

INSTITUTIONAL FOOD MANAGEMENT

Mohini Sethi



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Foreword

I am extremely happy that Dr Mohini Sethi, Reader in the Department of Food and Nutrition of Institute of Home Economics has brought out the book “Institutional Food Management” which is the culmination of the teaching and practical experience of over 30 years.

The book covers all aspects of Food Management and Service, including Designing of Kitchen and Service Area. Equipment selection and maintenance, Personnel and Financial Management, Food Management with special emphasis on Hygiene and Sanitation. The text includes number of examples for easy understanding and is very well illustrated with Tables, Figures and Photographs.

The hospitality industry is growing very rapidly in India and offers plenty of opportunities to students of Institutional Management. Most of the books on Institutional Food Management available are written by foreign authors. Indian Foods, food habits as well as cooking practices are diverse, culturally specific and different from the western world. Therefore, this book which specifically deals with Institutional Food Management in the Indian Context will be very helpful to the students. Also the managers of canteens, restaurants, and other eateries will find this book very informative and helpful.

I am confident that this book will be useful to all those interested in making available hygienically prepared, wholesome and nutritious food at catering establishments. I congratulate the author for the commendable work of putting together her long experience in the form of book with meticulous details.

DR (MRS) K. KHANNA

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Preface

Institutional Food Management has been designed as a reference book for the teaching, learning and institutional feeding in all its varied aspects. It covers a wide range of topics from the development of food services, traditional and modern management approaches to the management of resources, food production and service techniques, waste management, forecasting, budgeting and management accounting as well as hygiene, sanitation and safety measures to ensure wholesomeness of food served to the customer. Laws applicable to food service organisations have also been discussed to enable managers to ensure quality standards in food operations. The customer who tends to be ignored, often being expected to pay for what is available rather than what he wants, has been focused upon in detail.

The format and language is simple and explains seemingly difficult management concepts clearly, with the help of figures, tables and illustrations presented through examples as well as black and white and colour plates. The book is meant for teachers and students striving for professionalism in food management. It is expected to be a useful document for all food and beverage managers engaged in the tourism and hotel and motel industry. For all young aspirants who wish to set up their own catering ventures it will be valuable guide, providing a means of profitable self-employment.

The publication is set out in eight units comprising of 33 chapters covering almost every aspect of institutional food management. The nutritional aspects of quality have been given due weightage, especially useful for the management of food in institutional catering in an age where eating out is a more frequent phenomenon than eating at home.

It is hoped that the book will be useful to all involved with teaching vocational courses in food service management, graduate and post graduate courses in institutional food management. There is also much in it for food and beverage managers of canteens, motels, hotels or any kind of institutions involved with mass catering. Of course there is much to add, but this can be done only with the help of readers who suggest ways to improve the publication in the future.

I hope the users of this book will not only learn from my long experience of teaching and learning the subject, but will also interact with me to keep me updated with newer developments and expectations which we can try to fulfill together.

I would like to dedicate this book to my students who inspired me all along to find answers to their probing questions over the years. It is not possible to thank them individually. However, I wish to specifically acknowledge the efforts of Puja Kapur and Charu Kartik for the help rendered in proof reading of this manuscript. I am also grateful for the opportunities that came my way during the 32 years spent teaching the subject to post graduate students at the Institute of Home Economics (University of Delhi). Another friend, who contributed his efforts to making the figures in this book so real, is Shri J.P. Sharma who has always been willing to help. Thank you all and hope you enjoy reading and using what is yours.

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Unit 1

Institutional Food Management

- Development of Food Service Institutions
- Approaches to Management
- Management: Philosophy, Principles and Functions
- Tools of Management
- Management of Resources

Institutional Food Management or catering as it is usually called is the art of providing food and drink aesthetically and scientifically to a large number of people in a satisfactory and cost effective manner.

Every person eats away from home at sometime or the other, and people have different paying capacity for the same food items at different times, even a roadside food and beverage stall has the potential to flourish. What then is the role of management in operations if a food service establishment is to fulfil this potential? It is this and many such questions that this unit and those that follow attempt to answer.

Management can be defined as the art of bringing together available resources including the abilities of different people, organising them in a scientific and orderly manner, to achieve the desired goals of the organisation, while promoting individual aspirations as well. In its simplest form, Management is the process by which people work together to achieve common goals. It is, however, a continuous process of establishing objectives, putting together all human and material resources in the best possible manner, in an atmosphere of cooperation and goodwill. The management process therefore not only aims at achieving goals but is also concerned with the development of people.

Catering involves diverse activities and offers a variety of products and services making it different from other manufacturing and service industries. Its management therefore presents special challenges to caterers, be they involved in small medium or large operations. The special characteristics of food service institutions which differentiates them and their management from those of other industries are:

- A marked dissimilarity in of the principal products and services, offered, such as rooms, food, liquor, tobacco and conferencing.
- A wide variety of food offered in various service styles to the customer, ranging from biscuits and tea, cooked and processed snacks, beverages and meals to organisation of complete events.
- The products and services are closely interlinked and cannot be treated in isolation.
- The product offered is not always taken off the shelf and served, but requires further preparation or finishing before it can be presented to the customer.
- Products are not easy to standardise, and the same dish varies in its shape, size, colour, form, nutritive and sensory qualities, from one establishment to another.
- Providing a personal touch to the food is an important selling point in food services.
- The raw materials or ingredients used in food preparation are perishable to varying degrees and therefore special arrangements for their safe storage are necessary.

- Customer tastes vary on different days and even at different times on the same day. These result in radical changes in the amount of food left unsold leading to unpredictable costs and therefore wastage
- Food is more vulnerable to pilferage, theft, contamination, spoilage and waste. It therefore needs to be strictly controlled at all stages of production and service.
- Food production can make use of technology to a certain extent but cannot be fully automated being service oriented.
- Food service managers have to deal with a lot of people from varying cultural, religious, social and structural backgrounds. This calls for greater skills in food processing and man-power management both within and outside the establishment.
- The product is generally consumed at the point of production, but while some items can be prepared partially or fully beforehand and held safely, others cannot, and therefore have to be prepared on order. This results in peaks and troughs of activities.
- Customers have to wait for different lengths of time for being served depending on the extent of their orders.
- The caterer has also to concern himself with standards of hygiene and the health of his customers and employees as food once consumed cannot be retrieved, as in the case of manufactured products which can always be discarded by the customer or exchanged for another if found unsatisfactory. The adverse effects of an infected food can only be felt after it has been consumed.
- A large variety of costs are incurred in different ways by caterers depending on the types and extent of services offered, some of which cannot be strictly controlled for ensuring profitability.
- Fixed costs continue to be incurred whether the facilities are used or not.
- The demands of customers vary in the combination of services required to which caterers have to adjust. For example overnight board, lodging or conference guests, agency custom, restaurant and bar sales to nonresidents and banquets. All these give rise to a variety of prices for the same commodity, and therefore no one price can be determined as in manufacturing industries.
- There is a constant need to price competitively and to know the costs involved in providing products and services profitably.
- Food products and services are subject to prevalence of seasonal trading.
- There is always a possibility of altering the balance between the principal services sold, either by extending one service at the expense of another, or by overall expansion.

- Food Services offer flexibility of resource use, in contrast to other consumer products, as in the case of conversion of a lounge into a banquet, conference hall or bar.

In view of the above special features Institutional Food management requires a professional approach backed by special skills, knowledge and vigilance at every stage of production and service.

This unit deals with the factors that have led to the development of food service institutions and the services as they exist today. It also discusses approaches to management as they have gradually changed to meet new challenges arising from liberalisation and globalisation with their consequent influences on life style changes. While the basic concepts and functions of management remain the same, the tools which can be used to achieve goals effectively have been updated to enable food services to achieve goals more effectively through better resource utilisation leading to greater viability in a progressively competitive environment.

Chapter 1

Development of Food Service Institutions

A food service institution is one which plans prepares and serves food in quantities far greater than those characteristic of usual home meals. Such institutions serve various functions depending on the demands placed on them by their customers and vary from small to very large establishments. Though development has been rapid and widespread during the last 50 years the services have their roots in customs and habits characteristic of our civilisation. In mediaeval times quantity food production was the rule rather than the exception in religious orders, royal households and places of education where it was traditional in India for students to live with the teacher or *Guru* for the years of their education.

RELIGIOUS ORDERS

As already stated quantity food production was the rule in religious orders, royal households and communities, the costs of which were usually covered through charitable contributions or donations.

Food services in *abbeys* in England reached very high standards because the stewardship followed religious values of discipline, love, free service to those who came for shelter and food. Records show that an adequate food allowance per person was strictly established, and expenditure was thrifty with accountability for each penny, because these places of worship and residences for nuns and priests thrived on donations from the public especially on feast days, and the entire wealth of those who lived there in the service of the Lord.

In India, the equivalent of abbeys, were *dharamshalas*, usually situated near places of pilgrimage where people could rest for short periods and then move on. These places provided food to sustain the hungry and poor at fixed times and to pilgrims who would donate money in return for their stay and food, to sustain the activities of these shelters.

TRADITION AND CULTURE

Traditionally India was a country where eating out of the home was taboo, and people who went out to work for long hours always carried food with them whether they went on foot, in carts or on bus or train journeys. It was religion, tradition and culture that have always brought people together in large numbers to celebrate festivals, participate in mass prayers and enjoy social occasions such as marriages, births and other festivities, all of which involved eating together. The traditional *langars* or mass distribution of food after prayers in *gurdwaras*, the distribution of *prasadam* in temples, the breaking of fasts together during *Ramadaan* in mosques and feasting after mass at Christmas are all evidence of large scale food preparation and service from early times.

Festivities

Tradition and culture dictate that every activity be marked by festivity, whether it is a birthday of a god or goddess, the birth of a child in a family, or whether it is to seek the Lord's blessings for prosperity in general. Even in bereavement it is traditional not to let sympathisers go un-fed, irrespective of their numbers. People thus find several occasions to get together in large numbers to express their feelings of love and support and satisfy their emotional and social needs. Thus, festivals and celebrations brought community groups together, each member sharing the food production and service activities.

Gradually with communities shrinking in size due to changes in family structures from joint to nuclear, smaller families could not cope with social events either in terms of space, energy, time or active participation in community festivities. This was because couples strived to make ends meet by working outside their homes. Celebration and entertaining therefore, gradually shifted to professional caterers who took over the responsibility of planning, organising and offering package arrangements for home catering, setting up events in restaurants and hotels or even on campuses of institutions and resident's associations in housing complexes. Today catering and accompanying facilities are available not only for festivals and celebrations but also for conferences, funerals and the like.

Even though development has been rapid and widespread, food services have their roots in customs and traditions which directly affect people's eating habits and behaviour. As one travels from one region to another the food eaten differs so widely that one wonders if one is in the same country. The traditions and culture get built around factors like geographic location, soil conditions, climate, season, and other environmental and social factors.

ROYAL HOUSEHOLDS

Royal households had a large number of inhabitants to serve the royalty who were placed in a hierarchy and had established food allowances which were fixed according to their ranks, and a large battery of staff were employed for food preparation and service. The kitchens of these mediaeval households showed high standards of hygiene with respect to food handling, preparation, service and waste disposal techniques depending largely on natural recycling methods.

In India the states were governed by *princes* who resided in palaces and were morally involved in the welfare of their states, which often competed for excellence in development, uplift and care of the masses. Thus, an endless stream of people including family members, guests and the public were catered to and fed through the kitchens of the palaces, where strict attention was paid to costing, and accounts were maintained in a household book for auditing. The kitchens of these mediaeval households showed exemplary sanitary standards made possible by cheap labour who exhibited a high degree of loyalty and honesty of purpose. Each area compared to the best run establishments of today.

The *princely states* are now only tourist attractions and mass community feeding is restricted to places of worship or during festivities and celebrations conducted in temples, public places, clubs and hotels where catering is provided according to the menu requirements of the host, be it an individual or an organisation.

The last century has seen many developments in size, number and activities of food service establishments which have tried to keep pace with the development of the country in many spheres, these range from industrialisation, education, social welfare, healthcare, transportation, tourism, job and economic profiles, leisure, lifestyles and national and international trade. Some of these developments made people stay away from home for days together or even months which necessitated their eating at places where they were. So eating out began due to necessity rather than choice and food started being served outside homes for a price.

It is interesting to study how each of the different areas of development have directly or indirectly affected the nature of catering activities in institutions and helped them to develop through time.

INDUSTRIALISATION

Industrialisation brought in its wake, the need to feed the work force in factories, which led to the development of industrial canteens and lunchroom facilities which appear on the premises of every industry today. Industrial food services provide employee feeding through 24-hour canteen services that offer meals, and snacks at break times. Such services usually employ their own catering staff, although some medium sized industries contract the services to catering professionals for providing meals at subsidised rates to their employees.

Office goers too needed similar facilities and therefore office canteens appeared on the scene. These facilities have taken different forms, extending from full meal to mini-meals and snack facilities to those that provide hot and cold meals delivered on order to customers on trays or in tiffin boxes as packed meals.

Industrialisation further, led to the development of roads and transportation facilities giving rise to the tourism sector, and encouraged the trend of eating out. Today, a high percentage of people eat out at least once a month, a large section require catering services in the form of pick-up counters or home deliveries which have resulted from a number of factors that have totally changed the social structure and working and living patterns of families.

Thus, industrialisation by creating job opportunities for men and women led to a number of lifestyle effects such as migration of rural populations to urban settings in search of more lucrative jobs. This resulted in women spending less time at home and therefore having less time for preparation of home meals. In addition domestic help became scarce and more and more women went for jobs outside to make their ends meet.

The result was greater catering options which developed to offer solutions to new needs both in the form of commercial, semi-commercial and welfare institutions that provided pick-up stations for food items and today, even telephonic order and delivery services that are fast adopting information technology options, to offer their products and services on the net.

COMMERCIAL FOOD SERVICES

Historically, the evolution of public eating places was stimulated by people's desire to travel and explore, initially for spiritual enrichment for which people

went on pilgrimages to holy places, followed by other goals like education, work and leisure.

Commercial food establishments started as inns and taverns and gradually developed into profit oriented public eating places where travellers, shoppers and visitors could come and quench their thirst in hot summers and eat at a price. The beginnings of commercial catering can be traced to cook shops of France or the *dhabas* in the remotest parts of India, which were set up as convenient eating places for the traveller. The term restaurant is derived from the Latin word *restaurare* which became *restauer*, in French, meaning to repair, replenish or restore.

Restaurants

The cookshops of France were originally licensed to prepare stews which could be eaten on the premises or carried away to inns or homes for consumption. Menus were pasted on the wall or door to attract attention of those who passed by. The story goes that a *boulangier* or *boullion* maker decided to add a meat dish in sauce to his list of soups and stews and was challenged in court for violation of the license rights. He however, won the law suit and his business was legalised as a restaurant. Today the concept has given rise to chains of specialised restaurants serving highly elaborate meals not only in France but globally.

The real boom in restaurants started after the French Revolution when the chefs got displaced from public houses and started their own eating places called cafes in the late 1700s. The most famous of all 19th century Paris restaurants was Café Anglais, which was patronised by Tsar Alexander II of Russia and King William I of Prussia in 1867.

The first restaurant was opened in 1765 in Paris by a soup vendor followed by England where a meal was provided at a fixed hour and price for the first time in a tavern, which later became a meeting place for people. Shakespeare was known to be a regular customer of the Mermaid Tavern in London, and thus eating outside the home began.

In USA the first restaurant opened in 1834 by Lorenzo Delmonico in New York City, where today there are more than 300,000 outlets serving 130 million or more meals per day. The cafeteria was an American innovation popular even today for its less formal food service which could cope with large number of customers at peak hours effectively in comparison to a restaurant.

Boarding and Lodging Services

Gradually the services extended to boarding and lodging establishments offering a variety of services of successively improved quality in the form of lodges, motels and hotels of different sizes. As the demand progressively increased along with the population, mass catering got separated from lodging and food service began to be priced separately from living areas of a hotel, lodge or motel to provide freedom to the customers to choose what they want to eat, when and where. This led to the development of restaurants, coffee shops, snack bars, icecream parlours, specialty restaurants, fast food services, cafes, soda fountains, vending and the like offering single item menus to multi-choice ones to customers, and the basis for eating out changed from necessity to leisure and pleasure. This gave rise to the development of different food production and delivery services to suit the newer needs of customers for food in office and industrial canteens, hospitals, educational institutions etc. in the form of formal seating arrangements to semiformal buffets, self services and automatic vending. The new demands were for food and services that could be offered with speed giving rise to the term *fast food* services.

Fast Food Outlets

The *fast food* culture developed although its effects on health were detrimental. Every health and nutrition professional is now trying to counteract this through proper education and awareness campaigns. Every metropolitan city today has health food and gourmet shops offering self service buffets to attract the customer.

Contract Services

Food services are now provided as required by contract caterers who offer wide choices to the customer in the form of home parties which they organise as complete events for the host. They have their base kitchens for food production, bring most food ready prepared to the location along with their staff, tables, linen, crockery, glassware, etc. and serve the food to the guests. The host only pays the prefixed charge per head. Examples of such catering services are seen at large marriage parties.

Another form of contractual arrangement is used by industries or offices in which tenders are invited from contract caterers for setting up their regular feeding services in the form of canteens, or lunch room services. The space electricity and water is provided, and the caterer who wins the contract plans the complete spaces, production and service of food including waste

management. Contracts of this nature are renewed periodically, annually or after 2 years.

Commercial operations thus range from leisurely eating restaurants to coffee shops, vending, takeaway and home delivery services and fast food outlets all over the world. Establishments which started with a utilitarian purpose have now become a part of the social fabric making eating out a socially acceptable and fashionable experience, besides according status to people. This trend is expected to continue with increase in urbanisation, improvement in economic status and therefore purchasing power, accompanying changes in living styles and standards. At the end of 1995 there were 990 hotels in India with 58,041 rooms in the approved list of the Department of Telecommunications (DOT) of which 35 were of deluxe and 54 five star categories (Annexure I).

NON-COMMERCIAL OPERATIONS

This category of food services includes those which operate either at very low profit or break-even making no net profit at all. The goal of such organisations is to sustain the services for the inmates of institutions such as educational and social organisations which may be partially or fully subsidised by government or industry for the benefit of its employees or inmates. The development of non-commercial food services have arisen to meet the needs of environmental, social and economic changes that have followed globalisation and resultant policy changes of governments.

Impact of Social Changes

The social aspects of food and eating were in earlier days satisfied within the households or family since the joint family system was in vogue and each family unit comprised of at least five or more children. This led to a social security system working within families and all earning members placed their earnings in the hands of the head of the family who was usually the oldest and most experienced member. He took the decisions regarding disbursement of funds keeping the welfare of the family, based on their particular value systems and the special requirements of individual members in mind.

The change to nuclear families and one-two-three children policies of government have deprived the family of its social interactions. People have therefore moved their social interactions and entertaining to clubs, hotels, restaurants and the like, leading to the development of the party culture centered around fewer individuals, rather than the extended family. This led to the catering industry cashing in on the inability of small family units to entertain

lavishly at home, giving rise to the outdoor catering concept which is prevalent today, in the form of caterers arranging marriage parties, kitty parties, birthday celebrations and the lot, at virtually any location chosen by the host. Caterers and hoteliers today have halls available for such social events and charge for total event management.

Social Organisations

Social organisations such as city clubs, athletic and sports clubs, country clubs host dinners and festive events for large numbers for which they are well equipped with respect to staff and facilities. Visits to temples and religious places too increased more as social rather than religious events organised for the explicit purpose of worship.

Welfare and Rehabilitation

The welfare which was looked after normally by the large number of members in joint families thus shifted to the government and nongovernmental organisations (NGOs) and social and religious groups, who today look after the weaker or needy sections of society in an institutionalised manner. With the complete change in the fabric of society more and more illnesses, mental, physical and social have emerged, placing greater demands on the treasury of governments and philanthropic individuals to help solve the problems of the under privileged citizens.

Welfare and rehabilitation has today become a marathon task being executed through the establishment of institutions offering care in the form of hospitals and clinics, orphanages, daycare centers, prisons, and even old age homes. It has therefore become necessary to feed the inmates of these institutions keeping their requirements for health, development and survival in mind. Feeding was never more institutionalised as it is today, providing a boost to the development of contract catering systems. Some such institutions where mass feeding is necessitated by social and lifestyle related changes are briefly outlined.

Health and Medical Care

Increased attention to health, medical care and welfare schemes gave rise to hospitals, nursing homes, primary health centers, welfare centers for all age groups such as creches for infants and children, home for the old, handicapped and mentally disadvantaged citizens and so on. Within all these institutions it became necessary to provide catering facilities for inmates, staff and visitors in

the form of staff and other canteens which set up round the clock fast food counters and self service facilities.

In addition, welfare services were planned by the government to help eradicate hunger and malnutrition in deprived areas through local public health centers and schools. This led to the development of mobile catering and health units to cover rural areas to take care of health, supplementary feeding and mid-day meal programmes. This also provided the impetus to entrepreneurs to start mobile contract catering services even in metropolitan cities under licensed schemes for commercial goals.

Hospitals

Hospital catering started with the advent of large hospitals being set up for patient care. These are usually expected to be supervised by an institutional manager and dieticians since the needs for patient diets are different from those of normal people. Further, each type of disease requires different dietary interventions which only a trained dietitian or nutritionist can provide. Hospital feeding requires specialised food delivery systems as patients are served their meals in the wards under supervision of nursing and ward staff. The same is true of private *nursing homes*, or *clinics*.

To cope with the rush of patient admissions and their different dietary needs, dietetic services were provided in large hospitals through base kitchens under the direct supervision of trained dieticians. Private hospitals and nursing homes too followed suit, and depending on their size contracted the catering services or set up their own kitchens to provide the dietary needs of patients.

Institutional Feeding

Welfare centers, creches and orphanages set up by government, public and private institutions all need to feed and care for their inmates and thus there is a need to cater to the different age groups with their needs. This has been carried out for the inmates of institutions such as prisons, homes for the old and disadvantaged, hostels of boarding schools, colleges and universities. Canteens provided the support to the main kitchens for snacks, beverages and mini meals for day scholars. Institutional catering however was always carried out in an adhoc fashion and this is now expected to invite focus in this century.

Prisons: With the jails of the country overflowing due to increase in the crime graph attention was drawn to the massive catering arrangements required to feed people of all ages in prisons. So far the inmates of such institutions have been treated shabbily with food being thrown into their plates with *the eat it or*

leave it attitude because prisons were no bar zones for the common citizen. But today with the presence of human rights commissions and NGO's working for the rehabilitation of people the situation has somewhat improved, although there is scope for further improvement.

Institutions for the handicapped: There are a number of institutions which required special catering arrangements for the less fortunate citizens. This gave rise to establishments such as homes for the blind, disabled physically or mentally, orphanages and the like, where persons of similar disabilities were housed together and feeding facilities needed to be provided. Today many more kinds of social institutions have come up thanks to the unstinting efforts of non-government organisations who along with the government cater to the special needs of their inmates.

EDUCATION

As mentioned earlier, education in ancient India was imparted by the teachers or *gurus* in residential complexes of which some of the outstanding examples of Shanti Niketan, Sringeri Math, Institute of Higher Learning in Ananthpur, Banasthali, Belur Math still exist today in our midst most of them having been accorded the status of deemed universities. At these places spiritual education was imparted in strictly disciplined environment. The food which everyone shared was as close to *natural* as possible in its form, and cooking methods involved minimum heat treatment. Emphasis was laid on the freshness of the food prepared and served. Stale food was not known because the left overs were given away to the hungry less privileged or fed to domestic or other animals. This practice still continues at these centers of value education and excellence.

Residence Halls

With more and more families sending children to universities and colleges residence halls, dormitories and hostels providing boarding and lodging, sprang up on the premises. When the demand further increased and students needed accomodation, the women and men's hostels and youth hostels came into existence. Snack bars and cafeterias grew on the premises and students were permitted to use hostel facilities on regular basis.

School education too became distanced for some and canteen and hostel catering facilities became a necessity for the young active clients. For government schools where children could not pay in canteens for food, subsidised. mid-day meals providing at lest 1/6 to 1/5th of their daily

requirements of essential nutrients was initiated. The program has yet to cover all school children but the intention was to try and increase attendance in schools and eradicate malnutrition to an extent while also educating them in the process.

UNEMPLOYMENT

With the population of the country increasing steadily over the billion mark, unemployment is a real problem even among the educated youth let alone those who have little or no access to literacy or schools of learning. Added to this is the increase in the number of working women who have little time left for cooking and serving wholesome family meals.

Lifestyle Changes

Changes in living patterns necessitated an increase in the number of working couples and therefore more money to spend. The weekends were therefore for leisure activities like adventure sports, games etc. and eating out with the family.

Speciality Restuarants

As a result of lifestyle changes, relative affluence and unemployment of educated youth with more time on their hands, specialty restaurants developed to provide the variety demanded as a change from home meals and cooking. Today it is easy to choose between places offering South Indian, Western, Italian, Mexican, Thai, Chinese, Moghlai, Japanese and other foods at eating places offering cultural-specific menus.

Takeaway Services

Working women also look for convenience foods in the form of take-away services. Meals on wheels, home deliveries of partly or fully prepared food items to ease their work at home are also on the increase, providing evidence of such trends.

Vending

While vending is not new to India, it has been transformed from the vendor on foot to more advanced versions including automatic vending machines at some locations. All these types of establishments grew as a matter of convenience at places of work or residence and were originally meant to be low profit in their approach being started to satisfy consumer's felt needs or to provide them with conveniences at their doorsteps. But, as the country advanced in the economic

sphere, social and psychological factors became more important in the development of catering institutions. Eating out began to be considered prestigious, fashionable and a means of entertainment.

Entrepreneurial Ventures

Entrepreneurial ventures represent catering services started by individuals or families, resulting from some creative idea. Some examples are the provision of desserts for home entertaining, or supply of lunches for children and old people in families where the women go out to work and find little or no time to cook full meals in the morning. Even vending can be entrepreneurial in nature where the vendor makes a *dal* or curry from home, carries it on a cart in an attractive vessel along with a gas stove and some flour (*atta*) and salad vegetables. He makes fresh *chapattis* for catering to the socially less privileged like mechanics, shop keepers who can get a hot meal on demand. The cart is parked all day at a market corner where the vendor serves the simple menu at an affordable price.

Many such ventures have been cited that started small but grew into larger businesses. A classic example is the Oberoi empire of hotels which started as an entrepreneurial venture.

With the increase in population and consequent unemployment among the youth and women, the tendency of housewives to set up entrepreneurial ventures in catering from their homes is increasing. Newer avenues that will assist the large number of working women in serving home-made meals to their families is fast gaining ground. Entrepreneurial catering is one field that will leap forward, as food is that necessity which knows no differences in human kind and women have the natural innovativeness and skills in the field. For the illiterate masses too, simple vending of food items or two-item meals offer means to self-employment.

Franchising

With liberalisation on the government agenda however, a modern form of self-employment has emerged with national and multinationals entering the country in the catering arena. This form known as *franchising* comes with the total package of training to maintain the standards of the parent company in terms of establishment design, production procedures. Quality of raw materials, quality service methods, accounting procedures and the lot. Companies that have already entered this arena are McDonald's, Wimpy, Pizza Hut and the like. The Indian companies to follow suit are Nirulas, Moti Mahal, Haldiram,

Nathus and so on who are either franchising or expanding their units throughout the country in a satellite manner.

TECHNOLOGY

Advancement in catering equipment technology has made mass catering faster, of improved quality in terms of safety and variety. Railway and flight base kitchens can today, produce thousands of meals for travelers with varied requirements around the globe. With entry into the information technology era and catering on-line for orders, downloading catalogues for deciding on catering equipment purchases and so on all at the click of a mouse, services have not only become fast but more efficient.

One can visualise the information technology being utilised in the field of catering in a widely progressive manner in the future even by entrepreneurs supplying lunches to offices taking orders through their networks. The *e-dabbawala* is not far as conceptualised by Umesh Malhotra¹ as the ideal portal that will deliver sumptuous meals any where any time.

TOURISM AND TRAVEL

Travelling longer distances on pilgrimages or business gave rise to road-side eating and resting places in the form of overnight lodges and motels providing eating and refreshment facilities. These also offered packing and room services for those ready to travel during early morning hours. Portable meals have always been the practice in India, and even when meals are available to students, travellers and office goers many still prefer to carry packed meals from home for different reasons may be cultural, traditional or for reasons of food safety associated with home meals.

Besides hotels other tourist accomodation and catering facilities available in the country are:

- *The Yatri Niwas* These facilities provide clean, functional accomodation for budget travellers at reasonable prices.
- *Yatrikas* Comprise of cottages or sheds and halls at places of pilgrimage.
- *Lodges, Cafeterias and Restaurants* These offer basic boarding and lodging facilities to tourists.

1. Director, e-business solutions, Bangalore Labs., Article in *Economic Times*, New Delhi. 13 April, 2000

- *Midways* These are wayside amenities which connect important tourist centres and provide stop-over conveniences and catering facilities for travellers on long road journeys.
- *Camping Sites* These are usually built in natural surroundings in the form of forest guest houses seashore and beach resorts, or for pitching tents for adventure tourism and sports at base camps in hilly or mountains regions. Such sites. Provide infra structural facilities for trekking, mountaineering, skating, or skiing.
- *Holiday Resorts* These include guest houses, paying guest accomodation or bed and breakfast places.

Globally however, India's tourism effort is insignificant considering that this sector is the third largest foreign exchange earner, the annual allocation is only 0.5–1.0 per cent of the total income. There is therefore tremendous scope for development of catering facilities in this fast growing area.

SPECIAL FOOD REQUIREMENTS

Special food requirements for the military posted in mountainous terrain with freezing temperatures are also provided in the form of light weight packages taking into consideration their special needs for heating etc. available. Further the development of adventure sports like mountaineering, deep-sea diving and so on, need also to be catered through constant research and development efforts in food and material sciences.

Space Feeding

With air travel becoming common mode of transportation trayed food service has become the norm. Man's urge to explore outer space provided further challenges to the caterer, food processor and researcher to prepare foods in forms that will effectively meet the nutritional needs of spacemen over extended periods of time in a weightless environment. Presently, the foods are being packaged in edible films that form part of the structure of the space craft and further developments are in progress, but the search is endless if it is to meet the food needs of the future to keep pace with technological advances and developments in all fields of science.

TRADE

National and international cooperation in the fields of trade, commerce education and sports have led to a spurt in conference catering and group

living and feeding facilities. This has brought people together from different geographical and cultural backgrounds. The exposure to different kinds of foods thus created a longing for specialised catering, for which skills were lacking at home. Catering thus progressed towards specialty services providing Chinese, Italian, American, South and North Indian, and other regional and international cuisines.

Thus the changing living and eating patterns have given rise to a wide variety of catering institutions and establishments such as snack and drink bars, specialty restaurants, take home or delivery services, formal and leisure eating places, mobile catering and vending.

Today, catering institutions form the backbone of the tourist trade and are important foreign exchange earners. The only drawback is that the industry is characterised by a large number of establishments that have mushroomed in response to needs of individuals and groups, and have not developed in an organised manner. The *chai* (tea), *paan* and *chaat* stalls, icecream parlour or vendor, fast food restaurants and inexpensive eateries on road sides and wheels are a familiar sight even today. The *paanwala* may have extended his services to providing bread, boiled eggs and tea in addition but without much attention given to hygiene and sanitation. While the type and number of catering establishments are increasing everyday the need to focus on relatively small scale establishments feeding 50–200 customers a day, in terms of providing professionally planned operations is great, in order to ensure a fair deal to customers in terms of health, satisfaction and enjoyment of food.

In India, with over 20 million middle class consumers and increasing number of catering training institutions, the scope for catering entrepreneurial development holds great promise, while also increasing self employment opportunities necessary for a country which is bursting at its seams with the population having already crossed the billion mark.

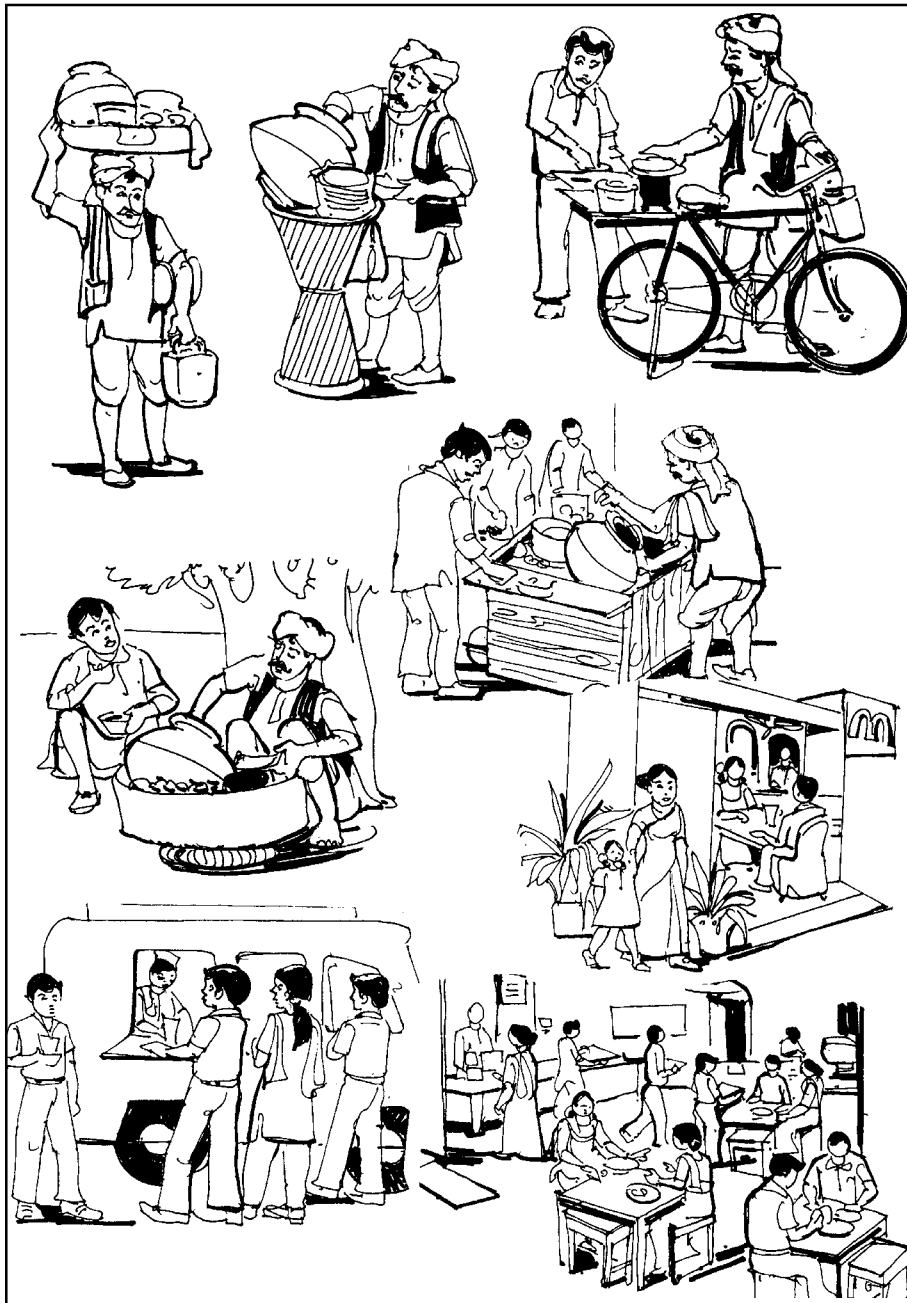


Plate 1.1 Development of Food Services in India

Chapter 2

Approaches to Management

Management thought has undergone changes in the last few decades resulting in adoption of approaches that can be flexibly applied to management situations in the fast changing business environment of today.

Sociologists have increasingly focused attention towards understanding the various aspects of organisations and studied their structures, managerial practices, people's behaviour at work and why some organisations succeed and other do not. Attention has also been drawn to how they form, change and spread.

Management thought in India gained momentum after independence, but developed on the approaches adopted in western countries especially Britain and the USA. Today organisations are aware of the need to develop and apply management concepts to every area of a business in order to achieve efficiency standards, be it administration, production, service, marketing or development of human, material and financial resources.

The approaches suggested by various theorists, sociologists and behavioural scientists from time to time are being discussed in the light of newer knowledge and its utility in the catering management environment.

CLASSICAL APPROACH

In the 1800's when industry was being developed child workers working up to 13 hours a day, was a common phenomenon even in England and workers lived in poor conditions. Classical approaches to management at the time however, treated productivity as a purely engineering problem. It was Robert Owen who first conceived the manager's role as that of a reformist, because he felt that improving the working conditions of employees would lead to better

production and profits, since he believed that the best asset for a manager was his workforce.

Owen improved these for his workers, reduced their hours to 10½ stopped employing children under 10 years of age, and started rating employee's performances openly on a daily basis. In this manner he instilled pride for achievement in the workers, discovered problem areas and introduced a sense of competition. Gradually attention was focused on teaching management skills rather than only technical ones and the focus shifted from the individual to groups.

The classical organisation theory resulted from the need to find guidelines for managing complex organisations and Henri Fayol was the first to systematise them. He is therefore considered the founder of classical management. According to him sound managerial practice falls into patterns that can be identified and analysed. Thus the classical bureaucratic model came into existence although it had its limitations and therefore transitional theories also called the neoclassical theories evolved which were more people oriented.

NEOCLASSICAL APPROACHES

While accepting the classical model, human relations and behavioural approaches were experimented with and improvements tried by managers who permitted subordinates to participate in decision making, these approaches were therefore termed as neoclassical. Contributors to these were Douglas McGregor, who thought that the bureaucratic system was based on negative assumptions of workers, and their activities were dictated by the management hierarchy with all decisions taken at higher levels and all implementation done at lower levels. Theories X, Y, and Z are proof of these assumptions. Agyris, Likert and others joined McGregor in his thinking and a great deal of work is documented to improve worker morale and consequently better performance at work. Today, the organisational environment has become more competitive but the same principles are adopted in organisations when production and sales figures are announced or printed for information of all concerned.

SCIENTIFIC MANAGEMENT

This approach is also called *Taylorism* after its founder F. W. Taylor, who initiated it as the scientific approach to management. Scientific management can be considered from three viewpoints within an organisation namely, the management, worker and the total organisation.

Management

This approach assumes that management has always been interested in obtaining control over the workers not necessarily for the sake of exercising power, but to increase output and efficiency. It appealed to management to offer definite rates and standards for jobs which could be used to judge the performance of the workforce. This also made it easier for management to calculate wage costs and remove grounds for conflict. In fact, Henri Fayol was the first to investigate managerial behaviour in organisations and to systemise it. He believed that management was a skill and therefore it could be taught. He outlined six basic activities necessary for operation of enterprises as indicated in Fig. 2.1 which are relevant even today.

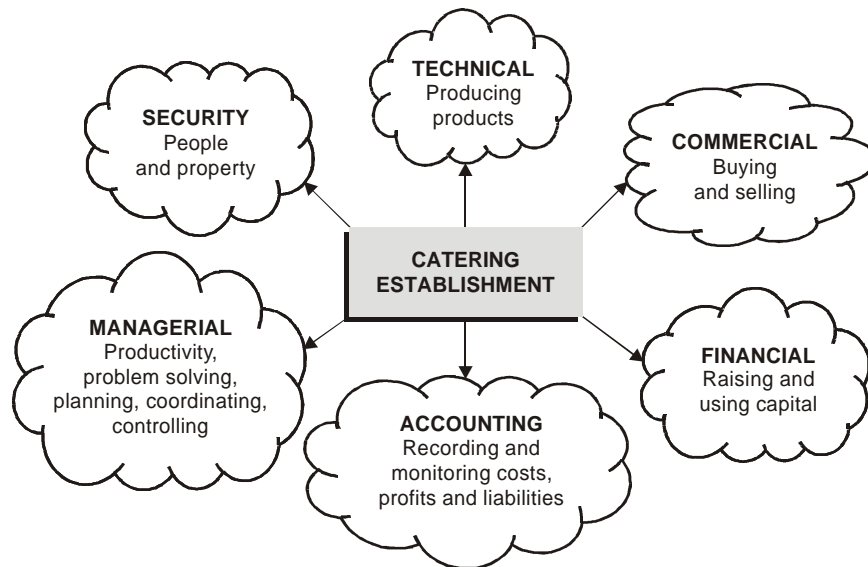


Fig. 2.1 Basic activities of an operation (Adapted from James A. F. Stoner and Charles Wankel, 1987)

Fayol however, preferred to use the word principle of management rather than rules, to build flexibility in the way managers could react to specific situations using their own judgement.

Workforce

The workers views were basically monetary gain and incentive pay which were part of scientific management, although much harder work had to be performed to meet the standards laid down.

Organisation

The scientific approach enabled organisations to set clear goals and organise processes, procedures and work areas more efficiently, as a consequence of which productivity improved and profits got better ensured. Thus, a value was placed on work performed which indirectly benefited the organisation, the approach involving better planning, organising and functioning even today.

While *Taylorism* grew out of experimentation and experience on the job, a problem that arose was that workers became afraid of completing jobs too soon because they believed their rate of pay would be lowered as a result. To dispel these fears, Taylor encouraged payment of higher wage rates to reward more productive workers.

Gradually, training modules based on procedures followed by high performers were prepared, skills required for various jobs were established for use in staff selection, and low performers were laid off. The standards for evaluation were identified for each type of work. Results of this exercise showed a 60% increase in accuracy, 80–100% rise in wages and higher worker morale.

Taylorism involved four basic principles:

1. Development of a science of management to determine the best method of performing each task.
2. Scientific method for staff selection and giving responsibilities for tasks to which their skills are best suited.
3. Development of workers through scientific education.
4. Friendly cooperation between management and employees.

Thus, Taylor tried to bring about a complete change in the mindset of both management and workers as the latter were classed at the time. He believed that higher productivity helped everyone in a work situation and no competition for profits was necessary.

Others who contributed to scientific management thought were Henry L. Gantt, who saw differential payments as lower motivators than payment of bonus. He started a charting system for production scheduling which is still used extensively and is particularly important in the catering field. Frank B. Gilbreth and Lilian M. Gilbreth focused on worker fatigue and motion studies in search of ways to improve employee welfare. They developed a promotional plan to boost employee morale and help their development, because to them scientific management was a means of helping people to achieve their full potential.

Unfortunately the mental change that Taylor expected did not come about because, while managements adopted new technologies, the philosophy was not put into practice. In fact, increased productivity led to lay-offs and workers ended up producing more for the same rates. There was no voluntary redistribution of increased profits by managements, leading to the growth of unions and labour shortages following the depression of world war II. Today, workers continue this legacy of being at odds with management. The scientists obviously overlooked people's social and job satisfaction needs, little realising that frustrated workers would increase tensions and create aggression, affecting both individual and group behaviour at work.

So, while scientific management produced affluence on the one hand, the worker questioned traditional authoritarian management practices on the other. Workers struck work over job conditions rather than only pay, and left jobs if they were unhappy.

Modern management was born with the setting up of the East India Company, which then expanded into managing agencies to carry on their business enterprises, which were an amalgamation of traditional and professional management. The art of people management was partly replaced by scientific management of organisations.

QUANTITATIVE APPROACH

This was developed after world war II and was also referred to as the *operational research*, *management science* or *mathematical* approach. Operations research (OR) involved a team of specialists from various disciplines to analyse problems and study the effect of all possible factors on the potential outcome, and through computer use developed models for presenting a rationale for making decisions. Model building is central to the application of OR because it uses quantification techniques for critical issues to arrive at logical representations of a real situation or problem. Basically, four types of models have been used namely representative, analogous, symbolic or mathematical and simulation models.

Representative Model

The representative model was a scaled reproduction of real situations or problems as in a photographic or mapped out model.

Analogous Model

This involved using comparative properties of situations to illustrate problems or the mechanisms involved in decision making in similar conditions.

Symbolic Model

These consist of mathematical models in which symbols are used for certain components of the problem and calculations of solutions are depicted to arrive at the best possible solution. Symbolic models represent real situations, are simple, convenient and economical resource conservation devices for testing hypotheses. They help in understanding and predicting conditions of uncertainty or risk and control decision problems which are under consideration.

Computerisation has further helped in speedy decision making and is a unique aid in analysis of alternatives, thus increasing productivity through speeding up management decisions.

Simulation Model

This model makes use of linear programming to solve problems such as queuing or waiting unduly, affecting sales revenue of an enterprise. In catering queuing is a common problem because the rate of arrivals is greater than customer service levels especially at peak service times. Queuing acts as a buffer between an input and output process or demand. Simulation helps to search for an optimum solution by striking a balance between cost of waiting or queuing, customer loss and cost of reducing queuing through allocation or reallocation of additional resources.

The proposition involved in this theory is that although delays are costly, the cost of reducing or eliminating them may cost even more especially in a labour intensive industry like catering. The optimum solution therefore would be that, which involves the least total costs to protect the goodwill of the customer.

Queuing problems are used in decision making concerned with time allocation of personnel and equipment with a view to minimising costs of idle periods during times of low activity. Models being abstractions of reality, they help to optimise conceptualisation for problems which involve time, money or profit maximisation.

Quantitative methods help to solve technical problems at operative levels but should be used as tools only when required, over-dependence on them leading to multiple alternatives often causing confusion in the mind of managers.

Thus OR provided a systematic evolution of alternatives for making rational, well considered objective decisions by providing a factual basis for guiding management. The techniques helped to sift critical issues for appraisal and analysis, guided management in their judgements, easing effort and time of managers while intensifying their decision-making roles.

The contribution of management science techniques was greatest in the areas of planning and control activities, forecasting, budgeting, cash flow management, production scheduling, development of product strategies, staff planning and stock control especially in large organisations. The approach however, cannot deal with problems of staff behaviour especially of those leading an organisation.

MANAGEMENT BY OBJECTIVES (MBO) APPROACH

Peter Drucker was the first to use this term in 1954 as a goal oriented approach to management planning and evaluation, in which the goals of managers were set to be achieved within a predetermined time frame. Each manager sets his own goals within the preset goals of the establishment and then works to achieve them. The significance of this approach is that a manager's ability is evaluated in addition to the performance results of the operative staff of an organisation. This makes managers more committed to goal achievement.

The characteristics of the MBO approach are superior-subordinate participation in goal setting, devising methods, reviewing progress and achieving results. MBO thus involves acceptance and agreement, delegation, result evaluation to focus on success areas and failure causes, leading to focused corrective action and reward systems. For success the approach involves constant superior-subordinate participation and interaction in all organisational activities. The approach is purely functional and requires a good information system in place being totally result oriented.

There are a number of positives about the approach in terms of employee satisfaction because it outlines what exactly is expected of them as it provides measurable objectives for every one, irrespective of level in the organisation. It creates a sense of belonging while at the same time taking into account profitability, competitiveness, efficiency and flexibility.

SYSTEMS APPROACH

The systems school of thought looks at organisations as a system composed of a number of sub-systems which interact with each other and the internal and external environments to achieve their goals. These are assumed to satisfy the needs of the environment in which the organisation exists. The systems model thus focuses on an organisation's general properties and processes without paying undue attention to those objectives which may not be so relevant to goal achievement.

The systems approach therefore, sees an organisation as receiving *inputs* from its environment and interrelating them through various job divisions or systems to produce the products or services which flow back into the environment to satisfy needs. Thus, the thinking is in terms of *flows* from one system to the other an illustration of which is depicted in Fig. 2.2.

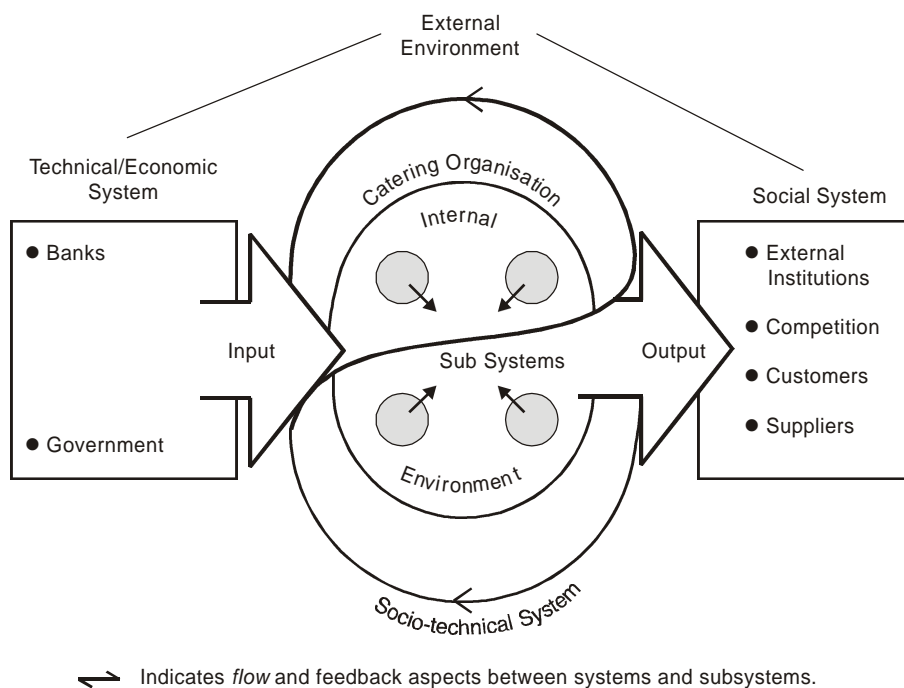


Fig. 2.2 *Systems approach to organisations*

In a restaurant for example, a system consists of a customer giving an order to a waiter, who in turn takes it to the kitchen. The cook then prepares the food and gives it to the waiter who then serves it to the customer. Thus, the activities of the customer, waiter and cook are interconnected in a customer—feeding system. Such systems show important properties of dynamism, the parts of the system constantly moving in addition to interacting with one another. So an event occurring in one part of the system is in some way transmitted through it. This patterning of interactions is what we understand as a network or a communications system.

According to Silverman (1974), there are three main assumptions underlying the view of organisations as systems which:

- are composed of a set of interdependent parts

- have needs for survival
- behave and take action.

The systems concept not only focuses on inter-connectivity of the parts but also inter-connectivity of systems. For example, a hotel reception and customer room service system is closely connected with the customer feeding system. So a change in one part may influence the other system, without the latter showing any visible cause of disturbance.

There are basically three types of systems namely closed, open and socio-technical systems.

Closed Systems

These usually have a limited number of inter-relating parts and their structures are based on the assumption that the outside environment is constant for long periods of time, and therefore no influences act on the organisation from outside. When changes do occur they are slower than the internal changes and organisations adapt to them to bring about a state of equilibrium.

Open Systems

These are similar to closed ones except they take into account the interaction with the external environment.

Socio-technical Systems

Here the link between the social and the technical system is provided by a set of activities, interactions and sentiments which are partly moulded by the technical system which in turn moulds the internal system. One such factor is the division of work developed in a system through which the task requirements interrelate to individuals' needs, as an interdependent *socio-technical system*.

VALUES OF THE SYSTEMS APPROACH

1. The systems model is valuable in determining how far the effects of changing one part of a system can be carried within an organisation. For example, changes in technology may require re-equipping of operation theatres in a hospital but this would have no impact on the catering system as far as providing post surgery diets are concerned. However if the electric load is withdrawn from the catering system to supply extra load to the theatres then the former will be impacted

and some other arrangement will have to be made or adjustments in load supply timings enforced to make normal functioning of food production possible.

Although organisations are always in a state of movement responding to changes or adjusting to the effects of a response, they are fairly stable because they have ways of compensating for disturbances which keep upsets from spreading indefinitely.

2. This approach helps to establish the importance of communication systems in any organisation because it is essential to interact between systems and subsystems.
3. It helps to predetermine the requirement of a unit or subsystem in terms of skills, IQ's etc., and staff requirements for jobs becomes easier. For example if the subsystem of a catering system only produces food for functions, staff with artistic culinary skills need to be selected and brought together to interact.
4. Systems that produce an effect or result, are valuable for analysing organisational problems. If something fails investigation can point to the subsystem responsible and pinpoint the areas for corrective action, while other systems continue to function normally.
5. Viewing a restaurant as an open system helps to realise changes in customer tastes which may change from leisurely dining to a need for fast service. The restaurant can then adapt its service style and menu accordingly to draw more customers.

Thus, the systems theory helps to distinguish between the *productive, maintenance adaptive and managerial-political* functions of an organisation (Katz and Kahn, 1966) but also presents some limitations as well.

LIMITATIONS OF THE SYSTEMS APPROACH

1. It is purely functional and does not focus on the behaviour of people except to a limited extent through the social-technical system. The usefulness of a system extends only to the contribution it makes to society, and this model cannot explain the prevalence of conflict at work, the presence of which is dysfunctional in nature and results from organisational goals being unable to satisfy individual goals as well.
2. Systems approaches have often been based on biological analogies which are very misleading, because they suggest that various parts of society cooperate like the parts of the body, rather than compete in a

struggle for survival. By concentrating solely on the structure of a system one loses sight of individuals and the conflicts that arise in the role relationships necessary to operate the system.

3. Cohen (1968) stressed that the least convincing aspect of the approach is its inability to explain change that arises not from the system but from the interaction between motivated people.
4. The systems model examines an organisation from the point of view of the managers, as the environment is considered in terms of how it affects the problems of those in authority.
5. The individuals within the system feel constrained by the needs of the environment and the organisational structure, which are seen as impersonal processes. This explains why organisations adapt to their environments at different rates.
6. The scope for participative techniques is limited because all decisions are made for the people working within the formal structure.

Thus, although the systems school helps in understanding how organisations function, it does so better with respect to a stable environment. Litterer (1967) has so aptly stated—*All behaviour is not formally planned and the unplanned portions are very important.* Therefore, a number of approaches need to be used together since change is constantly taking place in the organisational environment in which conflicts arise, and the responses to different changes have to be dealt with on a continuous basis.

To Buckley (1967), an organisation was a system of meanings and alternate responses to information which gave rise to patterned interactions. He compares social systems to complex adaptive systems which “... typically create, elaborate or change structure as a prerequisite to remaining viable, as on-going systems.”

There are thus no hard and fast rules for understanding organisations because just when a conflict appears to have been overcome, the solutions seem to go further and further away, and no particular conflict has the same solution at all times even for the same organisation. This is because the underlying cause is not always the same or a clearly visible one.

BEHAVIOURAL AND HUMAN RELATIONS APPROACH

This approach is based on the belief that an organisation is its people because, inspite of scientific and other planned approaches managers faced problems. This is because people did not always follow predicted patterns of behaviour and therefore management research was focused on social and psychological factors that operated among working groups.

Hugo Munsterberg in the late 19th century applied tools of psychology to achieve the levels of productivity that were aimed at through other approaches. He suggested three ways of improving productivity:

- Selecting the best person for the job using psychological testing techniques.
- Creating the best psychological conditions
- Motivating employees

Elton Mayo is widely known for the *human relations movement* in organisations. Human relations or HR is indicative of the ways in which managers interact with their staff. If an organisation stimulates greater and better work, its *people management* or HR is good and vice versa. To create good human relations in any establishment a study of human behavior at work is important. The Hawthorne studies of the early 1900's and the work of behavioural scientists like Agyris and McGregor are well documented. Thus, Mayo conceived man as a *social being* motivated by social needs such as wanting rewards on-the-job and responding more to work group pressures than to management control.

The human relations and behavioural approaches had two basic objectives one, economic effectiveness or viability and two, employee satisfaction which can further be extended to customer satisfaction with respect to service sectors like catering. These concepts were established by the Hawthorne studies the results of which implied that management could increase productivity if it showed concern for employees even in the smallest way.

Thus the theory of *rational man* responding to economic needs alone was replaced and theories of motivation emerged. Herzberg and Maslow's motivation theories are famous for their contributions to management thought and group behaviour at work.

Today, personnel managers or full departments of personnel management are in place in organisations irrespective of their size, especially to deal with staff behaviour at work, their motivations and the creation of harmony and pleasant work environments, in addition to the established salary structures and reward schemes. In fact a third objective now added on is consumer satisfaction, more so in service industries like catering.

CONTINGENCY APPROACH

This was the result of efforts by managers to apply different approaches to problems in real life situations. They found that methods used in one situation

did not succeed in other conditions. According to the contingency approach therefore, managers needed to identify which techniques will work in a particular situation under given circumstances, and at a particular time to contribute the maximum to goal achievement.

JIT APPROACH

JIT stands for Just-in-Time and this approach is the result of an increasing desire of managers to enhance efficiency for achieving better profits. This approach is applied basically to production management in an effort to control costs of storage space, time and effort. The idea is to receive raw materials straight for production as required with minimum stocks being held on the premises. The JIT approach was developed by the Japanese in the 1970's and has inspired managers globally to adopt it especially in manufacturing industries to cut costs of production.

In the catering sector too, adopting this approach is necessary for the packaged food manufacturing industry because the market demand for products is highly predictable and the raw materials perishable in nature, requiring to be sold out within a reasonable time period. The concept gains greater importance in India given the seasonality of raw food production in different regions of the country, and the price sensitivity of the consumer, who compares prices of manufactured with fresh foods while purchasing. It is common to find people even at household levels buying tomato puree or frozen vegetables when fresh tomatoes and vegetables go out of season and market prices are higher per unit than those of the manufactured packaged products.

Incorporation of the JIT philosophy in manufacturing operations or in quantity food production in food service organisations results in appreciable cost reduction making the end product more affordable for consumers and more profitable for the food manufacturing and catering industry. JIT application to production management enables the overall quality to be improved because foods are not stored excessively and deterioration is automatically prevented.

JIT thus follows a *demand pull* rather than a *supply push* approach enabling managers to produce products in quantities needed and at the time when they are required. JIT helps to manage the capital intensive part of production, in which the raw materials amount to nearly 80 per cent of the production costs, of which inventory costs are nearly 20–30 per cent of any operation. Savings of 5–20 per cent have been reported in inventory management and storage costs of operations (Singh, 2001). To implement this approach however, different types of information needs to be speedily communicated, and suppliers informed

about requirements, data on consumer uptake and the like needs documentation as indicated in Fig. 2.3.

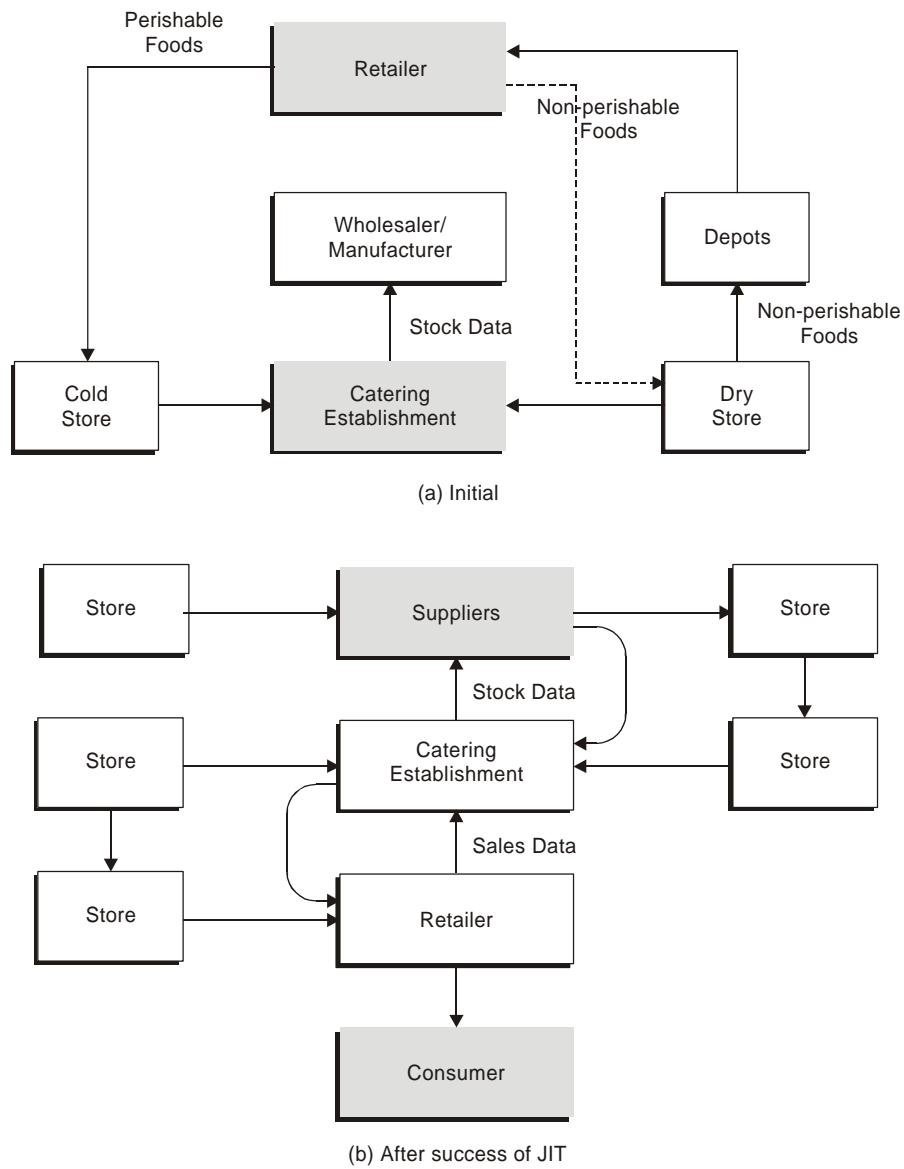


Fig. 2.3 Changes in communication flow in a JIT approach model (a) Initial (b) After implementation. Adapted from Manav Singh (2001)

The JIT approach when implemented has a number of advantages such as direct cost reduction through low inventories, staff and space reduction and thereby costs of handling materials. Damages in storage are reduced or eliminated, material flow in processing is reduced making work flow easier and saving time and energy. Some establishments which follow the approach are McDonald's (25000 outlets world wide), Dominoes Pizza, Cadbury India Limited which is linked to its depots, factories, cocoa sourcing points by use of appropriate software. While JIT is a management intensive system and requires time to establish networking facilities, once in place the system is easy to monitor effectively.

TOTAL QUALITY MANAGEMENT APPROACH

Total Quality Management (TQM) is an overall concept that fosters continuous improvement in an organisation. The philosophy emphasises a systematic, integrated and consistent organisational effort involving all resources at hand whether human or material, for the purpose of gaining competitive advantage in the market. According to Ho (1995) *Total* represents all people associated with an organisation including suppliers and customers, *Quality* denotes that the requirements of customers whether expressed or implied, are being constantly met and *Management* implies that the organisation's managers are fully committed to the continuous improvement of all facets of the organisation. The researchers associated with this approach namely Crosby (1979), Deming (1986) and Juran (1988) took this approach world wide and by 1992 the definitions kept changing to include statements like *performing jobs right the first time* or defining quality as *providing extraordinary customer satisfaction* or *conforming narrowly to standards* and so on. Juran developed the ideas of quality planning, quality improvement and quality control.

TQM according to the Japanese is a *journey which never ends* if an organisation has to succeed and survive in a competitive environment. The Japanese applied the ideology by simplifying statistical techniques for quality control (Ishikawa, 1986), emphasising on good data collection and presentation, Pareto diagrams for quality improvement and Ishikawa's own *cause and effect* diagram. Shingo's message was to stop the process whenever a defect occurs, define the cause and prevent its re-occurrence. The idea was to locate errors in a system and prevent them from becoming defects in the product. Kondo (1995) focused on quality and people motivation, and believed in creativity, physical activity and sociability for expressing the joy of sharing pleasure and pain with colleagues.

Thus, the TQM approach signifies a state of continuous dynamism within an organisation aimed at providing a little extra satisfaction to its customers

each time, and tuning themselves continuously to changing customer behaviour patterns. This management approach although taught by the Americans has worked miracles for the Japanese who followed it to the letter in their industries as exemplified by their successes in the global scenario. Today other countries are now following their example.

While quality has traditionally been related to manufacturing industries, technological advances and systems development has brought the service industries into its fold, especially in developing countries where human resources are available in abundance. Service sector is a major contributor to the economy of the country today, and catering has earned its status as an industry, though it has still far to go as far as quality service is concerned. Modern management approaches are not only a matter of giving direction to organisations but concerns the development of people.

Chapter 3

Management: Philosophy, Principles and Functions

Traditional management philosophy was based on the *rule of thumb* principle which assumed that what ever food is served will be eaten because it is a necessity for one and all, for sustenance of life and survival. Thus management of food became a combination of certain cultural factors adapted to the contemporary world, both through its own inertia and its relevance to the organisation and its environment. This combination often referred to as *ethics* determines actions, decisions and behaviour of people. It provides clues to critical questions of what the future holds in terms of human relationships and of the role of the individual in an organisation. There can be no lasting competitiveness without an ethic of human relations.

The traditional ethic is depicted by the *Confucian* philosophy which originated in China, and spread to Korea at the beginning of the Christian Era. This defines five basic relationships, by which society could be organised at the social, political and economic level. These cover the entire spectrum of possible relationships and how they work. Lets briefly review these in the light of the organisation and interactions at work.

MASTER-SUBJECT

This relationship is widely seen in the catering enterprises especially those units where owner-managers exist. Some examples are roadside establishments like the *dhabas* in India. the management style is authoritarian, and communication totally one-way in a downward direction.

HUSBAND–WIFE

When couples start small ventures especially from home, the subordination relationship becomes evident in their management style especially in a traditionally male dominated society. The management philosophy while based on love and understanding moves slightly towards participation and the division of labour is seen. The wife using her talents to manage the food production and service while the husband taking charge of dealing with the external forces and activities such as purchasing, inventory management, customer networking and finance.

PARENT–SIBLING

As the small venture expanded into a family business all members participated in sharing the work according to their age-ability, skills and they learnt-on-the-job, the art of management of various aspects of the organisation. Unity and loyalty was never in question because of the familial bonds between the members of the enterprise.

SELF–FRIENDS

Business philosophies changed with time and family extended loyalties where the parties concerned shared responsibilities for management and investments required for success. The characteristics of this relationship were care, concern and respect for each other, and therefore businesses flourished. They also took the lows with the highs in work and profits in their stride, patting each other on the back for success and working harder together to face the challenges that arose.

FRANCHISER–FRANCHISEE

This represents a relationship between one organisation and another, who permit use of their trade names, in exchange for royalty payments.

Modern management philosophies focussed more on productivity through scientific, logical thinking in management and lesser on human group behaviour and interrelationships at work during the late 18th and 19th centuries, which divided management and workers into *we* and *they*. Some results of the shift in management values and thought have been referred to in Chapter 2.

The 20th century saw a shift towards globalisation in formal management training which gave rise to hierarchical organisational structures. With technologies advancing in the field of communications. While speed of

transferring information increased, interpersonal human contact decreased which made behaviour at work in service industries particularly, indifferent to higher management.

Today, to counteract the situation of unionism and the aggression in industry, an attempt is being made to reestablish the lost human contact at work through strategies that will encourage not only productivity and profits but interpersonal harmony through participative and sharing management techniques.

PRINCIPLES OF MANAGEMENT

Management is a process involving activities through which action is initiated and resources used for achievement of preset goals. Certain basic guidelines can be formulated by every manager, to help him in the successful management of his establishment. These guidelines are called principles of management.

George R. Terry has aptly defined a principle as *a fundamental statement or truth providing a guide to thought and action*. Principles are thus formulated on the basis of past experiences of managers in related situations, through a process of recording mentally or in writing, the effects of decisions taken in the past. Although no two similar situations can be dealt with in exactly the same manner, present decisions can be based on the result of past decisions taken under fairly similar circumstances, depending on the future goals to be achieved. Thus principles are not rigid foolproof rules to be applied for finding solutions to situations, but flexible, practical, consistent, and relevant guidelines for use in similar sets of situations. Principles, therefore, provide a hypothesis for predicting future happenings when they are used with the manager's own judgement of how and when to apply them.

When managers make decisions that have constantly proved wrong, the fault does not lie in the management principles, but in the judgements made and applied to a particular situation. For example, a catering manager may follow the principle of serving meals strictly between 12.30 p.m. and 2.30 p.m. every day, but one day there is an unexpected rush of customers, and prepared meals get finished by 2.00 p.m. How will the manager apply this principle to manage the situation. His judgement can lead to the following actions:

1. Close down service at 2.00 p.m. on that day.
2. Quickly use some ready to serve foods held in stock to make up meals and meet the rush.
3. Request staff to make sandwiches and arrange for serving eggs to order for the remaining half hour of the service.

In this manner there can be so many different reactions to a particular situation that it may seem confusing to make a decision. But the principle if applied with value judgement, helps to make decisions easier and more effective. A manager who places greater value on the *goodwill of his customers* will not think twice about keeping the food service open, and providing whatever he can to his customers. He would not take the risk of turning away even a single customer. Another might value his own image vis-à-vis the staff, in which case he will treat the situation as challenge and think of quick preparations, being guided by the principle of keeping the food service open. A third manger may value good relations with staff and take the opportunity to give them half-an-hour off, based on his decision that the number of customers between 2.00 p.m. and 2.30 p.m. are not significant enough to go through the exercise of preparing meals over again and taxing his staff unduly.

In this manner the number of decisions possible can be as many as the value judgements people have. Principles applied must therefore, be flexible enough to be used in situations where goals change from time to time, no matter how far apart in time similar situations may arise. Principles represent the historical collection of *cause and effect* data obtained from experience of manager in various situations, from which practising and potential managers can draw for making decisions effectively.

There are no fixed number of principles that a manager may adopt as the basis of developing his establishment, and with individual experiences gained, very different guidelines for efficient working may be established in different organisations. Some principles help managers to predict, others provide guidelines for decision-making at various levels of an organisation. According to Koontz, O' Donnel and Weihrich, principles in management *are descriptive or predictive, and not prescriptive*. In other words, they do not tell a manager what he should do, but only give him an idea of what may be expected if certain variables interact in a situation.

There are 14 principles which may form the basis for management activity but each manager may use as many as they deem fit in a particular situation. In fact every manager can create principles to suit their own particular field of work and which could be reference points for success in the future.

These form basic guidelines of managing catering operations as outlined in Fig. 3.1 and briefly discussed.

Division of Work

The principle of division of work is based on the concept of specialisation, and since food production activities are each quite distinct in the skills they require,

jobs are generally divided according to abilities of staff. The idea is to make skills more efficient by performing each task repeatedly, till production speeds up and staff gain confidence. As the size of the establishment increases, the principle of division of work becomes more applicable as against a small coffee shop in which a cook and his assistant do most of the kitchen work, and shift to the service counter when production is over. Similarly, an owner-manager of a small canteen would probably perform the tasks of the cashier, accounts clerk, purchasing manager, recruiting staff, catering supervisor and so on. But as the establishment increases in size and the amount of work increases, the jobs would be delegated to people having the required abilities to handle them.

The principle of division of work, however, has to be applied with care in food services because its strict application might lead to staff being unable to takeover another's job. For example, if a cook leaves, the assistant would not be able to produce the food for the customer, to the detriment of the establishment. The principle should only be applied to the extent to which it helps timely achievement of goals. Since food has to be prepared and served at a particular time, this principle may be used to ensure speed.

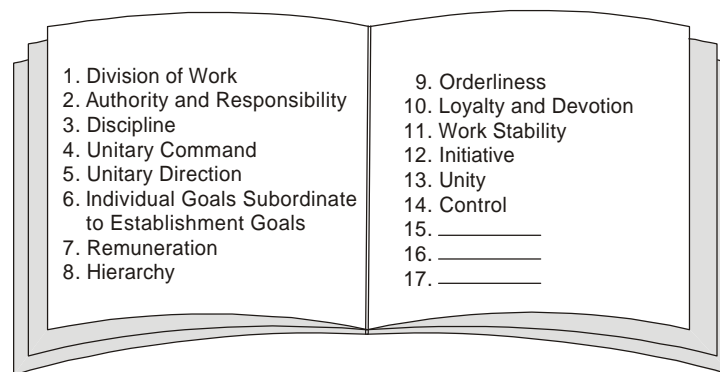


Fig. 3.1 Principles of management

Authority and Responsibility

The principle of authority works in two ways, that which is exercised because of position in the organisation, through the chain of command formally laid out, and that which is attributed to a person's intelligence, experience and the sense of values he holds. Both types of authority complement each other. In any work situation some of the official authority may be delegated along with the responsibility a task carries. For example, the task of meal production and job distribution may be delegated by the catering manger to the head chef in

the kitchen. He then also gets with the delegated job, the responsibility of ensuring correct portions, standards, quality, customer satisfaction and profits. Authority may also be dispersed or centralised in principle.

Discipline

The principle of discipline covers punctuality, courtesy, adherence to rules and regulations, obedience and so on, all of which are essential for smooth functioning of establishments where group activities are involved and directed towards common goals.

Unitary Command

Application of the unitary command principle goes a long way in establishment of loyalty to the senior in command and the organisation. It removes chances of confusion and improves communications through better understanding of particular personalities.

Where more than one person gives different instruction, loyalties get divided and subordinates take advantage of the conflicting situation to evade work. The result is that time gets wasted, work gets disorganised and performance and efficiency drop.

Unitary Direction

This relates to coordination of activities to achieve a single goal. There can be no command without direction. Undirected or multidirectional goals only lead to confusion and lack of goal achievement.

Individual Goals Subordinate to Establishment Goals

This principle is important for the success of any establishment, because if every individual starts working to achieve his own goals first and then those of the establishment, there is no doubt that the organisation will have to close down. This is because there is no end to individual needs and when one is satisfied another will crop up, at the cost of the food service.

Payment or Remuneration

All work must be paid for in order to motivate people to do their best. The methods of payment agreed upon should satisfy employees and the organisation, the terms in principle being, as far as possible, impartial.

Hierarchy

The principle of hierarchy refers to the chain formed by staff placed at different levels in an organisation, and corresponds to the various levels of management—line, middle, and top management.

Orderliness

This principle is most applicable to catering establishments which are constantly handling materials, heavy equipment and working with steam and other fuels. Material orderliness is of utmost importance because perishables need to be kept for different periods of time in raw, partly prepared and prepared forms. Orderliness helps to avoid cross-contamination, saves time looking for materials and equipment when required and ensures safety for all concerned.

Orderliness with regard to *staff* is helpful in placing people in positions so that *the right staff is in the right place at the right time*—a reflection of good organisation.

Loyalty and Devotion

This principle ensures an atmosphere at work which is bound to generate a unified attachment to the organisation and its interests and goals. While it takes a lot to build a sense of loyalty and devotion in employees, it is the management's prerogative to work towards this goal, through the development of harmonious relations at work.

Work Stability

Work stability is synonymous with minimised labour turnover which creates a sense of security and confidence in people, leading to better orientation at work. If this principle is not followed for any reason, and cheap labour is employed haphazardly in an adhoc manner, staff turnover increases. This is very costly both in terms of the wage bill and increased recruitment and administrative costs, besides resulting in poor performance.

Initiative

If staff are allowed to suggest plans which can be followed even partly, it is highly motivating for them. For example, if a recipe idea offered by an assistant cook is accepted and prepared by the head cook, initiative develops in the staff. Based on this principle, staff are often encouraged to participate in making decisions which affect them. This helps to raise morale, develop initiative to generate new ideas and increase efficiency and standards.

Unity

This principle emphasises the spirit of group work, and helps to establish smooth communications between people, as a result developing healthy team spirit and positive group behaviour.

Control

This principle suggests that limiting the area of control of a leader or supervisor to cover the work of only five or six people having related jobs, brings about greater efficiency. This is often referred to as *the span of control*.

Thus, principles used with good judgement enhance the chances of achieving set goals, increase understanding between people, help in decision-making and encourage better use of resources. Since all plans of action are based on decisions made within the value structures of managers, principles provide the base from where to start towards goals.

FUNCTIONS OF MANAGEMENT

The functions of management for any catering operation, small or large, are basically the activities which a manager performs to get people to work harmoniously towards organisational goals. These functions are distinctly different from the activities involved in the actual production and service of food in a catering establishment. There are basically six functions which every manager performs, as shown in Fig. 3.2.

The functions illustrated are performed at all levels of the establishment, with the span of everyone's activity and control. These are discussed for clarity.

Planning

Planning is the continuous process by which a manager scrutinises past performance, reviews its applicability in the light of environmental changes, internal and external to the organisation, and forecasts future trends. He then sets the goals for the establishment and bases its activities towards achieving them. The planning process is generally initiated by an awareness of an opportunity or a problem, which can be foreseen in the future. In the light of forecasts, the establishment is scrutinised for its strengths and weaknesses, and new objectives and goals are established on the basis of certain assumptions. These are also referred to as *planning premises* and include forecasts pertaining to technological advancement, economic and social factors, governmental

controls, customer attitudes and competitive forces. All planning involves three main steps:

First—gathering information for chalking out broad policies relating to building, standards, finances, staff needs, food service methods, type and number and type of customers desired. In short, any information for making a workable scheme.

Second—actually developing a blueprint of the structure, arrangement of spaces and activity details that can be conveniently translated into action from the information collected.

Third—setting goals or targets to be achieved in a predetermined period of time. The goals must be related to a fairly accurate forecast of future events, since they cannot be based on absolute certainty.

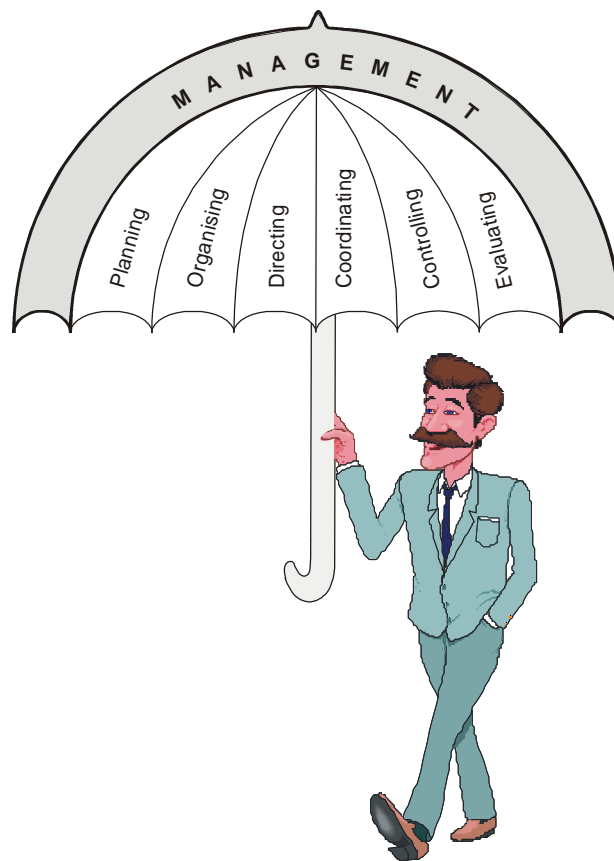


Fig. 3.2 Functions of management

Planning is thus a mental exercise, the results of which are later transcribed on paper for reference as the activities proceed. It is also a continuous process taking place at all levels of management, helping the activities of the establishment to proceed as realistically as possible towards goals in constantly changing environments.

Catering establishments differ from other organisations basically in the type of goods and services they offer. Food being perishable in nature and customers temperamental in their attitudes towards food, it becomes important for catering managers to set goals for a relatively short period of time. This usually covers six months to a year in terms of food production goals. But, goals concerning the type of facility to be offered can be set for longer periods. This is because it is not practical to take up restructuring of premises or changing the type of equipment frequently, as they both require high investment and in any case have long life spans. The planning for building, equipment, etc. is therefore done for five, ten or even fifteen years.

Goal setting is fundamental to any achievement. Any goal set must be clear to the planner as well as to all those who would be involved in carrying out the activities for achieving it. This helps people to know *why* they are doing *what* and feel a sense of achievement at the end. Work then becomes purposeful, creative, orderly, productive, cost effective and satisfying for all involved. Apart from benefits to the organisation, people benefit too, through better relations with each other, economically through bonuses and personal development by acquiring skills and experience and a sense of belonging to the organisation.

Goals in any catering establishment need to be set along a continuum as indicated in Fig. 3.3 beginning from short-to-long-term goals.

Short-term →	Medium-term →	Long-term
Now to 1 year	1 to 5 years	5 to 10 to 15 years
Forecasting	Gross profit margins	Production targets
Customer numbers	Purchase procedures	Capital investment
Service patterns	Equipment needs	Labour policy
Equipment	Maintenance	Staff training and development
Staff/skills	Customer staff relations	Diversification
Menus	Financial statements	Research-Market and Operations
Sales	Menu extension	
Profits	Pricing policy	Profit planning
	Budgeting	Diversification

Fig. 3.3 *Goal setting in an establishment*

It will be observed from Fig. 3.3 that for achievement of goals set at various points in time different skills are involved, starting from the acquisition, production and service of food to long-term policy-making for profitability. These reflect the different staff levels required in a catering establishment for performance of various jobs. As one travels to the right of the goal continuum the amount of mental effort required in planning, and the risks required to be taken in making decisions for the future, increase. This is because it is more difficult to predict changes that may occur in the environment, in say about five or ten years time, as compared to those in six months or a year. It stands to reason therefore that every goal set needs to be reviewed in the light of changes occurring in the institutional environment as the activities proceed towards it.

Blanchard and Johnson have suggested that once a goal has been agreed upon, it should be recorded on a single page in about 250 words only. This should be done clearly enough for all those involved in achieving it, to understand what they have to work towards. It is believed that 80 per cent of the important results desired are achieved through 20 per cent of the total goals set. So if every manager shifts the goals along the continuum and identifies six to ten important ones, these can become the key targets for all activities, for which details and standards for achievement can be chalked out and identified. These when written out clearly and understood by all concerned constitute a *plan*.

Planning catering operations thus involves stating objectives clearly by:

1. Forecasting the number of customers accurately.
2. Judging expectations of customers through familiarity with their food habits, religious and cultural backgrounds and economic status. In other words it means knowing their purchasing power, timings, manner of eating, and expectations from the food service.
3. Determining the margin of profit required to cover all costs taking into account inflationary trends, menu composition, tastes or customers and so on.
4. Establishing profit policy in the light of financial constraints like tax requirements, subsidies in the form of free meals to employees or subsidised overheads.
5. Knowing staff production and service skills.

Accurate future projections of the above help establishments to lay down general policies that would prove feasible over longer periods of time, especially where a number of factors determine the planning of sites, spaces,

and facilities, as these cannot be changed or shifted easily once bought and built due to financial and other constraints.

Advantages of Planning

Every establishment irrespective of its size requires to formulate plans of action for its present and future success. Though some managers may consider planning to be a costly exercise requiring lot of time, effort and money, it has certain distinct advantages. It helps to:

- minimise time-wasting activities, involving waiting for instructions or ingredients because of last minute purchasing, leading to an indefinite cycle of uncertainties of what is to be done next and so on.
- see future possibilities making managers alert to changes in trends that may affect the activities of the department. For example, the change in price of material will immediately make a manager think of using substitutes. Again, a noticeable change in tastes of customers can be seen through menus which have been planned and recorded over a period of time. These help to inculcate changes in future plans well in time to eliminate wastage of ingredients through overstocking.
- organise and integrate activities in proper sequences, match skills to jobs and increase overall efficiency by helping to see the inter-relationship of the various activities in the light of total objectives of the organisation, and of individuals. When each person's responsibility and the contribution their activities make to the final goal are understood, the staff also get motivated to do their best.
- eliminated confusion if the plan is communicated well to those involved in its implementation.
- provide an important basis for control through budgeting of time, energy, space and money, while forming targets for achievement.
- direct subordinates effectively towards the goals at all levels of management. With every step forward in the right direction, job satisfaction and confidence develop.

Time spent on planning therefore, is time well spent, provided it is not overdone. Figure 3.4 gives an idea of the time that may be spent planning, by staff at different levels in a food service establishment.

It will be noticed that the higher the hierarchical level in an organisation, the greater is the time spent on planning, the least being at the operative level where it is a matter of only sequencing individual activities distributed through

detailed plans of work and handed down. So while kitchen staff often have the feeling that managers sit all day in their chairs while they do all the work, it is quite clear that the difference is only in the nature of the work. Managers do more mental work while food production and service staff put in more physical effort to put plans into action.

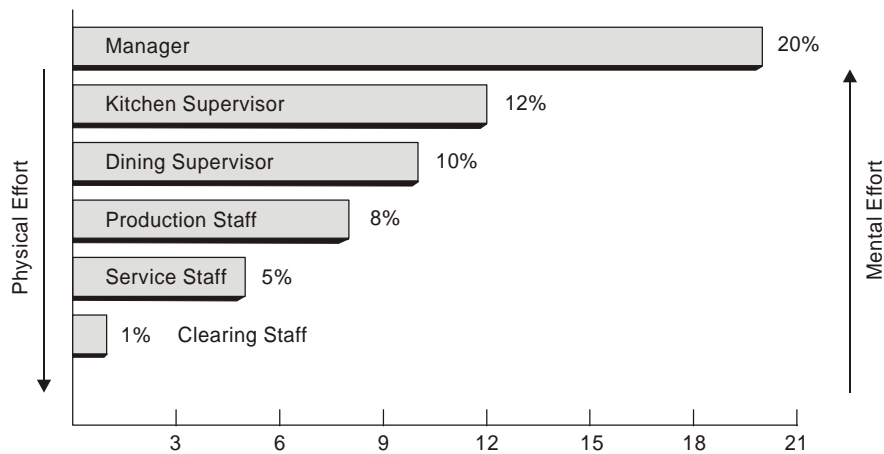


Fig. 3.4 Approximate planning time for staff

Sometimes however, managers get so involved in planning that they find little time for supervisory, and other important directing and coordinating functions. This leads to constant effort of trying to catch up with neglected functions and correcting unsupervised wrong actions so that confusion, dissatisfaction and inefficiency result. Too much time spent on planning is thus disruptive as well as costly, and blocks initiative and creativity of staff, delays work and affects staff relations adversely.

The higher the planning level the greater is the time lag between setting the goals and measuring performance towards them. For instance the performance of a utility worker washing dishes can be judged on the spot because the goals are set in the activity area, i.e. the kitchen itself. But, a cooks performance in controlling costs can be assessed only after a day, week or month. This is because the goals for profitability are set at the highest level in the establishment and evaluated long after the cooking is done.

Important areas of planning in catering establishments are planning for spaces functional areas, production and service activities, staff and customers. Some areas of planning essential in food service establishments are those relating to menu planning, work areas, inventory, food purchasing, staffing for

production and service and much more, all requiring attention to different extents. Each of these are discussed in detail under relevant chapters in the units that follow.

Organising

Once the goals have been set and responsibilities of work understood by key staff of departments, each area of the plan needs to be put into practice. The key areas of activity revolve around the production cycle, service areas, profit planning and record keeping.

Each department manager then has to translate his plan into clear-cut activities, which are then sequenced in a manner that will result in smooth work flow. The ability to establish such a work flow by proper coordination of activities allotted to staff according to their abilities, is termed as *organising*. It involves demarcating areas of activity and then establishing activity-authority relationships for each worker or group allotted the particular activities.

Steps in Organising

There are *five* basic steps used in organising work in any area.

- (a) Each activity is broken down into specific action units.
- (b) Each action unit is then allotted to a manageable group of people, and authority delegated to a group leader for task performance.
- (c) Staff are allocated to each action unit and placed in positions according to their skills with levels to authority clearly defined.
- (d) Adequate resources are then allocated for each activity.
- (e) Work load is equally distributed to avoid stress areas and fatigue.

Organising is thus a matter of putting together resources by matching skills with tasks, within the structural and financial constraints of an establishment. A manager therefore, needs to organise his staff, equipment and materials into work centres and service areas to provide optimum levels of production and service thereby giving satisfaction to staff, customers and the organisation in terms of profits.

The fact that organisation and therefore authority relationships between people exist in every establishment cannot be denied. Even the smallest food service has an organisation structure, formally spelt out or informally created by one person instructing and others following those instructions and reporting back. The different types of organisation structures and their uses are discussed in Chapter 4.

Directing

While planning and organising require mental effort on the part of the manager, directing is the function that initiates actual performance of tasks and requires greater interaction between people. This is done through use of five distinct activities as indicated in Fig. 3.5 and carried out in formal or informal settings on or off the job.

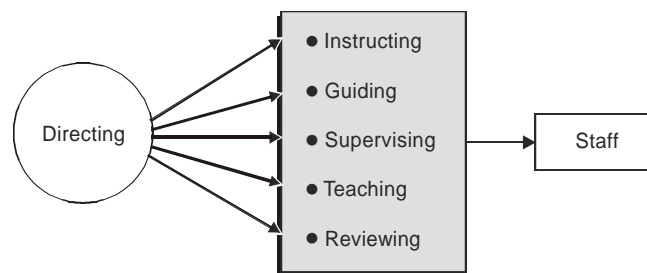


Fig. 3.5 Activities involved in directing people at work

Instructing

This is an important step because while a manager may have worked out a perfect plan of activities indicating who is to do what, unless the instruction to the group actually carrying out the plan is clearly understood by them, paper plans can fail miserably. All instructions therefore, should be clearly written out in a language understood by the staff, then verbally communicated to them so that any queries arising from the staff can be clarified before the work actually starts. Then copies of the written instructions may be placed on notice boards and at suitable points in the kitchen and service areas to reinforce the instructions communicated. It is a good policy to prepare instructions for each activity and paste them at each work centre for ready reference while working.

In catering situations interaction is extremely important because people involved in kitchen and service areas are generally of different cultural, religious and educational backgrounds and communicating is not as simple as it may seem to a manager. Staff understand according to their own experiences and abilities, and a very simple instruction like *Please bring me some coffee* can mean different things to different people. To a server it would convey a cup of coffee, to the kitchen staff it may mean getting the manager some coffee beans to sample, to the storekeeper it may mean issuing a fresh tin of coffee, and so on. Where such a disparity of backgrounds and job skills occur, it is wise to pass on instructions to the person directly incharge of the kitchen, such as the head

cook or kitchen supervisor depending on the size of the establishment and the organisation structure of the kitchen. It is also more likely that instructions passed down to other staff in kitchens by the cook would be better received and accepted, because he is seen as one of them doing jobs with the rest. Besides, it is much easier for people to follow a single leader who speaks their language and works alongside.

Instructions must ensure that each member understands how his work fits into the total scheme of work to be achieved at the end of the day, week, month and so on.

Guiding

The task of directing people involves guiding them in their jobs in a manner that will help them to achieve the standards of performance desired and also gradually develop themselves through their jobs.

There are a number of occasions when a worker does not want to admit that he is finding a problem in his job for fear of being under-rated by his colleagues or superiors. In such cases managers or supervisors will not be able to guide him in time, if they wait for him to ask for guidance. The result will be habitual use of incorrect methods and poor performance. Therefore an important component of good guidance is *supervision*.

Supervising

Supervision involves *keeping a watch* on what is going on at the production, service and other related activity levels. Clearly one must avoid standing too close to an employee or actually interfering with his job by performing it. There are many ways in which supervision can be carried out effectively by:

- *Viewing people's work positively.* This means looking for things they are doing 'right' and giving 'praise' where it is due. In the process keen observation of other people's work too can bring out areas where guidance and correction may be necessary.
- *A regular round of activity areas* and work centres just to say 'hello' to people and find out about their welfare. Observations or curiosity shown about the way work is being done, can often produce a response from which judgement of methods being followed can be made.
- *Maintaining records of production and sales.* Statements of costs and profit margins can provide a good guide to supervision. Areas showing variances with respect to expected results indicate that attention is needed.

In food service establishments, good supervision helps in maximising resource use and checking pilferage, because one is dealing with 'food' which can tempt just any person, especially if it is an expensive item and not easily afforded by employees handling it.

Teaching

The person responsible for motivating people to achieve goals, has got to be able to demonstrate methods of work which will relieve stress situations in the production and service centres. Catering is always associated with peaks and troughs, that is, moments when the tempo of work is very fast and under pressure and moments when there appears to be not enough to do. These are correlated with mealtimes when the influx of customers is maximum and then in between the rush dies off.

Teaching people to organise work so that it can be spread evenly throughout the working day, and using quicker methods for finishing time-consuming jobs, makes work less stressful and performance better. In addition it helps to create a more relaxed environment for development of good human relations.

Reviewing

Reviewing the effect of every activity on individual and total performance is the job of every food director. There are a number of strategic points in the production cycle of food which determine the quality of what is on the customer's plate. Reviewing activities therefore, and modifying them where necessary to conform to standards laid down, is essential for every food service, large or small.

Directing or leading people to work willingly and achieve organisational, group and individual goals depends greatly on the personality of the manager. Leadership style, experience and ability to communicate with people, to a large extent, determines the degree to which staff can and will take instruction, be guided, supervised and motivated to achieve and develop.

Coordinating

Besides directing individuals to achieve goals, the activities of all staff have to be well coordinated if group efforts are to become meaningful.

Coordination is the process of integrating objectives with the activities of different units of an organisation in order to achieve goals efficiently. Coordination implies the avoidance of all splintering efforts that may destroy the unity of action through either working at cross-purposes or in the midst of

interpersonal conflict. It is the integration, synchronisation or orderly pattern of group efforts in enterprises resulting in accomplishment of common objectives.

Coordination therefore, is beneficial for all work especially non-routine and unpredictable, where environmental factors change rapidly and interdependence is high, even with external agencies.

James D. Thompson identified three types of interdependence among organisational units, such as pooled, sequential and reciprocal.

Pooled interdependence: This occurs when units do not depend on one another to carry out their work, but do depend on the adequate performance of each unit for their ultimate survival. Each part contributes separately to the whole work and is supported by the organisation which also takes on the coordination activities with the external environment in an effort to achieve goals.

Sequential Interdependence: This exists when one unit acts before the next can, as it depends on the products of the earlier unit as an input or needs to link the process with it in some way.

Reciprocal Interdependence: This represents the existence of a give-and-take relationship between the sub units. In such cases each depends on the others for both their inputs and outputs as clearly indicated by the direction of arrows in Fig. 3.6, which show the flow of activities between sub-units and the controlling unit.

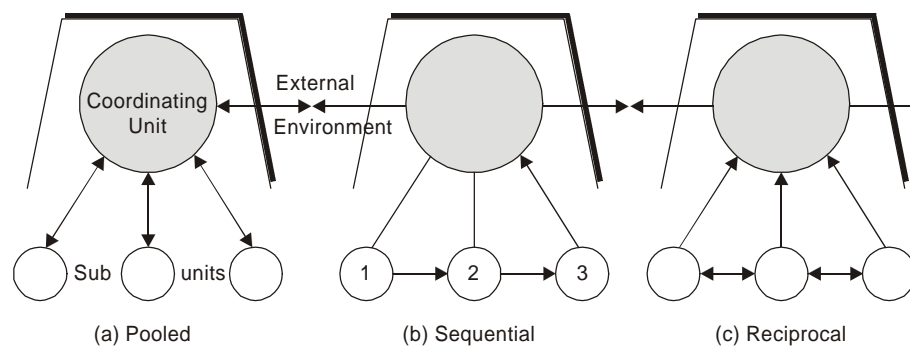


Fig. 3.6 *Types of interdependence in an organisation*

Coordination is least needed in the pooled type of interdependent set up, but is greater with sequential and still greater with reciprocal arrangements. As needs increase so does the complexity of coordinating the activities of the

organisation. The greater the degree of specialisation the more difficult the job of coordination becomes between specialist units.

Coordination is the one word in which all management functions can be summarised. Koontz considers management as an *exercise in coordination*. In fact, all the functions of management need to be coordinated to achieve goals. One can imagine the chaos that can result if the purchase of food materials is not coordinated with the menus planned, or quality received is not suitable for the dish planned. Again, if service style is not linked with production and clearing operations, it can result in customer dissatisfaction and unhygienic conditions for all.

Since every activity is dependent on every other activity, coordination assumes a great deal of importance in policy making for organisations but is highly dependent on information as shown in Fig. 3.7.

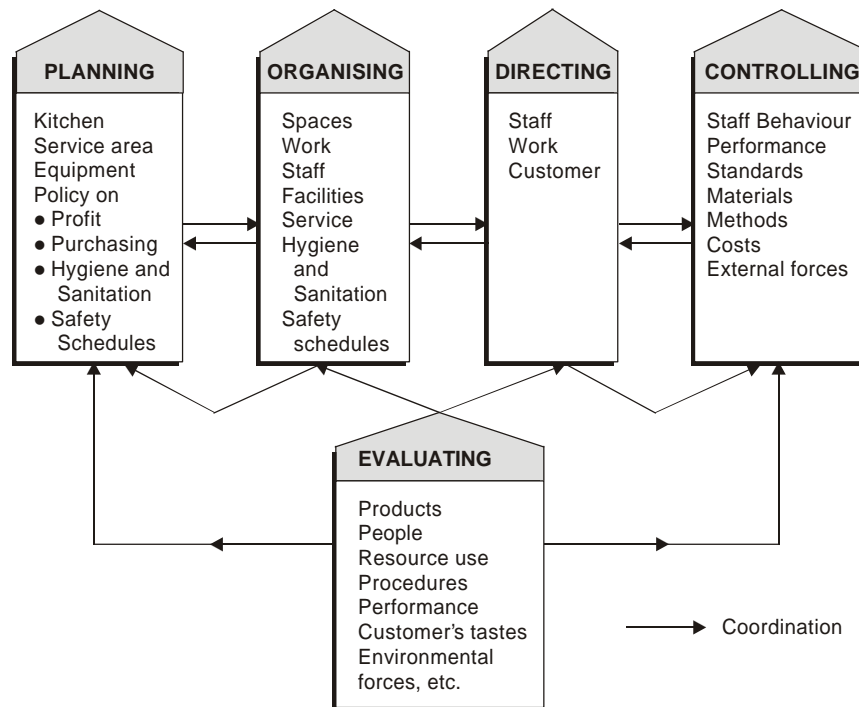


Fig. 3.7 Importance of coordination in management

Constant coordination helps to tackle problems when they arise, gather ideas from various experiences, anticipate problems and take timely action to prevent them from recurring. The extent of a manager's responsibility for

coordination depends on the organisational structure, policies and scope of his activity.

Henri Fayol considered coordination as the binding together, unifying and harmonising of all activities and efforts. The larger the organisation the greater becomes the extent of coordination necessary to keep the individual departments together instead of alienating their activities. Better interaction is established and work is done under a single command. Where good coordination exists staff loyalty to the establishment is strengthened and a feeling of oneness permeates through the organisation resulting in greater understanding.

Controlling

In all the functions of management discussed so far, there is no certainty that the targets laid down will be consistently achieved, therefore control is necessary to give the right direction to activities. This is because achieving is no simple process taking place under stable conditions. The food service establishment is constantly surrounded by a changing environment consisting of helping and hindering forces as far as achievement is concerned. By controlling the hindering forces therefore, and making use of the helping forces, goals can be achieved. Constant monitoring is however necessary. Figure 3.8 illustrates some of the forces that affect food service establishments.

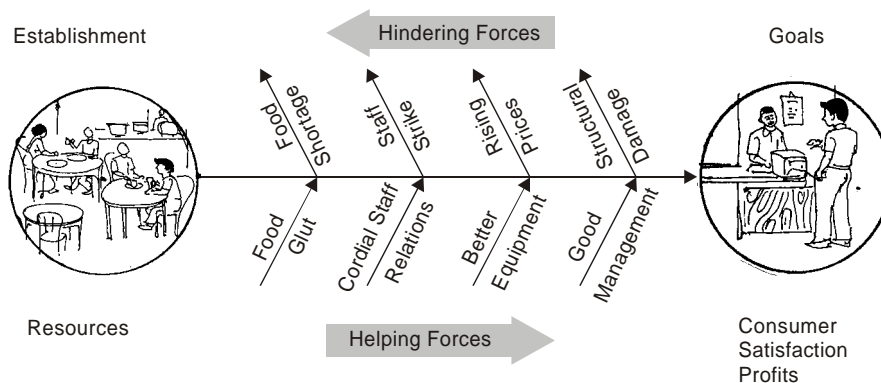


Fig. 3.8 *Helping and hindering forces in the food service environment*

As Fig. 3.8 indicates helping forces move the establishment towards its goals assisting in maximising profits through accelerating the speed of work, whereas the hindering forces act as negative forces that inhibit timely

achievement of goals even though, their effects are not immediately noticeable. Thus, these forces need to be closely monitored for maximising resources use and productivity.

The controlling function in management is expected to increase the impact of the *helping* rather than the *hindering* forces working on an establishment. This can only be done if managers make the best use of natural forces like a favourable crop, good weather and holiday time to attract customers, motivate staff, invest on better equipment and provide a safe, healthy and happy working environment. In such conditions people would be willing to face any challenge from the external environment. At the same time any hindering force needs to be counteracted as soon as it arises in order to ensure that activities proceed towards their original goals. The control process has various components:

- (a) Measuring actual performance.
- (b) Comparing results with standards expected.
- (c) Pinpointing areas of deviation.
- (d) Determining reasons for the deviations.
- (e) Taking corrective action, so that goals can be achieved.

Control is usually exercised through the formulation of budgets such as capital, purchase, cost, sales and operational budgets. Apart from these close supervision, regular maintenance, inspection and security measures help to establish control of operations and ensure efficient resource use.

Controlling is a very specialised but multifaceted function involving control of costs, methods or work and processes, behaviour of people at work, both individual as well as in groups, all of which have been dealt with in the units that follow.

Evaluating

Evaluating is a process of determining how well people perform their functions, by ascertaining and comparing actual results with expected ones, over a period of time. Efficiency is therefore judged by the process of reviewing or evaluating, which is a measure of how far set goals have been achieved. This may be done periodically by the manager himself or by his superior. A process of self-judgement or evaluation as one moves towards set goals helps to ensure success. If evaluation is done at the end of a project, it can only have a theoretical function because correction of procedures or deviations from set norms cannot be detected in a precise manner.

In addition, the use of resources becomes inefficient if people have to search for *what* went wrong *where* and *when* on the way to the goal. The areas of evaluation in any establishment are:

Staff Appraisal

The performance of staff, needs to be evaluated from time to time in order to determine how efficiently their potential is being tapped. Appraisal not only brings to light work carelessly done, but also helps to identify training needs or guidance needed by staff. Judgements regarding efficiency of staff made on the basis of recorded information through checklists, analysis sheets, production records, sales records and profit statements, are useful for establishing future plans for staff improvement as well as for stepping up efficiency the establishment.

Staff may be appraised with the help of rating scales designed to judge a person's:

- knowledge and understanding of his work
- quality of performance in terms of its being *unsatisfactory* or *outstanding*
- compatibility, dependability, awareness regarding safety, cleanliness, etc.
- integrity, loyalty in terms of willing cooperation with co-workers to help achieve organisational goals
- health status.

Apart from the above it is important to evaluate personal qualities like character, reliability, presence of mind, initiatives as well as social skills. Although these are difficult to evaluate objectively, some methods need to be devised because they are important to a progressive establishment. Evaluation must be done in a very unbiased manner as far as staff are concerned, because any impression of having favoured even one person in judgement can lead to serious repercussions in staff relations. Evaluation also provides standards for placement of staff in higher positions for which they are found to have the skills.

Evaluation of staff may reveal a high rate of staff turnover, or absenteeism, indicating a lapse on the part of management in terms of not being able to motivate them enough for efficient performance and interest in their work. Alternatively, those who are constantly abstaining from work may be frequently sick, in which case action is necessary to improve their health. A third cause may be over work which calls for redistribution of jobs or investment in some labour saving devices.

Appraisal of work conditions and procedures

This involves evaluating:

- kitchen and service area plans to see if they require redesigning or rearranging for smoother work flow and comfort.
- jobs for deciding on areas requiring mechanisation for speed of work, efficiency, cleanliness and safety.
- the degree of lighting and ventilation required in relation to particular work centres.
- structures for necessary maintenance jobs.
- ergonomic aspects of the work environment.
- methods of serving, washing and clearing to estimate the amount of breakage. A high percentage would indicate poor quality crockery or careless handling. This may call for decisions regarding increasing investments, training of staff, and so on.

Food Product Evaluation

It is necessary to see that products conform to standards laid down. This is generally done by sensory methods in food services by setting up taste panels consisting of people who are highly sensitive to slight changes in taste, flavour, odour and colour of foods. The objective methods make use of instruments to measure qualities like thickness, flow, crispness, lightness and intensity of colour of food but these are mainly used only for testing in certified laboratories (labs) for standardising food products at manufacturing level in food industries, for ingredients and foods sold to food services in packaged forms. But food institutions do not usually set up their own laboratories for chemical or microbiological evaluation. The nutritional quality of food can be judged through chemical estimation of the contents of various nutrients in different foods and dishes at regular intervals through labs authorised to test cooked foods.

Evaluating the quality of dishes served to the customer must be a continuous process which helps to improve the product progressively. Product should not be evaluated only attribute-wise but according to the overall acceptability evaluation of food products in absolute terms which is important to judge the palatability perception of the customer. Some aids to evaluating foods are the use of score sheets for each dish, a sample of which is given in Table 3.1.

Table 3.1 *Score sheet for evaluation of tandoori chicken*

Quality Characteristics	Score Description		Score of Sample
	1	2	
Colour	Burnt Discoloured	Reddish Brown	
Moisture	Too moist Dry	Just right	
Mouthfeel	Hard Mushy	Tender but firm	
Taste and Flavour	Flat Over-seasoned Raw Strong	Well seasoned Natural Flavour well developed	
Total Score			

Rating scales help to establish preferences of customers for a dish especially if it is a new recipe. The scale is prepared on the basis of the descriptions indicated in Table 3.2, and various samples of the same food are subjected to preference rating.

Table 3.2 *Preference rating score sheet*

Product		Date				
Rating	Score	Samples				
		A	B	C	D	E
Excellent	5					
Very Good	4					
Good	3					
Fairly Good	2					
Not Good						
Not Bad	1					
Don't Like						
very Much Dislike	0					
Dislike	0					
Total Score						
Comments:						

For composite evaluation of a product, the scoring can be done using the format in Table 3.3.

Table 3.3 Score for composite evaluation of a food product

Scoring Legend:
 5: Excellent 2: Satisfactory
 4: Very Good 1: Unsatisfactory
 3: Good

Panel Members	Evaluation the product and grade it								Overall rating Scores	Is there any thing you disliked about the product		If yes, what	Would you buy it
	Appearance	Colour	Shape	Taste	Texture	Odour	Flavour	Mouthfeel		Yes	No		
	1.	4	4	4	5	5	5	5		4	5		
2.	4	3	4	4	5	4	4	4	4			Texture could be better and colour even	Regularly
3.	4	4	4	3	4	3	3	3	4			Flavour mouthfeel	Regularly
4.	1	2	4	2	2	1	1	1	2				Occasionally
5.	4	4	4	3	4	3	4	3	4				Occasionally
6.	3	4	3	4	4	4	4	4	4				Occasionally
7.	3	3	3	2	3	3	3	3	3				Occasionally
8.	3	3	4	4	3	3	5	4	4				Occasionally
9.	3	3	2	2	3	2	2	2	3			Mouthfeel	Occasionally
10.	3	3	3	3	3	3	3	3	3				Regularly
11.	3	3	4	4	4	4	3	3	3			Mouthfeel	Occasionally
12.	4	3	4	4	3	3	3	4	4				Occasionally
13.	3	3	3	4	5	3	3	4	4				Occasionally
14.	4	4	3	4	4	3	3	3	4				Occasionally
15.	4	3	3	3	4	3	3	3	3				Regularly

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Sensory evaluation of food items requires skill, patience and practice to provide reliable information about product acceptability. Most food

establishments depend on sensory methods of food evaluation as it is very expensive to set up food testing laboratories and spend time on objective testing. As far as evaluation of foods for nutrients is concerned it is convenient for the caterer to use already available information in the form of nutritive value tables,¹ which have been prepared after adequate laboratory estimations of different foods and periodically updated.

While evaluating food products the guidelines to be followed would be based on the acceptability of food to those who prepare it and the customers, who consume it. It is therefore the practice in all establishments to taste the food for acceptability and check its colour and presentability before it is offered to the customer. (Unit 4 for food quality and menu evaluation).

Evaluation for Profitability

All food service operations must be evaluated for viability. This involves estimating sales, costs and profit figures. If the food costs are too high it can be indicative of any one or more of the following:

- Pilferage of food from stock.
- Prices too high.
- Cooking method inappropriate, giving inadequate portions.
- Menu planning unsuitable to cost structure of the establishment.
- Excessive wastage in preparation.
- Inadequate weighing facilities or supervision at strategic points in the production cycle.

All the above points indicate inefficient management, and can be corrected to reduce costs. This holds good even for overhead and labour costs being incurred in a food service institution.

Besides looking at profitability from the point of view of costs and sales figures, it is important to determine if seating capacity is sufficient for demand or needs to be extended. Another aspect which reflects in high cost is the amount of *plate waste*. Estimates may be made from figures of menu items often rejected by customers. A close look at the menu and deletion of unpopular items or those which the staff are not skilled enough to prepare well, increase the viability of the establishment. Plate waste can also result from a change in customer tastes, and this too needs to be watched.

1. Narasinga Rao (BS), Deosthale (YG) and Pant (KC), *Nutrient composition of Indian Foods*. National Institute of Nutrition, Hyderabad, India, 1989.

It is obvious, therefore, that evaluation is necessary for ensuring continued efficiency, at all levels of the establishment.

All the functions of management therefore are closely interlinked and no one function operates in isolation, or in a particular order or sequence. They would be performed according to the needs of various situations, and to various extents as required. Certain functions, however, need to be performed before others as shown in Fig. 3.9.

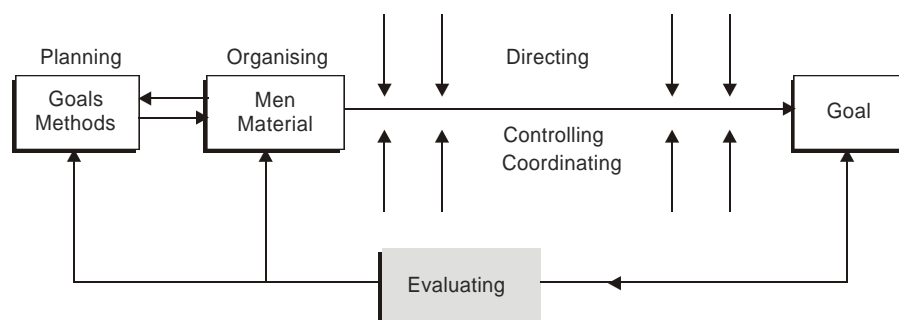


Fig. 3.9 *Interrelation of management functions*

All the functions need to be continuously performed and not necessarily in any particular order, at all levels in an organisation to achieve set goals.

By virtue of the varying sizes of establishments, they differ in the manner in which their functions are performed by individual managers. It is important to emphasise that management is independent of ownership, all managers are not owners. It is only very small establishments like the roadside kiosks, tea stalls and canteens that may be managed by their owners. And, it is here that there is a need for developing professional attitudes to catering because, it is the entrepreneur whose resources and capacity to borrow at high interest rates are limited. He must therefore look at all the facets of catering with a view to generating the means for expansion or diversification. This can be done best by being scientific in approach to management rather than setting up one-off operations and working by rule of thumb or guess work.

It must also be recognised that no operation can be run single-handedly and if one has to deal with people at work, and attract enough people to serve, operations must be based on sound principles and function in a planned coordinated manner.

However, while the basic principles and functions can be learnt and taught, the art of managing situations comes only with experience. Besides, it is acquired to different extents by each individual, depending on his or her ability to

imbibe confidence, develop presence of mind and trust in others. Also, developing the art of making decisions on behalf of other people and communicating effectively with them, using initiative and creativity as one goes along, requires social and creative skills, which come more easily to some than to others.

Chapter 4

Tools of Management

As the term indicates, *Tools of Management* refers to materials which have been developed by managers in the past and used as an aid to effective management. These vary with the level of management and therefore each level uses different aids. Tools of management can be distinctly classified into two categories namely, tangible and intangible tools. These are therefore as diverse in form and application as the number and type of establishments and the creative ability of their managers to adapt the available tools or develop new ones to suit their particular management situations.

TANGIBLE TOOLS

The word *tangible* indicates that these tools are in forms that can act as reference points for future decision making by managers who can retrieve them for use in particular situations for making their own decisions by adopting or adapting them as considered appropriate. Tangible tools are those aids to management that have been developed by experience of managers in different work situations and organisations and represent a collection of those tools that resulted in successful decisions in the past. These are usually available in organisations in the form of organisation charts, job descriptions and specifications, inventory records, standard costing sheets, staff appraisal forms, budget statements, price lists, work schedules, staff appraisal forms, menu plans, contracts of employment, medical forms and the like. Some of these have been indicated in Fig. 4.1. and briefly discussed with examples.

Figure 4.1 indicates a few tangible tools prepared and used by managers to perform their functions efficiently. Every situation demands the use of different

tools which are devised by managers or modified to suit various conditions for decision making.

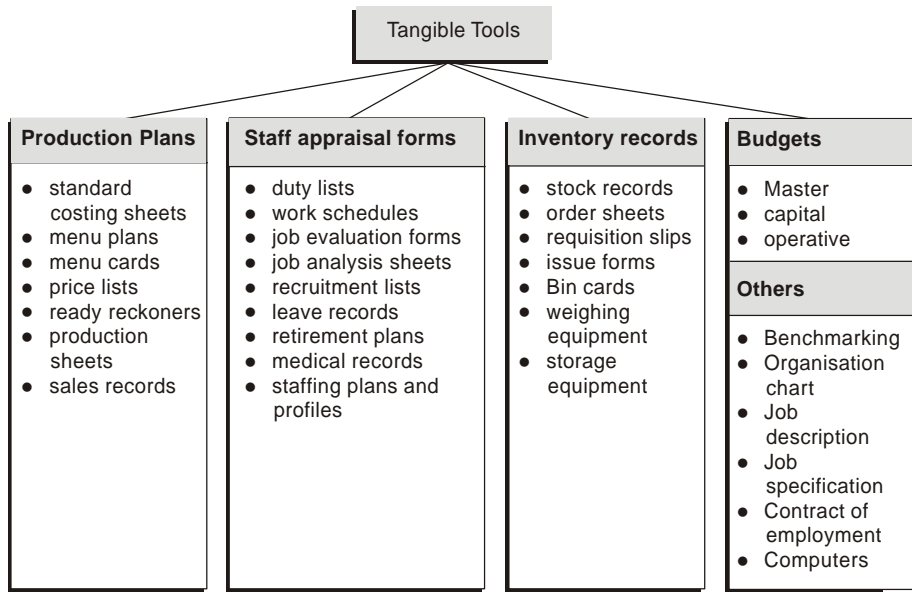


Fig. 4.1 Tangible tools of management

Organisation Chart

The basic tool for any establishment is the organisation chart, which shows the structure of an organisation in terms of how the various units or departments are linked together.

The organisation structure is the outcome of putting people and jobs together and therefore represents the entire team involved in the running of the establishment at both operational and management levels. The chart indicates activity-authority relationships which exist in the establishment. According to Drucker, an organisational structure can be charted out by using three types of analysis. These have been represented in Fig. 4.2.

An organisation chart tells us about the subordinate-superior relationships and the lines of decision making authority that exist in an establishment, in other words *who* reports to *whom*. It also establishes the existence of unitary or dual command as the case may be, helping to correct any inconsistencies that may show up on the chart. Any organisation that has a detailed organisation chart can be associated with a well set structure, having functions logically arranged to achieve maximum efficiency. These formal arrangements are based

on formal leadership patterns and methods of communication, with the hope of achieving proper coordination, because people tend to accept their positions in the organisation as charted out.

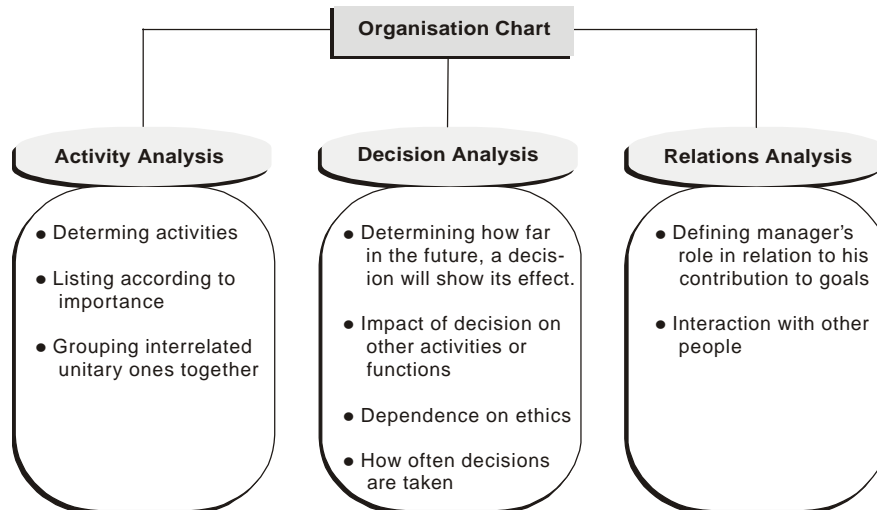


Fig. 4.2 Factors for preparation of organisation charts

The two types of authority relationships that most often exist in food services are line and line-staff relationships. In the former, each individual is responsible to the person ranking above him on the organisational chart. Thus, authority and responsibility are passed downward. In the latter, that is line and staff pattern, specialists are positioned at various levels to advise those along the line structure because the activities of the establishment become too diversified for proper functioning and control. The expertise of staff is utilised to maximise the efficiency of line personnel to the utmost. However, a number of problems can arise if the information channels in an establishment strictly follow the lines of authority. In catering particularly, where staff are expected to fill in for others at short notice, specialist departments can prove futile if informal channels of communication do not develop.

Organisation structures can grow in two directions. Vertically and horizontally. In vertical structured organisations the person above assigns the work to his immediate subordinates down the line. Figure 4.3 indicates vertically structured food service establishment.

As the length of the structure increases, coordinating the activities of the establishment become difficult, so the duties get divided separately for each unit. This results in a horizontally spread structure, as shown in Fig. 4.4.

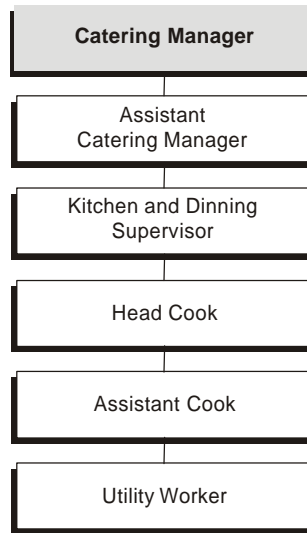


Fig. 4.3 *A vertically structured food service organisation*

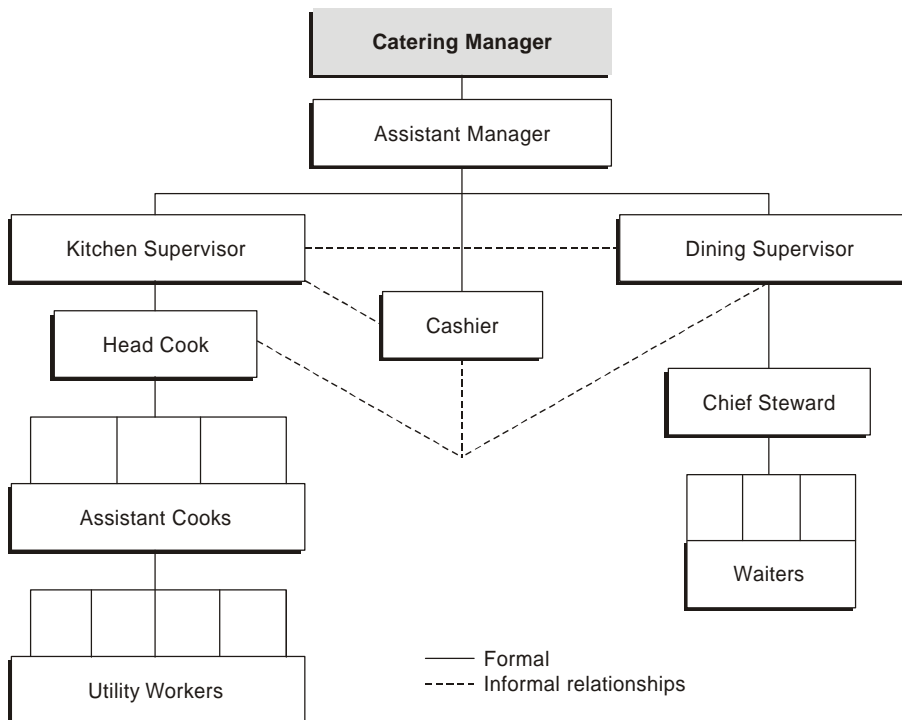


Fig. 4.4 *Horizontal organisation structure*

An organisation chart thus indicates functional units as well. Functions and positions are represented graphically by blocks. The solid lines indicate formal authority relationships while dotted ones represent informal relationships.

Organisation structures may also indicate whether authority is centralised or decentralised. For example, if the control and decision-making function lies solely at the top level it is completely centralised. Which means all decisions must come from the highest level. Structures may also be flat or tall which indicate the span of control at each level of the establishment. Tall structures have a shorter span of control, that is, each supervisor or manager has fewer number of people under his authority than in a flat structure. In flat structures therefore it is more difficult to supervise closely.

While an organisation chart can be used as a tool for managing it also has some limitations, which are enumerated below:

- (a) The charting only shows formal authority relationships, omitting the many informal ones which develop at work and become a powerful means of communication between people. This is because these develop spontaneously between people and emerge within groups not because of their positions but because they possess some personal qualities like age, competence, charisma and behavioural patterns that command respect.
- (b) The chart also does not indicate how much authority is vested in each position.
- (c) Many charts indicate structures as they are expected to be, even though they may not be so in reality. A chart therefore, does not necessarily indicate an efficient organisation of work in an establishment.
- (d) The structure does not indicate the nature of management activity taking place at each level, whether operational, creative or administrative.
- (e) The major disadvantage is that people begin to interpret authority relationships as differences in status. Sometimes lines of authority are drawn at a lower level on the chart in some units than in others, or because a particular person reports to someone higher up in the organisation, his status may be confused.

Some organisational charts for catering establishments of different sized establishments are indicated in Figs. 4.5 to 4.9.

It will be noticed that in a *dhaba*, the relationships between manager and other staff are flexible, being both formal and informal, as is expected where staff numbers are limited and all jobs are tackled by everyone on a personal

level. It is worth mentioning here that the *dhaba* or roadside café in India is a very popular eating place and traditionally prepares food from raw ingredients and serves them to travellers piping hot, giving at the same time a very personalised service, by preparing chappatis in forms requested by customers.

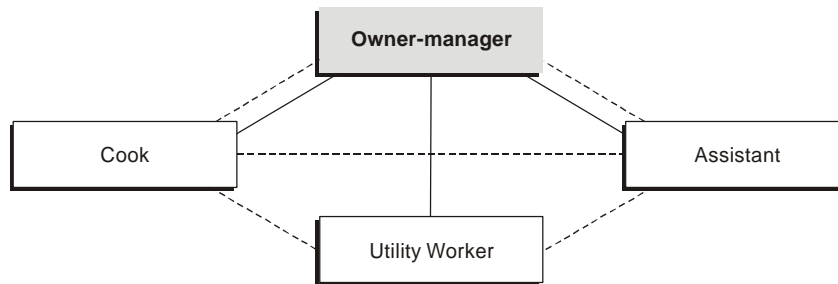


Fig. 4.5 *Organisation chart of a Dhaba*

The number of personnel at operative levels increase according to the size of the establishment as illustrated through Figs. 4.6 to 4.9. It will be noticed that while formal relationships do not exist between the service staff and kitchen personnel, informal relationships get established if pleasant relations are harboured by managers who can then use these channels to advantage for greater efficiency.

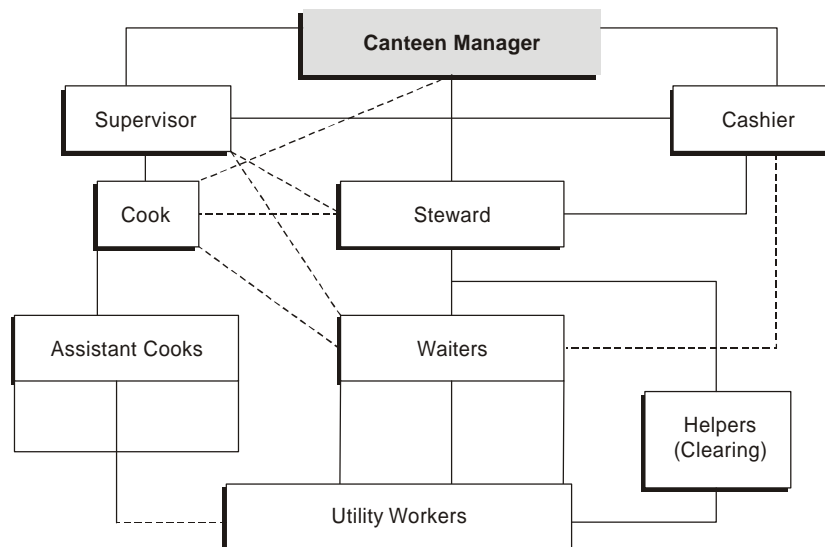


Fig. 4.6 *Organisation structure of a canteen*

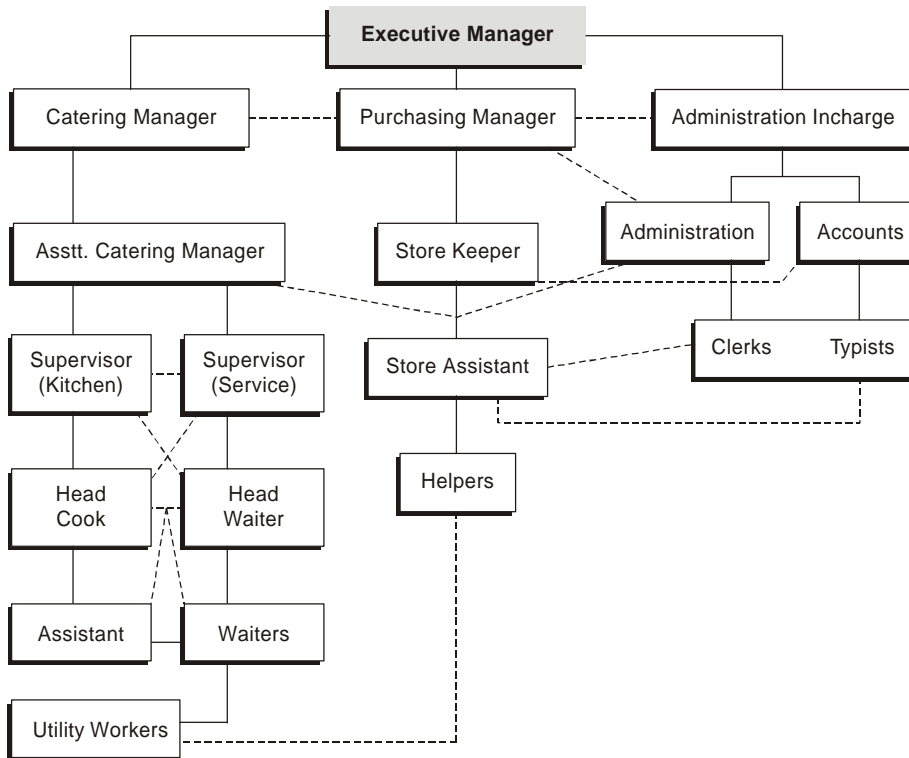


Fig. 4.7 Structure of a large restaurant

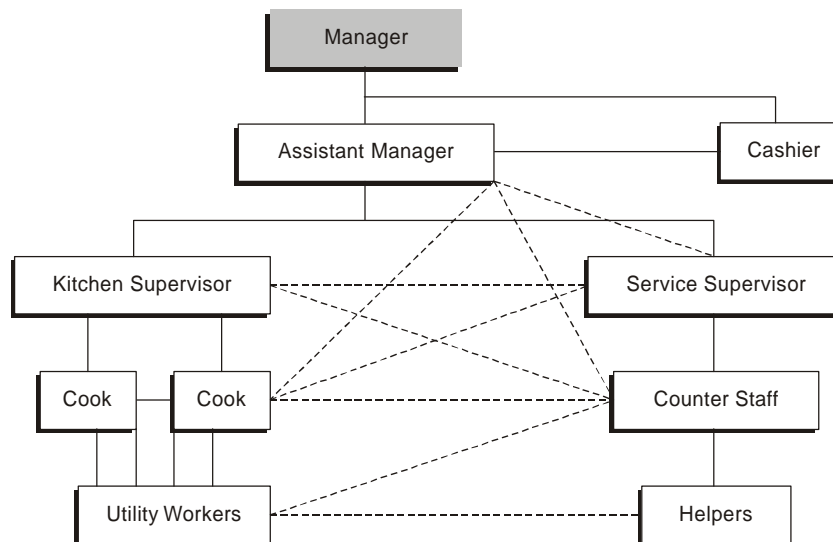


Fig. 4.8 Organisation structure of a snack bar

The position description however, provides a standard against which to judge if a position is at all necessary, and what its organisational level and location in the structure should be. Figure 4.9 shows that additional staff are required to place or load meals on board aircraft, apart from extra workers needed for the special packing and portioning of food which is done at ground level. As the organisation grows larger more and more levels of authority are formed and work gets decentralised, as also its control. The Unit General Manager in Fig. 4.9 represents the manager of a flight catering unit in a capital city.

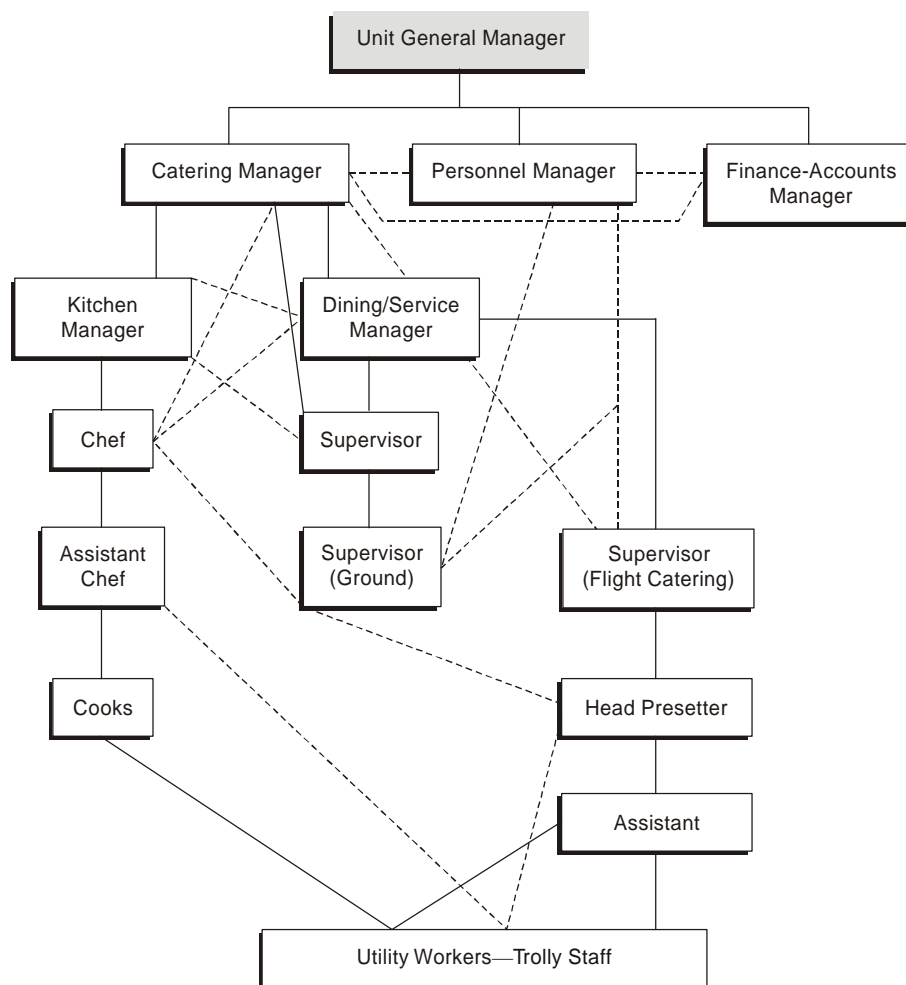


Fig. 4.9 *Organisation chart of a flight catering establishment*

Thus, the organisation chart is a useful but limited model. It identifies tasks, titles and the planned relationships between these tasks. But does not show informal communication channels, cliques and actual activities performed in the organisation.

Within the structures of different organisations illustrated, other tools required by a food service manager for efficient management are job description, job specification, work and time schedule, job analysis, production and service analysis statements and budgets as indicated in Fig. 4.1 according to the various levels in an establishment. Some of these tools are discussed in details below.

Job Description

Job description refers to the definition of a job in a precise manner indicating exactly what is to be done by people who are occupying or would be occupying a job position in an establishment. A well defined job brings about greater certainty of what is expected in terms of the performance, and when actual results match expected ones, both morale and efficiency are raised. However, a job should not be too narrowly defined as it leaves no scope for using creativity. On the other hand, too vague a description makes it difficult to understand and handle the job, leading to frustration and loss of control.

Job descriptions are therefore effective tools for managing at every level of the organisation structure. As one proceeds along the chain of command towards the operative level in the organisation, job descriptions need to be more detailed, clear-cut and expressed in a language and form which can be understood by less educated workers. At higher levels people have a better knowledge of the work for which they are appointed and are expected to have a higher mental calibre. Besides, the results of their work are not immediately seen as in the case of operative staff. As the proportion of mental work increases, they have greater flexibility in timing their work, and can adjust their schedules so long as they go on feeding the information required by operating staff at the right time.

This can be seen when we look at the job of the head cook vis-à-vis that of a catering manager's. While a chef has to report on duty at 8 a.m. to complete his various jobs and supervise those of his team in the kitchen for lunch service, the manager can work on a more flexible schedule so long as the menus are planned in advance, food materials ordered in time and meals checked for quality before they are served to customers.

Table 4.1 *Tools of management used at different levels of a catering establishment*

<i>Organisation Level</i>	<i>Tools Used</i>	<i>Responsibility</i>
Kitchen production and service	Job description, job specification, time and work schedules. Staff duty lists/ rotas, menus	Responsible for actually producing and serving food and meals.
Line management	Job analysis sheets, production plans, staff rotas, sales analysis records, cyclic menus, leadership style.	Overall supervision of kitchen and service points, requisitioning of ingredients and issue from stores, directing coordinating, controlling, preparing staff duty lists, staff requirements, ordering food and materials, planning profitable menus, arranging for parties preparing operating budgets
Middle management	Plans for staffing, menus, absenteeism records, price lists, inventory records, order sheets, standard costing sheets, budget statement, etc.	Setting goals, policy-making for manpower planning introducing technology, planning for profits, diversification, networking
Top management	Plans for sales, purchases, recruitment, expansion, etc., decision-making, communication, leadership	

It is also important to note that better communication through job descriptions is necessary whenever one is dealing with a group of people having diverse capabilities. As one goes up the organisational ladder job descriptions become more broad-based, stating only the functional aspect of the job. It need not necessarily spell out the manner (through clear-cut steps) in which the function is to be performed or goal achieved because the communication is a one to one communication with the superior, and the worker can always clarify any point verbally with his superior. Examples of job descriptions for two levels appear in Figs. 4.10 and 4.11.

It will be noticed that the job description of a cook is more comprehensive. It also acts as a check-list for staff who may forget to do a job till it becomes routine for them. On the other hand, the job description of the catering manager is more general, expecting him to work to an efficiency guided by his experience. He is, however, given an idea of what is expected of him in terms of arranging functions, bar service and meals for staff.

It can therefore be generalised, that job descriptions are not only important aids to job performance at all levels of an organisation but they help to draw up

recruitment, set up salary levels commensurate with work involved, provide the guidelines for training and aid in controlling activities within the establishment. Job descriptions also remove conflicts between people in terms of specifying each person's job responsibilities.

Title Catering Supervisor

Code No.

Establishment

Job Summary

The job carries with it the responsibilities for:

- (a) Efficient operation of catering facilities for management, staff and employees.
- (b) Arrangement of functions as required.
- (c) Administration of bar facilities.
- (d) Liaising with related departments.
- (e) Holding additional charge in the absence of the superior.

Performance Requirement

- (a) Responsibilities as above.
- (b) Using initiative in development of menus and methods of work.
- (c) Developing good working relations with staff, guests, suppliers and visitors.
- (d) Evaluating work and staff performance, and ensuring maximum utilisation of resources.
- (e) Ensuring optimum equipment use and maintenance.

Supervision

- (a) Supervision of all production and service area work.
 - (b) Checking for quality.
 - (c) Close check on service at peak hours to look for problems such as queuing, delay in service.
 - (d) Getting feedback from customers.
 - (e) Sorting out customer grievances on the spot.
-

Fig. 4.10 *Job description of a catering supervisor*

Job Specification

A job specification is a statement indicating standards to be achieved for a particular job. It also covers duties expected to be performed, working conditions in which the job would be carried out, and the qualifications required. A job specification is generally used as a tool for selection of the right employee for a particular job. Small establishments may use the job description instead of the job specification for the purpose, because closer supervision is possible at work, to check if expected standards of performance are achieved at every stage of production and service. A sample job specification is given in Fig. 4.12.

Title Head Chef

Code Number

Establishment

Job Summary

The job involves:

- (a) Planning menus with catering supervisor.
 - (b) Requisitioning ingredients for food preparation.
 - (c) Checking deliveries with requisition slips.
 - (d) Checking quality of food received and getting it issued for use or storage in kitchen as required.
 - (e) Alloting work to assistant cooks.
 - (f) Guiding them in preparation and processing techniques.
 - (g) Preparing main dishes.
 - (h) Finishing all food.
 - (i) Testing for acceptability.
 - (j) Dishing out, portioning and holding food at the right temperatures till required for service.
 - (k) Getting next day's menus checked, requisitioning ingredients and sending requests to stores for issue.
 - (l) Getting Preparations done and refrigerated for use next morning.
 - (m) Getting kitchen cleared up at the end of each day, switching off gas, electricity and water points.
 - (n) Locking up, or handing over work to the person taking over for the next shift as the case may be.
-

Fig. 4.11 *Job description of a head chef*

<i>Job Title:</i>	Cook
<i>Department:</i>	Kitchen
<i>Supervisor:</i>	Catering Manager
<i>Job summary:</i>	As under job description
<i>Education:</i>	Craft course in catering
<i>Experience required:</i>	At least two years experience in an institutional kitchen
<i>Knowledge and skills:</i>	Knowledge of Indian and continental cooking
<i>Personal standards:</i>	Clean appearance and habits
<i>References required:</i>	One at work and one personal
<i>Hours of work:</i>	40 hours a week
<i>Promotional opportunities:</i>	To head cook, and with extra qualification to kitchen supervisor.
<i>Ability tests:</i>	Actual performance tests to be passed to expected standards.

Fig. 4.12 *Sample job specification*

Work Schedule

This represents an outline of the work to be done by an employee. When this is to be completed within a time schedule as well, then it is referred to as a time and activity plan.

For proper scheduling it is important to analyse tasks which are to be performed on a particular day. In catering, the production day can be divided into low and high production periods, and an understanding of these is important in scheduling tasks. As a rule tasks requiring minimum effort, time and attention, should be scheduled or planned for performance during periods of low production, as these follow high pressure work periods of peak-hour production and service. Besides providing the necessary relaxation, such scheduling gives a sense of achievement and motivates staff to cope with the pressures of peak hours. On the other hand, if complicated tasks are fixed for a low production period, they appear to get more complicated. The best time to schedule such tasks is first thing in the morning when workers are fresh and rested. However, sometimes catering staff are required to work late hours, and perhaps continue in the morning because of the high rate of staff absenteeism or turnover. In such cases people who have worked more than eight hours a day should be given simple jobs, which do not require a lot of care and attention, because mental and physical fatigue sets in.

A job considered disagreeable by a worker should only be scheduled during peak hours when it gets done in the stride because people do not have the time to think of it in particular. If all jobs are considered in the light of their physical, psychological, social and environmental effects on the performers, work has number of advantages:

- More work can be done in a day. imparting a sense of achievement.
- Resource are better utilised, making work more productive.
- A busy schedule leaves very little idle time, gives greater satisfaction, and raises staff morale.
- The involvement is greater and staff perform their best.

Apart from work and time scheduling, productive work depends a lot on people's attitudes to their work, the nature of the job, the time and concentration required to perform it and the amount of satisfaction derived from it. Analysing tasks and scheduling work can therefore help to identify materials, equipment, time and skills, required for doing particular jobs. It is an effective tool for efficient working, as it helps to establish a sequence in which jobs are to be done within a time frame. This sequence is readily available before the work is started, so it helps each worker to know what he has to do, without waiting for verbal instructions and wasting time. Table 4.2 is a sample work schedule for a self-service canteen operating between 10a.m. and 5 p.m., offering a choice of plated lunches, snacks sweets and beverages, while Fig. 4.13 is a sample of time schedule for staff. It will be noticed that at the peak hours of production and

Table 4.2 Sample work schedule for a self-service canteen

Time	Menu: Chicken Curry Rice Dahi Vada Vegetable Burger Samosa Cake Hot and cold beverages				
	Manager	Head cook	Assistant cooks		Utility worker
			I	II	
8.00–9.00	—	Check menu, Collect ingredients (raw and prepared) and equipment	Help head cook, boil potatoes		
9.00–10.30	Check menu, Inspect Kitchen and services areas for staff on duty. Check stores for stocks. Prepare order sheets	Prepare curry, Prepare cutlet for burger	Halve buns, oil them, Preheat oven. Grind dal for vadas. Prepare chutney	Prepare dough and filling for samosa. Cut salad	Pick and clean rice. Clean utensils and equipment
10.30–10.45	Continue Work				<i>Tea Break</i>
10.45–11.45	Office work. Put up menu for next day	Complete curry. Fry cutlet, vada and samosa, boil rice.	Whip curd for vada. Prepare garnishes. Boil Trays, cutlery, spices, napkins etc.	Prepare service counter. Check service area for	Clean tables and service counter. Arrange trays and trolleys
11.45–12.00	Inspect food and accompaniments. Get cash counter ready	Portion food. Dishout and garnish. Record portions sent for service guide. preparation for next day's menu	Transfer food to service counter. Check service equipment and portioning tools.	Arrange service counter and areas	Wash up utensils. Clean kitchen tables

Contd.

<i>Time</i>	<i>Manager</i>	<i>Head cook</i>	<i>Assistant cooks</i>		<i>Utility worker</i>
			<i>I</i>	<i>II</i>	
12.00–1.30	Cash Counter. Supervise service	Provide back up service from kitchen. Plan	Refill service trays. Serve	Serve	Clear service area. Prepare for dish washing
1.30–2.00	Lunch counter	Cash Counter	Serve. Clear service	Serve. Assist in clearing	Clearing. Washing up
2.00–2.30	Close cash counter. Prepare kitchen and service analysis sheets	<i>Lunch Break</i>			
2.30–3.30	Check stocks, leftovers and requisition slips	Preparation for next day's menu. Portioning cake etc. for tea	Assist head cook match staff time schedule	Cleaning service areas Washing up	
3.30–3.45	Putting up work schedules duty lists, rotas, menus etc.	<i>Tea break</i>			
3.45–4.30	Office work <i>Tea</i>	Storing prepared. Food, ingredients. Clearing kitchen. Switching off fuel connections	Tea service. Recording leafovers storing. Wind- ing up	Washing up. Cleaning tables, floors	
4.30–5.00	Office work. Checking establishment for safety and security		Giving service statements to Head cook.		

services, that is 10.00 a.m. to 2.00 p.m. all the staff are present. The peak period lies between 10.30 a.m. and 12.00 noon for production and 12.30 p.m. and 1.30 p.m. for services. The timings for staff are therefore staggered before and after the peak hours.

Work and time schedules not only chalk out the work plan for staff, but at a glance help to identify tasks which may be combined, eliminated, or modified for greater efficiency. For effective scheduling a food service manager must have data on the time required for performing a particular job.

Schedules are important tools for demarcating the responsibilities of each worker and giving them a sense of achievement at the end of a task. A schedule may also indicate changes or additions to normal duties on a particular day, and helps to check any claims for overtime work performed. Often greater use of convenience foods on the menu or introduction of time and labour saving equipment may require time and task adjustments on the schedule. Flexibility should always be built into schedules, to enable food services to adjust their work in response to technological and other environmental changes.

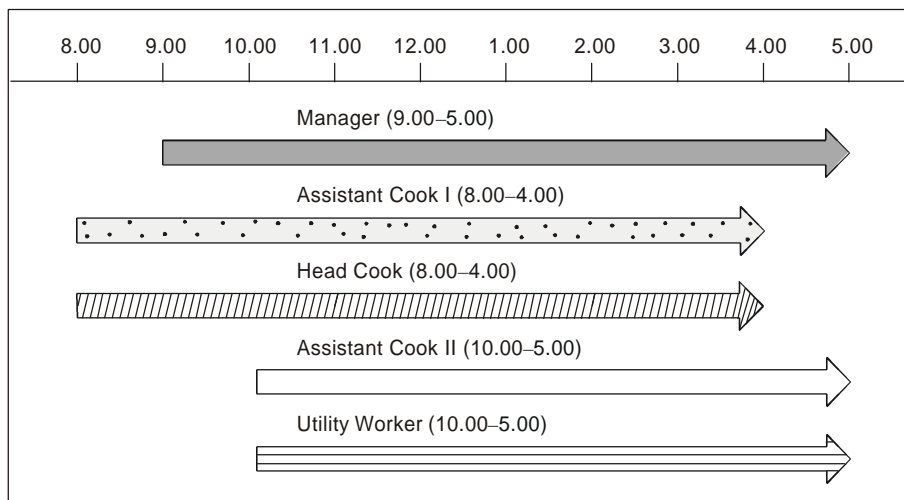


Fig. 4.13 *Staff time schedule*

At a glance it is apparent that all the staff are present during peak hours, and two are present to attend to tea time service, pre-preparation for next day and cleaning activities.

The food industry is unique in the sense that there is a constant need to increase or decrease staff strength at the production and service levels, depending on the number of customers and their requirements. It is also a common feature

of the industry to employ low paid workers and therefore, on a particular day, there may be even 10 to 20 per cent absenteeism. To guard against such circumstances, the work force consists of casual workers on hourly or daily wage basis, temporary employees, as hoc appointees, those on training and so on. This enables a manager to use scheduling as a tool to cover peak hour work adequately by the required number of people, without resistance from staff. In catering, split shift schedules are rarely followed, though staff may be asked to perform day or night duties through alternate weeks if an establishment does operate round the clock. This, however, is not normally done in any food service, because people do not generally eat round the clock. Besides, laws governing food service establishments spell out the desired hours of work in accordance with minimum wage agreements for various types of work.

Work and staff need to be scheduled properly for two main reasons:

- (a) *To have the right type of skills available when required:* For instance, there is need to have more service staff available at lunch time in a food service establishment, rather than kitchen staff. Once the food is ready only one or two back-up staff in the kitchen are necessary for ensuring a constant flow of food from kitchen to service counter. The number will of course depend on the type of the service and the customer.
- (b) *For maximum efficiency:* This is possible only if production and service areas are not overcrowded, or else the work environment will not only cause fatigue but also become prone to accidents.

Successful scheduling in terms of man hours and skills can only be done if jobs are analysed properly along with working conditions, menu patterns, purchasing methods, quantities handled and equipment required.

Job Analysis

The term clearly means analysing jobs to know precisely what they involve. The purpose of breaking up jobs into their respective components is to take an objective look at a job at frequent intervals. This helps to bring into focus any overlapping, neglected or problem areas, which can then be remedied by conscious effort, to increase efficiency. Job analysis is also sometimes referred to as *task analysis* and is a way of looking at jobs and situations in which a number of variables are involved.

Food Service Institutions are made up of a number of interdependent parts of variables, and job analysis helps to simplify them and reveal possibilities for

improvement. This is more so in the changing technological environment of today, in which the possibilities of making labour intensive jobs easier and less time-consuming are enormous.

Jobs may be analysed by many methods, such as charting out the steps or a performer and preparing travel patterns for a job. These records are known as *pathway charts* and help to analyse areas where unnecessary time and energy is being used. The data can then be used to develop procedures and aids for better resource use.

Task analysis also helps in scheduling work, by examining it closely for process, materials, equipment and skills needed to complete a job. Figure 4.16 shows the steps or activities involved in preparing a sandwich.

An examination of the steps in Fig. 4.14 will indicate whether

- (a) some of them can be combined into a single step;
- (b) the sequence is interrupted or logical for a smooth work; and
- (c) time and energy spent can be reduced through scheduling.

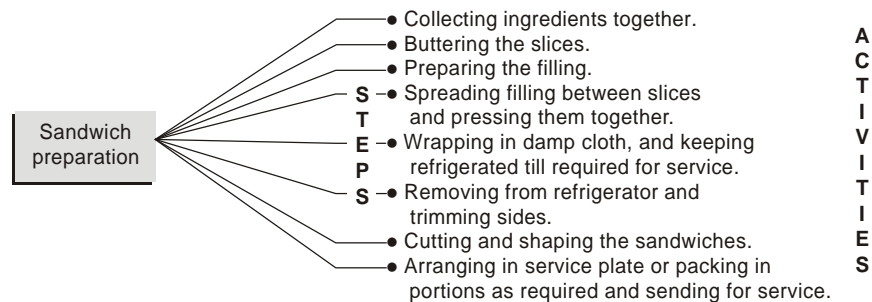


Fig. 4.14 *Task analysis for sandwich preparation*

Some tasks may be coupled or performed simultaneously. For instance, activity (2) and (3) may be combined to eliminate the step of buttering the slices. This can be done by mixing the butter and the ingredients of the filling and making a spread.

Job analysis is therefore a very good tool for increasing efficiency both in terms of speed as well as resource utilisation and can be used at all levels of activity, more so at the operational level.

Job analysis sheets help to assess the skills required for each task and formulate job descriptions, which usually define duties, tasks and responsibilities of the performer.

Production, Service and Staff Analysis Statements

Statements indicating the quantities or portions of food produced, served and left over each day act as tools for forecasting customer demand patterns over a particular period of time. The type of records are production records, sales charts, records of stocks and leftovers over a specified period, menu records and standard costing sheets. Any number of tools can be developed by a food service manager according to the specific requirements of the establishment. Standard costing sheets, for instance, help in substituting equally costed dishes when some ingredients for a planned dish on the menu are not available or have become too costly for the dish to be profitably produced and offered to the customer.

Each establishment can thus devise certain records which are suitable for controlling and managing its operation. Another aid is a record of staff absenteeism. This can help to analyse which workers are constantly absenting themselves from work. The reason could well be traced to routineness of the job, insecurity at work or ill health. The reasons if identified can lead management to take corrective action. Records of sickness and absenteeism also indicate productive hours lost, leading to increasing labour costs which establishments can least afford.

Budget

A budget is a projected plan for the operation of a business. It is sometimes expressed in terms of money, but at other times may also be expressed in units or percentages. It is an important tool for managing an operation as it establishes targets for future production, sales staff numbers, purchases and so on. Budgets are of different kinds and are classified and designed according to the use for which they are intended in various establishments. Figure 4.15 shows the kinds of budgets that may be formulated by catering establishments depending on their size.

Budgets may also be referred to as *fixed* or *flexible* with respect to the levels of sales assumed. In fixed budgets, the amount to be spent on certain items is fixed at the beginning of a budget period. In flexible ones, a judgement of costs is made from previous years experiences in relation to the possible volume of sales. Food services which are subject to seasonal sales like canteens and cafeterias situated in hill resorts or at sea sides also prepare flexible budgets for labour costs.

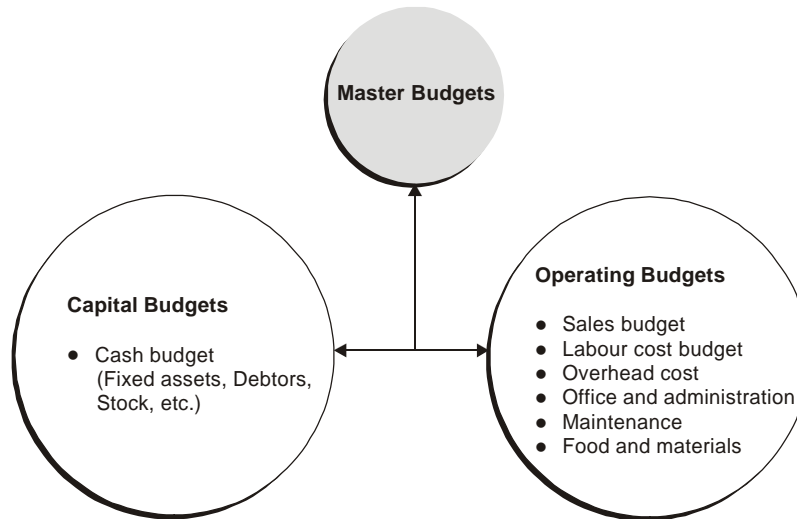


Fig. 4.15 *Budgets in food services*

Budgets are prepared on basis of forecasts of sales volume, which in turn help to determine:

- The proportion of variable and semi-variable costs;
- The cash position of the establishment; and
- The amount of expenditure to be made on equipment, furniture and overheads.

In every establishment, however, there are certain key factors which govern the volume of sales achieved, and these need to be considered while forecasting and budgeting. These factors prevent sales from increasing and are therefore sometimes known as *limiting factors*. Some of these factors are:

- (i) *Capital at hand*: It is not possible to invest more than a certain amount, and this factor limits the extent to which an establishment can grow.
- (ii) *Size of spaces*: This affects the seating capacity. It is obvious that more customers cannot be served at a time than the space available permits.
- (iii) *Staff at hand*: Shortage of staff limits the production and sale of food and services to the capacity of existing staff. Being short staffed therefore is a limiting factor for sales volume of an establishment.
- (iv) *Poor management*: In spite of having enough resources their poor management can become a serious limitation to achieving profits.

Standards deteriorate through poorly planned menus, improper work distribution, inefficient kitchen arrangements, poor supervision, inaccurate costing and pricing.

- (v) *Demand of the customer*: The demand for food may decrease because of high prices, greater competition or an epidemic because of which people abstain from eating out.

It is therefore important to identify which factor is limiting the sales in a particular situation and then try to remove its effect on the establishment.

The managers of small establishments are particularly concerned with operating budgets, such as sales, labour, overhead, maintenance and administrative budgets. In larger establishments at higher levels in an organisation the cash and capital budgets become important tools for setting goals, controlling and monitoring performance and quality of food and service. Along with budgets accounting information through balance sheets, profit and loss accounts and break-even charts, all act as tools for effective management or operations.

While all tangible tools developed by managers in India were manually prepared and filed for use, today the computer acts as a very powerful tool for not only storage and retrieval of information when required but also speedy networking between units which may be located at distant places not easily connected by conventional means. Newer management tools have thus developed which can be used to improve efficiency of production and service. These have been described under the relevant subjects dealt with in other chapters.

Benchmarking

Subramaniam (1977) has defined *benchmarking* as a structural method of learning better processes or techniques from other similar establishments and implementing them in ones own system. Today, *benchmarking* has developed into the third most widely used management tool in the world. In India however, this is still a very new concept but with time is expected to pick up and show results. Managers are gradually realising that it is important to identify key processes in order to satisfy the needs of customers, which today is gaining priority over immediate profits in any industry, more so in the food production and service sector.

Some of the tools of management discussed so far were all concrete and expressible in black and white. Those that follow are more subtle in nature, but are nevertheless indispensable for managing people and making them contribute their best for the organisation.

INTANGIBLE TOOLS

Intangible tools are the qualities with which people are naturally endowed or to some extent acquired through training and conditioning. They are abstract in nature and make their impact on efficiency of management without being seen or handled. These tools being innate are reflected through a person's personality and charisma and therefore act in very subtle ways through leadership or interpersonal qualities and communication skills of people. This is the reason why leaders emerge even in small groups although their role at work may not be defined as managerial in nature. It would be an understatement however, to say that intangible tools cannot be acquired, they can, but only to an extent by training, conditioning or development. Intangible tools help to motivate and carry a work force from diverse backgrounds towards preset goals of an organisation, by utilising them in decision making processes. They are used for solving problems of staff and other resources, motivating people towards better productivity, all in a climate of harmony and mutual respect. Some important intangible tools are enumerated in Fig. 4.16. and discussed briefly below.

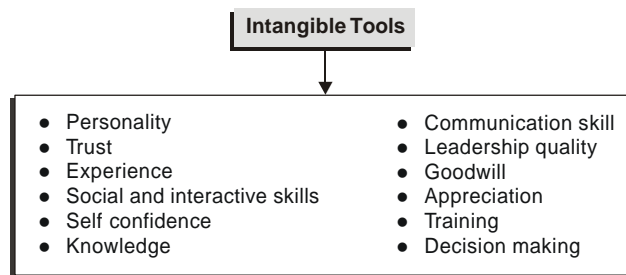


Fig. 4.16 *Intangible tools of management*

Personality

This is the sum total of a manager's physical stature, mental and emotional status, social habits, outlook or vision with respect to his total work and the environment.

Trust

Trust is an important tool used effectively in situations when work along with authority and responsibility needs to be transferred to colleagues or subordinates in order to get work done efficiently and on time.

Experience

There is no doubt that when any organisation thinks of appointing new employees experience counts, as evidenced through any qualification request seen in employment advertisements of various job positions. This is because experience though not measurable in tangible terms, is a useful tool for making decisions, for the future, in organisations having similar work requirements. Although the number of working years can be tangibly stated every individual develops different types and magnitudes of experience even in the same organisation, according to their management abilities and opportunities for decision making and problem solving.

Social and Interactive Skills

People vary in the ways in which they interact with others at work depending on their inherent nature in terms of being extrovert or introvert, the former being more easily able to approach people irrespective of their position in the hierarchy, than the latter. Social skills may be used effectively as a tool by managers in the form of getting together informally with their employees over tea. This helps the staff to be at ease with their superiors who through casual conversation many become acquainted with the problems of their staff or their talents which can then be used to effect in management.

Self Confidence

Self confidence is the ability to express oneself without hesitation because one is sure of one's own capabilities. This trait shows in a manager's personality, posture, voice and conviction in what is said or done in different circumstances. This tool helps managers to avoid confusion which only results if he himself is not sure of what he wants done. A confident manager commands the respect of his team and does not have to demand it, has no problems of instructions not being followed and the work goes on efficiently without close supervision. This is because instructions are clear and easy to interpret and follow even in the absence of the manager.

Knowledge

Knowledge is acquired generally by interest and interaction with ones environment through informal and formal training. The degree of knowledge gained however, does not equip a manager with managing ability unless it is applied to the practical field. When knowledge gained is applied to the solution of problems in the work environment through use of a person's own judgement of the situation at hand, management results. The more decisions made

successfully or otherwise the more experience is gained and the success rate is increased. Thus, knowledge is a very important tool of management because degrees alone do not impart decision making abilities, and people with more book knowledge do not necessarily become good managers.

Communication Skills

A manager may be able to make good decisions at work but his or her ability to communicate them to others for implementation may be inadequate. Those with good interactive skills should therefore be delegated the responsibility to implement decisions. Communication skills are inherent to some extent but can also be acquired through training and development of individuals. This tool is vital for managerial success.

All plans chalked out for the success of an establishment will come to naught, if they cannot be interpreted and understood by the people who have to carry them out. The ability to convey information or messages to others so that they can understand and interpret them in the same light as the sender of the message is known as communication.

Communication is therefore the most important tool of management when dealing with people, yet it is the most difficult to achieve effectively, because it involves much more than just sending and receiving messages. Interpretation of what is said is affected by a number of factors such as:

- (i) Personality characteristics.
- (ii) Sense of security or fear in the work environment.
- (iii) Nationality and cultural background.
- (iv) Sex, education and occupation.

These are some of the reasons why no two people interpret a message or a situation in the same way. Apart from the above, people have certain mental images of other people because of their position, status, dress, colour and therefore associate certain personality traits with them. Another aspect of communication in a work environment is the *halo effect* which affects the ability of people to evaluate any situation or message accurately. This effect is seen at every level in the form of impressions which superiors form about people and which act as barriers to the process of communication, because the impressions influence their perception. It is common for people working together in a group, to feel victimised at times, when credit for group effort is given to one or two people repeatedly. This happens when managers form good or bad impressions about some people. Those who feel victimised will never be able to interpret a message from the manager favourably even when he wishes to convey

his appreciation for their work, because they carry an impression of the manager as being unjust and unappreciative of them.

Extensive studies of people's behaviour at work have established that social and psychological factors have a pronounced effect on communication between people. Among the most significant of the studies are those of Leavitt (1951) who studied the effectiveness of various communication networks or channels. He concluded that in every network there are two indices, one is the *index of centrality* which indicates the ability of an individual to interact in a group and establish smooth flow of communication with other members. The other is the *index of peripherality*, referring to people who remain on the periphery of a network and generally occupy positions of low interaction. The higher the index of centrality the better are the liaison qualities of that position. The higher the index of peripherality the lower the level of interaction, and therefore people at these positions in the network tend to be less well informed.

The Communication Process

The process basically involves a 'source' from which the message or information starts and a 'receptor (s)' for whom the information is meant. The information may be a statement of fact, an opinion, a suggestion, request or order. As already mentioned, communication is only complete if there is a reaction or feedback from the receptor(s) to suggest that the information has been correctly interpreted and understood. It does not, however, imply that the receiver must agree with the contents of the message. It is the psychological and behavioural aspects of people which make the seemingly simple process of communication complex in practice. In the catering environment, communication is central to unifying all the different activities which interplay in the achievement of goals. Figure 4.17 illustrates this clearly.

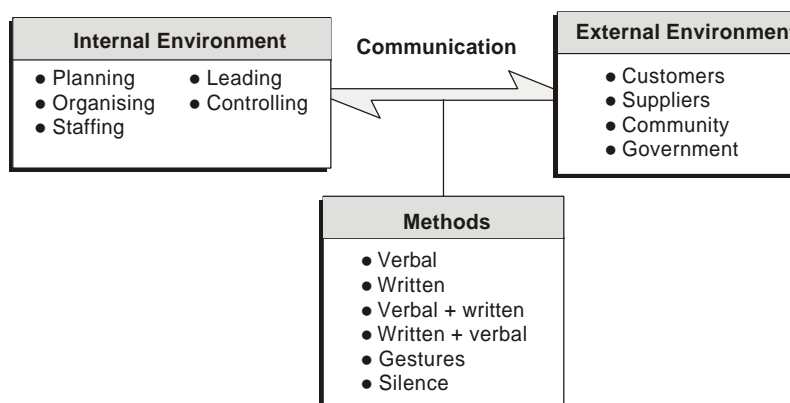


Fig. 4.17 Communication as the core of management activity

Communication Methods

The methods used to pass on information or messages and initiate action in the food service environment are briefly outlined and discussed.

- (i) *Verbal* this literally means by word of mouth but with technological advances recorded voice or verbal messages can be conveyed by people even from long distances, or in a large organisation through the telecommunications in the form of intercoms, mobile phone, voicemail and so on.
- (ii) *Written*—through letters, memos, notes, or SMS messages.
- (iii) *Verbal followed by written*—Instructions given and followed up by a detailed plan of action helps it to be used as a reference at work.
- (iv) *Written followed by verbal*—Such communication methods are seen in the form of an order handed over to an employee, and the intricacies explained verbally just to make sure they are understood.
- (v) *Gestures and facial expressions*—These can be very effectively used to communicate feelings of joy, anger, frustration or friendship.
- (vi) *Silence*—This also communicates feelings of disagreement, disinterestedness, anger, shock, worry or even concentrated mental activity.

Whatever be the method of communication used by people, its effectiveness depends a lot on the sensitivity of people to interpret the words (written or oral), gestures, expressions or silence correctly. In other words, the receivers have got to be at the same mental wavelength as the sender of the information. In any situation, however, no one method of communication is used in isolation, and it has been found that an oral message followed by a written one is very effective at levels where immediate action is required. The written form helps to follow up the activity and to record the results for future reference. It has also been noticed that a message or information gets communicated much better when the receiver needs that particular information for getting his work done. The most effective communication is established where authority and responsibility are completely delegated and clearly defined. Very often, a worker who becomes disinterested in his work has become so because he does not know exactly what to do. Therefore, the success of any operation involving a number of people depends on the channels and methods by which information concerning their work is passed on.

Communication is thus the essence of coordination of all work in an establishment, and therefore follows patterns depending on the organisation

structure of the establishment. These patterns are known as *channels* or *networks* of communication.

A number of networks can be formulated, formal and informal according to the various organisation structures and social groupings which people make at work. Formally, information flows in an establishment from superiors to subordinates in a downward direction, or between colleagues in a horizontal manner or in the form of reports, queries and grievances, upwards. These three directions of information flow, move automatically along the formal structure of the establishment. The information which gets passed on by people through their social groups in casual conversation irrespective of their formal positions in relation to each other is known as *grapevine* communication, because it travels very fast and at times bears no semblance to the original message. Information thus transmitted gets distorted by being differently interpreted by people according to their varying experiences, perceptions and personalities. This method can, however, be a very useful tool for managing work effectively, if managers make an effort to understand how the grapevine works.

In grapevine communication, information may be passed on from one person to another in a very casual manner, but it reaches people so distantly placed at work that it is impossible to locate its source. At times one person may say something he overheard, to friends during tea break. This casual statement may become the gossip of many different groups, who begin to believe it is true. If the information concerns proposed bonus payments to employees, overheard and passed on before the decision was made, it can cause problems for management, because an adverse decision can create a lot of unrest.

What is interesting however is, that information travels unbelievably fast by the grapevine, in contrast to the same message through formal channels. Enterprising managers could use the grapevine as an effective tool for passing accurate information to people instead of the usual rumours. This is possible if they can identify those persons who are looked up to and trusted by the group and have liaison and leadership qualities. This cannot however, be largely depended upon as a regular means of communication, and any barriers in the way of people's understanding should be identified and removed.

Barriers to Communication

A number of factors may become barriers to effective communication and make conversation, negotiation and training impossible, because people become alienated and indifferent to others and their work. These factors need to be identified constantly and guarded against to prevent communication from

breaking down. Managers have therefore got to be vigilant and maintain good human relations at all costs if an organisation is to survive.

A breakdown in communication is symptomatic of the existence of problems in the management of the organisation. For example, communications can break-down if the work force is uncertain about who is the boss, how, what and when a job has to be done, or when there are no clear cut standards for staff to work towards. The uncertainty builds into confusion and frustration leading to less and less interaction between people at work. The result is inefficiency because of a demotivated workforce who does not know the goals of the establishment. If these gaps are allowed to widen communication breaks down completely. Besides the structural and organisational problems mentioned above, the reasons for communication gaps may be connected with the manner in which messages are transmitted to the people at work. Fig. 4.18 represents ten factors responsible for communication breakdown.

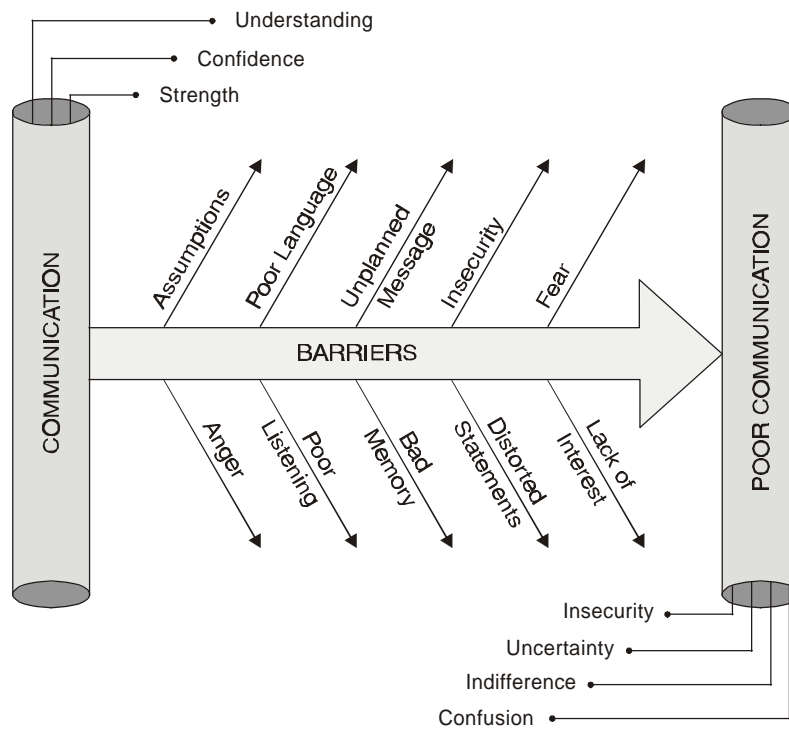


Fig. 4.18 *Barriers to Communication*

The establishment of an effective communication system in many organisations is thus the solution to a lot of deep-rooted problems, which can

be brought to the surface and tackled successfully by every enterprising manager. Every manager should endeavour to identify the existing barriers to communication in the establishment, and make a conscious effort to demolish them, replacing the barriers with strings of understanding, confidence and strength.

Leadership Quality

Leaders are born is a statement often heard, and time has shown that every manager cannot be J. R. D. Tata or M. S. Oberoi yet many successful managers have emerged and developed under the guidance of great leaders and through their own hard work. Leadership quality makes people look up to a manager for advice, feel motivated to work for him and respect, loyalty and love are generated in the work environment. Managers vary in the extent of leadership quality they possess because of their personal traits and individuality and the degree to which they themselves are committed to the goals of the establishment.

Leadership represents the set of skills and characteristics which differentiate the people who make an impact on other employees of an establishment. It is for this reason that they are loved and respected by other employees, customers and all those who deal with them. Charisma distinguishes a leader from a manager but charismatic leaders can be brusque, arrogant and are generally poor team players, although they exhibit a sense of vision and can give direction by creating an image of an expansive future for an organisation. People see this vision and feel motivated to achieve. A leader who can mobilise the trust and support of staff achieves greater heights than his contemporaries in the competitive management environment. This is because people need to share in a vision and want some understanding of the bigger picture and how their work contributes to it.

The self confident leader produces simple plans, speaks plainly, proposes clear-cut targets and stimulates staff to achieve them speedily thus building up a momentum to achieve. Leaders talk less but set an example for others to follow showing enthusiasm to achieve in their own behaviour at work. Dr. Rob Yeung suggests 10 ways of using charisma to advantage in goal achievement namely:

- Draft a compelling vision
- Communicate passionately
- Get cooperation from others
- Inspire and pull people towards goals

- Provide direction and momentum
- Assert if necessary
- Learn from others leaders
- Make decisions in line with vision
- Get feed back
- Command and not demand respect and loyalty

While it is the general belief that charismatic leaders are born, Yeung believes that they can be developed by good training. In today's competitive environment offering free preferences, management requires not only coordination of skills and leadership qualities but also creativity and innovative ideas to gain competitive advantage. In fact leadership and creativity together translate into entrepreneurial skills which are an asset to organisations, small or large. However, they are gradually acquired through experience on the job and cannot be taught through a classroom. In fact autonomy, early responsibility and opportunities to learn and grow in the work environment are the key to encouraging leadership and creativity in managers. Unless managers are allowed to exercise their creative skills the organisation will stagnate. Peter Drucker has so aptly said ... *production is not the application of tools to materials but logic to work*. Hence, if innovation and application are absent, productivity gradually falls and the enterprise cannot sustain itself.

Some guidelines for effective leadership are:

- Avoid nagging to get cooperation
- Be direct about what you want people to do.
- Don't blame as this can hinder problem solving.
- Stay focused on current faults and don't generalise.
- Negotiate and don't demand.
- Realign priorities to suit the way staff want to work.
- Speak less and listen more.
- Be subtle in the way you want work done instead of ordering.
- Recognise the efforts of others and reward them with praise where due.
- Do some self-evaluation also.

A good leader starts by asking:

- What has to be done? And not What do I need?
- What do I have to do to make a real contribution? The answer best suits the leader's strengths and the needs of the project.

- What are my organisation's goals?
- What qualifies as acceptable performance?
- Do I tolerate poor performance?
- Do I like or dislike an employee?

Leaders are not threatened by others who have strengths they lack. The qualities of an effective leader have been summed up by Lord Moran of Britain, a medical professional during world war I as:

Leadership is the capacity to frame plans that will succeed and the faculty to persuade others to carry them out in the face of difficulties.

The definition implies knowledge, realism, ability to implement in the form of capability coupled with effectiveness, all within a frame work of selflessness, courage to decide, will power to achieve, ability to deal with people and make an impact on them by setting an example. With all these qualities a leader is good only when his thoughts, words and deeds are in harmony. However all managers are not leaders and it would be appropriate to quote here that ... *leaders are like lions, they don't flock together, you find them one at a time.*

Leadership quality is the tool used for deciding the style a leader adopts at work, which varies with the situation and its demands from both the internal and external environment of the organisation, as it affects goals.

Leadership is the quality in a manager, irrespective of his craft skills, education or position, that directly influences people's behaviour towards his and their work. In other words, it is the quality by which people can be motivated to move enthusiastically and with confidence towards established goals. Leadership qualities are inborn to a certain extent, but can also be acquired by training, and experience.

The leadership style of a manager determines how good his relationships are with his subordinates, and how easily he can communicate with them. Leadership styles adopted in the management of group work are closely related to the personality of individual managers and their social skills. It is debatable, how far social skills can be taught, because extrovert personalities develop easy relations with other people while introverts find it more difficult.

The different leadership styles that are used in the catering field can be easily classified. Some, distinctly make people work by order or force, others join the group and initiate activity, still others use persuasion while some, by their pleasant and endearing manner generate the enthusiasm for work and achieve goals in the best possible manner. Thus, through a manager's personality, referred to by Doswell and Gamble as the *manager factor*, a manager can build

an image for himself in his work environment. For the establishment, he is responsible for how customers view the food service.

Katz and Kahn (1966) define leadership as *the influential increment over and above mechanical compliance with the routine directives of the organisation*. It is the willingness of people to follow a leader, and this happens when people can see the manager or leader as one who is providing their own wants and needs.

Leadership style is used as an effective tool of management both in formal as well as informal structures. This is evident from the fact the even when placed formally in positions of power, managers can exercise authority over people only if they will accept it. Some managers who are good planners and organisers fail to achieve results because they are not good leaders. Reference has already been made to the development of informal organisation patterns within the formal frame work. In catering situations one often sees the emergence of a leader within a group, that is, a person who will be followed in whatever he says or does, even though he may not have been placed in a position of authority through the formal structure.

Experiences of managers have shown that the contribution of leadership ability towards goal achievement may extend up to 40 per cent while 60 per cent is attributed to the need for the job and the authority exercised by superiors.

Lal (1983) has reported that managers tend to behave in characteristic ways while making decisions. Table 4.3 summarises the style of leadership reasearched and the percentage of wage among managers.

Table 4.3 *Styles of leadership among managers*

<i>Description</i>	<i>Style</i>	<i>Style Usage (%)</i>
(i) Own decision without explanation to subordinate	Autocratic or centralised	Varied, depending on nature and type of estt
(ii) Own decision with explanation to subordinate	Same as I.	
(iii) Prior consulation with subordinate	Participative or decentralised	35.2
(iv) Joint decision	Democratic	29.5
(v) Delegation	Laissez faire	3.5

It may be noted that all the styles are used to different extents by managers according to the nature of the decision to be made. For example, for decisions regarding salary, styles (i) and (ii) were used 98.44 per cent of the time. For

hiring staff these were used only 14 per cent of the time. The observations from this study were averages to show the percentage of time which managers spent using the different styles of leadership.

Thus a manager does not and cannot use any one leadership style in isolation at all times. He may be autocratic in an emergency like when an accident takes place or a fire breaks out in the kitchen. Also, in situations where only he has the answer, such as deciding on the number of customers to be catered for.

According to Likert, (1967) effective managers use the participative style and depend more on communication, while at the same time adopting a supportive attitude, sharing needs, values, goals and expectations with their staff. Various traits related to leadership ability have been identified in the literature ranging from physical traits to those of intelligence, ability, personality, social and task related ones.

Leadership style is thus a powerful tool of management, especially in people oriented spheres such as food service management, in which the degree of concern managers have for people (reflected in their style) can create a comfortable working environment harbouring trust and respect for each other. This of course is based entirely on the personality and other traits of the manager and his ability to inspire confidence in people, who then get committed to the goals of the establishment.

Goodwill

Goodwill is the feeling of oneness with people whether colleagues at work or customers who visit an establishment. It is an important tool for harmony at work as it inhibits ill feelings or jealousy in an otherwise competitive environment. It is that quality which makes customers come back to an establishment repeatedly because they feel at home, being served with quality food in an atmosphere infused with love and consideration, exhibiting good manners in a happy comfortable environment.

Appreciation

All managers are quick to criticise even if a small mistake is detected, but the tendency to praise employees for work well done and appreciate their talents is generally absent or very infrequent. The only time appreciation or praise is showered on people is when they retire or die, why not when they are alive and actively involved at work. According to Parkinson and Rustomji (1993) *praise* is the finest, cheapest and possibly the best-tool of management, as it spurs people on to work better.

Training

With catering becoming more and more competitive, professional training of employees at all levels is becoming an indispensable tool for the management of operations. This is because training imparts knowledge of the various aspects of the operation, and skills to deal with the influences of the ever-changing environment. Besides ensuring efficiency, training also develops the right attitudes to work. With increasing number of unemployed graduates in the market, caterers would do well to pick up raw hands and spend less on interviews, references and selection, and subject them to on-the-job training, using training as the tool for developing their best potential. They could be subjected to on-the-job training for 70 per cent of the time, with the remaining 30 per cent utilised for academic work.

Sensitivity training should form part of the programme in which people are brought together in groups and allowed to discuss their feelings and frustrations, freely among themselves. These are referred to as T groups. Through such exposure individuals develop trust in themselves and in others, become fearless and self-confident and learn to work effectively with others.

When people are trained in groups, they get better stimulated to learn because of group participation, and this group spirit is later maintained at work. Training programmes conducted by well-trained teachers should impart knowledge of the history and objectives of the establishment, relationship with other departments, the key persons to contact in each department, budget estimates as they affect the workers, preparation and service of food, sanitation and safety, and the existence of work improvement programmes. In addition, knowledge about laws governing food service organisations and their implications at work are a vital aspect of any training in food service institutions.

The organisation gains from a well-trained work force through reduction of staff turnover and absenteeism, fewer accidents at work, better resource utilisation, decreased costs, higher production, higher levels of morale and job satisfaction. Training makes its contribution to the goals of the establishment as well as to the development of the individuals.

Decision-Making

Decision-making (DM) is the ability to forecast changes in the organisation and its external environment and react in advance or be prepared to react in any eventuality. No work at any level can be performed without making decisions. The difference lies only in the nature of the decision. At production and service levels the decisions made concern materials, methods of work,

quantities and quality. Higher up in the organisation decisions change to those of planning menus, selecting equipment and suppliers, making purchases, costing and pricing. Still further up the management hierarchy decisions regarding staffing, grievance procedures, trade union negotiations, establishment policies and investments have to be taken. Besides these, strategies for reacting to environmental changes have to be drawn out.

The process of decision-making involves three basic steps:

- (a) making a mental effort,
- (b) listing out alternative courses of action within the structure of a situation,
- (c) choosing a single course of action from among many alternatives.

In practice, people are making decisions all the time, without thinking about the process which the mind is going through, to decide what is to be done. For example, a cook decides to garnish a dish of tandoori chicken with onions, lemon slices and chopped coriander for one set of customers, to others he sends it accompanied by roast potatoes garnished with coriander sauce. He may have decided to do the latter because these were some boiled potatoes left over from the earlier meal or the coriander was not looking too fresh to be used as such for the last lot of customers. In both cases however, he has acted on a single course of action without as much as sitting down to list the alternatives. Similarly, the catering manager decides to change the menu because the price of a food item has suddenly gone up or down, or because he envisages a drop in the number of customers on a particular day. In this way there are so many decisions, all of different types that are being made and acted upon at all levels of management, almost continuously, depending on the roles that people are performing at work. The more complicated the decision situation, the more time is spent on decision-making.

Three pre-requisites are therefore essential for any decision to be made:

- (i) There has to be a reason for making a decision,
- (ii) The courses of action that are open need to satisfy the reason, and
- (iii) Choice has to be made from among these alternatives.

The proportion of time spent on each of the phases of decision-making vary from one level in the organisation to another, and from one person to another. But, in general, at top management levels more time is spent on studying the effects of environmental changes on the establishment and developing courses of action to react to them favourably. The middle level managers spend more time selecting the best courses of action open to them.

There are two main types of decisions taken in catering establishments. Some are routine and repetitive which do not require fresh thinking each time the need arises. An example of this type is, the decision to place a pan on the cooking range when any food is to be cooked, or switching on the oven, when a cake mixture is being prepared. Such decisions are said to be programmed. The second type are decisions include those required to be taken if an accident takes place in the kitchen, or when some incident of misbehaviour has to be tackled, or a piece of equipment breaks down in the middle of food being cooked in it, or 25 per cent staff do not turn up for work one morning. These type of decisions are called unprogrammed decisions and require the use of judgement, creativity, presence of mind and initiative.

The routine type of decisions act as a tool for managing time well, because they become quite automatic and require practically no mental effort, time or advice from superiors. The unprogrammed decisions are important for managing emergency or pressure situations, which are a characteristic feature of catering establishments. At higher levels managers also need to know the possible effects of their decisions, because of the fact that operations consist of highly cohesive groups at the operational levels, and can collectively demonstrate group feelings bringing great pressure on management. This is expected to increase as catering workers get more and more unionised. Decision-making therefore, although an important tool of management needs to be used with great care, because the results of a decision are known only after a period of time. Managers would do well to cash in on their knowledge of the people who work with them and utilise their cohesiveness to achieve group and organisational goals.

The importance of decisions vary with the degrees of responsibility entrusted to a manager. Where a decision has a greater effect on people, its importance is greater than a decision which affects a piece of equipment, or a procedure.

Decision-making is vital to all functions of management as it forms the core of planning and all good decisions are cost effective, and satisfying to people and the establishment. Therefore its usefulness need not be overemphasised.

While some important tools have been outlined and discussed briefly, tools of management are as varied as the types of managers who develop them. Tools thus evolve and get adapted to the needs of particular situations. Some conceptual tools which have been used for analysis of organisations are abstraction and models.

Abstraction is the process of selecting certain facts about a situation and a searching for possibilities that could prove important for deciding a course of

action, whereas preparation of *models* involves connecting the abstracted elements into a pattern weaving them to form a model of the situation by which problems can be better understood and solutions arrived at.

All tools of management whether tangible or intangible used or developed by managers are used in combination to extents dictated by each situation. Abstractions and models are mechanisms used for economy of time and effort but need to be used within their limits.

In conclusion, tools to a manager are as useful as he can make them. If he has initiative, and the will to succeed, he can create new tools or shape old ones to suit his particular needs.

Management of Resources

Resources are factors available to a food service manager for the production and service of food, and these are always limited for a number of reasons. Some are used up and finished with time, so they have to be continually generated to have a constant supply. Others gradually wear out or depreciate in value and utility and need to be constantly maintained till unfit for use, and replaced when they become obsolete. There are basically nine kinds of resources necessary for efficient management of catering institutions, as depicted in Fig. 5.1.

It needs to be emphasised however, that all natural resources form the base of organisational resource, and management that can develop other resources on this base can produce fruitful results.

MANAGEMENT

Resources however, cannot by their mere presence lead to the success of a food service, but need to be nurtured and skillfully utilised through imaginative management techniques, to make them grow and bear fruit. This has become necessary because, the environment is changing all the time, requiring managers to continually keep pace with the new challenges. Therefore the most important resource for any establishment today is its *management skill*. When this resource is well developed, all others can be utilised to advantage. It is therefore evident, that for an establishment to survive in its ever-changing and competitive environment, resources need to be utilised to their maximum, because no resource can be increased indefinitely. The discussion that follows focusses attention on the utility of each resource available to a food service manager.

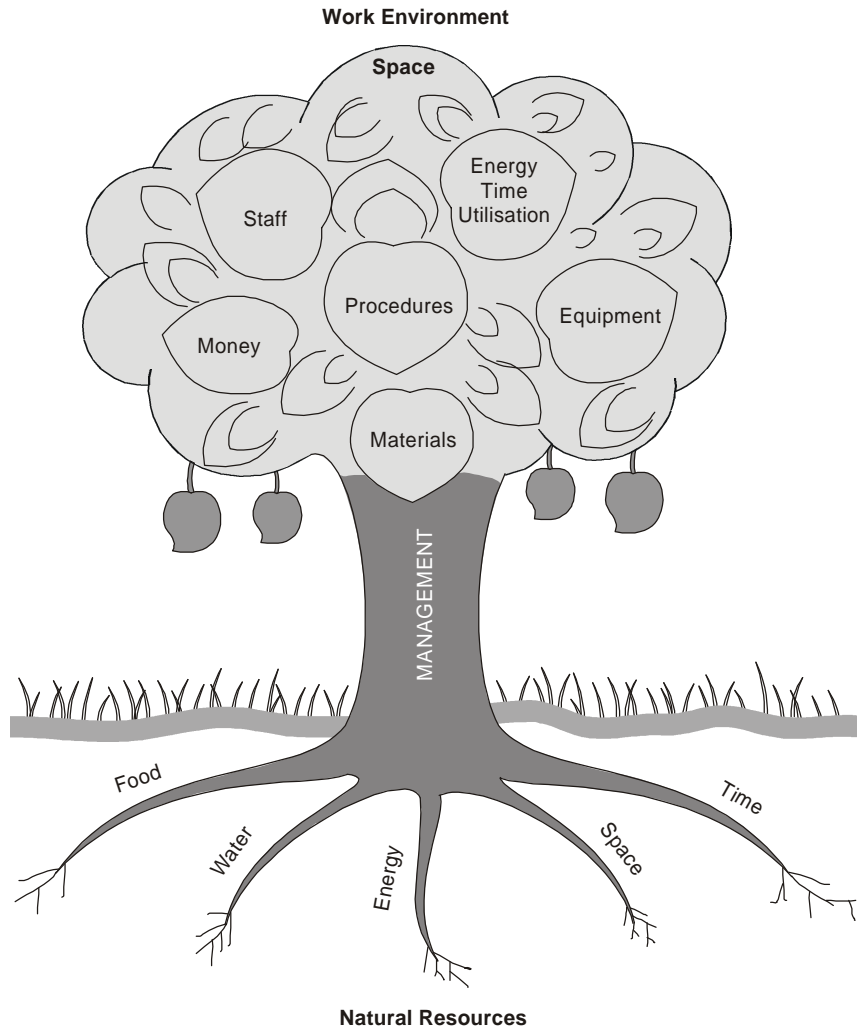


Fig. 5.1 Resources for catering institutions

MONEY

The goal of every food service establishment is to make profits, but before this can be achieved there has to be money to invest and spend in order to acquire the other resources necessary for the production and service of food. It is only when food is made available to the customer that money will start flowing back into the establishment. It would therefore be appropriate to pin-point briefly the methods by which an entrepreneur can raise the money for his establishment, before the utilisation aspect of resources is considered. There are basically four

ways in which money can be raised for starting expanding or renovating institutions as indicated in Fig. 5.2.

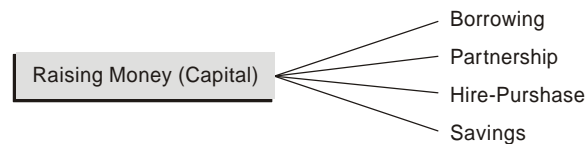


Fig. 5.2 *Ways of raising money*

Borrowing

In the case of institutions serving social causes such as catering for handicapped homes, or providing employment opportunities for war-widows through setting up canteens, capital may be raised at low interest rates through various schemes. Money can also be borrowed against securities or overdrafts.

A number of facilities have been provided by government and non-governmental organisations (NGO's) to encourage small enterprises in every state. These sources of borrowing include nationalised banks or government finance companies who offer loans at low interest rates in special cases. Some sources are briefly enumerated below:

The Small Scale Industries Development Bank of India (SIDBI)

This is a subsidiary of the *Industrial Development Bank of India* (IDBI), a premier lending agency to the small scale sector industry employing 20 or more people.

Nationalised Banks (NB)

These finance entrepreneurial efforts or ventures at concessional interest rates of which some are the State Bank of India, and others at state levels all over the country, covering both rural and urban areas. They also conduct regular entrepreneurial training programs for different target groups.

Private Banks

In the present competitive environment, private banks today offer all kinds of financial assistance for its customers, who can operate through the internet to speed up transactions whether borrowing, investing or liquidating assets.

Women Entrepreneurs Guidance Cell (WEGC)

Started by the Indian merchants chambers, this cell consists of experts in the field of finance, accountancy and management. The cell aims to promote and develop new or small scale business enterprises especially those started by women. Their advice and programs are open to everyone and not restricted only to members for purposes of consultancy.

Indian Council of Women Entrepreneurs (ICWE)

This is the only national association affiliated to the World Association of Women Entrepreneurs (FCEM). It caters to the needs of women in very small, cottage, household and medium sized ventures.

Bhartiya Yuva Shakti Trust (BYST)

This organisation provides total assistance to underprivileged youth who wish to set up and develop their own businesses. Assistance includes professional advice on finance, training, education and guidance till the venture takes off.

Such facilities are available in every state to motivate youth into self-employment schemes. With unemployment of young energetic people increasing, catering activity is expected to continue rising. The governments industrial policies also reflect that small businesses have a great role to play in bringing economic stability to the country by making it self-reliant.

Women Economic Program (NORAD)

Facilities in different traditional and non-traditional trades. To date 25,650 women have been trained by NORAD under the training cum employment program.

Support and Training for Employment (STEP)

Twelve new projects were sanctioned in 2000–2001 and 48,550 poor and asset-less women were trained in agriculture, farming and related as well as other trades. They subsequently organised cooperative societies for carrying on the marketing of profitable ventures.

Syamsidha

This is an integrated scheme through which self-help groups (SHG's) are formed among women. The aim is to impart awareness and education and help to

empower them economically. It is to be implemented in 650 blocks of the country for benefitting 9.30 lakh women.

Swa-Shakti Project

This is a World Bank and international fund for agricultural development projects implemented in 35 districts and 7 states. Ninety one NGO's have already formed 9000 women's SHG's.

Rashtriya Mahila Kosh (RMK)

This organisation facilitates provision of micro credit to poor women for income generating activities through a network of social organisations. Four lakh women have already benefited through the RMK to the tune of 77.8 crore rupees.

The government of India (GOI) through the Departments of Women and Child Development (DWCD) has set up many similar initiatives through NGO involvement.

State Level Organisations

Some state level organisations which are actively involved in encouraging self-employment are:

(a) Gujarat State Financial Corporation (GSFC)

This provides schemes for industrial enterprises especially entrepreneurs who can draw funds at will. It is called the *gold card scheme* which is a simple mechanism devised to provide a line of credit to entrepreneurs planning to undertake expansion, modernisation or diversification.

(b) The Punjab Women and Children Corporation (PUNWAC)

This organisation was started by the government of Punjab with the explicit purpose of training women in entrepreneurial activities. By 1994 PUNWAC had selected 40 women for training at the Druckwaster School of Graphics and Education set up by Druckgrafien India Limited, an approved security press licensed by the Reserve Bank of India (RBI).

(c) Association of Women Entrepreneurs of Karnataka (AWAKE)

This organisation provides facilities for nurturing business ideas and bringing them to fruition.

Other Sources

Sometimes enterprises may be started using lumpsum investments received on retirement in the form of pension funds, but the risks involved are great. Today government offers many tax rebate schemes through which personal money can be invested over longer periods and then used when required.

Partnership

Joining in partnership with other people who can share the investment in the business.

Hire Purchase

This involves purchase of premises and equipment on a *hire purchase* basis, which can then be paid off in instalments, after the establishment is in operation.

Savings

The owner can use his savings initially, till the establishment earns enough profit to pay back. But, this is not a desirable practice if loans can be raised at reasonable interest rates.

Whatever by the source of raising money for an enterprise it is important to evaluate it to ensure that investments made in food services are producing the expected returns. This is because the success of catering operations depends to a large extent on the customers, and a changing environment. Once the profit areas are identified more money can be spent on them and withdrawn from less profitable areas.

Having raised the money it is important to pay it back at the earliest to minimise interest payments. In order to do this it must be invested wisely in space, equipment, materials and other resources, to get optimum return on investment. Making investment decisions for catering establishments therefore, must be based on certain general criteria such as:

(i) Area of the space within the building

This should be adequate to cope with the expected number of customers, and the range of services to be offered in the short as well as the long run.

(ii) Suitability

Each planned area in terms of design of equipment, furniture, fittings, structure, surfaces, etc. should be ergonomically suitable for use by staff and customers. At the same time it should provide an efficient, comfortable and safe working and dining environment. It is at the layout and design stage that maximum utilisation of areas need to be considered, in the light of predetermined objectives.

(iii) Control System

Each part of the premises must provide the means for a built-in control system. In the case of food services, it amounts to watching relevant areas and instituting methods of control at receiving, production, service and storage points. This includes attention to equipment in terms of the space available and its safety in operation.

(iv) Economy

Control of operating and maintenance costs is important in all areas and for all equipment installed. These costs can be minimised by reducing man-hours required for operation by installing devices for routine jobs. The concept of multiuse areas and equipment in food services is important to utilise money spent on premises wisely.

(v) Flexibility

If installations and space are designed for flexibility, smaller are as are required for a number of different activities. Also, fewer equipment need to be purchased if they are multiuse pieces.

(vi) Durability

The durability of materials and equipment naturally makes the money go further than if replacements are necessary early.

(vii) Continuity

This implies continuity in the use of areas, equipment and materials within an establishment. Any underutilisation of these resources amounts to wastage.

(viii) Efficiency

This can be judged on the basis of how quickly after the investment is made, can the establishment pay it back with interest which has accrued.

(ix) Safety

This is a prime consideration when making investment decisions, and investing borrowed money.

Practically all these criteria have been discussed under separate units dealing with areas, equipment, financial aspects and safety.

SPACE

Space being the most expensive resource requires thought for building upon it. The aim should be to utilise every square centimetre effectively. Spaces for food services may be acquired through auction, hire purchase methods, direct purchase of land or building, as considered suitable. In an existing building, spaces may be renovated to provide arrangements of work areas with equipment so placed as to establish a smooth work flow. The environment should also be congenial and comfortable to work in. Well developed commercial spaces however, are more expensive than spaces located on the outskirts of a city. The environment too is crowded and possibly polluted in the former.

Space or land is perhaps the only resource which in real terms appreciates with time. This appreciation, however, is only beneficial if the advantage is received by the owner of the food service. In small catering establishments however, more often than not, the owner may be paying a rent for the space, in which case he does not receive the advantage of its appreciation. On the contrary, over a period of time more money is required to pay for increased rent, cutting into the profitability of the food service operation. Decisions regarding utilisation of spaces therefore need to be based on some important criteria such as:

- Type of food service desired to be set up: This may be a self-service, cafeteria style, or formal waiter service.
- Forecast of customers: This includes the type of customer to be attracted and the maximum number expected per day, and their turnover.
- Nature of menu-whether fast foods or full meals.
- Timings of the service.
- Staff skills and number required.

- Usage flexibility required: Would the owner or manager want greater flexibility in the use of the space at different times, to adjust to peak or lean seasons.
- Design, shape and area of the space.

From the above, it is apparent that every manager must prioritise criteria or develop new ones to suit particular goals of the organisation, be they long or short term.

MATERIALS

The materials commonly used in food service establishments are food materials, fuel, tableware, linen and cleaning materials. Fuel has been discussed under energy while utilisation of other materials have been briefly outlined.

Food Materials

These vary from perishable fruits and vegetables, water, milk and meat to longer lasting grains, and pulses. In addition, a wide variety of processed, packaged food may be used depending on the nature of the establishment, the menu and establishment policy concerning cooking, serving and buying methods.

When purchasing food materials the points to consider for maximum utility are:

- Buy seasonal foods as they are cheapest in season and also contain maximum flavour, colour and nutrients.
- Consider percentage of edible portion when buying.
- Match quality, variety and the pack of food material to the end use for which it is purchased. For example, the more expensive long grain rice is suitable for those dishes in which the grain of the rice is visible when served and adds to the appearance of the dish. For dishes such as rice puddings or fermented products of rice like idli, and dosa, the cheaper broken rice would give equally good results. It may be argued, that the flavour of long grain rice is better, but this can also be obtained from broken rice of the same aromatic variety. Again, there is no point in buying a bag of 100 kg bread flour when a canteen usually buys bread from the market, making fruit bun only occasionally.
- Match quantity purchased to storage areas and type of storage available. Also buy quantities in relation to the turnover of the food materials, that is its rate of usage.

- Relate purchase lists strictly to the menu and vice versa, especially when perishable commodities are purchased. (Unit 4.)

In general, food materials are best utilised when loss is prevented during receiving, storage, preparation, cooking, service and clearing. Indications of inadequate utilisation are excessive plate waste, insufficient food to meet the demand, excessive leftovers, a drop in demand and so on. Any efforts to prevent these can lead to better utilisation. Even water which is taken for granted needs to be used efficiently. Managers need to be in touch with the latest technology to save this resource. An electronic water tap which has no knobs or pedals is an interesting and useful device¹. It is controlled by a photo cell, and to obtain water, one has just to place hands or other objects under the tap. On removal the water flow stops automatically. The tap is also equipped with mixers to regulate the temperature of the water. Nearly 85 per cent saving in water consumption has been reported by this device. The taps also do not require any maintenance as they do not leak or drip. They are powered by an AC current of 220 volts (V) and 50 Hertz (Hz) and the body is shock proof and fire-resistant.

Linen and Table Ware

The next group of materials needed in food service is table ware such as linen and appointments. Linen includes kitchen cloths, dusters and table linen. The former are required to be sterilised by boiling for half an hour in detergent water, rinsing out the detergent and drying for reuse. Since these cloths need to be changed everyday, the most efficient way to utilise them is to distribute two dusters and a kitchen cloth to each staff member working in kitchens and serving areas, so that they are responsible for them, and use only their own cloths for their work, replacements being necessary only when pieces are put out of use. In larger establishments however, each day's used cloths are centrally laundered and fresh issues made each morning.

Use of table linen however, is fast being replaced by easy clean materials or disposables. Most cafeterias, coffee shops and even restaurants now use plastic coated tablemats, or disposable paper mats, to offset the high laundering costs of linen. In school, college and office lunchrooms tray service eliminates the need for any table mats or linen, the tray acting as the cover for the place setting. In most food services where self service is prevalent, paper napkins are now provided to avoid laundry expenses. However, with the advent of dish and

1. Developed by DPM Electronics of Italy.

linen washing machines, stain removers and instant starches linen is again coming back to the arena of food service.

Cleaning Materials

Cleaning materials are easily wasted especially in large establishments because they are not the focus of attention of supervisors. What is noticed is a clean kitchen, piece of equipment, a surface or a clean plate or table linen. Without doubt use of extra detergent in washing and cleaning will produce a clean effect, but so does using just enough. Excess use is not only damaging to the equipment but also to the bank balance of the establishment. Control in this area, though difficult, is essential. More attention to training people in the use of measures for detergents in terms of cups per sink of water or table-spoon per wash can lead to drastic changes in profitability.

For floor cleaning the caps of detergent containers to a bucket of water is easier for a utility worker to follow than millilitres of phenyl, for instance. Thus, practical methods of control need to be worked out for individual establishments, depending on the methods of cleaning used and the type and volume of cleaning required for utensils, crockery, cutlery, table tops and equipment.

In general, multipurpose cleaners are cheaper to buy and easier to use for a number of different surfaces and utensils, instead of a different detergent for equipment, surfaces, utensils, crockery and so on. At most, two types of detergents and one disinfectant may be used in any establishment.

Cleaning materials also include mopping buckets, mops and brooms. With a greater range being marketed everyday the prices vary a great deal, but utility and not the price should be the criteria for selection. Sometimes cheaper products clean just as well as the more expensive ones, which are priced higher because of higher overhead costs or a trade name. It is therefore wrong policy to relate price to cleaning quality. Any materials or cleaning equipment should be weighted in terms of its useful parts and not the quality of its handle or accessories. The ease of replacement of used parts and durability is also an important feature to be considered. Sometimes the most simple broom and a mop cloth may be the best choice, because they eliminate maintenance costs and time in repair, since they are discarded when worn out and replaced at very low costs, quite easily.

While cleanliness is a vital part of every activity in a food service, sophistication in cleaning equipment should be the least important unless its utility far outweighs its costs of maintenance and storage. Small establishments

with which we are mostly concerned can ill afford the facilities of cleaning firms which are now developing, and would do best to resort to buying simple, easy to use equipment. Also, utility workers employed for cleaning jobs in small establishments are generally low paid, not so literate and are untrained in so far as following written instructions or handling unfamiliar equipment is concerned. Good management therefore, demands that even the so called common sense jobs be demonstrated to staff because they can learn better by imitation rather than through formal methods of communication. This is particularly so with methods of cleaning various types of materials, because among staff who are handling cleaning jobs, common sense is really not so common as is assumed.

The maximum utility of cleaning materials therefore, lies in establishing correct methods of cleaning, choosing simple, familiar, low cost equipment, using multipurpose detergents and avoiding wastage by buying packs in sizes required for a month or more depending on establishment needs, and finally storing well.

EQUIPMENT

The factors for the selection of equipment in relation to individual food service requirements have been dealt with in Chapter 10 and discussed with relevance to optimum utilisation of this resource. It would suffice here to mention that equipment are expensive and if they remain unused for most of the working day in any area of use, they become uneconomic.

Another factor to be considered when investing on equipment is to ensure that its installation and utility outweigh the cost of labour which could be required to do the job if the equipment was not installed.

For maximising use of equipment therefore, its selection must be made on the basis of:

- Lower labour cost.
- Making monotonous jobs quicker and easier.
- Making the environment more clean and attractive.
- Promoting staff morale.
- Providing a means of adding interest to jobs and increasing the avenues for job and staff development.
- Increasing production capacity within the limited spaces available.
- Having multiuse so that the equipment does not lie idle for too long.

Every catering manager must think in terms of modular equipment and mobility to provide flexibility of arrangement and use, to make investment on this resource worthwhile.

STAFF

Food Service establishments being service oriented are totally dependent on the skills and motivations of their staff, and their willingness to make the establishment succeed. No amount of mechanisation can give that personal touch to food which the production staff can, or replace the smile so necessary to lure customers to a food service.

Staff in food service establishments are at various levels of literacy, and possess little to highly specialised skills according to the needs of various tasks involved in food production and service. Getting the most out of people at work, and making their individual tasks and goals fit well into those of the establishment and the requirements of customers is a difficult but challenging job for every manager. This is because people behave and react to situations and other people in many different ways.

Maximum utilisation of staff therefore, depends on a thorough understanding of the needs of people, through establishing an effective communication system.

Staff Motivation

Maslow's need hierarchy is well established as the basis for judging what needs of individuals are satisfied at each level of the organisation and what remain to be fulfilled. Further, studies of the behaviour of people at work in the 60's and 70's led to the formation for Herzberg's 'hygiene-motivation' theory which categorised factors in the environment as *hygiene* factors, responsible for making people at work comfortable, but not motivating them enough to increase their efforts. He classed only those factors as motivators which were related to people's recognition, status and self development and called them *satisfiers*. It is the latter that could in Herzberg's observations, increase productivity. In the 80's, however, Norman MacQueen challenged Herzberg's theory saying *that it least applies to the people management most wants to motivate, that is, those with monotonous, repetitive, uninteresting jobs*. And some jobs in catering precisely fit this description.

While Herzberg's ideas of making jobs more interesting and satisfying in order to motivate people to work better are logical, they apply only to those jobs which can be easily redesigned and enriched. In food service establishments,

the work of the person washing dishes can be thought of as being enriched by the provision of the dish washing machine today, but will this make him perform more or better? He will, in fact, be working less and getting more idle time, perhaps even being demoralised at being gradually made redundant.

There is evidence that many workers do not care whether their jobs are enriched or not, and these are usually the semi- or unskilled workers. Argyris (1953) believed that with time people developed apathy towards jobs and did not expect satisfaction from their work. In fact a number of studies by Dubin and Sundstrom suggest that work is done for money, while pleasures and satisfaction are sought outside the work environment as far as staff at operative levels are concerned. In such cases, to get better performance, more attention of managers would be required to provide equipment which helps to do more in less time, leaving the worker more free time to be trained for better techniques. Further, overtime payments can be reduced, leading to a lower labour cost.

Skilled staff at operative levels, such as, the head cook or chef perhaps find it already satisfying to order people around in the kitchen, show his skills in food preparation and presentation to superiors, customers and so on. Their jobs can be enriched further by providing greater opportunities to show their skills through function catering, in addition to normal routine work. They may also be taught skills of menu planning, maintaining kitchen records, etc. to increase their potential and usefulness.

Managers therefore need to motivate their human resources to an extent that will automatically make people perform their best. They can cash in on the fact that although the higher needs of lower level workers are satisfied mostly outside their work environment, they can still be attached to their work. Managers need therefore to ensure that the basic conditions of comfort are provided at work and an atmosphere created where cordial social interaction is possible while at work or rest. The social factors affecting worker behaviour and attitudes cannot be underrated.

In catering, the two major costs when calculated as percentages of average sales are raw materials and labour. Quoting from a study (Sundstrom, 1978) these amount to 38 and 40 percent respectively, the remaining 22 per cent being distributed between overheads, rent and profit. Such high labour costs indicate that staff productivity is not optimised. In order to utilise people's potential to the maximum, it is imperative to plan every stage of production carefully, in order to minimise idle time of staff. It stands to reason that if people receive ingredients and instructions in time, have the right equipment in working order for the job, have a comfortable working environment, and a

friendly atmosphere, they are likely to do their best. This is, of course, possible only if the staff have the right skills for the job.

Another point which is closely linked with higher productivity and better performance is training of staff to acquire special skills needed to operate new machinery or adapt to change. According to Peter Mitchell (1981) the policy of multiskilling staff instead of making them specialists, increases performance. Apart from using up idle time from one task for doing something else, people equipped with a range of skills also help to breakdown the formal relationships created by a hierarchical organisation structure. Another great advantage is that internal promotions can become the policy if greater motivation to staff is provided to improve their skills, at the same time this would reduce the high rates of labour turnover in the long run, which are known to sap the efficiency in the catering industry.

More often than not, labour turnover is accepted as a norm by some managers, in which case it is a reflection of poor staff management rather than the instability of staff, and their unwillingness to stay on the job. The reasons for staff turnover are indicated in Fig. 5.3. With more attention to the principles of organisation and management therefore, staff turn-over can be reduced and consequently costs and apathy too. Some methods of reducing labour turnover are:

- (i) Good pay.
- (ii) Favourable conditions of work.
- (iii) Demonstrating how each person's work forms a useful component of the total goal.
- (iv) Participation in decisions which affect individual jobs.
- (v) Taking care of people through employee welfare schemes.
- (vi) Creating a sense of belonging.

To get the best out of staff therefore, it is important to:

- Integrate staff goals with organisation goals.
- Develop good relations with people.
- Look for what each person does right and be there to praise him.
- Be understanding, reprimand only when a mistake is made without holding it against the person.
- Establish a good recruitment policy so that staff employed are the staying type. It is common experience that younger people leave jobs quickly and more often than middle-aged people with experience.

- Set and example of expected behaviour, because people learn more easily by imitation. For example, a hard working, punctual and dedicated manager tends to nurture a team of workers who follow the same standards in their work.

Managing staff well means being one with them, and yet not interfering in their work.

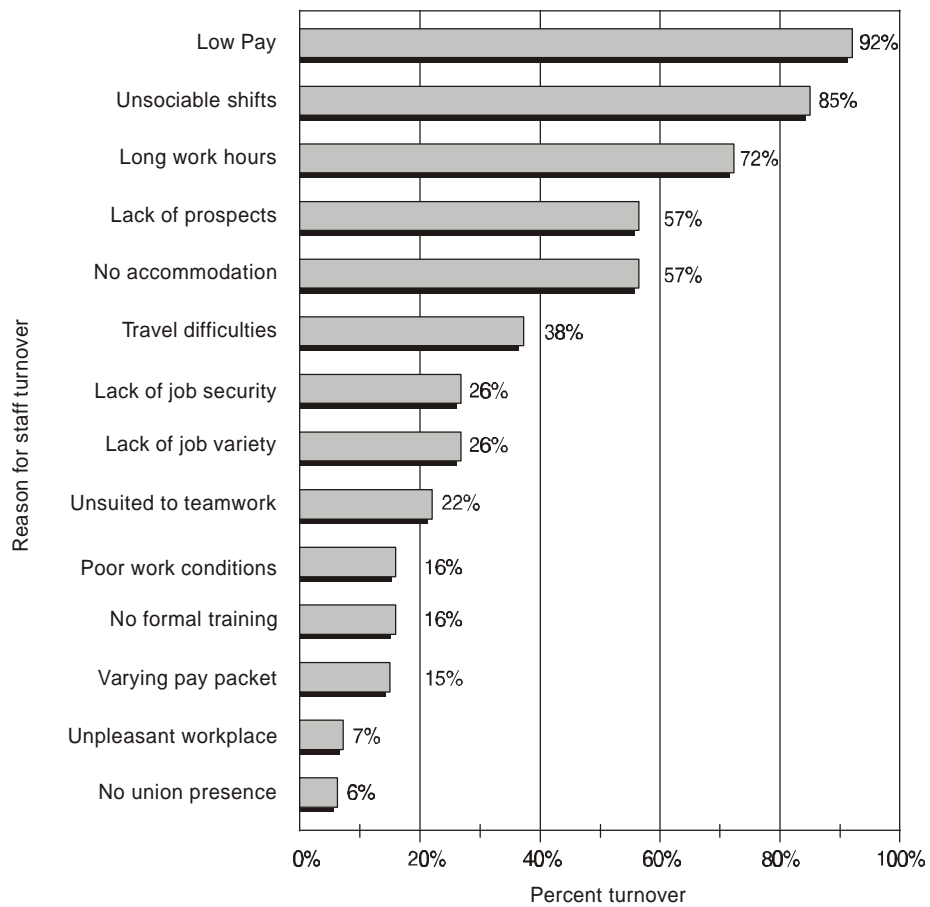


Fig. 5.3 Some causes of staff turnover in food service establishments

It is evident from Fig. 5.3, that the highest turnover is due to low pay which plagues the food service industry. Managers worry a lot more about unionisation of staff which in effect causes the lowest turnover. They neglect the working environment in preference to decor of dining spaces. This lack of a sense of proportion is the start of staff frustration and unrest.

TIME

All work, whatever, its nature, is required to be performed within a given period of time. In the catering field where food has to be served at particular times, the pressures build up for staff in kitchens, service and clearing areas, from time to time. Often managers and supervisors have to work long hours to have plans and schedules for jobs ready in advance to enable work to flow as smoothly as possible.

Because of the peaks and troughs of activity which characterise catering operations, a lot of this valuable resource gets wasted, at different points in the production and service cycle. To avoid this it is important to analyse each person's work to determine how well or otherwise time is being utilised. Philip E. Atkinson (1981) has suggested that a way to collect data on time utilisation is to maintain a diary or *time log* in which details are recorded showing how time was utilised, by whom, what was the desirable result and any comment on the achievement in that time period against what the objectives for the period were. This could be recorded at regular half or one hour intervals. An accurate record helps to focus attention on time periods which were used inadequately and during which useful activities could be performed. If the information has been recorded accurately, an analysis will show the amount of time which may have been spent on:

- (i) Waiting for ingredients, instructions, equipment, maintenance or just looking out of the window between feeding the grating machine and putting the next lot into it.
- (ii) Doing other people's jobs because they are absent, or incapable of handling their work load, or simply because of a friendly gesture to a newcomer.
- (iii) Doing routine non-creative jobs such as feeding potatoes into a peeling or chipping machine.

It is surprising how much can come to the surface if each detail is recorded and analysed. Very often staff time is spent doing things they like to do rather than on what they ought to be doing. Sometimes one person has too much to do while others have idle time because of faulty scheduling.

This may also be due to some people being faster than others at work, but then each person's potential would need to be utilised to the maximum possible.

Managers can thus use analysed information to adjust job distribution or content to minimise idle time, build creativity into work by minimising

routineness of jobs through *job rotation*. This will also enable staff potential in particular job positions to be identified and encouraged.

When there is recorded evidence of time being wasted staff may be involved in presenting suggestions for improvement of time utilisation. It is well worth remembering that if a material resource is only half used, the rest can still be used another time, but time wasted is gone and with it the money spent on it too. This resource must therefore never be wasted. As Benjamin Franklin once said:

... do not squander time for it is the stuff that life is made of. Once time wasting areas have been pinpointed after a thorough analysis of each job, decisions regarding their future use can be made. For the manager these may involve.

- (a) A change in management style if too much control and unnecessary interference in routine activities has led to a disinterested work force who idles away productive time deliberately.
- (b) Delegation of simple tasks giving greater attention to planning and organisation.
- (c) Periodic re-evaluation of goals to eliminate activities which are no more necessary.
- (d) Determining training needs and planning them to train staff when required.
- (e) Making time and activity plans for each type of job, to give a clear idea of what is expected of people on their jobs.

Time is one factor which is equally distributed to all people (24 hours a day) irrespective of their education background, skills and nature of job. But, as Krishnan and Agnihotry (1983) have aptly stated: *... most of us spend the better part of our lives, not knowing where we want to go and the rest of our lives in extricating ourselves from a self-woven web of confusion.*

So a lot of wasted time at operative or production and service levels can be attributed to management inefficiency either in goal setting or communicating goals to people. Fortunately, time analysis is simpler at the physical activity level and conditions can be improved through measurements, recording and analysis, with consequent correction of inefficiencies. But, as one goes to line, middle and top management levels, the physical activity related to production and service is gradually replaced by mental activity and assessing this for time utilisation is not an easy task. In some cases, time seems short because there is no proper delegation of responsibilities, so there is genuinely too much to do in target time. In other cases, it is simply inefficiently used time which would

be corrected to provide greater relaxation, and better output. To maximise utility of time managers need to:

- (a) Set clear-cut goals and plan out work sequences in detail.
- (b) Trust colleagues and delegate work to subordinates.
- (c) Get priorities right so that the most important work is done first and the rest in descending order of importance. This ensures that work which cannot be completed would not matter very much at the end of the day, or could easily be taken up first thing next morning without affecting the work of others.
- (d) Develop an easy management style so that people gain confidence in the plan of action laid out for them. Also any work plan which has the participation of those involved in the work helps better commitment to plans and improved performance in target time.
- (e) Schedule work among employees so that their skills are best utilised.

Much time gets wasted when there is too little to do, too much secrecy leading to an unwillingness to delegate work, fear of making mistakes or wrong decisions, too much unnecessary paper work and its storage, too many interruptions through telephone calls, unscheduled visitors, lack of information and poor communication.

Some causes of time wasting in kitchens and service areas, are:

- (i) Reaching late to work.
- (ii) Not having production plans in advance.
- (iii) Ingredients not requisitioned in time to start work immediately on arrival.
- (iv) Ingredients out of stock because of late ordering or non-availability.
- (v) Equipment not well maintained or not right for the job. For instance, even a small kitchen tool like a kitchen knife, if not sharp enough, will take longer to cut and also require more energy, for cutting meat or vegetables than a well sharpened knife.
- (vi) Conditions of lighting, ventilation temperature and humidity in working areas ignored leading to lethargy and slower movement at work.
- (vii) Improperly planned spaces and work centres.
- (viii) Not enough motivation or drive to work.
- (ix) Some problem within the family either medical, social or psychological affecting work.

- (x) Ignorance of how the job is to be done.
- (xi) Fear of annoying superiors.
- (xii) Laziness as a personality trait.
- (xiii) Autocratic leadership with excessive supervision and interference in the work.
- (xiv) Kitchens too large. Leading to much travel time between work centres.
- (xv) Too many bosses, leading to confusion about what is to be done and how.
- (xvi) Socialising at work, because of lack of loyalty to the organisation or devotion of duty.

Through a critical time analysis of production, service and management styles therefore, it is possible to control time wasting activities, and save this valuable resource for constructive, planned action and achievement.

ENERGY

In any discussion of energy it is important to distinguish between the fuel sources used in food services and human effort (energy). Until recently this resource was available in plenty and people did not even think of saving coal, oil or wood or gas which was commonly used of cooking purposes. In remote areas the powdered coal which remained after the large pieces were used up, was mixed with cowdung made into cakes or balls and sun-dried for lighting kitchen fires. This does indicate that in areas where sources of fuel were in short supply, there was an in built tendency to use every bit of it either as such, or after recycling it. In short, saving sources of energy is a habit more than something that can be taught. Although bringing about a change in attitude towards conservation is more feasible when the supplies are dwindling. It is a fact that people's awareness regarding energy saving gets enhanced when the prices of fuels being used rise beyond their means or when there is none available in the market.

Human Energy

Today the situation is one of high prices, shortages and sometimes even non-availability. This statement holds good for both fuels as well as for catering staff or human effort. Although the latter are available in plenty in the job market, they prefer to choose jobs which requires less effort. This is so also with the people who are educated in colleges and universities who aim at management positions straightway.

A look into areas where human effort may be wasted is worthwhile even though the work of people cannot be so closely and objectively monitored as that of physical structural arrangement and equipment. A brief resume of the factors which may affect the amount of energy people waste at work will help as a guideline for necessary action in any programme involving its conservation. These factors are:

- (a) Ill-planned layouts involving extra movement while working, or strain in the performance of certain actions. (Units 2).
- (b) Uncomfortable working conditions leading to slow movements, and fatigue.
- (c) Poorly scheduled work and time of staff.
- (d) Poor health of employees making them feel rundown, and more prone to frequent sickness and accidents.
- (e) Aggressive behaviour as a personality trait through which a lot of energy which could be utilised productively gets wasted in destructive activity.
- (f) Poor supervision leading to wrong methods of working, using up extra effort and time.
- (g) Emergencies where a lot of energy is wasted in panic, fear and anger.
- (h) Leadership style which generates fear, anxiety and lack of confidence in people at work.

There is no doubt then, that time and energy need to be conserved for efficient use. Time, if lost, never returns although energy can be regenerated but only at the cost of more energy which is required for the purpose. As far as people are concerned labour costs also go up because lost time and energy have to be compensated for by extra man-hours.

Those with no basic education at all tend to be rejected by the industry or are low paid. Therefore, it is a great challenge for food service institutions to utilise the skills of existing staff to the maximum because, skilled persons would be available only at a substantial price if they have to be recruited and selected too often and then trained to suit requirements. Thus, to make full use of our energy resources, it is important to stop wasting them.

Fuel Energy

Every institutional kitchen should have at least two types of fuels for food production and service. This is because if one runs out or fails due to unforeseen

circumstances the other can be used and work can go on without affecting the service.

Liquefied Petroleum Gas

There are basically two types of fuels commonly used in India for purposes food production, liquefied petroleum gas (LPG) and electricity. In small sized establishments at least two gas cylinders are kept, one in use and the other in storage which is manually replaced when the first gets exhausted. In larger establishments where a dozen or more LPG cylinders are needed with in short periods they are all stored, away from the kitchen in a storage space and connected by a regular pipeline through which the fuel is supplied for use. When one cylinder gets exhausted it is switched off and the next one switched on. The empty cylinders can then be replaced by the gas company without causing panic, delays and manual effort in changing empty cylinders one by one. Such an arrangement also makes food production areas safe for the employees, because the storage of an inflammable fuel such as LPG is away from the activity areas.

LPG cylinders are available in three sizes, each suitable for different sized establishments. Vendors who supply freshly cooked or finished products and station themselves on roadsides or market corners use the smallest size containing 2½–3 kg LPG, which lends itself to easy portability on their trolleys. The second size of 8–14 kg LPG is for small to medium scale establishments, and used in kiosks, tea stalls cafeterias to be manually replaced when required. The industrial size of capacity is used by larger catering kitchens, establishments such as hospital or industrial canteens feeding over 1000 customers at a time. These institutions generally use pipeline fuel supplies or have separate storages for LPG cylinders connected by pipe lines to production areas.

Electricity

This is an important fuel for institutional use, for heating equipment such as ovens, bainmarie, trolley and other holding equipment, food warmers, automated equipment, dish washers geysers, cooking tables and the like. modern equipment design also has on offer equipment geared to use both fuels together, such as electric oven and hot plate in addition to gas burners in the same model.

In developing countries like India, which faces shortages or both these fuels from time to time, in addition to progressive price increases, it requires understanding and creativity of food production staff to use the fuels as economically as possible.

Traditional Fuels

Besides the two fuels discussed briefly, the traditional fuels used in rural India even today are solar energy, coal, wood and fuel balls made of coal dust, hay and cow dung. Material managers need to plan simple instructions and hold training sessions for kitchen staff at regular intervals to instill in them, working habits that will optimise fuel use.

Solar Energy and *Biogas* for cooking is now promoted by the energy management centre (Govt. of India) for use in institutional heating. Solar equipment including cookers are being marketed to encourage the increased use of this fuel source in the most sophisticated catering and other in situations to describe solar energy and biogas as fuels the term non-conventional energy sources or alternative source as been used cow dung balls and cakes still dried in the sun for and used a source of energy for cooking in semi urban and rural areas. In addition biogas plants have been set up to waste materials for alternative energy sources.

Maximising use of fuel resources requires a golden rule of *Switching on Savings* and *Switching off wastages* to be followed to the letter. This policy saves at least 15–20% of fuel energy costs. In addition purchasing electrical equipment with energy consumption in mind leads to efficient utility and appreciable energy cost savings.

An indication of good utilisation of fuel is evident from the overhead expenses of an establishment. The first step in any effort to save fuel in kitchens and service areas is to make staff aware of the costs involved, in concrete terms. This can only be done if action is taken to have separate bills for each area. The area of wastage can then be identified and further analysed for points of leakage or careless use. This can then be followed up and methods evolved to prevent the loss. Some ways in which fuel energy is wasted in kitchens are:

- (a) Keeping ovens, stoves or grills switched on much before they are required for use.
- (b) Sometimes cooking range tops are left switched on by mistake when the fuel being burnt is not visible, such as in equipment with solid tops in which a radiant filament is not visible.
- (c) Fuel may be wasted if equipment is lighted for full heat irrespective of the size of the container in which the cooking is done.
- (d) When the temperature of cooking is higher than is necessary for a particular food, wastage takes place. This is also true for extended periods of cooking, which may not be required.

- (e) Foods cooked straight from the freezer without thawing use up more fuel than if thawed in advance.
- (f) Non-seasonal foods take longer to cook and therefore consume more fuel than seasonal vegetables, or tender cuts of meat and so on.
- (g) Methods of cooking involving preparation of food long before the time of service, require food to be held hot for longer periods. Besides affecting food quality fuel bills go up.
- (h) Use of high wattage bulbs in areas where lesser light can suffice.
- (i) Keeping exhaust fans running when kitchens and service areas are not being used.
- (j) Using colours on walls and ceilings, and materials which absorb light instead of reflecting it back for good visibility. This leads to the necessity of providing artificial lighting involving the use of electricity, which could otherwise have been saved.

Once the reasons for the high costs of fuel have been established it is possible to improve the situation and bring down costs to the benefit of both the establishment and the customers. The staff also stand to gain because lower costs and higher productivity mean extra bonuses for them.

So far factors affecting human and fuel energy conservation have been discussed. It is only right to assume therefore that any methods which help to conserve energy of any kind should also help to save time as well, leading to greater efficiency. It would therefore be appropriate to list out the possible ways of saving time and energy in a food service establishment. Some suggestions are:

- (a) Invest in equipment designed to switch off fuel supply automatically when cooking is done. Examples are equipment fitted with automatic timers on which a time period is fixed by the person who prepares the dish.
- (b) Use of thermostats to control temperatures so that higher than necessary temperatures are not used for cooking, holding or storing food.
- (c) Using the right size of pans for the quantities being prepared, so that fuel is not wasted in heating up larger vessels.
- (d) Heating elements and range tops should be switched off when not required. The hot plates may be switched off a few minutes before the food is done as it retains heat for some time after it is turned off. Experience with cooking of various dishes enables kitchen staff to

judge fairly accurately which food will need to be kept on the source of fuel longer than others. It is now possible to manufacture pan sensing devices which automatically switch off the fuel source when the pan is lifted from the cooking range. Similarly warning bells are used to remind staff that a dish in the oven has to be checked. In some cases warning lights may be used.

- (e) Arrangement of work centres to avoid extra movements.
- (f) Efforts to recycle heat given off from kitchens for purposes of raising the temperature of washing water would conserve lot of fuel.
- (g) Arrangement of refrigerators away from kitchens would require less electricity to run them efficiently. Also, condensers of cooling equipment should never face the wall, because the heat released has no outlet and tend to raise the temperature of the environment unduly.

Every establishment may find something to add to this list after evaluating their work areas for resource use, because the factors covered are only guidelines from which to proceed. What is important is the awareness of the fact that resources are always limited, as against wants which are unlimited, and therefore the best way to use resources should be discovered for each individual establishment.

PROCEDURES

Procedures refer to the methods followed in performing tasks. These have already been referred to under *Task Analysis*. In large quantity food production and service, certain techniques need to be developed which make work easier and quicker to perform (Unit 4).

The aim of every food service unit should be to follow correct procedures for every job so that the results may be consistent in terms of quality, quantity and time and energy consumption. Some points to pay special attention to while preparing foods for service are:

- (i) Collect all equipment and ingredients required before starting work to save extra steps.
- (ii) Light burners only after all the ingredients are ready for cooking and pans have been placed in position for heating.
- (iii) Extinguish idle flames at once between cooking one item and another.
- (iv) Once boiling starts reduce the flame to maintain at boiling temperature. This results in a fuel saving of nearly 30 per cent.

- (v) The size of the burner or flame should be proportionate to the utensil placed on it. Smaller burners consume 5–6 per cent less fuel, and should be made use of when preparing small quantities of food.
- (vi) Minimum amount of water should be used for cooking to conserve resources.
- (vii) Soak whole cereals and pulses to soften them before cooking to reduce cooking time and fuel.
- (viii) Soak all used utensils immediately after use for quick and easy cleaning. This procedure reduces the quantity of detergent required as well as effort in cleaning.
- (ix) Coating of undissolved salts on the insides of boiling or steaming equipment increases fuel consumption. A good procedure to follow is to clean such equipment regularly with a scrubber to prevent deposits from accumulating in the equipment.
- (x) When holding foods hot for service, the best procedure to follow is to preheat the holding equipment before placing the foods in the bainmarie or hot case. If hot foods are placed in a cold holding equipment the fall and rise of temperature not only affects the quality of the food, but more fuel is required to reheat the food.
- (xi) Minimising the number of utensils used in cooking saves energy in washing. This can be done by using pressure steamers or cookers, which can be used for processing a number of items one after the other before washing it. This can also be done by cutting fruits, for instance, straight into the bowls in which the fruit salad is going to be served.
- (xii) Use of labour saving devices cuts down on effort if planned properly.

It is clear therefore that effective utilisation of resources is simply a matter of good planning, organisation, control, direction, evaluation, and selfless leadership. Effective management is the result of constant motivation coupled with creativity and innovation in every unit of the organisation.

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Unit 2

Spaces: Planning and Organisation

- **Kitchen Spaces**
- **Storage Spaces**
- **Service Areas**

Space requirements for any institution, small, medium or large are determined by a number of factors such as location of the food service, customer type and numbers, their ages, socio-economic status, occupation, food and eating habits, likes and dislikes and purchasing power. All these factors more often than not reflect people's religious and cultural beliefs and backgrounds. In addition factors such as menus, customer turnover, service style, method and timings of service all affect the type and size of spaces needed.

While keeping the specific goals of establishments in mind spaces must be planned and organised so as to generate maximum profits and at the same time be attractive in appearance and atmosphere to those working in and using the space or area. For some institutions, the kitchen is the sole focus of management attention as in the case of restaurants, cafeterias, kiosks, canteens, where the production and sale of food items is the main goal. For others such as hospitals, hostels, hotels, motels and the like accommodation too generates income in addition to the sale of food. Unfortunately, little attention is paid to planning of food production and serving spaces, which usually get lower priority by managements.

In catering, the maximum utility of an area or space is related to its output in terms of units of sale. These may be single items, meals or events for which a canteen, restaurant or any other food service establishment may cater. Irrespective of the policy of an establishment or its size, flexibility must be built into its planning so that it can be easily updated to meet changing needs.

This unit is devoted to the planning and organisation of spaces in relation to three important areas of catering—the kitchen, stores and service areas.

Chapter 6

Kitchen Spaces

A kitchen is an enclosed space in which edible food materials are brought together, combined and cooked in different ways for consumption. It forms the hub of food production activity in any institutional food service establishment. The space provided is not only planned as a work centre for meal provision, but also acts as the area for social interaction of staff who come together for work, from different cultural and educational backgrounds. The kitchen is therefore, the focal point for cleaning, storing, cutting, peeling, cooking, holding food materials and dishes, washing up, waste clearing and so on. Planning kitchen spaces therefore requires appreciable investment in the form of money for equipment, hiring staff with varied skills, time, energy and other material resources as discussed in chapter 5.

Some institutional kitchens operate round the clock, others keep staff working long hours in both routine and creative jobs. Kitchen spaces therefore require a lot of thought in planning and organisation to make them worth while for the employees in terms of comfort and enjoyment, and for the institution in terms of profitability.

SIZE AND TYPE OF KITCHENS

The size of the kitchen will vary according to the nature and amount of work to be done in it. Usually the space allotted to a kitchen is approximately half that of the dining area, but the ratio varies with the size and type of establishment, and the menu pattern. If kitchen has to service only the adjacent room, its size is usually 40–45% of the dining area. If it provides food to the coffee shop, banquet hall, room service etc as in a large hotel, the kitchen may be as much

as 33% more than the dining area. If a separate bakery shop is provided it is usually 20% of the kitchen area for a coffee shop. The kitchen space allotment is usually 7 sq. ft. (0.64m²) per guest room as it provides quick service. The coffee shop kitchen is usually 1/4th the area of the shop. Thus, the size of the kitchen varies directly with the type of establishment and its service style. In a kiosk, for example, where ready-to-serve snacks are displayed for sale and the only preparation consists of making eggs to order or sandwiches, tea and coffee, the size of the preparation area will be very small compared to the area in a food service, where meals have to be prepared and held hot, or heated before serving.

As a rule, it is good practice to provide a compact arrangement of work tables and equipment so that unnecessary time and effort involved in extra walking, stretching and bending is avoided. As a general guide 2.5m × 3m is sufficient for a single person to work in, while 2.5m × 4m provide comfortable working space for two persons. Every kitchen should also provide at least 9–10m² floor area clear of furniture, fittings and stored goods for every three people working in it. For every additional person an extra 7.5m² would be necessary.

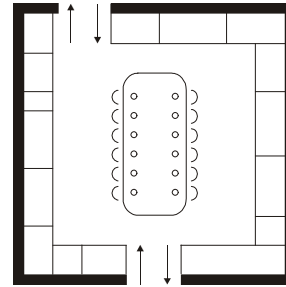
In large canteens, the size and shape of spaces provided for food preparation activity will be affected by the size and type of equipment, their placement, and the kitchen area in relation to the receiving, storage, and service areas. Too large or too small a kitchen space to accommodate the necessary equipment will lead to inefficiency in the use of the space. Too small a space will hinder work because of overcrowding, while too large a space will involve extra walking causing unnecessary fatigue to workers. Most importantly, the high cost of the wasted space will reflect unnecessarily high fixed costs, adversely affecting profitability.

Spaces can be used for a single purpose or adapted to perform a number of functions. For example, the aisle leading to the service area can be utilised for food preparation activity out of service hours, by the use of work surfaces which fit into the aisle walls, when not in use. Initiative is necessary to develop spaces while designing them to promote their usefulness. This is important, especially in the planning of kitchens with very little scope for expansion in terms of measurements.

Kitchens may take different shapes according to how much space is available in a building for the production and service of food, and where this space happens to be is located. Kitchens vary from square, rectangular, U-shaped, L-shaped, parallel to a single or straight line with dimensions varying according to the need of particular catering establishments.

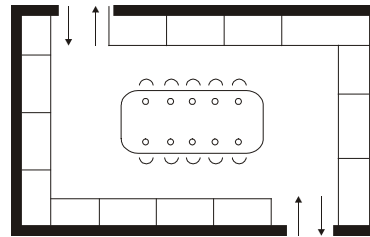
Square Kitchen

The square kitchen is not so common as the distance from one wall to another is more and requires much walking at work. It is also difficult to use the centre space effectively except for an aisle or for odd jobs that may even come in the way of the main cooking and preparation activity. All plumbing, electricity and gas connections are best brought to wall ends rather than having pipes and drains under floors in the centre of the kitchen. If this is done any leaks that may occur will flood the centre of the kitchen making it unhygienic and unsafe, as well as difficult to work in.



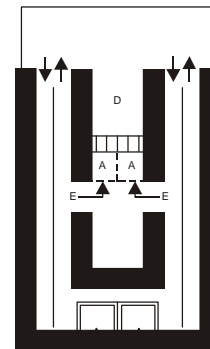
Rectangular Kitchen

Rectangular kitchens are a very common shape in catering establishments, and generally used where a lot of activity is undertaken for most of the day. In large establishments, where many different types of menus are served, and more space is required, rectangular kitchens prove useful. Ample examples can be seen in hospitals, large restaurants and central kitchens.



U-Shaped Kitchen

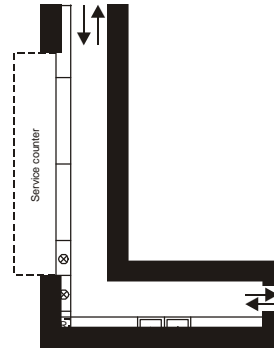
U-shaped kitchens are the most efficient type, being compact and step-saving. Doors are located at the end of the 'U' and the dining area around the three sides of the room. The sink unit is placed in the end-wall, or inside the 'U', with a window over it. There is no chance of criss-crossing in such a plan and work flows easily from one centre to the next. Counters can be fixed to come down on either side and provide additional service space during peak hours, and can be folded back against the walls after service hours.



'AA' indicates wall fixed counters on either side which come up to form an additional counter for service. They toled back into the walls after service hours.

L-Shaped Kitchen

L-shaped kitchens make use of two walls adjoining at right angles. It is an efficient design where floor space is limited. Extra space can be created by use of revolving shelves installed in a cabinet at the base of cooking and sink units. It is a very useful shape for small canteens, kiosks, tea and coffee shops.

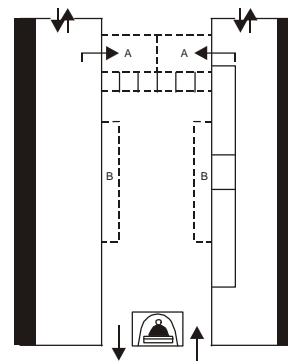


The service counter is fixed such that it folds over the wall on the out side when not in use.

Parallel Kitchen

In parallel kitchens the sides of passages may be utilised while the centre space acts as an aisle. The passage may be slightly screened off on one side for service during peak hours. This sort of plan is best suited to cafeterias of the self service type.

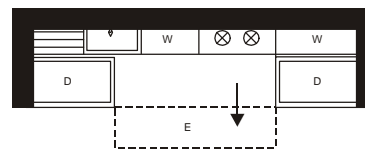
This shape is suitable for midday meals in schools where dining facilities are not possible. The central passages with walls at least 1.2 to 1.5 metres apart can be used for children to squat on mattresses and eat the plated food served. More often children like to eat standing or playing and so carry the food away from the area of service.



'AA' indicates counters while 'BB' are extendable counters opening into the corridor passage during service hours.

Straight-line Kitchen

This is sometimes referred to as an I-shaped kitchen. It is a useful arrangement for kiosks, tea shops, the straight line kitchen or mobile vending units. The extra storage is created on walls or under sinks through cabinets. For service, there is provision for a platform or extended counter outside a window. Window spaces can be shelved and covered with wiremesh shutters to increase display space and protect from flies, while at the same time providing enough ventilation in small spaces.



Extendable Service Counter 'E'

Combination of Shapes

Any of the shapes discussed above can be combined to plan out a kitchen, depending on the space available in a building. Sometimes very different shapes can emerge during the process of renovation or expansion of catering facilities.

In buildings where catering is not the main activity but forms an area that complements the main services such as accommodation, conferencing etc. in hotels, or medical services in hospitals, the space allotted to kitchens is usually what can be spared after the main services are planned. This can lead to unplanned space allocation, ending up with shapes and sizes in which a lot of creativity and innovation is required to make it effectively operational and pleasant to work in.

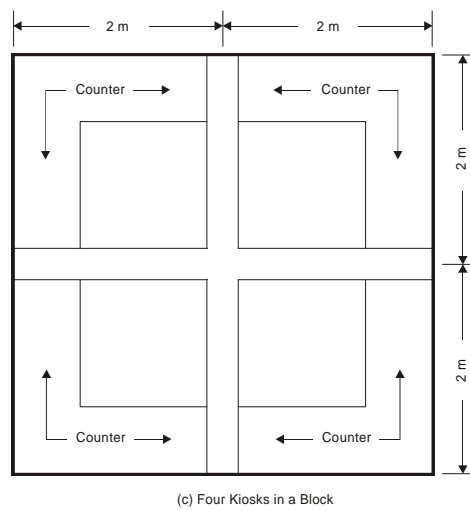
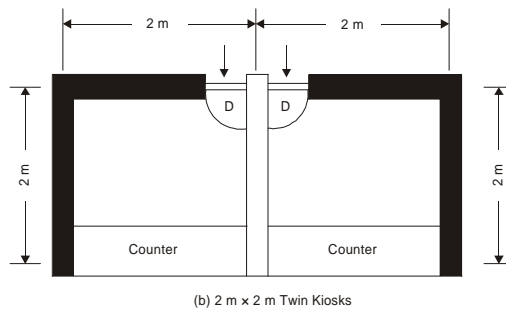
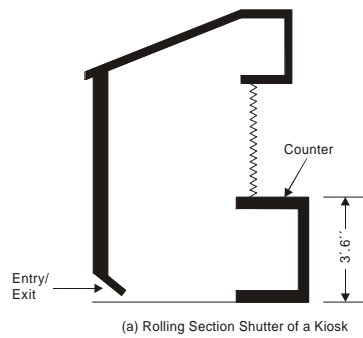
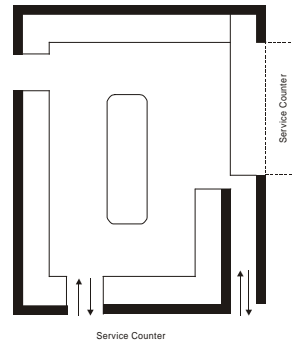


Fig. 6.1

Layout plan for kiosks

DEVELOPING KITCHEN PLANS

Before and kitchen plan can be developed, it is important to follow four main steps:

- Formulate list of activities to be performed.
- Break activities into jobs or tasks.
- Work out the simplest ways of performing the tasks.
- Arrange tasks into sequences for smooth operation.

Step 1: Formulate a list of activities that are to be performed in the kitchen. In the process of scheduling, the activities are organised into a *production cycle* which shows the sequence in which the listed activities are to be performed, and their interrelationships as shown in Fig. 6.2.

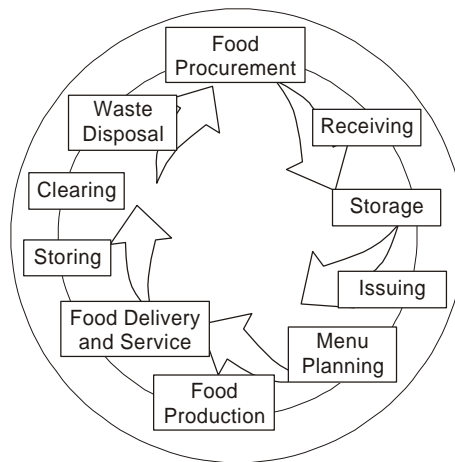


Fig. 6.2 *Food Production and Service cycle*

Step 2: Each part of the production cycle is then broken up into jobs or tasks which need to be performed in a particular order to achieve the objectives of a food service establishment. For example, if the menu for a canteen consists of small cakes, hot and cold beverages, a plated meal and sandwiches, each activity can be broken down into specific tasks for every item on the menu. A sample for small cakes is shown in Table 6.1.

Similarly, the tasks required for preparing hot and cold beverages, sandwiches and meals can be clearly defined.

Step 3: Once the tasks have been defined, one has to think of the simplest ways in which they can be performed.

Table 6.1 Task breakdown for preparation of fairy cakes

Activity	Area of Activity	Tasks
Storage	Stores	Get flour, butter, sugar, eggs, cherries, etc. Collect all equipment required.
Preparation	Kitchen	Sift powdered ingredients together. Cream sugar and butter. Beat eggs and gradually add to the creamed mixture. Pipe or spoon mixture into cases or in cookie trays, placing a piece of cherry in the centre.
Cooking	Kitchen	Bake in preheated oven for 10–20 minutes. Take out of oven and let cool on wire rack.
Serving	Canteen counter	Arrange on tray with cake cover and display for sale.
Washing up	Washing centre	Collect mixing bowls, beaters, spoons and baking trays and wash up. Transfer back to equipment storage till required. Any left over cakes to be placed in refrigerator for the next day.

Step 4: The tasks are then arranged in a sequence so that one task can smoothly follow another to establish what is termed as *work flow* in any operation. In other words, the work planned to be done in a kitchen space flows from one area of activity to another with the least expenditure of time and energy. Fig. 6.3 shows a typical work flow diagram for a catering establishment which can be adapted to create *work flow* sequences for establishments, of various sizes and kinds depending on the number and nature of the activities involved. For instance, in the case of a kiosk serving hot and cold beverages, boiled eggs, and some ready snacks, the work flow diagram will be as shown in Fig. 6.4.

Similarly diagrams can be worked out for canteens, lunchrooms and restaurants. A smooth work flow not only simplifies work, but cuts down wastage of energy and time by reducing confusion and noise in the kitchen.

WORK SIMPLIFICATION

Work can be simplified by viewing the kitchen and its activities from five different aspects namely:

- (a) Work area
- (b) Worker's area of reach
- (c) Work space
- (d) Equipment, materials and supplies, and
- (e) Movements at work.

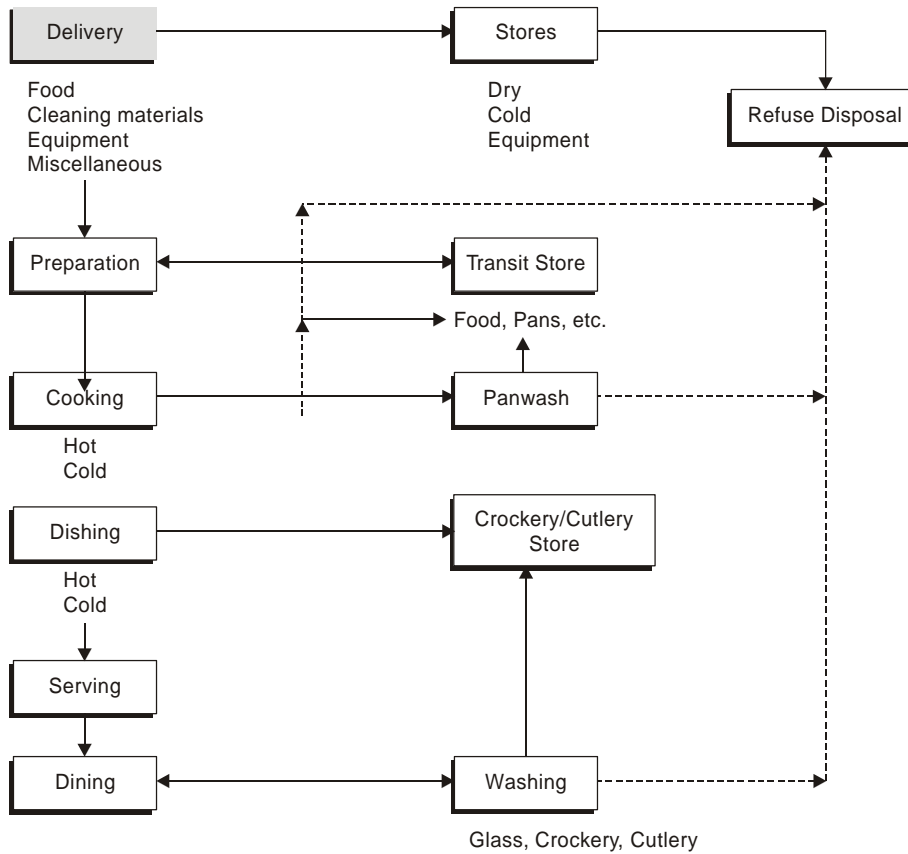


Fig. 6.3 *Work flow diagram of a food service establishment*

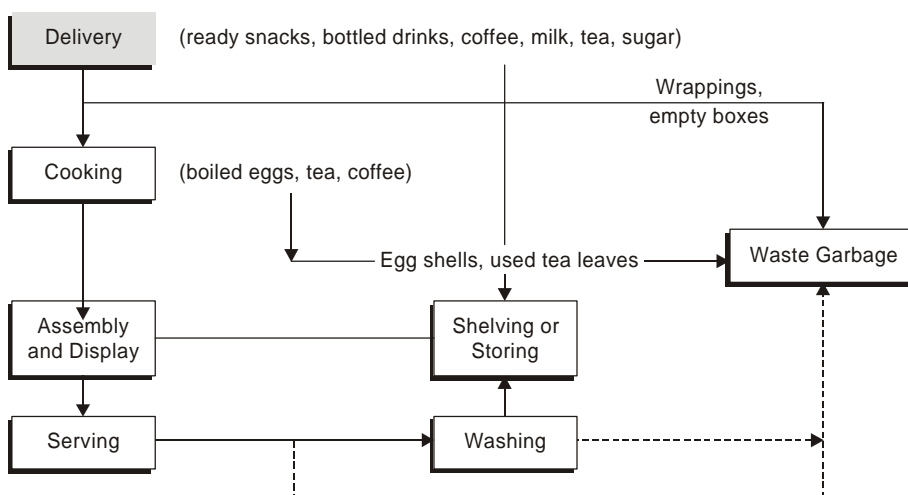


Fig. 6.4 *Work flow diagram for a small canteen*

Work Area

This refers to the area of the work surface, its height from the floor, location of the equipment and materials to be used on the work surface. It is recommended that for a worker performing a task in the standing position, the height of the work surface from the floor should be just below the waist-line, so that there is no need to bend at the waist or hip while performing the task. If the surface is too low, backache and general discomfort will result, and if too high will cause undue muscular strain and fatigue.

Surface heights should also be planned to vary with the nature of the activity. For example, a sink unit top should be higher than a food preparation surface to take into account the need for reaching down to the base of the sink in the former. Likewise gas stoves should be fixed at a lower level than the work surface so that when a cooking pan is placed on it, the contents can be seen and stirred without standing on one's toes. Table 6.2 gives the recommended heights for work centres.

When working in a seated position unnecessary stretching or straining of the neck muscles should be avoided. For comfort, feet should rest flat on the floor, so that an erect posture can be maintained as indicated in Fig. 6.5.

Table 6.2 *Average recommended heights in work areas*

<i>Description</i>	<i>Heights (in cms.)</i>
Height for work surfaces	90
Work surface	85–100
Shelf under work surface	80–95
Sink top	90–100
Bottom of wall units above work top	135
Highest shelf for general use	180
Top of highest unit	225

Considering that the worker may be performing tasks over long periods of time, badly planned work areas will probably result in mental irritability and accidents. Well planned work areas not only provide physical comfort, but also contribute to a sense of psychological and social well-being within the work environment.

Worker's Area of Reach

The body stature and reach characteristics of people directly influence the designing of areas. The area of the work surface is determined by the area of reach of the average worker, in different positions as illustrated through Fig. 6.5.

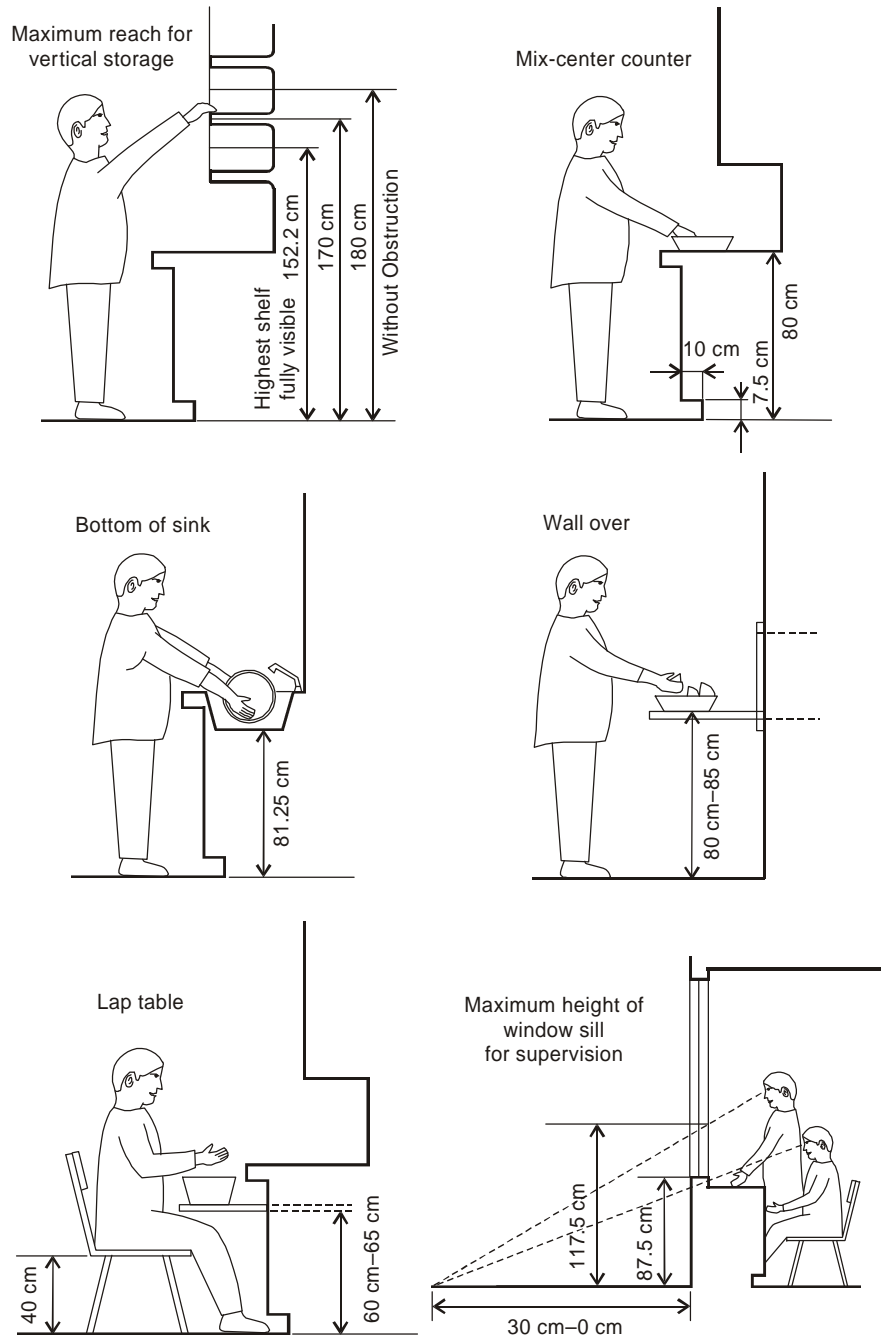


Fig. 6.5 *Comfortable working heights*

The *area of reach* signifies the limits to which a person can stretch his or her hands to grasp materials and equipment, required for an activity as shown in Fig. 6.6. If the arms of a worker are fully extended outward to form a circle on the work surface, the area within the circle is termed as the area of *normal reach*. A worker can reach any object in this area without stretching or moving other parts of the body. It is the most comfortable area of work involving the least amount of energy, and providing the most effective view of materials and actions for a particular job.

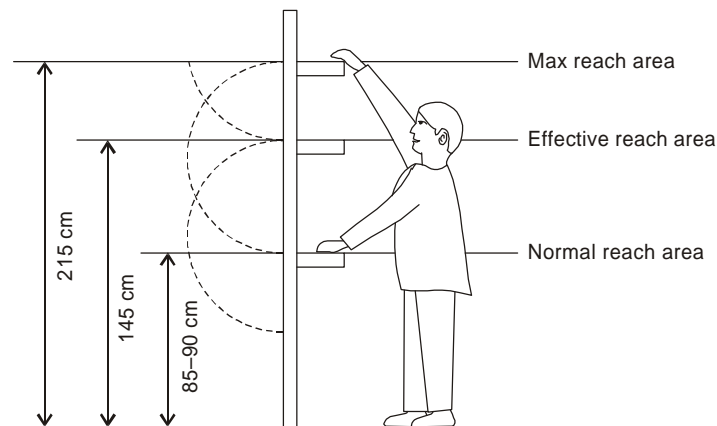


Fig. 6.6 Normal and maximum reach areas

While performing any food preparation activities, items part-prepared should be kept within the *normal reach* area as these will be required soon after to finish the dish. Items which have to be kept aside for 1–2 hours as in the case of soaking pulses and legumes, marinating meats, may be kept in the *effective reach* area whereas, foods or mixtures required to be kept overnight or longer as for fermentation, sprouting, etc. may be stored adequately in the *maximum reach* area.

Movements and Work

One needs to become conscious of how body movements are related to the amount of energy consumed. For this, it is necessary to understand that the body has been designed so that its weight is evenly distributed over the legs. When working in any position standing or seated, the centre of gravity of the body is disturbed. This causes unequal distribution of weight on the legs resulting in extra energy consumption to maintain the body position. If the balance is continuously disturbed in any activity, muscles get tired, and fatigue sets in.

For all positions at work therefore, one must keep the body in physical balance, i.e. maintain correct posture to enhance comfort and conserve energy. In addition, the muscles of the body are so arranged that the large muscles occur at those points in the body which are meant to take up maximum strain. With this in mind, the largest muscle in the part of the body moved, should be brought into operation whenever an action is performed. This fact is realised when we observe that some jobs are tiring for some people and not for others, this is because some people waste their energy because of wrong postures and therefore less energy is available for the job, which consequently does not get completed as best as possible and in the shortest possible time. Developing the art of muscle coordination to perform work with a tireless rhythm may require a conscious effort, but it is worthwhile making it till it becomes a habit—the habit of *not getting tired* at work.

Work Space

The amount of space available for work is important for completing tasks efficiently. The space should be large enough to place all the materials and equipment required, as well as allow for movement at work. In addition, extra space is necessary for placing completed parts of the work which need to be kept aside till required again. For example, in making a salad, a number of vegetables or fruits may need to be cut and kept aside, away from the area of normal reach, which would be needed for the preparation of the salad dressing. Finally, all the parts of the salad would have to be put together before being served.

Insufficient work space will involve extra movements in trying to go elsewhere to put away the partly or fully completed work and come back to the next activity. The work space should also allow for the keeping aside of used and unused equipment, away from the food in process. This can be done by using shelf space and areas under tables intelligently, as shown in Fig. 6.7.

Equipment, Materials and Supplies

Equipment, materials and supplies, all have to be considered in relation to the physical structure of the kitchen and the persons using them. Their placement, suitability, quality and quantity, all determine how simple any work can be made. This awareness helps to establish plans that are economical in terms of human effort, time and other valuable resources.



Fig. 6.7 Effective use of partition for storage

Any materials, supplies or equipment in regular use should be placed within the maximum reach zone, because activity is concentrated in the zone of normal reach. Shelves may be located within these zones for items which are used occasionally. This helps to increase the space within the work area. The normal and maximum reach zones are important in organising work centres, if one remembers that reaching for an item by stretching upward is less strenuous than reaching outwards or downwards. Therefore heavier items are better kept on upper shelves.

The energy used at work greatly depends on two basic factors, namely location of equipment and the manner in which it is stored.

- (i) *Location of equipment in the work area:* Certain equipment may be better placed within easy reach rather than stored in cupboards. For example, blender fixed in a work centre requires much less effort to operate when needed than one which has to be removed from a cupboard every time a food item needs to be blended.

A detailed description of the placement and use of equipment of various types appears in Unit 3.

- (ii) *Manner in which it is stored:* Equipment may be stored in a variety of ways. They may be kept in their boxes after each use, depending on the frequency with which they are required; covered with

weatherproof covers or left uncovered. The manner of storing will determine whether a piece of equipment requires cleaning before each use or not. In tropical countries particularly, where weather conditions change so often from dusty to rainy to dry, and temperatures are conducive to harbouring cockroaches, insects and flies, attention in terms of a lot of time and energy is required for cleaning. As far as possible, equipment should be kept ready for use in the normal reach zone, along with other ingredients and supplies used frequently to complete any task efficiently.

A good kitchen plan is one which achieves the maximum output from a given set of inputs. This can only be done if people at work are conscious of the need to reduce time and effort in performing a task. In the context of kitchen planning therefore, conserving space, time and energy are vital to the efficiency and profitability of any catering organisation. Establishing exact area allowances however, is a complex process based on experience and institution rather than only on set rules. Table 6.3 gives some idea of the allowances that can be made for kitchen and storage areas for various types of food services.

Table 6.3 *Estimated kitchen area allowances (m²)*

<i>Food Service Type</i>	<i>Meals produced per hour</i>				
	<i>200 or less</i>	<i>200–400</i>	<i>400–800</i>	<i>800–1200</i>	<i>1200–1500</i>
Cafeteria	0.79–0.40	0.46–0.38	0.38–0.32	0.32–0.28	0.28–0.18
Canteen	0.70–0.46	0.37–0.28	0.32–0.19	0.28–0.19	0.23–0.16
Educational	0.37–0.30	0.31–0.20	0.28–0.19	0.23–0.15	0.19–0.15
Hospital	1.70–0.42	1.10–0.42	1.0–0.42	0.90–0.37	0.74–0.37
Hotel	1.70–0.38	0.70–0.28	0.56–0.26	0.37–0.28	0.37–0.15
Restaurant	0.09–0.38	0.46–0.33	0.46–0.33	0.46–0.28	0.40–0.28
Snack bar	0.70–0.19	0.19–0.14	0.19–0.14	—	—

The above values are based on space allowances when modern equipment economic storage and efficient working practices are used. (Stewart, 1985). It will be noticed from Table 6.3 that the space allowances decrease with the increase in the number of meals produced per hour in every facility. The rate of decrease however, is not the same in every type of food service establishment, since this depends a lot on the menu type and mix, as well as rate of customer turnover. Where no values are given under snack bar, it means that this kind of facility is designed to serve not more than 800 mini meals or food items per hour.

DESIGNING KITCHENS

Designing kitchens involves a number of steps starting with collecting information about the physical, operational and financial aspects of the space in which production of food is to be carried out.

Physical Aspects

These include location, structural details, the layout, storage spaces, services available and required, access to sources of supply, staff and customers, and other local requirements with respect to planning, environmental health, fire and other safety concerns.

Location

This refers to the exact position of the kitchen in relation to the rest of the building. As far as possible, the kitchen should be adjacent to the service area, and preferably in one corner of a building, in a North-West or South-East direction. According to the *Shilpa Shastra* however, the oldest known, construction manual, the kitchen should be located in a south-east direction. The placement direction for internal structures for stoves, doors, windows etc. is also mentioned (Puri, 1995). This provides two side walls for windows and free access to air and natural light. A corner location also makes it accessible by road for purposes of receiving supplies and removal of kitchen wastes. The kitchen should be situated overground to avoid flooding, drainage backflow and unnecessary expenses on artificial lighting and ventilation. In basement areas, the humidity and heat of kitchens also make them prone to dampness and infestation.

Structural Features

These include drainage, electricity, gas connections, and water supply systems. These are generally provided for before the equipment is installed, although ideally, according to Alcock ... *the kitchen structure should be built around the equipment and services*. Other features include the design and finish of floors, walls, ceilings, and work surfaces, followed by lighting and ventilation. Last, but not the least, the structure must be safe, and provide hygienic and sanitary conditions for those who work in it.

Drainage: The efficiency of the drainage system determines the hygiene and sanitation of the kitchen environment to a large extent. Poor drainage further leads to contamination of food with dire consequences. Problems can arise in

drainage areas when fat gets collected in the drains and the flow through them is restricted. All kitchens should therefore be fitted with grease traps on all drainage inlets to prevent backflow or blockage. Taking care of this aspect of drainage during the layout planning, can prevent unnecessary expenses in clearing blocked drains during the course of operation of the catering establishment. Drains should be at least 10–15 cm in diameter.

Electricity and Gas connections: Electricity and gas points to be provided in a kitchen must coincide with the plan of equipment in the kitchen and future plans for use. Therefore, once the placement of work centres is established and a list of equipment to be used at each centre formulated, the number of gas and electricity connections required can be determined.

Depending on the size of the catering unit the requirements may vary from one power point and two light points as in the case of a kiosk, to three power and four light points, as in the case of a cafeteria kitchen, which may require to use a refrigerator, a mixer, and a juicer, in addition to lighting the area of display for food and dining. For larger kitchens, it is safer and more economical to have a pipeline gas supply which is metered as in the case of electricity, thus avoiding the inconvenience of gas cylinders getting empty in the middle of food preparation activity. Gas cylinders may be used by very small establishments where the menu does not feature many cooked items. For such establishments it would suffice to provide an inlet from the cylinder to the work top to be positioned correctly for use. Cabinets must be designed below the work surface to place the cylinder out of sight and away from the source of heat and dirt. Gadgets are now available in the market which when fixed on cylinders can indicate the amount of fuel in them, so that a replacement can be had before it is completely exhausted.

All pipeline arrangements or wiring should preferably be concealed in the walls, flooring or ceilings. Any unconcealed sections must be properly insulated and earthed, both for economy and safety. It is wise to make provision for more than one type of fuel in any kitchen to cope with failures and shortages.

Water Supply: In large kitchens provision for both hot and cold running water is necessary and has to be made at the structural stage. For smaller kitchens, arrangements for fitting a water heater above sink units may be sufficient, whereas in kiosks and coffee shops provision for the installation of instant water heaters connected with the normal plumbing is quite effective.

All water supply into kitchens must be from purified sources. Non-purified sources may be used only to wash out swillbins. Overhead waterpipes should

be avoided as they collect dirt and cause water of condensation to drop on the work areas. All pipes should preferably be concealed. Where storage tanks are necessary, they should be covered and easy to clean periodically.

Separate provision for drinking water is necessary where the public supply is not satisfactory, as in most tropical climates.

Floors: Kitchen flooring should be smooth but not slippery, hardwearing, free from joints, not easily damaged by spillage, easy to clean, and preferably in dark plain colours which do not show patches easily. Choice should also take into account appearance and durability.

There are a number of flooring materials available on the market. It is good policy to avoid any type of tiles as they require a number of joints which are not easy to clean out. A comparison of different floor coverings indicating suitability appears in Table 6.4.

Walls: Hard plaster with an emulsion finish is the most suitable as it is without joints, smooth, easy to clean, and does not harbour dirt. Ordinary emulsion paints are not washable, and removing marks or stains leaves the wall smudgy. Gloss paints are washable, but tend to show faults in old plaster work. In areas where the wall is near steam equipment, a plastic finish is better than tiles, as it is not absorbent and the condensation from steam does not damage the surface. Enamel and oil paints are also hardwearing. A particular type of finish cannot be specified for a kitchen because the manager of the kitchen must decide what properties should be given priority. Each wall covering has its own plus and minus points. Whatever the choice, the walls should be smooth, easy to clean, and impervious to moisture.

Ceilings: Any finish on ceilings should be heat resistant and not affected by steam or gases. A plaster paint finish is most suitable, though it requires frequent redoing. Gloss paints, on ceilings, however, cause condensation and affect humidity in the kitchen, making conditions of work uncomfortable, as also unhygienic. If one can afford them, acoustical ceilings are important for absorbing kitchen noise.

In general, while choosing finishes for walls, floors and ceilings it would help to remember that dark colours reduce the level of illumination and affect the visibility in kitchens. It is also a good policy to invest on quality for long-lasting effects.

Table 6.4 *Comparison of different floor finishes*

<i>Flooring</i>	<i>Description and Suitability</i>
Vinyl	Sheets are better than tiles for the reason given above.
Plastic	This material is less hard wearing, gets soft with heat, and is therefore unsuitable for kitchens.
Rubber	Sheet rubber is easily damaged by spillage, which is a common feature in kitchens. It also gets easily cut with the movements of trolleys or the falling of sharp tools, and is therefore not generally recommended. Rubber which is ribbed, studded or patterned is quite hard wearing, and suitable for flooring. May be used effectively where a lot of mobile equipment is not installed, and moved around.
Linoleum	This is smooth and easy to clean, stands wear and tear well. Linoleum is also available in a number of colours and patterns. Dark plain colours are preferable as they do not show patches easily, but at the same time any spillage is visible and should promptly be cleared up.
Floor Finishes	A number of floor finishes are available which render the surface easy to clean, make it non-corrosive to the action of mild acids and alkalis generally used in the kitchen.
Terrazo	This floor covering is expensive, but good.
Tiles	Many types of tiles are available in the market. The non-inflammable ones may be considered for use in kitchens where finishing of foods is the major activity. The only disadvantage is that they crack easily and need to be replaced frequently. The disadvantage of using tiles in general has been pointed out. Tiles are available in cork, terracotta marble, mosaic, ceramic or vinyl ranging in size from 6–16 square inches, and even metal for use on ceilings, to cover steam hoods, walls etc.
Bricks	Well laid bricks to give a smooth surface to floors can provide good kitchen flooring because they have a pleasant colour and a natural look, are hard wearing, quite comfortable to the feet.
PVC duck board	Flexible board, non slippery, reduces noise and provides more comfort than a hard flooring. The flooring is impervious to oils, grease, acids and alkalis, and is easy to cut and instal.

Work Surfaces

All work surfaces should be hardwearing, smooth and impervious. Stainless steel is by far the best among work surfaces in the kitchen, though the initial cost is much higher than that of any other surface finish. Work surfaces can be

covered with laminated plastics, hardwood or ceramic tiles, with certain sections in marble or stainless steel, to reduce the cost. Laminated plastics are quite easy to maintain and not very costly, but they need to be inspected at regular intervals and replaced if they begin to lift at places. Hardwood work surfaces are a possibility but would need a lacquered finish to be practical in an institutional kitchen. They also get easily stained and marked and are expensive to instal and maintain.

Marble though expensive is ideal as a work surface for food preparation work, because of its hard wearing and hygienic qualities as well as beauty. It is, however, impractical for small establishments, which may at most, invest in simulated marble for purposes of food preparation activity, which is also a very practical work surface.

No surface however, can be protected from knife marks, and therefore a separate wooden surface or board is essential in any work area where sharp implements need to be used. Figures 6.8 and 6.9 indicate the minimum counter width dimensions and the clearances that need to be provided for comfortable working at counters and between cooking ranges and sink areas with different kitchen layouts.

Lighting

Kitchen lighting should be designed purely to give the best illumination. In addition to overall lighting, fittings need to be placed directly above work tables and food preparation areas. Sometimes hoods placed above cookers may interfere with the placement of light fittings. Many types of lighting are available for use in institutional kitchens, such as fluorescent, filament and mercury lamps.

Fluorescent Lamps: Fluorescent lighting is more economical to use than filament lamps, because even though the initial cost is more, its maintenance cost is lower. Fluorescent lighting lasts almost six times as much as filament lighting, and gives three to six times more illumination for the same electricity consumption. Some fluorescent models available have been illustrated in Fig. 6.10, and many others are marketed with and without covers.

The colour effects of fluorescent lighting is correlated to the colour temperature. High efficiency fluorescent tubes reaching a temperature of 3000 to 4300 K do not give particularly good colour effects, and are not recommended for use in kitchens, dining or storage areas where the colour of the food could be masked. Those tubes with lower light output are better for their colour rendering properties, and therefore more suitable.

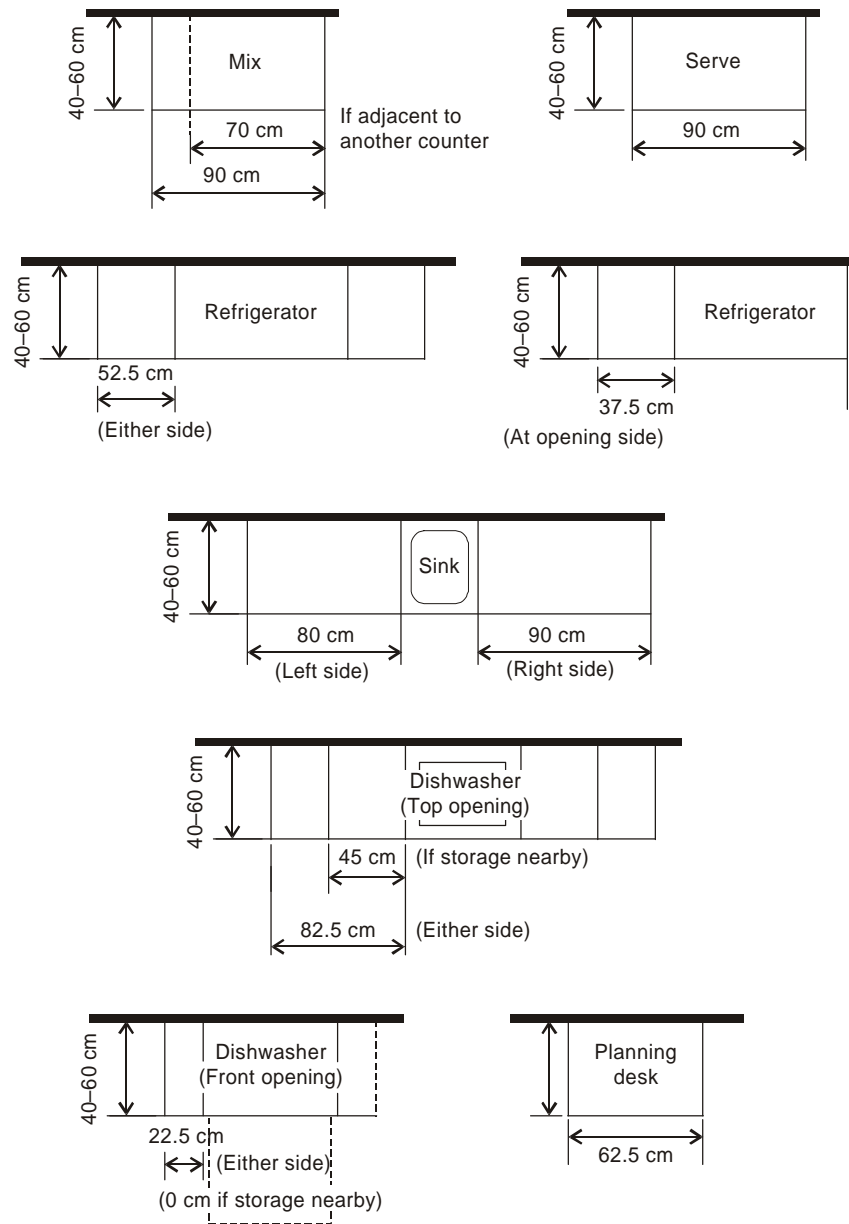


Fig. 6.8 *Minimum counter width dimensions*

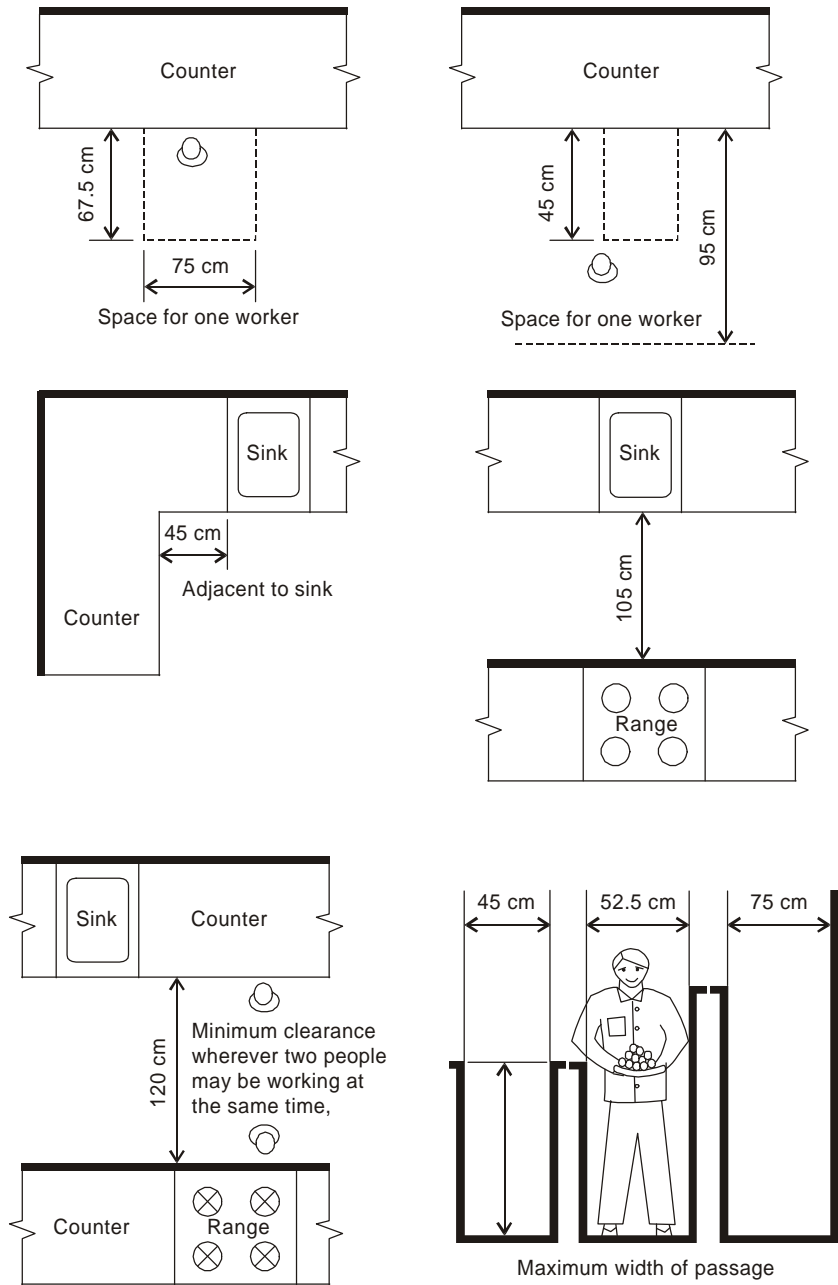


Fig. 6.9 Clearances for comfortable working at counters, ranges and sinks

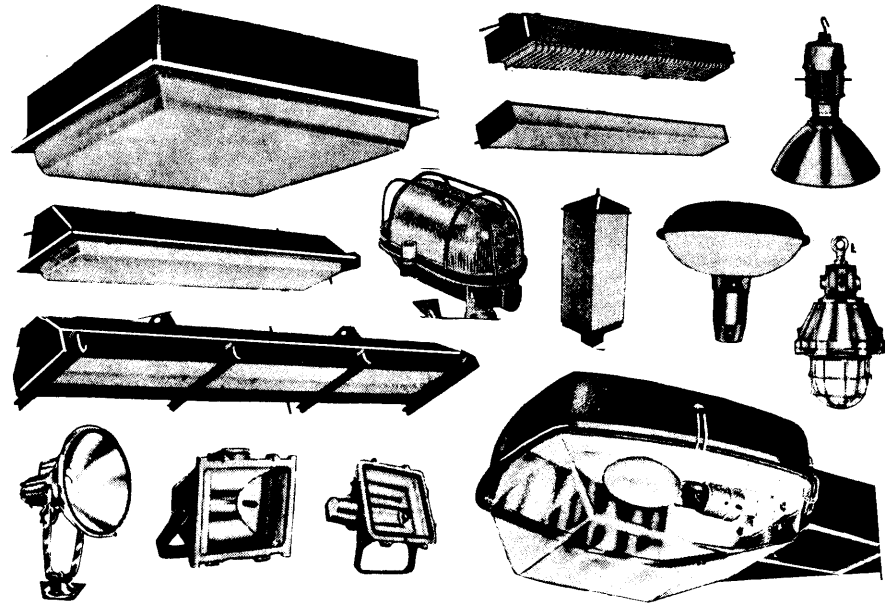


Fig. 6.10 *Types of fluorescent lighting (Courtesy: Bajaj Luminaries)*

Mercury Lamps: Mercury lamps may be used in kitchens, and are available in ranges of 80 to 400 watts capacity. The colour, appearance, illumination and life are approximately equal to white fluorescent tube lamps. Enclosed fittings give diffused light, provide greater comfort to the eye, and can also be fixed to false ceilings. The seal protects the lamp from moisture and dirt and is also easier to clean.

Thirty watts of lighting is recommended per square metre of floor area if fluorescent lights are used. If filament lamps are preferred, 80 watts per square metre area would be necessary. The illumination recommended for performing a task is 500 lux. The mounting height should not be less than 2.4 metres above the floor, and the fittings not more than 2.2 metres apart. Additional lighting is necessary under steam canopies, and any lighting equipment used should be of rustproof material and able to withstand moisture and heat.

All fittings need to be arranged over work surfaces and not behind the workers. Strip lights should be parallel to the surfaces and not at right angles to prevent a shadow falling onto work surfaces. Light fittings should be totally enclosed, water proof and easy to clean.

Ventilation

Ventilation in kitchens is very important to prevent the process of condensation on equipment, food and surfaces. Condensation leads to formation of mold and bacteria, resulting in contamination of food. Good ventilation helps to replace oxygen used by workers during respiration, and sets up a current of fresh air which drives out kitchen odours and fumes through suitable outlets provided. It also eliminates excessive heat from the cooking environment, regulating the temperature and making it more comfortable to work in. Therefore sufficient attentions needs to be paid to good ventilation and lighting in food preparation and service areas as it is vital to the preparation and provision of safe food, and through it the safety of the customers.

The modes of ventilation in kitchens are windows, vapour extractor hoods and exhaust fans. While they provide an inlet for fresh air, they also open the kitchen to insects, flies and dust so they are not totally sufficient as a means of ventilation. To be useful, windows need to be fitted with fly-proof shutters which not only keep out the flies but also prevent draughts from affecting the kitchen work.

Vapour extractor hoods are generally fitted over cooking equipment, and have proved very effective in removing fumes, vapours and odours from kitchens. If these hoods are further fitted with grease-trap filters, the risk of fire through condensation of fat within the hood duct is minimised. A number of models are now available for use in small kitchens too.

Exhaust fans are fitted near the ceiling in the walls. They are designed to suck out the air from kitchens, which then gets replaced with fresh air from inlets placed in positions for the purpose. The area is wiremeshed on the outside to make it fly proof. Usually no method of ventilation is used singly, but in combination they are very effective especially in large kitchens where many people work together at one time. In small kitchens the window or ventilator in combination with any one other device would be enough.

Whatever be the mode of lighting and ventilation selected for a kitchen or the nature of its other structural features, it is important to keep in mind that the kitchen environment should be made as bright and cheerful as possible. Colours like blue, beige and cream are cool to the eye, and counteract the feeling of heat in kitchens. Light colours also give better visibility, while equipment and furniture of natural colour adds to visual comfort. A harmonious environment is stimulating and helps to bring out the best in people in terms of skill, creativity and therefore productivity.

Designing for Safety

In the process of designing kitchens it is vital to make provision for safety through installation of fire-fighting equipment and emergency exits, placed at convenient points with reference to work areas which carry a high fire hazard potential, such as in cooking areas and electrical danger zones. In small establishments it may mean only one fire extinguisher, but nevertheless the awareness of its need is essential. Also alarm systems need to be incorporated while designing kitchens.

Designing for safety includes food safety principles which require to be followed in planning, to enable food materials in process or while handling to reach in a wholesome state to the consumer. Proceeding procedures should ensure that no cross-contamination occurs through back flows of food or excessive handling. Food must move from one centre to another only in a single direction and not back and forward at any point. Although the guest or customer rarely sees what goes on at the back of the dining spaces, their planning is the most crucial part for ensuring safety.

A good plan also provides air circulation and staff movement patterns that promote both physical and physiological safety through tight controls. The plan needs also to establish, a smooth flow in the area of garbage removal to minimize the time for which waste materials stay in the kitchen or near service areas. More details regarding the safety in catering establishments have been discussed in Unit 7.

LAYOUT OF KITCHEN SPACES

The term *layout* means the positioning of work centres and their arrangement with respect to equipment and necessary services like drainage, water and fuel supply in the kitchen. Planning layouts requires knowledge and expertise in four different areas.

Management and administration of kitchen: While it is not always necessary for a manager to be a food specialist he must possess the ability to view the kitchen in terms of functional efficiency, as far as meeting objectives of the catering establishment are concerned. It is also important for the administrator to be able to identify resources and restraints or limiting factors, and to make policy and other strategic decisions.

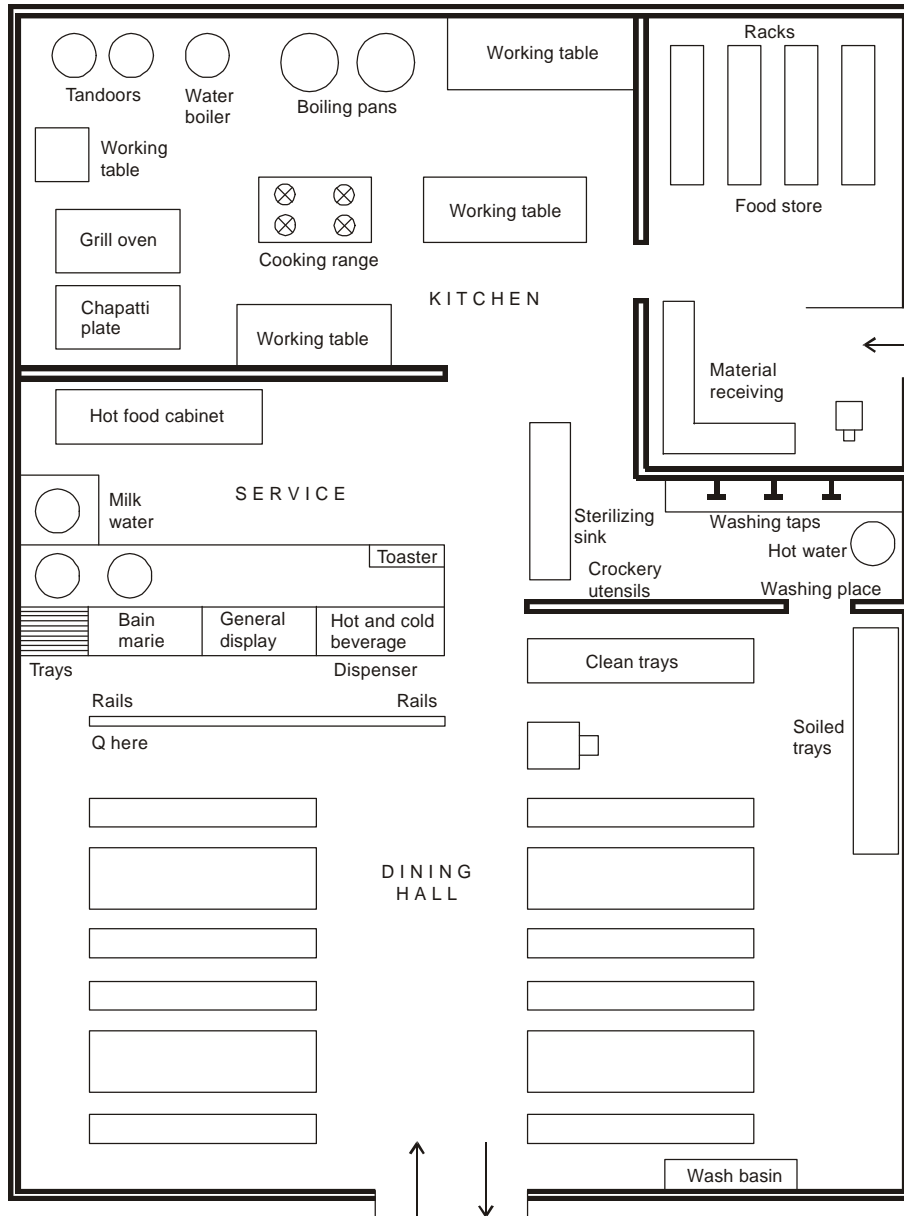


Fig. 6.11 Layout plan showing preparation, service areas of an institutional food service

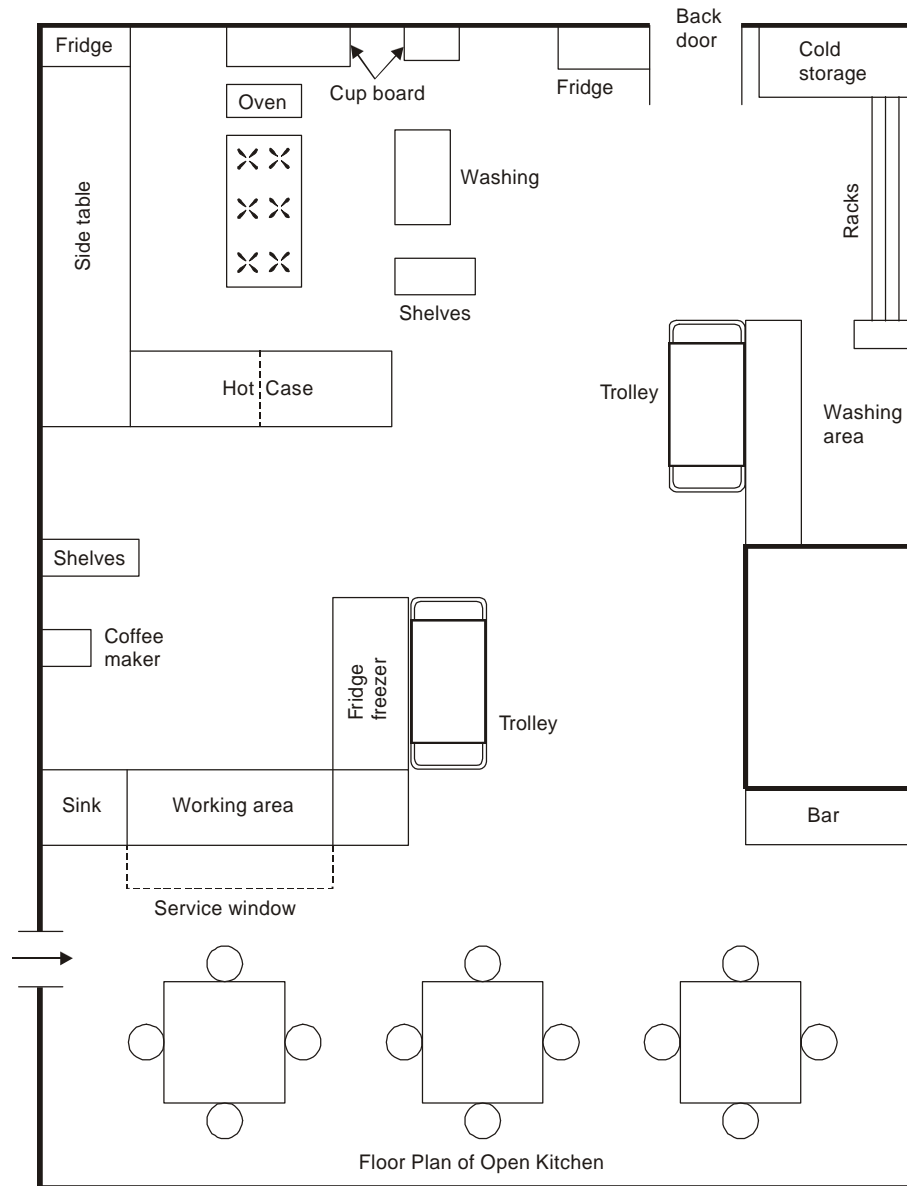


Fig. 6.12 *Plan of a coffee shop*

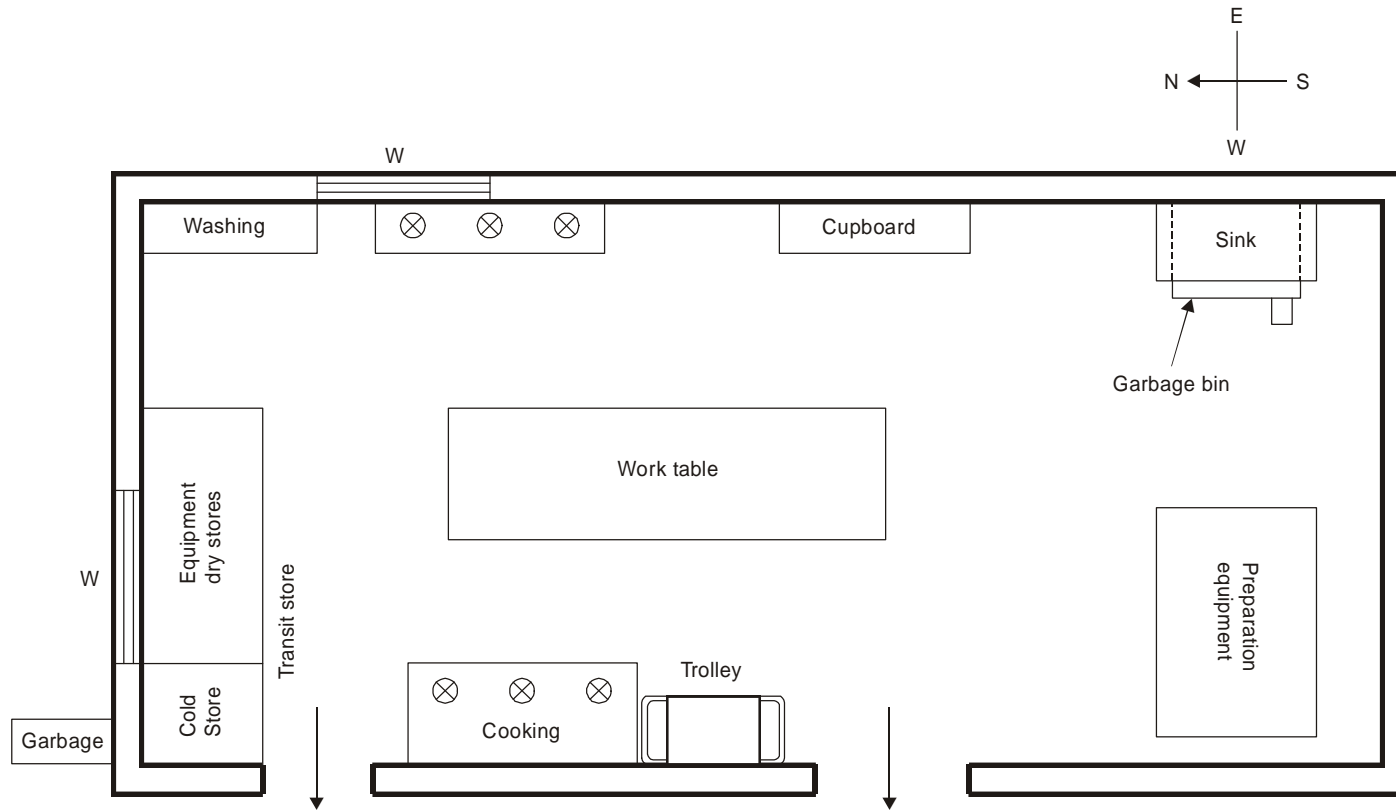


Fig. 6.13 An institutional kitchen facing East-West

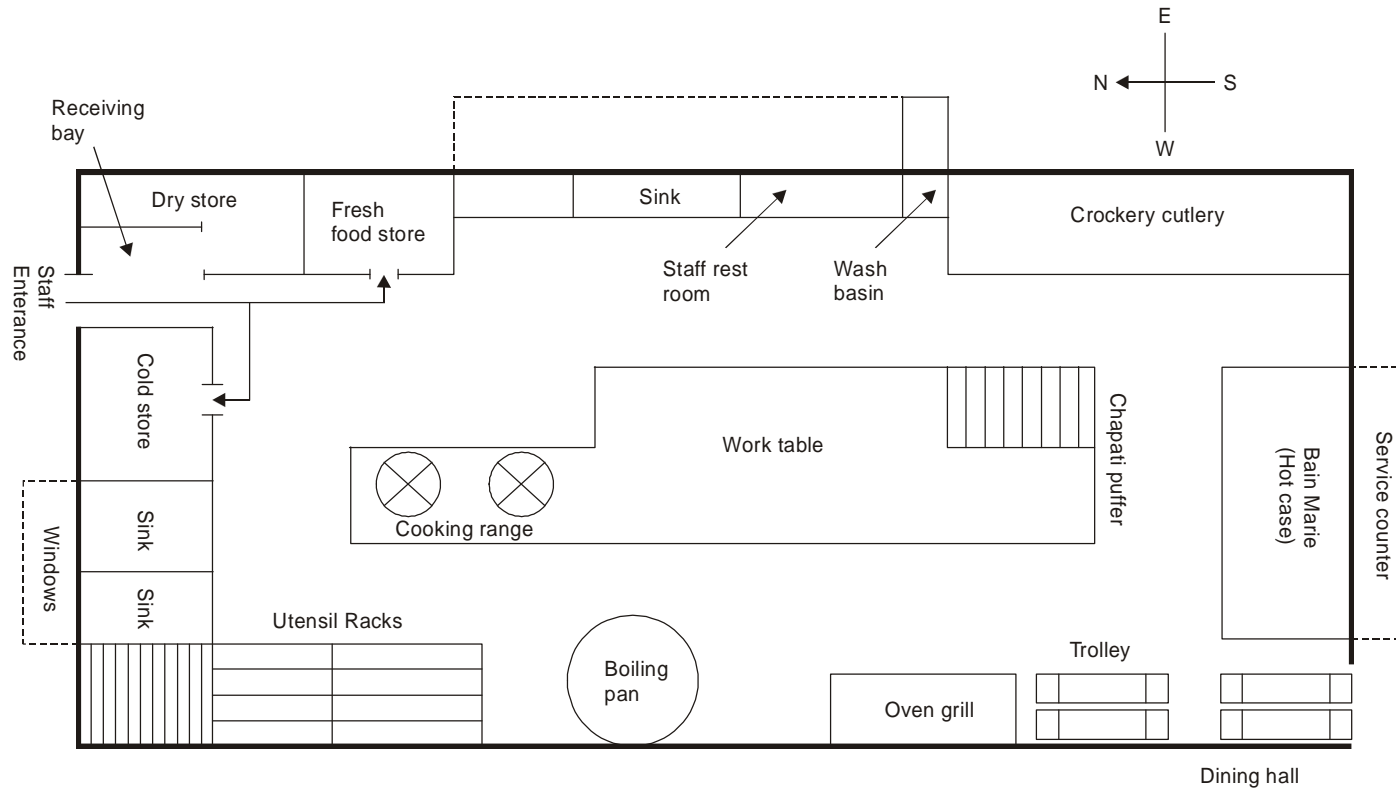


Fig. 6.14 *Layout plan for hotel kitchen*

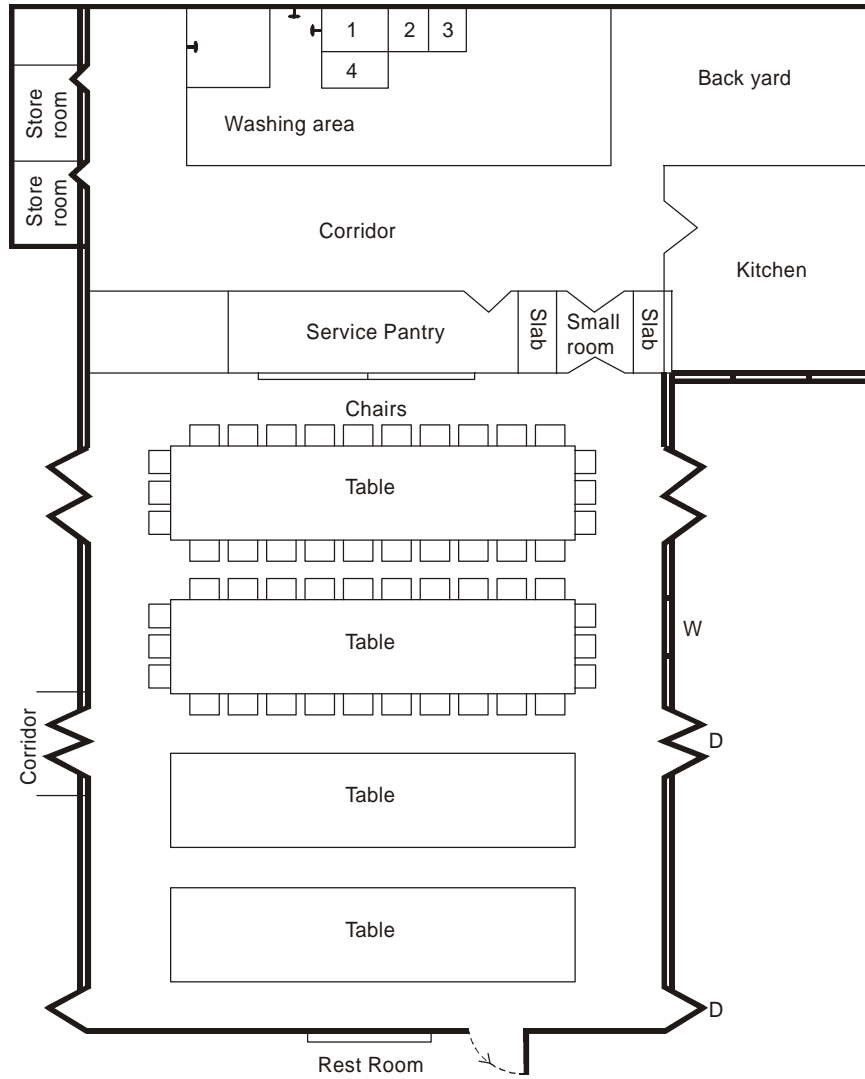


Fig. 6.15 *Layout of food service unit of Malviya Hostel, New Delhi*

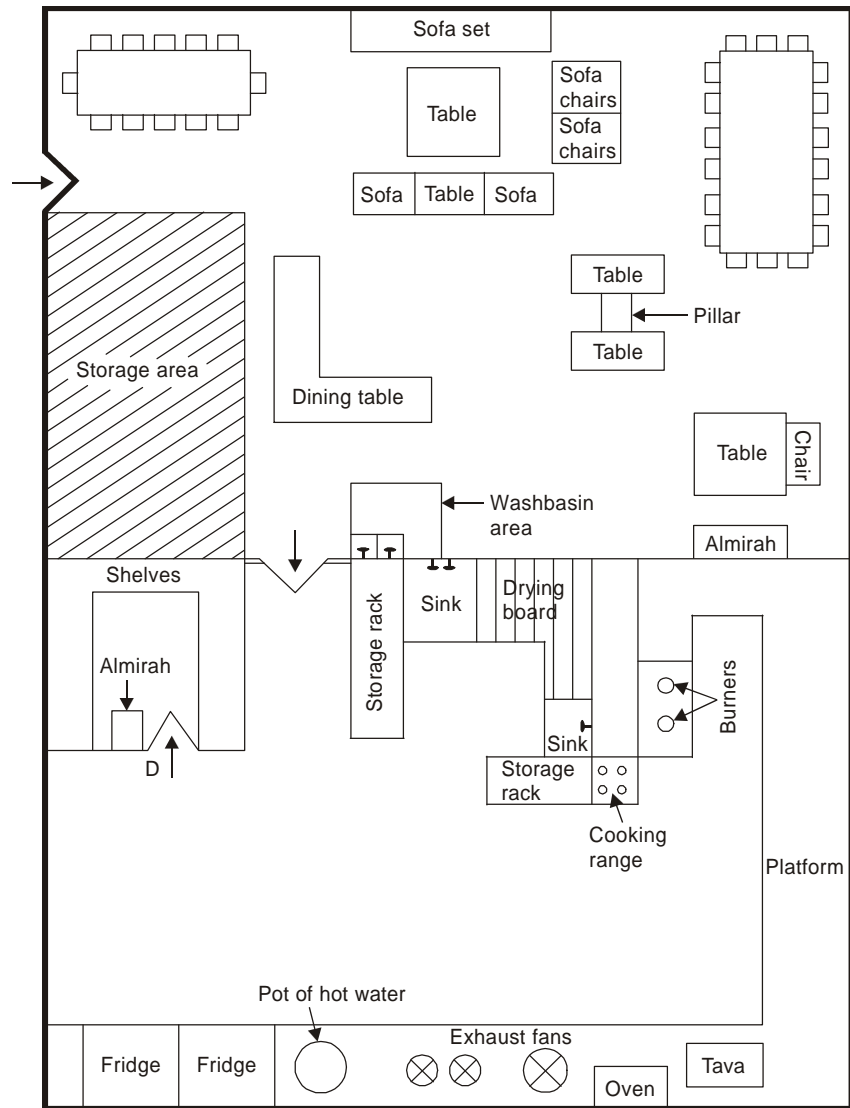


Fig. 6.16 *Layout of RBI canteen*

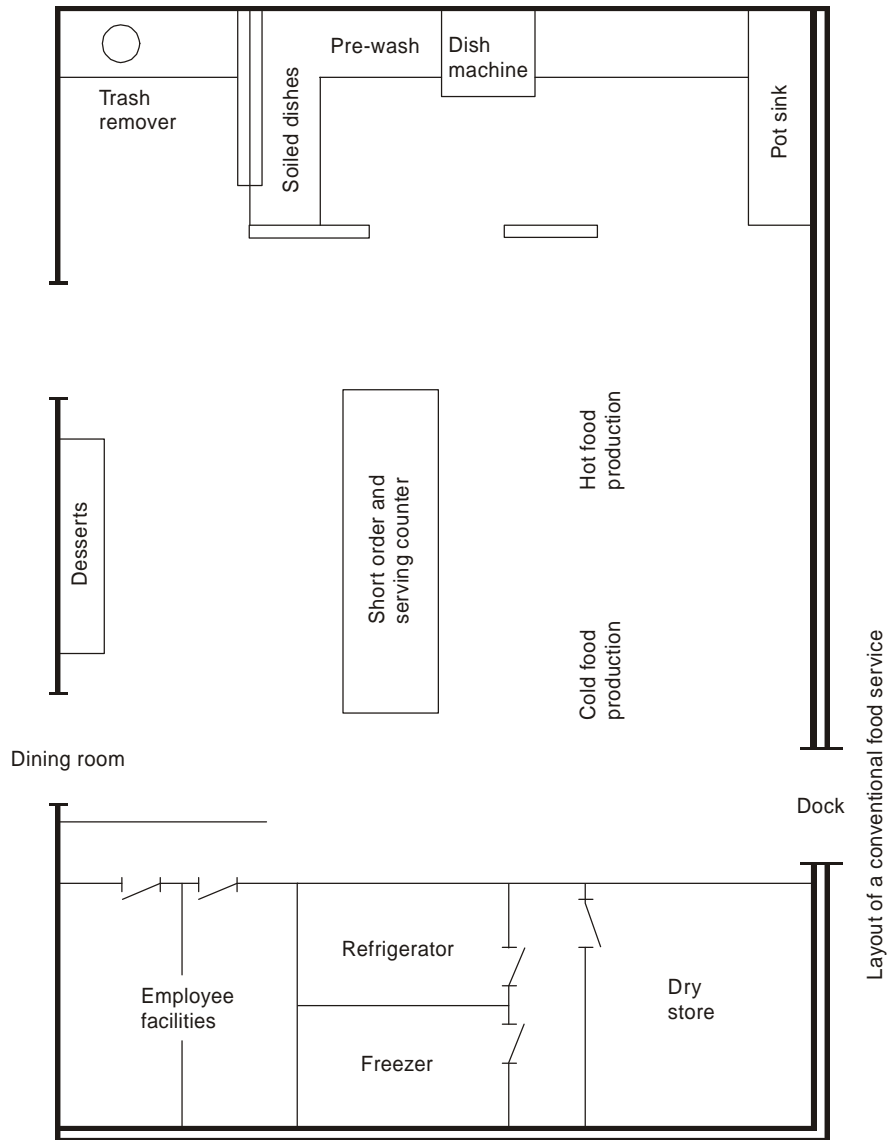


Fig. 6.17 Island plan for a hospital kitchen

The plans indicated through Figs 6.11–6.17 show the basic layout of spaces in different shapes and sizes of kitchens. Equipment placement would only be possible after consideration of the uses for which the space is going to be laid out, and the degree of flexibility desired by managers.

Operation: The expert in this field must be able to present essential data accurately, completely, and in an easily understandable form and therefore, has to be a food specialist because he has to approve the plan in the end on behalf of the users. The food service manager must therefore play an active role in the planning of layouts, because the direction of the food preparation and service activities within the layout are purely his responsibility. The plan in question would prove more practical if kitchen staff were involved in the decisions regarding the areas which they would finally use.

Architecture: The expertise of an architect is vital to the planning of any layout because he can translate the requirements of the food service manager into plan drawings which the structural engineers can interpret.

Construction and design engineering: Expert advice is necessary on construction features, timing of contracts and desirable building materials, in terms of providing the facility with structures and equipment which conform to standards laid down for safety of users. Very often it becomes necessary to change a fancy architectural plan because it is not feasible as far as the extension of local amenities to the building are concerned, such as the provision of extra lines for drainage, electricity load, telephones and so on.

WORK CENTRES IN THE KITCHEN LAYOUT

The work centres in a kitchen layout should be positioned with four basic concepts in mind smooth work flow, avoidance of congestion at work tables and sinks; comfortable work environment, and hygienic and sanitary conditions.

Smooth work flow: Smooth work flow in a kitchen can be easily managed if the sequence of activities to be performed is clearly marked out. On the basis of the work flow principles and the production cycle, work centres can be established for each production activity.

The main work centres in an institutional kitchen are:

- (a) Preparation centre for meat, fish and poultry.
- (b) Preparation centre for vegetables and fruits.
- (c) Cooking centre.
- (d) Holding, service or dishing-out centre.
- (e) Washing up or sink centre.

In addition to the above centres for food production, it is important to design kitchens layouts with separate hand-washing facilities for staff at strategic

points, such as the entrance to the kitchen and in between the preparation and cooking centres. Work in both these centres requires the use of such facilities frequently during the process of working. Depending on the size of the kitchen and its layout plan, hand wash basins should be fixed where they need to be used the most depending on the activity involved.

Avoidance of Congestion at Work tables and Sinks: Congestion in kitchens may result from any one or more of the following:

- (a) Faulty design or work centre planning and improper placement of major equipment. While designing kitchens, it is important to keep in mind the movement of workers in and around work centres with a view to avoid unnecessary congestion. An allowance of 3.5–4 m² floor space per person is adequate, with a minimum of 11.25 m² if ceiling is less than 3m.
- (b) Improper scheduling of work and timings of performance. It is important that all different jobs are coordinated in a manner such the people are busy enough, yet do not get into each others way.
- (c) Over utilisation of certain pieces of equipment resulting in congestion at that point. In such cases it is necessary to ensure a balance in the use of all equipment, through adjustment of menus or purchase or new equipment.
- (d) Very often a frustrated workforce comes together informally, around a group leader at a particular centre. In such cases, supervisors have to work towards raising the morale of the work force, and creating an atmosphere where each person performs his work happily and with a sense of dedication.
- (e) Congestion may also be due to overstaffing or a lot of people visiting kitchen staff from outside. A check on unnecessary traffic by restricting entry of outsiders during working hours could alleviate this problem. In addition, the risk of contamination from outside would be avoided.

Provision of a comfortable work environment: Comfort is one of the basic needs of staff in the kitchen, and involves factors which will help to produce the maximum work with the least fatigue. A number of factors contribute to comfortable working conditions:

- (a) ***Temperature and humidity of the environment:*** It is not so easy to control temperature and humidity directly in the kitchen, as this area is subjected to heat production in various ways such as through

production and emission of steam and fumes in cooking, radiation from visible heating elements or indirect heat from appliances. To add to this is the heat produced by the normal respiration of people working in the kitchen. So while it is not easy to control temperature and humidity in kitchen, an attempt can be made by provision of efficient extractor hoods over cooking areas where steam and fumes are generated and proper ventilation through exhaust fans which can make the environment more comfortable by setting up fresh currents of air in the kitchen without making it draughty. A temperature of 18° C to 20° C and humidity of 60 per cent is recommended for comfort.

- (b) *Structural features:* The structural features with respect to working heights, floors, ceilings and walls fittings and furniture have already been discussed in detail. It will suffice to state briefly that all structural features should aim at providing comfort at work, eliminating strain fatigue and tension, imparting a feeling of safety, security and harmony among people.
- (c) *Kitchen decor:* The décor of the kitchen should provide a feeling of spaciousness, brightness, relaxation and enjoyment at work. The greatest contributory factor to such feelings is colour. White or light colours make the environment feel clean, bright and efficient. Use of a single colour helps to create a feeling of greater space. White combined with natural wood or green can brighten up a dark north facing kitchen. Blue gives a happy, fresh and clean appearance. Too many colours should be avoided, not only because they give a congested feeling, but also because they withdraw attention from the colourful food and ingredients handled in the kitchen.
- (d) *Relationship of people at work:* With all the above factors taken care of a work environment may still be uncomfortable if the atmosphere in the kitchen is tense or hostile. It is therefore very important to create harmonious relationship among people at work, and between them and their superiors. It is therefore in the interest of management to provide an environment which is not only physically comfortable, but also mentally and socially harmonious.
- (e) *Hygiene and sanitation:* In the designing of any layout, hygiene and sanitation must be among the guiding principles, since the space in question is to be used for preparing and serving food to people. The consequences of bad hygiene and sanitation are discussed in Unit 7.

Here it will suffice to emphasize that an awareness of this aspect in the planning of spaces will go a long way in safeguarding the health of people working in those spaces, as well as that of the customers.

For successful layout planning it would be useful to remember that:

- The placement of equipment in centres should allow plenty of space around them for cleaning.
- Units built into walls help to save space in small kitchens.
- Free standing equipment rather than that placed flat on the floor is more hygienic. Sometimes in restricted spaces mobile equipment is useful not only for cleaning but to make the layout more flexible to suit the needs of the establishment at different times.
- An island layout is easier to clean and work in. with the work tables placed against the walls, between sinks, ovens and stoves and machines in the centre of the kitchen, they become easily accessible to all individuals working at different centres.
- Wet preparation and cooking units near external walls avoid drainage pipes passing through the kitchen.
- Walls and floorings should not have sharp turns and all areas should be visible to people when they are walking.
- Traffic lines used by staff should not converge, criss-cross or diverge widely.
- Layouts should ensure that food is not handled repeatedly. It should flow in a single direction. It is preferable to set up separate raw and prepared food areas to prevent any backward flow of food, as this causes partly processed food to come into contact with raw cut food subjecting it to the danger of cross-contamination.

In addition, plans should account for the provision of employee restrooms with washing and toilets facilities, built in lockers for keeping their street clothes and valuables while at work in their uniforms or working clothes.

STORAGE IN KITCHENS

Storage facilities at every work centre in the kitchen are necessary for keeping small equipment, utensils, crockery, cutlery, daily-use food ingredients, pots, pans, ladles, knives and kitchen-cloths.

The storage provided can take the form of built-in wall cupboards, covered bins for storage of relatively non perishable ingredients such as pulses, cereals,

sugar as well as bins provided for collection of waste materials. The latter are usually placed in clearing areas or just outside kitchens from where they are emptied by staff of local authorities in charge of waste management. These may be fixed inside cabinet doors or on the underside of work tables. Whatever may be the manner of providing storage in kitchens, a few guidelines are important.

- (a) The storage in each work centre should be suited to the kind of equipment and materials used regularly each day.
- (b) Storage must provide orderliness, cleanliness and easy access to items when required.
- (c) They should be insect and rodent proof to ensure food safety.

In food preparation and cooking centres, it would be apt to provide drawers on work tables for keeping kitchen cloths, chopping boards, knives, ladles, tongs, etc. along with cabinets for pots, pans bowls, and also some shelves for flavourings, condiments and spices. In addition, at the washing-up centres there would be need for slatted shelves for drying up washed pots and pans, racks for plates and drainers for cutlery. Below the sink, space will need to be covered to provide storage for cleaning materials, sponges, brushes and mops. Initiative is necessary to maximise the use of spaces, especially in restricted areas. Whatever the design of the storages, all food in store should be covered to protect it against dust, fumes and insects.

In large food service institutions a separate room may be allocated for storage of food bins and other ingredients from which the kitchen staff can draw at any time. This makes for more efficient functioning as the main stores usually issue only once a day against authorised requisition slips. Such a store is called a *transit store* and usually has built in shelves, refrigerated storage for fresh *perishables* for all common daily use ingredients.

MAINTENANCE OF KITCHENS

Maintenance of kitchens is essential to ensure the wholesomeness of foods prepared and thus guarantee safety of all who consume it. For any catering establishment, a schedule for kitchen maintenance is essential, irrespective of its size. A sample schedule is given in Table 6.5.

It is important to follow maintenance procedures for heavy equipment according to the manufacturer's instructions.

Table 6.5 *Maintenance schedule for a kitchen*

<i>Area of Activity</i>	<i>Maintenance Schedule</i>
(a) Floors	Wash and mop dry daily.
(b) Walls	Those above sinks and basins should be washed daily and others twice a week or weekly as necessary.
(c) Ceilings	Clean ceilings and corners between walls twice a week to prevent the formation of cob webs or accumulation of dirt or grease.
(d) Work surfaces	Inspect once a week to see if laminates are lifting at places, or edges stripping off. If so, call for immediate replacement. Renew as often as necessary.
(e) Windows and doors	Dust daily, wet cleaning twice a week.
(f) Lights, fans and other fittings	Clean once a week.
(g) Equipment	Light and movable, daily cleaning. Sanitize parts which come in contact with food, daily. Heavy, twice a week. Follow procedure according to manufacturer's instructions.
(h) Drainage	Grease traps should be properly emptied and cleaned at regular intervals before refitting.

Any number of kitchen layout plans are possible according to what people find convenient or easier to work in, number of customers expected and their requirements.¹

These layout plans are by no means ideal, as the locations for ventilation and lighting, equipment, waste bins, or outlets, hand washing facilities, fuel stove or gas store location, staff restrooms and washing facilities out side the kitchens have not been indicated in all of them. No perfect plan can be illustrated since the requirements and facilities provided by every institution vary according to their management, operational and financial policies.

The structural features of kitchen designing have been dealt with in detail. The operational and financial aspects are briefly outlined as follows:

OPERATIONAL FEATURES

As the term indicates operations covers those aspects which would directly influence the production activities or operation of the kitchen such as, purchasing and storage, production and service, staffing in terms of numbers, skills and working hours and other features related to time and energy requirements,

hygiene and sanitation aspects, communication systems, security and so on. Irrespective of the location of the establishment, the space allotments are however, little affected for operational purposes.

FINANCIAL ASPECTS

The physical and operational constraints need to be considered while allocating funds to each section. The essential components of financial information are operational life, cash budget and pay back period. Since kitchens are high investment areas in terms of financial allocations for each area of activity, detailed information becomes increasingly important for formulation of budgets. Often compromises have to be made to adjust the operational and physical criteria and bring it in line with the economic reality of a strict budget.

While the physical and financial aspects are objective in nature and can be measured easily and sorted out in terms of placement in the design quite easily, the operational aspects are more complex because of the subjectivity attached to them. Research is therefore required into the policies to be set up for purchasing, receiving and storage, production and service, cleaning and waste management, staff and office facilities, whether the activities should be centralized or decentralized. This would in turn establish the degree of off site preparation, menus, sales mix, preparation and service system desired, waste management procedures and a host of decisions regarding staff and customers which cannot completely be forecasted accurately.

The space designer's objective is to get complete and accurate information about the above aspects at an early stage before the space is actually designed even on paper. Therefore, all concerned even vaguely, should be consulted and any differences of opinion which would necessarily arise sorted out amicably.

All the information collected is then documented into what is called a design report which serves as a means of communication and coordination as the designing progresses to a plan or blueprint. A layout drawing now identifies the position of each equipment in the different areas and then other details get filled in to design each work centre within the space allocating the relevant services like electrical, plumbing, finishes and others that may be necessary for operations.

In long term designing of kitchen spaces it is important to keep simplicity, operating efficiency and flexibility in mind. Careful design and coordination will always produce a solution to a servicing problem when it arises, without compromising operations within the kitchen space. This plan or design is then implemented and built up to form an operational kitchen.

Chapter 7

Storage Spaces

Storage involves arranging goods in specified areas within spaces earmarked for particular materials, till they are required for use by the production, service or other departments. It consists of the complete process of receiving and handling materials, and checking them for quality and quantity against orders placed and issuing them to various departments against requests made through requisition slips. Unfortunately receiving, handling and storage food do not receive serious attention especially in small to medium sized establishments, and this attitude can seriously affect efficiency of any operation.

In any catering establishment, the manner in which food, equipment and cleaning materials are stored till used, is of utmost importance considering that 40 to 60 per cent of the costs in any operation are incurred on them. Well-planned storage spaces help to prevent losses of food and materials through spoilage, spillage, pilferage or breakage all of which can erode the profits of an organisation substantially.

SPACE ALLOCATION

Spaces allocated for storages depend on three basic factors.

- Nature of foods and other materials to be stored.
- Quantities in which they are stored.
- Length of time for which they are stored before use.

Nature of Foods

Storage spaces need to be worked out according to the degree of perishability of the foods to be stored, and the time period involved.

Depending on the speed with foods spoil, they are classified as perishable semi-perishable and non-perishable, each type requiring different types of storage conditions. These have to be kept in mind at the time of planning storages. Table 7.1 shows some commonly used foods classified according to their perishability.

Table 7.1 Food classified according to their perishability at room temperature

<i>Perishable</i>	<i>Semi-Perishable</i>	<i>Non-Perishable</i>
Meat, fish, poultry.	Cereals, pulses and their products (broken wheat, semolina and flours)	All preserved foods (canned, dried, pickled), etc.
Milk and milk products ¹	Popped, flaked and dry roasted cereals and pulses	Whole pulses, cereals, legumes and millets
Breads-‘chappatis’, ‘naan’ ² etc. and other products made from cereal or pulse flours	Roasted nuts and fried products, oil seeds	Dry roasted cereal products
Butter, cream, cheese		Sugars
Fruit and vegetables		Hydrogenated fats, oils, ‘ghee’ (clarified butter)
Eggs		Tea, coffee, cocoa
Partially or wholly prepared food	Cakes, biscuits and sweets ³	Spices, condiments and essences
		All processed foods

Notes:

1. Milk products refer to all cooked preparations using milk as the main ingredient, like rice pudding, custards, ‘rabri’ (thickened milk), etc.
2. These include any type of bread, fermented or plain including Indian breads like chapati, roti, naan, kulcha etc.
3. Sweet preparations containing milk, egg or cream such as meringues, eclairs and Indian sweets etc. may be classed as perishable although hard candy or preserves are semi-perishable.

Storage Quantity

The quantities of food to be stored are calculated from the rate at which each commodity turns over, that is, the rate at which it is used up. Once this is done amount of space can be allocated for each item in the store. The package size ordered will determine whether an item requires shelf storage or ground arrangements in terms of storage space.

Storage Period

The length of time for which each commodity is stored will be determined by shelf life of a product and its usage frequency. For example, tins of cocoa essences, custard powders and other processed foods may be stored for a longer time than juices. The former however, may be bought in smaller quantities than the latter because they are used less frequently. The storage or shelf-spaces allotted therefore will vary accordingly. Again, for cereals, pulses, sugar etc. the storage space required will be more as they are delivered and received once a month where as perishables like milk products, eggs and bread will be stored only for a day or two. On the other hand fruits and vegetables will not be stored except in the production centres (kitchens) where they would be delivered daily or once in two days and used up at the same pace. They will therefore not be allocated space in the main storeroom but be sent directly for use to the kitchen or transit store.

LOCATION OF STORAGE SPACES

Storage spaces should be located as near the point of use of the stored commodity as possible. Very often however, in multi-storeyed office buildings, it is not always possible to have the canteen kitchens placed near the store, or even on the same floor. In such cases, it is advisable to create small storages on the same floor, as the kitchen, or make provision through built in structures within the kitchen itself. These transit storages are fed from the main stores on a weekly, or bi-weekly basis, in order to reduce the time and effort spent in carrying food materials over long distances. Transit storages have an additional advantage of being able to provide ingredients and materials at short notice when the demand for certain items goes up unexpectedly and meals or menu items have to be prepared at short notice. Secondly, the main store is better able to control issues and stock levels.

Spaces should also be accessible to roads so that deliveries are easily received without interference with other organisational activities. Stores are best situated on the east or north-east side of a building to prevent the heat from the mid-day sun affecting the storage temperature. It is at the designing stage that care has to be taken to ensure that storage spaces are not located over or near a boiler, or have steam or hot water pipes running through or under them, concealed or otherwise. Care is necessary to ensure that traffic to and from stores does not interfere with kitchen or service activity.

The planned arrangements in a store are generally referred to as *functional storage* as it provides a facility which makes ingredients available for use with the least possible delay.

TYPES OF STORAGE

There are basically two types of storages, dry and low temperature. These are further subdivided according to the temperatures required by different foods to maintain their quality as shown in Table 7.2.

Table 7.2 *Types of storage*

<i>Storage Type</i>	<i>Temperature °C</i>	<i>Foods</i>
<i>Dry</i>		
Room temperature	20–25	pulses, cereals, processed
<i>Cold</i>		
Refrigeration	3–10	milk, eggs,
Cold store	0–3	fruits
Freezer	–18 to –20	frozen foods

Dry Storage

As the name suggests, dry storage is a space designed for the storage of dry ingredients which are usually stored at room temperatures on an average varying between 20–25° C, with the relative humidity maintained at 60–65 per cent. The storage should be dry, cool, well lighted, ventilated and free from infestation of any kind in order to maintain the food in good condition.

The space for dry storages must be large enough to hold stocks of a commodity for one to three months according to its frequency of use. This will however, depend largely on the type and size of the establishment and its catering policy in terms of buying procedures, menus and forms in which food and other materials are bought, and the ratio of fresh perishable items to semi- and non-perishable foods used routinely by the establishment.

The average temperature of a dry store can vary between 20°C and 25°C, depending on the range and nature of commodities stocked, and the weather conditions. If the outside temperatures are too high as is sometimes the case in tropical countries, then the temperature of the store may have to be brought down by air cooling the store, or the length of storage time of commodities reduced to preserve them in wholesome condition before use.

Dry storage is suitable for non-perishable and semi-perishable commodities, the latter being stored for a shorter time. Dry storages may be divided into five distinct categories as follows:

Food Store

This store is mainly for the storage of some semi-perishable and all non-perishable items. The manner in which different foods are stored depends on the quantities in which they are bought and the type and size of the storage space, a general guideline for which is given in Table 7.3.

While most non-perishables can be stored together in a storeroom, some semi-perishables like underripe fruits and vegetables, potatoes and onions, bread and eggs require separate ventilated storage facilities. Fruits and vegetables need to be stored for ripening. Firm green tomatoes, underripe bananas, lemons and other citrus fruits, require a temperature of 18°C to 24°C while potatoes and onions require a temperature of 4.4°C. The latter must, however, be put into storage at 10°C for three weeks before use. Foods which need to be held only for 2–3 days require a temperature of 10°C to 15.5°C, like breads and bakery products and where space permits, fats and oils should be stored away from the rest of the food.

Fuel Store

In large catering establishments the fuel store should be separate from food and other material storages, located preferably outside the kitchen as it is inflammable in nature and can prove dangerous if fuel especially gas (LPG) is stored in it. Space allocated for storing fuel depends on what kind of fuel needs to be stored whether kerosene oil, LPG, coal or wood. In smaller kitchens single sealed cylinders may be stored in cupboards built in the kitchen for use at each centre using a particular fuel. But care should be taken to see that all cylinders are well sealed and those in use switched off or locked when work is over.

Store for Cleaning Supplies

This must be separate from any food store, as it includes detergents of all kinds, brushes, mops, etc. If stored in the same storage space as the food, these should be kept in a separate section, screened off from food materials.

Table 7.3 *Storing food in dry storage*

<i>Food</i>	<i>Unit of Purchase</i>	<i>Method of Storing</i>
Cereals	Jute or polythene bags 5–10–50 kg packs	<ul style="list-style-type: none"> Stacked one on top of the other in a criss-cross manner on slatted platforms for air circulation. Placed in air-tight tins or bins.
Cereal products	1 kg packs 1–25 kg	<ul style="list-style-type: none"> Stacked in piles, tins or bins with air-tight lids, depending on the quantity.
Pulses and their products	1–20 kg	<ul style="list-style-type: none"> 1–5 kg can be stored in transparent plastic jars with screenable air tight lids. Larger quantities as for cereals.
Nuts and fried products	Polythene packs 1–5 kg	<ul style="list-style-type: none"> Packs stacked on shelves in air-tight labelled tins, opened only one kg at a time. Once opened the items should be transferred to transparent air-tight jars, neatly labelled and stored.
Eggs	Cardboard trays or cartons	<ul style="list-style-type: none"> Stored to consume within a day or two or kept in cold store.
Processed foods	Cans, jars, quantity of 24 and above in cartons.	<ul style="list-style-type: none"> Store out of carton, or in the cartons on shelves or racks, with open side facing for issue.
Spices and condiments	100g–1 kg packs Glass bottles.	<ul style="list-style-type: none"> Transparent labelled jars or packs. Stacked as such.
Essences and flavourings	Glass bottles	<ul style="list-style-type: none"> Stored as such.
Food colours	Small tins or glass bottles.	<ul style="list-style-type: none"> Stored on shelves.

Equipment Store

This involves storage of spare kitchen equipment, service equipment, spare parts of gadgets, and may also be combined with miscellaneous items like linen, stationery, disposable mats, crockery and cutlery.

Trash Store

This includes storage space for waste materials from all points of production, such as delivery points, storage, service and clearing up areas. This is usually a designated space outside the kitchen from where it can be cleared and disposed off by the local authority staff incharge of waste management.

In small establishments like coffee shops and kiosks, with limited menus, the dry store may include only a single limited space for storing all types of commodities. In such cases care should be taken to ensure that food, equipment and detergents are placed in separated cabinets, or at least on separate shelves, clearly labelled. Under no circumstances should food be kept near detergents or trash as this can lead to serious consequences. For example, a detergent may get added to food instead of salt, or cross-contamination of food may occur in storage through closeness to the trash store. A storekeeper is not necessarily knowledgeable about foods, and less so are the helpers who place the food in the store or issue them to user departments.

Low Temperature Storage

The principle underlying the designing of low temperature storages is to maintain temperatures at levels which will inhibit the growth of microorganisms, thereby preserving the food. At high temperatures, microbial activity gets accelerated because perishable foods have relatively high proportion of moisture, providing suitable humidity for spoilage to occur. There are three distinct types of low temperature storages based on different temperature ranges, maintained for the safe storage of semi-perishable and perishable food, namely refrigerated storage, cold storage, and freezer storage as indicated in Table 7.2.

Refrigerated Storage

Refrigerated storage is a space planned and maintained at a temperature between 0° and 10°C. It can be in the form of a complete room or a cabinet which is freestanding or fixed in the wall. Such storages are necessary for maintaining the quality of perishable foods for 3–5 days only after which certain changes start taking place in the foods due to enzymatic or microbial activity. A number of sizes of refrigerators are now available to suit the needs of every type and area in an establishment. Frost-free and automatic defrost models are also marketed for ease of cleaning and use.

It is good practice to keep foods covered in refrigerated storage to prevent them from drying. This also prevents odours from one food being picked up by another.

The space required for refrigerated storage is determined by a number of factors such as the volume of food produced, type of menus, preparation and cooking methods used, along with the accuracy of forecasts of sales.

Volume of Food: Space required is directly proportional to the volume of food produced at a time. Smaller spaces are required if forecasts for each meal or menus are fairly accurately estimated.

Type of Menus: If the menus offer a very wide choice of items to the customer, more kitchen space is required for the different preparations. Further, if the menu involves the use of many perishable foods, or forecasting is incorrect and plenty of food leftover, then the space required will be greater than if the number of perishable ingredients involved are few, and all that is prepared is sold.

Preparation and Cooking Methods: If all foods are cooked traditionally from raw food ingredients the space required will be greater than if foods are cleaned, part processed and packaged for used in the form of dehydrated, frozen or fresh cuts of meat and vegetables. This is because they can be directly cooked and less space is required for cleaning, peeling washing, cutting, drawing and so on. If the menu items involve preparation methods such as soaking, fermenting, and so on, then refrigerated space required is greater so that the degree of fermentation can be controlled over time.

For a canteen or coffee shop in which most foods are sold out each day, one 480 litre refrigerator may be enough to store fresh ingredients like milk, curds, fruits, doughs or fermented batters. In small establishments, the cabinet refrigerators may generally be kept between the kitchen and service areas, for easy access from both sides. In larger establishments, there may be separate rooms for different temperature storages.

Cold Storage

Cold storage is generally one in which the temperature is maintained between 0° and 5°C, thereby reducing the enzyme activity in foods to a minimum. Such storages are also called *chill rooms* and can hold perishables for over a week, and in the case of fruits and vegetables, even up to a month depending on their stage of ripeness and variety.

Freezer Storage

In freezer storage the temperature ranges from 0 to -20°C depending on the time for which a food is to be stored. For successful freezing, it is necessary to blanch foods, cool quickly to freezing temperature and pack in airtight

containers or food grade bags in quantities which can be utilised immediately on thawing. A food removed from the freezer storage must never be partly or wholly kept back, or refrozen. For this reason the sizes of packages become important for freezer storage according to single use quantities for each food.

Freezer storages may be in the form of wall or free standing cabinets, or a part of cabinet in which there is refrigerated storage as well. In the case of large central kitchens, supplying meals to schools, offices, and airlines, freezer storages may be a room designed to maintain the required temperatures. These are also referred to as *walk-in freezers*. Table 7.4 shows the recommended temperatures for storage of various perishables.

Table 7.4 Recommended Freezer temperatures for storage of perishable foods

<i>Food</i>	<i>Temperatures</i>
Fruits and Vegetables (except bananas)	1.1°C to 7.2°C
Dairy Products	3.3°C to 7.8°C
Meat and poultry	0.6°C to 3.3°C
Fish and shellfish	-5°C to -1.1°C
Frozen foods	-18°C to -6.7°C

Thawing Space: Shelving or modular trays which can be used for frozen storage as well as pulled out for thawing foods are required. Fluctuations in freezer temperatures should be avoided and thawing space provided outside the freezing chambers. These spaces should be maintained at refrigeration temperatures of 3–10°C for foods to thaw without deterioration and used immediately on thawing. The spaces provided will depend on the number and quantities of frozen foods thawed on a daily basis, which is further dependent of environment factors, and policy with respect to purchasing and production of food.

PLANNING STORAGE SPACES

Whatever the type of storage required, its planning and arrangement depend on a number of factors such as proximity to markets, menu and purchasing policy of the establishment with respect to the form in which foods are purchased, whether raw part prepared, processed or frozen.

Proximity to Source of Supply

If the catering establishment is situated within easy reach of the local markets, there is no necessity to stock large quantities of commodities, especially those which are in season. On the contrary, if markets are inaccessible, the need to stock greater quantities will necessitate relatively larger storage spaces. Thus the planning of storage spaces will depend on the volume and frequency of deliveries possible.

The Menu

The nature of the menu and its mix in terms of type and variety of items offered, will directly affect the storage space required. For example, a restaurant specialising in salads and sandwiches would require less storage space as compared to a canteen which is serving cakes, fried snacks and cereal preparations. Therefore the ratio of perishable to semi-perishable commodities required by the establishment will determine storage requirements.

Purchasing Policy

If purchasing is done by a central department, as in the case of purchasing food for central kitchens supplying midday meals to a number of schools in an area, it is customary to stock upto six month's requirements of non-perishable foods. Large catering establishments may order dry ingredients monthly and fresh ones by-weekly or even daily, if their operations are seasonal only, or price fluctuations are large and constant.

LAYOUT

Every store should aim at reducing mental and physical strain, time and effort of store staff in locating items when required, by placing them correctly on delivery. Depending on the size of the store, a reception platform of approximately 90 cm in length at the delivery point helps to prevent excessive lifting. The delivery vans can reverse upto the platform to offload the commodities at a receiving area which is located close to production and storages so that both the areas can be serviced simultaneously, the fresh perishable ingredients going straight for production and the rest for storage. Usually a receiving dock 2½–3 ft (0.76–0.91 m) high and 8 ft (2.44 m) deep serves the purpose of direct off loading from delivery van to storage areas. The length of the dock can be varied according to the average volume of delivery to be handed and space necessary for placing weighing equipment and counters for inspection

of goods. A make-up counter in the centre is often necessary for holding commodities before they can be arranged in their assigned places in the store or issued directly to user departments. This can be achieved by using mobile racks with adjustable shelving, baskets and trolleys for placing items in a systematic manner. For example, biscuits may be followed by canned foods and then cereal products, etc. Alternatively, they may be arranged in order of frequency of use or even similarity of dimensions as detailed in Unit 4.

Whatever the type of arrangement, store items must be placed at heights which allow for easy reach and readability, so that time is not wasted in trying to search for items when required. There should also be sufficient clearance between items, to allow them to be easily reached and replaced.

Structural Features

The ceiling of the store should be at least 3.5–4 metres high with provision for ventilation and lighting all protected by grills for security. Enamel painted walls and ceilings, with floors of concrete or heavy tiles are recommended to withstand wear and tear resulting from the movement of goods on trolleys or carts. Construction of ceilings, floors and walls should be aimed at easy cleaning to maintain hygiene; walls near floors should be damp-proofed to prevent microbial infestation and spoilage of foods.

All fittings in the stores should be of a type which can be easily dismantled for regular cleaning. It is preferable to have racks or shelves of metal or any other nonporous material, situated at least 5 cm from walls, or placed in the centre of a room with aisles around them, so that each part of every shelf is accessible. The space between the shelves may vary from 50 cm to 90 cm, depending on the size of the containers to be stored. For small cans or jars 30–40 cm is the usual spacing. The recommended height for racks is 2.3 m. racks higher than this will pose problems in reaching for placing and issuing of items, fixing of lighting, etc. For the storage of jutebags or cartons, slatted platforms with 8 cm clearance from the floor are advisable, for free air circulation through piled goods. A work table is necessary near the entrance of a storeroom for replacing or handling of requisitions and issuing of stores. Provision of scales either fixed on the wall nearby or placed on the table, are important for issuing small quantities.

Lighting

Fluorescent lamps in trough fittings placed in a row at right angles to the shelving are the most suitable because light penetrates best from this angle

into each shelf. If the shelves are light coloured, the light gets cross reflected for greater advantage.

Lights should be fitted high enough above the topmost shelves of the store to prevent damage to fittings while goods are being placed or removed. Lights fitted too close to food items also generate heat which can affect the quality of semi-perishable stocks.

Ventilation

Windows and exhaust fans provide suitable ventilation for storage, but these should be situated high up in the walls to provide ample and uninterrupted circulation of air, while preventing direct draughts on the foods stored.

Dimensions for Storages

Dimensions for storages should take into account freedom of movement between aisles in a store room. Where trolleys or carts are used the dimensions need to be adjusted to requirements. In no case should passages allow movement of more than one person at a time. Some dimensions for movement in store rooms are given in Table 7.5.

Table 7.5 *Space allowances for aisles in storeroom*

<i>Physical layout</i>	<i>Measurements (m/cm)</i>
Width of gangway	90 cm
Width of aisles:	
For single person	60 cm
For person carrying a load	65 cm
For two persons	70 cm
For two persons with load	90 cm
For an average handtruck	1.2 m
For two average handtrucks	2 m
Turning space for an average truck	2 m

Door openings should be large enough to allow free passage of supplies and equipment. This is usually 3½ ft (1.07 m) for single and 5 ft (1.52 m) for double doors.

SANITATION, SAFETY AND SECURITY OF STORES

Hygiene and Sanitation

Hygiene and sanitation in and around stores is of paramount importance. It is therefore necessary to keep stores neat and clean and to prevent attack of food by bacteria and molds. Dry food stores should be fly-proofed and walls treated with suitable insecticides. All stores should be guarded against rodents and pests, to safeguard both staff and customers against infested and contaminated food. It is good policy to formulate a schedule or chart for regular cleaning and maintenance of stores.

The following points may be kept in mind while preparing a schedule:

- Wash floors, walls and shelves once a week or fortnight and disinfection of spaces.
- Inspect incoming food for signs of damage, spoilage or infestation before storing.
- Arrange food systematically, so that old stocks are used first.
- All opened packages should be put in covered, air-tight containers before re-storing.
- Foods of similar type should be stored together.

Staff should be given clean coats, and made to observe the rules of personal hygiene while handling food items. (For details see Unit 7).

Security

Since stores stock items of daily use which are so vulnerable to pilferage and theft, it is extremely important to provide proper safety and security measures at the designing stage. In addition, stores have a lot of money blocked in stocks, which make security a vital aspect of store management. The safety hazards to which stores can be exposed are:

- Infestation or contamination of food held in storage.
- Theft or pilferage.
- Microbial spoilage due to improper temperature and humidity controls especially in cold storages.
- Fire.

Some important guidelines for maintaining security are:

- (a) Have minimum inlets or outlets to the stores. It is preferable to have a few well guarded openings placed high up in the walls for exhaust

fans. All windows and other openings should be well guarded with mesh and grills. There should be only one door for entry into and exit from stores.

- (b) The storekeeper's office must be positioned such that supervision is possible at all times and the door is in full view during working hours. At no time should the store be left unmanned.
- (c) Issue counters must close by roll-down shutters or half doors.
- (d) Safety locks must be fixed and the keys to the stores should always be kept in a safe under the charge of a single responsible person. Safety devices such as automatic locks, number locks, built-in alarm systems against fire, gas leakages and theft are now available in various models and sizes. Their placement at strategic points in a catering establishment is a wise investment.
- (e) A guard on 24 hour duty is important. Well-guarded exits inhibit pilferage if a personal checking system is established when staff go off duty.

Thus a good store must provide:

- Wholesome ingredients for food production and service.
- Proper temperatures and humidity for prolonging the shelf-life of various type of food.
- Suitable space and structural equipment arrangement for providing sufficient light and ventilation.
- Suitable barriers against pests and rodent infestation.
- Ease of cleaning and access to materials in the store.
- Foolproof quality control arrangements for the receipt and issue of goods.
- Safety and security.

Since stores are areas of high investment, minimum space requirements should be worked out accurately using computer technology now available. With stock levels and ordering levels worked out precisely, stocks need neither be excessive nor deficient when required for food production.

Stores or inventory management is a specialised field and constant interaction and communication between user units of the establishment, such as production kitchens and service areas, are required. These are the key to controlling costs and enhancing profits of an organisation in the long run.

Unplanned, indifferently designed and managed storage spaces can lead to losses of up to 25% from stocks due to spoilage, spillage and theft.

Chapter 8

Service Areas

A service area is one in which the customer comes in contact with the food service establishment. It includes spaces in which food is served and eaten or taken away for consumption, depending on the type of facilities provided. Thus, service areas can be divided into two distinct sections. One, in which food is displayed and or dished out for service, and the other in which it is consumed. Dining and service areas thus represent those spaces in a food service establishment earmarked for serving food to customers. These spaces vary appreciably from one establishment to another, depending on the activities which service staff are required to perform, the mode of service adopted, and the space available for seating customers. In some food services, the dishing up and food presentation may be done in kitchens, while in others these activities may be carried out in service areas. In still others, service areas may be planned out in a manner that requires customers to serve themselves partly or wholly. Similarly, areas planned for service at drive-ins or for vending services vary in terms or size of spaces, type of equipment and furniture needed, and their arrangements within the space.

Thus, the average space required when a customer is seated comfortably, the type and quality of service required are important factors in allocation of space and designing or dining and service areas. For any particular service, small children may require 8 sq. ft (0.74 sq. m) for which adults need 12 sq. ft (1.11 sq. m) for comfort. A banquet seating allowance may be 10 sq. ft (0.93 sq. m) per seat, whereas 20 sq. ft (1.86 sq. m) may be allocated in a deluxe restaurant.

The amount of serving equipment in a dining area with provision of space for bays or serving counters will also influence planning. It must be kept in

mind that overcrowding is frustrating for customers who like to dine leisurely and yet feel they are exclusive. Youngsters may find smaller service areas acceptable, since they don't mind being a part of the many, but are concerned with reasonable or low cost meals. They are also generally impatient and in a hurry so they don't stay long at a food service. There should however, be enough elbow room and space for serving and eating the food at the same time enjoying the experience. Adults usually require table space of the least 24'' (60.92 cm) for placing their food and drink comfortably whereas the allowance for children can be reduced to 18–20'' (45.69–50.76 cm).

LOCATION

Service and dining areas, as a rule, are located adjacent to kitchens or food production areas and clearing up or diswashing areas. In some cases, however, this may not be possible. For instance, when canteen services need to be provided in multi-storeyed office blocks, service and dining areas have to be located on every other floor for the convenience of customers. Therefore the production of food becomes removed from the service and consumption points. This also happens in conditions where food is centrally prepared and required to be distributed at a number of service points. The service and dining activities then get located at each distribution point, to which the food is bulk supplied from central kitchens. It is obvious therefore, that location of service and dining areas depends on the catering policies of establishments, which in turn are based on the viability of the food production areas.

All entrances should be located nearest to the service counter, and exits on the sides nearest to clearing areas. Cross traffic should be avoided so that service is uninterrupted. It is good policy to calculate space requirements in relation to the main goals of the establishments. For example, if a service is to provide a full day's meals and snacks to residents, it would be necessary to provide a service counter and seating space for diners, at least for main meals. On the contrary, if a school is providing midday meals to children which are obtained ready-prepared, a verandah facing a rear playground may be utilised for the distribution of food packets, bottled drinks, etc. arrangement for collection of empty bottles and disposal of used packs is, however, necessary to maintain cleanliness. Thus, to put a definite figure to space requirements for different establishments may not be feasible, because these vary with the functions an establishment is required to perform from time to time. While averages can be arrived at for different styles of service and dining they can at best, only be a guide to the planning of these spaces, as indicated in Table 8.1.

Table 8.1 Space guidelines for different food services

<i>Food Service Type</i>	<i>Space per Seat</i>	
	<i>Sq. ft.</i>	<i>m²</i>
<i>Cafeteria</i>		
Commercial	16–18	1.49–1.67
Industrial	12–15	1.11–1.39
College	12–15	1.11–1.39
School	9–12	0.84–1.11
<i>College Hostel</i>		
Table Service	12–15	1.11–1.39
Counter Service	18–20	1.67–1.86
<i>Waiter Service</i>		
Club	15–18	1.39–1.67
Restaurant	15–18	1.39–1.67
Banquet (minimum)	10–11	0.93–1.02
<i>Coffee Shop</i>		
Table Service	11–14	1.03–1.31

Adapted from: Lendal H. Kotschevar and Margaret E. Terrell. *Food Service Planning: Layout and Equipment*. New York: John Wiley and Sons Inc. 1967.

The figures in Table 8.1 do not include waiting areas and guest facilities. The structural features, room dimensions, table sizes and seating all affect capacity of service areas to be planned.

STRUCTURAL DESIGNING

This includes features like flooring, ceilings, walls and built-in furniture and equipment.

Floors

It is important to ensure that all flooring is hard wearing, safe in terms of being water, stain and fire-proof and at the same time decorative. Further it should be easy to replace damaged portions without having to change the whole flooring. Dark coloured is more suitable for dining and service areas since these are prone to spillage and the action of food acids, which can cause fading or discolouring of the flooring. Such damage may not be so easily detected as on

a light coloured floor. Besides, dark floors accentuate colour of foods on the table, by making the rest of the room look brighter. A number of floor tiles and finishes are now available which are not only decorative but have utility in service and during areas, such as mosaic, porcelain, terracotta, quarry, granite and marble. They come in a variety of sizes too varying from 6 inch square especially in terracotta to 8 inch square (51.6 cm²) in ceramic, 10, 12 and 16 inch square (64.5 cm², 77.4 cm², 103 cm²) in marble. The ceramic tiles are manufactured with a hard glazed surface and a light weight porous structure, and are available in plain colours, wide range of designs and in gloss, matt and textured surfaces. Tiles are specially suited to tropical climates and weather and working conditions as in India as they are easy to clean, maintain and replace in case of damage, without resorting to changing the entire floor.

Walls Ceilings

Walls and ceilings may be of acoustical materials that absorb any unwanted sounds and make the eating environment peaceful and more enjoyable. But, this depends a lot on the type and size of the establishment. For instance, if the establishment is situated on the roadside, the noise cannot be controlled to that extent. In such cases comfort while dining would take on greater precedence.

Furniture and Fittings

Furniture and fittings are best made of fire-proof materials, durable, hardwearing and noiseless, when handled or used. As far as possible windows should not occupy more than 20 per cent of the floor area, and preferably be provided with fly proof shutters. Doors should be self-closing. In addition, equipment like *pestoflash* insect traps which provide a dim light and give off a flash when an insect is caught in them are an essential fitting for dining and service areas although care should be taken to position such equipment away from the customer's view. It is now possible to get this equipment in various models and sizes to suit the size of the area and the type of establishment. Some models are shown in Fig. 8.1.

The general considerations for structural planning of service areas are therefore cleanliness, ease of maintenance, smooth work flow and attractiveness.

Cleanliness: This is the keyword for every establishment, because all customers associate a clean eating place with clean food. Cleanliness should therefore form the basis of all structural planning and layout of service and dining areas. All materials used should be easy to clean.

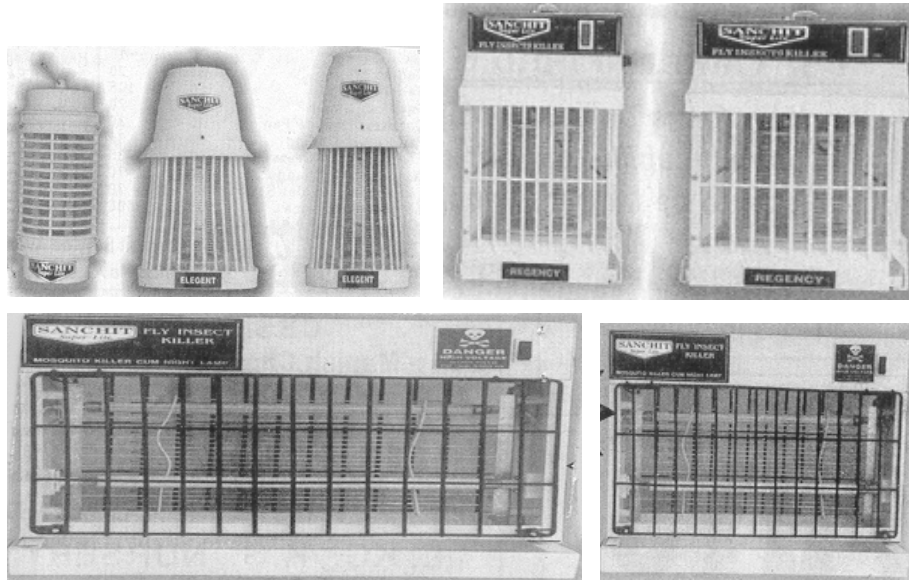


Fig. 8.1 Ultraviolet flying insect killer equipment

Ease of maintenance: Structures should be hardwearing because of the heavy use to which they are put by staff and customers, who use mobile equipment, footwear and subject the floors and walls to spillage. In addition floors have to bear the ill effects off pulling and pushing of chairs and tables while cleaning and the dropping of sharp knives and other cutlery by customers and servers alike. Any worn out parts should be easy to replace.

Smooth work flow: All structures should provide smooth flow of people and work through them, so that accidents are prevented and the areas are rendered safe for all using them.

Attractiveness: All areas exposed to the view of customers must be made as attractive as possible, in terms of colour, design and décor, while still creating an atmosphere of comfort and pleasure.

PLANNING SERVICE AREAS

The planning of spaces for serving food should aim at achieving smooth flow of work, maximum space utilization and prompt service to customers. The main factors around which service areas are planned include space available, funds in hand and styles of service.

Space available: The area of the space at hand will determine the number and extent of activities that can be carried out in it. Besides, the shape of the space is important in planning work centres efficiently.

Funds in hand: The amount of money available for operating the establishment will determine the number and types of activities that can be carried out. Investment that is possible on equipment for various functions, also influences the choices offered on the menu.

Style of service: It is reasonable to assume that the type of service offered in an establishment will determine the style of service adopted. For instance, a self-service facility will require a larger area for the display of foods from which the customer can make his choices, in contrast to a restaurant or coffee shop, where waiting staff can go directly to production areas, and get the order processed for service to the customer.

Smooth Flow-Work

In service sections a smooth flow-work is facilitated through arrangement of work centres and placement of equipment in a logical sequence according to projected activities. Service stations may be designed so that one small station serves about 20 seats. Central stations however, are necessary for areas with over 50 seat capacity. In waiter services the setting up of a central serving station is influenced by the distance of the dining area from the service area, especially when production and service or dining areas are on separate floors. The plumbing, wiring, customer turnover, service style and mode of delivery will all influence the location of stations.

Space Utilisation

For effective utilisation of service and dining areas, spaces need to be planned for multipurpose use. For example, school or university dining halls may be used for conferences, workshops, social and cultural activities during vacations with an area adjacent to kitchens partitioned off for serving lunches and teas. Again office canteens may be positioned in a manner to enable them to be opened to public, after office hours, without endangering the security of the office building. The canteen can be permitted to serve the same menus at unsubsidised prices, while providing an amenity for those who may be working late in office for some reason.

Dining areas of food service establishments can easily be rearranged and used for dance parties and other functions if the furniture is mobile, folding,

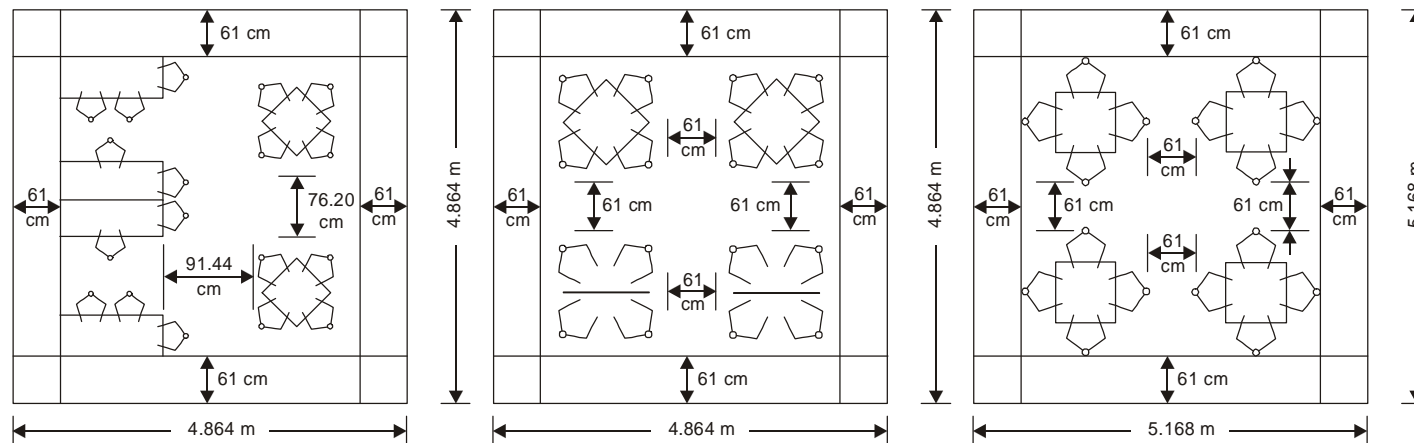
collapsible or stackable thereby being amenable to easy handling and storage. Structural planning for floors, walls, ceilings, doors and light fittings can also be geared to multiuse. For example, a flooring with a central wooden area can be used as a dance floor when required, and covered with dining furniture or carpet when not in use for this purpose. Dining spaces are generally three to four times the size of the kitchens to which they are attached and can easily be adapted for different activities.

It will be noticed that for self service systems, provision has to be made in the design for orderly formation of queues and equipment for self-clearing by customers, if planned. A small counter or service station in the service area for storage of table appointments and serving dishes, processing orders, preparing bills and receiving payments is all that would be necessary. Small substations for tableware, icebuckets, cruets and butter dishes may measure 20–24 sq. inches (129–155 cm²) and 36–38 inches (91.4–96.5 cm) in height. The station may be screened from customer view or attractively displayed. Spaces in the centre may be planned for provision of beverage or water, particularly if a large party is arranged. The size of a central station varies from a screened section 8–10 ft (2.44–3.04 m) long by 27–30 inches (8.23–9.14 m) wide and 6–7 ft (1.83–2.13 m) high to a small room.

If the style of service is a buffet, the space for seating should be limited to the wall ends of the dining area, to enable more people to be accommodated for a standing meal. Provision for seating is generally equal to one-fourth the number of people expected. Similarly, in a kiosk, only a window counter is sufficient to pass on ready-to-serve prepared items to a customer, such as drinks on the road-side, at a bus station or railway platform.

In a restaurant equipped for leisurely dining, each place setting should allow at least 20–24 inches (50–60 cm) space on the table per person. Thus seating may be increased or decreased within a space, by changing the arrangements of tables within the area. Since tables are often joined together to accommodate more people, or are placed diagonally in the centre, and parallel or perpendicular to the walls. This is illustrated in Fig. 8.2. All food service establishments providing seating must make arrangements for tables to seat two and four persons, which can then be combined in different ways to cater to groups of different sizes, such as for 6–8 people or even more. Different establishments would use more less both these sizes, depending on the frequency with which two or four people or their multiples visit the establishment.

Diagonal table arrangements are better for service and employee movement, because lanes between backs of chairs in a straight-arrangement can lead to congestion, confusion and accidents when guests are seated and or being served.



Same area as (ii) but can seat 18 persons by using rectangle and square tables.

Area of 4.864m² can seat 16 persons if same tables as in (i) are placed diagonally the spacing remaining same.

Area of 5.168m² can seat 16 persons with four 76-2 cm² tables

Fig. 8.2 Arrangement of tables to increase seating capacity

In schools, table heights should be adjusted according to customer comfort requirements which are generally 60.912 cm whereas 76.14 cm are required for adults.

However a minimum passage area of 45.684 cm between chairs when customers are seated is necessary. This means tables should be placed 121.92–152.4 cm apart. For trolley movement, width should be adjusted according to the width of the largest trolley in use.

In the cafeteria there is an influx of office goers and shoppers who have limited time for lunch, so the chairs are removed, and tables adjusted to provide standing space for more customers to enable a faster turnover and prevent undue queueing problems. At the same time a take away service is provided to satisfy the demand for office lunches. In the evenings the number of customers drops when shopping centres and offices close. The dining area is then converted for leisurely dining by lowering the heights of the tables and providing seating in the same space.

Table Sizes

Table sizes vary with the style of dining in an establishment. For waitress (waiter) service it is difficult to serve at tables more than 1.22 m long. For counter service the width of counter can vary from 40 cm to 75 cm. Calculated on the basis of 50 cm to 60 cm per seat, approximately 4.90 m of counter can generally seat 8 to 10 persons.

In a self service cafeteria where customers are expected to use their trays on the tables to eat from, the table provided must be of a size which can accommodate easily the required number of trays of a particular size. For instance, if trays 35 cm by 45 cm are used, then the table needs to be at least 122 cm² to accommodate four customers, for comfortable dining. While tables 90 cm² or 1 m² would be more economical, they would not provide the comfort if four diners were to use them simultaneously. If however, the table was present and the customers were not eating from trays, the smaller table would suffice. Where a fast service is desired tables of size 60 cm² and 75 cm² may be used, but these are not comfortable for all ages. It is advisable, however, to use a combination of sizes if flexibility is required, since small tables can always be joined together to suit numbers and spaces, in terms of sizes and shapes.

Table sizes thus, influence space utility, its flexibility and the comfort it provides to customers. For example, in a self service cafeteria where customers use trays 14'' × 18'' (35.5–45.7 cm) to serve themselves, tables sizes need to be able to seat 4 people at a time. The requirement would therefore be 48''

(122 cm) square tables rather than the usual 36 or 42 inch square as shown by tray placement through Fig. 8.3 drawn to scale of 1 cm to 1''.

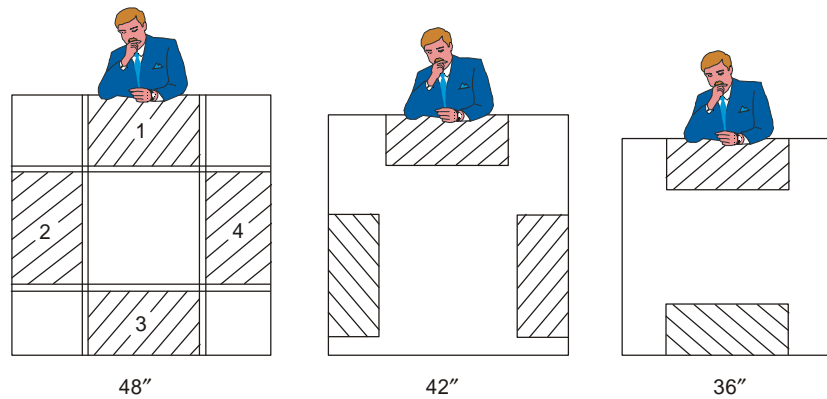


Fig. 8.3 Placement of trays 14" × 18" on tables of varying sizes

The size of square table for self tray service is calculated by adding length of tray to twice the width +2'' for maneuverability, which in this example is $18 + 14 + 14 + 2 = 48''$ square. While 24 or 30 inch square table may be more economical in terms of space per seat, it would be uncomfortable for large built customers. Smaller tables however, are useful for fast food services where high customer turnover is the norm and the focus is on food and not comfort while eating. Industrial or office canteens would invest more on tables for two people than for four, in comparison to cafeterias providing family seating facilities. Table 8.2 gives an idea of the ratios in which the arrangements can be made according to the type of food service facility planned.

Table 8.2 Ratio of small to large tables in different food service establishments

<i>Type of Facility</i>	<i>Ratio of Tables used</i>	
	<i>Table for 2</i>	<i>Table for 4</i>
Coffee shop	8	2
Office canteen	7	3
Cafeteria	6	4
College dining hall	3	7
School lunchroom	1	9
University canteen	8	2

Tables with common sizes may be combined for seating flexibility to meet requirements for customers coming in groups of more than four. Bench seating may also be provided for informal buffets.

Tables for booths are difficult for waiters to serve on if they are longer than 4 ft. (1.22) m. The width of such tables is usually 1.524–1.6764 m.

A lunch counter may have a minimum width of 16''–30'' (40.61–76.14 cm), allowing 20–24'' (50.78–60.91 cm) per seat, the length extending to a maximum of 16 ft (4.88 m). For 8–10 seats, U-shaped counters make maximum use of space and reduce travel distance and time at work. For every foot of counter length of 8½–11' (2.59–3.35 m) depth, 8–10 seats can be provided, with an aisle space of 3–4½ ft (0.91–1.37 m) for employees.

Dining room space requirements can be calculated using a simple equation:

$$\text{Sq. ft.} = \text{number seated at one time} \times \text{space per seat.}$$

The number of seats required in a dining space can be estimated from the rate of customer turnover. That is the number of times a seat is occupied during a given period.

$$\text{Turnover/hour} \times \text{seats available} = \text{customers served per hour}$$

Since customers served per hour can be recorded and seats available are known the turnover per hour for the period can be calculated.

Further, if the number of customers to be seated at peak periods is known the maximum seats required, can be quite accurately estimated, provided the seat dimensions are measured and expressed as sq. ft. required per seat. Calculations however, must account for certain number of vacant seats at any one time, unless seats are assigned according to numbers as in school hostels and other resident institutions.

Theoretical calculations however, do not always take into account the fact that most food service establishments are subject to a certain percentage of vacant seats whatever their size, unless the space allotted to dining is deliberately calculated for average number of customers. Spaces calculated on average numbers rather than on the basis of rush hour numbers, enable spaces to be utilised more effectively by adjusting the style of service or mode of eating (standing rather than sitting) when customer numbers exceed the seating capacity. The usual vacancy percentages to be taken into account for dining space calculations are given in Table 8.3.

Table 8.3 *Percentage vacant seats in dining areas*

<i>Service</i>	<i>Vacant Seats Expected (%)</i>
Table waiter service	20
Cafeteria service	12–18
Counter service	10–12
Self service/self clearing	8–10

These percentages may vary ± 2 per cent depending on a number of factors, such as:

- Customers coming in at different times.
- People arriving in groups of odd numbers or too large to be exactly accommodated on tables joined together.
- Unsuitable table sizes for exact group numbers.
- Reluctance of customers to share tables with others.

Most dining rooms provide for customers coming in groups of twos to eights, and experience has established that the seating capacity is better utilised in cafeterias, self service establishments and kiosks. This is perhaps because the menus offered are not so extensive as to be time consuming both in selection, service and eating. Secondly, the prices are lower because of lower fixed costs and can therefore be afforded by a larger segment of the population. Thirdly, the service is quick and no time is lost waiting for the food to be processed and served. It is estimated that six to eight persons can serve themselves from a well laid out counter every minute. So in one hour about 250 people would need to be accommodated for seating or standing while dining. So 250 seats will needed to be provided if turnover is two persons per hour. An additional 10 per cent spaces must be accounted for in terms of tables not cleared as fast as they are vacated, plus further 5–10 per cent for vacant seats as necessary.

Kiosks in particular, because of their location near busy street corners, platforms and bus stations, perform the function of fulfilling urgent needs of people for a beverage, snack or fruit. They are therefore very popular in spite of their total space being limited to 4.5 m² to 5.5 m². Double units have at places been arranged to provide seating but this is not generally so.

Thus, calculating space requirements is dependent on the total catering policy adopted by an establishment and the nature of the customer whether children or adults, residents or non-residents. Also, the total number of customers

for which the facility is designed determines the volume of food to be prepared and hence the size of equipment to be installed and space allocated.

For functions arranged in lawns or halls, folding chairs and tables 76 cm square are useful for arranging seating or buffet services. Table sizes should be selected according to the number of persons to be seated. In lunchrooms, the style may be a combination of self and waiter service, where people help themselves at a counter initially, and seat themselves where place settings are laid out. Second helpings may be offered at the table, or a part of the menu, such as salads, and accompaniments may be placed on the tables before start of the meal.

Prompt Service

Efficient fast service can be provided where menus are limited in their choices, proper holding and service equipment are used and placed at points where replenishments from kitchens as well as the process of dishing out for service do not involve delays. Some reasons why delays occur in service are:

- Distance between customer and service counter
- Menus
- Staff shortage
- Equipment shortage
- Type of service

Distance between Customer and Service Counter

If the distance is too much delays can result in serving the customer because too much walking is involved for waiting staff. This can also happen if there are obstructions due to equipment placement, blind corners, sharp turns, and hot surfaces around which the server has to travel extra distance every time an order is placed.

Menus

If menus are too extensive delays in ordering occur which reflect on service promptness. In addition, if menu cards are too bulky or large in size they come in the way of placing orders smoothly and quickly. Further more, menu cards or lists not organised in a logical sequence makes customers hunt for what is available and affordable, and time is lost . The print of the menu should also be legible for prompt order placement and avoidance of delays in service. Sometimes a decorative format is chosen which may not be easy to read and decipher.

Choice of the menu also influences time of service. Quick preparation of foods like beverages sandwiches, cakes etc. which are prepared and ready to serve lead to prompt service.

Staff Shortage

If there is shortage of service staff rendering prompt service is not possible especially during peak hours. In addition, if replacement staff are called in to make up the shortage, they may not be trained for the job or familiar with particular customer expectations. Service skills cannot be perfected at short notice, but require training and experience on the job. For replacement staff therefore communicating with kitchen staff and customers may cause delays.

Equipment Shortage

This may result from inadequate washing, drying and recycling facilities for clean and dry table appointments. Delays can result if customers at peak hours are greater in numbers than forecasted.

Type of Service

Waiter service involves more time for executing orders than self-service or combination service arrangements.

NUMBER AND TYPE OF CUSTOMERS

The number of customers to be served altogether and at any time determine the arrangements in service areas. The larger the number of customers served at a particular time, the larger is the space requirement for accommodating them. The area of dining rooms can therefore be calculated by simply multiplying the maximum number of people dining at one time with the space required for each seat. Also, the number of times a seat is occupied in a given period of time, multiplied by the number of seats, gives the total number of customers. Therefore, the spaces to be planned for dining areas would be calculated on the basis of the number of seats occupied during rush hours, when the highest number of customers are expected.

Customer turnover rates are, however, very inconsistent from one period of the day to another, and from one type of establishment to another. Factors affecting turnover of customers are:

(i) The Choice of Food

Some customers may step into a cafeteria only for a cup of coffee and therefore stay for a relatively short time (turnover of a seat faster); others may occupy the seat for a longer time while eating a full meal. The average time taken for eating various meals are given in Table 8.4.

Table 8.4 Average eating times for different meals

<i>Meal</i>	<i>Time for Eating (minutes)</i>
Breakfast	15–20
Lunch	20–30
Tea	15–25
Dinner	30–50

(ii) The Time at the Customer's Disposal

Some customers may be utilising a half hour break, others may be meeting for a discussion or celebration with a friend and have unlimited time to spend. The former will eat less or faster than the latter.

(iii) The Method of Service

Waiter service results in a slower turnover of customers because it takes longer to execute orders and waiting is involved both for the staff and the customer (Unit 4).

Turnover is faster when self service methods are adopted and still faster when self clearing methods are followed by the customers. Turnover is also affected by the method used in food production. If batch cooking is done the time required to serve is longer than when the food has been prepared and held ready for service.

Space and equipment both being expensive resources have not only to be planned for present needs but for future expansion as well. In addition, the type of customer the establishment wishes to attract is an important factor while considering space allocation. For example, children require less seating space than adults for comfort. The amount of serving equipment needed will also be affected by the tastes of customers as little or no cutlery or crockery would be required to serve snacky foods to children. Also, large volume holding

equipment is not required because snacks can always be put together on a short order basis. In contrast adults would require full well-laid out meals, delicately prepared, held, displayed and served at the right temperature.

Space allotment must bear in mind the need to change layouts for service and dining areas because of changing demands of customers, their ages and body sizes. Flexibility is therefore the essence of good space allocation.

NUMBER, TYPE AND SIZE OF EQUIPMENT

The total number of meals served at any mealtime, and the menu composition helps to determine the quantities of various dishes to be produced, and the size and type of holding, reheating or finishing equipment necessary in a serving area. The essential equipment in any servery for a cafeteria would be beverage equipment for hot and cold beverages, display cases (refrigerated or other) for snacks, salads and desserts, bainmarie or hotcases for holding food hot prior to or during service, trolleys for stacking trays if it is self service, and mobile equipment for holding cutlery, napkins, etc. and clearing trolleys with bins attached for clearing plate waste. Wash basins fixed behind a servery in view of the customer creates an impression of hygiene consciousness and encourages staff to use them.

For seating, furniture may be fixed along the sides of dining rooms or purchased as adjustable tables which can be used both for seating and standing arrangements, as required. Figure 8.4 shows how this adjustability helps to cope with rush hours in a limited space.

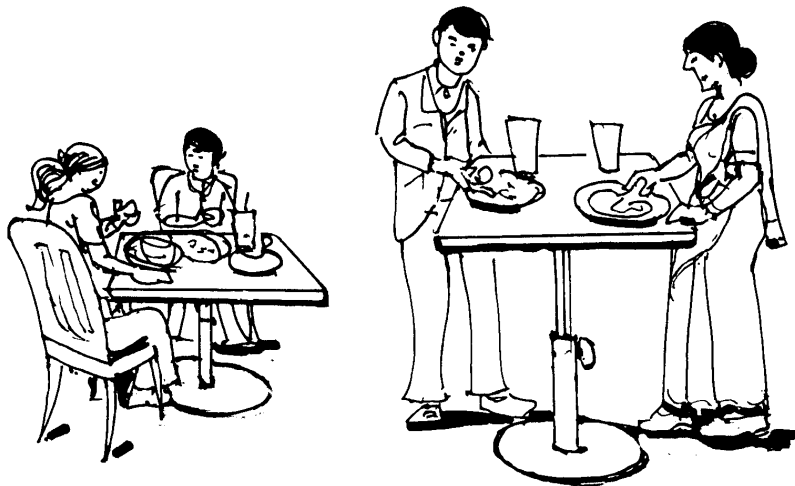


Fig. 8.4 *Tables adjusted to different heights to cope with rush hours*

The arrangements in Fig. 8.4 indicate a flexible style of service, and waiter service is provided for those who wish to avail of it. For waiter service however, the equipment is restricted to a sideboard with storage for table appointments and linen. Trolleys may be arranged for salads and desserts to be wheeled to individual tables for customers to choose from. All the food holding equipment remains in the food preparation area, which is partly a kitchen in view of the customers.

Moulded furniture is now being increasingly used for seating arrangements in restaurants and cafeterias. The added advantages of this type of furniture are strength, easy cleanability, low maintenance costs and stacking storage especially for chairs. Some places have chairs moulded with the tables. This of course requires more space and a fixed arrangement. The greatest disadvantages of this design is however, the lack of flexibility, in the arrangement of the serving or dining area.

SERVING STAFF

Waiting staff require certain skills and therefore the number of staff employed has to be closely monitored, according to the degree of waiting service offered to the customers. In the case of flexibilities built into dining spaces as in the above described arrangements, staff may be rotated between serving behind the counter, or for serving at the table as and when required. Since labour costs are fairly high and relatively fixed, spaces determine how many skilled staff are employed and vice versa. The number of staff are also determined by the number of customers to be served at one time and also the composition of the menu. For instance, where foods are prepared and packed ready to be handed out, service staff can serve many more customers at a time than if they have to wait for an order to be prepared partly or wholly before serving. Also each server spends more time serving when the menu has a wide choice.

Food service establishments which have fixed waiter service only will need to allocate more space as the number of waiter staff increase. This is because for such a service, staff need freedom of movement and more aisles for a smooth flow of service. In addition, more space is required for movement of customers in and out of the establishment as well as during meals.

STORAGE SPACES

The storage spaces needed in service areas for waiter service are far greater than those required for self-service establishments. This is because each table requires basic appointments like cruets, tableware, linen, sauces, pickle stands, butter

and salad bowls and bread baskets. For self-service all one requires is space for mobile equipment for cutlery and clearing, and counter space which is fixed according to the number of customers and the type of menu.

SERVICE AREA DIMENSIONS

Some guidelines have been established for different types of food services. Table 8.5 gives an idea of some space requirements which take into account comfort and ease of the users, both staff and customer.

The allowances take into account the area within dining rooms used for seating. These however, do not include toilet, washing and other customer facilities, the provision of which are essential in any food service establishment. The space of the room, its area, size of furniture, seating, layout or other furniture arrangements affect dining capacity. Space allowances are important for storage of books, bags and parcels which customers may carry to office or student canteens.

Table 8.5 *Space allowances for seating*

<i>Type of Establishment</i>	<i>Approximate Space Allowances (m²)</i>
Lunchroom seating young children	0.75 m ²
Adult seating	1.15 m ²
Formal service (banquets)	1.00 m ²
Cafeteria (commercial)	1.50–1.65 m ²
College cafeteria	1.10–1.40 m ²
School lunchrooms	0.85–1.10 m ²
Table service (college)	1.10–1.60 m ²
Counter service	1.70–1.90 m ²
Table service (club)	1.40–1.70 m ²
Minimum for table service	1.0–1.30 m ²

For informal services especially in schools and colleges it is often practical to provide drinking water fountains or coolers outside the dining area. This reduces over crowding at meal times and provides a facility for use throughout the day.

Service sections may vary in size from a small sideboard about one metre high and 50–60 cm² for 20–30 seats to a large central bay or a small room or sectioned off area 2.5 m to 3 m long, 75 cm wide and 1.75 to 2.25 m high, for

every 50–60 seats. As already mentioned, service bays may not be necessary if the dining room is adjacent to the kitchen or production area. In such cases call order windows on a single counter serviced from the production side directly by kitchen staff is more convenient and enhances the space utility for customer seating and service. Substations are however, very important for service, only when dining areas are removed from food production areas. The planning and organisation of serving and dining areas should aim at:

(a) Preserving Food Quality

This can be done by:

- The proper choice of holding and service equipment, particularly important for foods held at room temperature.
- Food should be held for the shortest possible period after preparation at the correct temperatures for each type of food item.
- Clean handling is important to maintain quality as service points require maximum handling of cooked foods.
- All foods displayed must be guarded against cross infection from customers, among whom it is difficult to identify carriers of infection. This is particularly important where the self service system of service is adopted.

(b) Avoiding Queueing Problems

This can be done by:

- Ensuring a fast turnover of food and customers.
- Arranging the areas so as to avoid a congested look or feeling to customers. But, at the same time service units and tables should not be placed so far apart as to make customers feel secluded or the establishment appear uninhabited giving the impression of being unpopular.

(c) Maintaining Standards of Environmental Hygiene

This can be done by:

- Keeping all areas clean.
- Clearing up as soon as a table has been vacated.
- Removing plate waste away from food handling areas immediately.

Waste disposal too needs to be planned for immediate removal from all spaces to prevent cross contamination.

DECOR OF DINING AREAS

In addition the above three factors in planning, an important feature of all dining areas is the decor. This plays on the psychology of customers and produces different emotional reactions in people. Some places even though restricted in their spaces, through clever colour effects impart a feeling of warmth, spaciousness, comfort, balance, cheerfulness, efficiency and enjoyment. Thus, use of soft lighting, different colours, flowers, plants, music, etc. can help to create what may be called the *atmosphere* in a restaurant, coffee shop, dining hall, and so on.

Spaciousness

Producing an effect of spaciousness is a great asset to any food service, because it helps customers to feel comfortable in small spaces, at the same time reduces the capital investment for the caterer. Besides the funds involved, it is not always possible to get large spaces in good locations. Also, smaller spaces are better utilised, while large spaces are often not used optimally and each square metre or a fraction thereof means unnecessarily blocking money. The effect of spaciousness can be produced in a number of ways through:

- Use of cool, light colours on walls, floors, ceilings and furniture. Colours that blend well with practically no contrast or pattern also add to effect.
- Use of glass panels, mirrors, paintings with a deep perspective or sceneries on walls which suggest to the viewer something distant.
- Lighting that falls on ceilings makes spaces look larger.
- A lighted wall panel gives a feeling of spaciousness.
- Clear plastic or glass tops of tables through which the floors are visible make them appear larger instead of being segmented with pieces of furniture.
- Floor coverings continued over part of walls, gives an impression of larger spaces because of continuity of flooring.

Lighting Effects

Lighting in dining areas contributes not only to spatial effects, but does much for aesthetics and comfort of the environment. In addition, it is functional in

terms of providing lights in areas where natural lighting is insufficient for proper visibility or not always possible.

Illumination

Illumination may be defined as the light falling on a unit area of a surface measured in units called *lux*. The light emitted by a unit area of surface is commonly measured in *candelas* per square metre. The recommended illumination levels for service areas in coffee shops is 150 lux, and in dining rooms, grills, restaurants and cafeterias it is 100 lux as against food production areas of 500 lux. If the proper degree of illumination is used in different parts of an area, it can enhance the structural beauty and colour of walls, ceilings, floors, furnishings, etc.

Good lighting can increase efficiency, through clearer visibility and make the environment safe for work. Light fittings are manufactured in a wide range providing varying qualities of light, from bright, translucent to diffused. Fittings are also manufactured for adjustable lighting to produce different effects at various times. Ceiling and wall fittings can be made for adjustable heights and angles, to provide direct light where needed. The choice of light fittings for food services must be made with the following factors in mind:

- Durability and finish.
- Attractiveness and ability to blend with the total décor.
- After use of the lamp the temperature of the holder should have the maximum recommended wattage.
- Weight of fitting and adjustability of design ease of installation and cleaning.
- Depth of recess required for installation, position of lamps and fixing positions, suspension required and wiring.
- Ease of maintenance, replacement and availability of spares.

Those involved in the décor of service areas must realise, however, that it is not only the amount of light emitted by a lamp that produces effects in the environment, but the percentage of light reflected by different surfaces. Very often a colourful meal on the table does not appear that attractive because the table colouring is dark and absorbs all the light, so visual perception of colours is affected. Lighting has therefore to be related to the surfaces in dining and service environment. Smooth or rough, dark or light determine the degree of light reflected and affect appearance of food and surfaces. The interaction of light and colour is therefore important in planning lighting. The blending and

mixing of colour lights to enhance effects in terms of décor is a highly developed art not within the purview of this book. It should suffice here to concentrate on the functional aspects and indicate the three types of light sources that can be used effectively. These emanate from three distinct physical processes—combustion, incandescence and electric discharge.

Combustion

This is the process involved when fuel is ignited as in a coal fire, oil lamps, candles, etc. This source produces orange-coloured light which is not so practical as a sole method of lighting dining areas. However, the method can be used effectively in creating atmosphere in a food service establishment on occasions which call for candlelight dining. Also the use of spit-fires for barbecuing meats in view of drippings falling into the spit fires creates an exciting atmosphere, along with the expectance of freshly cooked food from fire to plate.

Incandescence

Incandescence is the light emitted when a substance is heated. The most common example is natural light, emitted because of the sun's heat, and another is electric light. Rooms that are naturally lit exhibit a certain warmth and cheerfulness. Even the degree of natural light coming into dining rooms can be controlled by the use of blinds, hangings, plants, colour and texture of furnishings, to avoid glare heat in summers. In fact, in cold environment solar heat is now being channelised for useful purposes, and the manufacture and use of solar cookers is a step towards using natural incandescence for heating in cooking.

Electric Discharge

Electric light in the form of bulbs of different wattage, and in different colours and even with frosted coatings to diffuse the light, are now available. Incandescent bulbs give a warm light as compared to fluorescent lighting produced by electric discharge lamps. In fluorescent lighting, a tube of mercury vapour, coated with special powders, when subjected to a current result in activating the vapours, which then cause the coating to produce light of fluorescence. Figure 6.10 (p. 154) shows some types of fluorescent light fittings available. They come in tabular, circular, straight line and U-shapes and are useful for lighting up corners or crevices. Fluorescent lighting produces less glare, is cheaper to maintain though initial cost of installation is more than that of light bulbs.

Generally rooms require low level but generalised illumination to create a subdued effect. In addition other sources of light may be used effectively to focus on table appointment, panels, furniture, music centres, and the like.

Whatever the type of atmosphere created in an establishment, every service area must also provide comfort in terms of temperature and humidity the basic principles to be followed in the design and layout are:

- Effective space utilisation to provide harmony, balance, proportion and rhythm, while at the same time creating a focal point to draw customer attention. This can be built into the décor through size differentiation, repetition, contrast and arrangement.
- Planning of areas to provide flexibility in use.
- Scope for adjustments and expansion. This can be visually achieved as in the case of low ceilings which can be made to appear raised by using light colours. Again, geometric patterns on floors tend to give an extended feeling, and so on.

Thus a number of effects can be produced by using different colours, forms and textures. It is therefore important to produce those effects which harmonise with the theme of a food establishment and reflect the mood of any occasion. This is because people eat out for various reasons like celebrations, to cheer up when lonely or frustrated, for peace and quiet, for a change in menu or atmosphere, and so on. A good décor has the necessary flexibility built into it to adjust to these different requirements, at the same time it provides harmonious arrangements of equipment and furniture to give, not only a blend of colour or light effects but also utility and comfort for all users.

The trend in premise design is to attract the passerby through attractive window displays, lighted menu boards and neon signs. The interior too must be able to hold the attention of customers through invitingly decorated entrances and provide plenty of things to focus customer's attention on, while he is waiting to be served.

Small establishments should make use of amateur decorators, like students from institutions of interior decoration and design. Ideas may also be gained by observation, imitation and communication with others in the trade.

The food service sector is becoming so competitive that spaces have become limited and expensive. Managements have now to look at renovation schemes periodically rather than simply expanding spaces and sizes of existing establishments. All renovation schemes are aimed at:

- Improving appearance.
- Maximum space utilisation.

- Smooth work flow.
- Extending customer services and satisfaction.
- Increasing profitability through greater efficiency in all areas of management, production and service.
- Developing staff and improving relations with staff, customers and suppliers.

Apart from spaces required for the actual food production and service, organising spaces for staff facilities are important in every food service establishment. These include restrooms, toilet and washing facilities. The point to emphasise is that these facilities should be away from areas where food is actually handled, having independent exits leading to the outside of the building. Facilities for customers should be separate from those for staff to prevent spread of infection from customers to staff and then to the food preparation environment. All spaces must follow the rules for good hygiene, sanitation and safety in the interest of the institution, staff and customers.

Space Evaluation

All spaces designed in food services need to be periodically evaluated for efficiency in planning, usefulness of arrangements and their cost effectiveness. This is because spaces are the most expensive resource and needs to be planned and used optimally. Effectiveness of space use is best judged through assessments of the following indices:

- Comfort at work
- Low accident rate
- Happy workforce
- Customer satisfaction.

In general, customers like to feel that those who feed them are well organised and fastidious about cleanliness, hygiene and sanitation noise control and thereby customer safety.

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Unit 3

Equipment

- Catering Equipment
- Selection of Equipment
- Equipment Design, Installation and Operation
- Purchasing Equipment
- Care and Maintenance of Equipment

In early kitchens the equipment consisted on an open fire for cooking, which was generally placed on the floor, the fuel being coal, wood, sundried cowdung cakes or balls lighted between two or three bricks on which the cooking vessel was placed. This is still practised in rural India, or even in urban areas where labour at construction sites light some wood to cook their evening meal at the end of a hard day's work.

The need for a piece of equipment which could be moved in and out of the house led to the development of the galvanised iron bucket with a grill on the top followed by the smokeless *chullah*; the *tandoor* or traditional Indian oven which was followed by the gas and electric stove and finally the cooking range and the solar cooker. This is but an example of one type of cooking equipment, but the last few decades have seen a complete revolution in the catering equipment industry, which now provides for the modern caterer a range varying from very simple easy-to-use gadgets to extremely complicated automatic devices. This development has been in response to the needs of the different types and sizes of catering units varying from the simple fresh fruit juice kiosk to the streamlined restaurant, which have sprung up to satisfy the ever increasing demands of people for eating out. Catering equipment for food service establishments is basically not very different from that used for cooking and serving food at home except that, because of the volume of food cooked and served, and the greater degree of handling required, it is constructed for greater capacity, durability, speed, efficiency and economy.

Over the years, the activities of catering establishments have become more and more professional and the objectives have been constantly directed towards utilising equipment for maximum efficiency, at the same time maintaining a service that is clean and attractive to both worker and viewer.

The relationship of equipment placement in kitchen, stores and service areas with materials used in food production and service was emphasised in Unit 2 for achieving functional efficiency.

The present unit deals with the types of equipment available to the caterer, and how they can be suitably selected and purchased for a particular type of establishment. It also provides important guidelines for their operation and maintenance with special reference to hygiene and the economical use of time, effort and money.

Catering Equipment

The term *equipment* refers to all machinery, tools, utensils, crockery, cutlery, and furniture which may be used for preparation, service and storage of food. The types of equipment required vary with the activities carried out in a particular area of work. For example, in storage areas mobile and adjustable racks are used for shelving goods, whereas in the service areas cabinets with drawers for cutlery and napkins, are necessary and so on.

There are a number of pieces of equipment which can be used in more than one area of activity, such as, trolleys used for transporting goods from stores to kitchen can also be used for transporting prepared food from kitchen to service areas. Catering equipment ranges from simple boiling pans or pots, saucepans and iron grids to sophisticated cooking ranges, skillets, steamers, ovens, grills, temperature controlled fryers and so on. The list can be endless depending on the cooking, type and size of the food service and eating habits of people in any region.

CLASSIFICATION

Equipment may be classified in a number of ways, according to weight or size, the order in which it is used in the production cycle of a food service establishment, or according to their mode of operation.

Weight or Size

Food production and service equipment is often referred to as *heavy*, *medium* or *light duty* equipment. The heavy duty category includes all equipment that are generally too heavy to move around, and are therefore meant to be fitted or

installed after careful planning. Such equipment, as the name suggests, are made of heavy metal sheeting that can withstand hard use for long periods of time. These are therefore generally fixed on a platform but may also be free-standing with a 10 cm clearance from the floor for ease of cleaning. *Heavy duty* or large equipment such as ranges, ovens, mixing machines range tops, griddles, friers, etc. are generally manufactured in standard sizes with only slight variations, produced by different manufacturers. Information regarding capacities, output and other features are always provided for each piece of equipment by the manufacturer. In addition, installation and operating instructions are part of the suppliers responsibility.

Medium duty equipment refers to pieces which are not too difficult to move for occasional cleaning. They are so constructed as to get dismantled or moved around as such for rearrangements within areas or placed on wheels to make them mobile. Some examples are mixers, juicers, food processors, trolleys and so on.

Light duty equipment can be more easily handled and moved around or placed anywhere for use when required. It is light to use, generally smaller in size than the heavy or medium equipment, and include knives, service equipment, mechanical whisks and beaters and other daily use food preparation and cooking and service equipment.

It is evident that the three categories provide a wide range of equipment in terms of sizes and designs for the use of large, medium and small-sized catering establishments.

Order of Use

Equipment may be classified according to the order in which it is used in the production cycle of an establishment. The steps involved in the production of meals therefore form the basis for this classification as follows:

- (a) *Receiving equipment:* These include receiving platform, weighing scales, trolleys, and so on.
- (b) *Storage equipment:* Like racks, shelves, bins, jars, etc. Portable or mobile bins for storing flour, sugar, rice, pulses are more convenient to use and keep clean.
- (c) *Kitchen equipment:* This includes all items necessary for the preparation, cooking, holding and serving of food and washing up. Kitchen equipment would therefore consist of tables with suitable work surfaces; peeling, cutting, grating and slicing equipment; oven, grill, cooking range, hotplate, chapatti-puffer, for cooking.

- (d) *Service equipment*: This includes table ware and accessories, food holding equipment such as bainmarie, refrigerated display cases, trolleys, cutlery and crockery, warmers, trays, service dishes and so on. For delivery of foods from central or base kitchens to service areas such as railway trains, aircraft or within hospitals to the wards, special hot and cold food trolleys are used which can be plugged in till food is served.
- (e) *Clearing and cleaning equipment*: This includes equipment for clearing plate waste, and that needed for the storage and disposal of waste materials like peels, foods from the base and sides of pans, plate waste, wrappings or empty cartons which are of utmost importance in any establishment. Washing up equipment may include sink units, dish washers and driers, instant boilers for hot running water depending on the size of the establishment. Plates 9.1(a) to 9.1(e) indicate a wide range of available catering equipment.

Complete washing-up units are now available in stainless steel in place of the old cemented sink connected to a water tank on one side and a waste pipe on the other. The complete units now provide free flowing water using the accessories necessary to connect to underground drainage.

- (f) *Waste disposal equipment*: Equipment for waste disposal has been transformed from the open dumps to the closed bins, sealed bag and incinerators. The latter come in sealed units which can be fitted to sinks to crush any plate waste and peelings that may be passed through the sink. Incinerators are also available as separate free-standing disposal units meant solely for dealing with waste materials.

This method of classifying equipment is the most commonly used one as it helps to relate each equipment with the area in which it is to be installed and the use to which it is put.

Mode of Operation

Depending on whether the equipment is fully hand-operated, semi-automatic or fully automatic, the various pieces can be classified as mechanical, electrical, automated and so on according to its mode of operation. Equipment in the first category consists of mechanical pieces such as beaters or whisks, hand slicers, knives etc. which require greater effort to use than the semi-automatic types. The latter use electrical energy but need to be monitored carefully. These include mixers, electric whisks, fryers, etc.

Automatic Equipment

Automatic types include sophisticated equipment with thermostatic controls and timers. Which can be adjusted to required times and temperatures. The latter two categories are motorised and therefore require less attention and effort to operate. Their output in terms of the number of units of food prepared is also more than the mechanical and semi-automatic types of equipment.

Further classifications are made based on how well an equipment gets used because of its particular features or characteristics when in use. These are modular equipment, labour saving devices, multiuse equipment and custom built types.

Modular Equipment

Today a variety of equipment are designed in a manner so that parts of one equipment can be used interchangeably in another equipment. These are known as *modular* equipment and are very useful where the size of establishment is small and the number of equipment that can be installed need to be limited. For example, the pan or tray sizes in bainmaries can be made to dimensions that fit into the oven for baking and or stored in the refrigerator as such, or fitted into a trolley shelf and wheeled in for service or into a cold room to be used as required.

Common sizes of modular trays are 12" × 18" (30 cm × 40 cm) or 22 cm × 30 cm (9" × 12") made in different materials and may be selected according to convenience. Some times spaces can be made to size in order to match the standard sizes of equipment available for instance two 9" × 12" (22 cm × 30 cm) pans or one 12" × 18" (30 cm × 45 cm) tray could be used in the same space. Modular equipment thus enables food to be handled only when necessary, and reduces its repeated transference from baking, storage and holding equipment, leading to less piling up of utensils for washing up. Consequently less detergent too is required, which while being costly, literally goes down the drain.

Furthermore, modular equipment also increase efficiency of work(ers) by cutting out the extra time and effort which would otherwise have to be spent in transferring food from one equipment to another. Further more, the quality of food and its safety is better ensured.

Multiuse Equipment

The equipment that fall into this category are the food processor, which includes a number of attachments for multiple uses, such as chopping, grating, peeling, dough making. In short it is one equipment that can help to perform multiple functions in food preparation. Others include steamers, trolleys, boilers and the like which can be used to make different kinds of dishes. Multiuse equipment have the added advantage of occupying less space while at the same time providing flexibility in use, and restricting investment to only one piece of equipment.

For small or medium sized establishments it is a good idea to select multifunction equipment such as griddles which can be used for making dosas (fermented batter pancakes, eggs, chappatis and cutlets. Similarly, steamers for vegetables, poaching eggs or making idlis (steamed fermented preparation), are useful pieces in any institutional kitchen.

Creative and innovative staff can convert equipment manufactured for a particular use into multiuse units. An outstanding example of this in India, is the use of the dough-nut machine which is being used for preparation of *vadas* at the Nirulas base kitchen and supplied through their outlets. The result is a product untouched by hand, standardised for recipe and portion size. The *vada* is also a very versatile product and can be served as a snack or a side dish along with a meal as demanded by the customer. Perhaps other batters of similar consistencies can be used to prepare a variety of products, which can add variety to meals and motivate staff to become more creative with other equipment as well making the huge investments in equipment worth-while for food services.

Mobile Equipment

As the name suggests mobile equipment is that which can be moved from one setting to another as required, as in the case of trolleys which need not be ordered for placement at each work centre, but can be wheeled to it when needed for transferring prepared dishes from one activity area to another. Any medium to light duty equipment can be made mobile if required for flexibility of placement and use.

Labour Saving Devices (LSD)

These equipment are particularly important in food services as they save time, energy and human effort in food preparation and service activities. In addition

they improve the quality of products through producing standardised portion sizes, and also reduce food handling by different people, thus minimizing the chances of cross-contamination and ensuring wholesomeness of food offered to the customer. For example, machines like peelers, slicers etc. give uniform peeling of vegetables and uniform slicing of meat, bread, cheese or any other food.

Table 9.1 lists a few LSD's commonly used in food production kitchens, service and other areas that may be used for the different activities involved in quantity food production and service. The dotted lines indicate the endless scope of equipment which can be added on and selected according to individual requirements of different size and type of establishments, their menu needs and customer demands in terms of the end product desired. Sometimes equipment may be chosen because of increasing labour costs, or non-availability of certain skills when required or because of other environmental constraints.

Custom Built Equipment

Any piece of equipment which is specially designed to fit into a particular space, or of a size or capacity required by any food service establishment is said to be *custom-built*. In short it means, made to specifications and not in a size or design usually standardised for manufacture as appears in any catalogue. Since each piece is specially constructed for a particular customer, it is more expensive than the standard models. Sometimes even spare parts have to be designed separately when required. This category includes equipment like cupboard refrigerators, peeling machines of desired capacity, sink units of special sizes, ovens and so on. All equipment manufacturers offer the service for custom building equipment to suit the needs of individual establishments for size, shape, weight and fit according to available spaces.

Whatever may be the method of classifying equipment, it is important to remember that every food service establishment will have different needs in terms of size, numbers and types of equipment required. While the same piece of equipment maybe fixed in one establishment it may be free-standing or mobile in another.

Plates 9.1 to 9.4 indicate some equipment placed according to their use in food services.

Table 9.1 *Labour Saving Devices commonly used in catering activities*

<i>Food Preparation</i>	<i>Cooking Equipment</i>	<i>Service Equipment</i>	<i>Holding Equipment</i>	<i>Storage Equipment</i>	<i>Cleaning</i>
Processor	Cooking Range	Trolley	Hot and Cold	Storage Bins	Glass Washing Machine
Slicer	Fryer	Bainmarie	Food Trolley	Refrigerators	Dish Washer
Steam Kettle	Tilting Pan	Cutlery Carrier	Hot Food Cabinet	Freezers Trolleys	Table & Sink Units
Peeling Machine	Tooster	Tray Trolley	Oven	Mobile Racks	Sink Units
...	Grill	Urns	Food Warmer	...	Baskets
...	...	Microwave	Mobile Equipment rack
...	...	Oven
...

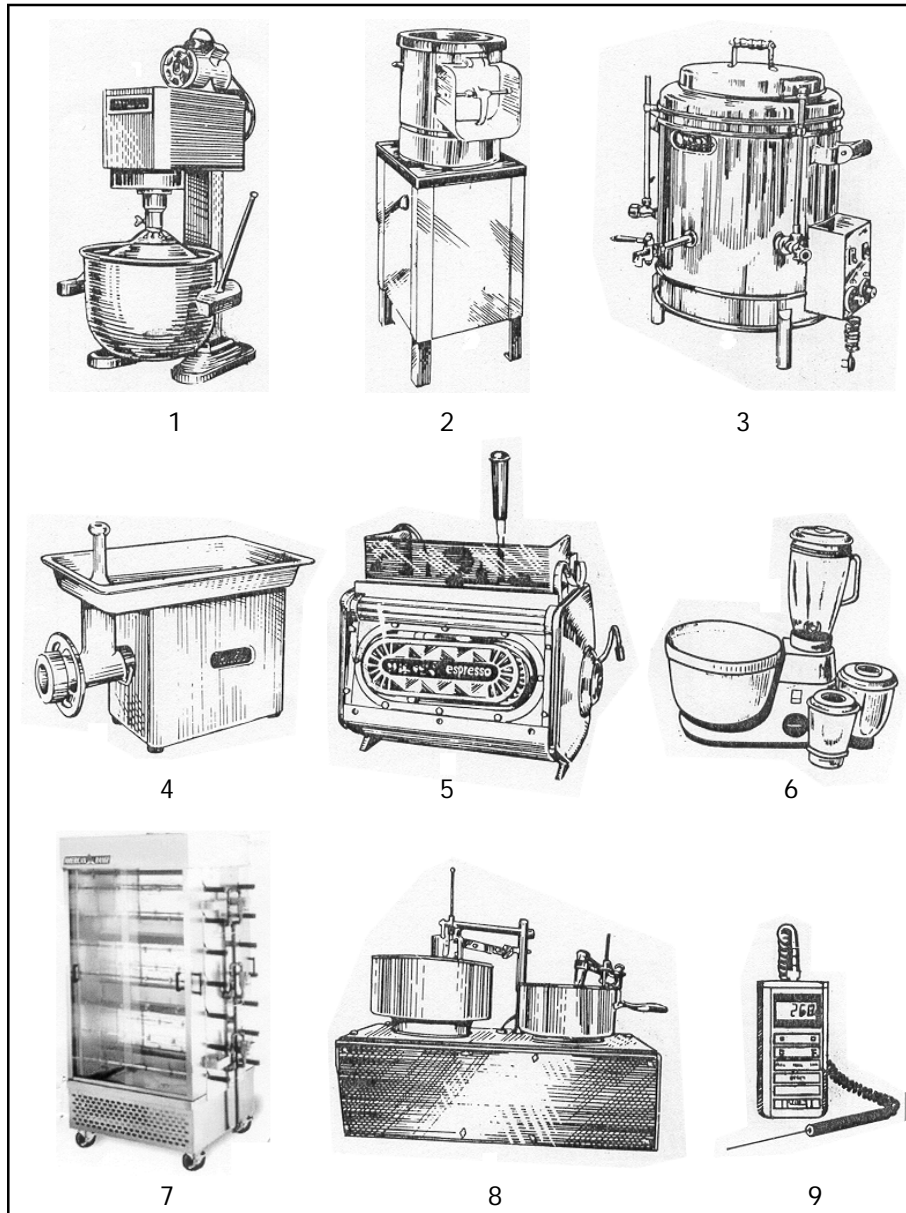


Plate 9.1 *Food preparation equipment*

1. Dough maker and moulding machine; 2. Peeling machine; 3. Boiler; 4. Chopper; 5. Coffee machine; 6. Food processor; 7. Rotiserri; 8. Wet grinder; 9. Digital catering thermometer.

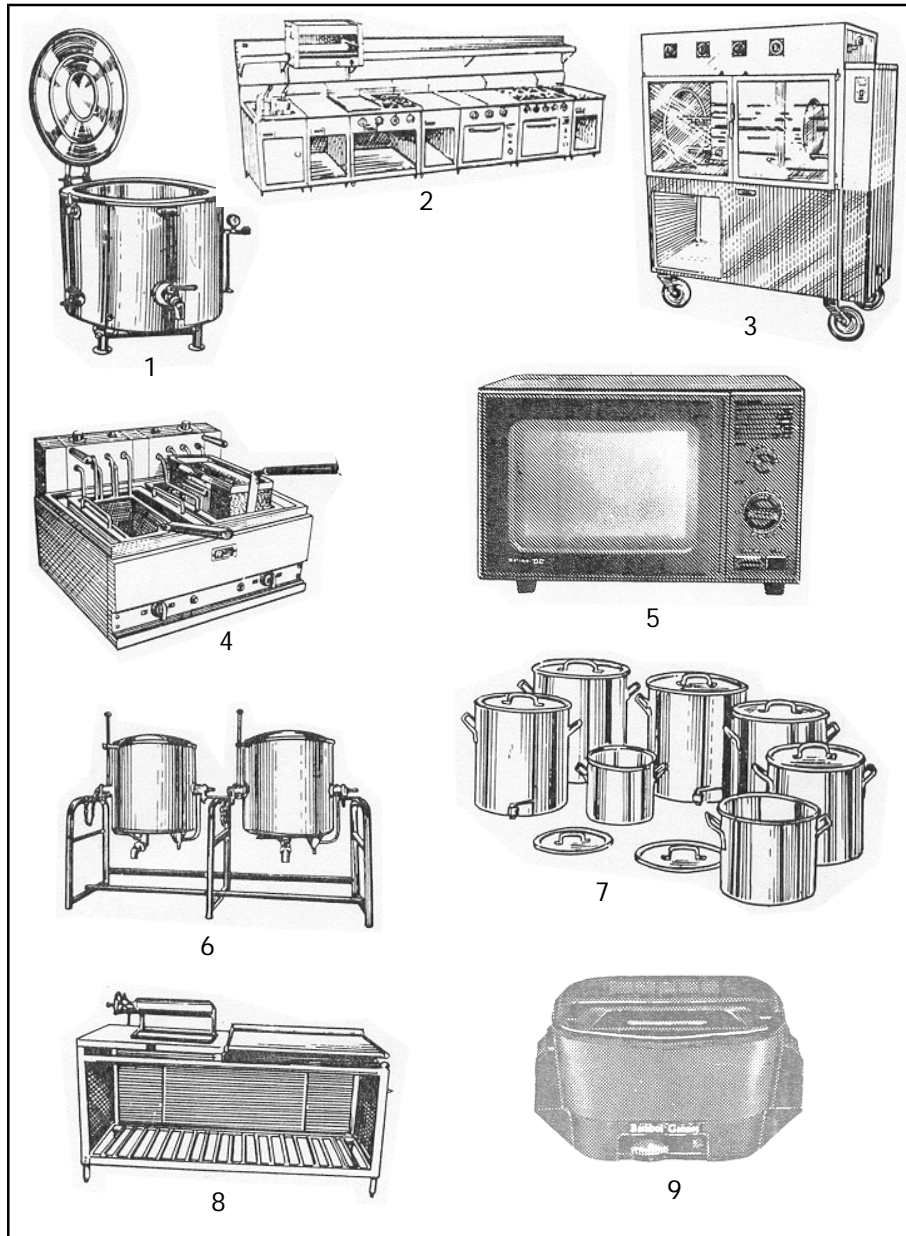


Plate 9.2 *Cooking equipment*

1. Rice-milk cooker; 2. Modular gas ranges, with ovens, fryer, griddle plate, salamander, back guard and overshelf; 3. Mobile rotisserie; 4. Fryer; 5. Microwave oven; 6. Boiling pans; 7. Stock pots; 8. Chappati plate and puffer; and 9. Automatic egg boiler.

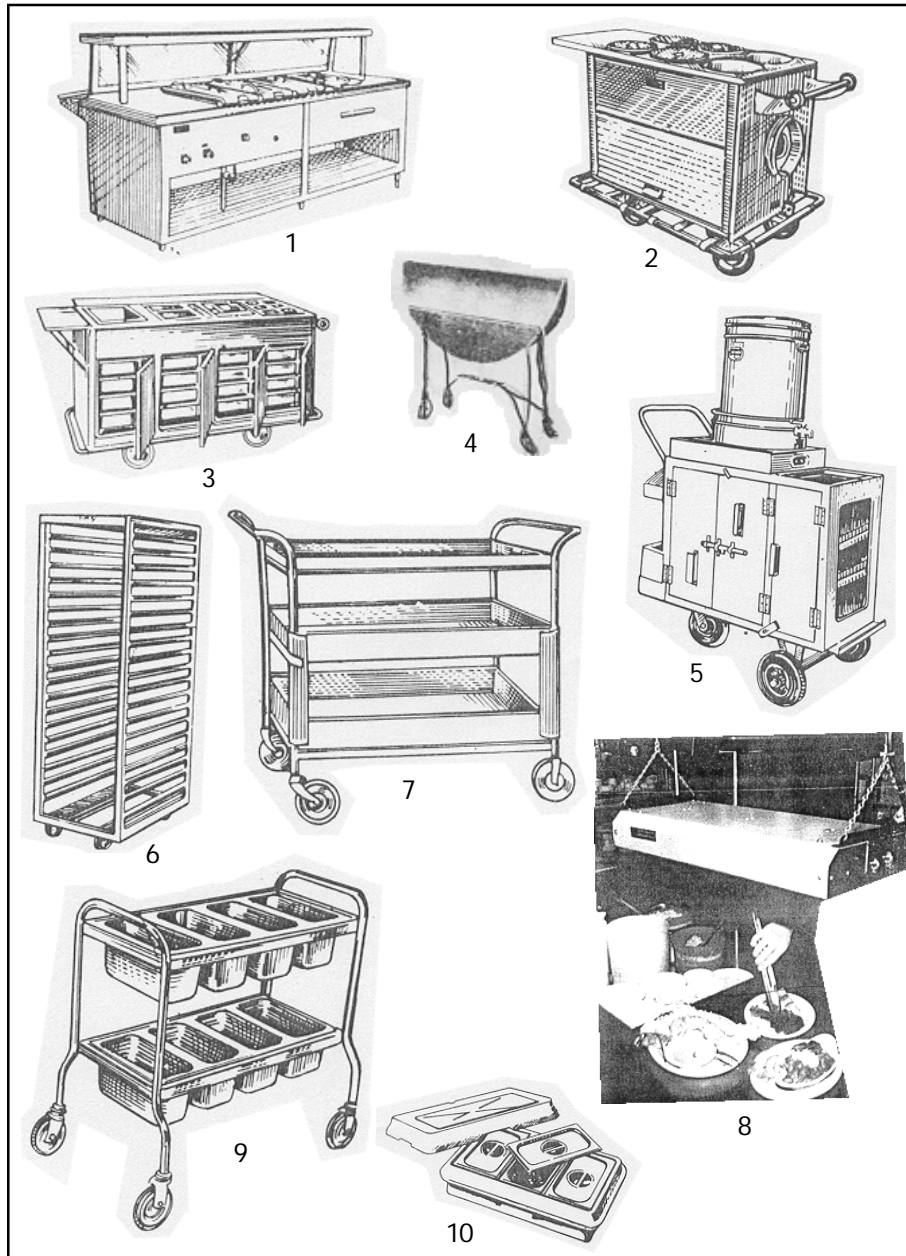


Plate 9.3 *Holding and service equipment*

1. Bainmarie; 2. Bulk food trolley; 3. Hot food service trolley; 4. Room service trolley; 5. Tea service trolley; 6. Tray carrier; 7. Collection trolley; 8. Infrared food warmer; 9. Cutlery carrier; 10. Meal delivery container.

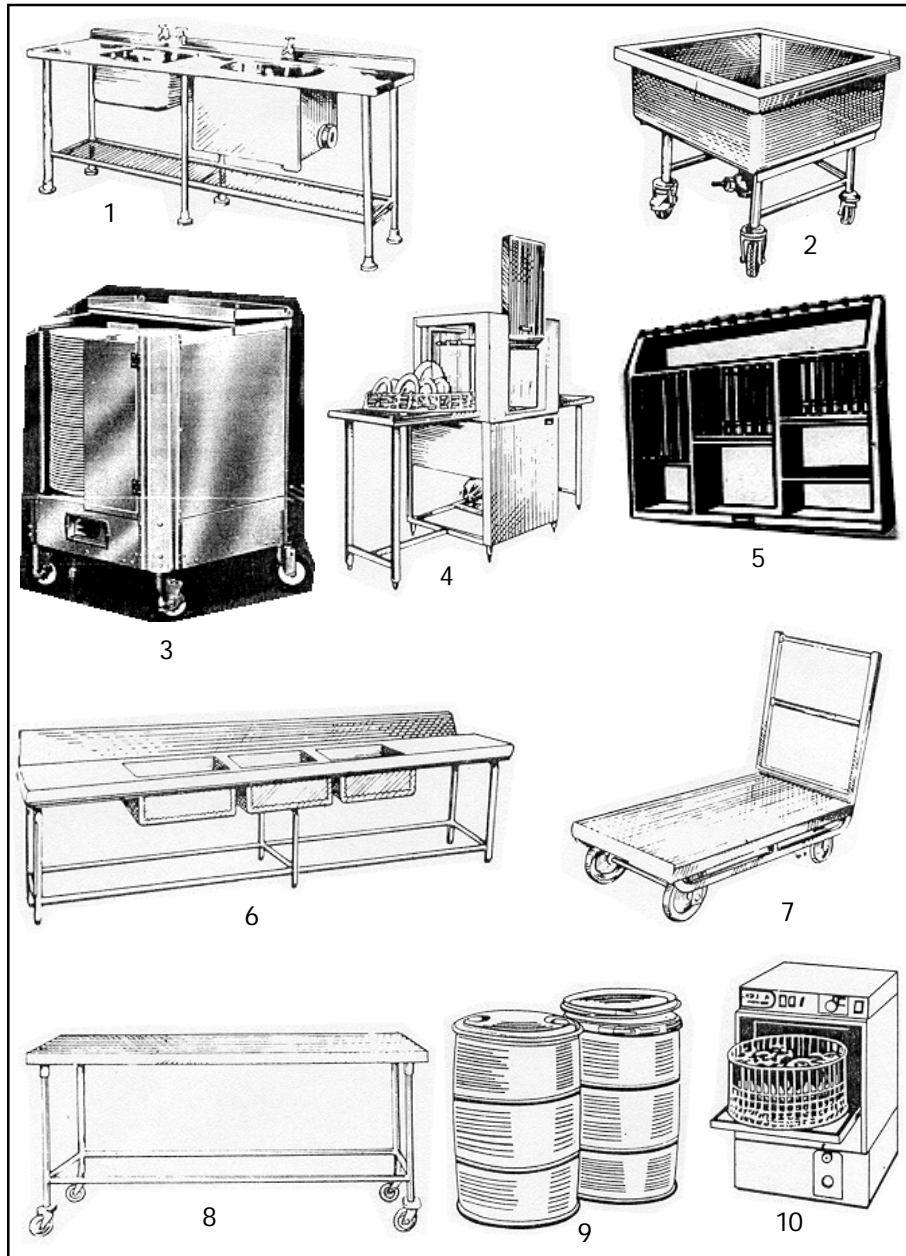


Plate 9.4 Storage cleaning and storage equipment

1. Washing units; 2. Mobile sink with drain; 3. Plate warmer; 4. Dishwashing machine; 5. Plate rack; 6. Three-sink unit; 7. Platform trolley; 8. Mobile work table. 9. Storage drums; 10. Glass washing machine

Equipment design development is thus a challenge both for the user as well as the manufacturer of equipment who is constantly trying to design newer concepts and innovate and create models to suit the needs of the institutions as well as keep in line with scientific development in the fields of kitchen equipment design and safety enhancement.

A scientifically tested product for the quality conscious has now been innovated known as the *sandwich-bottom* cookware. The vessels have a strong, stainless steel body with a heavy steel bottom, and a layer of aluminium or copper in between. This is better than the ordinary copper bottom vessels because the thicker sandwiched copper plate spreads heat faster and more evenly, the outer steel plate protecting the copper cladding against oxidation and therefore require less maintenance. There are however, no research studies on the comparative time and fuel cost savings in cooking with this and conventional equipment.

Selection of Equipment

A wide choice of equipment is available for a food service institution to choose from and since the investment on equipment is quite appreciable, selection needs to be made wisely. Some basic factors important in making decisions for selection of equipment for any catering establishment are indicated in Fig. 10.1

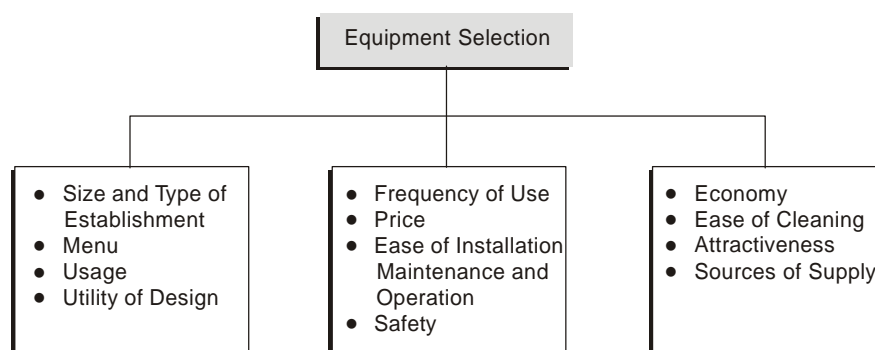


Fig. 10.1 *Factors affecting equipment selection*

SIZE AND TYPE OF ESTABLISHMENT

Size refers not only to the spatial measurements of the structure or premises for food preparation and service activity but also to the number of customers that must be catered to at one time. Thus, selection of equipment is directly affected by the volume of food prepared, as this is related to the size or capacity of the particular piece of equipment. Too large an equipment in relation to turnover

expected will lead to under-utilisation and inefficiency, while too small a capacity will not be able to meet the demands of the customers.

The space in which the equipment is to be installed will also determine the size, shape and capacity to select. It is well established that smaller floor areas are required if multi-use and modular equipment are utilised in any area be it production, service or storage.

The smaller the size of the establishment the more important it becomes to select equipment which is mobile and has the ability to be flat packed and stored when not in use. These characteristics enable the limited space to be utilized to the maximum in a flexible manner.

While selecting designs of equipment to suit individual food preparation and service requirements it is wise to maintain harmony with the general plan of the building. This is particularly important in service and dining areas where the organisation comes in contact with its customers. This is applicable even more in a self service type of establishment where the food production is often carried out in full view of the customer.

The type of establishment reflects the extent of service offered to customers in terms of the quantities and different types of foods prepared and served at one time. For instance, heavier serving equipment of larger capacities will be selected for college hostels following a relatively fixed menu at a particular time, than for the preparation and service of short order lunch served over a counter. Again, a coffee shop or cafeteria will require more types of equipment of smaller capacities, with greater emphasis on beverage service or snacks than cooked items prepared in quantity. The number of customers served may be more in the latter by still the equipment capacity required would be limited to the sizes required for short order preparation and service at peak times. Selection of equipment must therefore be based not only on sizes for present needs but on the possibility of future expansion of the food service establishment, since investment on equipment is a relatively fixed cost, being incurred only periodically every 5–10 years.

MENU

Equipment also depends on the methods of cooking required for the dishes planned on the menu. For instance, if a canteen menu consists mainly of fried snacks and beverage, the selection will be between investing on a fryer or a simple '*kadai*'. On the other hand, if the menu consists of ready baked items, sauteed or shallow fried snacks and sandwiches, a fryer would be unnecessary.

Menu patterns also greatly affect the serving equipment to be selected. For example, the size and number of inserts to be selected for hot food service counters will depend on the number of hot foods appearing on the menu as also the number of portions used at peak times. Common depth of counter pans are 6.5 cm, 10 cm and 15 cm (2½, 4 and 6 inches) though 2.5 cm and 20 cm (1" and 8") are also available. Pans of one size may be selected for convenience of storage. Very often pans made of non-corrosive metal can be used to cook certain items on the menu and placed directly in pre heated serving counters without the need to transfer food for service and storage. Table 10.1 shows the sizes and capacities of counter pans, with approximate metric values.

Table 10.1 *Sizes and capacities of pans*

<i>Half Size</i>			<i>Quarter Size</i>		
<i>Depth</i>		<i>Capacity</i> (litres)	<i>Depth</i>		<i>Capacity</i> (litres)
(inches)	(cm)		(inches)	(cm)	
1	2.5	2	2½	6.5	2.5
2½	6.5	5	4	10	4
4	10	8	6	15	5
6	15	12			
8	20	17			

Food Purchased

The form in which the food is purchased will further influence the selection of equipment for any establishment. For example, if ready idli, vada, dosa mixes are purchased for preparing the dishes for a particular menu, then there would be no need for a wet grinder which would be necessary if the mixtures were prepared from raw ingredients. Similarly, if quick frozen vegetables are used in the preparation of meals, there would be no need to select equipment like vegetable peeling machines.

It must, however, be remembered that while menus can be changed easily, changing equipment is expensive. Its selection therefore needs to be carefully planned to provide menu flexibilities. Multifunction equipment are good choices and can easily take care of menu variations.

USAGE

Every equipment selected must be able to fulfil a specific purpose, be it efficiency of production, profitability, convenience or customer satisfaction in terms of aesthetically presented wholesome meals, greater value for money or comfortable serving and dining.

There are a number of space and labour-saving equipment available on the market which can perform different functions simply by the use of attachments to the main machine. Fig 10.2 shows one such very simple item to which attachments for kneading, beating, mixing, grating and slicing can be fixed for use when required. Such multifunction devices are ideal for small outlets like coffee shops, canteens or lunchrooms. The utility of such equipment further increases if they are made mobile and can easily be used in any area of activity which requires it.

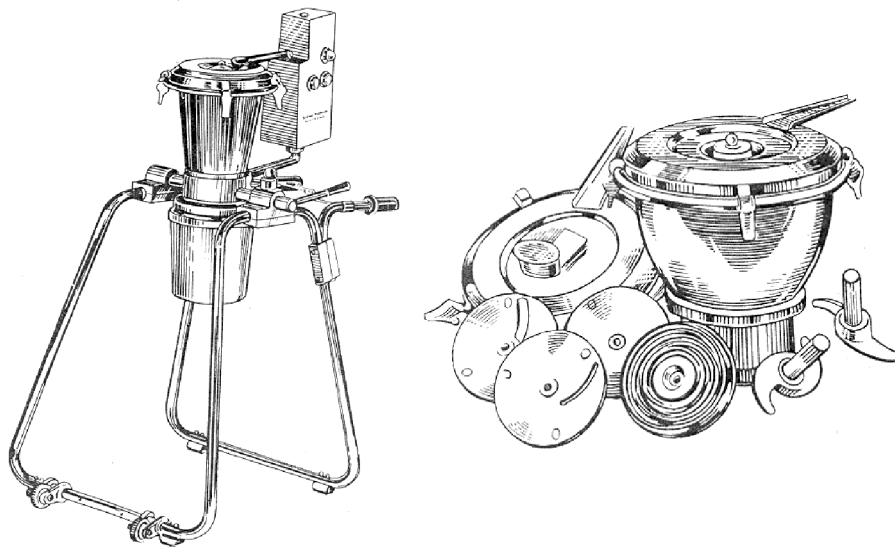


Fig. 10.2 *Mobile multifunction equipment (Courtesy: Sumeet Mixers)*

UTILITY OF DESIGN

The design of a piece of equipment has to be considered in terms of the results desired. For example, it is very important to know if an equipment is actually maintaining the temperature necessary for keeping food safe while holding it

or in storage. But it is very difficult to know this in the case of certain equipment unless the manufacturer indicates clearly the temperature at which the equipment is designed to operate. In selection, designs which have temperature indicators and warning lights should be preferred, because equipment tested in the manufacturer's laboratory may work differently in the catering environment. The usual markings on certain equipment are in the form of dials showing grading of temperature as 1–10 or *high, medium* and *low* which are not an accurate guide to the user.

FREQUENCY OF USE

The selection of an equipment will be affected by its frequency of use. For instance, there is no point going in for a wet grinder if items of food requiring wet grinding are placed on the menu once in a fortnight or a month. It would be wiser to select a kitchen machine which can be used for wet grinding when required and for blending, grating and other functions as well.

The degree of automation and standardisation required in terms of selecting gadgets or labour saving devices will depend on factors like expectations of the customers and the availability of labour for the establishment. In some locations where labour is cheap and easily available for doing repetitive jobs it might not be desirable to invest on highly automated equipment. Also, customers may prefer the variations in the quality of dish from day to day, and meal to meal which results when people make them, rather than the completely standardised product prepared through machines and automation. For instance, all customers eating at one time, may not demand a puffed plain *chappati*, some may want a *parantha*. In such cases it may be desirable to select a griddle plate rather than chappati puffer which may be grossly underutilised.

However using machines for vending liquid ingredients like milk, oils or beverage are useful as they prevent losses through spillage during issue or use. Mother Dairy is the best example of vending milk through a machine, the advantages being that the milk is not exposed to the customers or vendors in the process of distribution, and the system is tamper proof. The Gujarat Cooperative Marketing Federation Limited, and some companies in Tamilnadu and Mumbai too have launched vending of oils through machines. This is a useful development for the catering industry who can now purchase 5 and 15 litre tetra packs too as required for institutions which trade seasonally and especially for entrepreneurs who can draw oils from vending machines on a weekly basis to cut down on storage space.

Very often tall claims are made by manufacturers regarding the utility of their equipment. Caution must therefore be exercised to ensure that every piece is tested in the work situation to verify that it can be easily operated by the staff and is approved by them. Any equipment no matter how good or useful may prove futile if the persons who are to use it do not like to operate it. Since people react differently to changes in their habitual methods of working it is only with their acceptance and approval that equipment investments will prove worthwhile.

PRICE

The materials of which an equipment is made, affects its price which almost always determines buying choice. Every equipment depreciates at a different rate and therefore the rate of depreciation along with its impact on environmental sanitation, satisfaction in use, and suitability in terms of hard wearing qualities all affect selection. The investment cost of an equipment has to be weighed very carefully against the cost of time and effort saved in using it for better production in terms of quality and quantity of the product and the cost of operating and maintaining it. The rate of depreciation and the rate of return on investment are both very crucial considerations.

Selection is also guided by the funds available to the buyer over a period of time. This is because he has not only to pay the initial cost of the equipment and installation but also recurring costs for operation, care and maintenance necessary for every equipment whatever its size. The larger the budget the wider becomes the choice of the buyer.

EASE OF INSTALLATION, MAINTENANCE AND OPERATION

Selection of equipment must be guided by simplicity of construction, ease with which it can be operated using existing skills of catering staff, and the factors which are important to hygiene and safety of both equipment and its environment. Such factors are the material from which the equipment is made, the nature of the construction in terms of rounded edges, proper insulation, earthing and plumbing as the case may be. It is more expensive to buy equipment which needs a specialist's attention each time something goes wrong.

As far as the operation is concerned most catering staff should be able to acquire the skills to operate equipment quite easily. If sophisticated autocontrols are provided then the personnel need to be trained in their use and cautioned against the dangers of ruining the equipment and causing accidents due to

ignorance or negligence. While operators may be able to follow simple operative or push-button instructions, they may not be aware of the dangers of mishandling the equipment.

In such cases instructions in the form of simple steps clearly pasted on the door of the equipment or on the wall above it helps operators to depend less on their memory, and avoid unnecessary expenses and trouble. In the long run this helps to make work more productive and satisfying to both management and staff.

SAFETY

Since catering involves dealing with heavy equipment, sharp tools, glass and cutlery, large volumes of food, electricity, gas, steam, hot and cold water, it is extremely important to select equipment that is guaranteed for safety while in operation and when not in use. All sharp edged and movable parts should be provided with safety guards. There should be no crevices which may harbour dust, dirt and microbes, endangering the safety of the environment and the food produced.

This is particularly important in tropical climates where variable temperatures and humidity lead to microbial deterioration of foods, and dusty unhygienic environment often lead to unwholesome foods being picked up from road side stalls and establishment by unaware customers.

Another important aspect of environment safety is to invest on kitchen waste reduction equipment such as sink fitted or free standing incinerators which dispose of between 150–700 kg of waste per hour, through the normal drainage provided. Compactors are also available which compress waste into plastic bags at the rate of 5 to 1 compaction in 25 seconds, and are easy to operate with the press of a button. The capacities to invest on will depend on the volume of kitchen waste created per day, the electrical load, and plumbing arrangements.

In selection of equipment for safety the doors should open opposite the area where dishes are to be placed, so that doors do not come in the way of working smoothly and accidents are avoided. While deciding on cooking equipment, models of cooking ranges with concealed electric elements should be selected with due regard to the safety of all working in the environment who may touch the heated plate accidentally, not knowing it has just been switched off.

ECONOMY

Economy refers to the amount of fuel in terms of electricity, gas, kerosene, and coal, which an equipment may require for functioning. The operating costs of a piece of equipment is an important consideration in its selection. In certain areas, for example, electricity may be cheaper as a cooking fuel than gas or coal. In such cases it would be better to select electrically operated equipment rather than gas ranges. Some equipment to consider in terms of energy saving would be pressure cooking equipment, convection and microwave ovens for quick cooking and even heating. In addition, the costs of installation, maintenance and operation will determine the selection. It would be wiser to select equipment with higher initial costs and lower maintenance costs that to go for cheaper models which have higher recurring costs.

The availability of spare parts for the equipment in case of need for replacement is also an important consideration for selection. Very often expenses incurred in importing parts, and the time period involved in acquiring them can place the equipment out of use long enough to make it uneconomical. As far as possible equipment should be selected from within the range manufactured locally. This is also an advantage in terms of getting pieces custom built to suit individual requirements.

EASE OF CLEANING

Selected equipment should be constructed with materials which are non-corrosive, non-toxic, stable to heat and moisture and non-absorbent. All equipment should have smooth surfaces, not requiring any special detergents for its cleaning. Too much shiny chrome on equipment looks attractive when new but involves extra effort and time in wiping and polishing.

The properties of different metals used in fabricating equipment, and their relative advantages for use in food production and service areas are discussed below:

Copper

Copper is usually used for manufacture of cooking utensils. It requires frequent polishing and the nickel or tin lining of copper vessels needs replacement when it gets chipped or worn out. This is done to prevent chemical reaction of food with copper.

Copper is also heavy to handle easily, especially when cooking large volumes of food. The advantage of this metal however is, that it provides even heat transfer due to its excellent heat conductivity properties.

In India, stainless steel utensils with a copper base are now available and are fast replacing the more expensive copper utensils. These have the advantage of copper as far as heat conductivity is concerned, but are lighter in weight and therefore easier to handle. In addition they are cheaper to buy and maintenance costs of retinning are eliminated. However small copper vessels are still being used in some establishments, not only for cooking but for service to give the effects of days gone by. The metal is however expensive and requires frequent polishing for proper maintenance.

Aluminium

This metal is more easily fabricated than copper, and therefore is used extensively for storage bins, service carts, trays, trolleys, cooking equipment and utensils. The metal takes on a satin, frosted or chrome-plated finish. It is relatively light in weight with high thermal and electrical conductivity. Aluminium used for equipment is hard, durable and non-corrosive. It withstands pressure at high temperature and is therefore, particularly suitable for cooking and baking utensils and for the construction of steam jacketed kettles.

The disadvantage is that aluminium easily gets discoloured in the presence of alkali, certain acids and iron. But this is harmless and does not effect the colour or taste of food.

Aluminium may be cleaned with steel wool, lemon juice or vinegar. Alkali containing detergents are not suitable. Kitchen utensils are manufactured from anodised aluminium to harden the surface and increase its resistance to oxidation, discoloration and scratching. Anodised aluminium is also used for storage bins, service carts and trays. Being strong and light in weight it is useful for mobile equipment.

Aluminium is also used as a base for utensils with non-stick surfaces such as 'teflon' used in frying pans, griddle plates, pudding moulds, baking trays and cooking pans. These coatings are particularly useful when diets with low or no fat have to be cooked in hospital or health food kitchens. They are useful for cafeteria and canteen services requiring a limited quantity of cooking to be done at one time. The advantage is easy cleaning, but care needs to be taken to prevent scratches on the non-stick surfaces. To maintain it therefore polyethylene or wooden spatulas and ladles are used for cooking. Non-stick equipment are however, unsuitable for large volume cooking, though for preparation of sauces and individual portion, dishes such as pancakes and omelettes, frying pans, sauce pans and griddle plates are very useful even in large establishments.

Galvanised Steel and Iron

These are usually used for equipment like *kadai*, skillets, griddles, frying pans and cooking ranges. The material consists of a coating of zinc on the base of the metal which makes it relatively resistant to corrosion. While its original cost is low, replacement and repair costs are high, because it has a short life. Equipment made from galvanised steel and iron is also unattractive compared to those from other non-corrosive metals.

Non-Corrosive Metals

These include alloys of nickel, copper and stainless steel which are non-corrosive. Another material known as *Monal metal* is a natural alloy containing nickel and copper in the ratio 2:1 with small amounts of iron.

Heavy duty kitchen equipment, cooking utensils and table ware are mainly manufactured from alloys of iron, nickel and chromium. Their use has increased in institutional kitchens because of easy fabrication, non-corrosiveness, reasonable price and decorative effects which can be produced with ease on these metals. Further they are attractive, easy to clean, resistant to stains, non-reactive with food acids and alkalies and thereby relatively permanent.

Nickel stainless steel alloy called *18-8* containing 18 per cent nickel with no copper, is used for food service equipment. This is easy to clean and maintain while also being attractive.

Silver Plate

Silver plated equipment or *EPNS ware* as it is generally called, is used extensively for service by large hotels and restaurants. It is however, difficult to maintain, as it needs frequent polishing and periodic plating depending on the extent of use. Silver plated ware is not economical and therefore unsuitable for use in small to medium size food services.

Glass or Ceramic

This is usually suitable for service equipment such as tea and coffee pots or used in the construction of see-through doors in ovens. Glass is resistant to corrosion and metallic contamination, though most ceramics break easily when exposed to sudden changes of temperature.

Nowadays, heat resistant glass (borosil, pyrex) is available for manufacture of service and cooking equipment. The equipment can be placed directly on the heating element, beverage prepared and brought to the table in the same

equipment. Such cooker to table equipment are useful for coffee shops, kiosks and tea stalls where the customers can see the beverage being made freshly for them.

Polyethylene

Drums and barrels made of high molecular weight, high density polyethylene (HM—HDPE) are available and used for storage of foods and water. Figure 10.3 shows two types of containers, the *close head* design which has two openings and is suitable for storing oils and other liquids, and the *open top* model with lid and clamp for semi-solid and dry food storage.

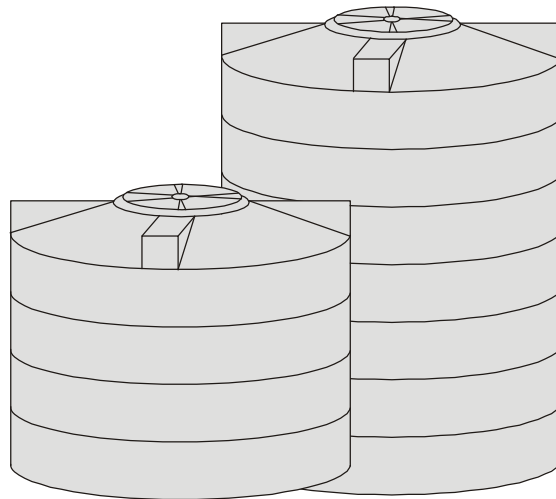


Fig. 10.3 Plastic water storage containers

Made in India by Prestige HM-poly containers Ltd. in collaboration with Mauser Werke GmbH, West Germany, polyethylene containers exhibit the following qualities.

- Light and easy to handle.
- Less expensive than steel drums.
- Have longer life than mild steel conventional containers.
- Non-denting and leak proof.
- Non-corrosive and rust proof.
- Withstand high temperatures of upto 100°C and can therefore be safely filled with hot liquids and other materials.
- Reusable and resaleable.

- Hygienic and washable.
- Conform to the UN Packaging code, IMCO standard and Indian standard IS:6312.

Mud Pots

These are indigenous porous mud pots of different sizes and shapes made in India, which have been used traditionally as containers for setting curds and other milk products and for serving tea, water and other beverages. The practice is still prevalent in some road side stalls in remote areas. These mud vessels have been traditionally used to keep food and beverages cool, in summers although hot tea and coffee are also served in them at railway platforms, by vendors. Figure 10.4 shows some traditional water coolers and vessels still in vogue, along with modern disposable and other equipment.



Fig. 10.4 *Traditional and modern disposables*

In fact, the use of mud containers are again showing a revival in restaurants where it is used for setting *kulfi* (Indian ice cream), and other desserts like *rabri*, *phirni* and the like. The containers provide a sense of familiarity and uniqueness in a modern setting so common in food services today.

ATTRACTIVENESS

The aesthetic quality of equipment attract a worker's attention to it and create a desire for using and looking after it. It is thus a morale booster especially in areas of activity where the work is generally uninteresting and unrewarding. For instance, in the vegetable preparation centre of a kitchen where the monotony of peeling and cutting grows progressively, the introduction of a vegetable peeling machine makes the job a bit more varied and less cumbersome. Again, in the dishwashing area, a dishwasher can help to create a little interest in the otherwise uninteresting routine of washing and cleaning.

SOURCES OF SUPPLY

Equipment must be obtained from manufactures and suppliers of repute so that it is backed by a guarantee. They also ensure prompt after-sales service and maintenance when required. All equipment selected must be checked for seals and labels indicative of quality. It is advisable to check with other users if a new model is being selected, to get an opinion on the usefulness and efficiency or possible drawbacks of the equipment in use before purchasing. For selecting equipment the following checklist acts as a useful guide:

- Is the equipment the right size for the space at hand?
- Does it serve the purpose for which it is to be bought in terms of utility and efficiency?
- Is it easy to use and keep clean?
- Can it be used for performing more than one function?
- Can it be moved around easily to change arrangements in centres and clean the space below it?
- Will it help to save space, time and energy immediately, and money in the long run?
- Do the staff like to use it or are they under compulsion to do so?
- Is it safe to use?
- Have the fuel bills gone up or down since it was installed?
- Does it need constant supervision while in use?

Equipment properly selected should reduce the drudgery of routine jobs, make messy jobs more organised and improve the hygiene and sanitation standards of the working environment. This is illustrated in Fig. 10.5 which clearly indicates the difference in the conditions produced by the selection of a simple equipment like a juice extractor which can be invested on even by a small catering outlet or a vendor.

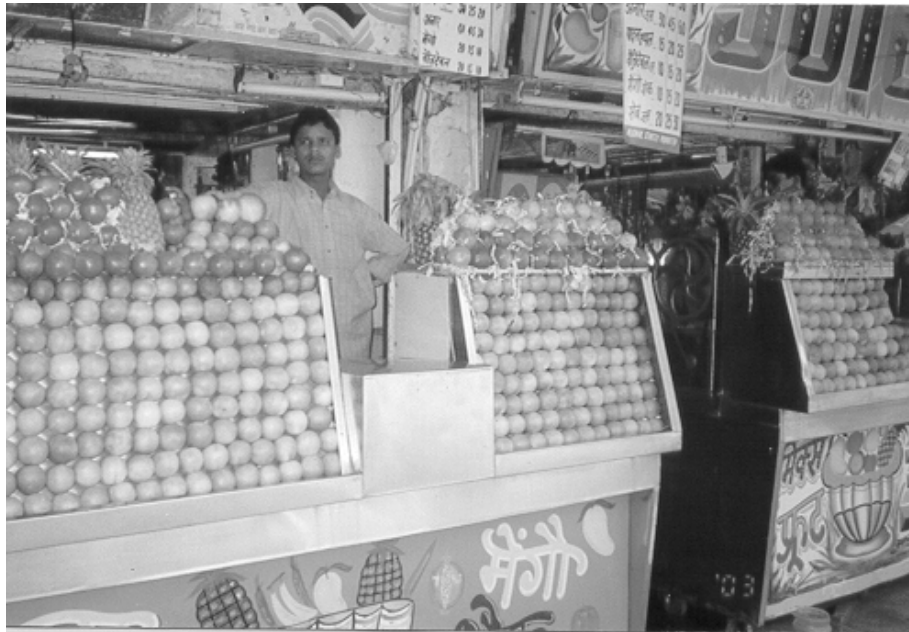


Fig. 10.5 *Effect of a juicer on the cleanliness and attractiveness of the environment (Photo: Courtesy Hemant Kumar)*

According to Professor Fuller the three main factors which affect catering policy are greater mechanisation, simplified operation and increased use of convenience foods. However, one must not be carried away with the idea of automation or labour saving equipment to the extent of sacrificing the *personal touch* so important in a food service industry.

Equipment Design, Installation and Operation

Equipment design for food service operations has never received so much attention as in the last few decades. Equipment designers have tried to keep pace with the varied demands created by the different types of food service establishments.

DESIGN

Design involves the intrinsic features of any equipment and requires the ideas of a number of professionals in related fields to make it conform to their different needs. With catering equipment the views of all dealing with the management, handling, preparation, service and storage of food and those who are actually going to operate the equipment are crucial. In addition architects, engineers, finance and health departments all need to approve its suitability from their different points of view.

Features

The features of a particular equipment refer to its functional qualities, the materials used in its construction, ease of cleaning, safety in and out of use, size in relation to production capacity, space available for installation, economy in cost and fuel consumption, performance, ease of installation, maintenance and repair.

There is a growing tendency to develop equipment designs which can perform specialised functions. Many items are also designed for multiple use.

These features are important for standardising the production processes. For instance grating, slicing, chopping and grinding by use of equipment designed for the purpose not only ensures evenly finished food, but also provides greater yield with minimum wastage of time and materials. This is made possible because the machine is able to handle the food completely while a person cutting with knife or grater will have to save his finger by necessarily discarding the last 3 cm or more of the food he is grating. It is also common experience that a machine can operate faster on electricity in contrast to gadgets being used mechanically by people to do the same job. The human effort and time thus saved can be more fruitfully utilised in increasing the extent of the service to the customer which is the object of every food service establishment. In addition the risk of contamination is reduced to a minimum because unlike human hands, parts of the equipment which come in contact with food, can be sterilised and kept ready for use. This will of course depend greatly on the construction of the equipment and the ease with which such parts can be removed for cleaning after use.

Equipment, is also being more and more designed for attractiveness, compactness and for efficient space, time and energy utilisation. There is also an increasing tendency to design equipment in modular units. This involves the construction of units matched in terms of their complement functions in a particular work centre. For instance, cooking units can be built into a single framework to provide the features of compactness and efficiency as shown in Fig. 11.1.

Designing also takes into account the mobility and flexibility of arrangement in work areas, insulation, automatic temperature and time controls, built-in sanitation and fuel efficiency. In addition, kitchen and dining heavy duty pieces are generally designed to give a streamlined effect.

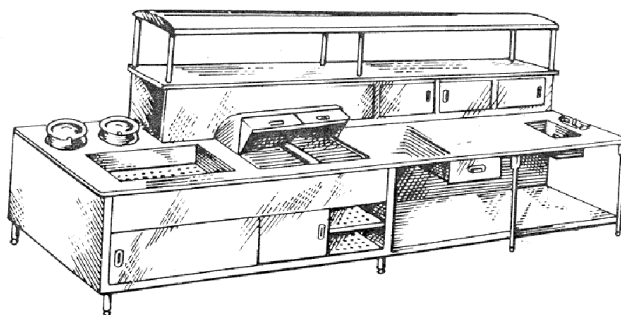


Fig. 11.1 *Chef unit assembly (Courtesy: Relief Catering Equipment, New Delhi)*



Fig. 11.2 *Storage space under work tables adds to hygiene*

1. Panstorage; 2. Ingredient storage; 3. Pivot tray; 4. Cutlery drawer; 5. Rotating trays; 6. Pull-out racks; 7. Waste bin units; 8. Waste bin units.

Well-designed equipment needs to conform to certain standards which in some countries are statutory, while in others are left to the moral and ethical standards of the caterer who is expected to safeguard the health of staff and the customer. The following features built into the design would help to ensure not only safety and health of the operators but customers as well.

- The design must permit easy cleaning of the equipment either as assembled or by removal of the parts which come in contact with food during operation.
- The design should not provide loopholes for entry of insects, vermin, dust or dirt so that food may be handled and served in a sanitary manner.
- Beauty and utility may be combined in the design by understanding the functions of the various parts of the equipment. A beautiful piece of equipment when installed loses its lustre and even shape when put into operation because of the effect of heat during cooking or by steam generated in the process. Sometimes too much attention paid to the appearance of equipment makes it time-consuming to clean and maintain. Design must always be related to functionality, whether it is small knife or a sophisticated automatic device.
- Design is sometimes geared to regulate the timing and efficiency of operation, such as in the shape and weight of beaters and whisks for a mixing machine. Figure 10.2(b) indicates the different designs of attachments used on a machine for the performance of different tasks.
- Equipment design should be aimed at simplicity, as this is pleasing and usually easy to care for and maintain. Complicated equipment should have parts which can be easily dismantled for cleaning and then be reassembled with the same ease.
- Shape of legs of equipment should be such as to prevent accumulation of dirt, entry of insects or vermin.
- Equipment should be designed to maintain high standards of sanitation. To achieve this, sharp corners, cracks, openings should be eliminated and all parts made easily accessible for cleaning, as shown in Fig. 11.2.
- All equipment should be mounted on legs or fixed on platforms or walls, with a clearance of 15–20 cm (6''–8'') between floor and lower surface of the equipment. A platform for heavy equipment must be raised at least 8 cm (3'') from the floor and the equipment aligned and fixed, so as to prevent vibration during operation.

Most equipment is now being designed for mobility, to enable spaces to be used more efficiently at different times according to customer demand. The designs of serving equipment have specially seen a lot of improvements in the form of heated and refrigerated serving counters, hot and cold trolleys plugged in to keep food at the right temperature as indicated in Fig. 11.2.

The construction of steam tables with fixed storage space has been modified to hold fractional sized containers with storage shelves below to hold refiller containers, for quick refilling of empty food containers during service. With sizes of containers standardised at generally 45 cm × 75 cm (12'' by 18''), spaces to match the sizes are cut into the serving equipment. Two containers of half size also fit exactly thus increasing the degree of flexibility in the service which can accommodate changes in menus both in terms of quality and quantity that may be prepared for service. Depending on the size of the establishment two or more openings can be made in hot food counters operated by dry or moist heat. The features which indicate good design in any equipment are:

- Accurate dimensions.
- Well-welded joints which do not form crevices or gaps.
- Parts of equipment put together well in relation to each other; for example, ovens and cooking tops or tables and chairs.
- Equipment well suited for the purpose for which it is designed such as dish tables, sinks and draining boards slightly sloped to drain.
- Hinges well fixed on movable parts like doors of ovens and drawers fixed for easy functioning.
- Good insulation.
- Safety features well considered.
- All parts easy to clean.
- Well polished or finished surfaces to make them smooth and guard against possible corrosion.
- Food display equipment well constructed to guard food from direct contact with customers and thereby possible contamination.

While there are a number of designs available for any particular type of equipment, manufacturers tend to be rather vague about the technical information they convey. For instance, the temperatures which an equipment is designed to maintain in operation are indicated through markings like 1–10, low medium and high as are often seen on ovens, hot cupboards, bainmaries, fridges and freezers. These markings mean nothing in terms of exact temperatures they provide for cooking, holding or storing different food items

which are so vital to efficiency, attractiveness and safety of food products. Again little is known about the environmental conditions in which a certain equipment has been designed to work best. Factors like positioning of the equipment in the area of work or the temperature and humidity of the room, or the exclusion of draughts, etc. are important to proper functioning for which there are no instructions. There are examples of refrigeration equipment being positioned against a wall neatly fitted close to cooking equipment. Refrigerators and freezers are not designed to operate efficiently at temperatures above 28°C which are quite common in kitchens especially in tropical summers. This results in undue strain on the machinery, unnecessary high fuel bills and depreciation costs.

Care at the designing stage to provide warning lights or alarms to indicate inside temperatures of equipment not only prevents food from spoilage but increases the life of the equipment. The most efficient device is the thermometer which should be fixed so that it can be read without opening the door of the equipment.

In large establishments, progressive suppliers usually keep their customers informed of design changes and improvements, but for small establishments where perhaps only one piece may be bought from a supplier in years, it is important for the food service manager to make a special effort to be well informed.

INSTALLATION

The most well designed and constructed equipment can prove a futile investment if it is not installed properly. It is extremely important to follow the manufacturer's instructions for installation, which give details of electrical load, gas or water connections necessary for the item. If these are poorly made it can ruin a new equipment completely. It is wise to include installation in the contract with the supplier so that the responsibility for the right connection and operation lies with him. The extra cost involved in installation charges is worth the guarantee that the equipment will operate efficiently.

OPERATION

Operation of equipment simply refers to the manner in which it performs when handled by the operators in the work situation. Properly used, equipment can help to reduce labour and simplify work a great deal, especially when catering for large numbers. Even the simplest equipment needs to be used correctly for efficiency. There are many ways of learning how to operate equipment:

- (a) *By observation*: This is through watching people operating it and then learning by imitation. This method may be followed when learning to use small kitchen tools, like different kinds of knives, choppers, ladles, cutters, peelers and so on.
- (b) *By experience*: This involves learning through trial and error till one arrives at the best possible method. This is a dangerous way to learn because in large scale work where heavy equipment, gas, electricity and steam are handled, accidents can occur unless one is aware of the safety aspects of the operation.
- (c) *On-the-job*: This involves being formally trained through demonstration and repeatedly operating the equipment under strict supervision, till the operator gets enough practice and confidence to work it on his own. This is the recommended method of learning whether the equipment is small or large. In this method the results are visible immediately, and one knows what to expect from correct use.
- (d) *Under-going a course for training*: This involves studying the pros and cons of the items to be handled over a period of time, learning the details about handling equipment according to its constructional details. The engineering aspects are well understood at the end of the course. Knowledge gained of the function of each part and the precautions necessary for proper operation, instil in the staff a sense of confidence to handle a particular or similar equipment with skill and also attend to minor deviations in its efficiency without spoiling the item through insensitive handling.

After installation the working of every equipment needs to be checked to see that movable parts are moving; if areas are heating up unduly; or thermostats working at different temperatures as indicated in manufacturer's instructions. This does not, however, ensure that when actually in use, the productivity will be that which is expected of the particular item. It is therefore important while following instructions of the manufacturer to check his claims on productivity and efficiency levels in terms of actual performance against expected standards. For a new unit with which the staff are not familiar, it is important to demonstrate its use repeatedly and check that the method of use has been learnt correctly. Further, it would help if clearly and simply written instructions in the language understood by the operator are pasted above the installed machine or on the wall of the work centre facing the operator. This will act as a constant reminder of correct use procedures, so that the equipment is not used wrongly. Every

piece needs a period for *running in* during which time any defects in construction or installation can come to the surface and be corrected through.

All people likely to use the equipment must be trained no matter how small or large the unit may be. This is necessary to recognise the danger signals, or unusual sounds so that whenever these are detected at work, corrective action can be taken in time and the equipment prevented from complete damage.

Chapter 12

Purchasing Equipment

Purchasing is that activity which is directed towards securing materials, supplies and equipment required for the operations of a food service organisation, and finally represents the act of buying at a price. In the broader sense purchasing is a management activity which involves planning, policy-making and conducting research and development activities, required for proper selection of materials and sources of purchase; following-up to ensure proper delivery; and inspection for quality. In addition, it covers the coordination of activities of related departments.

PURCHASING DECISIONS

In making purchase decisions for heavy equipment it is not wise to depend too much on engineers because they make very rigid specifications which may require alteration in existing design and delay the delivery of the unit. Detailed information of every equipment purchased, needs to be recorded with respect to its make, item number, date of purchase, expected life, production capacity, source of supply, price etc. This helps those incharge of operation and maintenance to work out schedules for the upkeep of the equipment. Further, in case there is ever a need to order spare parts there is no problem in communicating with the dealers or manufacturers. Records also help to identify any changes that may have been introduced in later models, and are a useful aid in case the piece needs to be reordered.

The need for purchasing any equipment is determined by a number of factors such as: the complexity of the food preparation process, volume of food cooked, the cooking procedure, style and length of serving periods, the form in

which food is purchased, staffing position and space available for installation and use.

The Complexity of the Food Preparation Process

This can be analysed to study the time and effort spent on a particular activity. For example, peeling potatoes, carrots or any hard vegetable is a very time and effort consuming activity, as well as a necessary one in any traditional food service establishment. The purchase of a peeling machine would reduce effort and time, while giving a uniform product in terms of peeled potatoes. It would also make the environment for the activity more hygienic by passing peels to the outside of the kitchen through an outlet attached to the machine.

Volume of Food Cooked

This will affect decisions regarding the size of equipment needed. For example, if a steamer is used to steam a dish like *idli*, *dhokla*, or *momos* for an estimated 100 portions everyday it may be wise to buy a steamer which can handle 25 portions at a time. This is because steamed food should always be served steaming hot and never reheated or else its quality deteriorates. It is therefore important to use the steamer for cooking in batches according to demand.

The Cooking Procedure

If food is cooked in batches then the needs will vary even though a large volume of food may be required through a serving day. This holds good for purchasing equipment like fryers, boiling pans for rice cooking and so on.

Style and Length of Serving Periods

These are important determinants of equipment needs. Since the style of service and the hours for which a food service is kept open will determine the number of customers expected. For example, in a waiter (ess) service more staff as well as service equipment will be required. This may necessitate the purchase of a dish and or glass washing machine.

The Form in which Food is Purchased

Whether food is purchased in raw, convenience, or ready prepared forms will affect equipment needed for food preparation. For instance if meats are bought in ready to prepare cuts as steaks, sausages or fish fillets the equipment needed in a butchery is not required.

Staffing Position

The number of man-hours and type of skills available will determine what equipment will be required to supplement staff. If an establishment suffers from high staff turnover it may be necessary to purchase labour saving devices which can be easily operated by most of the staff present.

Space Available

The space available for installation and use is of utmost importance especially in buildings not planned for the use of newer equipment. Also shape of space and point of location is an important consideration. While the above factors are important it is also necessary to work out specifically the present needs of the establishment, keeping in mind the possibility of future expansion.

IDENTIFYING SUPPLY SOURCES

Purchasing of equipment involves tapping the proper sources of supply, as the expenditure on equipment forms part of the capital investment of the organisation. For selecting the right supplier for each type of equipment it is necessary to prepare a list of suppliers and the special equipment items offered by them. The sources from which such a list can be compiled are:

- Past experience.
- Interviewing salesmen.
- Equipment catalogues.
- Trade directories and journals.
- Competitor's experiences.
- Trade fairs, seminars, conferences and conventions.
- Requests for quotations.

Once the source of supply has been determined the methods used to acquire equipment would be determined by the kind or nature of the equipment in terms of whether it is a special or a general purpose one.

SUPPLIER SERVICES

There are generally four types of services offered by the seller to the purchaser, namely, prepurchase survey, installation, demonstration, training and after-sales services.

Prepurchase Survey

Very often suppliers may insist on making a survey of the conditions under which their product is going to be operated. If this service is not available voluntarily it is wise for the buyer to ask for it, so that the vendor can guarantee the equipment efficiency in use. The survey helps the manufacturers to familiarize himself with the types of materials that are going to come in contact with the equipment. He can then judge as to whether his unit is properly designed for the purpose, in terms of functional efficiency. As a result the vendor can often suggest economic use if he knows where and how the unit is going to be positioned, or who is going to use it, and how.

Installation

This service is generally provided by the manufacturer for heavy catering equipment and is included in the price. The service is sometimes charged separately in which case optional charges are assessed on the basis of actual time and expenses incurred in the installation.

Demonstration and Training

This may be provided as part of the installation service. Usually the service engineer supervises the installation and assists in training the operating staff. This is an important feature because vendors frequently include a clause in their warranty agreements which relieves them of the responsibility for damage to the equipment caused by improper operation. If the vendor had trained the operator it is hard for him to avoid his warranty obligation by claiming that the operator was incompetent.

After-sales Service

This includes service during the warranty period, as well as service after it. On most capital equipment, there is a written guarantee against failure of the equipment from faulty design or defective parts for a period generally extending up to one year, during which attention to the equipment in case of faults developing is given by the manufacturer or supplier. After the *running in* period the buyer is expected to pay for all the services offered.

PURCHASE PROCEDURE

The procedure for purchasing involves a number of steps:

- The recognition of a need.

- Specification of the required item.
- Selection of the sources of supply.
- Enquiries regarding the price.
- Placing the order.
- Following up the order.
- Checking the equipment and invoices received against specification.
- Maintaining records.
- Maintaining public relations with vendors.

Recognition of Need

Purchase of capital equipment is influenced by the organisation structure of an establishment and the equipment needs of particular departments or goals. If purchasing is part of a modernisation programme for an existing unit it has to be considered by top management long before the actual purchase is initiated. A purchasing decision is the result of a report from the user department, where a need arises for a particular equipment. The report is expected to give the reasons for the need, the estimated cost involved if bought, and the expected savings from its use.

Specifications

After the purchase is authorised, specifications for the equipment are worked out by a team of people consisting of engineers, finance officers, catering managers, and staff operators who would ultimately be directly involved with the operation of the equipment. This determines the exact size of the unit to be bought in relation to the space available for its location; the requirements in terms of electricity load available in the case of electrical appliances, existing installation and maintenance facilities, production requirements, and so on. For purchasing any equipment it is important to establish clear specifications of what is required. Figure 12.1 indicates a sample of a specification for a sink unit.

The specifications for equipment are quite flexible because equipment designed by different manufacturers for the same purpose vary in their characteristics. Not all equipment meet one set of specifications, and setting rigid specifications means paying more for it because the competition for the manufacturer is reduced. However, all specifications must be clear and cover aspects relating to material, construction size, colour, finish and cost. The idea is to give clear instructions to the manufacturer or supplier, of what exactly would be accepted. If a piece does not conform to specifications, then the buyer has the right to reject it, a right which he cannot exercise if his specification is vague.

Item Number	Department
Name of Equipment	Sink Unit
Dimensions	1.50m long, 75cm wide, 40cm deep, Height from floor 95 cm.
Material and Construction	No. 12 gauge stainless steel with mild steel frame. Suitable for floor placement. Fitted with drainboards, splashbacks and overshelves for dish racks. Tubular stainless steel supports should provide minimum 15cm clearance from floor. Joints weld and polished, having rounded corners. Undershelves provided for placement of detergents, brushes, scrubbers, etc. Two sinks with drainboard in centre, sloped to drain into sinks. Outlets of sink 13cm in diameter and 12mm deep, fitted with grease trap and non-clog outlet.
Price	Rs
Delivery Date Not Later Than	

Fig. 12.1 Specification for a sink unit

Advantages of Specifications

1. Drawing up specifications frequently results in the simplification of the equipment finally purchased, because a lot of careful thought goes into the review of the buyer's and user's needs, and end use for which the equipment will be utilized.
2. Specifications lead to buying less complex and therefore less costly equipment.
3. They induce more suppliers to bid and a competitive price is arrived at.
4. They ensure that identical items are available from more than one source of supply.
5. Purchasing to specifications enables proper inspection before committing huge investments.
6. It gives a definitive standard in terms of uniformity of materials, design and result of equipment expected in-use.

Buying to specifications is a necessary step toward standardisation as far as catering equipment design and manufacture is concerned. Besides being safe and cost effective for the purchaser and user, it also educates suppliers and manufacturers in the equipment requirements of the industry.

In making purchase decisions for heavy equipment it is not wise to depend too much on engineers because they make very rigid specifications which may require alteration in existing design and delay the delivery of the unit. Detailed information of every equipment purchased needs to be recorded with respect to its make, item number, date of purchase, expected life, production capacity, source of supply, price etc. This helps those incharge of operation and maintenance to work out schedules for the upkeep of the equipment. Further, in case there is ever a need to order spare parts there is no problem in communicating with the dealers or manufacturers. Records also help to identify any changes that may have been introduced in later models, and are a useful aid in case the piece needs to be reordered.

Other activities which need attention are, the mode of delivery, receipt of incoming goods, their inspection, store-keeping, inventory control and taking care of scrap and surplus disposals.

PURCHASING METHODS

The methods of purchasing equipment differ from methods used for raw materials because equipment is an infrequent nonrecurring item of purchase and each transaction is negotiated separately. It is very rare to find a piece of catering equipment displayed with an exact price tag because the life of one piece is expected to extend over a span of 2–10 years or more. Therefore equipment especially expensive ones are hardly ever held in stock the orders being placed after studying the features through printed catalogues. After selection the order is then processed by the manufacturer, and depending on the specifications and other factors the delivery time varies for each type. Those models manufactured locally are delivered within days or months, while importation may take a year. This is also because unused pieces in showrooms or stores depreciate faster than equipment in use. That is why it is important to plan equipment requirements well in advance as it is not possible to buy them at short notice. The lead time, that is, the interval between placing the order and actual delivery varies with the type of equipment. The lead time is greater in the case of custom-built equipment because it has to be made to suit specific needs.

There are a number of methods used for buying equipment. For small equipment like kitchen tools, cutlery, table appointments and the like, informal methods are used, while for larger equipment formal methods are generally employed, all of which are discussed.

Informal or Open Market Buying

This method is generally used by small establishments who require to purchase a piece of equipment only once in a while. A survey of the market is made to find out what designs of the needed equipment are available and the prices are checked along with quality and other services offered. This is followed by contact between buyer and supplier followed by the supplier calling on the buyer. Price quotations are then obtained informally and the purchasing decision made which best suits the needs of the establishment.

Formal Competitive Bid Buying

In this method specifications of the equipment to be purchased are written out and quotations invited from sellers, by advertising in dailies or trade journals. Sealed quotations or bids when received are then opened in the presence of the sellers or their representatives, and at least three responsible heads of allied departments of the establishment. The offer considered most suitable is then formally accepted and orders are placed with the selected supplier.

Competitive bidding can be made a less formal method by simply sending printed requests with specifications only to interested sellers. This reduces the administrative work a great deal and the item can be purchased in a much shorter time unless it needs to be manufactured specially to suit the individual needs of an establishment. While orders are expected to be placed with the lowest bidder, this is not always done unless quality conditions are met.

All bids are expected to state the date, method of delivery, terms of payment, willingness to accept part or all of the bid, any discounts or other terms of negotiation, and date of closing of bids.

Negotiated Buying

This is a semiformal method used only when an item is restricted in its availability and therefore limited in supply. The method is flexible and enables buyers to make purchasing decisions fast enough to benefit from a fluctuating market. The buyers contact sellers and request them to submit bids in writing. The buyers are less strict in their procedures for acceptance, than in the competitive bid method.

Auction Buying

This method is only suitable for establishments which can make on the spot purchasing decisions because it involves offering spot bids for an item in a

situation where there are a number of bidders but no formal contract. Selling is generally on an *as is where is* basis with no responsibility or guarantee offered by the seller and the payment is made generally in cash, which is paid on the spot.

This method of purchasing is sometimes useful, if one wishes to buy used equipment or an outdated model, which may serve the needs of a particular establishment. This method of purchasing can provide good bargains sometimes, because of the urgency of the seller to dispense with the equipment. The advantages to the buyer are in terms of initial low price, immediate delivery and ability to inspect the equipment before purchasing, which is not always the case with new equipment especially larger units that are generally manufactured on order through catalogues.

Blanket Order Purchasing

This is a good method to use when buying single not too expensive fixed price items such as crockery, cutlery, dishes, small kitchen equipment like knives, ladles, etc. It involves an agreement with the supplier to provide a certain quantity of specified items for a period of time at an agreed price. If for some reason the price cannot be specified, a method of calculating it is built into the contract. The deliveries are then made at contracted periods, under what is known as a specified *release* system.

A second type of blanket order involves an agreement to supply all the buyer's needs for certain items for a specified time like a year. In such a method the quantity of the order is not predetermined and cannot be known until the time of the contract is over.

The advantage of *blanket order* purchasing is that a variety of items can be purchased from one supplier and deliveries are frequent and on time because the supplier is sure of his commitment. It also involves less paper work every time a request is to be made for any item, as the description of the item covered in the lists contracted for are a guide to both buyers and sellers. Also it is possible to buy at lower prices because of the possibility of getting quantity discounts by grouping the items required. In blanket order purchasing the prices can be handled in one of three way:

- (a) By negotiating firm prices for each item, on the list of the supplier.
- (b) By specifying the market price and using some standard method of calculating it for every delivery.
- (c) By establishing a ceiling price and using the actual prevailing price each time a delivery is made.

This method involves stocks of all required items to be held by the supplier and delivered on call. It therefore, enables the buyer to reduce stocking costs as well as be able to get a continuous supply of same designs, and brands in the future even if they are unavailable in the market at the time of ordering.

Consignment Buying or *Stockless Purchasing*

As the name suggests the buyer does not hold the stock of the items, and so suppliers who are nearest the location of the establishment are preferred. This method is therefore only applied for the purchase of those items of equipment which are required frequently but at irregular intervals, such as cutlery, crockery, small kitchen tools, etc.

The buyer is expected to make a list of items along with specifications, and suppliers quote their prices on those lists. The advantage of this method is that the buyer's capital investment on stock is minimised; paper work is reduced; prices and lead-time are reduced; while time and effort on maintaining and issuing stocks is transferred to the supplier and storage space is released in the establishment for use of frequently used regular items.

A research study on catering equipment revealed that 80 percent of catering establishments preferred purchasing equipment directly from the manufacturers while 40 percent used contract or tender methods. Very large establishments imported their heavy duty equipment because they felt that food production quality depended heavily on the equipment used and they needed to ensure global quality standards. (Gupta 1998). The frequency of equipment purchase varied from 3 months to one year for small equipment, 1–2 years for medium sized equipment and 5–10 years for heavy duty equipment.

In the catering field, managers often purchase equipment from distant areas or even from other countries if they are progressive and want to make use of the advanced equipment technology not available locally. In such cases decisions should be guided by the following factors:

Price

Even though initial investment may be reasonable for quality and usefulness, it is wise to add on the costs of emergency repairs, costs involved in getting hold of qualified engineers for regular maintenance and servicing and costs of communications with outside agencies. Running costs due to lack of acclimatization of units manufactured in advanced countries for the specific purpose of using them in tropical conditions, is a factor often overlooked and needs attention. Only tropicalised models should be considered for purchase.

Time Period

This refers to the time period for which the equipment may be in disuse because of delay in getting parts for repairs and maintenance.

Accessories

Another facet of purchasing equipment is the value of the accessories that go with the main unit. Sometimes these extras are equal to the price of the basic equipment. It might be wise to consider buying these from a source other than that of the main equipment, because the manufacturer may not be manufacturing the accessories himself. There are a number of methods used for buying equipment. For small equipment like kitchen tools, cutlery, table appointments and the like, informal methods are used, while for larger equipment formal methods are generally employed, all of which are discussed.

PAYMENT METHODS

Since purchasing equipment involves varying degrees of investment different methods are used for payment. It may be made in instalments, or paid in one lot in advance of delivery or after it is received and installed, as settled mutually between buyer and seller. In most cases a 25 per cent down payment is required at the time of placing the order to guard the manufacturer against orders being cancelled. This also gives him the initial balance for material required to start the manufacture of the unit. Other methods used are hire-purchase agreements, and payments through equal instalments. There are also exchange schemes for smaller equipment through which used mixies, pressure cookers, food processors or toasters may be exchanged for newer models. The payments in this case are adjusted according to a fixed amount as decided by the manufacturer which is discounted from the maximum retail price (MRP) of the new equipment acquired.

Whatever way equipment is purchased it is important to go for those models which bear a seal of approved quality and carry guarantees for specific periods of time, but not less than one to three years.

Chapter 13

Care and Maintenance of Equipment

All equipment large or small, heavy or light, requires care in handling, use and storage in order to extend its life to the maximum, minimise depreciation by maintaining it in a reasonably attractive and efficient condition while in use. In small catering establishments the care and maintenance is generally entrusted to those who operate the equipment as the types invested on are generally small or medium duty pieces. In large establishments where heavy duty equipment predominate, a maintenance department performs this function.

In the case of small pieces like cutlery, some metals need less care than others. Stainless steel is the most non-corrosive and easy to-care-for material, while plated cutlery tends to get scratched easily and with time requires replating.

With kitchen tools like the chef's knives, choppers, etc. care is limited to preventing the blades from rusting in the case of iron blades, by keeping them dry and covered. It is also common practice to rub them with a little cooking oil to protect them from rusting through contact with air. With whisks and beaters it is the rotating parts or the wiry ends which need special attention. It is good practice to wash or soak beaters and whisks immediately after use so as to prevent food materials from drying on the rotatory parts and posing a cleaning problem.

With heavier and larger pieces of equipment general cleanliness of the item and its environment is the guiding principle. The schedule below is a guide to the general care of most equipment.

SCHEDULE FOR CARE OF EQUIPMENT

1. Keep all equipment clean.
2. Wash all removable parts of equipment with suitable detergent and hot water after each use. In tropical summers this is not necessary as the water in the taps is usually warm to hot depending on the environmental temperature. After washing wipe equipment completely dry before replacing.
3. All small equipment like cutlery, ladles, chopping boards, kitchen tools, etc. should be washed after use as in (2) and replaced in drawers and racks built for the purpose and covered to prevent them from dust or dirt during storage.
4. Check that all pieces are in working order. Close supervision at work is necessary to ensure careful handling and to detect any deviations from effective operation, like an unusual sound, or fusing of warning lights, or ineffective thermostatic controls.
5. Repairs must be attended to without delay to prevent the equipment from giving way and disrupting work for any period of time.
6. A weekly, fortnightly or monthly programme for oiling or servicing the equipment to maintain movable parts or machinery in order is important. The service instructions provided by the manufacturer along with the equipment are a good guide to the service procedure that should be followed. It is useful to prepare an instruction card for every equipment carrying the manufacturer's instructions in as simple a form as will be understood by the operators of the equipment. This card could be kept near each major piece of equipment.
7. All electrical inputs to the equipment should be checked periodically to ensure that proper electrical load is available for efficient functioning.
8. Insulations, plumbing and other connections need regular checks to keep equipment running at optimum efficiency.
9. Make full use of warranty periods to help train organisation staff to learn regular maintenance procedures from the manufacturer's engineers.
10. Assign the care of each machine to one responsible person.

Money, time and effort spent on care helps to maintain equipment in continuous working order, while that spent on repair can mean interruption in work causing unnecessary strain on staff, in addition to extra costs.

It is beneficial to keep records of all amounts spent on care and maintenance of every large equipment. This helps to estimate the depreciation every year. Excessive costs shown through records for a particular year can help to draw attention to high maintenance costs, which weighed against the cost of the equipment may result in a decision to change the model for a more efficient one. Records can also help to detect inefficiencies in operation, or defects in design or manufacture.

Every equipment must be analysed for efficiency in use. Figures 13.1 and 13.2 give samples of record forms which could be maintained for each equipment.

Appliance or item	Purchased from
Style	Date of purchase
Size	
Amount purchased	Cost
Replaced pieces on by Reason for replacement	
Balance amount as on	

Fig. 13.1 *Record form for small equipment*

Name of Appliance	Date of purchase
Manufactured by	Supplier
Cost	Delivery Date
Estimated life	
Specifications	Motor-Horse Power
	Motor-Wattage, Voltage
Size Type	Capacity
Estimated rate of depreciation	
Date of repair	
Nature of repair	
Cost of repair	Name of engineer
Remarks	
.....	

Fig. 13.2 *Record form for large equipment*

Thus, if equipment is cared for systematically and proper procedures followed, maintenance follows on its own to prolong the life and optimum usage of the equipment.

CLEANING SCHEDULES

The cleaning schedules for some commonly used equipment in small food service establishments are given under their respective heads:

Cooking Equipment

Cooking equipment varies widely in size, shape and design and therefore requires separate treatment in terms of cleaning.

Hot Plates, Gas Stoves or Ranges

- Wipe the top daily while still warm, using wet cloth or sponge.
- Any foods spilled and burnt while cooking may require the use of mild detergent or scouring pad.
- For open burners, a weekly boil in warm soapy water will help remove any food particles that may have been the cause of blockage leading to inefficient heating.
- Wipe dry with slightly oiled cloth.

Ovens

- Wash, rinse the outer surfaces daily, after every meal.
- Use liquid wax for enamel finished parts.
- Brush the inside to remove any sediments due to food particles charred during cooking while oven is switched off but still warm. Any sticky areas may be wiped with a wet cloth after washing the oven.
- Clean all plastic knobs with wet cloth and wipe dry.

Holding Equipment

These include those equipment used for holding raw, partly or fully prepared food till served, such as refrigerators, bainmarie, food warmers.

Refrigerators

- The outside surfaces should be cleaned as for oven daily.
- A weekly cleaning of the insides of a refrigerator is sufficient especially if the establishment is small. For this the machine should be disconnected, doors opened and the shelves removed and washed in warm water according to manufacturer's instructions or with a dish cleaning liquid.

Bainmarie

- Switch off the electricity supply.
- Remove all food pans for cleaning, washing and drying.
- Empty the equipment of all hot water.
- Clean with a light detergent and sperge
- Wise dry for reuse.

Food Warmers

- Wash, rinse outer and inner surfaces daily, after every meal
- Proceed as for ovens.

Preparation Equipment

- All parts which are removable should be cleaned after every use with light detergent.
- Sharp edges should be carefully handled for cleaning, drying and replacing immediately for use.

Coffee Urn

- Urns should be emptied after each meal and the insides cleaned with a hard brush using a solution of sodium bicarbonate.
- Outer surfaces as for any other equipment.

In general, it is good policy to follow manufacturer's instructions for care and maintenance of any equipment.

MAINTENANCE COSTS

The cost of maintaining any equipment should be determined on the basis of the following factors:

- (a) Cost savings in terms of fuel consumption, as compared with the fuel bill prior to the installation of the appliance.
- (b) Cost of servicing and regular cleaning which would involve the cost of cleaning materials and detergents.
- (c) Rate of depreciation calculated over the expected life of the equipment.
- (d) Any savings that the installation would have resulted in, in terms of better utilisation of raw materials and prevention of waste.

- (e) Any savings brought about due to elimination of daily wage workers, as in the case of people being employed seasonally for peeling of vegetables for establishments which function for a limited period in the year, as for school meals, college canteens, and the like.

Studies have revealed that catering establishments by and large do not maintain records for their maintenance costs which vary from 2–10 per cent in different establishments. Smaller to medium sized establishments have absolutely no idea of what the impact of following maintenance schedules can be with respect to improving productivity, and thereby profits. This area requires greater emphasis through training personnel who actually use the equipment, in order to make investments incurred on them profitable, by extending the life of the equipment.

Maintenance, operating and replacement costs should be worked out for each appliance or category of equipment. These records help management decisions regarding future purchases of certain brands and rejection of others.

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Unit

4

Food Management

- Characteristics of Food
- Purchasing Management
- Inventory Management
- Menu Planning
- Food Production
- Food Service
- Clearing, Cleaning and Waste Management

All the activities in a catering establishment directly or indirectly aim at preparing and serving food to the customer. Those activities which are directly concerned with the food on the plate are meal planning, selecting, purchasing, storing, preparing, cooking, serving and clearing food. Food management is thus, the ability to manage these activities so that work flows smoothly to the point where the meal reaches the customer and gives him physical, physiological and emotional satisfaction.

Successful food management is therefore, the art of planning meals, single items or events according to forecasted likes and expectations of customers. This involves knowledge of the procedures for buying food and related materials wisely; storing them in a wholesome condition; putting them together to produce a variety of forms, flavours and textures and finally presenting them well to the customer. In addition it is important to deal with the waste materials generated in the process through practices that will ensure quality food and service, by preventing cross contamination through the environment. There is the further objective of bringing financial profit and a good reputation to the establishment through the effective performance of these activities.

The process may seem quite simple, but in practice involves skill and initiative at every step. Besides, it not only requires knowledge of the characteristics of different foods, but that of the markets and customers as well. A food manager also needs to possess the ability to maintain good relations with staff and customers, while creating for both an aesthetic and congenial environment for work and pleasure.

This unit deals with all these aspects, which when put together intelligently, can make eating away from home a pleasing and enjoyable social experience.

Chapter 14

Characteristics of Food

The edible parts of plants and animals may be termed as *food*, in so far as people eat them in some form or another to satisfy their physiological, psychological, emotional and social needs.

For the purpose of meeting the needs of the body for growth and maintenance, foods have generally been placed into three basic categories referred to as food groups on the basis of the nutrients they supply for the energy-giving, body building, maintenance and protective need of the body. A fourth group covering miscellaneous foods may be added to this with the purpose of including all those items used in food preparation which enhance the quality and acceptability of food, but may or may not enhance the nutritional quality or promote health.

It is universally accepted that the nutritional value of food is not primarily what makes people eat. It is its colour, flavour, texture, temperature and presentation. Besides, due to the enormous range of foods which people eat all over the world, there may be some items which do not fall into the groups mentioned above, and these can then be accommodated in the miscellaneous group. Figure 14.1 indicates the range and type of foods which fall under the above categories, and the nutrients they supply in appreciable amounts.

These food groups are an excellent aid to planning meals in which nutritional considerations are of primary importance, such as planning for school children, sick or old people, and in general, people who for some reason have become vulnerable to the hazards of nutritional imbalance.

One food taken from each food group at every meal would ensure balance in the plans, not only in terms of nutrients but also colour, texture, flavour and other factors which make food more acceptable and palatable. It is evident that

there is unlimited scope for the development of dishes, through various combinations of food from the different food groups. The figure gives only a few examples of foods under each category. These lists can be extended according to availability of similar foods in different countries, regions, climates and reasons. It must however be remembered that every food contains some energy giving, body building and protective elements, and therefore in practice cannot be strictly segregated into well-defined groups.

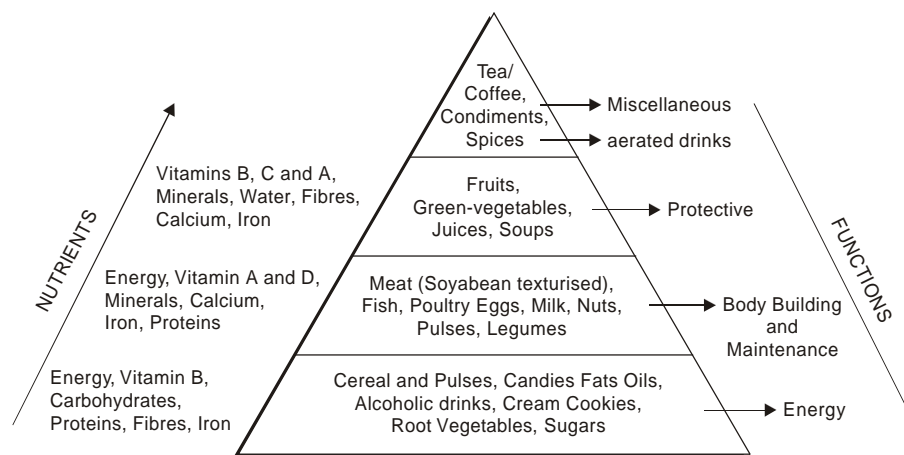


Fig. 14.1 *The food groups*

TYPES OF FOODS

More than 700 types of foods have been listed in India alone, under cereals, pulses, nuts and oil-seeds, vegetables, fruits, milk and milk products and flesh foods.¹ When these are combined in various ways and in different amounts the possibilities are unlimited. Apart from the variety that is possible in food preparation, every food manager must be aware of the types of foods available for use in food services and their seasonal availability. Foods are generally available in two forms, natural and processed.

Natural Foods

As the term indicates these foods are available in their natural forms as they appear from farms, orchards, slaughter houses and water sources. Some examples

1. Narasinga Rao (BS), Deosthale (YG) and Pant (KC), *Nutritive value of Indian Foods*. National Institute of Nutrition, Hyderabad, India, 1989.



Cereals



Vegetables-



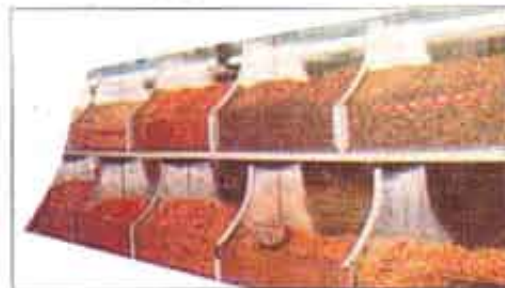
Fruits



Pulses



Fats and Oils



Nuts and Seed



Spices

Plate 14.1(a) *Natural foods*



Meat



Poultry



Fish and Seafood



Eggs



Milk



Milk products

Plate 14.1(b) *Natural foods*

are fresh fruits and vegetables, freshly cut meats, fish, nuts, pulses and legumes as harvested. While the nuts, pulses and legumes can be used in their natural forms, they are generally subjected to some form of processing to enhance their storage life. Plate 14.1 indicates the various types of natural foods available in different seasons.

Processed Foods

Processed foods are those which have undergone some type of treatment on a small or large scale before they are used as basic ingredients of a meal or consumed as such. Cereal foods are rarely used in their harvested form, and are generally subjected to processing. For example, cereals are milled into flours, broken cereals are used for porridges, semolina, and breakfast cereals. With the manner and speed at which newer food products are appearing on market shelves, it is important for every catering manager and operative staff to know about the characteristics of each category of food and its usefulness for speedy production as well as its value in offering variety and health to the consumer. Some categories are briefly discussed.

Traditionally Processed Products

These refer to foods as they were naturally preserved without any additions, using solar energy. Examples of such products are papads, cauliflower, aam papad, dry fruits etc. such products were prepared from homes and started as cottage industries. Today, with increase and advancement in equipment design, processing techniques have become standardized and moved to factories which now produce a large variety of products such as potato chips, ready to eat cereals, pickles, squashes, syrups even restructured or substitute foods and traditional foods of not only India but of other countries too like pasta products, high protein snacks, low salt and low sugar products etc to meet customer demand. The caterer therefore needs to constantly upgrade his knowledge and apply it to the production of food, in order to satisfy his increasingly aware customers. Food processing was an attempt to preserve foods for use when out of season, as a matter of convenience and that is why the variety of processed foods manufactured today and used in catering have been termed as convenience foods.

Convenience Foods

As the term indicates the foods that are conveniently available when needed and quick to use and put together for meals without starting meal production

from scratch are called convenience foods. Generally this term is used for partly or fully processed foods, but some time fresh foods can also be stored by the caterer in convenient forms. These are discussed under food production techniques in chapter 18. Food and Beverage (F & B) managers may often argue that these foods are more expensive to buy when compared with raw materials. But, if the costs of basic activities like peeling, cutting, marinating etc. are taken into account and the variability in edible portions of raw foods considered in every season, convenience foods are not so expensive in quantity food production in the long run, if bought from the manufacturer or through a reliable supplier.

The foods most commonly used by caterers are spices, sauces, cereal products milk and milk products refined or unrefined flours, nuts, oils, fruits, vegetables essences, flavouring agents and so on. The advantages are quality and price stability, shelf life, easy availability from stocks, guaranteed net weight and so on depending on the type of products required by an organisation.

Convenience foods are rarely believed to provide better quality when compared to fresh counter parts, but they are at least equal to or better than poorly handled fresh foods or stale vegetables and fruits which result from transportation delays etc. The factors that need to be considered while choosing convenience foods for use are:

- (i) *Cost Effectiveness*: A cook may claim to produce particular dishes cheaper using fresh ingredients. But a simple time study may prove that on labour alone he is wrong. Similarly in off season frozen peas may prove cheaper to use, with better quality than fresh pea pods, or certain cuts of meat bought trimmed and ready would be cheaper if butchery losses are considered.
- (ii) *Quality*: Not all convenience lines are good. Go by facts and not sales talk or persuasion, buying only branded or certified quality products.
- (iii) *Relieve Staff Burden*: Relieve the caterer of heavy or messy tasks of preparation, storage and cooking.
- (iv) *Clean Environment*: Maintain a clean environment by not producing excessive contaminating waste materials. All waste materials should be recyclable or biodegradable.

It must be remembered however, that all convenience foods may not be so convenient in all seasons and at all times. What is important is customer sensitivity and what he wants. It is possible that customers demand fresh foods like juices because at home they are using convenience foods a lot of the time.

Restructured Foods

In a country like India, where majority of people are vegetarians, the food processing industry has developed what are called restructured foods. These products are partially or completely disassembled from the natural food and then reformed into the same or different forms for the market. Restructured meats have become the focus of attention especially for the export market as well as catering to the non vegetarians in India. Restructured meats are available in the form of chicken kebabs, sausages and other pork products, burgers and so on. This class of foods is drawing attention because the availability of fish meats in the country is only 5g per head as against the daily requirement of 24g per head (Ranjhan, 1999, Sen and Karim, 2002). The other category of foods is vegetarian counter parts in the form of textured products made from mixtures of beans, pulses, starches, spices and so on in the form of vegetable burgers, kebabs etc. so as not to deny the vegetarian customer. Restructured products are convenient to prepare and serve on order although the awareness of factors that affect overall acceptability is needed by both staff and the consumer.

Substitute Foods

This group of foods include the high protein foods or meat substitutes prepared from soya and other plant proteins in extruded or textured forms. In hot tropical summers when meat consumption generally decreases such foods are substituted for meat products on the menu. They are now available in textures resembling chunks or bite size pieces, as mince and in powder form for mixing into soups, weaning foods, gravies and the lot. Another development is the manufacture of soya *paneer*, especially for people who may be allergic to milk proteins or lactose. To add to the list are a number of foods like margarines for butter, cooking media for hydrogenated oils and so on. (Patil an Ali, 2002)

Ready to Eat Foods

Ready-to-eat foods which were till recently restricted to snack foods which could be bought off the shelf and eaten, have now reached the stage of traditional Indian foods being packed in retort pouches. These require only microwaving and full meals are on your table. A welcome addition to the range are ready packed vegetable preparations in santeed or curried forms, cereal preparations as pualaos, *pongal* or so on from practically every region in the country (Rangarao, 2002). Some of the pouches are displayed in Fig. 14.2.



Fig. 14.2 Ready-to-eat food in pouches (Source: *Indian Food Industry*, Vol. 21, No. 1, Jan–Feb. 2002)

The development in range of foods offered to the caterer, will help to reduce the holding time before service and improve quality of food delivery in emergency or requirements at short notice as in hospitals. It would also lend itself to speedy service, reduction of wastage, variety on menus, less training for certain production skills, and cope with staff absenteeism without causing panic. The staff too can work social hours.

Some synthetically manufactured foods are also marketed which have possibilities in food production, such as essences, emulsifiers, sequestrants, vinegar and so on.

As the variety demanded by customers is increasing, food service managers are turning more and more to processed forms which are time and energy saving in food preparation. The list keeps on expanding with the fast growing technological developments and the changing demands of people for variety and convenience in food production and service. Most outlets depends heavily on the use of convenience foods in the form of preportioned packed cuts of meat, fish and poultry; partly prepared food to be finished on demand and served; and even ready to serve food straight from cans or packs.

Today, ready to eat Indian foods are available in retort pouches for further speed in service. They are also useful for working people and those living away from home but like to eat full cooked dishes and meals without making the effort to cook. The pouches being heat resistant can withstand temperatures of around 121°C, normally used in thermal sterilization of foods. The packs, have

only to be put in boiling water and when hot enough it is ready to put on a plate for consumption. Alternately, the contents can be poured into microwavable dishes and heated when required.

The concept has far reaching effects on labour costs of hospital kitchens and other institutions where professionals need not go without meals when they are on night duty. The catering staff too can work sociable hours and overtime payments can be reduced appreciably without sacrificing food quality which has been taken care of during processing. A caterer need not send a customer away after meal timings are over any more, or print changed menus frequently, because dishes once printed can be served anytime anywhere. As a result customer and staff good will is created which is a priceless asset and tool for any food service organisation. Canned and preserved foods form part of every food store in any catering establishment, as shown in Fig. 14.3.



Fig. 14.3 *Some processed foods (Courtesy: Nanz Supermarket)*

Food services which depend heavily on convenience forms of food to speed up food production and service and increase shelf life of ingredients are called fast food services or outlets.

Whatever the type of food or form in which ingredients are used, it is important to maintain the quality of whatever is offered to the customer. Foods differ in their qualities from season to season and according to varieties, breeds and feeds. Besides, customers differ widely in their expectations of food. Controlling quality is therefore a great challenge to every caterer irrespective of the nature or size of the food service.

QUALITY

When dealing with food materials and meal preparation for customers it is hard to define the term **quality** because it means different things to different people. John W. Buick² has defined quality as the *degree of excellence* that can be offered to or accepted by the customer.

Day to day experience shows that whether one pays for tomatoes, apples or a meal, customers do not mind paying more for what they think is better quality food or service. The factors that make food more acceptable are chiefly those that directly affect palatability of meals as indicated in Fig. 14.4.

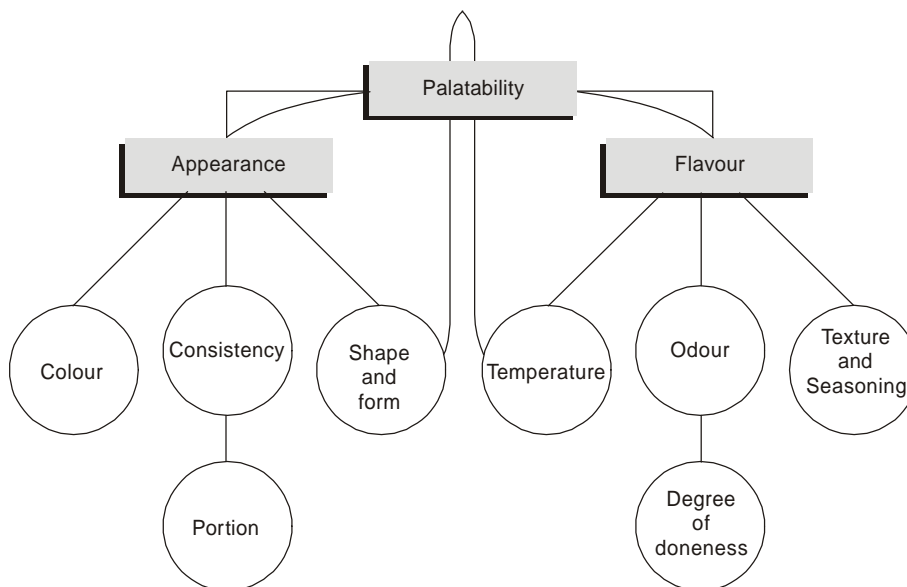


Fig. 14.4 *Palatability characteristics of food*

2. See reference, Buick (JW), Quality Control, Hospitality, October 1980.

In food services therefore, sensory methods of quality assessment are mainly used to judge food acceptability, through a process of managers and chefs tasting each dish and modifying it if necessary, before offering it to customers.

From the point of view of the caterer, however, **quality** not only includes palatability characteristics, which though important can be enhanced or masked as desired, by the use of additives, but the production of meals that are wholesome in terms of their being safe for consumption. Nothing is more detrimental to a food organisation than a case of food poisoning among its customers.

Whatever the criteria employed for judging the quality of food prepared and served, what is certain is that the customer demands *acceptable quality*. Obviously, it does not signify the most superior or best grade, so some means need to be devised to decide on where to draw the line in terms of selecting ingredients, and methods of putting them together to suit the expectations of the customers. Figure 14.5 indicates some factors on which quality assessments may be based. Thus, it is necessary to lay down standards for each of the quality characteristics and be able to control them at every stage of the production cycle.

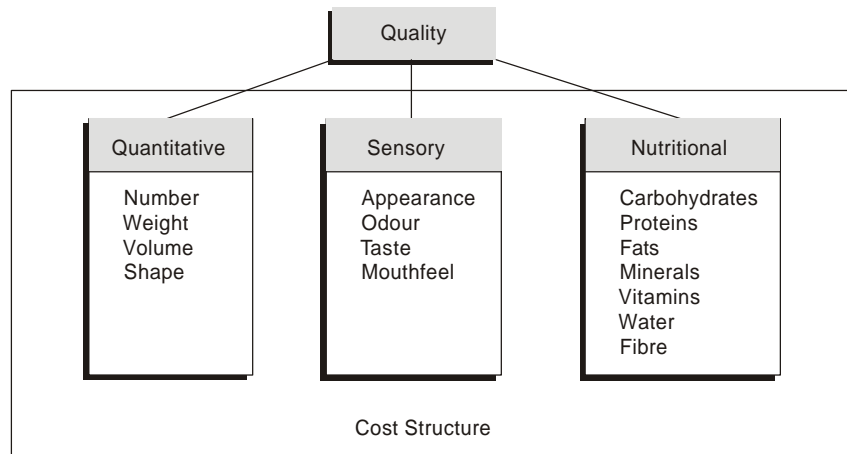


Fig. 14.5 Factors determining acceptable quality

Factors concerned with quantity affect portions on the plate and therefore need attention, besides the sensory and nutritional factors, all within a reasonable cost structure.

Quantitative Aspects of Quality

Each aspect of quality is in some way based on the amount of food or materials in question and therefore, reflects the concept of portion on the plate of the customer. For the caterer it provides a means of control over costs by controlling portions, numbers, weight and volume while for the customer it indicates *value for money*.

Number: Controlling numbers is just a matter of counting correctly, and with proper supervision is an easy task. It can be done manually or mechanically for example, cans per carton, one small cake per person, or 100 doughnuts from one kilogram of dough, prepared by a doughnut machine of that capacity.

Weight or Volume: Standards for weights and volumes of different ingredients and dishes can be established by the use of scales, slicing machines, measuring equipment, scoops and ladles designed to hold a measured weight or volume of food. For example, one scoop of ice-cream may be exactly 25 or 30 grams by weight. Some weight and volume equipment commonly used and found suitable for even the smallest food service operation are indicated in Fig. 14.6.



Fig. 14.6 *Some weight and volume equipment*

The standard cups, spoons, and ladles vary slightly in their measurements according to established standards in different countries, and their converted equivalents in weights and volumes are used. Table 14.1 gives measurements for standard Indian cups and spoons.

Table 14.1 Standard Cup* and Spoon Equivalents

Standard cup	Standard spoon	Volume of Contents (ml)	Remarks
1	50	250	Household containers may be standardised using the Standard equipment.
4/5	40	200	
3/5	30	150	
1/2	25	125	
2/5	20	100	
1/5	10	50	

Note: One standard cup is equivalent to 50 standard spoons which are both equal to 250 ml in volume.

One ISI standard cup is equivalent to—1.056 USA standard cup of 236.55 ml: 0.88 UK standard cup of 283.5 ml and one Swedish cup.

* Established by Indian Standards Institution (now Bureau of Indian Standards) vide Standard No. IS: 7376.

To speed up service, tea cups, ladels or other common use equipment can be standardised by measuring against standards or by experience. Household equipment may be standardised by using standard equipment for measuring ingredients or portions in small establishments such as in kiosks, tea stalls, coffee shops where space restrictions and costs inhibit the purchase of standard weighing and measuring equipment. Table 14.2 give some standard cup and spoon equivalents of some foods commonly used in food preparation.

Table 14.2 Standard cup and spoon equivalents of some foods

Standard Cup	Weight (g)	Standard Spoon	Weight (g)
<i>Cereals</i>			
Rice	200	Sodium bicarbonate	4.4
Semolina (fine)	160	Gingelly seed	4.0
Semolina (coarse)	250	Jaggery	4.0
Jowar	110	Salt	6.0
Refined flour	121	Sugar	3.0
Maize	160	Oil	5.0
Ragi	180		
Wheat	125		
Groundnut	125		

(Contd.)

<i>Standard Cup</i>	<i>Weight (g)</i>	<i>Standard Spoon</i>	<i>Weight (g)</i>
<i>Pulses</i>			
Bengal gram	180		
Others	125		
<i>Milk</i>			
Buffalo	243		
Cow	246		
Dry skimmed	131		
Dry whole	200		
Sugar	160		
Water	250		

In addition, small establishments are often busy places, especially if located on railway platforms, bus stations, at fairs, and other public places. And use of the available equipment for measuring out portions is quicker than using a standard spoon every time salt or sugar has to be added to food. Table 14.3 gives some weight equivalents determined by the use of cups, tumblers, bowls, and so on, often used in food services.

Table 14.3 *Weight volume equivalents of daily use equipment*

<i>Equipment</i>	<i>Wt Equivalent (g)</i>	<i>Remarks</i>
Tea cup	200	Water was used to establish the weight volume measurements taking 1 ml of water as equivalent to 1 gm.
Steel tumbler	375	
Glass tumbler	265	
Coconut shell	275	
Mud Vessel	250	
Empty cheese tin	300	

Shape: The shape of foods can be controlled by the use of moulds, trays and tins or by using grading machines which provides standard sized and shapes in terms of accepted portions. For example, dough cutters, jelly moulds, cake tins, etc.

The accuracy and sophistication used in controlling portions depends greatly on the volume of production. The larger the volume, the greater would be the degree of mechanisation or automation used in controlling quantity shape and form of portions. It is for this reason that a lot of portion controlling has shifted

to the manufacturer's domain, from where due to the large volumes produced, the sizes, shapes, weights, volumes, numbers and even costs can be controlled with greater accuracy. This also enables the smaller food establishments to buy food which has been preportioned, and then prepare and serve them to the customer. Examples of shape standardisation are seen in sausages, portioned chops, fillets, cans with the exact number and size of slices in them for corresponding net weight.

Sensory Quality

This refers to those characteristics of food which can be identified by use of our senses such as, appearance, smell, feel and sound of food.

Appearance

It is common experience that if food does not look good when served, it will be rejected even if its taste is good. So the most important feature of food acceptability is its appearance, which is largely contributed by the colour and texture of foods selected and their presentation to the customer.

Colour

Foods get their colour in many different ways—(a) from natural plant and animal pigments; (b) from the effect of heat on sugar in foods, (c) chemical reactions between sugars and proteins, (d) the oxidation of chemical compounds present in foods and (e) Synthetic colourants.

Pigments in Foods: Pigments in foods attract people because of the many different colours they provide in their natural, cooked or processed forms especially through plant and animal foods. Fruits and vegetables contain different kinds of pigments which when combined diligently impart the aesthetic qualities to foods. Pigments can be classified basically as shown in Fig. 14.7.

Natural plant and animal pigments: There are a number of pigments present naturally in plant and animal tissues, which are sensitive to physical and chemical changes. Foods therefore tend to change their colours with the degree of handling, exposure to air, sunlight and different temperatures used in the process of cooking. In the process of chopping, grating and grinding, the colours also get affected, because the cells or chloroplasts containing them get damaged releasing the pigments. Once released contact with air further destroys them. Colour is also associated with the degree of ripeness, flavour, taste, concentration of food and the degree of *doneness* when cooked, all of which determine acceptability.

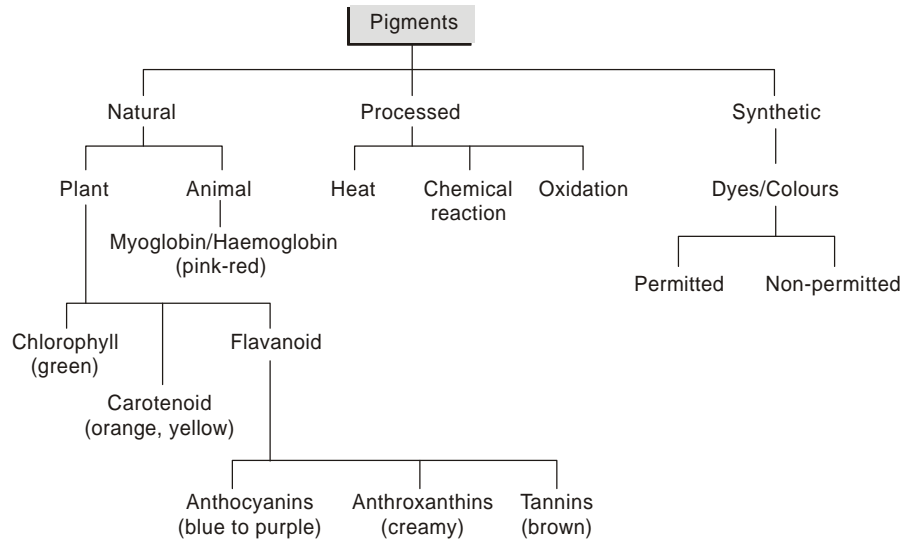


Fig. 14.7 Classification of pigments in foods

Chlorophyll This pigment imparts green colour to fruits and vegetables and are bound protein molecules in the form of organised complexes. Chlorophyll may be present along with other pigments in the same foods and therefore the colour and hues in different plants are seen as dark and light green or yellowish green and soon. Chlorophyll plays an important role in the production of carbohydrates in foods from carbon dioxide and water through a process of photosynthesis. Therefore as the fruit or vegetable matures it changes colour to that characteristic of the ripe fruit or vegetable. Chlorophyll is insoluble in water at room temperature but when the food is heated with acids, alkali or other substances the pigment either enhances the colour of the food or makes it paler because of increase in its solubility leaching out in the cooking water. The cooking of vegetables therefore needs to be controlled to achieve desired effects in the end product.

Carotenoids These pigments are generally found along with chlorophyll in plant cells and impart yellow to orange colours to foods such as melons, peaches, pumpkin, papaya and so on. The changes in the colours due to carotenoids are not so pronounced on cooking as in the case of chlorophyll. Carotenoid pigments are of two types-carotenes and xanthophylls. Carotenes appear in foods as *licopen* the pigment of tomato, the xanthophylls are distributed commonly in green leaves as lutein, in yellow corn as cryptoxanthin and zeaxanthin. Cryptoxanthin gives Vitamin A while *lutein* and *zeaxanthin* make no nutritional contribution.

Flavanoids Unlike the chlorophylls and the carotenoids these pigments are water soluble and responsible for many types of colours in plants. They appear as anthocyanins, anthoxanthins and tannins in foods. The anthocyanins are responsible for the blue to purple colour in fruits like plums, grapes, *jamuns* and vegetables such as red cabbage and brinjals. During cooking the colours may shift from red to blue in the presence of alkali and vice versa in acid medium. The pigments are soluble in water and therefore easily extracted for colouring foods naturally, during cooking and processing.

Anthoxanthins impart the creamy yellow colour to vegetables like cauliflowers, mushrooms, white onions, radishes and the like. On cooking the vegetables become whiter in acid medium and creamier if soda is added. Both anthocyanins and xanthins occur in the same plants and are responsible for the colour changes that take place in fruit juices if anthoxanthins are present, the blue colour gets intensified and vice versa depending on the dominance of a particular pigment in foods. There are many more natural colours that are extracted from different sources, food and non-food, used in food production and processing, such as annato, cochineal, saffron, turmeric, cardamom, betanin, safflower, kokum, grape skin and so on.

Tannins These include a number of colourless phenolic compounds which play an important role in colour and flavour of food. Their presence is responsible for the brown colours. Some tannins are water soluble and impart the brown colour to tea and coffee. They also provide astringency and body to the beverages including wines and beer.

Pigments in Processing

A number of shades varying from cream to brown and black are formed in the process of treating foods with different agents. Some are added to food while others change the structure of food components during cooking, processing and holding of foods altering the colour of end products. These are briefly discussed.

Effect of Heat on Colour

Depending on the composition of the food heat can affect its colour, flavour, texture and acceptability. Some examples will illustrate this point. When a slice of bread is toasted it turns brown. Since bread is toasted it turns brown. Since bread is made predominantly starch, when dry heat is applied it breaks down to dextrins, in the process of which moisture is lost and the heat

dries up the slice to give a brown toasted surface. The process is called *dextrinization* and takes place when foods are dry roasted before preparing any dish such as halwa, or porridge.

Heat therefore imparts a brown colour which can be controlled for various shades according to the intensity of heat applied to the many different foods as is done with cereals in the food processing industry, when flakes of different hues are manufactured.

Effect of Heat on sugar: Sugars when heated change to cream, brown and dark brown, due to the evaporation of the water of crystallization followed by the effect of dry heat. These shades of colour are made use of in the preparation of caramels, other candies and syrups used during food preparation and processing as in making of jams, squashes, toppings and flavourings.

Chemical reactions and colours: The amine group from proteins in foods combines with the aldehyde or ketone groups from carbohydrates or sugar molecules and leads to the darkening of foods. This is generally called *Maillard browning* and takes place in the case of milk heated for a long time to thicken or condense it. Examples of this type of non-enzymatic browning are seen on the surface of baked dishes, roasted meats or nuts.

Oxidation: Foods contain certain chemicals which on contact with air get converted to their oxidised forms imparting colour to foods. Examples include the darkening of cut fruits and vegetables when exposed to air such as apples, bananas, brinjals (aubergines), pears, potatoes, etc. Also tea turns darker on keeping. These reactions get accelerated in the presence of metallic ions like iron and copper, as seen when fruits are cut with iron knives or vegetables are cooked in iron or copper pans. The colour of cooked foods may be due to the above factors working singly or in combination during the different stages of food preparation, cooking and service.

Synthetic Colours

Synthetic colours are man made pigments generally associated with manufactured foods. Synthetic colours form a group of food colours that are classified as synthetic colour dyes or mineral pigments, and are either acidic or basic dyes. To control their use in convenience, ready to eat or vended foods and ensure safety for consumers certain rules were framed (PFA rules, 1955) under the PFA Act (1954). The rules specify which colours are permitted and which non-permitted for addition to foods in processing (Annexure 2). In

short, the form and combinations in which the food is presented influences choice, and menus which show a variety in colour and form are highly acceptable.

Flavour

Once the eyes are satisfied with the quality, the sensory organs of the nose and mouth take over. The customer then gets affected by what is called *flavour* of foods. Flavour relates to the combined sensation of odour or aroma, taste and the feel of food in the mouth.

Aroma

Several compounds present in foods are responsible for *flavour* and *aroma*. These substances are very sensitive to oxidation and high temperatures, and tend to interact with each other. It is for this reason that flavours change with time and temperature. With very few exceptions, flavours generally deteriorate with handling, processing and storage, and therefore no food tastes as good as fresh food. The terms *farm fresh*, *straight from the fire* or *just baked* are only too familiar, as far as attracting customers is concerned. No wonder a small kiosk where juice is freshly extracted for each customer, is generally overcrowded, in contrast to one where bottled or canned juice is served.

Flavour acceptance or rejection, however, is also influenced by people's cultural, regional and religious backgrounds. For instance, a person from western, far eastern or Muslim countries would relish the delicate flavour of beef, as against an Indian who would consider the odour unacceptable simply because the two have different eating habits and experiences with food. The age old proverb *one man's meat is another man's poison* is so apt when dealing with food acceptances. These differences have given rise to specialty menus such as Chinese, Continental, vegetarian, South Indian, and so on, to suit the tastes and values of different people and account for regional and cultural preferences. Large food service establishments offer choices from all these types of menus, while smaller ones cater to single specialties inviting those who would relish particular flavours.

Odour

The part that odours play in food acceptability is clear from the fact that very often odours put people off a food even without their tasting it. Odours can be described as pungent, minty, putrid, and so on. Pleasant odours generally result from subtle combinations which are delicate and not strong, a fact important to those involved in food production activities.

Mouthfeel: The next component of flavour is mouthfeel. Depending on how the food feels in the mouth it may be rejected if it contains too many chillies or spices which irritate the membranes of the mouth. If the food is too hot in terms of temperature, it causes blisters or pain. Again, the most favourite foods can be rejected if they are too slippery, sticky or hard to bite into.

Taste

After the odour is accepted the next sensory test of quality is the taste, that is, the reaction of the taste buds to the food, determining whether it is sweet, sour, salty or bitter. Most foods contain a mixture of some or all the sensations of taste. Acceptability of the food therefore depends on how well they harmonise to make the net sensation pleasurable.

Texture

Texture of a food can be determined both by *perception* and *mouth-feel*. It varies from food to food and in the same food too when different methods of cooking are used. For example, a baked pudding will have a firmer texture than the same pudding if steamed. Texture also depends on the structural composition of food. This quality can be described as rough, smooth, grainy, coarse, fine, crisp, viscous, spongy and heavy. For want of accurate descriptions sometimes analogues are used to describe texture. For instance, a custard may be described as *creamy* indicating that it is as smooth flowing and viscous as cream, and not because it has cream in it. Also, cereal preparations like rice or semolina puddings cooked beyond the gelling point may be described as *gluey*. People accept or reject foods which do not agree with their own mental images regarding shape, size, viscosity or sheen. For instance, rice which is overcooked and therefore sticky instead of grainy (with each grain well separated), will not be accepted if customers have a choice. Similarly, a glossy well set caramel pudding would be in great demand.

Mental Response

Apart from the sensory quality of food, certain psychological factors related to people's experiences with food play an important role in their acceptability. There is an example of a woman who could never accept stuffed brinjals (aubergines of the long slim variety, generally cooked in India along with the stem) no matter how deliciously they were prepared. This was because she was reminded of a pickle which had once appeared on her table and contained an

accidentally pickled rat, which resembled the stuffed brinjal. In contrast, whenever a cake is served it is accepted by people with a feeling of celebration, because of its association with birthdays and weddings.

The mind thus acts as a sensory organ influencing food acceptability. The sense of hunger too is the mental interpretation of a physiological need for food. Conversely we tend to eat a favourite food even when we are not hungry. Such eating expresses our *appetite* for food which can be called the *hunger of the mind* and not of the body.

Sound

Besides the mental responses to food, people also exhibit a certain degree of sound sensitivity. For instance, the crackling of spitfires when barbecue drippings fall in them, produce joyful expectancy of freshly cooked food from fire to plate. A similar pleasant reaction occurs when sizzling food is brought for service.

Alternately, the sound of hustling waiters, cutlery and crockery increases the expectancy of food and the satisfaction that the wait is over. With the advent of processed foods, the crispness and freshness of foods can now be determined by the *crunch factor*, or how loud and with what tonal quality the sounds emitted on biting food or crunching are heard. The Leather head Food Research Association in UK has been involved in reproducing the action of closing incisor teeth, generating forces like those found in the mouth, through an advanced computerized texture analyzer. The importance of sound in evaluating quality, has especially gained importance in recent years with snack foods being competitively processed and marketed. Some examples are potato crisps, corn puffs, *papads* and many others.

Nutritional Quality

The nutritional quality desired for different services would vary according to the needs of particular customers, but general guidelines can be established to provide standards which the caterer can follow. The criteria which may be used are:

- Portion size
- Seasonal foods
- Wholesome ingredients
- Storage preparation and cooking methods
- Holding and Service methods.

Portion Size

Although the actual amounts of various nutrients present in different foods vary, the weight and or volume of a portion of food served is a fairly good guide to providing nutritional quality. Therefore, it is important to determine standard portions for most dishes and further control them by weighing or measuring accurately. Some standards which have been adopted are indicated in Table 14.4.

Table 14.4 *Standard serving portions of some dishes*

<i>Food Item</i>	<i>wt/volume</i>	<i>Portion Size</i>	<i>Indication on Portion Guide</i>
Soup	ml	200–250	1 soup bowl or 2 ladles (No. 2)
Rice	g	100–150	2 ladle No. 1
Vegetables	g	50–75	1 ladle (no. 1)
Meat	g	50–75	two chops
Fish	g	50–75	2 fillets
Chicken	g	200–250	2 pieces
Curry	g	200–250	1 bowl or 2 ladles
Sauce	ml	50	1 ladle
Cake	g	50	1 piece
Snacks	g	50–100	2 pieces
Biscuits	g	18–20	large 2, small 4
Bread	No/g	5–10	2 toasts/slices
Cheese	g	10	2 slices
Cereals	g	80–100	1 plate cooked
Tea	g	5–10	1 cup
Coffee	g	3–5	1 cup
Eggs	No/g	50–60	1–2
Cream	ml	10	1 T
Pasta	g	20–50	1 plate
Preserves	g	10–15	1 T
Sauces	ml	10–15	1 T
Sugar	g	5–10	1–2 t
Vegetables	g	100	
Fresh green	g	150	
Mushrooms	g	80–100	
Root	g	100	
Frozen	g	60–70	

The accuracy with which portions are measured will depend on the catering situation. For instance, foods and ingredients would have to be actually weighed accurately if the catering is done for hospital patients on special diets, whereas, for normal people suitable standard sized equipment may be used to regulate the size of portions. This can be done through the use of already measured daily use equipment, like cups which hold 200 ml of tea or mugs holding 300 ml. The portion size used will depend on pricing and other policies of individual establishments.

The latter method is useful for portioning at the point of service, where exact measurements using standard equipment, would give the impression of being stingy, an impression not desirable for good customer relations. Other advantages of using cup or spoon measures are that the service is quicker, and the quality better. This is so especially if hot beverages like tea, coffee or soup are being portioned, which would get cold if each cup were to be measured with standard equipment and then served. The best way to standardize portion is to buy preportioned food or make suitable portions during food preparation. Many foods lend themselves to such treatment. Examples are equal sized cutlets, meat balls, chicken legs (drum-sticks), chops, *kebabs*, *chappatis*, *poories*, and so on.

Since quite a number of foods cannot be bought preportioned, particularly for Indian cuisine, or portioned in kitchens, other aids have to be developed to portion such foods using standardised methods.

Standard recipes: These are used to ensure that the same ingredients by weight or volume are used every time a dish is cooked. The methods of preparation should also be standardised so that the portions obtained each time are consistent in size, shape, volume and colour. Standardised recipes ensure that the yield from the same amounts of ingredients for dish is constant irrespective of who makes it, as the methods too are exactly spelt-out in concrete steps. Special attention is necessary in the use of garnishes which, because of the small quantities required tend to be used impulsively without realising that the cost of the dish can be adversely affected.

Portioning guides: These are charts indicating portions sizes of items on the menu and are displayed in kitchens and at service points, where staff dishing out or serving the food can refer to them, when in doubt. Portioning guides are helpful because while kitchen staff may have some idea of portions the service personnel are not always aware of them and may tend to serve unequal portions to customers unintentionally.

The manner in which portion sizes are written should be clear to the server. For instance, while costing, a portion may be considered as 50 g in weight, but it should be indicated as *1 × No. 2 ladle* for the server. (Table 14.4 column 3).

Close supervision: This is vital as far as portion control is concerned, because it is at the service point that the costing of dishes gets disturbed. If correct service equipment are supplied and good habits of serving developed, supervision effort gets greatly reduced.

Thus portion control reflects adequate quantities served in relation to different types of dishes, thereby affecting the amount of food served and its nutritional quality. Controlling portions does not imply serving smaller or variable portions, as these not only affect the nutritional quality intended but also jeopardize the *goodwill* of customers which is important for the success of any enterprise.

Seasonal Foods

The second criteria for maintaining nutritional quality is the use of seasonal foods in meal preparation. This is because in season, foods are best in their nutritive content particularly vitamins' C and B-complex. In addition, fruits and vegetables particularly, are best in colour, flavour and size in the prime of their season, in contrast to off season produce which due to improved transport and storage facilities are now available throughout the year, at least in urban markets. They are however, costly and not so flavourful as fresh produce.

As far as fish and sea foods are concerned, it is advisable not to consume them during breeding seasons because of the presence of certain antinutritional factors and substances which are toxic in their effects on the human system. In India, the general guiding principle is never to prepare or serve fresh fish in those months which do not contain the letter *R*, because these months in India (May to August) coincide with breeding seasons and are also monsoonic leading to contamination of water in ponds and rivers.

All Season Foods

These are basically processed forms of foods which are the result of technological advances in preservation, storage and packaging and are today available in many different shapes, sizes and prepared forms to add variety and convenience in meal preparation. These are however, costly to produce and therefore available mostly in urban markets. Processed foods however, contain added colours, flavours and preservatives as they are mass produced and have to be stored before reaching to the consumer. Moreover, consumers demand quick service

or convenience and caterers therefore are also stocking a wide variety of processed foods to cope with timing of demand and changing tastes and life styles. It is difficult even to think of an establishment which cannot provide sandwiches on demand with tea, coffee or beverages, bread baskets with an order or soup or buns for burgers. All these items use sauces and spreads for their preparations. Looking at the menu or food store of the smallest enterprise one can guess the number of processed foods used in the form of ingredients or accompaniments. While processed foods provide convenience their use is only justified if they are of top quality that will ensure consistent quality food products. In addition they should help reduce labour costs, simplify work and release valuable space for more profitable use, while reducing garbage in operational areas.

The awareness of the variety of convenience foods offered is now spreading fast as we are entering the field of biotechnological research which will enable foods to be genetically monitored leading to larger sized and greater aesthetic and nutritional qualities. This would have its impact on the catering sector, too, affecting the way food would need to be selected, handled, prepared and served to the customers. With fisheries developing in the country, fish and seafood in frozen packs or in dehydrated forms are now available for consumption throughout the year, especially in the metropolitan cities.

In developed countries where fishing is done under controlled conditions and the catch transported immediately for processing and preservation, the season today is not of much significance. The same holds good when dealing with meat and meat products or other foods which are available in processed convenience forms. Fortunately, the nutritive content of meat products does not vary greatly with time and season. It is more affected by the breed, the feed and the environmental conditions in which the animals are reared.

Wholesome Ingredients

This criteria refers to the quality of ingredients used in food production, and without doubt, different varieties, sizes and maturity levels have different nutritive values. Besides the presence of essential nutrients, wholesomeness also signifies freedom from contamination, infection and toxicity in foods. This is now being tackled through biotechnological research apart from being generally taken care of through hygienic and sanitary practices in the handling of foods at every stage of production, service and the disposal of waste materials. The keeping quality of food is also a test of its wholesomeness (Unit 7). Table 14.5 gives of brief outline of the characteristics useful in selecting foods, since wholesomeness of individual foods has its effects on the dishes prepared from them.

For processed foods however, the labels on the packages provide a fair indication of their wholesomeness. This is judged by the date of manufacture, condition of the package which can be checked for damage, transparent packs may be examined for size and colour of food or presence of infestation. Cans can be checked for dents or swelling indicating damaged sealing and presence of air or gas. Frozen foods should not show signs of freeze burn, should be firm, with even colour, emitting no off odours.

Table 14.5 *Food Selection Guide*

<i>Fresh Foods</i>	<i>Indicators of Wholesomeness</i>
Meat	Age of animal seen from skeleton and colour of muscle. Desirable colour red to pink depending on type of meat. Firm flesh, fine grain, if lean meat well distributed less fat.
Fish	Body firm, scales hard to remove. Bulging eyes, red gills, fresh odour.
Poultry	Good overall shape, meaty, well developed even fat layer, free from bruises, tenderness according to age, fresh odour. If frozen or preportioned should be well packed to keep uncontaminated.
Milk and milk products	Good colour, opaque, wellsealed bottles or packs, no sour odour or taste, uncurdled. Curds not separated, pleasant sweet-sour taste. Condensed milk—easy flowing, slight brown colour, no lumps. Khoa—solid cream coloured ball, smooth without cracks. Moist feel in the mouth.
Eggs	Smooth velvety surface, slightly dull, translucent. No cracks. Remains suspended in salt solution. Clean shell. Central position of yolk when seen against the light.
Fruits and vegetables	Good natural colour, firm, evenly shaped, mature, seasonal. Free from dirt, blemishes, signs of infestation, and injury or insecticidal residues.
Cereals, pulses, legumes, nuts, etc.	Free from insect infestation, stones or other adulterants. Regular shapes, even colour, size of grains. No sign of mould growth lumping together of grain or undesirable odour.
Fats and oils	No rancidity, oils free flowing, viscous, clean, in properly sealed containers. Check date of manufacture on pack or lot number and quality mark.
Processed foods	Cans not dented, packs not torn, bottles and jars sealed air-tight. Transparent packs may be examined for size and colour of food or presence of infestation.

Wholesomeness is thus the primary consideration for nutritional quality of dishes prepared, but it is worth mentioning that sometimes the size or irregular shape of foods gets associated with lack of wholesomeness and detracts the institutional buyer. While selecting foods therefore, the end use to which they are going to be put is an important consideration. The following discussion will therefore stem from the type of dish to be served and the factors related to it. For the sake of convenience the following menu has been taken as the starting point:

- Soup
- Chicken preparation
- Fried Rice
- Mint Raita (Chopped mint in beaten curd or yoghurt)
- Salad
- Fresh fruit

Soup

When ingredients are selected for the preparation of soups the points to consider are flavour and colour, while size and shape of the raw foods is of little significance. Even unblemished peelings of seasonal peas, carrots, beet greens, the end parts from sliced onions and tops of spring onion, which would normally be discarded while preparing vegetable, may be thoroughly washed and added to the stock pot to extract maximum flavour and colour. In their prime, vegetables and fruits have good colour, flavour and nutritive value even if they are small in size and irregular in shape.

If meats are used for stocks, all trimmings well washed may be added along with bones from de-boned meats for maximum flavour and nutrition. The additional advantage lies in making maximum use of food materials and lowering costs, while still maintaining the taste, flavour wholesomeness and presentability of the food.

Chicken preparation

This being a main dish, it requires selection of meaty good sized pieces. If the selection is to be made for a curry, the chicken may be cut into 8 to 10 pieces in contrast to 4 or 6 pieces for making *tandoori* or roast chicken. In fact, for the latter, even the whole bird dressed and drawn may be used. One chicken would normally provide four portions of curry. Broilers are better and quicker to cook, thereby providing better nutritional quality.

Fried rice

This is generally referred to as *pulao* in India, each variety named after the ingredients used in the rice preparation. The quality of the rice is extremely important, and a good pulao requires long-grain matured rice, which has a subtle flavour. Old rice makes better pulaos than newly harvested grains. The *basmati* variety of rice is well known for its superior flavour and size of grain, both ideal for pulao. The quality of rice selected will however differ, if Chinese fried rice is to be prepared; in this case the small grain variety is preferred.

Mint raita

This is a popular side dish served with main meals, especially with rice, in India. the *raita* is whipped curd or yoghurt into which mint or other ingredients are added. Traditionally, curds are prepared from milk in most foods services and not bought prepacked. The quality of the set, however, depends on the starter and the type of milk used, homogenised, standard or whole milk giving well set curds. Skimmed milk tends to give watery curds, though the nutritional quality is not appreciably affected except in terms of what milk fat contributes (energy and Vitamin A).

For *raitas* the taste of curd is more important than the firmness of the set. This is because the curd has in any case to be whipped to destroy the set. The curd must not be too sour and a 'mint' raita must have the characteristics flavour and colour of fresh mint. The size of the mint leaf is of little significance in its selection, since it has to be ground or chopped fine before adding it to the curd. A variety of *raitas* can be made and named according to the ingredients added for example, carrot raita, pea raita pineapple raita and so on.

Salad

Since salad ingredients are not generally cooked expect beetroot (which may be steamed) selection needs to be done with care.

- Tomatoes must be orange-red, regular in shape, firm and unblemished.
- Lettuce and other greens need to be crisp, bright and free from signs of insect infestation.
- Carrots should be orange to red, firm, but young and slightly sweet to taste.
- If meat, cheese or egg salads are prepared, the quality should be the best, because salads when held for service cannot be done at freezing or boiling temperatures. Salads left unused should generally be given

away and never reused if they are high protein salads containing chicken, meat or fish.

The wholesomeness of salads therefore, depends on their freshness, the degree of cooking of meat and eggs required to make them safe, the conditions of the cans if canned meats are used. It is preferable to use roasted meats for salads, because flavours get sealed into the meats better, the colour is improved and the danger of contamination is minimised.

Fresh fruit

Seasonal varieties having good colour, size and regular shape characteristics of the fruit, need to be selected for dessert fruit. Fruits always have full flavour and just ripe taste when in season. If the fruit cut and served as mixed fruit salad, or as an ingredient in puddings, then smaller sizes and misshapen fruits having full colour, flavour, and taste may be used without hesitation, as they can be bought at a much lower price than dessert varieties.

Storage, Preparation and Cooking Methods

The storage, preparation and cooking methods used, greatly enhance, retain or mar the nutritional quality of the food. This is because different nutrients vary in their physical and chemical properties, some being water soluble, others fat soluble, some stable others unstable to heat, light, acids, alkalies and oxygen.

The conditions of storage like temperature, humidity, lighting (natural or otherwise), ventilation, sanitation, method and length of storage and the wholesomeness of the food at the time of storage, all affect its nutritive value. It is therefore advisable to use foods, particularly perishable ones as soon as they are received, considering that before they reach the food service establishment they have already undergone a lot of handling, storage and exposure to environmental conditions.

The preparation of food prior to cooking also brings about changes in nutritional quality. Peeling, trimming, cutting and washing of foods affects its nutrient content as indicated in Table 14.6, which only emphasises the losses that take place of vitamins which are present in large amounts in fresh fruits and vegetables that are usually peeled, washed and then cooked or eaten as such. These nutrients get further destroyed when the food is subjected to heat in cooking. Besides the vitamins, mineral elements are also washed away in the form of salts which easily dissolve in water. It is not always possible to estimate the exact extent of the loss unless the cooked food is subjected to laboratory analysis and the nutrients present determined exactly. This is, however not

feasible in food service establishments, but a guide to enable nutritionally effective procedures to be established in kitchens and service areas can be formulated, as given below:

- (a) Separate areas for preparing food from those of cooking to prevent cross-contamination.
- (b) Use minimum amount of water in cooking to prevent water soluble nutrients from dissolving out.
- (c) Cook food in the shortest possible time to prevent heat labile B-complex vitamins and certain minerals from getting lost. Longer cooking can destroy essential amino acids to the extent of 30–100 per cent in protein foods.
- (d) Cooking at very high temperatures should be avoided because even some of the heat stable nutrients can be destroyed. The method of cooking best suited for a particular food should be used for it (Chapter 16).
- (e) Any water used in cooking should never be discarded, but made use of in gravies, sauces and soups.
- (f) Serve food as soon after cooking as possible.

In general, moist methods of cooking have less drastic effects on nutrients than dry methods provided no leached out liquid is discarded. For high protein foods like meat, eggs, cheese, etc. dry methods are suitable as the protein coagulates fast enough to seal the nutrients in the food.

Today, with the variety of processed foods available to the caterer nutrient losses need not be a problem especially in quick cooking and ready to serve items. This is because the nutrient losses taking place during processing, are replaced in the final product through a process of enrichment, by which the losses are made good by addition of the lost nutrients. Some processed foods are even fortified with certain nutrients considered necessary for health such as iodization of salt.

In food services, because large volumes of food are handled and cooked to have them ready to serve on demand, losses in nutrients also take place during the period of holding the food. This is because heat is constantly applied to the equipment to keep the food hot.

Processed and convenience ingredients or foods help the caterer to serve fresher food by reducing or eliminating holding time through batch cooking. Since the dishes take lesser time to cook and serve. This is because part cooking is done by the manufacturer of the foods. Temperatures however, need to be monitored very carefully for proper nutrient retention and safety of the food.

Table 14.6 Effect of preparation procedures on the nutritive value of foods

<i>Preparation</i>	<i>Method of Work</i>	<i>Effects on Nutrients</i>	<i>Retention Method</i>
Peeling	Thickness of peel determines the extent of nutrient loss. Removing peels and leaving food exposed to air for some time before cooking.	Vitamin C is lost in proportion to thickness of peel. Vit. A or carotenes in the coloured peels of fruits and vegetables is removed. Losses of Vit. A and C occur due to oxidation. Riboflavin is lost if sunlight falls on food.	Use foods with peels as far as possible. If you have to peel remove them thin, and use immediately
Washing	Washing after peeling.	Some water soluble vitamins washed out.	Wash as little as is necessary and quickly.
	Washing after peeling and cutting.	Greater losses occur because of increased surface area exposed.	Rub off all extraneous matter and wash skin before peeling to avoid washing after peeling.
	Throwing away washing water.	Losses increase with every additional wash.	Minimise washing, using the second washing before cooking.
Cutting	Size of cut large or small.	Large pieces result in less losses through oxidation than small pieces.	Cook whole if possible, or cut into large pieces to reduce the surface area exposed.

Holding and Service Methods

In food service establishments it is imperative to hold food for varying periods in anticipation of customer demand. Depending on the acidity or alkalinity of the food, nutrient losses take place. At a neutral pH of 7 most nutrients are stable except ascorbic acid (Vitamin C), folic acid and thiamine. At acid pH (less than 7), Vitamin A, carotenes, some B-Vitamins and amino acids get unstable, though Vitamin C becomes more stable. In an alkaline medium (more than pH 7) Vitamin C becomes unstable, and some B-Vitamins get destroyed. In the presence of oxygen essential amino acids degenerate, so do

Vitamins B₁ and B₂ (thiamine and riboflavin). In the presence of sunlight too riboflavin, carotenes, Vitamin A and Vitamin C get affected.

The losses of nutrients are proportional to the time of holding and the temperatures at which the food is held. Most foods must be held above 63°C to make them microbiologically safe. Holding time and temperatures not only affect the nutritional quality, but also the sensory and quantitative quality of foods. The sensory qualities are affected due to chemical and non-enzymatic reactions taking place in the food; volatilisation of flavour substances and changes in texture because of being kept hot over long periods. It is therefore important that if it is necessary to hold foods hot before service, they should not be fully cooked. This will prevent quantitative losses as well as get completely cooked and ready while being held hot. The quantitative changes are in the form of moisture evaporation and shrinkage which adversely affect the number of portions.

The nutritional quality of foods is also affected by the methods chosen for service. Those requiring food to be exposed for a long time before it is consumed lead to oxidative changes and consequent losses, as compared to those served and eaten as soon as they are prepared.

Having identified some of the factors which affect nutritional quality it is worth mentioning that some methods can be used to retain or even enhance nutritive quality in the process of food preparation. Table 14.7 indicates these briefly.

Methods of retaining nutritive value are those involving short cooking time, low temperatures, acid medium and use of the soaking and cooking liquid. If it cannot be used as such, it may be incorporated as an ingredient in another dish. A good example is when milk is split to make cottage cheese, the whey which separates out may be used for making doughs for chappti, poori, naan, etc. Alternatively, it may be used instead of water to make a rice preparation or a curry.

In the case of convenience food the nutritive value is generally given on the packages of foods marketed, from which the nutritive quality can be ascertained. A number of processed foods are available today which are fortified or enriched to maintain the composition of the natural ingredients of the original food. Labels need to be studied carefully to know what is best to use for the desired purpose in any establishment.

Table 14.7 *Improving nutritive quality of foods*

<i>Method</i>	<i>Foods</i>	<i>Effect of Quality</i>
Germination	Pulses, cereals, legumes.	Improves level of B-Vitamins and the biological value of proteins in some pulses. Vitamin C is developed.
Fermentation	Pulse-cereal mixtures, breads.	B-Vitamin content is enhanced especially with yeast fermentation.
Supplementation	Foods cooked in combination, such as cereal-vegetable, cereal-milk, cereal-pulse, cereal-egg or meat, fruit-milk, etc.	The nutrients lacking in one food get provided by the other food which is cooked with it. Essential amino acids lacking in cereals get made up by the milk, pulse meat or egg and so on. Similarly, fruit has little or no protein which milk provides in the fruit shake.
Fortification	Flour, fats and oils, salt, milk, etc.	Nutrients are added to foods after or in the process of manufacture to improve their nutritional quality.
	Processed foods like salt, sugar, flours.	Nutrients added for health promotion, even though they are not present in the original food.
Enrichment	Flour and its products, canned foods, etc.	Nutrients added to food by manufacturers to make up the losses that have taken place during processing.

Having discussed the quality characteristics in relation to acceptability it is necessary to emphasise that the quality to be served must be acceptable to both the consumer and the food service establishment. The latter may not always decide to serve the most 'superior' quality but the 'best' possible within its cost structure and the level of customer demand. All the qualities of food must therefore necessarily fall within affordable costs for the establishment and the paying power of the customer.

QUALITY CONTROL PROCEDURES

Quality control procedures adopted by various establishments differ according to the size of the operation. Smaller establishments require less sophisticated methods than larger ones which handle greater volumes of food, and therefore face greater chances of contamination if handled traditionally. If machinery is not used to speed up the work and reduce the amount of exposure of food to air

and handling, it would be difficult to control quality. Quality control procedures basically involve three steps:

(i) *Setting out accurate specifications*: This is done to communicate to the supplier the exact sizes, weights, numbers, etc. required. Sometimes, descriptions or coloured pictures of products may be used. This may also be displayed at different preparation centres in kitchens to guide staff to produce dishes which match them in their quality characteristics. Sample specifications appear in Figures 14.8 and 14.9.

<i>Product</i>	<i>Quantity/ Pack</i>	<i>Au. Wt. (g)</i>	<i>Colour of Shell</i>	<i>Freshness</i>	<i>Interior Quality</i>
Hen's egg	2.5 doz. per tray. Carton of 6 trays.	50–60	White or Brown	Not over 4 days after laying.	Tested by candling Prominent yolk in centre Thick gelatinous white.
Price Rs per carton					
Deliver two cartons on 2002.					
Use in preparation. For breakfast preparations, and in puddings, cakes/biscuits/All.					

Fig. 14.8 *Specification for eggs*

<i>Variety</i>	<i>Colour</i>	<i>Au. Size</i>	<i>Qty. Reqd.</i>	<i>Freshness and Quality</i>
Indian	Orange Red	12 carrots to the kilo	10 kg	Farm fresh with no sign of infestation, contamination or deterioration. Firm, even in shape, smooth, with soft midrib.
Price Rs per kg.				
Additional information Deliver on 2002.				
Use for desserts, salads and side dishes.				

Fig. 14.9 *Specification for carrots*

In India there is no official system of grading eggs unlike in the developed countries, where they are marked AA, A, B and so on. But vendors do grade

them visually by size and colour and price them separately. In such conditions it is important to buy from farm sources or reputed vendors who will contract for replacing the number of eggs delivered spoilt. In tropical countries weather conditions also contribute to spoilage easily and therefore it is a greater challenge to the caterer to provide exact specifications and conditions of supply, to maintain a quality food service. Figure 14.6 is a specification developed for carrots, others can be formulated according to the specific needs of each establishment.

In catering establishments, the development of specifications is very important because those who receive the foods are not food specialists. The store staff commonly check what is delivered with note and match it with the order placed by the institutional manager. Specifications help staff to check foods received more thoroughly for the quality required.

(ii) *Checking foods for quality:* Each food needs to be checked for quality against the specifications desired. This is done when the foods are received so that any item which does not conform to the specified quality is not accepted. Sometimes, due to carelessness or ignorance of staff, quality of foods may get compromised leading to spoilage in storage and losses. Specifications can also be developed for foods in process and those completed for service, to enable staff to check quality at strategic points in the production process. For instance, laying down standards for the thickness of the peel to be removed in preparing vegetable and fruits; checking to see that any equipment used is cleaned immediately to remove debris remaining in the machine; using the correct method of cooking for a food to avoid undue losses in nutritional, organoleptic and other qualities, and finally checking the temperatures of holding equipment. At the service point also, quality can be checked in terms of portion served, temperature of the food, its consistency and presentation.

(iii) *Testing the finished product:* The importance of testing the finished product before it is presented to the customer cannot be over emphasised. All testing should focus on those aspects of quality which are of concern to the customer and make food acceptable to him, such as appearance, palatability, portions and so on. The idea is to see that all food prepared for service is sold as far as possible. Figure 14.10 shows a sample evaluation proforma for a prepared dish. Using the given legend scores may be entered in the proforma to determine the acceptability score for each sensory attribute and the total score for the dish, which would amount to 30 if the grading was excellent for all the six attributes. Scores achieved for a dish between 24–30 may be treated as highly acceptable, 18–23 acceptable 12–17 fairly acceptable and 6–11 unacceptable.

<i>Legend</i> Excellent 5; Very good 4; Good 3; Satisfactory 2; Unsatisfactory 1								
<i>Dish</i>	<i>Appearance</i>	<i>Odour/ Taste</i>	<i>Texture</i>	<i>Composition</i>	<i>Presentation</i>	<i>Portion</i>	<i>Total score for the dish</i>	<i>Suggestions*</i>
Picture or description								

* Mention any defects or give suggestions for improving any of the above qualities in the dish under test.

Fig. 14.10 *Evaluation proforma for a prepared dish*

If on testing a dish for quality, it is found to be unacceptable in any way, immediate action should be taken to prevent it from being served to the customer. The process involved in its preparation, and the quality of ingredients used must be re-examined and any identifiable defects removed. It is wrong policy to camouflage defects in a dish by addition of excess flavourings or colours before serving it to customers.

While quality control is essential for every food service operation, one must not be too carried away with tests considering that quality procedures are time consuming and costly. The question then arises as to how much time, energy and money should be spent on them. This is difficult to state in concrete terms, because it must vary with the type of foods and the manner in which they are being handled. John Buick has suggested that not more than 0.5 per cent of the sales value should be spent on quality control, whatever the form. The sales volume is, however, a good guide to customer acceptability, so aptly illustrated in Plate 14.2 where the number of customers indicate the popularity and acceptability of the food, even though the menu is limited and the establishment small. It will be noted from the illustrations that customers really do not mind standing and eating or waiting in queues as long as the food served is of acceptable quality.

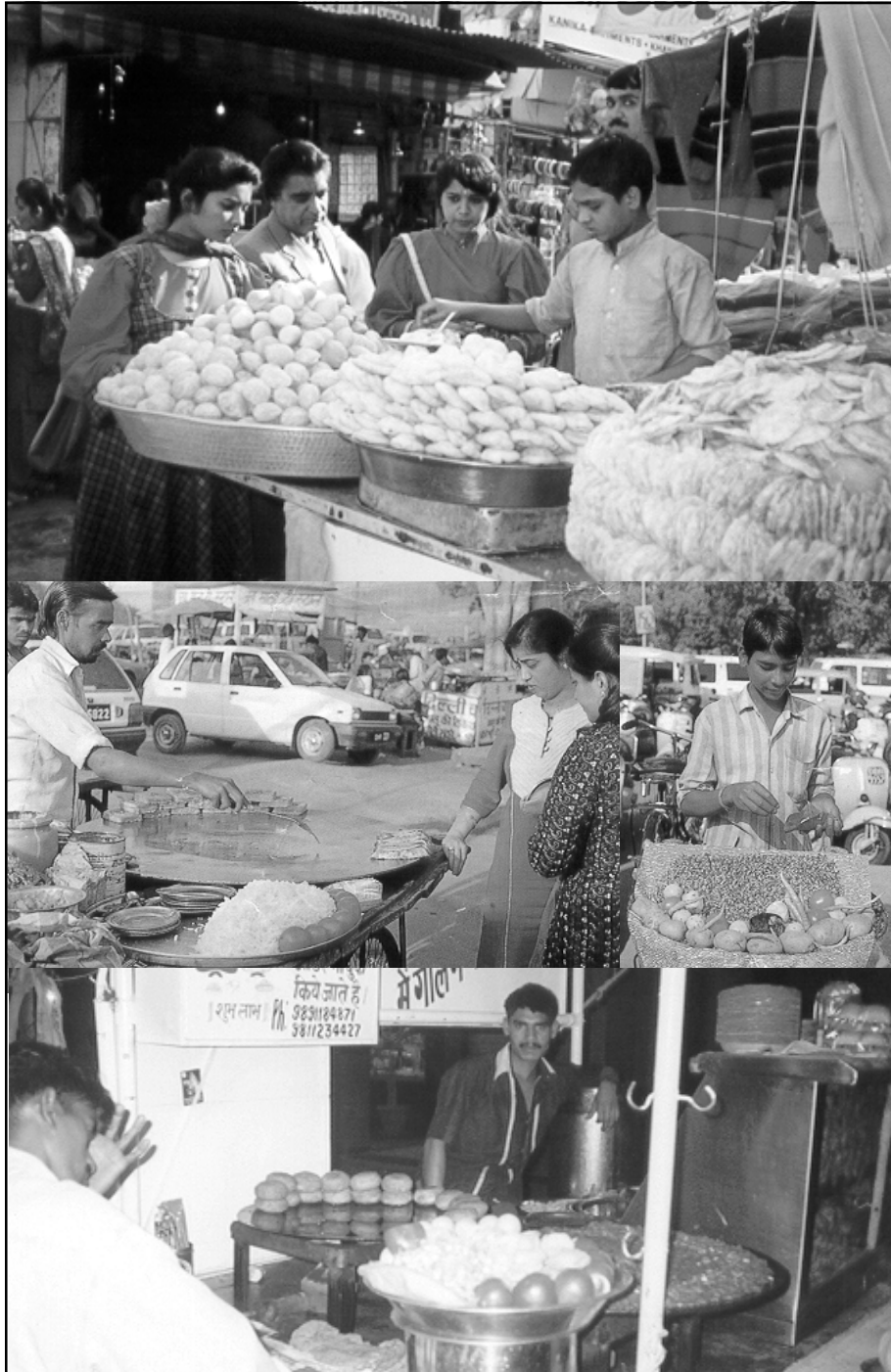


Plate 14.2 Chaat stalls indicating customer acceptability

FOOD RECOMMENDED FOR USE IN CANTEENS, LUNCHROOMS, KIOSKS AND OTHER ESTABLISHMENTS

The foods recommended for service in the different establishments are based on a number of factors:

- (a) Expectations and paying power of the customer.
- (b) Location of the food service facility.
- (c) Size and type of establishment.
- (d) Hours during which it is open for service.
- (e) Type of storage facilities available.
- (f) Service style.

These factors have been kept in mind while recommending food selection for different kinds of food service institutions.

Canteens

The foods suitable for service in canteens are hot and cold beverages, snacks both light and meaty, plated meals, sweets or desserts, depending on where the canteen is located and who the customers are, denoting their food habits, needs and purchasing power.

Office Canteen

An office canteen which would be required to cater to officers of all ranks and occasionally be called upon to cater for functions or buffet lunches should have the facilities for providing a complete meal in the form of a table d'hôte menu, and snacks varying from pakoras (fritters) and peanuts to cakes, biscuits, and sandwiches with tea, coffee and bottled or canned drinks.

Such a range of foods would provide the necessary choices for people who would want a substantial meal to those who only wish to supplement their packed lunches. Hot and cold beverages are required by all during tea and coffee breaks, with or without a snack so every canteen must have these on the menu. Some may have important guests to entertain at work for whom ready snacks like cake, sandwiches, etc. should be available. At the same time, choices should enable items to be mixed, matched and finished on demand, so that the food is fresh when served. Holding or reheating food makes it unpalatable and dangerous, because canteens have limited refrigeration facilities and unpredictable demand.

College or School Canteen

The foods suitable for college or school canteens would preferably include nutritious and satisfying snacks, tidbits, *chaat* and hot and cold beverages to suit the taste of the customers (both sexes). For example, children's favourites to include would be chowmien, pizzas, samosa, dosa, chana, poori, fried snacks like cutlets and kebabs, small cakes, patties, burgers, milk shakes, juices, aerated drinks, packeted nuts, popcorn and wafers seasonal fresh fruits would also be a good item to keep, which if not sold by lunchtime can be converted to fruit *chaat*, a popular snack with school and college canteen customers. In short, students expect foods that are quick to eat, not elaborate or messy, but attractive and appetising.

Industrial Employee Canteen

These cater to the workforce mainly, though a minority of senior staff may order lunches or teas and snacks to be served to them in management dining rooms, or in their offices.

The food is generally served preplated in 'thalis', the table d'hote menu taking the form of chappati, 1 rice, curry, one seasonal vegetable, onion and green chili or seasonal salad. Sweet and desserts may be made available but priced separately for those who wish to pay for them, depending on the catering policy.

At some locations buffet counters manned by service staff may be set up for employees to help themselves to a fixed menu each day including the dessert.

In employee canteens, any foods placed on the menu would take care of nutritional and satiety factors, as canteen meals and snacks provide the main food for the factory workers. This is because they would like to take advantage of the subsidised meals provided at work as a welfare measure. In addition the work force is employed for the work round the clock, and those on night shifts take heavy breakfast in canteens before going off duty, while those on day duty necessarily work through lunch or dinner times and eat main meals in the canteen.

Public Canteens

These may be situated at market places or shopping centres, trades fairs, bus stations, airports, other ports, railway stations or wherever customers represent the masses. These are also called snack bars when they offer food items which are snacky in nature, whether preplated or sold as individual items. In addition,

they generally provide beverages, both hot and cold or even desserts and ice-creams. The latter may be situated at airports where customers (passengers) are multinational or regional in their eating habits and prefer to stay at the airports between flights.

The type of foods are generally finger foods, but cutlery is available for those who wish to use it. Examples of foods recommended are burger, sandwiches, cookies, biscuits, pies, pastries, salads and pasta dishes. Canteens at other locations may offer chana-poori, curry-rice, dosa-chutney or sambar with idli and vada, chops with vegetables and so on. Canteens located at bus or railway stations will tend to offer cheaper foods like bread pakoras, samosa or single or two item mini-meals, as compared to those at shopping centres, fairs, and airports, to cater to the paying power and tastes of the masses travelling by bus and rail respectively.

As the demand fluctuates quite a bit during the course of the day, it will be noticed that the foods recommended are such as will not spoil easily at the environmental temperatures possible for the storage and service of food. The only precaution to take is not to include those items on the menu which are milk or cream based if refrigeration facilities are not feasible, as at bus stations. In addition, foods suggested can mostly be part prepared or prepared wholly and kept ready to serve on demand during times of rush. Also public canteens are exposed to environmental conditions of dust, flies, which requires food to be strictly guarded, against contamination (Unit 7).

Lunchrooms

Lunchrooms may be rooms attached to offices meant for serving meals to executives; rooms where lunch is served to school children in a boarding school; or for catering to inmates of residence halls on university campuses; or simply a classroom, corridor or verandah of a government rural or urban school serving midday meals to children, who may or may not be able to eat two square meals a day at home for various reasons.

It will be appreciated that according to the environment, the size of the establishment, lunchroom and the type of customer, the foods served will vary considerably. What is recommended though, is based on the fact that all lunchrooms catering to school children need necessarily to keep the nutritional quality of the food as their chief objective. Along with this, other quality characteristics would be looked after to a great extent as discussed earlier in this chapter.

Executive lunchroom

Executives would be expected to come for lunch in a staggered manner, so it is recommended that foods which cannot be reheated easily or finished on demand should not be placed on the menu, or be cooked fresh in batches.

Executives with their routine work pressures would like to eat their lunch leisurely, and therefore a complete meal menu and not a snacky one would be in order. They are also expected to belong to an age group that would appreciate food items which are traditionally familiar to them. So foods recommended are regional, traditional foods presented in a familiar manner. In India a typical menu would be:

- Curry
- Side vegetable
- Curd or its preparation
- Cereal preparation like rice, chappati, naan, poori, etc.
- Sweet
- Accompaniments: salad, papad and pickles

In case an executive is entertaining colleagues from other countries, the menu may be adapted to their needs by including a soup or starter, and serving the meal course by course or as a buffet with inclusion of salads and provision of seating arrangements. The dessert may be chosen according to the tastes of the guests (Chapter 15). In general the food prepared would carry less spices because foreigners are not used to highly spiced foods. In addition, the customers are mostly middle-aged, therefore lightly cooked food using limited cooking fat or cream, would be in order.

Thus executive lunchrooms would cater to flexible menus according to customer requirements, regional with seasonal variations and so on.

School Lunchrooms

In boarding schools, children from well-to-do homes generally reside, and therefore the facilities expected are those capable of providing full three or four course meals and snacks with tea or milk in the evenings after play.

School lunchrooms are characterised by large numbers of hungry over-active children (unless they are sick). Therefore, while all meals need to be planned so that they are nutritionally balanced, the selections must enable children to eat quickly, provide satiety value, and enjoyment. With school children burgers (ham, cheese, vegetable, meat) and pizzas are favourites, but

while these could form part of the meal platter they should not substitute the meal. Meals can be completed as indicated in the following sample menu.

- Hamburger or Pizza
- Roast potatoes/sauteed potatoes
- Salad
- Fruit yoghurt or kheer

Similarly, pizza may be provided at tea time, as a substantial snack. To shorten the time of service, counter service is the most suitable with arrangements made for seating and dining comfortably. This has two advantages—Firstly, when children take the tray for self service, as soon as they enter the lunchroom, they feel they are close to food so they do not get too impatient even if they have to queue up. Secondly, they can see the meal on the plates of other children, and on the counter and make their selections before hand. Food well displayed and plated by staff behind the counter enhances the appetite of the children too.

In school lunchrooms food may be served in steel ‘thalis’ or plates which the children carry to their tables and eat from. If rectangular sectioned ones are used these act as the trays as well. Once the children have started their meal it is good policy not to disturb them again for second helpings from the counter. Additional bowls of main dishes may be placed on each set of tables from which children can help themselves if they wish or alternately the staff could carry the serving dishes around periodically, offering second helpings to those who want them. This method also enables the counter staff to wind up as soon as all the coupons issued for lunch have come in. A table d’hote menu is recommended for school lunchrooms.

College Lunchrooms

In universities or colleges students do not all have the same lunch hours, and therefore a more leisurely atmosphere prevails in lunchrooms. Besides, the students have the choice of eating on the campus or not, and therefore may not be consistent with their eating time or habits. College lunchrooms therefore must provide a mixture of traditional and snacky meals served between fixed hours. The provision of a snack type meal facility helps students to eat when they are in a hurry to reach somewhere and have limited time, besides providing them the means to entertain friends for lunch cheaply. This arrangement also helps managers of lunchrooms to reduce wastage because snack meals can be prepared easily to order, eliminating large volumes of leftovers if the student numbers vary considerably from day to day.

Schools Lunchrooms for the Less Privileged

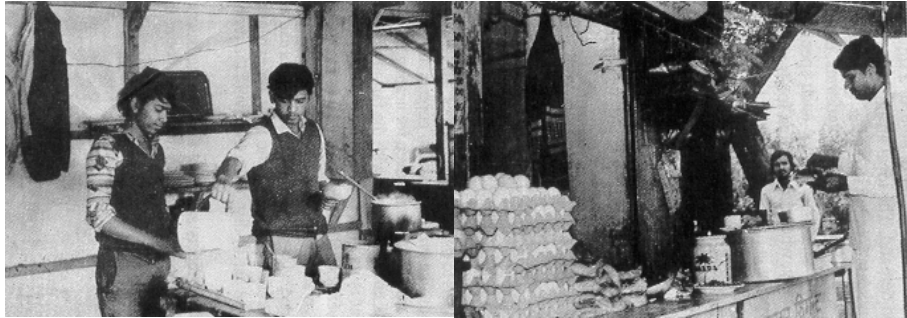
In government schools particularly in rural or urban low income settings the objective is to provide at least one-third of the nutritional requirements through the mid-day meal. The primary function of the school meal in such circumstances becomes that of supplementing the inadequate food intake of the children at home. The reason may be large families and low purchasing power; ignorance of the needs of vulnerable children because of illiteracy of parents; alcoholic male members, who leave little for family meals and so on. As mentioned earlier. The meal may be served anywhere in the school at mid-day. The children are generally made to sit on the floor and served on washed banana or other leaves, which can then be disposed off after the meal. In some schools plastic, aluminium or enamel plates are provided. The foods recommended are a high protein snack, generally a cereal-pulse combination and a nourishing beverage or seasonal fruit. Peanuts, seeds, green leafy vegetables, fruit and milk may be added to the ingredients for the meal to further enhance nutritive value and provide variety. Stuffed *paratha* and curds provide a good meal. Mid-day meals in these schools are generally eaten by hand and therefore it is important to inculcate good hygiene practices in the children, by making them wash their hands with soap before and after the meal. These should be strictly followed by those who dish out the food too.

Kiosks

Kiosks are structures constructed to provide 4.5 to 5.5. m² covered area with one opening for a window or service counter and a door for entrance and exit. The space is provided with one tap for drinking water.³

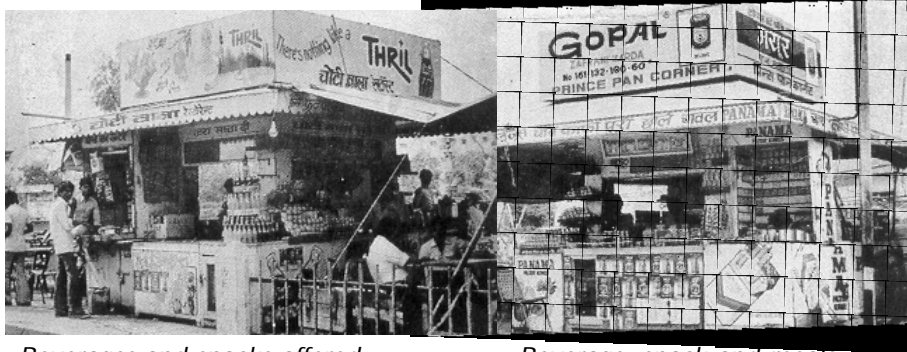
These kiosks may be used as food service outlets and are best suited for the provision of ready-to-eat snacks and beverages to the public, because of their location on crossroads, near bus stops, etc. Kiosks have been constructed to replace and rehabilitate squatters, who used to sell beverages on the road side. They are usually positioned in every residential area near crossroads, outside offices, schools and community buildings. While kiosks were planned for providing a facility for getting fresh fruit and vegetable on every busy street, they have been utilised by people in many different ways (Fig. 14.11). It will be seen that with a little imagination the limited space can become a source of attraction to people or get abandoned due to lack of it.

3. Description from the office of the Delhi Development Authority, Vikas Sadan, New Delhi.



Street tea stall

Tea and snack service



Beverages and snacks offered with extended seating

Beverage, snack and meals served seated along with paan and digestives.

Fig. 14.11 *Creative use of kiosks*

When using kiosks as food service outlets it is well to remember, that cooking on the premises is prohibited by the development authority. In spite of this restriction kiosks have developed into a class of food service establishments as popular as the traditional *dhaba* or road side cafeteria of old.

The foods recommended for service are ready to eat packeted biscuits, salted snacks, cookies, boiled eggs, sandwiches to order, fruit and juices. There is space enough for a fruit juice machine, or a small oven or food warmer in which foods like pizzas, pakoras, burgers may be reheated on demand. The ideal arrangement would be to place a small microwave oven for heating foods as there is no deterioration in quality with this oven, and it is quick enough to cope with the fast turnover conditions at bus stops, railways platforms, etc. The only deterrent is its high price which if paid, would give good dividends. With one such specialised equipment even a small kiosk can extend its menus, at least seasonally, when preprepared foods will keep without refrigeration for a

new hours till meal service. One light point is provided in every kiosk but this can be extended with permission, if the owners can afford it. There are twin kiosks also auctioned by the Delhi Development Authority (DDA) from time to time, for expansion of an establishment. The service methods should be based on the use of disposables to avoid the problem of washing up on the roadsides or in crowded areas.

Institutional Feeding

The foods and menu patterns for institutional feeding vary largely because institutions provide a *home away from home*, whether in the form of old age homes, hospitals, schools or college hostels, orphanages and so on. The catering provided in such cases is based on necessity and not so much on choice. Individual items of food are not purchased as is the case in purely commercial in quantities operations.

The needs of institutional feeding are therefore planned for a whole day or week for the inmates of these institutions. Nutritional and cost effective considerations of menus therefore become priorities for planning. The foods recommended would thus be seasonal, combined in a balanced manner to produce meals resembling the pattern of home meals. The factors to be considered for planning institutional meals have been discussed along with sample menus for different institutions such as old age homes, homes for the blind and so on in chapter 17.

Thus, with an understanding of the characteristics of different foods, and how best they can be utilised for the different needs of people, there is no doubt that any establishment, large or small, will flourish.

Chapter 15

Food Purchasing

The term purchasing comprises of a number of activities all directed towards the acquisition or procurement of food and related materials for the operation of a catering organization. Purchasing is a major factor for the survival of any establishment especially in the increasingly competitive environment of today. In fact, in modern industry there is a whole new profession of purchasing agents on whom organisations rely for their resources, at the best possible value for money. Sound purchasing practices therefore, represent the act of buying materials of the *right quality* in the *right quantity*, at the *right time*, at the *right price*, from the *right source* with its delivery at the *right place*.

FOOD PURCHASING

Much time and effort is spent on marketing a business, but purchasing which can make significant contributions to profits is often grossly neglected.

Thus, purchasing good food materials is the basis for preparing and serving meals that are acceptable to the customer. Unlike purchasing for the home, the food service manager cannot always go to the market and choose what he wants from the variety available. In fact, he has the disadvantage of not being able to actually see the food he is buying till it comes to his door. This makes food purchasing a more difficult but challenging task, and therefore needs to be based on certain established principles.

Principles of Effective Purchasing

The principles of effective purchasing are based on the commitment of organisational funds to those items which are in highest demand for that

amount of money, so as to lead the establishment to profitability and success. In catering, food constitutes the major variable cost and therefore purchasing decisions must be carefully made in consultation with user departments, sales and services to ensure efficiency. Nine basic principles of purchasing have been enumerated as a guide to making decisions.

(i) *Continuity of supply*: This is of critical importance for minimizing or eliminating disruption in food production activities.

(ii) *Minimum Investment in stocks*: This is particularly noteworthy since food is not only variable in its perishability, but requires a large variety of ingredients for its production into meals, snacks, desserts, beverages and so on. Costs of space which can be alternatively utilized for profitable activities, along with storage and handling costs amount to a sizeable blockage of capital. Therefore quantities to be stocked need to be considered very carefully while purchasing.

(iii) *Security of Stocks*: Forward buying has to be carefully balanced with present usage requirements. Security refers not only to guarding of stocks from pilferage or theft but also preventing spoilage or deterioration of quality in storage. One is often tempted to order quantities that may bring cash discounts immediately, but in the long run may find that a large percentage of the commodities have to be discarded because they are unfit to be served to the customer.

(iv) *Maintenance of Quality*: The objective of purchasing is to procure those goods which are most suited to production requirements for end use, rather than those which rank highest in absolute quality, in terms of standard quality marks, grades or brands. With perishable fresh foods like fruits, vegs, meats, eggs, bread etc. the purchasing department should direct deliveries straight to the user department or kitchen for production of quality meals.

(v) *Procurement at low cost*: In the matter of buying food materials the principle should be to purchase at the lowest ultimate cost rather than lowest initial cost. This does not mean getting cheap, non-standard materials, but reflects the bringing down of procurement prices through negotiation or cutting on packaging costs while still maintaining quality standards. This is usually done through bulk package purchasing directly from manufacturers, and using single suppliers who are conscious of the quality and quantities that are required on a long term basis.

(vi) *Avoidance of Duplication and waste*: Interaction between purchasing production and user departments is important to achieve reduction of food waste and duplication of procurement time and effort which can result from

sudden menu changes or production policy shifts. Needs must be viewed for short, medium and long term production so that people responsible for purchasing can plan procurement in advance to meet those needs.

(vii) *Maintenance of Competitive position:* Those incharge of purchasing need to have a thorough knowledge of the market environment and the purchasing policies of those offering similar goods and services to their customers. This requires experience and a high degree of executive judgement, through which impending taste changes of customers can be gauged in advance. A purchasing manager who can communicate these changes to production and service departments in advance can maintain the competitive position by drawing attention to costs, quality and prices that the market will take.

(viii) *Image with supplier:* What a supplier thinks of you and your organisation can be an asset or liability in the procurement of foods and materials. It is therefore important to set up a value based image through high ethical standards that are then reflected in a suppliers response to the purchasing manager, staff and then organisation as a whole. A supplier feels a sense of loyalty to the organisation if he sees justice, honesty of dealing and not a sense of exploitation through corruption and bribery. In the latter case the situation is a liability in the long run and the organisation cannot survive.

A good image will enable valuable information to be received from suppliers on new products, cheaper substitutes, new market ideas or materials that could lower costs or improve products for the customer. Besides this, the organisation will experience less difficulty in procuring foods during periods of short supply or getting a price advantage during seasons of glut from loyal suppliers.

(ix) *Harmonious Environment:* Development of relationships that lead to harmony and cooperation both within the organisation and outside it results in a sense of mutual trust and respect among all associates. Irrespective of which principles are used in the purchasing function of a catering establishment, the basic principle towards which everyone is working is the effective commitment of organisational funds and if the whole team works towards it together, the organisation is bound to succeed.

Purchasing Activity

From the above discussion it is clear that purchasing food for an establishment is not a single activity involving exchange of money for food in a market, but a series of activities from knowing what to buy and for what end use, to actually getting the food for purchasing preparation and service. Figure 15.1 indicates the activities involved in an establishment.

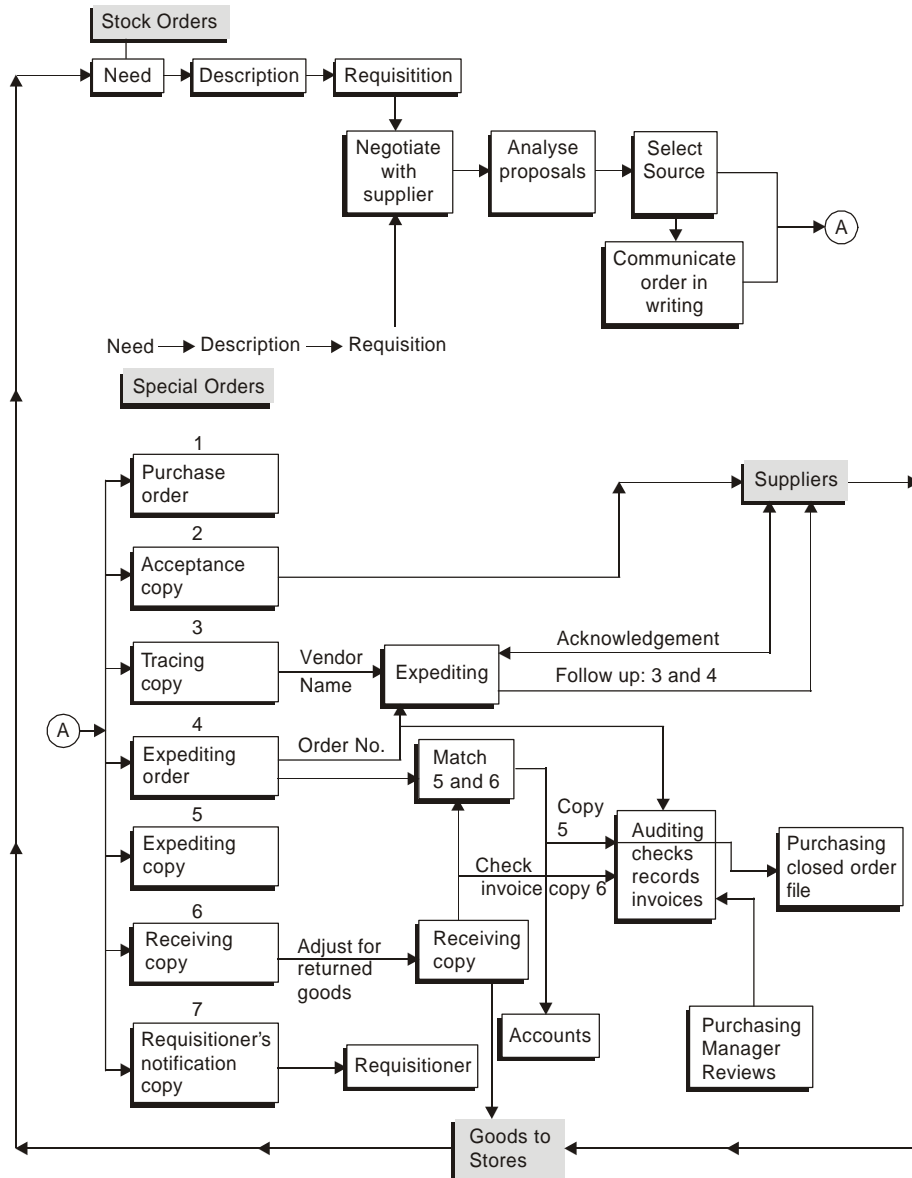


Fig. 15.1 The Purchasing Process

The purchasing process gets initiated only when a need is recognized after which a number of steps follow before an item can be actually bought. The purchasing process thus requires the interaction and coordination between staff of user departments, suppliers, stores, accounts and inventory managers, depending on the size of the establishment.

The job of purchasing food becomes even more difficult in countries where there is no system of food grading initiated by the government which can help the buyer to pick up what is required without any apprehension. But quality is of utmost concern to all dealing with the preparation, service and consumption of food.

PURCHASING POLICY

Every establishment sets its own purchasing policies according to its specific needs for different types of foods and related materials. For example, certain establishments may decide to buy their canned and preserved items from government canning centers only. Others may contact manufacturers directly while still others may depend entirely on the suppliers judgements of what would be good. Some establishments may have employees whose families are farming, and their products may be bought farm fresh according to seasonal requirements. Whatever may be the policies laid down, the methods of buying depend largely on the quantities of the various items required at one time. The different methods possible are discussed below.

PURCHASING FUNCTIONS

Purchasing functions and activities need to be planned according to the policies laid down for each establishment. The following functions applicable generally are enumerated.

- Keeping records of specifications for each type of dish on the menu developed with the help of those who prepare the meals.
- Storing foods in a manner that will enhance or maintain their keeping qualities.
- Using perishable foods within two days of purchase.
- Rotating use of packaged foods so that older stocks are used first.
- Formulating specifications for food items.
- Liaising with suppliers and user departments.
- Placing orders.
- Receiving of food and supplies.
- Inspection of goods.
- Taking or rejecting delivery of goods.
- Storing or issuing directly to user departments against requisitions.
- Maintaining inventories.

- Maintaining safety and security of stores, by keeping an eagle eye.
- Disposing off obsolete equipment and waste materials.
- Control of Stocks
- Staff management.

PURCHASING PROCESS

The purchasing process gets initiated only when a need is recognized, after which a number of steps need to be followed before the item can be actually bought. These steps are represented in Fig. 15.2

The purchasing process thus requires the interaction and coordination between staff of user departments, suppliers, stores, accounts and inventory managers, depending on the size of the establishment.

PURCHASING METHODS

There are basically six methods used in catering organization for purchasing food and materials.

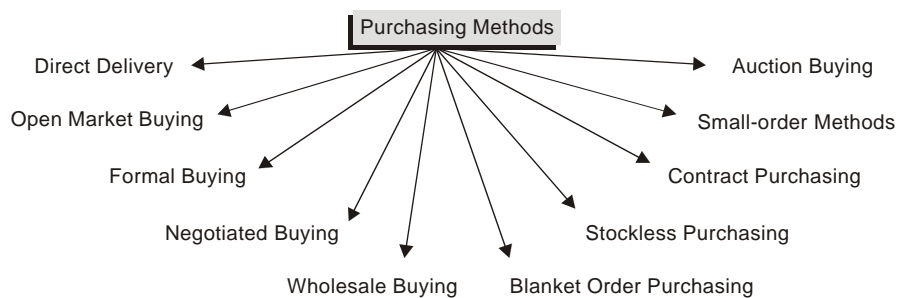


Fig. 15.2 *Purchasing Methods*

Direct Delivery

This is a method of involving direct delivery of food and drink from the manufacturer, who may be referred to as a national supplier.

Open Market Buying

Most food service establishments use this method for buying food items. The buyer invites quotations from suppliers for items according to required specifications. The supplier is then selected on the basis of his samples, prices, delivery schedule and other service offered. Contact with suppliers is made by

visits to markets, on telephone or by visits of sellers to the food service establishment. Open market buying is an informal method and can easily be adapted to individual establishments. It is generally used for purchasing of perishable foods like fruits, vegetables, meat etc. This also enables the caterer to pick up smaller quantities of items to suit stock holding levels, so important for items used occasionally or less routinely.

In fact, very small establishments which are family enterprises often buy directly from wholesale markets, food stores and cooperatives, and transport the quantities required to the establishment. This helps to appreciate and be aware of the changes in market situations, and make the best use of prices and commodities by using instant discretion in purchases. For instance, it is not worthwhile for a road side café to draw up specifications, for the limited menu that it may serve. So, on a visit to the market with an idea of buying brinjals (aubergines) among other vegetables, if the buyer finds that the brinjals are mostly infested and of poor quality, he can instantly decide to replace the item on the menu with a vegetable that is of good quality. Had an order for the same been placed with a supplier, one could land up with a lot of waste because when buying in bulk, say 5 kg, no supplier would pick up perfectly good coloured, well shaped brinjals, to see if some of them have tiny holes.

In larger establishments where suppliers are involved in the purchasing, it helps to use price quotation and order sheets for recording the prices quoted in the time bound contract with a supplier as shown below in Fig. 15.3.

Formal Buying

In this method formal quotations are invited from sellers against written specifications for each category of foods. These requests for bids may be made through dailies, or printed material which is widely distributed or posted to interested sellers who may be contacted on phone. Along with specifications the buyers also include in their requests, conditions like last date for quotations, general time between order and delivery, mode of delivery, terms of payment, willingness to accept whole or part of the bid, discounts, and so on framed within the purchasing policy of each establishment.

The quotations received remain sealed till the date of opening which is also indicated in the buyer's requests. They are then opened by the purchasing manager in the presence of the bidders and representatives from the user department, accounts and administrative staff, who witness the quotation accepted. The practice is to accept the quotations of the lowest bidder, unless products clearly fail to meet the specifications.

Food service establishment		For Delivery on			
Supplier		Date of Order			
<i>Item number</i>	<i>Specification</i>	<i>Amount required</i>	<i>Amount in stock</i>	<i>Order</i>	<i>Price quoted</i>
Fruits					
Apples					
Bannanas					
Oranges					
...					
...					
...					
Vegetables					
Onions					
Potatoes					
Cabbage					
Tomatoes					
...					
...					
...					
Meats					
Chops					
Mince					
...					
...					
...					

Fig. 15.3 Sample price quotation and order sheet

Formal methods of buying are generally adopted by government establishments for which central purchasing is done, such as for hospitals, or homes for the handicapped or government schools. They may also be used for large catering establishments. Formal methods involve a great deal of competitive bidding and therefore are sometimes referred to as *competitive bid buying*. Figure 15.4 is a sample of requests for quotations in the form of a tender notice for large scale contract purchasing.

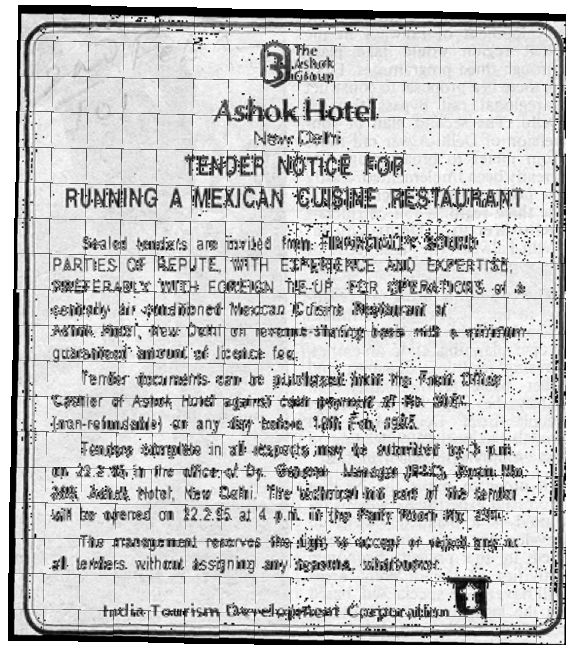


Fig. 15.4 A tender notice

Negotiated Buying

As the name indicates this involves negotiations between buyer and seller regarding prices and quantities. This method is generally used for seasonal items which are limited in supply, where both buyer and seller are keen that the product is lifted quickly. Negotiated buying therefore involves taking quick decisions in a fluctuating market. The buyers contact sellers directly, negotiate the price and quantity and request bids are submitted as soon as possible. Obviously, this method is quicker, more flexible and less formal than the competitive bid method.

Negotiated buying may be adopted when purchasing food items directly from farmers or manufacturers but this is generally possible only for very large establishments because the contracts with manufacturers would have to be for large quantities, e.g. the total farm produce for an item for a season, or one complete manufacturing lot. The advantage is of course in terms of quality as well as price, but storage costs increase. Two types of contracts may be signed between the buyer and seller:

- (a) A '*Firm At Opening Price*' (FAOP) contract: In this the buyer agrees to take the supplies at a price established in the future when yield is

known, rather than at pre-season prices when the contract is made. Such an agreement is therefore firm but not signed till the seasonal yield is known.

- (b) A '*Subject to Approval of Price*' (SAP): In this case the buyer has the option of rejecting the order if the price fixed in the future is not acceptable to him.

Wholesale Buying

In this method a contract is signed with a wholesaler for purchase of goods at a specific price for a future period, along with the quantities required and when. The agreement specifies the intervals between deliveries for the contract period. This method is also suitable for larger organizations or central purchase departments. The wholesaler can offer more frequent deliveries than the national supplier or manufacturer, but within a much more restricted area. Usually caterers tend to use a combination of manufacturer and wholesaler as the supply sources, depending on the requirements.

Blanket Order Purchasing

A blanket order is an agreement to provide a specified quantity of listed items for a period of time at an agreed price. If the price is not settled at the time of placing the order, a method of determining it is included in the contract. Deliveries are then made under the *specified release system*.

Another type of blanket order agreement is to furnish all the needs for particular items for a specific period. Under this the quantity is not refixed until the time period has elapsed. The advantage of this method is that a variety of items for which frequent deliveries are required can be ordered with one source which may be an agent between suppliers and the buyer. The blanket order method is best for items that are required in small quantities but more frequently and whose usage rate cannot be planned accurately.

A blanket order is contracted usually for one year, although variations may exist between establishments. The description of orders in this method may be handled in any of three ways.

- (i) Itemization of all possible products covered.
- (ii) Broad descriptions of goods such as crockery, cutlery, detergents etc.
- (iii) General orders to cover all items that a supplier can provide.

Prices are also handled according to the method of ordering specified in the contract. A firm price may be quoted against each specific item or market

price at time of supply on a maximum ceiling price as written in the contract. If the ceiling price is crossed then it is treated as a new single-purchase transaction and does not come under the purview of the blanket order purchasing contract.

This method is useful because it eliminates the routine administrative work of ordering and carrying products in stock which are only a phone call away. Lower prices too can be negotiated because supplier keeps the stock often at earlier prices even though current prices may be higher in the market when the order is placed.

Stockless Purchasing

As the term suggests, the buyer does not keep the stocks of goods which he orders by this method, but the supplier keeps it for him. The inventory is thus owned by the supplier. Sometimes the consignment may be kept with the buyer but it belongs to the supplier, in such cases the term *consignment buying* is used.

For stockless purchasing to operate smoothly there must be perfect understanding between buyer and seller. The prices charged in such a system may be quoted slightly higher since the supplier is bearing the warehousing and inventory costs. But the total capital of the buyer which is usually fixed in stocks is much less. However, a back up minimum inventory is maintained by the establishment to protect against unforeseen delays in production, delivery or a sudden increase in requirements.

Generally, stockless purchasing applies to *off-the-shelf* items like essences, processed foods and mixes, snacks, biscuits, ready meal items and so on. Such items are commonly used by other establishments as well as the general consumer, although the buyer may purchase it at frequent but irregular intervals.

The consignment buying procedure is becoming increasingly popular and the range of materials purchased is gradually widening with caterers as their limited space is put to more profitable use.

Contract Purchasing

This is also called a *systems contract* and usually used by 5-star hotel chains. The technique assists the buyer and seller to improve reordering of materials which are repetitively used, with minimal administrative expenses, while still maintaining control. (Bolten, 1966).

This method is in many ways similar to the Blanket order technique except that the arrangement is a long term one and suppliers are therefore not changed

frequently. Also much more formal ways are used to select a supplier in order to eliminate personal considerations. The requirements of the contract are also more stringent with respect to service, the price fixed, and the total costs for all items and services contracted are the determining factor. The supplier selected usually is a specialist in the supply of the quantities demanded and offers discounts to the buyer on the total contract.

The supplier usually assists the buyer in analyzing requirements of materials covered by the contract so that the contract details will reflect the product variations and prices most suitable to him. The rate of usage and frequency of reordering need to be known over the past contract period.

Under the systems contract, the buyer receives only those brands produced or sold by the contractor. Such standardization is acceptable to the buyer for maintaining the quality of the end products. Only an immediate requisition is passed on to the vendor and there is no need for copies. The requisition is numbered serially throughout the contracted period and deliveries arranged when required after pricing the requisition slip. Most arrangements have a clause to deliver at 24 hour notice as if from a storeroom. Periodic payment is made even though every requisition represents an invoice.

The systems approach has a number of advantages such as:

- Deliveries are within a 24 hour work period.
- Time spent with the buyer is reduced.
- Lower prices.
- Space and staff costs reduced.
- Errors in ordering are reduced.
- Wastages due to changes in requirements are eliminated.

Apart from the advantages for the buyer, the seller also gains through establishing a long lasting relationship instead of just taking orders. There are also savings on paper work, extra trips and therefore transport expenses leading to profitability and convenience for both sides.

Small-order Methods

Most establishments require purchases to be made which are non-recurring and involve small sums of money. The purchase methods used for these transactions involve the petty cash system, cash on delivery or telephonic ordering check payment system.

Petty Cash System

Petty cash is a sum of money which is set aside to meet minor expenses of a business. It is effective for purchasing small orders from the local market in exchange for a bill and cash payment. The petty cash is also under single control, so that large transactions are not made which need to be closely supervised.

Cash on Delivery System (C.O.D.)

The term states that this ordering system involves payment on acceptance of a delivery. The order may be placed telephonically, or these days even through the internet.

Check Payment Ordering

This system is also called *paperless purchasing*. The *purchase order-draft system* is a combination of the order and a blank check for payment. Besides the product specification the order also contains delivery instructions, account number, unit price, quantity, taxes, discounts and terms of payment. The supplier completes the pre-signed blank check which states the maximum limit of the payment. A duplicate copy of the completed check is returned to the buyer for record.

These days establishments use the same system when they quote their credit card numbers for the payments and receive the copies with their statements of accounts.

Auction Buying

Food is rarely bought through auction but sometimes a manufacturer may diversify and announce the sale of his premises including processed food stocks.

In such cases a preview of products and stock quantities is offered before the auction. Large caterers may take up this option of purchasing to take the price advantage if they normally use those processed products. This method of purchasing is useful for furniture and equipment which is not obsolete.

On rare occasions of a glut harvest of perishable foods, the farm produce may be auctioned in totality and large establishments can make use of the opportunity. However, it is more common for food processing and storage units to benefit from such situations than individual food service establishments.

Whatever method is used for purchasing food, it is advisable to make the procedure simple with minimum paper work. Also communicating requirements

clearly at all stages of purchasing is vital to the success of any food service establishment. Purchasing should be approached with three basic priorities in mind, *service, quality* and *price*. Some factors which help food buying are:

Service: Service should get the top priority and stock should be available at all times and on call in case of unforeseen circumstances. However, service is not only a matter of ensuring that a supplier will deliver reliably on time, but how regularly he communicates market information about new products and trends to enable you to take profitable advantage of a situation. How often does he let you know in advance of a possible shortage of certain products that are required in stock. Does your supplier offer you a telephone sales service for perishable and other supplies. Such services can help in cutting down ordering costs, introducing flexibility if a change in quantity of product is required and so on.

Quality: This is the quality laid down for the production and service of food in a particular organization and expressed through standards and specifications for all items. The meat and grocery items can very easily be overcharged for, because contracts usually say *prevailing prices* and therefore in this area specifications play an important role for maintenance of quality supplies. Poor quality should not be accepted. Before an order is placed, the price that will be charged on the bill should be ascertained, and agreed by both parties.

Labels which indicate quality symbols like ISI, FPO, Agmark, date of manufacture, expiry date, maximum retail price per kilogram or pack, nutritional information, all enable the food buyer to select foods properly.

Price: This enables cost comparisons with different brands of similar products to be made instantly, and buying decisions arrived at without undue delay. Agreed prices only whether from a price list, discount or net price should be entertained and invoices checked thoroughly before payments of suppliers are cleared.

In some product areas suppliers may hold up the quoting of prices and agree to supply at prevailing market prices at the time of delivery. This would require to be contracted for in writing, the price communicated for samples being sent before delivery is confirmed. An occasional visit to the market will also help purchasing staff to arrive at a reasonable price with the supplier. Alternatively, quotations of other suppliers will help to arrive at a competitive and reliable price.

THE FOOD BUYER

An institutional buyer spends a lot of money on food and related materials on behalf of the establishment and for the customers. He thus bears a heavy

responsibility for the well-being of both. Every food buyer therefore needs to possess certain qualities to work effectively, such as:

- (i) Loyalty to the institution through devotion to duty, exercising a sense of justice, being open-minded but alert to a seller's psychology while being hard working and patient.
- (ii) Loyalty to customers in terms of being able to recognise good quality food that is free from adulteration and contamination.
- (iii) High moral and ethical values, so that he is not influenced by or obligated to suppliers in any way.
- (iv) Objectivity in his judgement of quality offered in terms of price and service.
- (v) Skill in identifying markets, negotiating deals with suppliers and establishing good relations with people around.
- (vi) Accepting food brands that are marked by standardising agencies approving their quality such as ISI, FPO or AGMARK in India.

It is important to note that the principles of purchasing and the qualities of food buyers remain the same irrespective of what is bought, but every organisation should encourage purchasing staff to visit trade fairs, read publications and keep abreast with newer products and technologies related to food production and service establishments.

For buying well, the person responsible for placing the orders for food on behalf of his organisation and customers must have knowledge.

- (a) Markets and procedures
- (b) Food availability
- (c) Food handling practices
- (d) Size and type of packs
- (e) Purchase quantity
- (f) Supplies and terms of supply
- (g) Quality best suited for end-use
- (h) Cost control techniques
- (i) Price fluctuations
- (j) Communication techniques

(a) *Markets and Procedures:* Food is marketed in many different ways through wholesale markets, retail stores and vendors directly from farms or manufacturers, and transported to the place of use. The method of buying chosen will depend

on the commodities required and the amounts of each to be bought, used and stocked. A buyer must therefore know how various commodities are marketed and handled? Especially when the markets range from the wholesale to retail to supermarkets which now specialize in quantity food handling and supply, in the form of *hyper-markets* that stock every possible commodity manufactured or grown.

Food and food products available in markets undergo a constant change. Newer varieties of fresh fruits and vegetables are constantly researched to improve size, colour, texture and flavour. A classic example is the appearance of newer varieties of citrus fruits and mangoes, different sizes of chillies, cabbages, tomatoes, potatoes, and so on.

Apart from the different forms and varieties grown, fresh food is available in forms as desired by a consumer. For example, meat can be purchased as chops, boneless, leg of mutton for roast, mince, etc. Fish may be bought whole or filleted as required, fruits and vegetables in dessert varieties and processed forms.

Freezing technology has added a number of possibilities to the range available by capturing the freshness and qualities of foods at their different stages of growth and preparation. Advances in processing technology are responsible for additional varieties of packaged foods made available to the caterer. Instant foods, mixes, texturized protein products, dehydrated, canned, freeze dried, part cooked and ready to eat foods, have all become familiar to most buyers. In addition, there is a wide range of ingredients offered in the form of syrups, spices, flavouring, food colours, stabilisers and preservatives, to enhance the sensory and keeping qualities of food.

Unfortunately suppliers do not often find the catering industry as attractive as the retail markets because of the limited volumes and strict specifications required. But if the caterer is treated as an advertiser especially for branded products, the supplier would gain from improved brand awareness by the public who have today started eating out more than ever before.

(b) *Food availability*: Foods especially fresh produce are available in the market seasonally particularly in tropical countries, and this affects their freshness, flavour, texture and other sensory qualities as well as price, all of which are important to the food buyer. Processed foods too are affected by raw material availability and price of procurement and therefore, purchasing food during their seasons of plenty affect prices of products too. Plates 15.1 and 15.2 indicates the seasonal availability of some foods in India.

Peak Period
 Lean Period











































































	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Amla												
Banana												
Cherry												
Chikoo												
Custard Apple												
Grapes												
Guava												
Litchi												
Mango												
Orange												
Papaya												
Pear												
Pineapple												
Pomegranate												
Water Melon												

Plate 15.1

Seasonal availability of fruits in India
 (Source: Government of India, 1994-95)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Beans												
Bitter Gourd												
Brinjal												
Cabbage												
Capsicum												
Carrot												
Chillies												
Cucumber												
Garlic												
Ginger												
Green Peas												
Lady's Finger												
Mushroom												
Onion												
Spinach												

Plate 15.2 Seasonal availability of vegetables in India

The manner in which foods are brought from the farms or factories to the markets provides a good index of their nutritional and keeping qualities. Fresh foods which have to be transported long distances reach the consumer after a lapse of a few days. It is therefore good policy to use fresh produce especially meat, fish; poultry and vegetables as soon as they are received in a food service establishment.

(c) *Food Handling Practices:* Different foods are packed and handled in different ways. For example, radishes and carrots are often packed in jute bags in standard weights and transported while cabbages or cauliflowers may simply be stacked one on top of the other directly in a truck. On their receipt in markets, vendors or retailers sometimes scrape carrots and radishes and wash them in water before arranging them in their stalls or shops for sale. Such handling improves the sheen, colour and smoothness of the vegetables and attracts buyers, but reduces the keeping qualities.

It is therefore important to know what handling procedures are followed before placing orders for foods. Appearances should not be the only characteristic on which to base one's decisions regarding food purchasing. Quality characteristics of different foods must be kept in mind, along with the end use for which they are being purchased.

(d) *Size and Type of packs:* Foods of the same quality come in many sizes and types of packs. For example, rice may be purchased in gunny bags of 25 kg each or polybags of 10 kg, 5 kg or 1 kg net weight. Again canned foods come in different sizes containing different net weights of foods. Depending on the requirements of individual food services, the appropriate sizes will need to be purchased.

Table 15.1 gives an idea of some standard can sizes used.

(e) *Purchase Quantity:* The buying quantities will depend on a number of factors such as:

- Availability
- Degree of perishability
- Rate of use
- Delivery schedules
- Types of storage
- Customer demand

The amount of space available for storing foods in an establishment will determine the amounts in terms of pack sizes and numbers to be purchased.

The kinds of storage such as cold or freezer storage at hand, will also affect the range of products that can be bought and stored. On this will depend the number of trips to the market or number of deliveries per week or month.

These are only some of the factors internal to the establishment, but a number of factors in the environment can affect the quantities to purchase such as riots, floods, droughts, strikes, expected crop failures and good value for money in a particular season, an exodus of people in or out of the place where an establishment is located, all affecting customer number.

Table 15.1 Commonly available can sizes

Can Type	Net Weight*		Size No.	Used For
	oz.	g.		
Baby can	4½	128	—	Strained and pureed fruits and vegetables.
	5½	156	1	Baked beans, peas, milk, cream
	8	227	2	Meat, pudding, paste, vegetables and fruits.
A1	10	284	2/3	Baked beans, soups, vegetables, meats, fish.
E1	14	397	3	Fruits, vegetables
No. 1 (Tall)	16	454	4	Vegetables, fruits, meats, soups, fish, milk, juices.
(Flat)	16	454	4	Sweets, desserts, meat, fish, poultry
A2	20	567	4	Fruits, vegetables, juices.
A2½	24	794	5/6	Fruits and vegetables
H.R.	48	1360	—	Meats
A10	108	3061	—	Fruits.

* Metric weights have been rounded off.

Adapted from: J.J. Morel. *Contemporary catering*. 1967. Barrie and Rockliff; London p. 59.

(f) *Suppliers and terms of Supply*: Very often suppliers agree to fixed prices of a range of items over a period of time and have no objections to supplying immediately on demand. Others may be rigid on the mode of delivery in which case stocks have to be maintained with the establishment. For some commodities the establishment may request for items straight from a farm situated close to the establishment. In that case the price advantage may have to be weighed

against storage costs and immediate usefulness to capture the fresh quality characteristics in prepared meals.

(g) *Quality Best Suited for end use*: This would be determined by the end use to which a food item purchased would be put, as discussed in Chapter 14.

(h) *Food cost control techniques*: The control at the point of receipt of items is vital to the profitability of a food service. The importance of this is clear from the following example:

Example 1

If a bag of onions weighs 95 kg instead of 100 kg at a cost of Rs.200 and 20 bags are used in a month by a food service establishment what would the implications of this be on costs?

The agreed price/cost of 100 kg potatoes was	= Rs. 200
But actual cost of 95 kg at delivery	= Rs. 200
∴ Cost per kg to the establishment	= $\frac{200 \times 1}{95}$
	= 2.11
If the establishment used 2,000 kg the cost is	= 2,000 × 2.11
	= 4,220
Expected cost price was	= Rs. 4,000
∴ Loss to the food service establishment	
every month	= Rs. 220
Annual loss would be	= Rs. 220 × 12
	= Rs. 2,640

This only proves that small leakages if not checked at the point of purchase can change a profitability projected situation to one of loss. Others sources through which similar cost effects can be produced are accepting poor quality of food items, where peels are too thick or seeds too large affecting edible portions obtained from foods. Also processed foods which are not of standard quality such as stale or infested cereal products or defective cans can lead to preparation of food items which have lost their normal portion size, colour or flavour. The kitchen is often held responsible for quality of preparation, forgetting the importance of checking flavour at the receiving point. It stands to reason therefore that if poor quality is received, poor quality is served. This can gradually affect volume of sales and thereby profitability.

(i) *Price Fluctuation*: Prevailing prices and fluctuations occurring from time to time in wholesale and retail markets may be due to factors beyond the control of an establishment that can bring about price instability. Fresh food prices vary with seasonality, quality, harvest quantity as in times of glut or plenty, leading to a fall in prices per unit. Other factors are the hindering forces in the environment like crop failure due to natural calamities, transporters strikes and so on. Prices of processed foods also fluctuate because of increased costs of production such as material and equipment costs, labour, packaging and transportation. However, every batch of food product manufactured usually is marketed at the same maximum retail price (MRP). The food buyer thus, can monitor his prices to advantage by directly dealing with the manufacturer, to reduce his packaging cost through bulk pack contracts. This is of course possible only for very large organizations who can stock a whole batch of food products manufactured, and utilize the same within its shelf-life period. Vigilance and visits to markets enables a food buyer to buy the cheapest and best quality products if he has knowledge of market conditions. An occasional visit to markets-wholesale and retail, is good policy instead of depending entirely on the price quotations and qualities offered by the suppliers. Suppliers tend to offer products which are most profitable to them within their conditions of supply, and the best quality may never reach an establishment unless the supplier is aware of the buyer's knowledge. Knowing market prices also helps to make use of seasons of glut in terms of buying in quantities, which carry 'cash discounts'.

(j) *Communication Techniques*: Communication of requirements to the supplier to ensure that the right quality is received in the right form and at the right time as important. The best way to communicate food requirements to a supplier are by the use of very accurate word pictures of foods and ingredients. These are known as specifications and may also carry pictures of quality foods and ingredients as well as include details regarding the dates of delivery, pack sizes and numbers. Today use of telephones, mobiles for constant communication anywhere any time and internet have all speeded up communication, reducing the necessity to hold large stocks.

(k) *Relative keeping quality of different foods*: Different types of food, perishable, semi-and non-perishables require different temperature storages if food quality is to be maintained and loss through deterioration prevented.

For the caterer however, costs can be reduced by contracting directly for supply from manufacturer. This is done through bulk packing, agreement to avoid labeling and other expensive packaging costs.

Role of the Consumer

The consumer has a crucial role to play in establishing quality food and service standards while eating away from home. He can help to do so by:

- (a) Being aware of the dangers of poor quality foods and knowing how to identify desirable quality. The concept of 'acceptable' quality in any food service establishment is really based on what the customer willingly accepts.
- (b) Accepting only those meals or foods which are freshly prepared or finished and served at the right temperatures to ensure microbiological safety.
- (c) Visiting only such places where standards of hygiene, and sanitation are maintained.

Every establishment must be aware that the consumer is the best advertisement tool for their organisation. If one customer goes happy ten more will be sent to the outlet, but if one is unhappy an adverse message spreads like wild fire and sales drop immediately. All food purchasing activities must therefore be closely linked to customer feedback, received through service and production staff, as well as management feedback received through peak hour customer turnover, sales records and other tools.

RECEIVING AND STORAGE OF FOOD

It is not enough to keep records and place orders for food and materials without the responsibility of receiving and storing the commodities. Receiving and storage of food are therefore important functions of purchasing.

Receiving

Once the food materials have been ordered for supply their handling at the time of delivery represents the process of *receiving*. A number of precautions are necessary at this stage to ensure that food is not damaged or discarded because of careless handling, spillage, cross contamination and incorrect weights or volumes. It is always beneficial to set up a procedure to be followed by those involved in the receipt of goods. Also, deliveries of various orders come at different times and each category of food requires separate treatment before it is accepted for storage and use.

Delivery Methods

There are many ways in which food may be delivered to a food service establishment depending on the nature of the food.

Fresh vegetables and fruits may be delivered in jute bags, baskets, cardboard cartons, wooden chests or as such, depending on the texture, nature and perishability of the item. For instance, in the case of strawberries or grapes, cardboard cartons of limited sizes are generally used so that the fruit is not damaged; oranges may be piled in baskets while apples need to be wrapped individual and generally packed in cartons or wooden chests. Vegetables, carrots, lemons, brinjals and root vegetables can be bagged, spinach and other leafy vegetables has to be packed as bundles and kept loosely in baskets and tomatoes in cartons as for fruits. Bulky vegetables like cauliflower, cabbage, jack fruit are even piled as such in transport vans and delivered.

Milk and milk products are generally transported in crates if delivered as pasteurized individual containers. They are now available in food grade poly packs of different sizes, or in cardboard packs of up to one litre capacity. Products like cheese may be bought in blocks wrapped in water proof packings, so also butter. All milk and milk products are delivered in refrigerated vans especially if bulk supplied and not individually packed. In India, the development of the *Mother Dairy* is an excellent example of bulk milk transportation and vending. (Fig. 15.5)

Meats may be delivered as whole carcasses or as different cuts as ordered, depending on the quantities involved. Meat if bought minced, is generally delivered in poly bags, or in containers wrapped over with transparent film for easy visibility. Various preportioned cuts may be in polypacks or disposable trays in which standard portions are packed, each covered with a transparent film for easy counting and visibility when delivered.

Fish should ideally be delivered in ice boxes or in freezer transport vans to be placed straight in freezer storages especially when ordered and supplied in bulk. This however does not always happen especially in developing countries where freezer transportation is not easily afforded by the small supplier. However, fish may also be supplied in frozen, dehydrated or smoked forms or in cans for use when needed. Fresh fish may be packed cleaned whole or filleted and is available in all supermarkets or specialized meat outlets. Kababs or fish fingers ready to cook are also available today.

Poultry is generally supplied as dressed and drawn birds, on weight basis and packed in cartons or large-sized polypacks delivered in refrigerated vans to establishments. Also available as part prepared frozen products in the form of chicken cutlets, fingers, kababs, patties and chicken balls which find a variety of uses in small and large catering establishments. Frozen marinated forms are also available.

Processed food materials which are generally packed in factories are delivered in standard packs of 24's or 48's or multiples depending on the size of the order. Examples are canned or instant ready-to-eat foods.



Fig. 15.5 *Mother dairy milk delivery (Courtesy: Mother Dairy, Delhi)*

Cereals, flours, pulses and legumes are generally bought by establishments in gunny or polypacks depending on the quantities required. The jute packs contain 50 to 100 kg. while polypacks vary from 1 to 10 kg.

Sugar and salt are delivered in polypacks double packed in cartons.

Fats and oils in hermetically sealed containers varying from 1 kg to 15 kg. Oils may be supplied even in drums of 50 or 100 kg from which oil can be siphoned off to issue for use. This method however, is only used in very large establishments.

Cooperatives in Gujarat have now started automatic vending of oils so that even ½ –1–5 kg or litres can be coin vended by small establishments as required.

Delivery Procedure

- The supplier gets an order in writing stating the date on which supplies are required.
- He passes it on to his stores department or purchasing officers (depending on the perishability of the food). The order is than noted to be kept ready for delivery on the specified date.
- It is transported to the buyer's stores for receiving.
- The goods are delivered along with two copies of the delivery *challan* or notes one signed by the buyer and returned to the supplier in confirmation of having received the goods; and the second is retained by the buyer for counter checking the bill or invoice when it is received from the supplier for payment.
- The invoice or bill is then passed on to the accounts department for making the payment.

Receiving Procedure

- The delivery note is checked with copy of the order placed.
- Counts, weights or volume are checked to tally with the amounts of various items on the delivery note.
- The quality of all ingredients are checked with the specifications given to the supplier. Any unacceptable items are returned with the person executing the delivery, along with a note on the delivery *challan* stating the items returned. This is countersigned by the receiving authority and the deliverer of the goods.
- When the delivery note is signed the materials that are delivered have been accepted. In case any damaged item is noticed after the delivery the supplier is informed telephonically. This is followed by a request in writing to replace the same amount with specified quality, in exchange for the received item.

The request is made for replacement of the goods according to specifications immediately. The items, if not replaced within the specified period, are then bought or substituted and the supplier is warned against any such re-occurrence. If such behavior continues then the supplier is usually changed.

Receiving materials is generally done close to the storages or just outside them so that it is easier to store them after receipt and checking. In small establishments it may be a matter of providing a receiving bay, that is, a space in which a weighing scale and a work table is placed to count up or weigh foods as they arrive, and check against delivery notes. Figure 15.6 shows staff weighing a basket of vegetables, while others are lying in the receiving bay to be weighed. The area is just outside the main kitchen of the establishment from where most of the fresh items go directly for preparation instead of being stored. Where the perishable items are received directly by the production department, a receipt slip as shown in Fig. 15.7 is signed and sent to the stores manager for record.



Fig. 15.6 *Weighing vegetables at the receiving point*

Dept	Date	Time
Item		
Net weight		
		Signature (Dept authorization)

Fig. 15.7 Sample receipt slip for perishables

In larger establishments the receiving area may be a well designed space provided with weighing, washing and packing facilities for storing food in cold or other storages, immediately on receipt.

Storage

Storekeeping is one of the most neglected activities in small scale establishments. The first principle in storekeeping is to know *what is where, when* it is needed by the user department.

Most food materials need to be stored for different lengths of time and at different temperatures, to preserve their wholesomeness till required for preparation and service. For effective storage of food items therefore, two types of storages are used the dry storage rooms meant for non-perishable commodities like cereals and their products, pulses, legumes, sugar and spices, canned foods, fats and oils, etc. and the low temperature storages for semi-perishable and perishable foods.

Food stores in all establishments should be situated for easy access by staff of user departments as well as suppliers, without causing any interference in the flow of work of all concerned.

Dry storerooms should be well lighted so that every item placed in them is easily visible and identifiable. Good ventilation helps to prevent spoilage, and maintain the temperatures required. From the point of view of security, it is general practice to provide only one entrance-exit to stores. This also provides better control of deliveries and issues to user departments.

The structural and environmental features of storages have already been dealt with in Unit 2. It would suffice here, to mention that storage equipment is now designed for easy reach and mobility, so that even small establishments can get storerooms cleaned without having to completely empty them.

A lot of damage is done to quality when foods are not stored in a systematic manner. Figure 15.8 indicates planned storeroom where foods are properly stored in an orderly manner.



Fig. 15.8 *Well planned storage*

Organisation of Storages

The arrangement of food items in storage spaces affects the efficiency with which foods can be stocked, issued and re-ordered. Any system adopted therefore, should aim at establishing a smooth flow of material in and out of the stores in a manner that will preserve the qualities of foods to the maximum. Haphazard arrangements lead to situations where fresh stocks may be issued before earlier ones are used up; or more orders for an item placed because none of it could be easily located on the shelves when required. The following suggestions will prove helpful in creating a systematic arrangement of food items in storage.

- (i) Arrange food according to the type of commodity.
- (ii) Place item in alphabetical order of food categories, following the same system within each category as well, as indicated in Fig. 15.9.
- (iii) Stamp the date of delivery on every stock received before shelving to ensure that old stocks are used up first.
- (iv) Place items on shelves according to date stamped, with earlier ones in the front of a row, and later ones at the back. Stamping also helps to

cost the stocks more accurately according to the prices paid on the bill for the particular lot.

- (v) Mark prices on stocks as well. The information can then be made readily available to the user department and helps a catering manager to calculate the food costs more realistically, for calculating the selling prices of prepared dishes profitably.

<i>Cereals</i>	<i>Canned fruits</i>	<i>Nuts</i>	<i>Spices</i>
Bajra	Apples	Almonds	Chillies
Barley	Apricots	Cashewnut	Coriander
Jowar	Berries	Peanut	Cumin
Maize	Cherries	Pistachio	Fenugreek
Oatmeal	Dates	Walnut	Pepper
Ragi	Figs	—	Turmeric
Rice	Graperfruit	—	—
Wheat	Litchi	—	—
—	Mango	—	—
—	Mixed	—	—

Fig.15.9 *Alphabetic arrangement of items in stock*

- (vi) Arrange products to give an organized appearance. Efforts should be made to ensure that commodities do not lie around on the floor at any time. Heavy bins or drums should also be placed on wheels or on a slatted platforms, for free circulation of air around the food packs. This also helps in regular cleaning of spaces where food might spill during issue.

Storage Procedure

The storage procedure varies with the food item, its vulnerability to spoilage, quantity in which bought and the nature of the package in which it is delivered.

Jute or Poly Bags: All items delivered in bulk bags like sugar, flour, cereals and pulses, are packaged in jute or polybags in quantities of 20, 50 or 100 kg. These should be cross-stacked keeping a maximum of six bags to a stack, placed on a slatted platform. Any opened bags should be immediately emptied

into airtight metal drums or plastic bins, polyethylene drums or cans with tight fitting lids.

Cross stacking helps free air circulation. Poly bags of milk powder should preferably be refrigerated. This would require much space and therefore only large establishments that would buy milk powder in bulk and have refrigerated rooms for milk and milk products, eggs, and other perishable foods would be able to store it, otherwise daily supplies should be arranged for smaller establishments.

Cartons and Cases: Cartons of canned foods, biscuits, etc. should be stacked with their labels visible for identification, and open on the side for easy access to packs.

Tins or Small cardboard packs or jars: These packs are generally used for dried fruits, preserves, mixes, jellies, etc. and may be lined up one in front of the other, each row having packs of the same item. This helps in having the first horizontal rows representing all different items of food in stock, easy to locate for issue when required.

As a rule vegetables and fruits require to be stored in areas separate from the main dry stores, especially root vegetables. This is because root vegetables pass on their odours to other foods easily, and through respiration also increase the temperature of the store. Oils and fats need special attention in storage because they tend to get rancid in the presence of light. They also absorb odours and flavours from other foods. A knowledge of foods that easily absorb or give off strong odours is necessary to help keep foods in storage from being adversely affected.

Low temperature storages are based on the fact that microbial activity decreases with decrease in temperature, and thereby prolongs the storage life of perishable items. Eggs and dairy products require temperatures of 5–10°C as against meat, fish and poultry which need to be stored at 0 to –20°C, if stored for more than two or three days. For a short period of 2–3 days 0–3°C is sufficient. The storage life of some foods at 21°C has been studied extensively and some general observations from the literature are depicted through Fig. 15.10.

A sample plan showing the layout of a store of an industrial canteen is persented in Fig. 15.11.

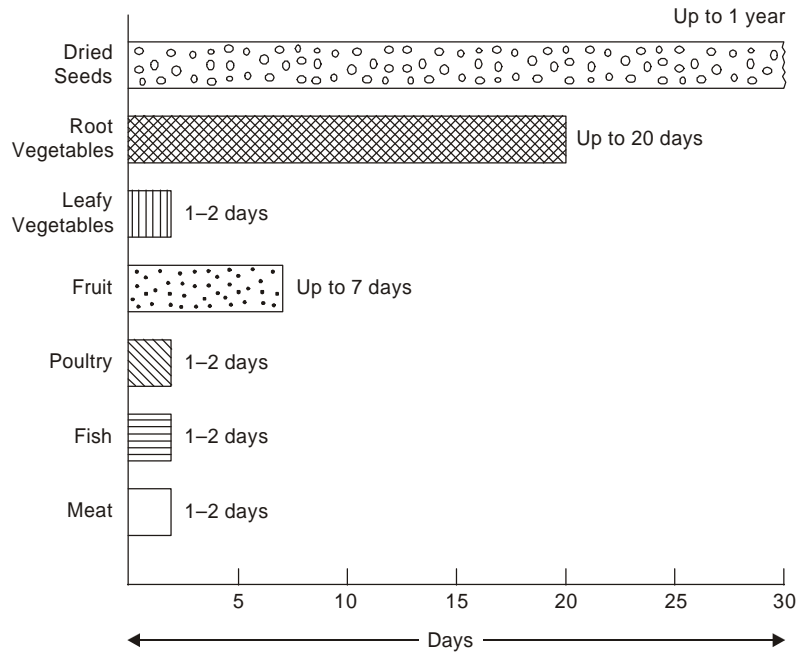


Fig. 15.10 Storage life of foods at 21°C

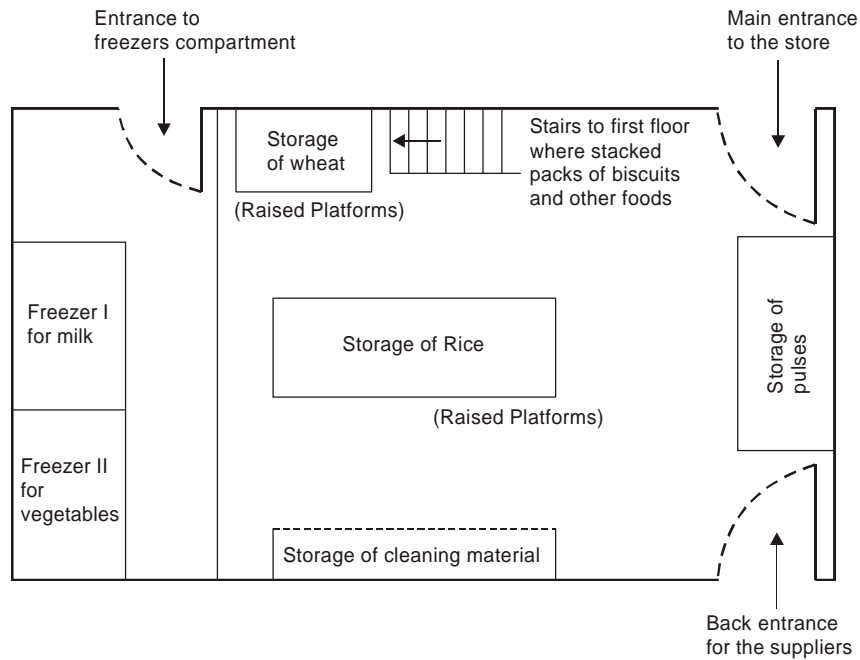


Fig. 15.11 Sample layout of a store (courtesy Maruti Udyog)

Storekeeping

Maintaining stores efficiently requires a good communication system between the storekeeper and the user departments, to know their needs specifically. Training and experience are necessary for accurate record keeping and negotiating with suppliers. Above all, every storekeeper must have a high standard of ethics because he is in a very vulnerable position, handling stores of value which every man requires and would like to have. He is also vulnerable to getting corrupted by sellers and staff alike.

Store Records

A number of records need to be maintained as foods move very fast in and out of the stores, and it is necessary to be able to account for them at any given time. Some of them have been briefly discussed time.

Requisition Slip: This is a request form submitted by user departments to the stores incharge for the issue of required items. Depending on the size of the establishment and the number of user departments different coloured slips may be used for each department. Figure 15.12 presents a sample of requisition slip.

Department		Date
Food Item	Unit	Amount Required
<i>Signature</i> (Requisitioning Authority)		

Fig. 15.12 *Sample requisition slip*

Material Issue Slip					
S.No.	Items	Required quantity	Issued quantity	Date	Remarks

Fig. 15.13 *Sample issue slip*

It is customary to put in requisition slips to the stores at least one day in advance, so that the food items required for the next day are collected and issued in time for food preparation. In large establishments, a separate transit store exists, from which items required daily are used up. When the levels in this store or kitchen cupboard go down, then a fresh requisition slip is issued to the main store to mark up the levels.

Wherever a transit store room exists, the main store issues items requisitioned in quantities of standard packs especially for semi-and non perishable items such as cereals, pulses, flours, processed foods etc. In the former the packs of 10–25 kg are issued at a time which are then emptied out into storage bins with air-light lids. The quantities required each day are then issued according to weighed requirements from the transit store itself. This makes food items available more easily when required without filling in requisition slips. Issues from main stores can then be made once or twice a week at fixed times depending on the stock levels in the transit store.

Order Form

An order form issued to place orders for supplies with the supplier must be signed by a person authorized to do so. Generally, the catering manager authorizes purchase in a small establishment, and a purchasing manager in an establishment which has a purchasing department. Three copies of an order are prepared, one each for supplier, ordering department and stores incharge who receives the goods when they arrive. A sample of order form appears in Fig. 15.14. Once the order has been executed, the items received are entered in a ‘goods received’ book the format of which is shown in Figure 15.15.

Order			
From:	Lucky Restaurant		Ref: LR/84/3991
To:	Food Suppliers Ltd.		Dated: 10/05/2003
Please supply the following item by 27/05/2003			
Item	Quantity	Unit	Value
			(Manager) <i>Lucky Restaurant</i>

Fig. 15.14 *Sample order form*

Goods Received Book

<i>Date</i>	<i>Item Description</i>	<i>Unit</i>	<i>Quantity</i>	<i>Order No.</i>	<i>Supplier</i>
20.4.2002	A2½ Pineapple slices	case	6 × 24	672314	Gopaljee & Co.
	Tomato Ketchup	bottles	12 × 620 ml	672314	Gopaljee & Co.

Fig. 15.15 Sample of goods received book

When all the orders have been executed a *Bill Application form* quoting all items with invoice numbers is forwarded to accounts for payment.

Stock book: In this, records of all items received and issued are maintained along with stocks in hand and their monetary value as shown in Fig. 15.16. This enables a storekeeper to see at a glance, the quantities of any particular item in stock at any time. It thus helps him to place orders before stocks are completely depleted.

<i>Date</i>	<i>Stock level</i>	<i>Received</i>	<i>Issued</i>	<i>Balance Stock</i>	<i>Value of Stock</i>

Item	Price
Unit	Max. Stock Level
	Min. Stock Level
	(Reorder Level)

Fig. 15.16 Sample of stock book

Invoice: This is the bill which follows a delivery, to be paid for by the buyer. In food service establishments the invoice received by the storekeeper is usually sent to the account section for payment, after verification of items and rates.

Food Quality in Storage

Where large quantities of food materials are stored, it is imperative that steps be taken to ensure that the quality of foods does not deteriorate on storage. The important quality characteristics have been discussed in Chapter 14, but it is important to know about the factors that can possibly affect food quality in stores. These are:

- (a) Excessive handling
- (b) Fluctuating temperatures and humidity
- (c) Sunlight
- (d) Infestation
- (e) Careless staff

(a) *Excessive handling*: This can damage packages, making it possible for foods like biscuits, noodles or other cereal products to become soggy or moldy or broken making them unfit for use. Damage to food like fruits and vegetables can cause enzymatic and oxidative discolouration affecting their quality.

(b) *Temperature and humidity*: Uncontrolled temperatures and humidity can lead to evaporation or absorption of moisture, leading to drying or sogginess the latter providing suitable conditions for microbial growth.

(c) *Sunlight* in stores at certain times of the day, falling either upon milk and milk products, or upon other foods containing Vitamin B₂, can affect their contents. Light and heat can also affect the quality of stored oils and fats and foods containing them.

(d) *Infestation*: Attack of cereals and pulses by weevils, presence of white ants in the store, or rodents and other pests can damage the flavour, and quality of foods, making them unfit for consumption.

(e) *Careless staff*: Careless handling of food items by staff can lead to contamination of poorly stored food.

With all these factors in mind, efforts should be aimed at increasing shelf life of foods through care in receiving and storage, while at the same time maintaining quality.

These are the minimum records that a store incharge must maintain for purchasing food items. More records will be necessary for equipment, linen, detergents etc. depending on the size of an establishment and the variety of related materials used. However, the methods of purchasing are all the same except that suppliers will be different and so also the sources of supply.

Chapter 16

Inventory Management

Once purchasing of foods and other materials has been completed and the commodities received and stored for immediate or later use it is important to take stock of the investment made. If the inventory or stocks carried in storage by the organisation involves an over-commitment of funds, the establishment foregoes the opportunity of investing the money more effectively elsewhere. If the inventory is too small the organisation may be losing out on sales which it could have achieved. Therefore inventory management is a process by which the stocks held are delicately balanced with expected sales, resulting in an asset commitment level that can be considered optimal.

INVENTORIES

In any organisation stocks are identified in three ways namely, raw materials; those comprising finished items such as meals, snacks; ready-to-eat items, and those which are still in the process of production, for sale to customers. In catering there are some part prepared or treated foods that are stored at low temperatures, which are drawn upon on customer demand and freshly finished for service. Examples of foods in this category are marinated meats, which may be roasted or grilled required for salads which are simply dressed on demand, ready curries, boiled eggs for biryanis, blanched and frozen vegetables and so on.

Apart from food items at different stages of production, stocks of detergents, crockery, cutlery, glassware, table ware like vases, cruets, napkin holders, linen and stationery such as disposables have to be maintained. Since they all require investment funds to varying extents, the materials all have to be included while calculating the value of the stock.

BENEFITS OF INVENTORY

The benefits of holding stocks vary with every organisation depending on their specific goals. Business motives can be placed under three basic classes, *transactionary*, *precautionary* and *speculative* according to the temperaments and policies of managers, heading a department or the organisation (Rustagi, 2000).

Transactionary Motive

This motivates managers to hold only enough inventory that will permit smooth production and service of meals to customers and satisfy any unprecedented demands on the spot. The inventory held would be partly as raw materials, and partly as pre-prepared or treated ingredients as well as finished items. Managers with this motive would rather invest in cold temperature storage to maintain quality of food and materials than to hold unnecessarily high stock levels.

Food quality being of prime importance it is the practice in catering organisations to order fresh foods for every alternate day delivery via telephonic communications a day in advance. Perishable foods like fresh milk and meats may even be delivered daily depending on size of establishment and type of storage available. This makes it possible to use up earlier ingredients quickly especially perishable ones and order the next lot on actual inspection of the stock in the light of any change in customer demand. Working out flexible purchasing arrangements with suppliers is the key to smooth catering operations.

Precautionary Motive

As the term suggests the motive in this case is to make sufficient provision for commodities in routine use in case of unexpected situations, as a precautionary measure. Some such situations are:

- A sudden influx of hungry customers on a particular day, week or season.
- Transport problems disturbing regular supply.
- Natural calamities bringing people out of their homes for eating.
- Staff absenteeism.

Any of the above or other factors can affect production and service to customers. Therefore inventories of both raw and finished items are usually maintained.

Speculative Motive

The organisation might like to capitalize on opportunities for profit making and therefore extra levels of inventory are carried in stock. Some examples are

sports or cultural events coming to town and bringing in huge crowds of spectators, or commodity shortages expected due to political reasons like curfew, bandh, riots, national celebrations, and mass migrations.

INVENTORY MANAGEMENT

The purpose of carrying inventory is to try and make the production process smooth so that sales to customers is not interrupted with unnecessary delays due to materials being unavailable when required.

Why Manage Stocks?

Simply because the costs involve not only the capital costs of commodities, but the costs of storing and carrying them. Because of the large sums of money tied up and the fine balancing act required between supply and demand, its management becomes an important function in any organisation.

For example, if stock levels are high the funds get blocked unnecessarily, lower levels if carried the results will affect profitability if customer demands cannot be met adequately by the production department or kitchen. Most decisions are taken by purchasing managers in consultation with production and service staff but not without proper physical inspection before reordering. *Reordering levels* for every item requires to be ascertained, before fresh orders are communicated for execution. But all this is only possible after the finance department is convinced that the investment at those levels is justified. All these procedures work routinely in the case of product manufacturing, but with catering the customers whims, fancies and tastes change and often unpredictably. Therefore, the reordering levels too, need to be received for various items periodically, depending on the extent to which demand shifts for menus and certain dishes.

METHODS OF INVENTORY MANAGEMENT

Basically two methods are universally applied for inventory management, the ABC analysis and Economic Order Quantity (EOQ) method.

ABC Analysis

In this method all commodities are classed under three groups A, B and C according to their priorities as important for production and service. The order of priority is based on total value of annual consumption. The analysis is done stepwise as under:

- All the items used by the establishment are listed along with their annual consumption values in units.
- Using the unit consumption figures and the rate per unit the total monetary value of each item is computed. (Table 16.1)

Table 16.1 ABC Analysis for Inventory Management

1	2	3	4	5
<i>Item No.</i>	<i>Annual Consumption Units</i>	<i>% of total Units</i>	<i>Rate/Unit (Rs)</i>	<i>Total Annual Consumption (Rs)</i>
1	5,000	6.25	80	4,00,000
2	8,000	10.00	60	4,80,000
3	5,000	6.25	55	2,75,000
4	20,000	25.00	5	1,00,000
5	3,000	3.75	25	75,000
6	12,000	15.00	15	1,80,000
7	16,000	20.00	6	96,000
8	11,000	13.75	5	55,000
	80,000	100%		16,61,000

- Place the items with highest annual value to that of the lowest value in order of priority. [Table 16.2, Column 3 (C3)].

Table 16.2 Cumulative Annual Value of items

1	2	3	4	5	6*
<i>Priority</i>	<i>Item No.</i>	<i>Annual Value (Rs)</i>	<i>Cumulative Annual Value</i>	<i>Cumulative percentage</i>	<i>% of items*</i>
I	2.	4,80,000	4,80,000	39.13	10
II	1.	4,00,000	8,80,000	52.98	6.25
III	3.	2,75,000	11,55,000	69.53	6.25
IV	6.	1,80,000	13,35,000	80.37	15
V	4.	1,00,000	14,35,000	86.39	25
VI	7	96,000	15,31,000	92.17	20
VII	5.	75,000	16,06,000	96.68	3.75
VIII	8.	55,000	16,61,000	100.00	13.75

* from Table 16.1, Column 3.

- Calculate cumulative annual value by repeating the first value of C3 and placing it in C4. Then add 1st value of C4 with 2nd value of C3 to obtain the cumulative Annual Value for each item.
- The Cumulative percentage (C5) is then calculated by dividing values for each item in column 4 by last cumulative value obtained and multiplying by 100.

The items are then placed into the 3 groups A, B and C on the basis of the cumulative percentages. In the above example the groupings according to item number would be as indicated in Table 16.3.

Table 16.3 *Grouping of items for ABC method of inventory management*

	<i>A</i>	<i>B</i>	<i>C</i>
8			
5		3	—
7		1	
4		2	
6			

It will be noted from the groupings that no item has been placed under C. The percentage values of items to be included under A, B and C respectively would however be the manager's decision depending on the priorities (s)he wishes to accord to items according to the menu requirements, which may change from time to time.

Economic Order Quantity (EOQ)

This method takes care of two main aspects of inventory management, the quantity to be ordered and when to order or reorder. Basically, the focus is on maintaining optimum levels of each unit and this depends on how many units are there in one lot and the speed at which they are used up from storage called the *turnover rate* of stocks. The average level can be optimized by analyzing the quantity ordered carefully, for its unit carrying cost and the annual requirement of each commodity at different times of the year.

The EOQ model tries to establish the size of order for each item that will minimize the total inventory costs, (carrying cost plus ordering cost) and defines distinct parameters for each stocked item.

- (i) *Minimum level of inventory* depending on the rate of use and the time lag between order and delivery for each item or sets of items depending on the supplier appointed and the method of purchase.
- (ii) The *stock level* at which an order should be placed called the re-order level for each item. A minimum level has to be worked out considering the time lag before new deliveries are received. This is often called the *lead-time*. Minimum reorder level ensure that a stock-out position is avoided as far as operations of production and service are concerned. The most economic size of the order for an item is worked out on the basis of:
- The usage rate
 - Lead time
 - Ordering Cost

Usage rate

In catering establishments the type and number of items required are quite extensive in variety, buying units and usage rates. Some examples are cereals, pulses and their products which are usually used everyday, essences and food colours last over a period of time and are usually bought in units of 12 or 24 bottles per pack which may constitute the monthly or annual requirement. Fresh produce like fruits and vegetables may be ordered through daily or biweekly deliveries and have little or no stock requirements. These are monitored telephonically each evening or 24 hours in advance depending on the stock at hand in cold stores. With such variations in usage both ABC analysis for priorities of items and EOQ have to be used in combination with close monitoring to set reorder levels. EOQ can be determined using a simple formula:

$$\text{EOQ} = \sqrt{\frac{2AO}{C}} \quad \text{or} \quad \text{EOQ} = \left[\frac{(2AO)}{C} \right]^{\frac{1}{2}}$$

where EOQ = Economic quantity per order.
 A = Total annual requirement
 O = Ordering cost per unit.
 C = Carrying cost per unit.

If the inventory falls to zero and is immediately replenished as in the case of fresh items, the average inventory becomes EOQ/2 and can also be represented graphically as indicated in Fig. 16.1.

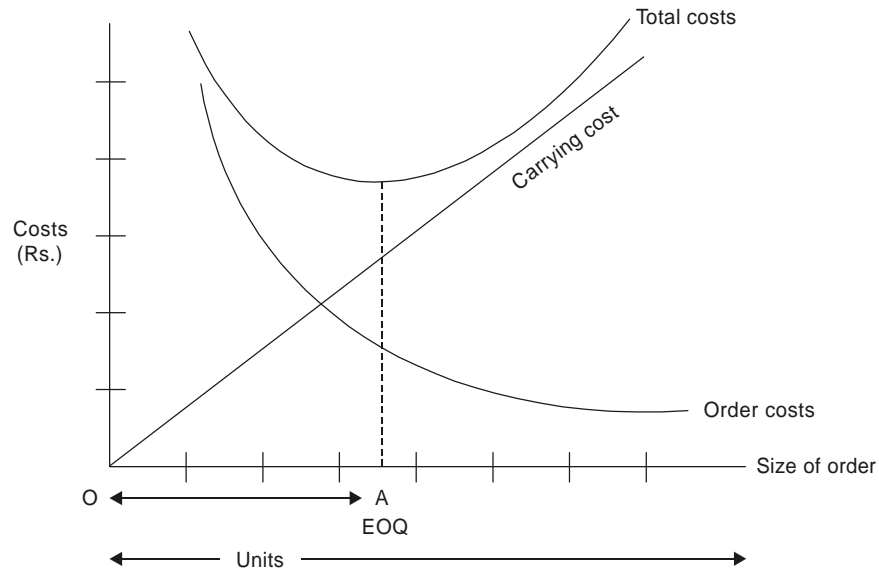


Fig. 16.1 *Determining Economic Order Quantity of items*

Figure 16.1 shows that the total ordering cost decreases with increase in the order size or quantity, but the total carrying cost increases with increase in order size. It will be noticed however, that the total cost of inventory (carrying + order costs) decreases at first with increase in order size but then gradually increases with the size of the order. The level at which the total annual cost is the least determines the most Economic Order Quantity (EOQ) as shown through point A in Fig. 16.1. The number of units to stock therefore should be OA at any given time, if annual cost of inventory of that item is to be minimized. An example will explain the point.

Example 16.1

In a catering establishment 20,000 units of wheat flour are used annually of which the ordering cost is Rs 1875 per order and carrying cost Rs 3 per unit per year. Determine the EOQ of the item.

$$\begin{aligned}
 \text{EOQ} &= \sqrt{\frac{2AO}{C}} \\
 &= \sqrt{\frac{2 \times 1875 \times 20,000}{3}} \\
 &= 5000 \text{ units.}
 \end{aligned}$$

This means that the total cost of inventory is the lowest when the quantity of order is 5000 units. If the quantity per order is increased, the total cost will increase too, but if quantity ordered is less than 5000 units, then the cost of inventory will increase still more because the EOQ balances the carrying and ordering cost. The total cost of any other order size would be more than the total cost at the EOQ.

Thus calculation of EOQ helps to determine the size of each order and the timing of the order as well. When stock levels fall below the EOQ its time to replenish them, and make up the deficit. This is a fine situation from the financial point of view but for the caterer there are certain problems stemming from the usage rate of each commodity.

- The usage rate of every commodity is uncertain, and fluctuations can be very wide with seasons, festivals, fasting days etc depending on the cultural and traditional norms followed by customers.
- The time between ordering and getting supplies can never be zero, because of the wide variety of ingredients, foods, and other materials used by catering establishments.
- The quantity arrived at in the EOQ model may be hypothetical, and all commodities cannot be ordered in exact units depending on the standard wholesale packs available. For instance cans may be available in packs of 24 forming one unit of supply, or a bag of wheat flour may be in 20–100 kg bags. A fraction of a unit, therefore cannot be ordered in practice.
- Ordering costs are also not fixed as used in calculations of EOQ, because a number of sources of supply need to be tapped for various commodities.
- The ordering costs in catering are also not a direct function of the size of order because there are economies of scale and quantity discounts are the norm associated with large orders.
- The carrying costs also vary as the size of inventory increases and storage efficiency comes into play.

Some of the above problems can be solved by changing the assumptions and working the model accordingly with the help of information technology and computers, but it will require well informed managers who can do perfect networking with their environment at the touch of a button. This is in practice though possible is not as yet practical especially in small scale establishments and in specialised institutional catering.

INVENTORY COSTS

If there were no costs in maintaining stocks and storages there would be no need for managing them, because the underlying principle of managing any situation is guided by the cost control function. The costs in inventory management may be classified as costs of:

- (i) Carrying
- (ii) Ordering
- (iii) Being out of Stock

(i) *Carrying Costs*: This is the cost incurred in keeping or maintaining the stock position of one unit of raw material whether in storage, in process or in the form of finished product. Two basic costs are involved such as cost of storage and cost of financing.

Storage Cost: This may be worked out in relation to one unit of raw material in terms of rent of space occupied, cost of staff, security, air conditioning, pilferage, handling costs and so on.

Financial Cost: Includes cost of funds invested in stocks, overhead expenses of purchasing stationery for record keeping, interests paid on borrowing for purchasing if applicable, or for delayed payments to suppliers.

It is clear that the total carrying costs in a catering establishment are very variable because food use is variable and the demand depends on rapid changes within and outside the establishment.

(ii) *Ordering Cost*: These costs include administrative expenses of preparing and executing an order and communicating with the supplier from time to time. Of course, if establishments are large enough to use latest computer technologies then the costs though initially high become reduced with time and use. Order forms can then be downloaded and executed without delays.

The carrying and ordering costs both determine the level of inventories held.

(iii) *Stock-out Cost*: The cost of being out of stock for any item for which there is heavy demand represents a *hidden cost*. It must be clear that a stock-out situation only arises when there is no stock in storage against heavy demand. There is no stock-out in the absence of demand even if the storage level of the item is zero. The *hidden cost* only arises when there is a demand, and, it is the cost which the establishment incurs in terms of lost sales. The loss is not only of that particular item but other related items as well, which may be available in stock but not demanded at the time.

In order to avoid these costs which are not easy to calculate, but may prove to be quite substantial, catering managers resort to use of substitute items or instant quick mixes to tide over the situation rather than lose customers and their *Goodwill*.

MAINTAINING PERPETUAL INVENTORY

A perpetual inventory is an up-to-date record of all purchases and store room issues along with their balances for each commodity. This is usually done with the help of *bin cards* attached to every item whether shelved or in bins and shows the stock position at a glance instead of going through stock books and looking for balances of each item. It is called perpetual because any issues and receipts are immediately recorded and balances show the exact stock position at any point in time. A sample perpetual inventory card is displayed in Fig. 16.2.

<i>Food</i>	<i>Item Description Size Maximum/Minimum Level Lead time</i>														
<i>Date</i>	<i>In</i>	<i>Out</i>	<i>Bal.</i>	<i>Date</i>	<i>In</i>	<i>Out</i>	<i>Bal.</i>	<i>Date</i>	<i>In</i>	<i>Out</i>	<i>Bal.</i>	<i>Date</i>	<i>In</i>	<i>Out</i>	<i>Bal.</i>

Fig. 16.2 Perpetual inventory card

Other stock books are also used but vary with size and nature of the establishments. Very large establishments now use the computer for data entry which can be speedily accessed when required by any manager on his personal computer (PC). For efficient inventory management therefore, the reordering levels for each commodity need to be worked out along with its lead time.

Re-order Level

This is the lowest determined level of a commodity in stock at which fresh order for the item must be placed for replenishment. The reorder level depends on the usage rate of the item and the lead time, that is, the time that elapses between placement of an order and receipt of the supplies.

Usage Rate is the rate of turnover of a commodity from stock. If x number of units are used every week then $4x$ units will be ordered every month especially if the usage is constant. The order may be placed after 3 weeks to take into

account the lead time of a commodity. But there must be at least a week's supply in stock before the next order is placed so that stocks come to zero only after the fresh supply is received. This is called the *minimum stock level*.

The usage rate of every commodity therefore, might vary according to menu and customer demand and therefore levels have to be worked out for each group of ingredients. The minimum stock level for each group may therefore vary quite appreciably. Decisions regarding the margins of safety therefore require a consideration of the minimum stock levels to hold, lead times, reorder points, maximum stock levels and usage rate and value. Fig. 16.3 gives an idea of how this may be done graphically.

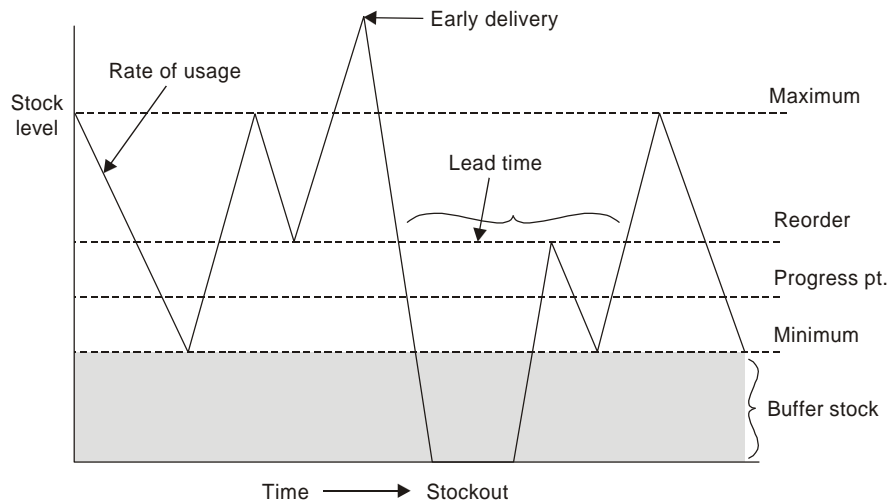


Fig. 16.3 *Stock decision points*

PURCHASE DISCOUNTS

Very often purchasing and or catering managers get tempted to buy larger quantities to avail of discounts. This must however, only be done if the increase in carrying costs more than balance the savings in ordering costs due to less orders being placed. Discounts should not be availed of for commodities whose usage rate is low as they will deteriorate in quality with longer storage.

Thus purchasing is a highly specialized function in the efficient management of any catering establishment. The act of buying is not the end of the responsibility, storekeeping of the commodities is a professional task requiring much skill, effort and constant vigil to keep production and service running smoothly while still maintaining high standards.

Most catering establishments view storekeeping as a clerical activity and assign it to a low paid clerk. This is unfortunate because careful handling of stocks in storage and the maintenance of quality through accurate control is so essential to efficient operations. It is poor handling of foods in storage that lead to the often reported cases of food poisoning, resulting from their consumption through the finished products.

The quality of purchasing therefore forms the basis for the profitability and success of every organisation.

Chapter 17

Menu Planning

A menu is virtually a list of dishes planned for production in a catering operation and may include full meals, snacks or beverages. Menu planning may therefore appear to be a simple exercise involving putting down whatever items the planner or cook like and are easy to prepare. Past experience of sales may help them to forecast the quantities of each item that needs to be prepared. They may together decide to keep their outlet open for only a few hours or till the quantity prepared is sold out. If the food is finished and some customers are faced with a 'closed' sign, the next day the manager may buy food and related materials in larger quantities if he finds that many went away without being served. This is often the case with small roadside establishments who do not have much storage space or trained staff but start a business using *hit and trial* management techniques.

They may even be faced with the opposite situation where customers did not come again because they had a sorry experience the previous day. This will lead to cooked food being left unsold. All such experiences show that:

- Menus need to be planned for the customer and not for the managers or staff of the food service.
- The cooks have to know what the customers like and at what times of the day.
- Staff must know how to prepare the demanded foods well and to the quality standards desired.
- They need to serve dishes in attractive ways to tempt the customer.
- The atmosphere should be light and relaxing and not tense and noisy.

- The efforts put in to please the customers and satisfy them should also generate profit for the establishment to make it worthwhile.

One can go on thinking of many more factors that need to be consciously or unconsciously considered before a final list of food items or menu can be prepared and offered to customers to choose from at a price.

Thus menu planning is not a simple listing of food items, but they have to be arrived at after much thought and this complex process is called menu planning.

Let us now see why so much effort needs to be put in by catering managers for writing down a menu. It is because the menu performs a number of useful functions for smooth operation of the establishments.

FUNCTIONS OF A MENU

The many functions of a menu are that it:

- Introduces the establishment to the customer.
- Authorises production of meals in the kitchen.
- Helps to prepare order lists for foods and ingredients and set up purchasing procedures.
- Determines the type of equipment, staff skills and the type of supervision required.
- Helps to organise spaces and work in stores, kitchens and service areas.
- Determines the style of service to be set up.
- Forms the basis for the calculation of food and labour costs, overhead expenses and desired profits.
- Reflects the type of customer the establishment wishes to attract.
- Satisfies the needs of customers for nutrition, hunger, as well as social and psychological needs.
- Introduces interesting food combinations to customers, and through specialty foods imparts knowledge of the foods eaten in different states, countries and cultures.
- Provides a means of developing good eating habits in people.

There is no doubt from the above that the menu forms the core of all other activities in a food service establishment, as shown in Fig. 17.1.

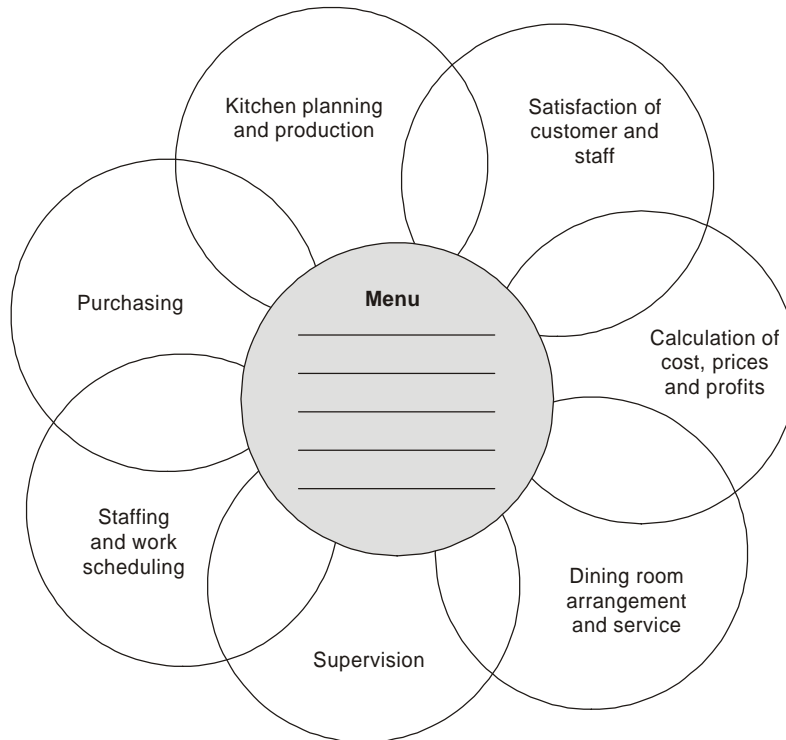


Fig. 17.1 *Menu—the core of all food preparation and service activity*

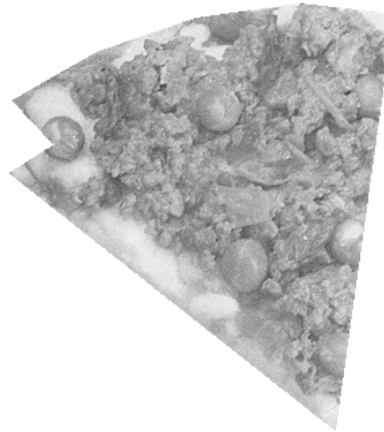
The success of a food service operation, no matter what its size, depends heavily on those who plan the menus and how they do it. While it may seem a simple exercise of providing something to eat and drink, in practice good menu planning requires a lot of skill. It is important therefore, that people responsible for planning menus have a good knowledge of:

- Foods
- Preparation and service methods
- Aesthetic presentation
- The customer

Foods: This involves knowledge about different kinds, forms and varieties of foods; their seasonal availability; nutritional and anti-nutritional factors; and the presence of toxic elements in certain food varieties; the edible portion obtained from each food; taste and flavour differences and how they can best be combined for meals; acceptability; and cost factors.



Boneless chicken capsicum



Mince pizza



Vegetable soup



Roast lamb



Seekh kabab

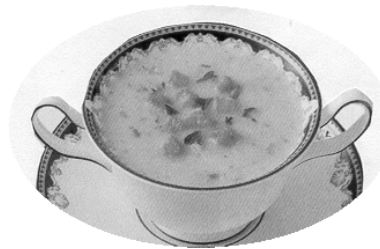


Spicy cauliflower bake

Plate 17.1 *Foods presented in different ways to enhance acceptance*



Paneer tikka



Vegetable soup



Cheese crepes



Shahi paneer



Salads

Plate 17.1(Contd.) *Foods presented in different ways to enhance acceptance*

Food preparation and service methods: Even though the menu planner does not necessarily prepare or serve the food, it is important for him to know which food is best prepared by which method of cooking. This is possible only if the planner knows about the inherent qualities of foods in terms of texture, composition, colour, flavour, and all other chemical and physical properties. Knowledge of the behaviour of these characteristics to the application of heat, addition of salts, acids, oils and spices, so essential to any method of food preparation, is also important.

Similarly, knowing what food is suited to what style of service; which flavours blend together best, and how to combine them, are the crux of a customer's food acceptability.

Aesthetic presentation: Whatever may be the colour, taste and flavour of a meal, its appearance on the plate or in the display case determines customer's choice. Plate 17.1 illustrates different ways in which simple foods can be presented to catch the eye of the customer. Equipped with this knowledge the menu planner can introduce a variety of form and colour in menus to attract the customers and increase acceptability.

The customer: It is vital for the menu planner to be familiar with the food expectations of the customer. A general idea of his food preferences or favorites, physiological requirements, paying power, social standing, regional or ethnic backgrounds, and the reasons for eating out are essential for providing customer satisfaction. People eat outside their homes for a number of different reasons, and each one affects their choice of food at a particular time. For instance, office goers stopping for a quick lunch would prefer light inexpensive meals, while an executive who is entertaining would choose more elaborately presented items. Similarly, captive customers, such as children in a boarding school, or people in an old age home will necessarily eat from a less selective menu, because they have no choice but to eat what is prepared in the institutional kitchen. Again, people travelling long distances look forward to food, because other activities as on a train or an aeroplane are restricted. The menus should therefore be interesting in terms of providing variety in form, colour and flavour. In addition, they need to be easy to serve and eat while travelling.

Also, people have very strong likes and dislikes because of cultural, religious or traditional reasons. For instance, in India people have taboos regarding the eating of beef, most people are vegetarians, and some religious orders do not permit even the consumption of onions and garlic. In Muslim countries people abstain from pork consumption, and any meat eaten is bought from shops where animals are slaughtered by the *Halaal* method. In Sikh communities meat slaughtered by the *Jhatka* method is acceptable (Glossary).

While it is not possible to provide for the needs of each and every customer, menu planning which shows a consideration for these special needs is to be commended. It is a challenge therefore, for the planner to provide variety and interest in a meal according to the general needs and expectations of the customer. To do this, the planner does not only have to be knowledgeable but also imaginative and creative.

In a catering establishment the person who plans the meals is also generally required to perform the tasks of ordering foodstuffs from suppliers; liaising with stores for issue of non-perishables; preparing kitchen schedules and staff rotas; supervising service, etc. The number and nature of the tasks vary with the size and type of establishment.

WHY PLAN MENUS?

Planning menus becomes essential when food has to be bought, prepared and served in large quantities to people of varying tastes and requirements. The advantages of planning are:

- It enables provision of appetising, nourishing and attractive meals to customers at a fair price. This is only possible if the meals are planned in advance, so that a price advantage can be obtained by buying seasonal foods and in quantities which carry discounts.
- Planning meals helps to determine requirements accurately. Food buying can thus be controlled through advance buying, because quantities are calculated beforehand.
- Ensures that food is not wasted because any leftovers can be creatively incorporated in the next meal on menu which is already planned out.
- Time and effort spent on haphazard ordering, shopping and receiving of food materials is saved.
- Time and effort spent in preparation and cooking is also minimized because ingredients needed for subsequent meals are known in advance. For instance, garnishes can be prepared along with salads at one time. Chopping and cutting separately for each dish is avoided. Time is not lost in waiting for ingredients, as they are already purchased and ready for use.
- Carefully planned menus save fuel and cut down on waste through excessive leftovers. For example, milk may be heated together for the preparation of hot beverages, setting of curds, or for preparing cottage cheese, instead of placing the milk in three containers and heating

small quantities separately. Similarly, planned menus can help to save on quantities and ingredients, e.g. leftover curds may be added to boiling milk for making cottage cheese or 'paneer' instead of vinegar or lemon juice. Also, the whey obtained need not be wasted, but added to curries, soups, etc.

- Menus help to note favourite dishes and those which did not sell too well in the past. From these records, decisions regarding the number of portions of each item to be prepared for service can be made.
- Planning tends to offer a wider choice of dishes because seasonal varieties of foods can be introduced in advance. This becomes very restricted when preparation has to be done on the basis of spot decisions.
- Advance planning removes a lot of anxiety for the planner, and enables clear-cut instructions to be given to staff. This also helps to create harmony among people at work.
- If the planner cannot come to work one day, the customer does not have to go hungry or disappointed, because the work goes on according to plan.
- Meal planning helps in the accurate calculation of food costs and inclusion of items that can be profitably sold. It also becomes far easier to fix selling prices in advance for the information of the customer.
- Planning helps to take care of price fluctuations and prevents frequent changes on menu displays as far as the customer is concerned.

Planning menus is thus an important activity for every food service operation and catering managers need to ensure procedures which can determine how best it can be done.

PLANNING MENUS

Before actually writing down the items on the menu, every planner must consider the basic factors important to the *situation* and the *customer* for whom the menu is being planned.

The Situation

The basic factors to be considered in terms of the situation would be:

- (a) Location of the establishment in relation to the market.
- (b) Space available for storing food in wholesome condition.
- (c) Size of kitchen and service areas.

- (d) Number of staff and their skills.
- (e) Equipment available in kitchen and service areas.
- (d) Policy of the establishment in terms of:
 - (i) What type of customers it wishes to attract. This will be basically determined by the pricing policy, in that the higher the prices, the richer the customer and the higher his power to pay.
 - (ii) The extent to which the establishment wishes to invest on catering, in comparison to other areas of expenditure like furniture, décor, equipment, and so on.
 - (iii) Degree of automation or labour-saving devices desired.
 - (iv) Personnel in terms of trained staff or cheaper unskilled labour.
 - (v) Profit margins.
 - (vi) Type of service, i.e. whether food is served or preplated and handed over or packed and delivered.

The Customer

Customer's are likely to represent people of varying ages, activities, occupations, physiological status and sex. They would also belong to various religious and cultural backgrounds, some perhaps, having rigid food habits. The following discussion will illustrate how the various requirements of customers forms the basis for menu planning as indicated in the sample menus given along with the special factors to consider while planning them.

Boarding Schools

Since boarding schools have the responsibility of providing meals to resident school children, the factors important in planning their meals are:

- (i) *Nutritional balance*
 - (a) School children generally spend a lot of physical energy at play. They are also at various stages of growth and so their general nutritional needs would have to be considered while planning their meals. Some children may have special requirements because of sickness or injury. The considerations would therefore emphasise on planning balanced diets suitable to their needs. Table 17.1 gives the nutritional requirements of school children at different ages.

(ii) *4-meal pattern*

This comprises of breakfast, lunch, tea and dinner with bedtime milk or milk based beverages.

- (a) Children are generally restless and do not like to spend too much time at the table. Besides, they feel rushed in the morning because they must reach school on time.

Menus therefore, have to provide dishes that are not only quick to eat, but satisfying. Perhaps something they can carry out of the dining hall easily, such as a hamburger or a salad roll; or stuffed parathas, pancakes, and whole fruit would be in order.

- (b) Children have varying appetites and often prefer snacky meals at frequent intervals, to a few large ones.

(iii) *The purchasing power*

This is not important because parents or guardians have already paid the mess charges in advance before sending children to boarding school.

(iv) *Planning*

Planning should be done according to the average age of the children and then favourite dishes, including one dish that they dislike generally. This will tempt them to eat what is cooked and food for them. Similar age groups should be seated together service for arrangements should be made to help younger children with the plating of their food and the service should be supervised by a teacher who eats with them to set an example of discipline eating everything offered.

(v) *Sex*

Gender is as important factor to consider as girls like very different types of foods than boys. Girls are also less active than boys and eat less, but they like variety in colour, texture, flavours. Boys prefer fast foods and snacks which they can eat while performing activities. A policy of mixing dishes in the menu to suit both sexes is desirable unless their hostels are separate production and service units.

(vi) *Service methods*

Self service methods should be encouraged while supervision is necessary to ensure every dish is picked and eaten.

(vii) *Food Safety*

Safety of foods should be ensured in the production process, service and hygienic habits of children who would normally use their hands while eating.

(viii) *Eating Patterns*

- (a) Children also tend to get bored with foods easily. So menus need to provide variety in colour, texture, taste and flavour.
- (b) The climatic and weather conditions are an important consideration too. In very dry and hot weather, children lose a lot of body water and salts through perspiration. The menus then would need to introduce extra liquids and salts, because children do not generally like to drink plain water.
- (c) In general, boys prefer foods with a higher satiety and caloric value than girls of the same age, who become figure conscious and prefer light, frequent but small meals. Also, girls generally prefer foods that are more highly spiced.

The menu planner therefore, has to consider all these factors when planning menus for children, in addition to making them cost effective, tempting and profitable. The structure of the menu for a children's hostel would therefore be:

Main dish	—	a curry
Side dishes	—	root vegetable
	—	green/other vegetables
Cereal	—	Rice/Roti/Chapatti/Poori
Curd	—	Plain/raita
Salad	—	Green/mixed/seasonal
Sweet/dessert	—	Cooked/Frozen/Topped/Fruit
Accompaniments	—	Papad/pickles/chutney/sauces

Below are some sample menus for different types of customers indicating the special features considered in planning.

SAMPLE MENUS

Sample menus A–F have been suggested for various institutions and occasions to act as guidelines for planning.

Menu A: *A day's menu for a boy's boarding school.*

<i>Breakfast</i>	<i>Lunch</i>	<i>Tea</i>	<i>Dinner</i>
Egg	Curry/Kadhi	Samosa	Spinach Dal/Palak meat
Buttered toast	Sauteed vegetables	Milk shake	Sauteed potatoes
Milk	Curd (yoghurt)		Chappati
Fruit	Chappati		Rice
	Rice		Carrot Halwa

The pattern of menu A has taken into consideration the following factors:

- (a) The Indian food habits which include a curry, curd, dal preparation (usually consumed in some form at least once a day), an Indian dessert at dinner.
- (b) Boys need nutritional balance provided by foods from all food groups in each meal. Satiety value through a fried snack, egg and halwa take care of protein and extra calories for activities, besides, providing all the other nutrients.
- (c) The menu provides in its format, a lot of flexibility, so that different curries, halwas, forms of egg, snacks, fruits and shakes can be provided according to seasonal availability.
- (d) It may be noted that boys do not like salads unless they are incorporated in sandwiches or rolls, which can be introduced as snacks, in the form of burgers, kebabs, pakoras etc.

Menu B: A day's menu for a girl's hostel

<i>Breakfast</i>	<i>Lunch</i>	<i>Tea</i>	<i>Dinner</i>
Porridge	Curry	Pakorras	Dal
Egg (Poached)	Raita	Chutney	Sauteed vegetable
Butter toast	Salad	Tea	Chappati
Milk	Chappati		Rice
	Pickle		Halwa/Kheer

The difference in Menus A and B is chiefly in the provision of spicy preparations like 'raitas', pickle, chutney and assorted pakoras with inclusion of salads for girls (glossary). Eggs have been provided in unfried forms in preference to fried forms. The menu is just as flexible as Menu A, and can be varied according to the mood of the customer and the availability of ingredients.

It may be noted that Menus A and B are only samples, and if a cyclic menu is prepared which is the normal practice in hostels, then specific dishes may be written out for several days in advance.

Menu C: *A day's menu for inmates of a home for the handicapped*

<i>Breakfast</i>	<i>Midmorning</i>	<i>Lunch</i>	<i>Tea</i>	<i>Dinner</i>
Bread roll or Stuffed paratha Milk/Coffee	Fruit	Mixed pulaos or Stuffed chappati Curd	Cake or Sandwich Tea	Dal Seasonal vegetable Rice Chappati Set custard

The factors that have been considered in planning are:

- (a) Limited fried foods because the level of activity is less than in normal people, varying according to the handicap.
- (b) The consistency of foods is not very *runny* so that they can handle the food easily. Food is also served in large pieces or in forms which can be easily held together and eaten.
- (c) Dishes planned are attractive and meal time is looked forward to more than by normal people who can move about freely and perform number of interesting activities.
- (d) Variety can be incorporated by mixing pureed green vegetables into doughs, or providing different stuffing for parathas and rolls.
- (e) Dishes have been planned for minimum use of table appointments. Where a number of items are planned it is expected to be served as a plated meal.

Menu D: *A conference lunch menu attended by delegates from different countries*

Stuffed capsicum and tomatoes
Cottage cheese/Meat ball curry
Mixed vegetable pulao
Pineapple raita
Green salad
Carrot mould with cream
Coffee

The factors taken into consideration while planning are:

- (a) The dishes are generally acceptable to persons from all countries. The menu accomplishes this through:

- The starter and salad which are two items which are eaten all over the world.
 - The curry selected is familiar to most persons as meat balls served with spaghetti or in tomato sauce are common to most.
 - Cottage cheese curry provides vegetarians with an equivalent substitute for meat curry.
 - Indian curries are relished by people from all countries.
 - Rice is a common cereal in most countries and people look forward to tasting oriental flavours in the form of *pulaos*.
 - Pineapple raita would provide the familiar flavour of fruit yoghurt while acting as a suitable accompaniment to the rice.
 - Carrot halwa moulded and served with cream introduces a new form of pudding to foreign palates, while being relished by most Indians.
- (b) The composition of the menu allows for quick service between conference sessions.
- (c) Colour, texture, flavour and attractiveness is taken care of through providing different heights on a buffet table during service.
- (d) There is very little scope for over spicing. For those who wish to add more spices, these could be placed on the table in the form of *chutneys*, *pickles*, *papads* and cruets of salt and pepper or salad dressings.

While the menu accounts for tastes and habits of people from all over the world, the Indian touch that many delegates relish is not absent.

Menu E: Canteen Menu

<i>Special for the Day—Pizza</i>		<i>Rs 10.00</i>
Assorted Fried Snack (with Chutney)	¼ plate	7.00
Mini meal	plate	10.00
Sandwiches	pack	6.00
Fruit Cake	piece	5.00
Tea	cup	3.00
Coffee	cup	5.00
Cold drinks	glass (150ml)	5.00

The factors considered in planning are:

- (a) Eating habits of the customers—if it is an office canteen, hot beverages will be demanded all day.
- (b) Purchasing power of the customer.
- (c) Favourites among customers especially included in the day's special.
- (d) Easy to serve in disposables.
- (e) Satiety value and value for money.
- (f) Minimum on the spot preparation.
- (g) Items which will provide attractive displays.

Menu F: Old Age Home Menu

<i>Morning</i>	<i>B'fast</i>	<i>Midmorning</i>	<i>Lunch</i>	<i>Tea</i>	<i>Dinner</i>	<i>Bed time</i>
6–7	Tea 9 a.m.	11.00	1.00 p.m.	4 p.m.	7.30	9 p.m.
Tea	Porridge/	Fruit	Curry	Tea	Dal	Milk
Biscuits	Milk	or	Sautéed	Cake/	Vegetable	
	Toast and	Juice	vegetable	Namkeen/	Raita	
	Butter/Jam		Curd/Raita	Biscuit	Chappati	
	Egg		Chapatti		Salad	
	(scrambled)		Rice		Dessert	
	Coffee/		Sweet			
	Tea		(mithai,			
			chocolate,			
			rewari)			

The factors considered in planning are:

- (a) Timings indicating
 - Punctuality in food service and more frequent eating patterns because of inactivity and systems getting slower.
 - Providing frequent attention to lonely persons.
 - Food is the only thing they look forward to with mental activity and social interaction getting reduced.
- (b) Eating habits taken into account in relation to:
 - Favourite dishes of the lifetime.
 - Texture needs as they cannot eat stretchy, chewy or sticky foods depending on age and oral condition.

- Strongly flavoured foods because their senses get less receptive.
- They like crisp foods.
- Need more nutrition as they eat less quantities, but enjoy variety.
- Colourful meals to attract their attention.
- Nutrition and energy needs adjusted to weight and age.
- Easy digestibility and therefore relatively softly cooked foods yet having form.
- Weather and climate.

The above menus provide only an insight into the art of menu planning for particular situations. No amount of description or illustrations can replace the results of the actual experience of menu planners with their particular situations and customers. Each category requires initiative, creativity and imagination with consideration for physical, psychological and social requirements.

The objectives of a good menu plan meeting nutritional requirements of school children (Menus A and B) can be completely marred if children from the boarding school go out and eat in a café or canteen. As seen from Menu E, canteens need not always focus attention on nutritional value. This is because even if they did, children may not make the right choices in buying.

Since aged people become moody, acquire sedentary life styles, their menus must be presented well and preferably preplated for them though served in style so they feel cared for. Their timings and walking or exercise routines should be so fixed that they have no time to think of the slowness or physical deterioration in their body as many chronic ailments begin to set in. They need to be fully involved mentally in the planning of their menus to encourage acceptability.

While menu planning has its advantages, it also requires a lot of time and thought to be effective. The effort of every planner, therefore, should be to minimise the time spent on other activities. In order to do this it is a good policy to plan meals several days ahead, as this helps to:

- (i) Prepare market orders in advance and reduce last minute purchasing.
- (ii) It allows enough time to shop when markets are least crowded.
- (iii) Helps to control costs through cheaper buying when larger amounts are needed for a week's supply as against daily shopping.

With practice and experience, menu planning too can become a less and less time consuming, and more effective activity till it becomes almost routine.

WRITING MENUS

The importance of a menu as a sales tool must be kept in mind while writing it, because it is the first advertisement of the establishment, which the customer sees. It should therefore be written in a language which is clearly understood and with attractive colourful headings. Descriptions for items used should help the customer to visualise a dish before ordering such as fresh fruit juice, green garden peas and so on.

Writing menus requires skill and the starting point for catering or food and beverage managers is usually the chef who is trusted with the expertise to translate menus into items or meals for service as ordered.

What managers need to understand however is, that all chefs do not know or agree with the way customers want their food. In fact a *French chef* would be frustrated to work and cook for Indians who visit a French restaurants, because some of them would demand chilli sauce with French food. But, what is important while menu writing is to visualize customer expectations and base the menu offerings according to their likes and dislikes. This is because it is the customer who is paying for the food and not the caterer or his staff. Nevertheless staff skills must be reflected in good measure on the menu. So for success, planners must reflect the tastes of customers while planning and writing menus rather than those of their own. Always plan cook and serve for the customer.

The variety of menus available today is practically unlimited and often educative of the traditional cuisine's of other countries. The menu designs and writing also attempt to match the style of every establishment. Each one is characteristics and there can be no generalizations.

Aids to Menu Writing

Always use a pencil to write menus so that it is easier to erase an item if changed, till the plan is finalised.

There are a number of tools which a planner can use as aids for menu writing. It would be useful to keep the following ready at hand before starting to write a menu.

- (a) An indexed updated file of standard recipes (along with ingredients and methods), giving costs, portions, selling prices per portion and gross profit percentage. It will help to include the name of alternate cost equivalent ingredients for use in the recipe in case of lack of availability of some ingredient. An index number for cross reference is necessary for locating and consulting other pages in the file.

- (b) Price lists of seasonal and other foods, updated for ready reference.
- (c) Lists of substitute foods in the form of exchange lists.
- (d) Ideas for use of leftovers, developed with experience.
- (e) List of the most profitable dishes.
- (f) Lists of foods in stock at the time of planning in terms of leftovers, prepared and raw foods. It is useful to have updated stock lists in order, that will enable earlier stocks to be planned into menus first before fresh ones are used.
- (g) List of staff on leave so that skills of existing staff can be kept in mind before placing an item on the menu.
- (h) Lists of popular food combinations.
- (i) Ready reckoner of dishes.

MENU FORMAT

This varies with different situations and establishments, but the general format should be simple, clear and priced where required. About $\frac{1}{4}$ th of the menu card should be blank space and the lettering large enough to read and focus on without strain. Specials should be highlighted. Items should be grouped together for selection in the order in which they would be eaten in a meal.

With the above available aids and the basic considerations in mind menus can be written out with names of dishes in the following order:

- (a) Starter/soup
- (b) Main dish
- (c) Side dish(es)
- (d) Cereal preparation
- (e) Salad
- (f) Accompaniments
- (g) Dessert
- (h) Hot beverage

The sample menus A and B in Table 17.1 indicate this order with the names of dishes as planned for main meals such as lunch or dinner:

Table 17.1 *Menus showing order of dishes written-out*

<i>A</i>	<i>B</i>
Egg Drop Tomato Soup	Grilled Stuffed Tomatoes
Tandoori Chicken	Baked Fish/Paneer
Kofta curry (meat or vegetable balls)	Sauteed Peas and Corn
Pulao (fried rice)	Sunshine Salad
Naan (Indian bread)	Garlic Bread
Onion Tomato Salad	Steamed Chocolate Pudding
Kulfi (Indian ice-cream with pistachio nuts)	Coffee

Table 17.1 shows that menus must be written in a form that is simple, legible and attractive to draw customer attention, to:

- Vegetable and meat choices, nature of the menu and the number of courses to come.
- Names of dishes should be clearly understood. If unfamiliar names are used, description should follow the names so that the customer knows exactly what he is ordering.
- Sauces and accompaniments create a feeling of getting good *value for money*, and must be indicated on the menu. These may be written as a separate item, or along with the dish for which it is the special accompaniment.
- Care is necessary in word selection and correct spelling of dishes, particularly if they are written in a foreign language. For example *Half-Fried Chicken* will convey a different meaning to the customer than *Fried Half-Chicken*.
- Portion sizes must be indicated along with prices (Menu E) so that the customer does not feel cheated. In some cafeterias the price is expected to indicate the portion size, but this is sometimes deceptive and damages consumer relations.

Menus can be written in many different ways according to the purpose for which they are intended.

Menu Balancing

Menus once constructed should be balanced with respect to colour, texture and form, flavour, and the dishes should complement each other in these respects, while each one stands out for its characteristic qualities.

Sometimes dishes have characteristic colours and many be dull cream to brown in colour as in the case of baked or fried fish. How does one balance the dish in colour? Garnishing does the trick, to make it aromatic as well as colourful. The fried fish can be placed on a platter surrounded by green salad leaves or finely chopped cabbage and the baked dish garnished with parsley, coriander and lemon wedges to enhance its colour, accentuate appearance and presentability thereby enhancing customer appeal. Lets take a sample menu to explain the art of menu balancing.

Sample Menu I

- Fried fish
- Chipped potatoes
- Radish salad
- Caramel custard

The above 4-course menu is evaluated for its sensory qualities to visualize the total acceptability it presents as indicated in Table 17.2.

Table 17.2 *Sensory evaluation of a menu*

<i>Sensory Quality</i>	<i>Evaluation</i>	<i>Acceptability</i>
Colour	Cream to brown	Unattractive
Texture	All crisp except dessert	Form customer favourite
Flavour and Aroma	Well blended	Acceptable
Taste	All bland except salad which is astringent	
Portion size	Good	Acceptable
Dessert		Not a favourite with all or majority of customers.
Form	All served flat in shallow dishes except dessert which is moulded on quarter plate and has a form different from rest of the items on the menu.	
Total impact on customer	If well prepared	Fairly Acceptable
Impact on Institution	Requires balancing in colour texture and form with addition of vegetarian alternative for fish	Can increase sales

Since fish and chips are favourites, combine well and contrast in flavour and aroma it is good to retain them. The only problem is colour. Now how can this be improved?

- (i) Introduction of a fresh fruit juice or soup.
- (ii) Garnish the fish with lemon slices and finely chopped coriander or parsley. Provide a vegetarian alternative to fish.
- (iii) Mix finely chopped radish leaves with grated radish to add green colour, keeping the tartness and astringency of radish which blends so well with the fishy flavour.
- (iv) Since caramel custard is not a favourite with every customer, a colourful jelly may be made available to serve with a choice of ice-creams to add the finishing lasting touch to the menu.

Keep a colourful fresh fruit salad handy as a choice on the menu to prepare and serve on demand. Such balancing also helps to make best use of resources by increasing the edible portion of salad without added cost, maintaining the favourite combination, adding colour and giving a choice of dessert to the customer. If this same menu is to be served to a vegetarian, cottage cheese fillets may be used to replace the fish and indicate the choice on the menu card. Make sure that these are not fried in the same oil as the fish, let the customer know if you want the customer's good-will.

Menu Design

This refers to the final appearance of a planned menu as it is presented to the customer and presentations differ from one establishment to another and the type of menu planned. For example, some menus items are written in French with English translations in brackets for a la carte menus while for table d'hôte-menus they may stick to French versions if it is a restaurant in France and the menu is meant for the paying power of the citizens rather than tourists.

In France menu design has achieved the status of an art form, as no where else in the world. However, there is more to a menu than its cover, its prime concern being to convey simply, clearly and precisely what is the food and drink that is being offered to the customer.

Trends in menu design and writing are not easy to detect but smaller establishments do try to imitate and produce menu designs to resemble the best of the line in a competitive market and as a status symbol. Others try to be creative in a negative way by naming dishes in non-food terms just to be different. Which customers get attracted to such menus, is a matter of conjecture.

The quality of the paper used often differentiates one establishment from another as far as the customer is concerned. The paper may vary from heavy duty marbled paper in different colours mixed or plain, to hard vinyl covers which are now slowly being ousted, to homely effects produced by line drawings of foods or service scenes on plain double bond paper which may or may not be lightly laminated for ease of cleaning and use. Some cafeterias are even designing their menus on disposable table mats and placing them on tables for customers to read as soon as they sit for a meal. This has become a popular way of presenting the menu especially in fast food establishments where disposables are the expected norm with customers. The menu may also act as an advertisement for the establishment if the customer carries it away after the meal as a souvenir. Menus may sometimes carry landscapes and quotes from famous poets who have lived in that location especially in countryside or heritage hotels. Humour may be depicted on cards at popular establishments.

Shapes of menu cards may also be different to attract attention, such as heart or diamond-shaped, triangular, foldouts some reflecting traffic colours especially in road side chains.

Menus can often be used as vehicles for artistic and creative expression being designed to match the décor of establishment. Heavy, matt, slightly textured card with cream base and green or gray print, with light brown heading and a picture of a busy restaurant in front. The card may have inserts of matching paper showing table d'hôte menu.

Essentials for a Good Menu Card

There are five basic features important to a good menu card.

- Appeal
- Content
- Tips on Dishes
- Format
- Stain Resistance.

Appeal: A menu card should be aesthetically appealing, and easy to hold, being neither too large or too small.

Content: The content should be legible for easy reading, with each group of dishes highlighted with a heading and portions and prices clearly indicated. It may have visuals of items to enhance and contrast with plain writing of items. An unusual name for a dish should carry in brackets the description of its main contents and or cooking method.

Tips on Dishes: A menu card might offer cuisine from different countries to choose from, which reflect indigenous cultures. In some way description of recipe or name of place of origin may be added to the dish name or group heading.

Format: The format should be designed in a manner that price fluctuations can be accommodated easily without cancellations and overwriting.

Stain Resistance: A menu card should be laminated or lacquered including inside pages so that it is impervious to stains and also easy to wipe clean.

A menu must match the image of the catering establishment or create a desired image with respect to quality, neatness, discipline, order, comfort and expectation of the customer.

PRICING THE MENU

Menus are priced according to the nature of the establishment. Commercial establishments having as their goal a higher percentage of net profit than semi-commercial and non-commercial welfare organisations. Menu pricing has always been done in catering establishments in a haphazard manner using rule of thumb methods.

Today however, every operating department has to show at least a minimum of profit. The starting point for menu pricing is the calculation of food costs both total and portion costs for each dish. Then a food cost percentage is established with respect to sales volume. For this certain guidelines for setting profit goals for various types of organisations have been presented in Table 17.3, while details for calculating prices have been discussed under costing and pricing in Unit 5.

If prices are too high you lose customers if too low profits are affected and ultimate closure becomes immanent. Therefore, a price mix needs to be worked out to suit the customer's paying power and help them to select a menu suitably within their means. If all items are low cost you are probably leaving out some popular dishes that would be chosen by those who can afford them. Start with short menus or few items then change or expand every week adding on one special item every mealtime to judge customer responses and establish their likes, dislikes and favourites.

Table 17.3 Guidelines for profits goals

<i>Organisation</i>	<i>Food cost %</i>	<i>Labour cost %</i>	<i>Over head cost %</i>	<i>Net Profit %</i>	<i>Sales %</i>
<i>Commercial</i>					
Restaurants/Hotels**	30–35	25	20	20–25	100
Road side café's	35–40	20	10	30–35	100
Dhabas/Fast foods	35	25	15–20	20–25	100
<i>Institutional Feeding</i>					
College hostels	40	25	20	15	100
Working women's hostels	35	25–30	15–20	15–20	100
Old age homes	40	25	15–20	15–20	100
Midday meal programmes*	90–95	subsidized	5–10	Nil	100

Note: * Government pays a total of Rs 2.50 per child to be used for feeding, rest is subsidized with 5–10% only kept for cleaning, fuel etc.

** Hotels and hostels make most of their profits from room occupancy.

MENU DISPLAY

The menu can perform its rightful functions only if the customer can see and read it clearly on or before entering a food service establishment. Menus may be displayed in many ways.

1. On a menu board with the help of plastic letters which can easily be re-arranged to change the name of the dish from day to day. Such a display is neat and clear. Its effect can be enhanced by using contrasts in colour such as white on black or red on white boards.
2. In small kiosks, canteens or mobile catering vans, menus are displayed on blackboards written out in chalk. The disadvantage is that chalk can be erased by customers brushing past.
3. Printed or neatly typed menus may be inserted in plastic cases and displayed. This method is often followed in coffee shops and cafeterias where a number of customers handle the menu to make their selections.
4. In hostels or other institutions typed menus are displayed on notice boards outside dining areas. This enables people to make up their

mind about dishes before they go to service counters. The advantage lies in faster service and no unnecessary crowding, since those who do not like the menu do not enter the dining area. In such displays, it is preferable to have glass shutters so that the menu is visible and yet protected from dust and mishandling.

5. Printed booklets placed in attractive waterproof folders are a method of presenting menus to customers in restaurants offering extensive choices.
6. On formal occasions such as for banquets, small individual menu cards may be typed and placed on menu stands in front of each guest cover. Sometimes separate cards carrying the names of the guest are placed alongside. This enables invitees to be directed to their proper positions on the table without commotion, and also indicates to each diner what courses are being served. In this form of menu display, there are no price or portions printed along with the dishes, as the diners do not have to pay for their meals. Plate 17.2 illustrates some forms in which menus may be displayed.

The effort that goes into menu planning or the quality of menu card however, is not good enough to bring in customers if it is not displayed or communicated to them in some way.

It always pays to display a menu and position it as close to prospective customers as possible. So if an outside wall is available think of a display case instead of taping menus on windows of cafeterias using adhesive tapes. If a pavement, forecourt, garden space is available, it is preferable to a wall. Displaying menus or specials for the day should be considered as advertising and therefore done as well as possible. Not spending time or money on a menu is misplaced economy. An attractive menu case performs a number of useful functions.

- Enhances and flatters a menu.
- Attracts the eye of the customer.
- Reflects a management that cares about every detail and thereby implies care in preparations and presentation of food.
- Suggests that the ambience within the establishment would be carefully planned and attractively set out.

Too often the menu is shabby, unattractive or even stained and mutilated especially in smaller food service units operated unprofessionally. One can see the effect of this on sales immediately.



Plate 17.2 Some methods of displaying menus

Menu displays are basically of two types. Advertise or show them outside the restaurants so that the attractions woo the customers in, or make them come in out of curiosity and see the items on offer. Any method of display should attract the eye, imply an exciting menu or array of dishes on offer while being suggestive of the ambience in which customers are invited to eat.

Methods of Display

There are a number of methods used for displaying menus which are briefly discussed.

Showcasing: An attractive menu case placed at the entrance to an establishment will enhance the menu even if it is not of lasting quality and draw attention of passersby. Showcasing requires the same kind of skill as advertising. Catering establishments do not usually use the media for advertising extensively because the products are usually consumed at the point of production. The best mode of advertisement for the products of catering is the *word-of-mouth* through happy customers.

Today, with fast food outlets and home deliveries increasing rapidly, the commonest way of communication has become the print media. Attractive leaflets are sent to people with their newspaper or through the post and mail boxes. The leaflets are colourfully presented with details of menu items, mini meals and discounts or free beverages announced to attract attention. Other information includes telephone numbers and e-mail addresses, for communicating. A sample of a home delivery menu appears in Fig. 17.2.

Factors considered important in showcasing menus are:

- Background colour of menu
- Material of the case
- The style
- Its ability to stay clean
- Easy to maintain
- Case is lighted or not
- Easy to open for menu changes
- Replaceable fixtures.

All these should be kept in mind when menu cases are manufactured, so that time and money spent on it is well spent and produces the desired impact on potential customers.

PLEASE ALSO CONTACT US FOR
 COCKTAIL BAR-BE-QUE PARTIES
 BIRTHDAY PARTIES
 KITTY PARTIES
 ANY OTHER FESTIVE CEREMONIES
 ALSO PLACE DEMANDS FOR LUNCH/DINNER
 VEG/NON-VEG ON MONTHLY/DAILY BASIS

VISIT
 301 MANDAKINI ENCLAVE, ALAKNANDA FOR
 UNIQUE COLLECTION OF
 HYDERABADI PURE LOOSE PEARLS, MALAS,
 SETS, EARRINGS & BANGLES
 AT A VERY REASONABLE
 AND ECONOMICAL RATES

WALL TO WALL BUNNY CARPETS
 FOR BUNGLOWS AVAILABLE IN
 DIFFERENT COLOURS AT A VERY
 REASONABLE AND AFFORDABLE RATES

FREE HOME DELIVERY

KERNAL BAR-BE-QUE
 AT
 301 MANDAKINI ENCLAVE

REMEMBER US EVERYDAY BY 2 'O' CLOCK



CHICKEN



FISH



MUTTON



PIG

AND FIND US AT YOUR DOOR STEPS IN
 THE EVENING AT GIVEN TIME

HOME DELIVERY

LT. COL. DHIR (RETD.)

<table border="0" style="width: 100%;"> <tr><td>1. SEEKH KABAB</td><td>KG</td><td>80</td></tr> <tr><td>2. SHAWARH KABAB</td><td>KG</td><td>80</td></tr> <tr><td>3. MUTTON TIKKA</td><td>KG</td><td>80</td></tr> <tr><td>4. MUTTON ROHTA</td><td>KG</td><td>45</td></tr> <tr><td>5. MUTTON BARIHA</td><td>KG</td><td>90</td></tr> <tr><td>6. SAUNDE/KAPOORIKIDNEY</td><td>KG</td><td>140</td></tr> <tr><td>7. PLAIN MUTTON</td><td>KG</td><td>75</td></tr> <tr><td>8. MUTTON CHOPS WITH CHAMBS</td><td>SACH</td><td>8</td></tr> <tr><td>9. MUTTON PICKLE</td><td>KG</td><td>100</td></tr> </table> <p>PORK PRODUCTS</p> <table border="0" style="width: 100%;"> <tr><td>1. SAUSAGES</td><td>KG</td><td>60</td></tr> <tr><td>2. SALAMI</td><td>KG</td><td>100</td></tr> <tr><td>3. HAM</td><td>KG</td><td>120</td></tr> <tr><td>4. MASALA CHOPS WITHOUT FAT</td><td>KG</td><td>75</td></tr> <tr><td>5. PORK PICKLE</td><td>KG</td><td>150</td></tr> </table>	1. SEEKH KABAB	KG	80	2. SHAWARH KABAB	KG	80	3. MUTTON TIKKA	KG	80	4. MUTTON ROHTA	KG	45	5. MUTTON BARIHA	KG	90	6. SAUNDE/KAPOORIKIDNEY	KG	140	7. PLAIN MUTTON	KG	75	8. MUTTON CHOPS WITH CHAMBS	SACH	8	9. MUTTON PICKLE	KG	100	1. SAUSAGES	KG	60	2. SALAMI	KG	100	3. HAM	KG	120	4. MASALA CHOPS WITHOUT FAT	KG	75	5. PORK PICKLE	KG	150	<table border="0" style="width: 100%;"> <tr><td>3. FISH TIKKA</td></tr> <tr><td>4. PANEER TIKKA</td></tr> <tr><td>5. VEGETABLE SEEKH/SAMOSA</td></tr> </table> <p>STANDARD MENU FOR CATERING PARTY Rs.120/- Per Head</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">1. SNACKS</td> <td style="width: 50%;">2. FOOD DISH AS PER YOUR DEMAND</td> </tr> <tr> <td>(a) Mutton Soeethi-Kabab</td> <td>(a) Chicken / Mutton</td> </tr> <tr> <td>(b) Chicken Tikka</td> <td>(b) Vegetable</td> </tr> <tr> <td>(c) Fish Tikka</td> <td>(c) Dal</td> </tr> <tr> <td>(d) Paneer Tikka</td> <td>(d) BRYANI VEG/NON-VEG</td> </tr> <tr> <td>(e) Vegetable Seekh / Samosa</td> <td>(e) Curd</td> </tr> <tr> <td></td> <td>(f) Nam/Prantha/Missi Roti</td> </tr> <tr> <td></td> <td>(g) Bread</td> </tr> </table> <p>3. SWEET DISH AS PER YOUR DEMAND</p>	3. FISH TIKKA	4. PANEER TIKKA	5. VEGETABLE SEEKH/SAMOSA	1. SNACKS	2. FOOD DISH AS PER YOUR DEMAND	(a) Mutton Soeethi-Kabab	(a) Chicken / Mutton	(b) Chicken Tikka	(b) Vegetable	(c) Fish Tikka	(c) Dal	(d) Paneer Tikka	(d) BRYANI VEG/NON-VEG	(e) Vegetable Seekh / Samosa	(e) Curd		(f) Nam/Prantha/Missi Roti		(g) Bread
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Fig. 17.2 Home delivery menu

In food services where a waiter style of service is offered, the menu is generally presented in the form of a folder. This introduces the establishment to the customer and therefore gives information other than the list of dishes and prices. It covers the address, telephone numbers, service timing and other relevant information.

In a canteen, lunchroom or cafeteria, the menu would probably be displayed as a list of items with prices on a board. In smaller establishments a blackboard and chalk may be used to write the date and menu items offered every day.

On formal occasions small menu cards may be placed in front of each guest cover for letting guests know in which order items will be served. Such menus generally indicate the set menu ordered by the host. Each card also carries the guest name on it so that each guest is directed to his proper position at the table vis-à-vis the host(ess).

In institutions like hostels, hospitals, homes, menus are charted out for a week or ten days in advance, according to a meal plan varying from a three to five meals a day routine. This plan would include breakfast, lunch and dinner, with some institutions providing something at tea and/or bedtime also. Some establishments may even provide a beverage, fruit or midmorning snack.

In institutional menus, it is not the practice to indicate prices or portions because these establishments are generally non-profit making, and the price for meals is never paid by the customers or inmates at the point of service.

The decoration and colour used on menu cards should blend with the general décor and nature of the establishment. It should be attractive and pleasing, and not detract from the items listed. If a menu card is written out for a special occasion it should convey the mood of the occasion as shown in Plate 17.3.

Legal Aspects of Selling

It is an offence not to display prices to prospective customers. Non compliance is therefore punishable under the regulations in the Price Marking (Food and Drink on Premises) order. The idea is that a customer should know how much he will have to pay for what he orders beforehand. Any extras like service charge, tax etc. should also be clearly indicated.

Upto thirty items the prices must be displayed. In case there are more than thirty at least thirty must be displayed and items subdivided into categories like, soups, grills, breads, and so on with at least five items indicated under each.

However, exceptions have been made for institutional feeding such as industrial canteens, clubs, boarding houses, hostels, etc.

Any unfair practice in product or service is also covered under legislation like Essential Commodities Act, Weights and Measures Act, MRTP Act and Consumer Protection Act—all of which are discussed in detail in Chapter 29 (Unit 6).

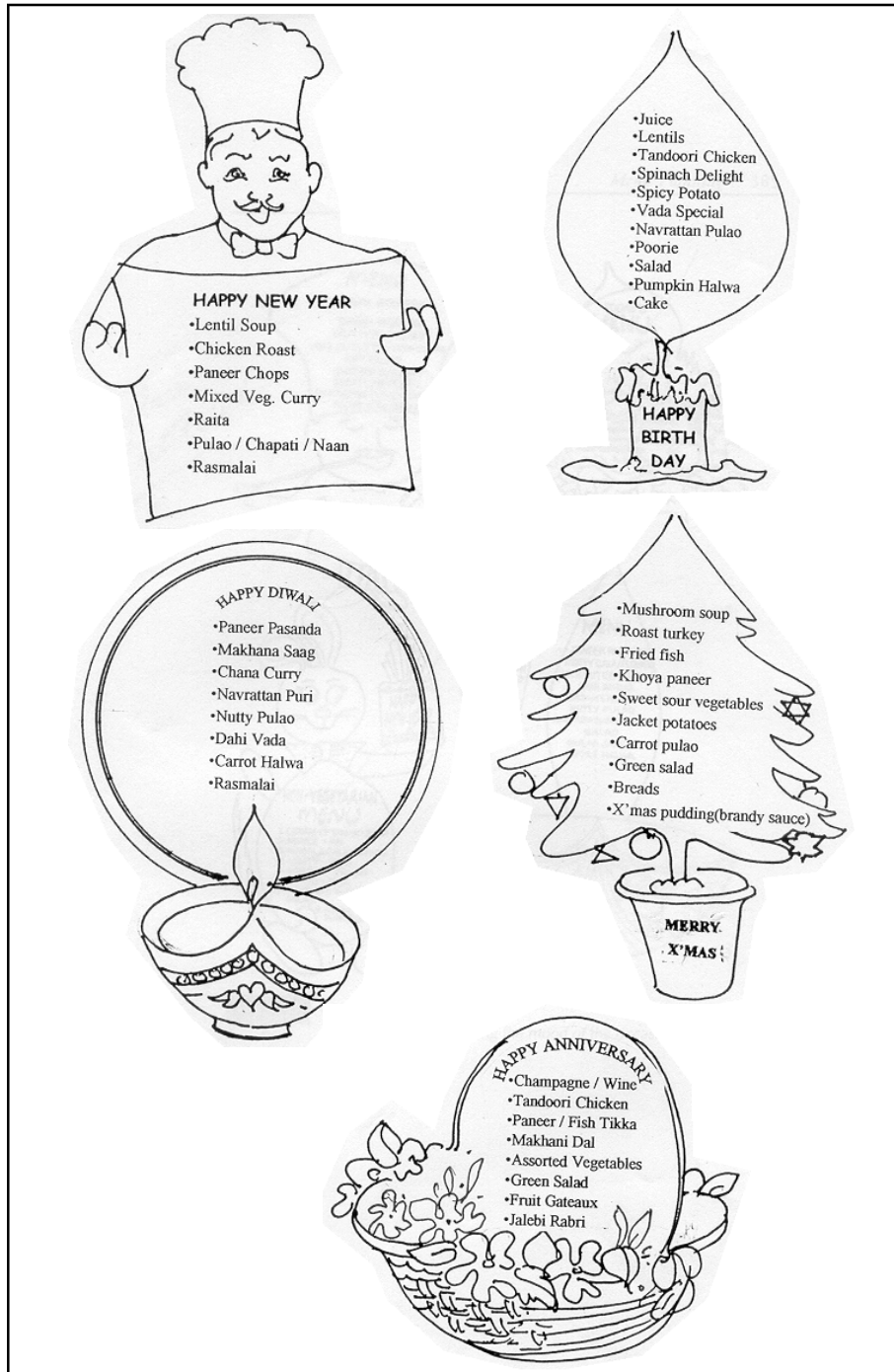


Plate 17.3 Menus conveying the mood of the occasion

TYPES OF MENUS

Menus are of different types being selective, set, single use, occasional, routine or static. They have been called differently around the globe as:

- (i) A la Carte
- (ii) Table d'hôte
- (iii) Combination
- (iv) Occasional menu
- (v) Single use menu
- (vi) Du Jour
- (vii) Cyclic

A la Carte Menu

A la Carte is a French term which signifies a choice menu and generally offers a large variety to choose from. It generally offers choices of dishes or items to customers under the food categories as shown in Fig. 17.3.

The categories in a la carte menu generally follow a sequence on the menu card, in which the customer would normally select items for the meal. Each dish is priced separately so that a choice can be made according to the taste and purchasing power of the customer.

<i>Starters</i>	<i>Soups</i>	<i>Main Dishes</i>	<i>Side Dishes</i>	<i>Cereal Preparation</i>
Jal Jeera	Rasam	Fish	Vegetables	Chappati
Egg Mayonnaise	Mushroom	Chicken	cooked in	Paratha
Prawn Cocktail	Tomato	Mutton	various ways.	Naan
Assorted Snacks			—	Puris
Assorted Salads	Chicken	Cottage Cheese	—	Breads
Stuffed Tomatoes	Goulash	Stews	—	Rice dishes
Spring Rolls	French Onion	Legumes	—	—
—	—	Vegetables	—	—
—	—	—	—	—
—	—	—	—	—

(Contd.)

<i>Salads</i>	<i>Desserts</i>	<i>Sandwiches</i>	<i>Snacks</i>	<i>Beverages</i>
Tomato Onion	Fruits	Ribbon	Fried	Tea
Spring Salad	Ice-Cream	Chutney	Sandwiches	Coffee
Green Salad	Souffles	Salad	Grilled	Hot chocolate
Beetroot Radish	Pies	Chicken	Baked	Buttermilk
Salad	Custards	Double decker	—	Milk shakes
Russian Salad	—	Club	—	Juices
Waldorf Salad	—	Scandinavian	—	—
Mixed Tossed	—	—	—	—
Salad	—	—	—	—
—	—	—	—	—
—	—	—	—	—

Fig. 17.3 Choice categories on an a la carte menu

A la carte menus may range from being limited take away to after meal items in a coffee shop, canteen or cafeteria to being extensive in the case of restaurants providing waiter service. These menus are used chiefly by profit-making establishments, and are suitable for leisurely dining, because the wide choices offered and selected, take longer to process in the kitchen, before they can be served. A sample a la carte menu of a food service is given in Fig. 17.4.

The advantage of a la carte menu is that customers can choose any item according to their appetite, mood and pocket.

Table d'hôte Menu

Table d'hôte means *table of the host*. This menu is therefore a set menu, in which a number of dishes are planned by the host and food served and offered at a set price. Some establishments especially those located in out of the way places with seasonal customers, such as at hill stations in tropical countries or at places of pilgrimage where worshippers flock together at certain times of the year, follow set menus. Their selling policy is a *take-it-or-leave-it* one, and little or no flexibility is built into the set menus. This is so even when catering for travellers as on railways, airlines, etc. A typical table d'hôte menu is served in India in the form *thali* meals in some establishments and on trains. In the latter, stainless steel trays with sections of various sizes for serving the different menu items, are generally used. Similarly, the tray meals served on an aircraft are all set menus.

पत्ते वाली दही	FRUIT YOGHURT	Rs. 30.00
अंडों के अंडसा अण्डे	EGGS TO ORDER	30.00
दो अण्डे — डीप/केक/सॉसिज के साथ	TWO EGGS WITH HAMBACON/SAUSAGES	40.00
सॉसिज — मीठ मिर्, आकुरी के साथ	SAUSAGES WITH MASHED POTATOES	40.00
वेंडिकेस बट्टेदेस	VEGETABLE CUTLETS	30.00
सुन्नी टोट	MUSHROOM ON TOAST	40.00
पटोर सब्जी	PARANTHA SABZI	30.00
इडली	IDLI	30.00
मसाला डोसा	MASALA DOSA	30.00
उत्तमम	LITHAPPAM	30.00
पुड़ी भाजी	POORI BHAJI	30.00
बास्केट से	From The Basket	
सम्बर और केक के साथ	All served with butter and preserves	
कुर्रियाँ	CROISSANTS	25.00
डेनिस पास्ट्री	DANISH PASTRY	25.00
टोट	TOASTS	20.00
गर्म पेय	Hot Beverages	
अशोक चाय	ASHOK TEA	20.00
मसाला चाय	MASALA TEA	20.00
इंस्टैंट कॉफ़ी	INSTANT COFFEE	20.00
हॉट चॉकलेट	HOT CHOCOLATE	25.00
बर्निकेटा	BOURNVITA	25.00
ड्रिंके पेय	Iced Drinks	
लससी (सुन्दर/सुन्दर)	LASSI (Sweet/Salted)	25.00
कॉल्ड कॉफ़ी — आइसक्रिम के साथ	COLD COFFEE WITH ICE CREAM	35.00
कॉल्ड कॉफ़ी	COLD COFFEE	25.00
आइस टी	ICED TEA	20.00
फ्रेश लीम वॉटर/सोडा	FRESH LIME WATER/SODA	20.00
अननस/केले सम्बर दही भी लससी	PINEAPPLE/BANANA YOGHURT SHAKE	25.00
शुद्धी पर अर्धीक	Sales tax extra	
कॉन्टिनेन्टल नाश्ता	Continental Breakfast	Rs. 50.00
रूबिन रस (सिम्बर)	CHILLED JUICE (Canned)	Small
सम्बर/अननस/टोमटो/अन	Orange/Pineapple/Tomato/Mango	
टोट/केक/पास्ट्री टोस	TOASTS/BREAKFAST ROLLS	
सम्बर और केक के साथ	With butter and preserves	
चाय/कॉफ़ी	TEA/COFFEE	
इंग्लिश नाश्ता	English Breakfast	90.00
रूबिन रस (सिम्बर)	CHILLED JUICE (Canned)	Small
सम्बर/अननस/टोमटो/अन	Orange/Pineapple/Tomato/Mango	
रूबिन, बर्निकेटा — दूध के साथ	PORRIDGE/CORNFLAKES WITH MILK	
अंडों के अंडसा अण्डे	EGGS TO ORDER	
अण्डे, डीप/केक/सॉसिज के साथ	With Bacon/Ham/Sausages	
केक	or	
वेंडिकेस बट्टेदेस	VEGETABLE CUTLETS	
टोट/केक/पास्ट्री टोस	TOASTS/BREAKFAST ROLLS	
सम्बर और केक के साथ	With butter and preserves	
चाय/कॉफ़ी	TEA/COFFEE	
भारतीय नाश्ता	Indian Breakfast	60.00
फ्रूट जूस	FRUIT JUICE	
सम्बर/पास्ट्री और रूबिन	MAKHHAN PARANTHA AND RAITA	
पुड़ी भाजी	or	
उत्तमम और सॉस	POORI BHAJI	
चाय/कॉफ़ी	or	
	LITHAPPAM AND SAMBAR	
	TEA/COFFEE	
आपकी पसंद पर	As You Please	
सम्बर/अननस/टोमटो/अन	FRESH FRUIT JUICE (Seasonal)	Large 35.00
अननस/केले/केक	Pineapple/Orange/Sweet Lime	Small 25.00
रूबिन रस (सिम्बर)	CHILLED JUICE (Canned)	Large 30.00
सम्बर/अननस/टोमटो/अन	Orange/Pineapple/Tomato/Mango	Small 20.00
फ्रेश लीम वॉटर/अन (सीजन के अनुसार)	RAPPA/PAPA E/BANANA/MANGO (Seasonal)	20.00
बर्निकेटा — दूध के साथ	CORNFLAKES WITH MILK	25.00
रूबिन — दूध के साथ	PORRIDGE WITH MILK	25.00

Fig. 17.4 Sample a la carte menu (Courtesy Palm court)

Combination Menu

Gradually table d'hôte menus too are increasingly being planned to provide a little flexibility in the form of a choice of soup or beverage. Examples of partly set menus are seen in clubs, hostels, college canteen, etc. where a choice of side dishes or desserts may be offered keeping the main dishes and soup or beverage fixed, Figure 17.5 shows examples of different kinds of table d'hôte and combination menus.

Club Menu	Price	Railway Menu	Price
<i>Dinner</i>		<i>Dinner Tray</i>	
Mushroom soup		(Non-vegetarian)	
Roast Mutton and Mint Sauce		Mutton/Chicken Curry	
Roast Potato		Sauteed Potatoes	
Butter Cabbage		Spinach	
Vegetable Cutlet		Curd	
Caramel Custard		Salad (Onions and Green Chillies)	
<i>Indian Vegetarian Dinner</i>		Rice (boiled)	
Mushroom Soup		Chappati	
Lauki Masala		Papad	
Mutter Mushroom Curry		Pickle	
Dal Urad		<i>Vegetarian Tray</i>	
Tandoori Roti		Kofta Curry	
Caramel Custard		Dal	
(Courtesy: Delhi Gymkhana Club, New Delhi)		(Rest same as for non-vegetarian menu). (Courtesy: Northern Railway.)	
<i>College Canteen Menu</i>		<i>Airline Menu (Meal)</i>	
Vegetable Burger with sauces		Chicken or Cheese Pattie	
Chicken Chowmien per ½ plate		Salad with French Dressing	
Chana Pooori per ½ plate		Pulao (Vegetable or Meat)	
Samosa with Chutney per ½ plate		Cream Cake or Lemon Tart	
Idli with Sambar per ½ plate		(Courtesy: Indian Airlines)	
Cake 1 piece		<i>Combination Menu</i>	
Tea/Coffee 200 ml		Tomato soup	
Cold Drinks 200 ml		Tandoori Choices	
(Courtesy: Lady Sri Ram College, New Delhi)		—Chicken	
		—Seekh Kabab	
		—Mutton Tikka	
		—Paneer Tikka	
		Curries and dal	
		Bread	
		—Naan	
		—Kulcha	
		—Roti	
		—Paratha	
		Ice-cream	

Fig. 17.5

Table d'hôte menus with a la carte element built into them

It will be noted from Fig. 17.6 that in the club menu the choice is limited to the main dishes while the side vegetables that may blend with the vegetarian or non-vegetarian main dish are selected. The soup and dessert remain fixed and form the table d'hôte component. Such menus are termed as combinations menus. The combination menu can take the form of a table d'hôte menu with built-in choices to the extent desired.

The canteen menu however lists selected items of mini-meals, snacks and beverages showing a little component of an a la carte format but providing only specified choices within the hot and cold drinks category. Of course it is not a set menu and customers are at liberty to choose any listed item, according to their mood, weather and pocket.

The railway menu is set for both vegetarians and non-vegetarians except the main dish which is substituted will pulse preparation and kofta curry. Airline menu is usually trayed and served, the choice being in the vegetarian and non-vegetarian items only.

An airline menu is usually served on microwavable light weight trays the choices being between vegetarian and non-vegetarian meals which are labeled for ease of service. Special meals are also provided according to requirements if indicated at the time of booking the ticket.

A true combination menu indicates the choices between meat dishes and breads. Ice-creams too can be chosen if there is variety offered or else one type may be selected. Since combination menus are usually served in restaurants where the customer makes up his own combinations from the a la carte menu, customers expect a choice of desserts as well. If the menu is for a school or college hostel then only one dessert may be planned and offered each day.

In some establishments it is common to have a la carte menus with a *Special for the Day* attachment to it. This *special* may be a set of dishes with an accompaniment, or a plated meal offered in a table d'hôte form at a set price. More and more establishments are now including vegetarian and Chinese dishes on their menus for the customer.

Food service establishments should be able to provide at any time, an alternative to the planned menus, if customers' food habits demand, keeping ethnic preferences in mind, For example, if a customer does not eat eggs, the food service should be able to make an omelette without it. Alternatives could be *Cheela* in which the egg is substituted by gram flour and a batter prepared, spread thinly on a hot griddle, cooked, folded like an omelette and served. Other examples are sandwiches on order and *paratha* instead of *poori* or *chappati* and so on.

Occasional Menu

As the name suggests this menu is planned specially for certain specific occasions like marriages, receptions, birthdays, private parties, fast days or other celebrations. This menu is usually offered by caterers on customer demand. Menus for each occasion are planned, costed and priced and offered to the customer, who may accept the plan as such at that price or want an alternative to be served for one or more dishes on the plan. In this case the change is made, the menu recosted and priced and then offered to the customer who may accept it as such or try and negotiate the price if the guests are large in number or numbers are uncertain at that point. Such menus are also offered by clubs, contract caterers and hotels apart from restaurants and other catering establishments.

Single-use Menus

These are specially planned for the customer according to their special requirements. The choices may have no logical order or may be very formal varying from catering for a dance party to a seated formal banquet. In the former, the menu may be a mixture of cocktail snacks, rice or pasta based platters, finger or fork buffet foods and plenty of beverages. The latter would require formal waiter service with individual menu cards placed in holders in front of each seat, carrying the name of the diner. The menu is served in courses one by one in order. A sample of such a menu is presented in Fig. 17.6.

Such menus are single use individualized menus and not for offer as a public sales tool.

Du Jour

This is a French term meaning menu for the day. It can be offered as an a la carte, table d'hôte or a combination menu for customers to choose from as they like. Such daily menus are usually used by small catering establishments such as café's, coffee shops, pubs and the like. It is generally written on a blackboard, notice board and displayed on the outside of the establishment so that passersby can see it clearly and get attracted. Such establishments change the menu everyday to maintain the curiosity of the customers.

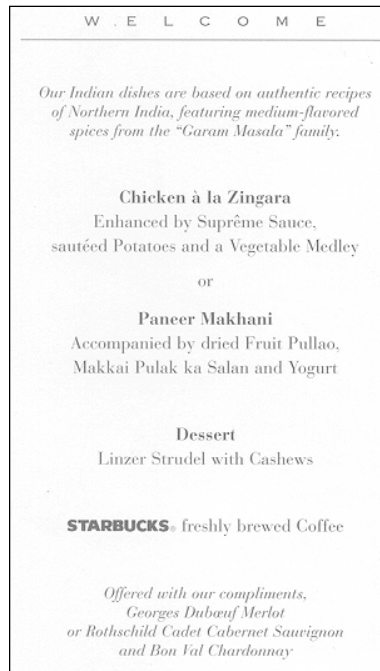


Fig. 17.6 Formal banquet menu

Cyclic Menu

In the case of hotels, hospitals, homes and other institutions, menus are planned in advance for periods of time varying from five days to one month. These are then cycled or repeated. Such menus are termed as *cyclic* menus and are usually combination type menus providing choices within a set framework.

Menus are generally used cyclically in establishments with captive consumers, whose numbers do not vary appreciably and where tight budget limits prevail. Also the special requirements of these customers are known over a period of time and can be incorporated into the menu as required.

With short-term cycles, however, there is a tendency to produce menu fatigue. The customers tend to remember what is served on Mondays, for example, and may look forward to meals only on a favourite menu day. To counteract this a number of methods are adopted.

- (a) Planning is done for an odd number of days, so that the same menu does not fall on the same day of the week, or same date of a month. For example, plans may be made for 5, 10 or 20 days to prevent people associating a particular menu with a particular day of the week.

- (b) A general menu structure may be set, but dishes changed to introduce variety. For example, a menu may say 'seasonal vegetable' or 'curried meat' so that the customer does not really know what he is getting. It could be peas on one day, cauliflower on another, and meat curry followed by curried mince or meat balls, and so on. Variations can also be introduced through different methods of cooking the same food. This also provides flexibility to the planner, who can with confidence mix and match foods and flavours according to stocks, availability, budget and special occasions. Figure 17.7 is a cyclic menu for a women's college hostel.

It will be noticed from Fig. 17.7 that a certain pattern is followed in a cyclic menu that allows for flexibility in the inclusion of dishes at will. Some guidelines are given briefly below:

- (a) All curries, biryanis, pulaos, pizzas, cutlets etc., may include choices between vegetarian and non-vegetarian preparations. It is customary to serve non-vegetarian dishes at least twice a week.
- (b) Sweet is generally served at dinner time when the diners are at ease, at the end of the day. In the above menu it is served every alternative day, but may be twice a week depending on the policy of the establishment.
- (c) Fruit is served at least once a day.
- (d) Salad as often as possible.
- (e) Accompaniments like papad, pickle, etc, are generally offered when no vegetable side dish is prepared, especially at lunch which is a hurried meal.
- (f) Anyone who wishes to have milk at tea time can order it specially.
- (g) Sunday breakfast is usually a heavier meal than on the other days, as people have more time to eat, and generally take breakfast later than usual.

Cyclic menus have a number of advantages:

- (a) Once a basic menu pattern is established, the planner has more time for creative thinking in terms of adjustments that become necessary in case of holidays, special circumstances, staff shortage, delays in deliveries, and so on.
- (b) The staff and work in kitchens and service areas get better organised because future production plans are known.

<i>Meal</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>	<i>Sunday</i>
Breakfast	Porridge, Bread Butter/Jam Milk/Tea/ Coffee	Idli & Chutney Milk/Tea/ Coffee Fruit	Egg to order Bread, Butter Milk/Tea/ Coffee	Uppama (with peas and nuts) Fruit milk/ Tea/Coffee	Egg on toast Milk/ Tea/Coffee Fruit	Porridge Cheese on toast Milk/ Tea/Coffee	Paratha (Stuffed) Curd Tea/Coffee
Lunch	Curry, Salad/Papad/ Pickle/ Rice/Chappati	Curry Seasonal vegetable, Salad Rice/Chappati	Curry, Raita, Fried Rice Chappati Pickle	Curry Seasonal Vegetable salad, Chappati Rice	Curry Curd Pulao Chappati	Curry Seasonal Vegetable, Salad Chappati/Rice	Biryani Salad Raita Pickle
Tea	Sandwiches Tea	Biscuits Tea	Samosa Tea	Cake Tea	Cutlets Tea	Pakora Tea	Burger Tea
Dinner	Dal Seasonal vegetables Chappati Rice Fruit Salad	Dal, Seasonal vegetables Salad Chappati Rice	Soup Pasta Preparation Stewed Fruit with custard	Dal, Seasonal vegetables, Salad Chappati Rice	Soup Pizza Ice-cream	Dal Seasonal Vegetables Salad Chappati	Soup Cutlets Seasonal vegetables Bread Custard

Fig. 17.7 Cyclic menu for a hostel

- (c) Recipes get standardised with repeated preparation, making food service more cost effective for management and customers.
- (d) Work can be equally distributed throughout the day so that tensions are reduced for kitchen staff irrespective of peaks and troughs in catering operations.
- (e) Available equipment and skills can be optimally utilised if menus are thoughtfully planned in advance.
- (f) Administrative work involved in ordering and stocking food is reduced, because a single order can be placed indicating timing for deliveries over a season or specific period.

Thus, a well planned cyclic menu can be a very effective tool of management in food service department. It should, however, have a degree of flexibility built into it, which can be made use of to introduce seasonal variations, special requirements (for the handicapped, aged, or sick), and to control waste.

Menus may be used in a number of ways according to the requirements of food service establishments. Since menu planning is a time and effort consuming activity, it is not advisable to change menu plans too frequently. A la carte menus are hardly ever changed since they provide a large choice for the customer anyway. The only reasons for change would be increase in cost prices of dishes which may make some dishes unprofitable to serve; change in tastes of customers who do not demand the dish any longer; or retirement or resignation of the specialist cook preparing the dish(es). Table d'hôte menus are changed more frequently to provide variety of set menus within the same price range.

CONSTRUCTION OF MENUS

A menu needs to be constructed in a systematic manner by first deciding the menu pattern considered suitable in terms of its being set, selective, or a combination of both, and the degree of flexibility to be incorporated. The five basic steps that can be followed are:

- Select the main dish
- Add side dishes and cereals
- Match starter and salad
- Add dessert and beverage to balance the menu
- Fill in the accompaniments to complete the menu

It becomes easier for a menu planner to select from a file of ready lists of main dishes, side dishes, beverages, appetizers, desserts and so on. Which act as a useful tool when constructing menus.

Constructing a menu entails:

- Writing down the main dish and planning side dishes around it. The items selected should help to enhance the colour, texture, flavour and taste of the meal.
- Menus should be checked vertically and horizontally in case of cyclic or weekly non-cyclic menus, to ensure that the same food item or dish does not appear consecutively on two or more days. It must not have the same item used twice in the same meal, nor on the same day. For example, avoid using mutton for lunch and dinner on the same day, or using potato for lunch as well as snacks.

While constructing menus for a week, a good principle to follow is to list the main dishes for all the days first to avoid repetitions, then follow the various steps to construct the rest of the menu as shown in Fig. 17.8.

The aim of every planner should be to create menus that will be fairly consistent in their quality characteristics, costs and therefore selling prices from day to day. To do this, seasonal and price fluctuations can be taken care of by selecting cheaper side dishes for expensive main dishes and vice versa, while at the same time complementing the main dish in flavour, taste, colour, and texture. When choices are planned, the dishes chosen should be comparable in the *value for money* that they provide, and in other aspects as necessary for particular customer requirements. Variations can be provided with the use of different cooking methods, seasonings or garnishings.

Selection of dessert should generally relate to the main course of the menu. If the latter is light, the dessert chosen can be rich, and vice versa. Desserts may be fruity, cooked puddings (hot or cold), creamy such as ice-creams, souffles, custards, kheers, or based on cakes, gelatin or pies, depending on the rest of the menu.

While there are meal times established for main meals, all food service establishments may not necessarily plan for full course meals. Small cafeterias, canteens, kiosks, mobile vans or vendors may cut down on menu items and provide plated meals, snacks, and beverages. Such menus are becoming more and more popular as people want a bite between meals, when in company or while travelling. In addition, specialty menus which do not require to change are planned on popular demand. An appropriate example is the *chaat* stall in

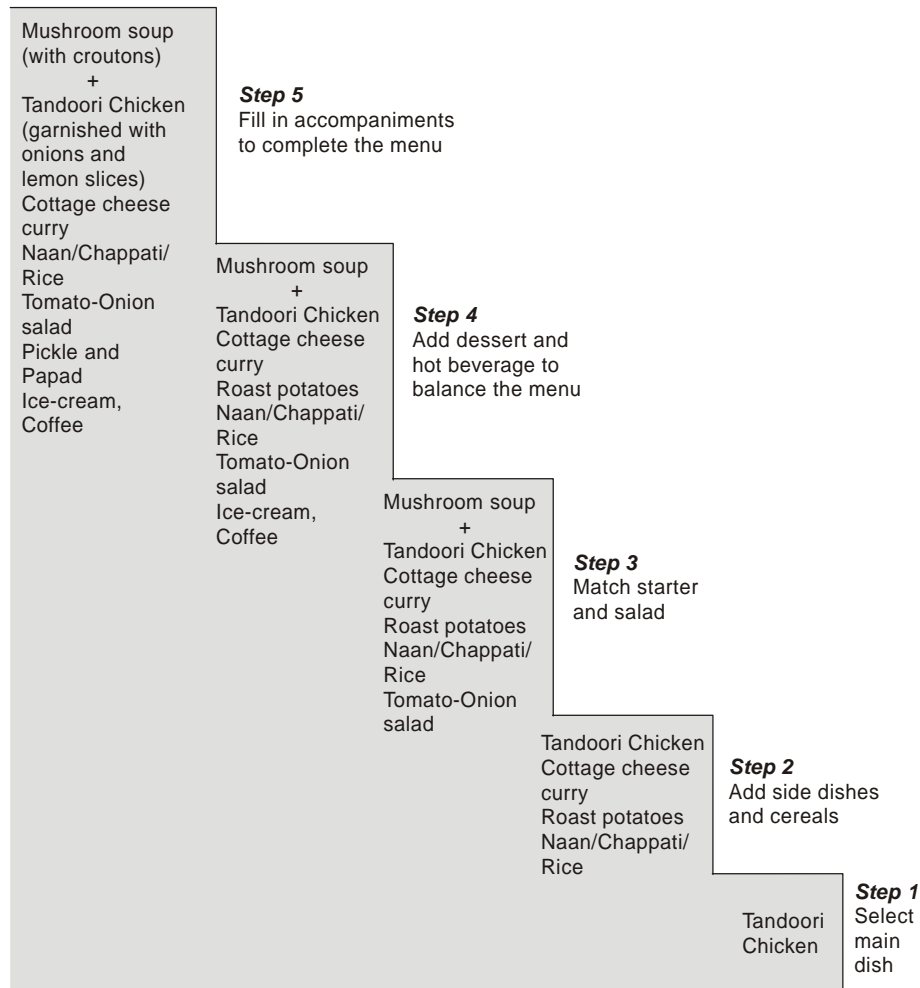


Fig. 17.8 Steps in constructing a dinner menu

India, where the same *chaat* is prepared and served day after day because customers of all ages enjoy it. Figure 17.9 is evidence of the popularity of such an establishment which provides variety on the menu, through changes in ingredients and level of spicing rather than a change in the menu items. In fact, *chaat* of any kind is such a hot favourite that a small corner set up in a cafeteria can become the source of customer attraction to the establishment. A corner set up in this manner, with due regard to the principles of hygiene is also attractive and the dish is made up on demand. This is a classic example of using favourite dishes on menus to increase acceptability and demand for other items, served in the cafeteria.



Fig. 17.9 *Chaat corner forming part of a larger food service establishment*

Menu planning is thus an art involving knowledge, thought, insight, creativity and initiative, which with practice can become a very satisfying and profitable activity.

Chapter 18

Food Production

Food production, whether for five persons or fifty, is basically the same in terms of the food quality desired by the consumer. Also, the principles underlying the methods used for preparing and serving foods in large quantities remain unchanged. The difference lies in the larger volumes of food materials which have to be handled, combined, cooked, dished out and served imaginatively within a set cost structure and widely different tastes and requirements.

Food production encompasses the preparation of a large variety of items ranging from appetisers to curries, roasts, sandwiches, salads, vegetables and beverages. For each type of item, certain skills are needed and different methods of processing are required to produce different effects.

Any production activity should therefore be viewed as a system, conditioned by its environment, and only capable of being improved if all the factors making up the system are taken into account. These provide the frame work for work organisation, resources required, methods of staff motivation, planning and control of all activities interacting in the organisation. It has to be realized that altering even one element of the framework, will have its effect on other parts of the system. The approach should therefore be to look at food production as a whole system to improve production efficiency.

FOOD PRODUCTION SYSTEMS

Food can be produced in quantity through a number of different ways, varying with the policy, size and type of catering establishment. There are basically eight types of food production systems:

- (a) Conventional
- (b) Convenience
- (c) Ready food system
- (d) Cook chill system
- (e) Cryogenic chill system
- (f) Cook freeze
- (g) Vending system
- (h) Contract catering system.

Conventional Food System

In this system food is produced totally from raw ingredients processed on the premises prior to service. Most small catering establishments and institutional kitchens follow this system in India. In this system all fresh food is ordered in a manner that it is delivered directly to the kitchens, or stored only for a day or two in refrigerated storage (depending on the volume). So relatively less storage space is required for food, than in other systems. The food is prepared from scratch, as it passes through the production cycle, and the system is therefore also referred to as the traditional system.

Convenience System

In this system of food production some of the food and ingredients used are bought pre-prepared or preportioned from the markets. Some of the items like soups, noodles, marinated chicken, tandoori items, require only finishing at the time of service, while others may be completely ready to serve not requiring processing at all. The latter include ice-creams, sauces, salad dressing, fruit yoghurts and sweets.

This system requires less preparation equipment, space, energy and even fewer employees. But the ready foods purchased are costlier and require expensive cold and freezer storage facilities, with much more storage space than a conventional food system. The convenience system is used mostly by large hostels and multi-outlet food preparation centres.

The food processing industry today, offers such a great variety in convenience foods, that a lot of time and effort are saved for the caterer. Some examples are ready food mixes, spices for particular dishes such as chicken, pau bhaji, chana, meat and other *masalas*, canned vegetables and fruits, meats, fish, beans, soups, pastas, and others in the frozen state, as such or in prepared forms. Advances in equipment and packaging technology have made it possible to buy restructured

high protein foods prepared from soyabean for the vegetarian customer, special types of potassium salts for hearts patients and sweetners for the weight conscious and diabetics. All these can help the caterer to meet the varied special needs of customers.

Ready Food System

In this, the production of food is done continuously everyday, with no peaks and troughs of activity in production centres. The system involves preparation of food into ready portions of individual food items or cooked dishes, which are then sealed and chilled, frozen and stored for use as and when required. Today, ready Indian dishes like *chana* curry, *matter paneer*, *pulao*, *sambar* rice, Jaipur vegetables, Kashmir spinach and others representing the specialties of different regions are now marketed in retort pouches, ready to be reheated, opened and served, on demand. This is a welcome development for use in catering involving night shifts, or irregular duty hours as in hospitals where an emergency operation may require night-long work of staff who need to replenish their energies.

The retort pouch products developed at the Central Food Technological Research Institute (CFTRI) Mysore, are now marketed under the brands of *MTR* and *Tasty Bite*.

Retort pouches are flexible packages made from multi-layer plastic films with or without aluminium foil as one of the layers. The plastics are heat resistant making them suitable for processing in retorts at 121 °C, as in the case of thermal puncture resistant, withstanding the rigors of handling. They can be stored without refrigeration, the contents poured onto a plate or dish and microwaved before serving.

The development of the Ready Food System in India is also a boon to the airline and railway catering services who can supply extra ready dishes if required by travellers when on delayed schedules. For the housewife and working woman who has to look after family meals but has less and less time and energy to prepare them from scratch, it is a welcome development for use in home entertainment.

The ready system works on the lines of a factory production system where foods are prepared, packed, freezer stored and transported to the points of use. It also involves additional expenses on cold and freezer storage and transportation. The issues of food also, have to be planned and coordinated very carefully because any food removed from freezer storage has to be used up and cannot be restored once thawed. In this system the food production shifts away from the service points. The greatest advantages of the system are that the quality and

costs can be better controlled, and excessive handling of food at the point of use is prevented. This is possible because, only finishing kitchens are required at the points of service, which is therefore smaller, fast and safe.

Convenience and ready food systems are now extensively used along with satellite finishing kitchens at service points as in the case of fast food franchisee outlets such as McDonalds, Pizza Hut, Nirulas and so on. Though the latter have their on central production or base kitchens which feed the satellite establishments in various regions, the former depend on ready baked bases for pizzas, buns for burgers etc. from bakeries which act as the suppliers, and are often unrelated to the parent company.

Whatever system is adopted in an establishment, the basic process of food production remains the same. Food and ingredients have to be bought and then used for preparing the different dishes directly for service, or chilled and frozen for future use. The difference lies only in the location of the systems vis-à-vis the service points.

Cook Chill System

Cook-chill systems involve conventional cooking on a factory scale in central food production kitchens and then portioning of foods, followed by chilling and storing for use when required. These systems have been used in developed countries for more than thirty years now, and were designed for efficiency, food safety, uniformity of standards, and profits.

The cook chill system introduces a logical, well organised routine of meal production that eliminates extra manpower, overtime wages and wastages. At the same time skilled staff waste less time and work sociable hours with operations going smoothly from day to day without the peaks and troughs in production activity that accompany conventional catering systems.

The basic elements of a cook-chill system are:

- Storage of fresh, processed or frozen foods
- Prime cooking equipment
- Chiller
- Packaging
- Regeneration units
- Portable temperature probes
- Distribution packs and equipment

All the listed activities of the system are so arranged as to ensure a smooth workflow. Many manufacturers install complete systems today for caterers who

wish to adopt this system of food production, although careful consideration needs to be given to the process the facilities for storage, temperature control, electricity load, space requirements, costs, usage of the end products and staff training.

Using Cook-chill

Some recommendations for using cook chill system are:

- There should be a maximum of 30 minutes elapsing between cooking completely and portioning before chilling.
- Blast chilling should take only 90 minutes to bring food to the right temperature.
- Food should be stored at 3°C–5°C and not higher.
- Store for maximum of 3–5 days.
- If the temperature exceeds 5°C in storage the food should be consumed within 12 hours, and if the temperature touches 10°C irrespective of the duration, the food should be discarded.
- When removed from storage for service it should be reheated to at least 70°C within 15 minutes.
- Serve within 15–20 minutes.

Only equipment that can cope with the stringent hygiene requirements should be installed. The advantages of chilling versus freezing are that:

- Starches in the foods do not collapse
- Helps to preserve colour, texture and nutrition in foods
- The chef can cook conventionally without using thick freezer-stable sauces although traditional recipes may require slight modification to suit the system.

When purchasing a cook chiller the electronic time and temperature controls should be checked in the kitchen production and storage environments before installation. Other features to look for is modular trays of stainless steel for easy cleanability and stacking when not in use. The chiller should be provided with reversible doors and a frontal ventilation panel to allow the equipment to be placed close to a wall and in line with other equipment being used in the kitchen. The chiller being the most important equipment it should be selected with care.

Cryogenic Chill Systems

Cryogenic liquids are substances used to produce low temperatures through freezing mixtures. In the food industry nitrogen (N_2) and carbon dioxide (CO_2) gases produce an inert atmosphere around the food product, when allowed to expand as a contact refrigerant. These have been used to chill foods for many decades in batch and continuous processes. To the caterer, chilled foods have become synonymous with cook-chill. The CO_2 is supplied in high pressure cylinders or pressurized tanks from where it is released and expands to produce CO_2 snow at a temperature of $-78^\circ C$. The solid CO_2 then sublimates to a gas, the latent heat of sublimation providing the refrigerant effect. Nitrogen under pressure has a temperature of $-195.8^\circ C$. Carbondioxide is usually used as snow or pellets for chilling meats prior to processing and for maintaining chill temperatures during distribution between $0^\circ C-3^\circ C$. For chilling of prepared meals N_2 is used.

Cook Freezer Systems

The cool freeze system involves the production of foods as for *cook chill* processes. The introduction of instant quick freezing (IQF) technology has enabled large quantities of food items to be prepared and frozen quickly to retain their flavour, taste and other qualities including nutrition. IQF systems have made it possible to capture the fresheners of fish and sea food, meat and poultry, ice-creams and dairy products, fruits and vegetables at $-40^\circ C$. The food systems can handle from 200–2500 kg of food per hour.

The caterer however has to ensure that when frozen foods are purchased they are at -3 to $-20^\circ C$ depending on the item. There should also be available freezer storages for the quantities purchased. Transportation vans should be maintained at below zero temperatures.

Vending Systems

The concept of vending is not new to India or any other country. The difference lies in the manner in which it is carried out. In India, vending started as a single person entrepreneurial venture by unemployed or illiterate who could see no other avenues for making their ends meet. People would make an item that was popular say *chaat* and carry it in baskets to a street corner or a pavement, outside a theatre and sell their wares in exchange for a price which they thought people would pay, for a predetermined portion. Other items vended were snack items, desserts, sweets, vegetables, fruits and so on. They were happy to prepare

fresh everyday and sell the lot by the evening and go home, feeling employed. Consumers too, preferred to buy hot snacks like *samosa*, *idli*, *dosa*, *paratha* or *tikki* at bus stations with a hot cup of tea, after a days work, rather than sit at a coffee shop or cafe for the same thing which costed them more.

Gradually, the concept of vending changed from vendors on foot, travelling long hours from door to door, to those carrying wares on carts to cycle driven vending and the 4-wheel mobile vending of today. With time, vendors became aware of hygiene because customers demanded it and the same food items began to be artistically displayed in glass cases to attract the customer. It was the practice to light an incense stick or *dhoop* on every food vending cart or shelf to ward off the flies.

Today, even though vending in all forms is still seen, it persists largely as an unorganised sector of the catering industry. With spurt in tourism the larger hotels now rent out space to foods which are favourites with a majority of consumers, who would rather eat it in style than be seen standing on the roadside and enjoying the traditionally vended foods. Personal vending services are likely to succeed as long as people would like to eat, fresh food cheaply and served quickly.

With global influences fast food establishments have flooded every city in the country, but in the long run the most important aspect would be the Indian-ness of food items and the price, which will help them to survive. Vending is there to stay, although vending systems are changing from personalised services to automatic mass service in some limited way.

The question then arises, will automated vending catch on in India? The only successful example has been milk vending, and that too is to an extent personalised because people contact is so important to catering success. A few machines may have been installed where necessity guides the decision such as at airports where vendors are prohibited due to safety and security concerns. Tea and coffee is also vended by counter staff and served after dispensing from machines. It is not likely that coin vending would succeed in India as a system of mass use as seen in developed countries. The reasons are many, ranging from population explosion, poverty, illiteracy, unemployment, lack of consistent power supply, traditional eating habits, and a host of others. The automatic vending facility cannot be left unmanned even if used in sports complexes, airports, railway stations, bus stations and the lot. Further, machines do not reach the customer, the vendor does, a facility which is convenient and traditionally used by people in the remotest regions of the country.

Contract Catering System

A contract catering system operates through a contract between the food service provider and the customer. Generally tenders are invited from established food service institutions and the best or lowest tender is accepted that meets the quality requirements and other considerations of the proposed contract.

Contracts for catering systems are basically of two types. *One* in which any host organisation orders one or more types of items to be made available at specified meal times if demanded by the customer. In this case, a hotel or restaurant may offer a permanent place on its premises for serving specialised food items like kebabs, kulfi, chaat, paan, etc. to its customers. The contract may be on space rental only or percentage sales basis or both. The *second* type involves catering contracts for entire catering activity including planning, organisation of the spaces to serving food and drink, waste management encompassing the whole set of activities required to produce and serve food.

Educational or industrial organisations, offices etc. may invite tenders from established catering organisations for providing a canteen or a lunch room service as a regular facility for a fixed period of time say 1 to 3 years as per their policies. In this case only the bare infrastructure is provided and every thing regarding food production and service management is left to the caterer. Sometimes the price of items may have a ceiling or maximum limit, and the percentage net profit which the caterer is allowed to make is also predetermined in the contract. Wherever, a subsidized meal is required to be served to employees, the establishment pays the rest, to the extent of the net profit fixed.

A system of coupons may be built into the contract through which the management can counter check the meals served to employees. This type of catering service facility is fixed at one place of operation. Today, catering service contracts for individual parties are organised anywhere, any time for individual hosts as well. Examples are hiring halls, farm houses for outside catering, garden parties and so on. Established contract caterers now provide a complete party with a mutually, agreed menu and charge on a per head basis. The heads are counted though number of plates used up which are counted and kept on the service counters. Whatever kind of service is desired by the hosts, it is provided complete with staff, equipment and food.

With the development of specialized software and the speed of networking that computers have provided, contract catering firms have emerged to take advantage of the situation and each activity of food production and service has been specialized.

One such outstanding example is that of the Radhakrishna Hospitality Services (RKHS) which have moved from garden catering to new heights of reaching where others did not endeavour to do. The company totally networked centrally, and caters to requirements at remote and adventurous spots such as on high seas, and oil rigs with its food chain.

Employees of Enron, Dhabol power plants have all enjoyed the speciality foods through the RKHS where managers merely concentrated on understanding the logistics of remote site catering.

RKHS has now a tie up with Eurest International, part of a global food giant, the Compass group. It is also tied up with Ticket Restaurant, the food coupon promoters, which are part of the French Accor group. Today, RKHS operations are spread across Burma, Bangladesh, East and West Asia and South Africa, known also for having catered to the U.S. forces in Bosnia. So contract catering systems are less about cooking and more about logistics control and managing the food chain. Supplies were transported five times between six stages

- Raw material source
- Processing plant
- Stockists
- Wholesalers
- Sub distributors
- End users

As a result 40% of total cost was spent on transportation which was time consuming and risky. RKHS therefore invested heavily in infrastructure and set up distribution hubs in the name of *Food Land* to bring about economies of scale, quality and value addition to the food chain. The chain as Mumbai has 40,000 sq ft space with 2400 cubic feet deep freeze, 1200 cu ft. Chiller and 6,700 cu ft dry refrigeration facilities. Food and takes care of 90% of supplies to the sites from three hubs. It is Food land a major supplier to the hospitality and food service industry.

The distribution centres monitor the quality of food. Procurement division looks at the best quality and price for purchasing supplies. The company has a fleet of refrigerated buses with chillers and dry storage. The logistics is controlled through an ERP system linking up distribution centres with RKHS sites. An integrated software has also been developed to empower staff at site to take decisions, place orders and soon. Today, food service at RKHS sites are comparable to the best in the world whether these sites represent construction sites or posh city environments.

Raju Shete¹ has built up a specialist food service operation with sophisticated logistics management. Figure 18.1 gives a glimpse of the food production and service set up at the Dhabol Power plant sites.



Fig. 18.1 *Food production and service at the Dhabol power plant site¹*

In fast food services the convenience ready food and vending systems are used to a large extent. Some large hotels may have their own ready food systems, but a large scale cookchill or freeze system is not likely to catch on in India, because of a number of reasons.

- (i) There is a large variation in the methods of cooking and using food items and ingredients throughout the country, and many of the dishes do not lend themselves to standardisation.

1. Shete. R. Top of the food chain. *The Economic Times*, 28, May–3 June 1999.

- (ii) The feeding in hospitals and other institutions is not the total responsibility of professional caterers and managers, who can make decisions about the food service systems.
- (iii) Ready food systems require large investments and depend heavily on electricity for food preparation and storage, the supply of which is erratic all over the country.
- (iv) A large percentage of the population (80%) in the country is still rural and people are looking for cheap foods with high satiety value, not expensive foods with standardisation.

Therefore in considering which food system to use an establishment has to think of the cost of production and the price which people will be willing to pay.

FOOD PRODUCTION PROCESS

The process of food production involves a number of interdependent activities, including collecting the ingredients, weighing and measuring them according to standard recipes, preparing the different foods to make them ready for cooking, cooking, dishing out for service and clearing up in readiness for the next cycle of production.

Collecting Ingredients

In large quantity food preparation, collection of ingredients is done on the day previous to preparation. This is because some items have to be collected from the main stores, while others are delivered directly to the kitchen such as milk and milk products, fresh fruits and vegetables. Timely collection also enables early preparation next morning. This helps to start off the next day without wasting time, in addition to distributing work evenly throughout the day. Further, in the event of a cook or assistant being absent the next day, the work goes on as per plan, making it easier for others to handle the jobs without panicking.

Weighing and Measuring

In order to reproduce a popular dish each time it is desired by a customer, and to maintain standards of quality, it is important to weigh and measure ingredients accurately. In addition, the method of combining these ingredients using the desired methods of cooking at the right temperatures and for suitable periods of time, are essential for consistency. In other words, standard recipes are necessary for producing food in large quantities. Figure 18.2 is a sample of standard recipe for pea delight.

Preparation of Foods

All foods have to be prepared to some extent before they can be used immediately, stored, cooked, or served. The process of preparation generally involves activities like peeling, scraping, paring, cutting, grating, grinding, washing, sprouting, mixing serving and so on.

Pea Delight

Standard Recipe Catalogue No.

Portions: 50

Preparation time: 30 mins

Cooking time: 20 mins

Ingredients

Shelled green peas	5 kg
Onions	500 g
Garlic	25 g
Ginger	25 g
Oil	150 g
<i>Spices:</i> Turmeric	5 g
Garam masala	25 g
Cumin powder	10 g
Salt	50 g

Garnish

Tomatoes	250 g
Green Coriander	2 bunches
Green Chillies	15 g
<i>For mint Chutney:</i>	4 bunches
Mint	
Tamarind (Soaked)	50 g
Green Chillies	25 g
Onion	350 g
Salt	20 g
Sugar	5 g

Methods

For Chutney

1. Remove mint leaves from stem and wash thoroughly.
2. Peel onions, wash and chop coarsely.
3. Grind the ingredients together to a fine paste and keep aside.

To Serve

Dish out into holding equipment garnish and keep ready to serve hot with the meal. Makes a good accompaniment to poorhouse, paranthas, naan and other breads.

For Peas

1. Wash and drain peas (if frozen may be used as such).
2. Peel wash and chop onions, garlic and ginger finely.
3. Heat oil in pan and brown onions garlic and ginger well.
4. Add dry ground spices and fry for 20 minutes.

For Garnish

7. Wash green coriander leaves and chop fine.
8. Wash green chillies with stem and split in halves.
9. Wash tomatoes and cut into wedges.
10. Garnish the minty peas with green coriander, chillies and tomato wedges.

(Contd.)

5. Add the peas, fry into spiced mixture, add salt and let it cool, cover on slow fire till peas are tender.	<i>Variation</i> 1. Garnish* may be changed to provide different flavours.
6. Mix the prepared chutney with the peas and keep hot.	<i>Some suggestions</i> * Chipped potatoes and onion rings. * Lemon and potato slices. * Tomato slice and onion rings. * Ginger julliene.

Fig. 18.2 Standard recipe for pea delight

Since catering staff do not all have the same literacy or conceptual skills a standardised recipe should provide as much information as required. Some suggestions are:

- Name of food item and file code or catalogue number.
- Total quantity, size and number of portions obtained on cooking.
- Ingredients by weight, measure or count as applicable.
- Detailed method of pre-preparation, cooking and finishing for service.
- Exact temperatures and timing for storing prepared or partly prepared items and for cooking.
- Any service information such as panning and garnishing for individual portions or for holding hot during service.
- Cost information
- Quality expected
- Total time for producing the recipe.

Names of food items should be brief, yet descriptive and immediately recognizable. Different colour cards for each item may be used to demarcate a recipe for main dish, side dish, salad accompaniments dessert, and so on. Stars on cards can indicate customers favourite dishes.

A standard recipe file acts as a very useful tool not only in menu planning but also in evaluating the popularity and profitability of a particular dish, meal or event.

Pre-preparation

Pre-preparation deals with methods of preparing different foods prior to cooking, as well as forms in which they can be prepared to offer variety in textures.

Pre-preparation is an essential step to food production especially when large quantities are involved. Imagine a single item such as the preparation of 100 vegetable cutlets or 50 portions. What would happen if a customer has to wait for the potatoes to boil, vegetables to be grated and mixture then prepared for frying before serving. It is just not feasible for the establishment nor acceptable to the customer.

What pre-preparation then, could be done so as to fry out cutlets quickly for customers on demand? Let us try and list the steps that could be completed in advance to make this possible.

- The potatoes could be boiled, peeled, mashed and kept aside covered in a refrigerator or cold room.
- Vegetables could be grated or chopped finely and kept ready for mixing just before tea time.
- The bread crumbs could be made ready fresh or dry as required.
- All accompaniments like chutneys would be refrigerated completely ready to serve.

Just before service time the vegetables and potatoes would be brought out of the refrigerator to room temperature, mixed with the vegetables binding agent, salt and the spices, then shaped into cutlets.

While oil is heated for frying, the cutlets would be coated, crumbed and placed in chill room, ready for frying on demand and serve with already prepared sauce or chutney brought to room temperature.

Preparation Techniques: Whatever methods of food production are used there are certain techniques which can be developed through knowledge and experience to help in utilizing available resources more effectively and saving staff time and energy as well as reducing customer waiting time. Techniques are unlimited and the numbers can be extended according to the activity requirements and needs of an individual establishment. Some pre-preparations techniques are briefly enumerated and described.

- Combining similar work
- Using right equipment
- Correct fuel use
- Standardizing portions
- Time optimization

Combining similar work

- When food is prepared, even one item such as blanched tomatoes may be required for tomato onion salad, stuffed tomato, gravies, soups, grills and so on depending on the menu. If all the tomatoes are blanched, cut or chopped by the same people it can save time, energy, effort of staff. This enables all the tomatoes required for the day to be processed at one work centre, and passed on, ready for use to other centres instead of 3 or 4 different people in separate areas cutting, chopping, slicing and handling tomatoes in smaller batches leaving more cleaning and washing up to be done as well.

Furthermore, when tomatoes are supplied in large quantities, they cannot all be of the same size, shape, firmness or degree of ripeness. So if one centre is handling them all, the sizes required for a particular dish can be separated out and used, misshapen ones can be used for soups and gravies while firm red ones used for salads and grills. Still others can be stored at room temperature for ripening.

Such techniques used for other ingredients also can optimize resource use.

Using right equipment

- Using the right equipment for a job, such as a sharp heavy knife for cutting on a chopping board with rhythmic movements, for efficiency. This is a safe and quicker method rather than holding each piece of vegetable in hand and manipulating the knife for cutting.
- Peeling is smoother and faster with peeler than with a knife.
- Using egg and tomato slicers gives even slices, and they are quick to use.
- Gadgets are available which can be used to shape freshly boiled eggs (while they are still hot) into a square shape, for even square slices to add variety in food presentation.
- Kneading machines or dough hook attachment fixed to a kitchen machine gives quick, even results, and is safe and easy to operate.
- Peeling and slicing machines too can do the job quicker and provide a clean working environment with better portion yields.
- Use of power equipment and automation reduces fatigue and anxiety to a minimum.
- Using modular equipment reduces dish washing load as well as costs of detergents, energy and time.

- Using modular equipment which can fit into the refrigerator for storage, into the oven for cooking and the bainmarie for holding prior to service. This not only saves time but also decreases the volume of dishwashing, reducing both effort and the expense on detergents.

In short, selecting the right equipment for a particular use and developing ways of using both equipment and foods effectively are the basis of efficiency when dealing with large quantity food production.

Correct fuel use

- Using the heat of “just switched off” ovens or hot plates to dry off bread ends for crumbs or warm service plates and dishes.
- Planning menus to contain dishes which require different temperatures for preparation so that they can be placed on different shelves of the same oven. This is a time and saving technique for meal preparation, because, the topmost shelf has the highest temperature (especially in non-convection ovens), while the lowermost shelf has the lowest temperature. This technique also helps to utilise the equipment optimally.
- Placing dishes which require different methods of cooking in one meal so that when one dish is being cooked in the oven, another is done on the cooking range on the top of the oven. While that is being done, the accompaniments can be prepared and so on.

Standardizing portions

- For dividing dough for 100 portions, the dough can be rolled into a long even cylinder, and cut rhythmically into one inch portions ensuring even sizes. These can then be made into balls for chapatti or poori rolling or putting through a chapatti press, ready for cooking.
- Any mixture can be portioned to exact size using a scoop or a selected ladle size and then shaped as desired.

Time Optimization

- Fresh spices like ginger onion and garlic which require a lot of time in peeling can be hand peeled by staff when they are relatively free, and the same can be refrigerated or kept frozen in lots that are required at one time. Alternatively they could be bottled in white vinegar and stored at room temperature, to use as and when required. The spices can also be ground to a paste ready for use and refrigerated till required.
- To make cutlets in large quantity, they can be portioned shaped, coated, breaded and kept ready for frying on demand.

This list of techniques can be extended according to the activities and needs of individual establishments. A few examples of analysed activities focusing on usually time-consuming tasks show the advantages of using certain techniques, in terms of utilising materials, time and effort for greater efficiency. The results of some of these activities have been colated in Tables 18.1 to 18.4.

Table 18.1 *Preparing 10 kg potatoes for chips*

<i>Technique</i>	<i>StaffNos.</i>	<i>Time Taken</i>	<i>Product Quality</i>
1. Using knife for peeling, removing eyes and chipping	4	1 hour	Uneven surface and thickness of chips
2. Using hand peelers, removing eyes alongside with the point of the peeler and using hand chipper.	2	1 hour	Smoother surface and more even thickness.
3. Electric peeling machine, removing eyes with knife or hand peeler point, Chipping by machine	1	40 minutes	Smooth even chips, better in colour because less exposure to air and therefore less browning

The observations in Table 18.1 reveal that using the third technique reduces time of preparation as well as the number of staff employed to do the job. Besides, one and a half times more potatoes can be chipped in one hour using the third techniques.

Table 18.2 shows that the number of people involved in the activity (human effort) remains the same because the steps are basically al the same in the three techniques employed. The only variation is the final step, that is, pureeing the steamed spinach. Thus, even changing one variable results in a time reduction of 40 and 60 per cent respectively. Further variations can be made in the method of steaming to improve efficiency even more according to the needs of individual establishments.

Table 18.2 *Preparing 10 kg spinach for puree*

<i>Technique</i>	<i>Staff Nos.</i>	<i>Time Taken</i>	<i>Product Quality</i>
1. Traditional Sorting our damaged leaves —Trimming stems —Washing 3–4 times in plenty of water and draining —Chopping with knife —Steaming —Pureeing on grinding stone	2	2½ hours	Fine puree, brownish green in colour because of the grinding stones.
2. All the steps in (1) but mashing with mechanical masher	2	1½ hours	Slightly grainy and stringy texture Good colour.
3. All steps as in (1) But using electric blender	2	1 hour	Very smooth puree. Good colour.

Use of electrical blender reduces time taken for preparing the puree. The smoothness can be controlled as desired by the reducing the blade speed and number of rotations. The colour is good although there is no reduction of staff, they have more time for other jobs. The time can be further reduced if the steps of chopping the greens is eliminated. This can easily be done if the cleaned leaves are placed in a uncovered hot pan and stirred, occasionally till they leave the water present in the leaves. This is stopped when the green colour required is reached and partially covered for some time. In most cases the water dries up or it can be used as the liquid base for stirring the next batch of spinach. The electric blender is then used to get the required texture. If the spinach is not immediately required the liquid can be drained off and the leaves cooled and packed for freezing and used on demand.

Table 18.3 Illustrates two techniques for rolling pooris and compares the effect on performance and product quality.

Table 18.3 Rolling dough for 20 pooris

<i>Technique</i>	<i>Staff Nos.</i>	<i>Time Taken</i>	<i>Product Quality</i>
1. Traditional: —Cutting dough into 200 equal portions. —Making each portion into a ball. —Rolling each ball into rounds. —Heating oil in a 'kadai' and deep frying two poories at a time	2	2½ hours	The evenness of rolling depends on the experience and practice of the staff on the job. Some poories may not bloat fully due to uneven rolling.
2. First two steps same as in (1) —Rolling each ball in a poori maker by pressing between plants —Heating oil and trying on demand	2	1 hour	Evenly rolled All poories expected to bloat fully.

By varying the method of rolling the time saved is almost 33 per cent. The technique can be further modified by part frying the product and draining off the fat or oil, keeping the poories aside to finish on demand. This helps to cope with the peak hours in a food service and also prevents the dough from fermenting and becoming slack and difficult to roll out if not used up fast enough. This is particularly a problem in tropical countries where temperatures rise rapidly and vary appreciably from one part of the day to the other, being highest at lunch time.

Another important cooking method used in India is roasting of different foods. Table 18.4 compares the efficiency of these methods of roasting brinjals in quantity.

The fear that operative staff have about machines replacing them is a proved misconception as the table shows. Since time is saved the staff time released can be used for other jobs with greater efficiency, besides retaining maximum nutritional value.

Table 18.4 *Roasting 5 kg brinjal for the preparation of 'Bhartha'*

<i>Technique</i>	<i>Staff Nos.</i>	<i>Time Taken</i>	<i>Product Quality</i>
1. Traditional: —Washing and wiping dry —Smearing with oil and keeping in spit fire for roasting.	1	1 hours	Irregular Browning but good colour and flavour.
2. Same as (1) except roasting 4–6 at a time under a grill.	1	40 minutes	Frequent turning of brinjal required for even browning, flavour good.
3. All steps as in (1) except roasted all together in a greased tray in a hot oven.	1	30 minutes	Even browning, good flavour and taste. Turning only required once.
4. Microwave Cooking	1	20 minutes	Good flavour, on preparation, softer in texture, but no wastage as peels are soft and used in the cooking. The dish also becomes higher in fibre content.

Tables 18.1 to 18.4 illustrate that not only the use of proper equipment but also creativity and planning in every activity of kitchen production are necessary to maximise output and take care of colour, flavour and other characteristics which make food acceptable.

More and more techniques can be developed with ones own experience as well as that of others in the trade.

The list of techniques can be with experience as staff use their creative instincts and talents to make work more interesting, cause less fatigue and be time saving too. Some of the techniques developed for the different types of foods have been discussed as follows:

Meats: The form in which meat may be prepared for cooking varies with the cut and the type of meat, such as top round, rib, leg and shoulder of pork, mutton, beef, etc. and the dish into which it is finally to be transformed for service, such as curries, kebabs, cutlets, roasts, tandoori, fritters, mince, pate,



Chopping vegetables

Salad making

Batter mixing

Plate 18.1 *Some pre-preparation techniques*



Dough making



Shaping dough



Chapati making

Plate 18.1(Contd.)

Some pre-preparation techniques

and so on. Meats may be cut into various sized pieces to suit the dish. For curries 100 g × 4 pieces is sufficient for a portion with or without bone. One-inch cubes are used for boti kebabs, marinated overnight under refrigeration to be used the next day. Mince is steamed, spiced, bound, shaped into cutlets balls or seekhs and used for frying and service immediately or stored for finishing on demand. Large joints may be coated with oil and stored under refrigeration for roasting the next day, rolled and boned meat may also be similarly treated. Chops may be trimmed, coated and prepared for frying in advance to be finished on demand. Some preparation techniques are presented in Plate 18.1.

Poultry: Pre-preparation consists of skinning and or cutting dressed, drawn birds into portions. Chicken, generally, are cut into six portions (two legs or drumsticks, two thigh portions, two breast portions, but vary according to the dish for which they are being prepared. For tandoori or roast chicken, a full bird cleaned and drawn may be refrigerated, or four portions may be made (two leg-cum-thigh portions, plus two breast portions). These may then be marinated and kept ready in the refrigerator overnight to be roasted on demand. Whole birds when used for roasting can be portioned after cooking—the process is generally known as *carving*. Birds may be deboned for cutlets, fritters, or minced for making fingers or meat balls, in which case the pre-preparations are generally as for meat dishes. In case of meat, or chicken balls, these may be made completely or partially ready and frozen in quantities required at one time. The gravy may then be made fresh, boiled and the balls immersed in it to be held hot for service. Alternatively pasta can be boiled, drained and cooked to be mixed with meat ball curry and served. The balls may be thawed, grilled or microwaved and used as snacks with a dip.

Fish: Fish is generally cleaned drawn and frozen whole, filleted, or coated in bread crumbs and kept ready for frying or grilling. Fish may be prepared into fish fingers, shredded for fritters and cutlets or cut into small pieces for curried preparations. Other sea foods may be similarly treated to prepare them for finishing when required. Fish is available in a number of processed forms, processing industries being established on the sea coasts or in automated floating factories. This is because fish gets easily spoiled if not processed immediately to maintain its qualities. It is available as canned, dehydrated, smoked, frozen.

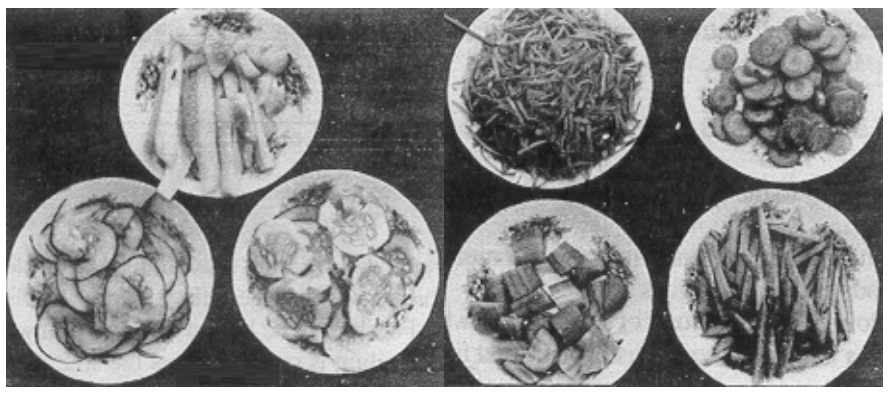
What an establishment wishes to use depends largely on the menu and the frequency with which fresh fish is demanded by customers as also its availability. For example, establishments situated on the coastline have no reason to use processed forms when fresh fish and other sea food is available in abundance.

Vegetables: Vegetables may be prepared in a number of forms depending on the end use to which they are put and their contribution to the whole meal. For instance, when vegetables form the main dish of a menu, they may be prepared whole, plain, or stuffed, as required. As side dishes, they may be chopped into various shapes and sizes, depending on the texture and consistency of the main dish which they are accompanying. The preparation of vegetables may be conveniently dealt with under three headings, namely leafy vegetables, root vegetables and other vegetables.

Leafy Vegetables: These are generally prepared on the same day as the meal service, since they contain a high proportion of moisture, and easily shrivel up when prepared. Quite a few green vegetables are used as herbs and garnishes, and in the preparation of sauces and chutneys. Some are used as side dishes in a menu, or even as an ingredient in the preparation of main dishes. For example, spinach may be ground and added to dough for making spinach chappati, or added to pulses, etc. Vegetables may also be prepared as main dishes, or served along with meat. In large food service establishments, leafy vegetables, especially the dark green ones, may be lightly steamed, cooled, packed, and frozen for use when required. This is a very handy way of preserving their colour and flavour, instead of allowing them to shrivel up or brown due to enzymatic activity. It is not always possible in large scale food production to receive deliveries of leafy vegetables on the same day as they are required and therefore, all preparation methods must aim at maintaining their quality at the optimum level.

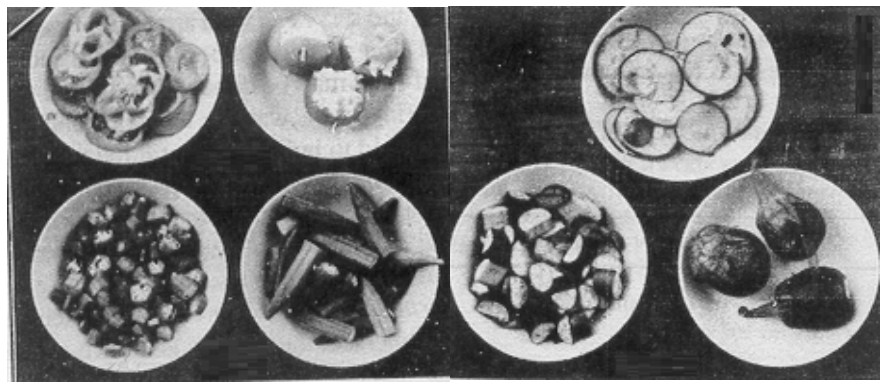
Some green vegetables act only as flavouring agents, and are therefore used as garnishes, such as mint, parsley, green coriander, etc. They may, however, be used as ingredients in food preparation such as in mint raita, chutney, pulao, chappati and so on. Green garnishes are best washed, placed on a clean cloth, and the cloth twisted to wring out all adhering moisture. The leaves are then finely chopped, packed in polythene bags, frozen and then used as garnishes over dished out food, or for incorporations in any dish.

Root Vegetables: As the name indicates, vegetables which mature under the soil fall in this category of vegetables and are more hardy than other vegetables. Some commonly used root vegetables are potatoes, onions, carrots, garlic, beet-root, etc. Since these vegetables are hardy they can withstand chopping, peeling, grating, slicing and shaping much better than other vegetables. They also take to mechanical handling more easily and can therefore be prepared for cooking with the help of kitchen machines.



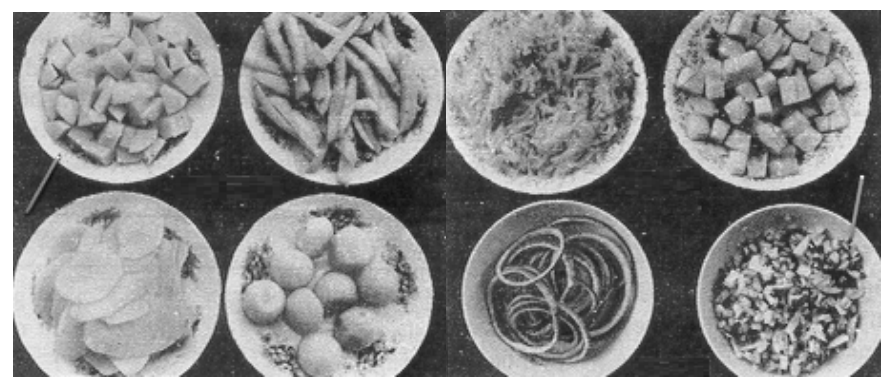
Cucumber

Carrots



Tomato and Lady's Finger

Brinjal



Potatoes

Cheese and Onions

Plate 18.2

Vegetables prepared in different forms for cooking and service

Other Vegetables: This group includes all other vegetables which do not come under the first two categories. Some examples are stem vegetables like lotus, banana and rhubarb stalks; gourds such as green, ridge and snake gourds; pumpkin, courgettes, brinjals (aubergines), beans, cucumber, drumsticks, mango green, tomato and flowers of plants like water lilly, banana flowers lady's finger and salad vegetables. The list can be exhaustive as different plants and their parts are grown and used as food in different parts of the world.

The most succulent vegetables can be prepared by just peeling and cutting them into attractive sized pieces, scooping them out and then cooking and serving them as stuffed vegetables. Others may be cut into different shapes for making decorative salads or garnishes. Figure 18.4 shows some commonly used vegetables, and the form in which they can be prepared for cooking and service.

Cooking Techniques

The process of subjecting foods to the action of heat is termed as cooking. Once the food items have been prepared, they need to be put together or combined to form a dish which is attractive, aromatic, tasty, and thus enjoyable to serve and eat. Most foods need to be subjected to some process involving the application of heat, in order to make them tender, easy to digest, and safe from microorganisms (Unit 7). Some foods need not be cooked if the desired effect required is crispness, as in salad making, or if they are to be used as accompaniments or garnishes for main dishes.

The manner in which heat is applied to food during cooking determines the type of cooking methods used. The methods developed may be classified under three main heads as shown in Fig. 18.3.

<i>Moist Heat</i>	<i>Dry Heat</i>	<i>Combination Methods</i>
Boiling	Roasting	Braising
Simmering	Grilling and Broiling	
Poaching	Toasting	
Stewing	Banking	
Blanching	Sauteing	
Steaming	Frying	
Pressure Cooking	Microwave Cooking	

Fig. 18.3 *Cooking Methods*

Moist Heat Methods

Boiling: Boiling is cooking foods by just immersing them in water at 100°C and maintaining the water at that temperature till the food is tender. Water is said to be boiling when large bubbles are seen rising constantly to the surface of the liquid and then breaking rapidly. Foods may be boiled in any liquid which is bubbling at the surface such as a stock, milk, juices, syrups, etc. Boiling is rarely used as the sole method of cooking, except to prepare foods for further treatment in meal preparation. The few foods that are cooked by boiling and served as such are potatoes, eggs, sweet potatoes, rice and beetroot. Meats may sometimes be served after cooking in boiling liquid such as in the preparation of stews.

Boiling of food may be done in one of three ways:

- (i) By bringing the water or liquid to bubbling point and then adding the food to be cooked, and allowing the liquid to bubble again till the food is done.
- (ii) By adding the food to water or liquid and heating them together to the boiling point of the liquid and then maintaining that temperature till the food is tender.
- (iii) Bring the food and water to bubbling boil, then reduce heat to maintain simmering temperature, cover and allow to cook till tender.

Boiling as a method of cooking is generally used in combination with simmering and other methods as in the preparation of curries, soups, stews, casseroles and foods cooked in sauces.

Simmering: When foods are cooked at temperatures just below the boiling point of the liquid in which they are immersed, the process is known as simmering. It is a useful method to use when food has to be cooked for a long time to make it tender, as in the case of cheaper cuts of meat used for stews or stock preparation.

Poaching: This involves cooking in the minimum amount of liquid at a temperature just below the boiling point. Foods generally poached are eggs, fruits and fish. For poaching eggs, the addition of a little salt and vinegar to the cooking liquid lowers the temperature of coagulation, cooking eggs quickly and giving the poached egg a clean smooth edge.

Stewing: This is a gentle method of cooking in a pan with a tight fitting lid, using small quantities of liquid, to cover only half the food. The food above the liquid is thus cooked by the steam generated within the pan. The liquid is

brought to the boiling point and then the heat reduced to maintain the cooking at simmering temperature, that is 98°C. Stewing is therefore a slow method taking from 2 to 4 hours depending on the nature and volume of foods being stewed. The method is generally used for cooking cheaper less tender cuts of meat along with some root vegetables and legumes, all put in the same cooking pot and cooked in stock or water. The longer cooking time and the lower temperatures enable tougher meat fibres to become tender. The cooking of meat and vegetables together make the dish attractive and nutritious since no liquid is discarded.

Blanching: In meal preparation it is often necessary only to peel off the skin of fruits, vegetables, nuts, etc. without making the food tender. This is achieved by dipping the food in boiling water for varying periods of time (5 seconds to 2 minutes) depending on the texture of the food to remove the skin or peel without softening the food. Blanching is also done by pouring enough boiling water on the food to immerse it for some time, or subjecting foods to boiling temperatures for short periods and then immediately immersing in cold water kept ready for the purpose. The process causes the skin to become loose and can be peeled off easily. The method helps to maintain a good texture, while improving the colour and flavour of foods. In addition the peels can be easily removed to improve digestibility, eliminate enzyme and microbial activity, and make it safe for consumption in salads, puddings or even to be eaten as a dessert fruit or with cream or ice-cream.

Steaming: As the term indicates, this method requires the food to be cooked in steam generated from vigorously boiling water or liquid in a pan so that the food is completely surrounded by steam, and not in contact with the water or liquid. Steaming is generally done in special equipment designed for the purpose. Small establishments can use double boilers, while larger ones utilise pressure cookers designed to hold 16–20 litres of liquid, and provided with separators for steaming food. For very large establishments, steamers are available which may be simple in design or as pressure steamers for quick cooking of large quantities of food (See Unit 3). This method of cooking is best suited for dishes which need to be served soon after steaming, that is, piping hot. Foods best suited are vegetables, fruits, fish, custards, cereals, and generally those which get tender quickly. The method is ideal for making *idli*, *dhokla* or other fermented products. Steaming equipment is now available which can turn out 100 to 120 portions of steamed food in 10 to 15 minutes.

Establishments use steamers to steam complete stacks of egg in their trays instead of boiling them in water. This enables the efficient use of steamers and

vegetables, rice, too can be cooked at the same time. The traditional method of steaming in India is exemplified in the kitchen of the famous Tirupati temple, where earthenware dishes are used for the cooking and hoards of people take the food as *Prasad* after offering to the deities of the temple. Figure 18.4 shows this cooking arrangement, through a simple way of effectively controlling the heat required for cooking of different foods. Those which have the maximum moisture content are placed nearest to the source of heat, the dry vegetable next, and the rice on the top. The bottom of each vessel is fitted into the neck of the bottom vessel and acts as a lid. This process is repeated as soon as the cooked *Prasad* or meal is emptied out into containers for service, and the kitchen is mopped and cleaned up. No one who goes to Tirupati comes back hungry. The poor and rich are fed alike at meal times and at other times a token *prasad* is given to those who briefly visit the temple. The food is cooked in batches so that it is fresh for service each time.

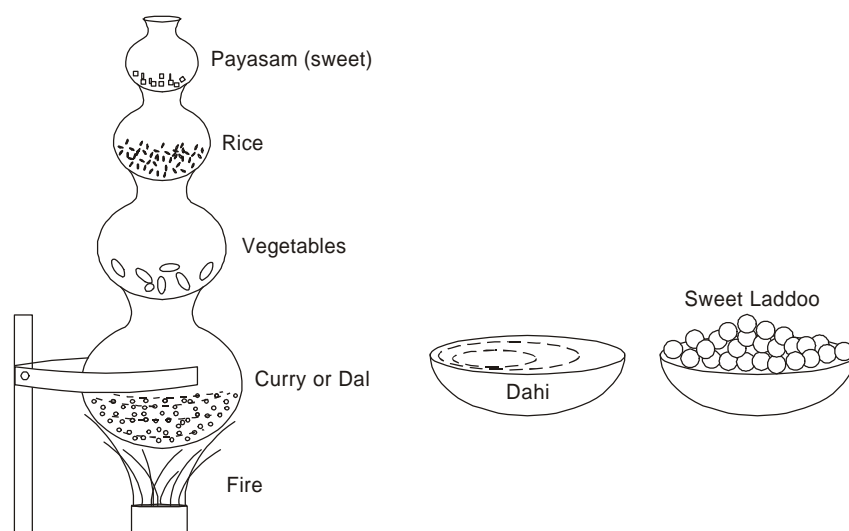


Fig. 18.4 Steaming traditionally in India

Today well designed steamers are available. But production staff need to be trained in the use of any new equipment to improve the efficiency of production.

Steaming has certain definite advantages of making foods more easily digestible, nutritious and full of flavour. This is because it is not necessary to add fat in this process, and the food retains its nutrients better because heating temperatures are constant, cooking time short and leaching minimum. Besides, it is consumed as soon as it is prepared, especially if the food is batch cooked

according to demand. This prevents nutrient losses which would normally take place if the food is held for some time before being served.

Pressure cooking: This is a method of cooking developed on the principle that more heat is generated by steam under pressure than otherwise, and therefore cooking time is greatly reduced. Also, since the steam is not allowed to escape, the volatile flavour compounds remain in the food and the shorter cooking time enhances nutrient retention and palatability. Pressure cooking is best suited to cooking of foods which are required to be moist such as curries, soups, broth and stews. The equipment for pressure cooking varies in its capacity to suit the needs of food services of different types and sizes, and can usually be adjusted for pressures of 5–10–15 lbs per square inch.

Dry Heat Methods

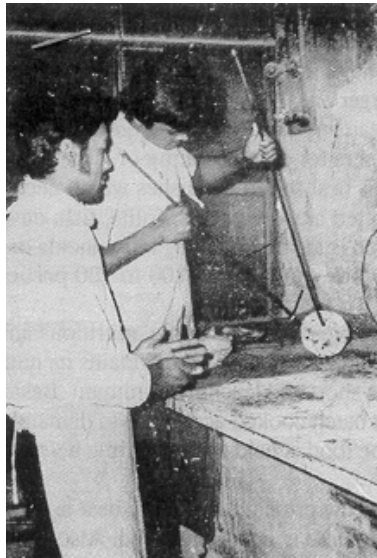
Roasting

This is a method in which the food is brought in contact with direct heat from a flame or any source of radiant heat. The food is periodically coated with fat and the pieces of food, generally meats, are turned over the fire occasionally for even cooking. Roasting may be carried out using three types of equipment because of which the methods have got their names. These are

- Spit roasting
- Oven roasting
- Pan or pot roasting

Spit Roasting

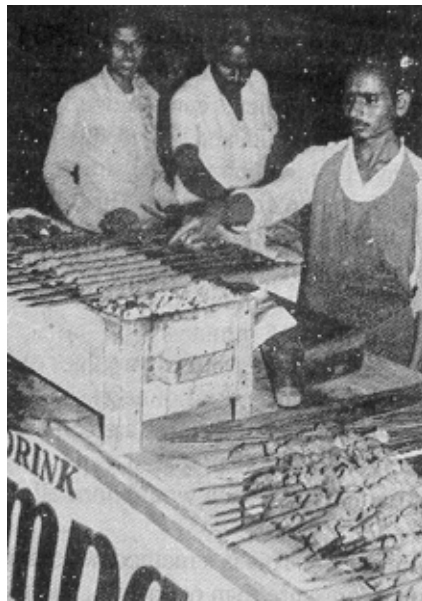
This method uses a deep iron rectangular tub or *spit* containing live coals on which meat pieces, skewed together are placed and rotated at intervals using the wooden or heat proof handles on the skewer. The method of cooking is therefore known as *spit roasting*. *Boti* kebabs are prepared in this manner. For spit roasting, it is advisable to use small pieces of deboned meats to ensure proper and even cooking. The meat cooked in this manner is called *barbecued* meat, and has an even brown colour with a characteristic flavour. It also has high customer appeal because it is served straight from the fire and is fresh, hot and aromatic.



Traditional oven roasting



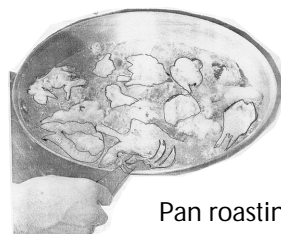
Tandoor



Spit-roasting



Modern oven roasting



Pan roasting

Plate 18.3 *Methods of roasting*

Oven Roasting

This method uses an electric or mud oven known as the *tandoor* even for cooking with dry heat, generally for the roasting of foods. The method is referred to as *oven roasting* (Plate 20.1). This is a common method because of the ease with which a large amount of meat or poultry can be roasted. In this the meat is usually placed on a meshed or slatted shelf inserted in a roasting tray, to allow the meat drippings to fall to the base of the tin during cooking. If the drippings are allowed to touch the base of the meat, charring or burning takes place, or part of the meat gets the flavour of fried meat. The drippings are, however, used to moisten meat from time to time.

In *oven roasting*, usually large joints or full birds are cooked. the meat turns brown and crisp on the surface and remains moist and tender inside. If the top is also required to be moist then birds are best roasted with their skins. Good roasting involves preheating the oven to 425°C first, placing the meat in it, and letting it brown for 5–10 minutes and then reducing the temperature and allowing it to cook till tender. If only one temperature is used, then cooking at a moderate temperature of 350°C to 375°C for a longer period gives a better product than a high temperature for a shorter time. This is because moderate temperatures and longer cooking time ensures complete heat penetration through the food. Constant high temperatures may even lead to over browning or charring and uneven cooking, with greater moisture loss resulting in a dry product. It is good practice to oven-roast joints after browning them first, and then wrapping them in aluminium foil. This method retains moisture and flavours better and leads to even heat penetration and cooking.

Pan or Pot Roasting

In this method roasting is done in a heavy pan usually used when small joints are to be cooked. Enough fat is heated in the pan to cover its base. The meat is then browned in the hot fat by turning it over occasionally to cook it evenly on all sides. It is then lifted out and placed on top of skewers, positioned at the base of the pan to prevent the joints from sticking to the base of the utensil. The meat should only just touch the fat. The pan is then covered with a tight fitting lid, and the meat allowed to cook on a slow fire till tender. Often root vegetables may be prepared and added to the pan before putting the lid and allowed to roast along with the meat. This method is known as *pan or pot roasting*. The principle underlying the process of roasting involves sealing the meat surface through the coagulation of surface proteins brought about by direct radiant heat and high temperature. The sealing prevents further

evaporation of moisture from the inside of the meat, retaining its juices and natural flavour. Besides meat, root vegetables like potatoes and sweet potatoes may be oven or pan roasted. In India, peanuts, popcorn and bengal gram are often roasted in a *kadai* containing sand or salt which are continuously heated over a source of heat. After roasting is complete, the sand or salt are separated by sieving and the nuts and roasted gram vended.

Grilling and Broiling

The terms *grilling* and *broiling* are used synonymously for cooking through application of dry heat. The food is placed on a metal grid directly over the source of heat or on a tray placed under the source of heat. Some equipment is designed so that food comes between electrically heated grill bars or hot plates. Usually tender cuts of meat, poultry or fish are prepared in this way, and browned under grill. Cheese and meat preparations like pizza, cheese toasts, chops, bacon, sausages, tomatoes, capsicums, etc. are also grilled. In fact, this method of cooking has given the name to the dish known as *mixed grill*, which consists of a variety of meats and vegetables grilled and served on a platter with salad and cereal. When food is cooked uncovered on heated metal or a frying pan, the method is often known as *pan-broiling*.

Grilling has also been done with the use of infra-red radiations reducing the cooking time. The equipment used for this purpose is called the '*infra-red grill*'.

Toasting

The term *toasting* is used to describe a process by which bread slices are kept under a grill, or between two heated elements, to brown on both sides and become crisp. This does not imply cooking. Toasters are now available which radiate heat from both sides on the bread at the same time, and can be adjusted to give the required degree of brownness through temperature controls. Automatic models switch off when the preset temperature and brownness is reached, and the toasts pop out of toasters automatically.

Baking

Foods cooked by baking involve the use of an oven or tandoor—equipment in which hot air circulates around the food placed in it. While it is basically a dry heat method of cooking, the action of dry heat is combined with that of steam generated from the food during cooking. Foods baked are generally brown and

crisp on the top, and soft and porous in the centre. Some dishes baked are cakes, breads, puddings, vegetables, meat dishes in sauce, etc.

The principle involved in baking is, that the air inside the oven is heated by a source of heat, either electricity, gas, or wood, as in the tandoor. The oven is insulated to prevent outside temperatures from causing fluctuations in internal temperature of the equipment. In the case of the traditional *tandoor* the insulation is provided by a coating of mud given on the outside and inside of the galvanised iron or brick oven. The temperature of the traditional oven is tested by experience, the indicator being the speed with which water sprinkled on the inside evaporates. If it is too hot further sprinkling is done to reduce the temperature just right for the cooking of specific foods. Once the right temperature is attained, the foods are placed in the hot air currents which pass on their heat to the food through the container, or directly as the case may be. The top of the food gets brown and crisp because of the direct heat on the surface of the food.

The methods of heat transfer involved are radiation from the source of heat to the metal wall at the base of the oven; by conduction from the base to other walls; and by convection through the heated air currents set up in the oven around the food.

Sautéing

This method involves cooking in just enough fat or oil to cover the base of the pan. The food is tossed occasionally or turned over with a spatula to enable all the pieces to come in contact with the oil and get cooked evenly. Sautéing involves lightly tossing the food in heated oil and then covering the pan with a lid, reducing the flame or intensity of the heat applied to the pan, and allowing the food to be cooked till tender in its own steam. The product obtained in cooking by this method is slightly moist, tender but without any liquid or gravy. Foods cooked by sautéing are generally vegetables, used as side dishes in a menu. Sautéing can, however, be well combined with other methods of cooking to produce variety in meals.

Frying

This is a method in which the food to be cooked is immersed fully or partially in hot fat, till it acquires a golden brown colour and a crisp feel. When foods are completely immersed in the fat or oil, the method is known as *deep frying*, while the term *shallow frying* is used when the food is only partially immersed or has only surface contact with the oil or fat.

Foods are generally fried in a *kadai* or in fryers designed for the purpose, and provided with wire nets for immersing the food in the hot fat or oil and then draining out the excess oil from the food after the cooking is completed.

Fried foods have always been favorites with all age groups. Some fried foods are fish and chips, fried chops, kebabs, cutlets, fritters, samosas, and so on. The list is endless because fried foods are crisp, attractive, aromatic, quickly served and microbially safe due to the high temperature at which the cooking is done. In addition to the above characteristics, good quality deep fried foods provide a lot of variety in menus. For example, potatoes can be served as fingers, crisps, chips, fritters, *pakodas*, cutlets and *bondas*. Without these choices available to the caterer and customer, meal production as well as consumption would become a monotonous task.

Fried foods also prove to be cheaper to produce in large quantities, in terms of time, labour and money, because they are quick to cook and can be produced at short notice if pre-preparation is well planned, and the partly prepared portions are stored at the right temperatures for safety. The ordering of ingredients for fried foods becomes more specific in relation to size, type and variety of a food portion required, thus leading to better cost and quality control. For example, when purchasing fish fillets a specific order can be placed such as 100 × 250 g fillets of the specific fish required. In contrast, if a total order of 25 kg fish is placed, it can include pieces of varying sizes leading to inefficient portion control and wastage during frying.

Deep fried foods differ greatly in texture, flavour, appearance and taste. Since each food has special quality characteristics it is important to maintain or enhance them in the process of frying. To do this it is essential to know what deep frying involves and how quality can be affected for better or for worse. The factors involved are:

- (i) Selection of the right frying medium
 - (ii) Knowledge of the right frying temperatures
 - (iii) Use of proper frying techniques
 - (iv) Proper care and selection of frying equipment
 - (v) Microwave Cooking
- (i) *Selection of the right frying medium:* Any fat or oil used for frying should be flavourless so that it does not mask the natural flavour of the food. The smoking point of the frying medium when fresh should not be less than 220°C, and it must contain some antioxidant and stabiliser to prevent its deterioration during storage, and while in use.

- (ii) *Knowledge of the right frying temperatures:* Different foods require different frying temperatures for best results. If higher temperatures are used than necessary, the oil or fat breaks down and discolours the food, making it unacceptable and unpalatable. Table 18.5 gives the recommended temperatures for frying some foods.

Table 18.5 *Deep frying temperatures for some foods*

<i>Food Item</i>	<i>Frying Temperature Recommended (°C)</i>	<i>Remarks</i>
Potatoes	175–180	Time taken will vary according to the size and type of pieces, and whether combined with other ingredients, spices or bread etc.
Seafoods	170–190	From 1–8 minutes depending on the size, form and type of food.
Chicken		
Raw	165	12–15 minutes
Breaded after steaming	176	3–4 minutes
Marinated and breaded	176	4–6 minutes
Cutlets, rings, fingers, etc.	175–180	3–5 minutes
Pakorras, doughnuts, samosas, turnovers, etc.	150–170	1–7 minutes depending on the ingredients, preparation techniques used and the size of the portions.
Vegetables	175–190	1–8 minutes depending on the vegetables.

- (iii) *Use of proper frying techniques:* The proper methods used in frying are vital to the quality of the finished product. If foods have been fried properly there will be minimum absorption of fat or oil by the food, making it look and taste crisp and fresh instead of stale and greasy. Foods which look too greasy indicate that they have been fried at too low a temperature or refried to serve hot. Most foods require to be coated before frying in order to retain moisture and flavour, and seal-in the nutrients. Some coating material that can be used are:

- a mixture of flour and milk
- a batter of flour, milk and eggs
- finely rolled dough as in the case of turnovers and samosas
- egg and vermicelli and
- gram flour batter.

Sweets can also be cooked by the method of frying, such as doughnuts, *gulab-jamuns*, *shahi tukre*. Any method used for frying requires knowledge of the composition of various oils and fats, their smoking points, how best they can be conserved before, while and after cooking and how various foods can be coated to get the most acceptable products. In addition, skill is necessary to prepare the coatings of the right consistencies and composition to suit the natural qualities of the food being fried such as the moisture content of foods, their tenderness, degree of shrinkage or expansion occurring during the process, and to try and enhance them.

- (iv) *Proper care and selection of frying equipment*: Selection of the right size and design of equipment to suit the needs of an establishment, is important especially when a fryer has to be invested on (Unit 3). The size will be determined by the frequency with which fried foods appear on the menu and the volume of frying to be done in one lot.

The cooking of foods by frying involve:

- (a) Very rapid heat transfer from the frying medium to the food.
- (b) Part of the fat combining with cooked food to provide flavour and nutrients.
- (c) The high temperature browns the surface of the food.
- (d) Moisture is lost faster from the surface to provide a firm seal. This keeps the inside of the fried food moist and tender and helps to retain the natural flavour of the food, besides providing a crisp texture.

The skills required in the actual process of frying can be learnt easily with practice if one is made aware of the hazards that can occur from careless handling of fats, oils and hot equipment. The basic skills involve a thorough knowledge of the principles outlined above, and those listed below:

- (a) Knowledge of various oils suitable for frying and their smoking points.
- (b) Correct temperatures for frying of different foods.
- (c) Level of frying medium in the equipment, to prevent splashing of hot oil or fat while frying.
- (d) Heating medium gradually and then increasing temperature to that required for frying.
- (e) Shape and size of foods fried should be same as far as possible, to obtain uniform browning.

- (f) Knowledge of correct quantities to be fried at one time in relation to size of equipment. This also ensures even heat penetration. About one and a half to twice the fat weight can generally be fried in one hour. In a good fryer, the food fat ratio can be 1:5 to 1:8, depending on the food.
- (g) Salting destroys crispness and therefore should preferably be done prior to service.
- (h) Maintenance of frying equipment is important for increasing its efficiency and producing evenly fried and dry products.
- (i) Turning foods while frying them requires skill to prevent splashing of hot oil.
- (j) Knowledge of the qualities of food which make them suitable for frying.
- (k) Proper draining of oil from products after frying.
- (l) Awareness of the hazards, and knowledge of equipment use is necessary to prevent accidents.

The best cooks can face problems in frying. Table 18.6 gives a glimpse of the kinds of problems that can occur with frying if proper knowledge of fats and oils and the different foods to be fried is lacking.

Table 18.6 *Problems in frying*

<i>Problem</i>	<i>Caused by</i>
Excessive fat absorption	Overfilling the fryer with the food to be fried. Fat temperature too low. Too much coating. Denatured fat or oil.
Foaming	Frying high moisture foods continuously in the same fat or oil. Overheating the medium. Not refreshing the medium fast enough. Heating oil too quickly. Frying in copper or brass equipment. Traces of detergents remaining in the equipment after cleaning. Breakdown of fat or oil. Overfilling food in the fryer.

(Contd.)

<i>Problem</i>	<i>Caused by</i>
Smoking	Overheating the oil. Frying high moisture foods. Not changing the oil or fat for long. Contaminated oil or fat. Residue of food which burn or char constantly in the medium.
Darkening	Overheating which chars crumbs settled at the base of the fryer. Contaminated oil or fat. Not refreshing the medium. Continuous heating at high temperature. Frying salted foods or those high in sugar or starch.

- (v) *Microwave Cooking:* This method of cooking involves the use of high frequency electromagnetic waves (microwaves), which penetrate the food and produce frictional heat by setting up vibrations within the food. Special ovens are designed for the purpose. These are fitted with a magnetron so placed as to focus the microwaves on to the food. The two greatest advantages of cooking by this method are quick cooking (within minutes), and the absence of heat in the oven. The latter enables dishes to be removed from the oven with ease and safely without the use of oven gloves. The method is however only suitable for cooking or heating up small portions. It is an excellent method for reheating or finishing individual portions of food on demand, because the method does not brown the food each time it is heated, and hence retains the original colour of the food. In some models of the microwave oven a browning or roasting cycle has been introduced where required in finishing kitchens.

In microwave cooking however, it is important to remember that metals reflect the microwaves, while glass, plastic, paper or china transmit them, to the food. It is therefore necessary to use cooking containers that will transmit the microwaves. Microwavable dishes are freely available on demand.

The usefulness of microwave oven in self-service cafeterias, kiosks, coffee shops and lunchrooms, where people eat at different times and in small groups, cannot be overemphasised. In industrial and hospital canteens where services need to be provided for night staff, the

microwave oven is an asset for heating up meals at odd hours, in required quantities and instantly.

Combination Methods

These methods involve the use of more than one method of cooking. The most commonly used combination method of cooking is *braising*.

Braising: This is a method in which roasting and stewing are combined for cooking. The foods are first browned or pan roasted in little oil or fat to seal off the surface, then half covered with liquid, the pan tightly closed, and the food stewed till tender. Braising is good method, especially for cooking meats, and a lot of Indian curries are prepared this way. Similarly, legumes and pulses may be sauteed in a little fat, and then pressure cooked or steamed. Another commonly used example of a combination method of cooking is the preparation of meat ball curry. In this, mince-meat is mixed with herbs, spices, onions, garlic and bengal gram dal, and pressure cooked till tender. The mixture is then ground to a fine paste, bound together with egg, made into balls and deep fried. Curry is then prepared by browning onions, adding spices, tomato puree and water. The mixture is then brought to a boil, and the meat balls added to it. The temperature is then held just below boiling for a few minutes, and the mixture simmered and held hot for service. It is thus seen that two or more methods may be used together in preparing a dish.

The methods of cooking discussed above require the application of heat to foods, but methods of food preparation involving the removal of heat from foods are also used in food preparation, such as in the case of chilled and frozen dishes like cold soups, desserts, jellies, souffles, moulded salads and ice-creams to mention just a few.

Whatever methods are chosen for cooking food, there are some items which do not retain their quality inspite of the best equipment available. Some examples are boiled rice, pulao, steamed vegetables, poori, chapatti and other Indian breads. These must therefore be cooked in small lots or batches according to demand.

Batch Cooking

Cooking food in batches also helps to avoid leftovers of cooked food especially when the demand cannot be forecasted accurately. Further it helps to cut down on holding time of cooked foods, which if prolonged is detrimental to quality. The rate at which batches of food items leave the kitchen is directly proportional to the rate of customer demand. For example, if a tray of 20 pooris are sent to

the service point at the beginning of lunch time, then the next batch which is kept rolled and ready will be fried out when half the portions are sold out. The same procedure would be followed for other items. By the first one hour of service the rate of demand for a particular dish can be judged. Poori may be in demand every one minute, rice every 10 minutes and snacks every 5 minutes. A constant vigil is necessary, because the problem of numbers in catering establishments has no simple answer, and therefore some overproduction is inevitable if customers don't have to be turned away. This surplus is usually used up for staff meals, but may affect profits if the dish in question is a high costing one. The nearest one can get, is to be vigilant, note the timings when there are peaks, record customer favourites so as not to be caught unawares either with over or under production, and thereby minimize wastage. It is good planning to have some ingredients at hand that can be used in ready form in case of an unprecedented rush that goes beyond meal timings.

TECHNIQUES FOR EFFICIENCY

Besides batch cooking other techniques that can be used for stepping up production efficiency are:

- Plan menus so that items require different cooking temperatures. This will enable the use of all the shelves in a single oven, and lead to savings of time and fuel while optimizing oven use.
- Menu items may be planned which require different methods of cooking so as to enable use of different equipment simultaneously. When one dish is cooking in the oven another can be made on the oven top or in the fryer or griddle plate.
- Select food items with higher edible portion percentage so that more portions are available. Peel thin if it is a must to do so.
- Use power equipment and automation to keep fatigue and anxiety to a minimum.
- Use modular equipment to reduce diswashing load, detergent, effort and time.
- Use heat of just switched off ovens or hot plates to dry off bread for crumbs or warm service plates.
- Use pressure cookers to cut down cooking time by half.

Many more creative techniques can be developed by enterprising staff and management to sustain interest and motivation even in routine jobs.

EFFECT OF PREPARATION AND COOKING METHODS ON THE NUTRITIONAL QUALITY OF FOODS

Having discussed the various methods of cooking, and the techniques that can improve efficiency it would help to briefly outline the effects that they have on the nutritional quality of food.

Moist methods lead to relatively greater losses of nutrients than dry methods of cooking, but some nutrients are stabler than others as far as heat, temperatures and time of cooking are concerned. Proteins, fats and carbohydrates are not lost in day to day cooking of foods, but in vegetables which contain a higher moisture content, water soluble vitamins are lost, being vulnerable to destruction by heat or loss through leaching in the cooking water. This is more so if salt is added to the cooking water and then discarded, because along with water soluble vitamins, the mineral salts of sodium, potassium, and chlorine are also leached out of the food. It is therefore advisable to cook in a minimum amount of water, or to utilise any excess water in soups and gravies. Table 18.7 gives some positive ideas for alternative uses of cooking water or other normally discarded portions of foods which are rich in nutrients.

Table 18.7 *Alternate uses of nutritionally rich food components normally discarded*

<i>Item Prepared</i>	<i>Method of Preparation</i>	<i>Component Discarded</i>	<i>Alternate Use</i>
Cottage cheese	Milk is heated and coagulated with acid (lemon juice, curds, etc.)	Whey	May be used for gravies in which curds and tomato are generally used. Added instead of water to pulse preparations. For making doughs for chappati, naan, poori, bread, etc. In soups and nutritious beverages like 'lassi'.
Green vegetables	Peeling	Green pea shells, beet greens, spinach stalks, carrot leaves, cauliflower leaves	Wash, chop and boil in water, strain, stock and use in soups and gravies.

(Contd.)

<i>Item Prepared</i>	<i>Method of Preparation</i>	<i>Component Discarded</i>	<i>Alternate Use</i>
	Boiling	Water	May be used for cooking Pulaos, mixed vegetables or and curry.
Sandwiches	Trimming edges of slices.	Bread strips	For bread pudding or crumbs. Fried, toasted for use as accompaniments to soups. Dipped in seasoned batter fried and served as snack. Fried and used as a garnish for pulaos, with cutlets, fried chops, etc. Dipped in milk, baked into rusk.
Boiled rice	Boiling in excess water and then straining the water.	Drained water	To thicken cream soups, and gravies. Added to rice puddings and kheers. For grinding while making cereal pastes. Add instead of water when diluting mixtures for fermentation, as in the preparation of idlis, dosas, dhokla, etc. For rehydrating dried legumes and pulses.

Root vegetables do not lose nutrients through leaching to the extent that other vegetables do because they are generally boiled in their skins. Losses due to oxidation and evaporation occur more when vegetables are peeled and cut a long time before cooking. The size of the pieces also determines the degree of loss. the greater the surface area of the food exposed, the greater will be the losses. The cooking time and amount of liquid are important factors in nutrient retention too, and methods of cooking should aim at the shortest possible time and minimum amount of water to use in the process. The best nutrient retention in cooking vegetables is achieved when they are sauteed in a little fat or oil and allowed to steam in their own moisture on a low fire till tender. Spices may be added before the steaming process. Steaming under pressure is the fastest way of cooking food, and an important equipment to have in kitchens is the steamer and pressure cooker.

All foods need to be washed before they are cooked, and some even require soaking for different time periods. Water soluble components do get lost to various extents even during these treatments. It is therefore advisable to wash

food as little as is necessary for cleaning them and utilise the soaking water in the cooking process. More vitamins and minerals are lost through washings than through subsequent cooking of foods.

Studies¹ on repeated washing of rice indicate that thiamine and nicotinic acid are lost to the extent of 40 per cent in washings. In addition, the practice of straining the liquid from boiled rice and refreshing under tap water accounts for further losses. The answer therefore lies in cooking with just enough water (usually double the quantity in the case of rice) that will be completely absorbed by the rice when it is ready. While losses of B group vitamins due to leaching can be controlled by using minimum or measured amounts of water, some losses of heat labile vitamins do occur in the cooking process. Sometimes, when sodium bicarbonate is added to preserve the colour of foods, or for quick softening of pulses and legumes, most of the thiamine gets destroyed. On the other hand, increasing the acidity of foods during cooking by the addition of tamarind, lemon juice, etc. preserves the vitamins. If soda needs to be added, it is good practice to rub the soaked legumes or pulses with the soda after draining the water and keeping it aside then leave the legumes for 20–30 minutes then wash out the soda well a few times after which they can be cooked normally in the drained soaking water. The effect of the soda on texture and cooking time will be the same as when cooking soda is added to the food during cooking, but will help nutrient retention.

The most easily destroyed vitamin during cooking is vitamins C, because it gets easily oxidised, in addition to dissolving in washing and cooking water. The best way to conserve this vitamin is therefore to cook covered for very short periods. The best of course, is to offer the food containing this vitamin in uncooked forms such as ripe fruits, and salad vegetables or use a squeeze of lemon freely on pulse preparations at the table just before eating. The only food whose nutritional quality does not get affected during cooking is egg.

Vitamins A or carotene is relatively stable to heat and therefore cooking by moist methods does not affect these nutrients. Dry heat methods are, however, destructive, especially shallow frying or roasting. The losses are not due so much to the heat applied, as they are to air exposure for long periods. In deep frying, where the exposure to air is less, oxidative losses are reduced.

Any discussion of the effects of cooking on the nutritional qualities of foods would be incomplete without briefly mentioning the methods that can enhance the nutrient quality of foods if followed in food preparation activity. These are

1. *National Institute of Nutrition*, Hyderabad, India

briefly outlined in Table 18.8 and provide a useful guide to enhancing nutritional quality without increasing costs.

Table 18.8 *Enhancing nutritive value of foods*

<i>Methods</i>	<i>Foods Involved</i>	<i>Effect</i>
Germination or Sprouting	Pulses, grains, legumes, edible seeds.	Development of Vitamin C Increase in B-vitamins. Improved biological value of proteins.
Fermentation	Doughs, cereal-pulse mixture, beverages. Milk and its products. Doughs and batters	Enhancement of B-vitamins especially with yeast fermentation. Digestibility also improves with lactic fermentation.
Supplementation	Combination of foods which supplement each other in nutritive value like dishes of cereals and pulses cooked in combinations; or cereals and vegetables; cereals and milk.	Total value of the dish or meal is increased, the nutrients being those added by each of the foods being combined.
Fortification	Processed food products with iodine and potassium, oils butter, margarine, with vitamin D, flours with B vitamins.	Increase in the nutrient which is added to the food at the processing stage.
Enrichment	Processed food products	The nutritive value of the food processed is brought up to the value of the raw food, i.e. those nutrients lost in processing are made up at the end of the process.

Enrichment and fortification is done at the manufacturing level for processed foods like milk products, cereal and pulse products, grains, oils and fats. In fortifying foods the nutrients have to be added according to national policies. Catering establishments have to make their choices according to the quality required or desired for their customers.

Enhancing the nutritive value of foods alone is not enough, it is important to ensure that food preparation methods make the nutrients available for ready absorption through improved digestibility of the foods prepared. For example, a food may contain all the desired nutrients, but if fried in an oil which has

been repeatedly used for frying, the food prepared in it may become toxic and difficult to digest, although when it is served hot it may be acceptable to the unknowing customer.

A knowledge of the beneficial effects of cooking and the characteristics of certain food components is important to successful food production. The benefits are:

- (i) Cooking improves the appearance of many foods and helps to develop flavours in them.
- (ii) Heating destroys pathogenic organisms that may be present, making the food safe for consumption.
- (iii) The digestibility of starchy foods is enhanced through the release of starch and other nutrients from the grains of cereals, making the food more easily accessible to digestive enzymes.
- (iv) Cooking also inhibits undesirable changes from taking in foods by inactivating those enzymes which produce them.
- (v) The process of cooking makes foods like meat tender and much easier to chew, digest and absorb.
- (vi) Some foods contain substances known as anti-nutritional factors which interfere with the utilisation of nutrients by the body. For example, egg white contains a substance called avidin which inactivates the vitamin biotin of egg yolk, if raw egg is eaten. Cooking destroys avidin making the vitamin available to the body. Also some pulses contain enzyme inhibitors, which if not destroyed by cooking make the food indigestible.

Therefore, while sprouting or germination enhances the vitamin values of pulses, sprouts should always be steamed lightly before adding to salads, because the raw pulse protein will not be digested due to the presence of the trypsin inhibitor. Trypsin is the digestive enzyme which acts on the protein of foods.

In general, moderate heating used in cooking improves the biological value of proteins in foods. Excessive heating, however, can denature the proteins, making them unavailable to the body.

FOOD PRODUCTION TECHNIQUES

Whatever method of cooking is chosen for the preparation of foods, certain techniques can be developed through knowledge and experience to help in

utilising available resources more efficiently for food production. Some of these have been briefly discussed through pages 425–433.

EFFECTIVE USE OF LEFTOVERS

Whenever one hears the term *left-overs*, the mental tendency is to associate the food with staleness, unwholesomeness, difficult to digest, nutritionally unsound and so forth. In short, the signal of undesirability rings in the mind. If these conceptions were true it would be the gravest error to include a discussion on left-overs in a text or reference book on food, catering and institutional management. But this is not true, what is important is to correct the concept of left-overs in the minds of all concerned with the production and service of meals and that of customers in general. If food poisoning cases have occurred sporadically through the consumption of food anywhere, the responsibility falls entirely on the management of the operations in terms of compromises on quality of raw materials, lack of staff training with respect of food handling, hygiene and sanitation practices, ignorance of correct preparation and holding methods and so on, and mostly a casual approach towards unsuspecting customers especially those who are ignorant and often illiterate. As a policy no catering institution has the right to play with the health of consumers, and even a single episode sends the establishment towards closure.

Leftovers therefore need to be looked at positively as ingredients, stored at the right temperatures for extremely short periods before use. There are three classes into which leftovers can be divided in catering establishments and these are clearly depicted through Fig. 18.5.

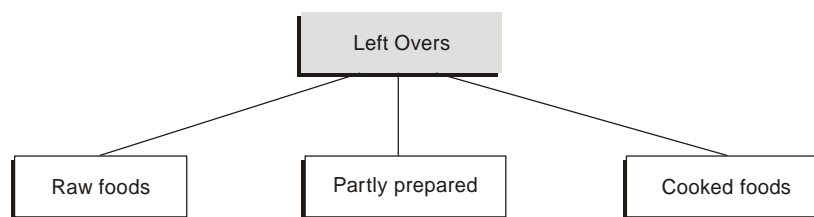


Fig. 18.5 Classification of left-overs

Raw Foods

Raw foods include perishable and semi-perishable foods which are usually delivered directly by suppliers to the kitchens. These in fresh forms too are

considered as left-overs when the quantities are not enough for large quantity food production of single item or dish for service.

Such vegetables can be combined with other vegetables to prepare mixed grills, vegetables cutlets using potatoes or cereals as the main base ingredients. They may be used as steamed accompaniments to main meat dishes such as tandoori chicken or roasts, in stews, soups, sauces, or *raitas*.

Partly Prepared

These include marinated meats, paneer or other foods, unserved salads in refrigeration, juices, sauces, boiled eggs, fermented mixtures as doughs and batters and so on.

These can be creatively used as barbecued meats with vegetables added on, before cooking. Small amounts of juices may be used as toppings for fruit pies, custards, shakes, puddings, cakes and so on.

Cooked Foods

When food remains unsold in large quantities it usually gets pilfered, or wasted through mishandling and spoilage, unless it is reused in some way and presented to the customer again soon after.

Since already cooked food cannot be stored for too long, without its quality deteriorating, it is important to devise ways of incorporating it as soon as possible into new dishes, dishes in which the food is completely unrecognisable. **Yet, there must be no relaxation in terms of the standards of quality offered to the customer.** The following menu will help to illustrate how this can be done effectively.

<i>Breakfast</i>	<i>Lunch</i>	<i>Tea</i>	<i>Dinner</i>
Eggs to order	Tandoori Chicken	Assorted Sandwiches	Tomato Soup
Toast with butter	Vegetable Pulao	Biscuits	Baked Fish
Jam	Curds	Tea	Roast Potatoes
Milk	Tomato Onion Salad		Bread with butter
Fruit	Naan-Chappati		Fruit Salad

Leftover: Eggs

These can be used as

- (a) Omelletes served to staff as such or used as garnish for lunch dishes

- (b) For French toast
- (c) Binding agent for snack
- (d) Boiled or fried and used as garnishing for biryani, pastes, and spreads for sandwiches
- (e) In curries
- (f) As Scotch eggs
- (g) As ingredient in desserts.

Leftover : Toast

If a lot of toast is leftover and not used up even by staff for breakfast the following may be of use:

- (a) Cut into strips length wise, dip in milk and place on greased tray in oven to dry into golden brown rusks.
- (b) Make bread crumbs.
- (c) Moisten in water, fill with any filling potatoes, leftover rice or vegetables and make into ball and fry for tea break snack.
- (d) Dry into strips and use with soup.
- (e) Cut into cubes and fry to make crotons. These can be stored in airtight container at refrigeration temperatures till required.

Leftover: Milk

- (a) Set into curd
- (b) Use in dessert
- (c) Convert to iced milk shakes with seasonal fruit
- (d) Beverages as flavoured milk.

Leftover: Fruit

- (a) Eat as such if uncut.
- (b) Cut into fruit salad or 'Chaat'.
- (c) Mix with custard as dessert.
- (d) Blend into milk shake.
- (e) Extract juice.
- (f) Make or serve ice-cream or cakes.
- (g) Serve with cream or ice-cream.

- (h) Stew and serve with topping.

The jam and butter can be refrigerated for re-use.

Leftover: Tandoori Chicken

This can be used as such or deboned and the meat used as an ingredient in the next meal or on the next day's menu. Some ideas for its use are discussed below.

In boned form the possibilities are:

- (a) In chicken as a mini meal with salad.
- (b) Converted into curried or butter chicken.
- (c) Chicken biryani or fried rice.

In deboned form the chicken may be utilised in the following ways:

- (a) Minced and mixed with binding ingredients, shaped into chicken balls or fingers and deep fried to be served as a snack.
- (b) As balls they may also be used curried, with noodles or other pasta dishes and served as a main or side dish.
- (c) The chicken can be minced and converted into a sandwich spread.
- (d) As such, deboned chicken can be mixed with steamed or sauteed vegetables to make a good side dish.
- (e) For making chicken stew.
- (f) Chicken soup with sweet corn.
- (g) Sweet and sour chicken.
- (h) In the preparation of pizzas, pulaos, stuffed paranthas, samosas, turnovers.

Leftover: Vegetable Pulao

This can be converted into:

- (a) Vegetable balls or bondas, cutlets or tikkis to be used as snack.
- (b) Curried balls generally termed as 'Koftas' in Indian cooking.
- (c) Minced and used as coating or covering for cheese pakoras or fritters, scotch eggs, nargisi koftas.
- (d) Mixed with white sauce, and covered with cooking cheese and baked in the oven.

Leftover: Curds

These may be used for preparing the following:

- (a) Marinade for meats, fish, poultry and cottage cheese.
- (b) Gravies for curry preparations.
- (c) Sandwich spread or dips for snacks, by passing through a fine muslin and allowing the sour water to drain off. This water may be separately used for adding to fresh milk for cheese (cottage) preparation.
- (d) Doughs which need to be fermented for making naan, fried poories called 'bhaturas' and other types of fermented breads.
- (e) Fresh curds by using a bit of the left over as a starter.
- (f) Sour beverages like *lassi* a common beverage for tropical summers.
- (g) Curd rice.
- (h) Raitas.

Leftover: Tomato Onion Salad

The tomato and onion slices may be separated and incorporated into dishes as an ingredient or used as garnishes. Some suggestions for their use are:

- (a) Soups
- (b) Curries
- (c) Sauces
- (d) Dry mixed vegetables
- (e) Pizza topping
- (f) Stuffed omelettes
- (g) Garnishes

Leftover: Naan/Chapatti

Many Indian desserts are prepared using fermented batters and doughs for which both 'Naan' and unfermented chapatti can be used.

- (a) Moisten with water or whey water, blend and use to thicken green leafy vegetable preparations. They bind the water released during cooking of the high moisture leaves. The portion too gets extended apart from enhancing the taste.
- (b) Can be added in crumbed form along with spices to any masala for the preparation of gravy for curries, or thickening of soups and sauces.

- (c) Use fried pieces to garnish meats, pulaos, pastas.
- (d) Add to pizza sauces along with vegetables or meats.
- (e) Fry and dip in sugar syrup, top with thickened milk or condensed milk and nuts and serve as dessert.
- (f) Vegetable filled rolls and fry for snack.

Leftover: Tomato Soup

- (a) Chill and serve as cold soup.
- (b) Use as base for curries instead of tomato.
- (c) Thicken, add steamed vegetable and use on pizza base with cheese. Bake or grill for snack or mini-meal.
- (d) Brown onions, add spices and soup, cook till oil separates out, use as topping or *tarka* for dal or pulse preparations.
- (e) Thicken into a sauce with flour, blend with butter or margarine add finely chopped or grated vegetables and use as sandwich spread.
- (f) Use as gravy with pasta and cheese.

Leftover: Baked Fish

Remove the meat taking care to separate any fine bones remaining and use as:

- (a) Ingredients for fish pie.
- (b) Savoury tarts or topping for cocktail snacks.
- (c) Bind and fry into fish fingers or balls after coating with bread crumbs.
- (d) Fish curry.

Leftover: Roast Potatoes

- (a) Wash, mix with vegetables and shape for cutlets, fingers. Serve with sauce or chutney as snack.
- (b) Coat with gram flour or *besan* and fry into *pakor*s, or *bondas*.
- (c) Use with paneer cubes on seekh for barbecue mix after marination in spiced curd.
- (e) Sprinkle *Chat* masala and prick with tooth pick, offer as snack.
- (f) Use as garnish for chicken roasted or grilled.
- (g) Use as part of mixed grill for breakfast.
- (h) Mash and use a filling for patties, *parathas*, *kachori* and so on.
- (i) Mix with mint chutney and use as side dish with meal.

Leftover: Fruit Salad

Use as for fruit discussed above.

The above examples indicate the unending possibilities of using up leftovers while still maintaining high standards of quality in terms of freshness, appearance, colour, texture and therefore acceptability. All that is required is creativity, vigilance regarding proper methods of storage and a policy to use leftovers not later than the following meal.

In large food service establishments, extra portions can be diverted for immediate service to inmates of social institutions like homes for the handicapped, orphanages, etc. so that there will be no leftovers at the end of any day. such policies help to provide quality food at a standard of skill that such institutions would not normally be able to afford. At the same time the food cost can be recovered from the institutions to which the food is diverted and wastage is prevented.

HOLDING TECHNIQUES

Every food service establishment requires to hold prepared food for varying periods of time before it is served. This is necessitated by the fact that all foods cannot be prepared quickly enough to be served on demand, and customers do not all come at the same time.

The two basic principles underlying the holding of foods are:

- To maintain them at temperatures which prevent microbial activity and ensure their safety for consumption. Foods must, therefore, either be held above 63°C or below 5°C. As a general rule it would be safe to serve hot foods boiling hot and cold foods really chilled or frozen.
- Holding techniques must maintain the quality characteristics of food such as quantitative, sensory and nutritional.

Very often, foods prepared too early and thus held too long, tend to lose their moisture and shrink because of the constant heat applied to keep them warm. This affects the appearance, colour, flavour and the size of the portion that is served, deviating from the standards expected by the customer. Hence the importance of preparing foods to keep them in readiness for cooking as close to serving time as possible.

Methods of Holding Foods

- (i) Salads, desserts, sauces, milk and milk based dishes must be held under refrigeration temperatures preferably between 3–5°C.
- (ii) Soups, curries, hot desserts and custards should be held in preheated bainmaries designed to maintain food at safe temperatures of above 65°C.
- (iii) Ice-creams must be held at –3°C in refrigerated case maintained at that temperature. Sometimes bulk ice-cream containers may be kept in salt-ice mixtures to maintain their temperatures, quality and safety. Frozen desserts especially milk based ones, once melted must never be refrozen and used, as they can prove hazardous to health.

Food production thus involves stringent measures and close supervision at every step to ensure that the food obtained, prepared, held and served is wholesome and safe for consumption.

Chapter 19

Food Service

The service of food is an art which can make or break the reputation of a catering establishment. It represents the manner, as well as the atmosphere, in which food is presented to the customer. Well prepared food, conforming to high standards of quality can be rejected if the service is slow, slipshod, and the server unkempt in appearance, impolite or careless. Also customers can refrain from visiting food services if the environment does not provide the emotional satisfaction expected by them. Apart from food quality, therefore good service is vital to success of a catering establishment. To the customer, good service represents clean serving and dining areas, properly selected serving equipment, neatly dressed and well behaved serving staff who can welcome with a smile.

STYLES OF SERVICE

Depending on the nature of an establishment, and the requirement of particular occasions, food may be served in a number of ways, some formal, informal. Most common methods of service may be classified under four main heads:

- (i) Waiter Service
- (ii) Self-Service
- (iii) Vending
- (iv) Contract catering

FORMAL SERVICES

As the name suggests, these methods of service take the process to the level of a fine art, as they take care of every detail set out to make the atmosphere as

formal, spic and span and welcoming as possible. Starting from the decor to furniture selection, its arrangement in the space, uniforms of servers, order of meals served, presentation of both meals and staff all in a well communicated yet silent atmosphere. Some formal styles of service include banquet services, restaurant waiter services, air-line first class services. Morell (1966) has called formal services as personalised services.

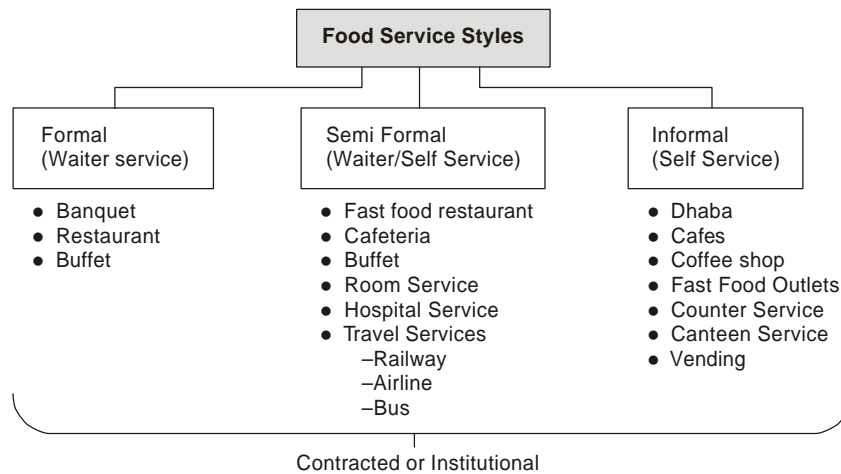


Fig. 19.1 *Styles of service*

Waiter Services

Waiter Service is a formal type of service in which staff present the menu to the customer and wait on him till he decides what he wants. The order is then noted and passed on to the kitchen for execution. In the meantime the waiter serves the water and or any beverages ordered, and adjusts the table appointments according to the customer's menu selection. For waiter service, tables are preset with napkins, cutlery, water tumblers, salt and pepper cruets and other accessories. The dining area gives a formal appearance and provides an atmosphere of dignity, hospitality and leisure.

The menus for waiter service are usually multi-choice a la carte menus and customers have to wait at least 20–30 minutes before food can be served to them. However, the menu may be a table-d'hôte one as in clubs, or on special occasions, when the menu is decided with the host as in services arranged especially for marriages, conference dinners and banquets.

The degree of formality in a waiter service style varies with each type of establishment, from very formal in which each course is served in new plates with cutlery arranged according to the course requirements, to semi-formal, in

which the starter or soup is served, plates removed, and a fresh plate offered for the entire meal. This is then replaced only when the dessert and coffee is served. The least formal service involves pre-setting of the table and appointments in full, and offering the meal in service bowls placed on the table for customers to help themselves. The waiter attends when he is summoned, or when the meal is over. He then serves the desserts and coffee as required.

Waiter service requires special skills and therefore training, which is carried out preferably on the job and out of peak service hours, when close supervision and demonstration is possible. The more formal the service, the more expensive it becomes to both management and customer, because of the increase in the number of staff required and the amount of tableware necessary. Over the years waiter service has developed to provide a number of forms in response to changing needs as shown in Fig. 19.2.



Fig. 19.2 Formal waiter service

Traditional Indian Service

While countries like India have largely been influenced by English ways of serving and eating food, the traditional methods do exist where establishments follow traditional policies on service. The 'thali' service has now become a common feature of most restaurant services. Similarly, some specialty restaurants serving meals in a typically South Indian style, serve on banana leaves. In certain regions, food is served on the 'peepal' leaf too. There are no appointments, staff serve prepared dishes, salt, pepper, pickles on the leaf all at the beginning of the meal. The server then waits and watches to refresh any leaf with the desired food item.

Traditionally, water is served in mud pots. When these styles are adapted by restaurants, the leaf may be placed on the table and water served in tumblers, with cruets for salt and pepper and pickles and salads placed on the table for those who would like to help themselves.

Some restaurants have even ordered washable table mats in the shape and colour of banana leaf, usually used to serve menus typical of the regions which serve on the leaf. The disposable advantage of this development however, has been lost since washable materials are not all biodegradable. Perhaps a little more creativity exercised in designing with materials which are either recyclable or biodegradable is required by tableware designers, keeping in mind that no recycled material should not come in contact with food served.

Apart from inculcating traditional styles of service in up-to-date restaurants, the waiter service can be modified to suit each establishment. For example, in a coffee shop, where customers do not spend as much time as in a restaurant, the staff generally do not stand near each table. They watch from a service bay or behind a counter and respond when summoned, or just come when the meal is over.

In contrast, the traditional wayside eating place known as the 'dhaba' has always provided a scanty waiter service. The services of staff employed are normally used for all kind of jobs including washing up, service, cleaning, receiving payment from customers and returning the change. Over the years, the menus of 'dhabas' have remained the same irrespective of their location, i.e. a curry, a dry vegetable and chappatis. But their appearance has changed from one that has a simple traditional look with makeshift tables and 'charpoys' for sitting to one of laminated table tops with chairs or bench seating. The service boys have, however, remained the same, cheaply employed, and serving food in street clothes, which are scanty and ill kept. Fig. 19.3 shows tables laid out for restaurant service



Fig. 19.3 *Traditional thali for restaurant service*

Banquet Service

This is the most sophisticated style of waiter service and is usually carried out when the heads of state or government are being entertained. It is therefore extremely formal, and calls for perfect etiquette at the table. The tables are generally draped in white damask and each cover is set out with matching napkins and other table appointments. Use of fancy table appointments like menu card holders, name cards, flowers and cruets are used for each cover. The cutlery used is usually of silver. A name card and menu is placed in front of each cover according to the status of each guest. The menu is a table d'hôte one agreed upon by the host(ess) or specialist catering staff on behalf of the host. Such services are seen at Rashtrapati Bhawan, dinners hosted by Governors of States, or the Palace invitees of Monarchs such as the Queen of England and so on. The arrangements of such food services are depicted in Fig. 19.4.



Fig. 19.4 Banquet service

Meals are served in courses, which may vary from four to six, and the cover is left clean after each course. Fresh sets of plates and cutlery to go with each course are arranged. The service is carried out by waiters performing perfectly rhythmic movements while serving courses or removing plates. More staff is needed for the service than in any other style, usually 6–8 waiters, depending on the size and arrangement of the banquet. The waiters are expected to start service of a course simultaneously from different points. The aim is to completely serve a course or clear it thereafter within a couple of minutes, so that the diners do not have to wait too long for other guests to be served before starting the meal. When everyone has been served the host(ess) signals the start of the meal. During the meal the head waiter directs all staff movements through unspoken means of communication like gestures. After the formal part of the meal is over. The host stands up, and waiters take their positions behind each

guest, pull their chairs back and direct the guests to the lounge where the coffee is served, and they can then talk informally, or smoke. The head waiter usually stands behind the host during the service, and when toasting the meal. He retains that position during any speeches as well.

Restaurant Service

Service styles in restaurants vary slightly from one place to another, and are slightly less formal than the banquet service but form different versions of waiter service. Their objective is to provide an atmosphere for leisure dining to the customer and yet remain personalised. Waiter service styles have been described differently in catering literature as English, French, Russian, American or compromise styles of service, but, basically all these styles require one waiter to serve every 8–10 diners. Certain modifications are made in different countries according to the needs of various establishments and the cultural and traditional eating habits of people.

The Speciality Restaurant

The idea of a speciality restaurant was first introduced in the mid-fifties through the development of the *Wimpy Bar* in the U.K. Today, Wimpy is a global name for a standardized establishment following set patterns of layout, operation and menus. Counter and table service are both used. In India, speciality outlets are not new as vendors used to pick up any one or two items and make those routinely for *sale*. The *Parathewali Gali* in old Delhi, the chaat, biryani, kulfi and jalebi corners are all evidence of the existence of speciality foods to enjoy which people used to travel long distances. Full fledged establishments with modern appearances only began to be set up in the 1980's, although some still stand noticed since the 50's.

With global influences being exerted on the eating patterns of customers due to exposures to other countries, their traditional foods too can be found in practically every metropolis of the world. The term *speciality restaurant* has been applied to traditional catering establishments which specialise in any one type of food, typical of a particular region or country. Today one finds a number of such restaurants which serve only South Indian, or Mughlai food, Hyderabadi cuisine, (Annexure **). Chinese, Japanese, Italian, Mexican or other specialities. In fact, five star hotels have made it a regular feature to select regional themes for their food fares or organise food courts, which are limited to a week's duration when they offer cuisines of various specialities to their customers. Some establishments invite speciality cooks, from the regions even housewives who are expert cooks to demonstrate their regional traditional cooking skills at

special cook-and-serve counters that provide the authentic taste, flavour and aroma to any single item or a meal. Most specialities share some basic features:

- Single theme
- Restricted menu
- Open kitchen

All the different types of service styles account for different rates of customer turnover. The formal services serving almost one tenth the number of clients in comparison to the informal types of services, with the same number of staff, specific method of cooking or serving.

Single theme

A speciality restaurant specialises in a particular food theme usually operating on cooking to order or one which features snacks exclusively, the latter also being sometimes called as a *short order* establishment. The food theme may represent any special item of a region or a meal such as Rajasthani or Punjabi food, and the like.

Restricted menu

The menu pattern is a la carte in nature offering customers choice though limited to three courses. Usually a starter, the special item and dessert or beverage. The starter may include choice of soups, fruits, juices or *hors-d'oeuvres*, and the third course may be a sweet, cheese board or savory preparation and hot or cold beverage.

Some may offer specialities in the form of grills, roasts, with different types of breads. A typical South Indian speciality will offer *dosa*, *uppuma*, *idli*, *rasam*, *sambar* and rice preparations typically consumed in the South of India.

A north Indian speciality outlet may offer chicken curry, *chappati*, *paratha*, green leafy vegetable, *lassi*, *kadhi-rice*, *rajma-rice* and so on. Specialities featuring fish dishes, hamburgers, pizzas of all types are well known and quite popular.

Open kitchen

In speciality restaurants cooked food is never prepared in advance and held for service. It is always prepared on order or finished from partly prepared and refrigerated ingredients. The snacks too are fried, grilled or toasted and finished on demand in full view of the customer or served piping hot from the kitchen within minutes.

The operations revolve around the *out-front* kitchen where food preparation and service are combined. Chefs prepare the items and pass them on to the

customers directly for consumption. The biggest advantage is that customers can interact with chefs and delete any ingredient from their order that they may not want to eat, on a particular day.

Foods are either served in dishes in which they are cooked or the range of equipment is limited to usually multi-use. Convenience foods and quick cooking dishes are placed on the menus. Disposables may be used for ices, sundaes, desserts and snacks. For service all the staff take positions behind the preparations and service counter and cash desk.

Other specialty operations are the *Buffeteria*, and *Espresso Bars* with takeaway services used in popular outdoor catering. Buffeteria consists of small island units each laid out for different menu items for example fast foods, salads, Indian or continental foods, snacks, desserts and beverages. Alternative seating is provided in addition to large containers for disposal of waste materials like disposable plates tumblers and cutlery. The specialty restaurant includes all forms of service, deluxe or formal, popular or informal personalised, self-service or any other combination.

Take Away

Establishments arrange for take away trays in which meals are dished out as for drive-ins, where people may want to eat in their cars or take their meals home, to beaches or just anywhere to enjoy. The disposable trays are made up and packed in foil bags along with disposable cutlery, napkins and sachets of sauces, pickles, salt, pepper and any other accompaniments required for the meal. A drink is also packed.

Buffeteria

A food service establishment which serves all meals in the form of buffet services is termed as a buffeteria. The service style is followed in some cafeterias, hostels, boarding houses and other institutions where service timing is strictly controlled, the service being closed according to the service timings. Figure 19.5 shows one such layout.

Espresso Bar

The Espresso bar was one of the first specialty food services with coffee on offer through an *decorative* piece of equipment that could be operated by any attractive staff with a few simple instructions. The espresso machine is now a familiar sight in snack bars which serve salads and snacks along with short order items and coffee. Coffee bars too specialize in coffee of which *Coffee Home* and *Barista* are household names.

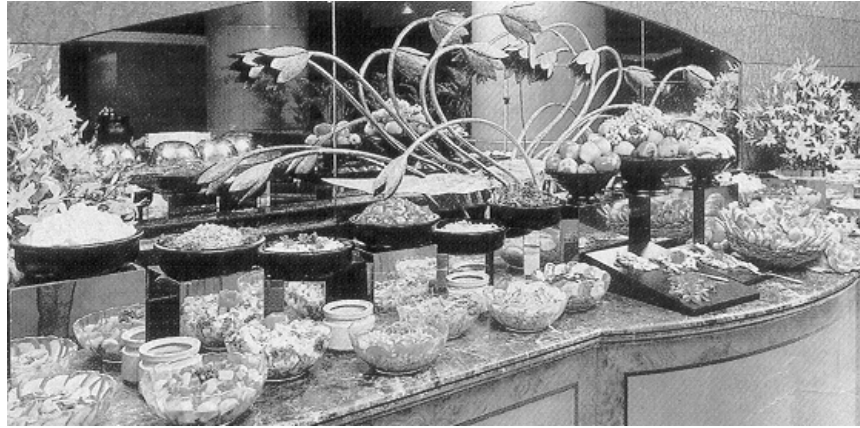


Fig. 19.5 *Buffeteria service*

Today, the franchise and the cyber cafe is the latest trend in specialty services offering coffee low charges to clients, who sit for hours using computer.

The customer today looks for good food and prefers to pay more of the price for it rather than for décor, furniture or the ambience, all of which become familiar soon, and thus no more as attractive as before. The emphasis of caterers should therefore be focussed on quality food and its service. Self service is here to stay and so is eating out, both at leisure and in haste. Overall caterers must see what customers want and service it to them the way they want it, and whenever they want it.

Another area of focus for the specialty caterer is the suitability and matching of wines for service with Indian food. Jancis Robinson, who is among the world's 200 masters on wine, experimented with *highly spiced local dishes and Indian wine*. She concluded that *there is no reason why wine should not be taken with food served in India*. The reason perhaps is not that the two don't complement each other but because of taboos in India with respect to drinking while dining which are now gradually disappearing. Home-bred wine makers and connoisseurs are all for *desi* delicacies and wine. It is just a matter of breaking age-old inhibitions.

If specialty restaurants have to exploit this opportunity Indian chefs would have to keep particular wines in mind while creating their delicacies. It will not be too long before *Dal makhani* is served with *Riesling* and Murgh Mussalam with *Pinot Noir*.¹

1. A Times of India report. June 16, 2001.

Room Service

The term has come from the fact that food is served in the room where a guest is staying. Usually applied to public lodgings, it is essentially a waiter service in that, the order is placed on the phone and a waiter brings the same to the room, on a tray or trolley and serves it to the customer.

It would not be incorrect to classify the service of food on a train, aircraft, or hospital ward as room service since the food comes to the passenger, or to the patient in bed, instead of the diner going to the dining area for food. Transport catering services such as those provided on road, rail, air and sea, do not all classify under room service and have a number of special characteristics which are not associated with other food and beverage services. These are:

- The customers are all together in large numbers.
- Service has to be provided to all at the same time.
- The time period is specified for which the services have to be provided.
- Sufficient food needs to be carried for the exact number of customers travelers.
- Alternate choices cannot be supplied on demand unless passengers order special meals at the time of booking their seats.
- The service area is limited and often congested or turbulent which affects service.

The services described earlier cater to mixed markets, where customers do not arrive all at one time and those who wish to can dine leisurely or in haste as required. There are four main types of transport services offered to customers on the move.

Roadside Catering Services

These facilities have today, come up in the form of roadside coffee shops, cafeterias, mid-way restaurants, and fast food outlets for feeding the traveller. Often in isolated places they are usually short staffed in terms of peak-time rush and also keep open for long hours to catch the traveller who may arrive at odd hours offering food and beverages which can be taken away. In addition there are lodges, motels and guest houses, where travellers may make an overnight stop. These too offer food and beverage services on advance notice, but with limited seasonal menus, or just breakfast service expecting the traveller to move on after breakfast.

Railway Services

Food is required to be served to passengers on long train journeys. Railway catering takes two main forms *in-transit* and *on station* catering services. Catering at railway stations can be seen as licensed vending, fast food and beverage services, cafeterias and take away points. The *in-transit* services are offered through the restaurant car service of the train where the meals are served to passengers who wish to sit and eat at a table, as in a restaurant. The customers then return to their allotted seats on the train after the meal. In some trains a buffet service is provided, where customers can serve themselves, and buy whatever light refreshments they want over a counter.

Over the years rail catering services have become more compact and streamlined and customers are served at their seats as in room service but with minimum equipment, disposables, and pre-portioned arrangements, especially on express or fast passenger trains. The meals usually follow traditional patterns and trains are loaded with the food at main junctions.

Airline Services

Services for airline travellers was originally restricted to sandwiches, tea, coffee and beverages. This has now developed into the full fledged meal service. Similar to railway service, airline services too provide services through self and waiter restaurants at the air terminals supplemented by vending machines and licensed bars.

The *in-flight* services however, vary in menu and service style according to the travel class, time and duration of flight. In economy class, portions are highly standardised and served in plastic trays with disposables in the form of sachets for sugar, spices, pickles, plastic cutlery and paper napkins. In the executive class however service is done from a trolley, food is portioned per customer demand and garnished freshly as desired. The crockery may be bone china, fine glassware and cutlery creating the ambience of a high class restaurant service.

Airline catering is often contracted to a specialist caterer who supplies services to a number of airlines. Special services of this nature have led to the development of flight kitchens now being operated with very high standards of quality control, safety and hygiene by a number of Hotel groups, such as the Taj, Oberoi, Ambassador and others in India.

The customers usually pay for catering services in the cost of their airline ticket. The service offered therefore becomes the determinant of choice of the airline by which people will travel.

Service at Sea

Also referred to as marine or sea catering. This involves the provision of food and beverages for staff and passengers, on ships of different sizes and types that travel for days and months at sea.

Shipping companies who work chiefly with transport of cargo require a catering service for their staff, which usually comprises a dining hall and bar. They may have restaurant or buffet services depending on the catering policy. The ships are well stocked with food at the ports. Indian staff however, usually demand traditional foods and flavours, and therefore fill up their cold and freezer chambers with foods not likely to be bought at foreign ports, because of their high costs.² Of course other western and for Eastern cuisines are also provided for variety by the cooks who are well trained in their jobs for specialty cooking.

The other type of sea catering involves food and drink on luxury ships in which passengers go for long cruises. The catering facilities are an important part of this service, highly standardized and equipped for leisure services. Because the customers are captive in the sense that they cannot go off the ship between ports, the food becomes the focus of attention. A la carte menus and fast foods are also offered. The quality of catering service therefore, provides the competitive edge for cruising companies.

Irrespective of the type of room service the food is preportioned and laid out on a tray or packed in a box (in the case of snacks) and presented to the customer.

Mechanics of Waiter Service

The mechanics of waiter service includes the five steps necessary in preparing to serve the customer and the manner in which food is actually presented and tableware cleared after the meal.

Step 1: The process starts with the preparation of service bays, sideboards and tables for the type of menu and time of the day by:

- Checking that all cutlery, cruets and other table appointments are clean.

2. The author has worked as Nutrition Advisor to South India Shipping Corporation in 1970–71 and had to grow ginger and garlic in crates placed on deck, to save the high dollar costs of restocking these spices at foreign ports.

- Checking table linen for cleanliness, folding napkins and placing them as required for the particular service, discarding torn pieces of linen.
- Placing glassware after checking for chipping and cracks, butter dishes, sauces, spices, in place.
- Ensuring that sideboards have enough of all items during service time.
- Switching on hot plates 5–10 minutes before service begins, especially in the case of buffet service where the quantity of food to be kept hot on the table is greater.
- Checking that sugar bowls are filled for after meal beverage.
- Studying the menu for knowledge of dishes to guide customers in their choices, and to keep suitable service equipment ready for serving.

Step 2: Receiving customers and taking the order by:

- Greeting and directing the customer to the table for seating.
- Presenting the menu and taking down the order, making a mental note of who has ordered what or write on pads marked with table positions vis-à-vis the host, so that there is no chance of mistakes in service.
- Passing the order to the kitchen.

Step 3: Serving—No customer likes to wait too long. So while the kitchen is translating the order into a meal, the waiter starts:

- Filling water in tumblers.
- Placing bread and butter on the table.
- Adjusting cutlery for service to indicate that the meal is on its way.
- Once the food is ready plates are placed at each cover.
- The dishes are presented from the left of each diner and served by the waiter.

Step 4: Clearing—Removing plates, cutlery and appointments from the table.

- This is done generally from the left of the diner, but various adaptations have been used as found convenient and acceptable.
- Presenting finger bowls.
- Removing crumbs from the table.
- Preparing table for dessert and/or coffee as ordered.
- Clearing table again.

- Presenting the bill, collecting the payment and returning the change.

Step 5: Sending off the customer:

- Coming forward to pull back the chair when customer rises to leave.
- Helping guests with their belongings.
- Checking that nothing belonging to the customer is inadvertently left under the table or below a napkin.
- Wishing him well with a smile that will make him return.

In the waiter style of service it has always been a practice for waiters to be tipped by the customer in appreciation of the service rendered. This amounted to a formally collected gratuity, and acted as motivation for staff, who then went out of the way to please their customers.

This collection has now been discouraged by a large number of food managements, who now add a certain fixed percentage of the bill, as a *service charge*. Such charges are then used in different ways by the management. It may be:

- divided equally among all kitchen and service staff, as it is felt that the kitchen staff contribute equally if not more to customers' satisfaction.
- given equally to service staff only.
- used partly or wholly for providing benefits to staff such as laundering of working clothes, providing transport for those working night hours and so on.
- Considered as just another source of revenue.
- distributed as part of wages.

The imposition of service charges through the bill has however, resulted in a lot of resentment in the minds of service staff, and demotivated them with respect to their work. They no longer put in that special effort to please the customer. On the other hand the customers are confused, because they do not understand why the waiters no longer take interest in serving them, when they are paying more as service charges than they would do as *tips*.

However, employers and staff have widely different views on the matter. Some feel that customers want to express their appreciation by *tipping* and will do it inspite of the service charge, while others prefer the service charge, even though it bears little or no relation to rewarding good service. The service charge gives the impression of an additional cost and may as well be added to

the menu prices. Unless the disparities existing with respect to the service charge are removed by legally devising common policies for the food service sector, which are clearly understood by staff and customers alike, this charge will continue to give a very poor image to waiter service in the industry. There are other drawbacks of formal or waiter(ess) food services:

- Time consuming for both staff and customer.
- Costly to the establishment because of more staff required.
- Customer turnover and therefore sales revenue lower than informal services.
- Increased overhead expenses because of stationery, laundry of table linen, cleaning and maintenance of appointments.
- More crockery and glassware used so breakage greater.
- Menus with greater choice so printing charges increase.
- Space is capable of being used less flexibly because of expensive furniture investments.
- The staff interest in the customers is proportional to the tips received.

These are some of the reasons for the shift from restaurant or waiter services to more informal methods that have developed over the years.

INFORMAL SERVICES

Informal food service styles are set in a more casual environment, be it in a room or hall with fixed counters where customers choose what they want and help themselves partly or wholly, or they may be served by a waiter on table arrangements made in a garden of the restaurant. Every arrangement provides an aura of informality, a little personal touch so important to catering services, and an assurance of freshly prepared quality food.

SELF-SERVICES

Establishments offer different styles of service in which an element of self customer service is in-built, ranging from the customer choosing his seat, seating himself to serving and sometimes even clearing his table. Self service is a type of arrangement which requires customers to come to a counter, bay or table to serve themselves. Even though it is an informal style of service, it is nevertheless an organised one. A number of self service styles have emerged, each adapted to the needs of the establishment and the customers. They possess in-built flexibilities to suit different occasions and needs of establishments and people as a result of constantly adapting to changes in the demand environment.

The advantages of self service are:

- The informality in the style puts customers of all ages at ease while eating.
- Customers take on waiter functions partially or wholly, and therefore the number of staff required is less in proportion to the customers served.
- The amount of food handling is considerably reduced, and this increases the safety of food for consumption.
- Better portion control is possible because the choices in the menu are limited as compared to a la carte menus. Also food costs can be controlled more easily through portion control.
- The service is faster because foods of different consistencies and temperatures do not have to be transported from kitchens each time an order is placed.
- The customer gets better value for money because he does not have to contribute towards excessive labour costs, or overheads connected with extra or decorative tableware and fancy service.
- The customer comes in closer contact with food preparation and service staff leading to better interaction and the establishment of goodwill.
- The customer can make better choices when the food is on display, than when he reads a menu card, because some people are ignorant of what to expect of a dish by the latter method. Visual display of a dish also makes people try newer dishes which attract their attention.
- Food can be preportioned and garnished by kitchen staff, who understand the value of flavour and colour combinations more than service personnel do. Figure 19.6 indicates some styles of service in which customer participation takes places to varying degrees.

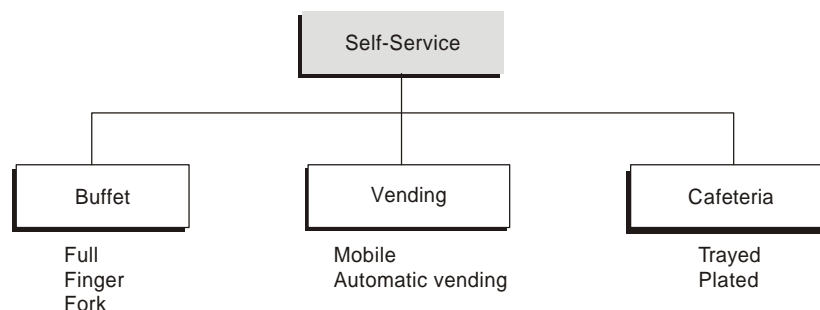


Fig. 19.6 *Self-service styles*



Cafeteria



Self-service grill

Plate 19.1 *Forms of service*



Railway pantry service



Airline service

Plate 19.1(Contd.) *Forms of service*

Buffet Service

The service of meals in buffet style can be made to vary in the degree of formality desired. The atmosphere created for the diners depends on the manner of the arrangements made for eating, the décor of the table, the quality of tableware and linen used, and the menu. Buffets may be arranged in many ways depending on the space available, the occasion, number of people eating, and the degree of informality or formality desired. Basically, all menu items are dished out and placed on the table(s) in as attractive a manner as possible. Sometimes, service plates and cutlery occupy one corner of the table, at other times, a separate table for these may be placed near the main table. Another table is arranged with glassware, prefilled with water to which a diner can help himself. Plate 19.1 indicates arrangements for different forms of service.

Buffets may be classified into the three main types according to the menus planned, and the type of dining arrangements desired Full buffet, Finger buffet, and Fork buffet.

Full buffet. This is generally a complete meal buffet, in which the service can be made very informal or as formal as is desired, the degree of formality being indicated by menu choice, table and seating arrangements provided, and quality of tableware used. The meal planned may contain hot and cold foods. Hot foods are often placed on the service table, over electric or spirit *rechauds* to keep them hot during the entire period of service.

It is generally not feasible for a diner to manage a complete meal on one plate along with accompaniments and beverages, and yet enjoy it. Since the focus in this type of buffet is on the meal, eating can only be a pleasure if the meal once served is not interrupted by having to get up and go to the buffet table for further helpings. Complete meal buffets, therefore, can be arranged in the following ways:

- (a) The diners pick up their plates and serve the food from the service table.
- (b) They choose a table from among many small tables already laid out with cutlery, linen, accompaniments, and water or beverage.
- (c) Staff circulate among the diners, offering second helpings of dishes, and refilling water or beverage, so that there are no interruptions in dining.
- (d) After the meal, the dining tables are cleared by the service staff.

This type of buffet service is a combination of self and waiter service, providing the comfort and enjoyment for which people go out to eat. The advantages of this style of buffet service is that guests in a large gathering can choose the company they want during the meal, serve as much food as they wish without being watched, and choose their favourite dishes, rejecting those they do not like, without a sense of embarrassment.

The second form of complete meal service involves piling up trays, generally 45cm × 48cm, arranged with mats on a table or trolley placed next to the main self service table. The service flows in the following sequence:

- (a) The diner picks up a tray places a mat on it and moves to the main table.
- (b) Places dinner plate, napkin and cutlery on it.
- (c) Serves the food of his choice on his plate from a counter.
- (d) Places the beverage or water on his tray.
- (e) Carries the tray to the cash counter and pays for the selected meal.
- (f) Goes it to chairs placed along the sides of the room, places the tray on his lap for stability, and has the meal.

Sometimes, high tables for 2–4 trays may be provided for placing the food for dining in a standing position, or the seating arrangement may be similar to that described in the first type of service, except that trays are used instead of the tables being preset. In some services, a self clearing method may be adopted in which the diner places the used tray on shelved trolleys after the meal. These are then wheeled away for dish washing by staff.

The self clearing method is a very practical one for boarding schools, where children reside in large numbers, or in residence halls in universities. It also provides training in cleanliness and hygiene, and the dining area does not look unkempt in appearance during or after a meal. This method also creates a sense of belonging and usefulness where inmates of social institutions need to be rehabilitated, besides helping to cut down extra staff costs. The method can be utilised effectively even by profit making establishments.

The third type of buffet meal service may be arranged such that service staff stationed behind the buffet table portion out the main meals on plates and hand them over to each diner, who then self serves the salads, sauces and other accompaniments according to taste and appetite. This style of buffet service is used for conference lunches, school, university and office lunchrooms.

Finger buffet: Clearly, in this case, the menus offer finger foods only, eliminating or minimising the use of cutlery for eating. Such buffets are served usually at

tea time, for cocktail parties, or festive occasions when a large number of guests have to be served. The atmosphere is that of informality, and disposables may also be used for this service, especially for children's parties.

Fork buffet: As the term indicates, fork buffets are those in which the food planned and served can be eaten with a fork only, the menus consisting mainly of snacks. These are also informal and are generally arranged for teenage parties or conference lunches, where the primary focus is not the food, but the disco or the conference. There is generally little or no seating provided for the guests, who circulate and socialise at meal times. The service is a completely self help one, requiring only one or two people to refill the table dishes, or clear the table after the meal. The meal time is not fixed, and the service may extend beyond the usual 1 to 1½ hours.

Buffet services are becoming more and more popular as people have much less time for leisurely dining. Also, inflation and rising costs of eating and entertaining outside the home have resulted in a shift to cheaper eating of good food, the focus moving towards the food, and away from the mode of dining.

Cafeteria Service

The cafeteria self-service may be established on the tray service style or the plated system. The whole meal may be served on the tray or plate and priced as a single unit. Whatever the mode of serving the food, cafeteria services always provide for seating or standing table arrangements for dining. With space becoming the most expensive resource for an establishment, cafeteria managers are now progressively planning adjustable tables which can be lowered for seating at times when customers are few, and raised for dining while standing during rush hours to accommodate more customers as shown in Fig. 19.7. Cafeteria services may be discussed under two heads-trayed and plated services.

Trayed Service: This is a common method of serving meals to customers in transit, as on trains, aircraft and deluxe buses. Meals with the necessary accompaniments in individual portions are trayed and loaded on to the aircraft for service to passengers. Main items which are required to be served hot are loaded in aluminum foil containers as individual portions arranged in bulk trays or trolleys, which are heated in ovens on board the aircraft, dished out on the trays and then served. They are labelled suitably for the meal type as ordered by customers at the time of booking their travel. On trains the food is loaded in bulk containers into the pantry car, and dished out on individual, usually sectioned trays at the time of service according to customer requirements. The

choices are mainly limited to the main dish, either vegetarian or non-vegetarian, the rest of the menu being fixed.

In Western countries a central tray assembly method is used for service in hospitals. It consists of the service and assembly of ready foods on individual trays which move down a conveyor belt near the production area. When food has been dished on to the trays as required, they are then placed in a mobile holding unit and transported to different floors or locations to the patients.

In India, foods are trayed similarly at ward level for patients but there is no central assembly line. The kitchen staff assemble the food in mobile trolleys which are then transported by staff to the wards. Only trays for special diets are laid out in the dietary department for patients on special diets suited to their special recovery or disease requirements. Each tray bears a card with ward and bed number and the special diet indicated.

In a hospital cafeteria or one in the market place or a wayside snack bar tray service may take the form of customers placing pre-portioned items of their choice onto trays from display cases and paying for the same at the end of a long counter. They sit at the tables provided and may or may not self clear their trays according to the policy of the establishment.

Plated Service: In this service the hot food is held in a bainmarie in full view of the customer, but separated from him by a sneeze guard to protect it from contamination. It is plated by staff for each individual customer according to the selection made from among the choices provided. Cold desserts and salads are pre-portioned and displayed in refrigerated cases for selection.

The latest trend in cafeteria catering is to bring into view the actual process of meal preparation, so that the customer can see the food being prepared especially for him, before it is plated. The idea also is to show the importance of hygiene through cleanliness maintained for those activities which were usually out of view of the customers. Besides, being served food straight from the fire leads to its better psychological acceptance. This method also helps to prepare those items on order, which generally cannot be prepared beforehand, and held for service without their quality deteriorating. Some examples of such items are, chappati, poori, pancakes, dosa, grilled dishes and the like. Usually, the time consuming dishes like curries, soups, etc. are prepared and held hot to be dished out with those which are prepared in full view of the customer.

Some cafeterias may provide separate counters offering different types of meals or foods, so that if some people want only a snack or beverage they do not have to go through a long queue. The overcrowding is controlled through cash counters placed near the entrance, where selections made from menu

boards displayed clearly and even pictorially and are used as aids for making choices. Coupons for the selections made are then bought at a cash counter and the receipt presented to the service counter for those specific items. This makes the service faster too.

VENDING

Vending is an ancient method of serving food, and originally consisted of a seller or vendor bringing food home, or supplying it at bus stations, railway platforms, on roadsides, market places, fairs, etc. This has gradually developed into the mobile catering vans which now move to places and park where customers are expected. The vendor, whether on foot, on a bicycle or in a van, has been gradually replaced by the automatic vending machine, which does not move to the customer, but provides snacks, hot or cold, confectionery and beverages at railway platforms, airports, in schools, universities and hospitals.

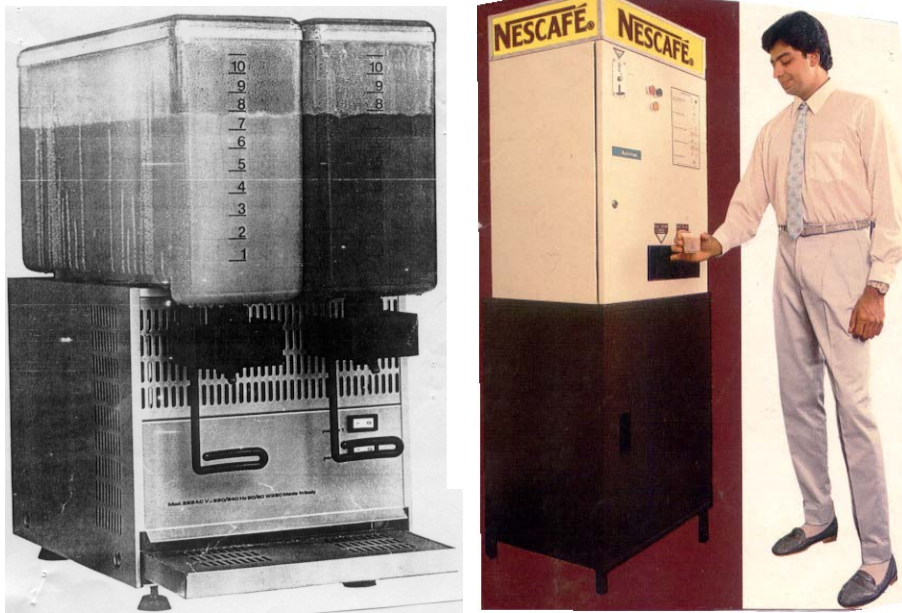
In India, however, automatic vending has still to come, because there are too many people who can be self-employed through vending activities. Figure 19.7 gives an idea of the types of vending services that form such an important part of low cost catering in India. Machine vending can, however, be seen at airports, in hospitals, cinema houses in metropolitan cities, but is not the norm. In the area of milk vending, however, the machine has become a common sight in cities, and people have accepted it as the best way of buying safe milk. Figure 19.7 shows vending machines for beverages usually serviced by an attendant or self vended.

While automatic vending for other beverages and snacks is not expected to catch up very fast in the near future, an awareness about offering safe food to customers is evident. Vendors are seen enclosing displayed food in glass covers, and using *dhoop* or incense sticks to ward off flies and other insects. Some vendors even advertise that they use mineral water for making up their beverages.

Mobile Vending

Mobile catering has become extremely popular in the last decade, with catering vans commonly parked in market areas outside educational institutions and on roadsides. These are the modern counterparts of the roving hawker who has always been a common site in cities. Mobile catering units operate as pavement cafeterias in busy areas through converted caravans. The unique feature of these services on wheels is that the restaurant or café comes to the customer instead of the customer going to it. In fact, it is gradually becoming popular with office goers, who prefer to pick up a hot packed meal for lunch, instead of

carrying snacky lunches, or eating in office canteens everyday. Mobile catering also has lower fixed and overhead costs, and can therefore offer meals at lower prices to customers. The greatest advantage is moving the food to the customer instead of waiting for him to come.



Beverages



Meals

Fig. 19.7 *Self vending machines*

The Menu

For mobile catering outlets the menu is generally restricted to snacky items or plated meals and hot and cold beverages. Due to lack of space, the choice is generally limited. A typical menu would include items like burgers, sandwiches, rolls, pizzas, ice-creams and beverages. Some mobile units provide complete plated meals like chicken curry rice, noodles with sweet and sour vegetables, or chops with salad and chips. The variety provided can be as large as desired, or as interesting as one's creativity permits.

Service

Food is generally prepared centrally and only reheated or finished in the mobile kitchen. A window which opens out as a service counter is utilised for serving as indicated in Fig. 19.7. The menu board is usually displayed next to the counter, but food as such cannot be displayed. Disposables are mostly used for service and disposal bins provided where the mobile unit is parked.

Mobile catering provides an interesting outlet for the sale of food prepared by large kitchens of hotels and restaurants. The idea of channelising fresh food to the market, or for distribution to social institutions like schools for the blind, or homes for the handicapped or old, is an excellent one. This prevents deterioration of food when the number of customers in the food service falls below forecasted levels, and eliminates the need for careful temperature controlled storage of leftovers. The India Tourism Development Corporation (ITDC) has recently started a regular mobile lunch service for office goers through their hotel kitchens. People come to the vans at lunch time, eat around it, or take food away to their offices. Mobile catering has tremendous potential with more and more women going out to work, having little or no time in the mornings to pack their own lunches. The services can provide packed main dishes, which people can carry home from office too, making it easier for them to serve dinner after a days work.

Sanitation and Safety

The sanitary aspect of mobile catering is dependent on:

- (a) The general standard of cleanliness maintained within the mobile kitchens.
- (b) The type of menu
- (c) Keeping quality of partly or fully prepared food items.
- (d) Health of staff and their working habits.
- (e) Environmental cleanliness, temperatures and humidity.
- (f) The holding equipment and temperature of foods.

All these points have been discussed in detail in Unit 7 under sanitation and safety.

Whatever the manner or style of food service adopted, the points to ensure are:

- (a) Personal hygiene of the service staff.
- (b) Cleanliness of the environment and equipment.
- (c) Good behaviour of staff in terms of their being courteous, soft spoken, smart and alert in their movements.
- (d) Good food presentation in an environment of cordiality, assistance and leisure.

The concept of mobile catering is not new. In war time, or during periods of famine and drought, food has always been transported from central areas of production or collection to remote areas for distribution and consumption. Again, this system has been followed when food, in the form of cooked meals, is distributed in rural schools which are far flung and in relatively unconnected areas for child feeding programmes. What is relatively recent, is the development of mobile catering. In fact, it is a sophisticated version of the food vendor carrying his basket or trolley of food to the people.

If this potential of mobile catering is exploited by every state, it can lead to the success of the midday meal program in government schools in every region of the country and make a visible impact on the state of nutrition and health of children.

Auto Vending

Today vending has moved from mobile vending to auto-vending, a method of offering catering services through the use of automated vending machines. This kind of service, sometimes called *auto-catering*, is used at busy metro stations, airports, markets, tourist resorts for self vending. The machines are coin vended, instructions for use are clearly indicated stepwise and the customer pays for his beverage or snack which then drops the can or package through a slot for self-service.

While Paris and Barcelona had automatic restaurants in the 1920's, they have long been known in the USA, although in India the concept has yet not caught on, except for snack or beverage machines sporadically located and often operated by staff because where unmanned it may be mutilated by the dishonest passer by. Where ever they have succeeded it is because there is no other service facility as at airport terminals.

However automatic machines are now available which dispense a wide range of products including micro-wave meals, which are very useful for hospital staff on night duties or in industries operating in round-the-clock shifts.

Auto catering is a useful concept for providing a service at odd hours, and during off-peaks or in out of the way spots in motels or hotels, where people may check in at any time of day or night. The machines provide a useful supplement to manual services. However, auto vending should be used as a useful tool for augmenting a service rather than the answer to all catering problems. In fact, machines perform very specialised operations of tea and coffee making and dispensing of iced drinks.

It must be remembered that machines cannot replace staff, who still have to produce the meals, or food items and constantly service the machines. Machines are eye-catching equipment, silently performing a useful and remunerative service for caterers. Imagine people going out to eat and being faced, with a row of machines instead of a person's smile. People basically like the personal touch that staff will always provide to a catering service in spite of today's robotic developments.

All the different types of service styles account for different rates of counter turnover. The formal services serving almost one tenth the number of clients in comparison to the informal types of services, with the same number of staff.

Contract Services

Contract services have evolved over the last few decades and today any individual, group or food service establishment can give a contract to a caterer who specializes in a certain category of catering, production or food service operation. Individuals and groups use contract services for functions and festivities such as marriages, birthday or anniversary parties, conferencing, canteen services for office buildings, hospitals, tourism catering, educational and other institutions. Catering services are also contracted for fixed time periods as for sports, cultural festivals, fares and so on. In fact, those organisations engaged in providing food service management contracts provide high quality food and service because they know their contracts will only be renewed if the customers are satisfied.

Today, the competition in this section has increased tremendously each one vying for institutional customers. Even hotel chains have started specialist corners for food and services, by renting out space to unorganised sector establishments for providing particularly customer favourites such as *chaat*, *paan*, and *chinese food*, some work on a contract basis with service providers who are specialists in foods from certain regions. This has helped to organise the

unorganised catering sector by providing a five star environment and a fixed place to work in and deal with customers of a social class who enjoy *chaat* for instance, but will never wait in a queue for it, or be served in disposables. They however, enjoy eating the same in the ambience of the restaurant and the waiter service.

This has helped favourites to come on hotel and restaurant menus, and *chaat* parties organised by restaurants have become the pick of the day for kitty parties and other celebration functions.

PRESENTATION AND DISPLAY OF FOOD

All efforts spent in the preparation and service of food would be in vain if it were not presented to the customer in an appetising manner. Where self-service methods are used it is equally important to display the food in an attractive manner so that the customer will be attracted to the food even when he is not particularly hungry.

Good presentation and display of foods works on the psychology just like a good advertisement which catches the eye. Food can also attract through its aroma, good colour and pleasant flavours. Many are quite often tempted to buy a cake only because it looks fresh in the display case of an establishment, and not because they went to a coffee shop or bakery to specifically buy it. It is therefore in the interest of every food service establishment, irrespective of its size or menu structure, to pay greater attention to presentation and display of the food.

Presentation

This refers to the look of the food on the table or in the customer's plate. The dish prepared may be a very simple one but a touch of the right garnish in the right amounts can make a world of difference to the pleasure it may give. Similarly, the choice of the serving dish in relation to the colour and texture of the food presented in it, affects the attitudes with which it is received. Figure 19.8 illustrates these points clearly.

The manner in which food is presented says a lot about the establishment, in terms of standards, skills, costs, caring for the customer and profitability. All these reflect in the popularity which a food establishment gains over time. For instance, dishes served neatly, with the level of the food at least half to three fourths of an inch below the edge of the serving dish give a good impression, while gravy spilling over the edge is characteristic of poor service skills, insufficient attention to equipment size in relation to portions, and carelessness.

Again, too large a bowl for the portion may make a person feel deprived of value, although the crockery may be good and attractive. Thus proper selection of dishes and flatware also help to enhance the presentability of a dish or meal. The customer's image of what he expects of a dish in terms of colour, flavour, taste and texture also plays an important role in the acceptability of food. It stands to reason that a pink coloured milk beverage will be associated with strawberry or raspberry flavour; but on tasting, if it has a vanilla, banana or pineapple flavour it is likely to be rejected. Also a milk shake served in a tall glass with a shaker straw has better eye appeal than when served in water tumblers. A few general guidelines for attractive presentation of food will prove useful.

- Mix foods together which blend well in flavour such as cereals and vegetables, pork and pineapple, milk and non-citrus fruits.
- Find a match, contrast or soothing blend in colour and flavour. For instance, rice and milk in rice pudding, or cauliflower and cheese in au-gratin are examples of colour matching, while carrot pudding, mixed vegetable salad or pulao, or grilled chicken and tomatoes provide contrasts in colour. Dishes which provide a soothing blend in colour are caramel custard, green salad, bread pudding, meat pie, and so on.

Mixing shades which do not blend can put people off even in the case of usually delicious flavoured foods. A typical example is serving tomato and beetroot together in the same salad although individually served both the food items are highly accepted. The two shades of red are unappetising and their widely different flavours unacceptable. On the other hand, serving beetroot and radish salad, and tomato and onion salad are extremely attractive in colour contrast, and the blend of flavours is highly acceptable.

- Foods must provide a variety of textures to add interest to meals. For example a soup by itself is not as presentable as one served with a few croutons in it. Similarly, a meal of mushroom soup, dal, curry and custard, can be made interesting if soup is served with croutons, dal with topping of butter, fried onions and a sprinkling of green coriander, curry is replaced by sauteed carrots and custard served with jelly.
- Dishes in the same meal should provide contrasts of temperature, e.g. a meal consisting of hot soup, chicken tandoori with roast potatoes, Russian salad and ice-cream.
- Dishes laid out on a buffet or dining table, should be set out in a manner that will provide a feeling of different heights. This can be done through proper selection of table dishes and service equipment.

One can imagine the lack of interest created by serving food of different textures all in flat plates. On the other hand, rice served on a flat platter could be shaped to give a peaked effect, curry served in a round deep bowl, sauteed vegetable in a shallow oblong dish, chappatis on a flat platter, and pudding set in individual dessert cups.

All foods can be presented in a number of forms suited to different service styles, as indicated in Table 19.1.

The examples in Plate 14.1 can be extended to any dish or meal. Presentation of food is a matter of having aesthetic and creative qualities, which to an extent may be inborn in staff, but can also be acquired by observation, training and experience. Plate 14.1 gives some ideas of ways in which foods may be served to look different and interesting. The cooking methods selected for meal preparation can affect the way in which a dish looks, tastes and feels in the mouth, e.g. tandoori chicken prepared by roasting; chicken curry by pan broiling; chicken cutlets by deep frying; and chicken fricasee by baking, all present very different dishes.

Thus food presentation ideas can be unlimited, all that is required is to develop a flair for handling food, and an understanding of flavours, colours, textures, for combining these effectively in food preparation. This usually comes with experience and interest in food and eating, and a concern for people for whom the food is prepared. The customer also feeds back ideas through certain demands or suggestions. These may also be received through expressions of the diners, repeated requests for a dish, regular eating in a food service establishment and through good personal relations established with people.

Food Display

For a catering business to reach its full potential, it has to create sales and provide a degree of customer satisfaction which is perceived as being better than that offered by other food services of the same type. Since selling food is crucial, the quality and effectiveness of its presentation determines how much is sold, an index of the profitability and success of the operation.

The arrangement of items in a showcase in full view of the customer is termed as food display. Display of menu items plays on the visual perception of the customers, helping them to make their choices with confidence. They can see the colour, texture and portion size of an item before selecting what they want, and this information is not clearly given by the menu card. Any misconceptions they may have about a particular dish on the menu are removed in this manner. All display of food must be screened from the customer to keep

it safe from contamination, and it is a good policy not to serve the displayed samples, unless it is a service cum display counter. In such cases, the staff attending to the service should also be screened from the food by glass shutters, so that food is only exposed when served.

Attractive presentation of food can help to increase sales by creating and aura around the food that makes people spend on impulse. It also improves sales revenue through reduction of staff costs by changing service systems from traditional waiter styles to partial or complete self services. This in turn speeds up service and customer turnover increases appreciably too.

Food is generally displayed in establishments where fast service is required, as in cafeterias. The type of foods displayed are generally those in which presentation skills of staff can be shown, or a special dish. Some usual items of display are salads, sandwiches, cold meats, baked products, cold desserts, *mithai*, desserts and snacks. Where these foods are displayed in transparent wrapping, the danger of contamination is less. When displaying cold desserts and sandwiches, the display cases need to be refrigerated and temperatures controlled to ensure they are right for the food being held in them.

Display Design

All display and service counters should be designed to enable easy cleaning, and preferably made of stainless steel from which glass shelves and screens can be dismantled and refixed easily. The amount of food on display counters should be restricted to minimise their storage time at room temperature.

Cafeterias with display service counters also run the risk of cross contamination from customers' tables if they are not cleared away efficiently. The development of see-through kitchens in some food services places the food production process on display. Customers feel more confident when they can see their foods being prepared freshly for them. This also motivates staff to adopt careful and clean working habits since they are under scrutiny by customers and management. Depending on the type of food service, various types of servery and buffet layouts can be found. These range from a single display unit showing a range of confectionery in a coffee shop, to island buffets, salad bars, carving stations or beverage display and service points. All these are designed to meet the specific menu requirements of individual restaurants and finished so that they blend with and enhance the restaurant theme.

To meet hygiene regulations the caterer needs to consider the temperatures at which various items of the menu need to be displayed without their quality deteriorating. A number of hot and cold displays are available to choose from.

Table 19.1 Forms in which foods are presented for various service styles

<i>Dish or Meal</i>	<i>Presentation for</i>			
	<i>Counter service</i>	<i>Waiter service</i>	<i>Self service</i>	<i>Vending</i>
Hamburgers	Burger bun filled with cutlet, wrapped in paper napkin. Sauce provided at counter.	Burger bun served halved on a plate with cutlet, salad and sliced tomato. Sauces and table appointments on laid table.	Burger made up with layers of salad, cutlet, tomato and onion slices, placed in a display case to be picked up.	Wrapped burger, salad portions displayed separately to be picked up as desired.
Soup	Served hot from bainmarie as required in individual bowls.	Served in large bowl on table for 4 or 6 or served in individual bowls, with bread or other accompaniments.	Customer pours soup from urns into cups placed near the urn.	Automatic coin operated, portion controlled, taken in disposables placed near the vending machine.
Tandoori chicken	Served from behind the counter as individual portions.	Freshly roasted, served whole or halved and garnished with lemon, onion and green coriander.	Preplated and garnished or served as cold chicken salad.	A vendor spit roasts marinated pieces on request and serves with onion and a slice of lemon.

The longer the food is displayed in refrigeration, dehydration and deterioration sets in depending on the particular food item. On the other hand if food is kept hot, it either overcooks or dries up making it unattractive. It is therefore good policy to serve the displayed portions on demand and replace them at short intervals with fresh portions. See through display cases are available which can be placed as part of self service equipment. Some designs have shutters that the customers can open to remove a single portion to place on their tray. The display case is then continuously replaced from the other end according to demand.

Temperature control in display equipment is of utmost importance for quality retention in foods. All high protein foods must be displayed at under 5°C. The equipment design too should be looked into before investing on such equipment. If the cooling is from the base, the bottom of the foods may reach temperatures 0°C and freeze, while top surfaces may be at 5°C. This will destroy textural quality of foods and palatability. So the basic selling point is to keep up quality, show it attractively and it will not need advertisements to sell it, as it will sell itself.

Thus, there are many ways in which food is displayed for served. It is for the catering manager to adapt the traditional methods to progressive trends of the customers in a practical manner. Success of a food service depends largely on adapting to customers' whims at a particular time, to make it pleasant for them.

FOOD SERVICE EMPLOYEES

Approximately 60–65 percent of all food service employees prepare cook and serve food, and keep eating areas clean. Only 30% are managers and operators of small restaurants in which they cook, as well as supervise the work of part-time or temporary staff. In some establishments salaried staff are employed for various jobs, of management, production, accounting, service and so on.

The catering industry till today, believes in employing part-time workers and training them on the job or accepting student internees from catering institutes, and then choosing the best talent for the organisation. Even during the internship or attachment period if catering establishments paid trainees a stipend for the duty hours performed, young energetic and motivated staff could be recruited, as this stipend would cover their transportation and expenses. A more open minded approach is required by managers to help reduce employee turnover and improve the quality of service in their establishment.

INSTITUTIONAL FOOD SERVICE

Institutional food service represents the service of food to inmates guests, visitors and workers of an institution whose primary goals are not profit catering. The food service provided is a supplementary service for maintaining the health of people to achieve the goals of the institution, be it an educational, industrial welfare or other organisation.

The methods of institutional food service remain the same as for other catering operations, each of which are being briefly discussed.

Education Institutions

These institutions are basically required to provide a catering service for students, staff and visitors at a reasonable price commensurate with the purchasing power of students. The service is provided on working days only between 10 a.m. to 5 p.m. The special considerations to be taken into account are:

- Catering services are contracted against invited tenders and are generally valid for one academic year only, therefore not necessarily renewed if the service is deficient in any way.
- No outsiders are allowed to use the services and therefore clientele is limited
- The business is seasonal, because of long vacations and holidays.
- Menus are limited since storage facilities are restricted by space allotted.
- Menu items are priced according to the purchasing power of students, their likes and dislikes which vary greatly from time to time.
- The age groups vary according to whether the institution is a school, college or university campus with or without hostel facilities.

Service Methods

The service methods chosen are therefore informal cafeteria style services, offering a la carte or table d'hôte menus for meals and snacks, with limited choices. Counter services are also set up on campuses whereas in some, coupon systems are followed, the customer takes his seat after payment and the food is plated and served to them in exchange for the coupons presented to the counter. Alternately, customers may be required to collect their choices over the serving counter and bring it to their seat for eating. Sometimes trays are provided on which preportioned beverages, meals, snacks and accompaniments provided in sachets are placed, taken to the cashier who is at the end of the service counter.

The cashier then prepares a computerized receipt, in exchange for cash payment for the items on the tray. After the payment customers collect their cutlery, napkins water and settle down to enjoy their chosen food.

School children who reside in boarding schools get their meals in their hostel dining halls, where they serve themselves and sit down for meals. Any second helpings are offered to them at the table. *Thalis* and *katoris* may be used with curds and desserts preportioned, or trays with sections provided for service. Similar service methods may be followed for college hostels, but extra servings of all items may be placed in bowls on all tables, including accompaniments, for second helpings.

Food presentation is of utmost importance to attract and tempt children to eat full meals rather than go for fast foods from school and college canteens. Occasionally the school or college hostels if large, may employ their own catering staff and provide the total facility instead of contracting it to outside caterers. This not only enables the institution to control the operations better but provides permanence to the service job security to staff and allows a lasting relationship to get built up between the hostelers and the food service of which they become a part.

Industrial Feeding Services

This involves serving food to a large number of workers varying in their hierarchical levels in the organisation. Usually staff feeding is associated with cheap meals because they are heavily subsidized by management. The mental image of plates filled to the brim with indifferently prepared food eaten in unaesthetic environments is no longer valid today.

Depending on the size of the industry, the task of feeding staff may either be left to selected contract caterers, or the catering staff too may be directly employed by the industry which may feed upto 5000 people per day, round the clock.

Industrial catering involves satisfying a wide range of customer requirements such as cooking and serving full breakfasts, lunches and dinners, supplying fresh snacks with tea and coffee on demand, making special snacks for executives, guests and visitors, laying out conference buffets and so on. All this would involve staff skills of different types and storage, production and storage space for all materials required for a regular restaurant but in much greater quantities. Skills would vary from management in all areas of the production and service cycle including menu planning, presentation, waiting skills, waste management and so on. In short, it requires a very professional approach which

is also highly commercial, responding to changes in demand of various levels of staff who depend on at least two main meals at work, for their health and survival.

Work Force Requirements

Requirements will however, depend on the location and the nature of the work force, younger employees preferring fast food counter services in contrast to the more leisurely approach of senior staff, who generally prefer to be waited upon in a comfortable aesthetic environment.

Food Choices Menus

The menu will also be affected by the age structure of the work force and their level in the organisation. For example, operative level staff would prefer traditional menus which have variety of cereal and high satiety value even if only one curry, cooked vegetable, but enough of it. They do not care much for delicately presented salads but are happy with onion and lemon wedges. If only *mithai* in the form of *burfi* or *ladoo* is served they are content supervisory staff may look for curds or their preparations a salad and some sweet but may eat only one type of cereal even if a choice is provided. Executive managers would possibly prefer lighter meals with attractive salads, soup and some baked dish with a selection of breads, or if the choice is traditional, limited quantities of cereals, curries or roasted meat and steamed vegetables with a delicate fruity dessert and or coffee. The choices are usually commensurate with the lifestyle, the managers being slightly more sedentary than the operational work-force.

Service Styles

These vary from informal cafeteria or counter service type methods to semi-formal such as buffets manned with service staff for direction, portioning and other assistance, to very formal buffets or sit down meals when VIP visitors are entertained or on other special occasions.

The steadily increasing awareness of healthy foods is a challenge which food processors and caterers are fast trying to adjust to, with respect to cooking practices and menu plans.

Welfare Catering

Welfare catering comprises provision of meal to less privileged clients be they school children who go to government or local *slum schools* in rural and urban areas, old people in homes, orphanages and institutions for the disabled.

Mid Day Meal Program

The mid-day meal is the only nutritious meal the under privileged children are likely to get if it is planned and implemented well in every state. While the government wishes the scheme well by increasing the allocation per child for the meal from time to time, the implementation is grossly inadequate considering the low levels of attendance in such schools and the existing high prevalence of malnutrition in the country.

The program would require only one to 2 hours in any institutional kitchen in the area under the guidance of nutritionists or local trained aganwadi workers or school staff to implement the program to supply cooked meals to children at least once a day. Some non-government organisations (NGOs) have taken up this task in some areas and states. In Tamilnadu, the program was implemented with the help of Home Science colleges and school staff and is a recorded success story.

It would be a blessing in disguise if food service establishments realised a sense of social responsibility and lent their infrastructure and expertise for production and distribution of basic food necessities to such children, considering the huge quantities of food that are prepared and often wasted in their establishment.

Other welfare institutions include old-age homes orphanages, institutions for the blind or disabled in other ways. All of them require meals but on a low or non profit basis. They also need to use different forms of food service, according to the abilities of the inmates, of these homes.

Old Age Homes

The customer here requires greater attention than the young energetic people who eat out when they want. At the same time old people are more traditional in what they like to eat, their senses dull with age, and therefore they feel happier with good food presentation. Service to such clients is challenging and requires attention to every detail of waiter service. They need to feel important, and waited upon because meal time is what they really look forward to considering that their occupations are limited and health too not as good as before.

The aged may be even divided into groups, the young old, old and old-old varying in age from 65–80 plus. The young old may even be attracted by a informal buffet service where they can see the display of all the food and choose what they like to eat, serve themselves and eat at tables laid out with cutlery, glassware etc. for their meals.

Blind Schools

Here colour is not important and people need to be served while seated, with all the food items portioned out for them in sectioned trays. Gradually they learn the position of the curry, vegetable, cereal and so on by their acute sense of touch. No sharp tools should be presented such as forks or knives. The inmates usually eat with their hands. The consistency of the food items need also to be planned to avoid spilling. Close supervision is however needed to assist with second helpings.

Homes for Other Disabilities

The disability needs to be kept in mind before deciding on the most suitable service method, to adopt. Where large numbers are to be served and they are partly physically able, counter services are good ways to promote limb movements. They may however, be handed over pre-plated meals and allowed to help themselves with preportioned desserts, curds or choice of fruit.

The basic requirement of service staff in institutional feeding is love and care for the customer or client irrespective of who pays for their meals, or what the salaries of staff are. Dedication is an important quality for successful institutional food service.

Chapter 20

Clearing, Cleaning and Waste Management

The importance of clearing and waste management cannot be under-rated in a food production and service environment, where the same tables are occupied by different customers, some of whom may be carriers of infection. On the other hand, if tables are not cleared well and fast enough, or the waste arising from kitchens is not managed efficiently, cross contamination of fresh foods being served or processed can result. Clearing the tables is usually followed by sorting out of cutlery, crockery and piling the dishes in a tub or sink of hot water to rinse out the grease. This is followed by cleaning or dishwashing. Soaking in hot water with added detergent and rinsed again for cleaning.

CLEARING

Clearing denotes a process which involves the removal of used plates, dishes and table appointments after customers complete a course or leave a table. Some guidelines for clearing are:

- Remove table ware and appointments as soon as customer has finished eating.
- Dust off any remnants from the table leaving it neat and clean before the last item like beverage or dessert is served.
- Completely change covers and appointments as soon as customer leaves, in readiness for the next customer.

Care needs to be taken to ensure that the worker who clears tables is allocated no other job during service hours as he can contaminate food and surfaces if

not supervised constantly. Clearing personnel should be provided with a plastic washable and light weight container that is used for collection of used table ware. Light weight trolleys with a section provided for clearing plate waste are used in large service areas so that they can be wheeled in and out with ease for clearing without the danger of spilling food and drink that has been cleared. Provision is necessary for sponges or wiping cloths which can be dipped in disinfectant, wringed out or squeezed and used for wiping surfaces as soon as the table ware is removed. All equipment and waste material from service areas should be segregated immediately for dishwashing, and waste removed into incinerators for crushing and volume reduction for disposal. Where incinerators are not installed, covered bins should be placed outside kitchens and plate and kitchen wastes collected in them. The bins should be cleared into pits if the space and environmental landscape allows, for recycling into manure for garden use, or left covered to be removed by the waste management services of the area. The bins should be cleaned after every meal, disinfected and replaced for use.

CLEANING

The management of food operations is not complete without attention to the function of cleaning, an important part of which is *dishwashing* or *washing up* as it is commonly known. Even services which make use of disposables, have to consider effective arrangements for washing of cooking pans, cleaning of kitchen tools, serving dishes, tableware and parts of mechanised equipment which come in direct contact with the food.

Dishwashing

While most supervisors of catering operations are extremely conscious of the importance of thorough cleaning of utensils used in food preparation and service, *dishwashing* as a task has always been looked down upon even by the kitchen staff themselves. This is proved by the fact that cheap labour is generally employed for the job, which therefore becomes the most unrewarding and the least efficient. The introduction of dishwashing machines suited to the cleaning of various equipment have somewhat upgraded the job, but then staff need to be trained in their use and maintenance.

The common adherents on used equipment are saliva, lip marks, food materials like fats, protein and carbohydrate residues, insoluble salts and carbon residues remaining from the scorching of foods which sometimes occurs at the base of the cooking utensils.

Undoubtedly, sanitation is essential to catering and therefore the importance of proper cleaning methods for kitchen, service, storage and other equipment cannot be underrated. Ideally, these should be sanitized by the use of germicidal solutions.

All cleaning involves the use of water, a detergent or scouring powder or abraive, and something to scrub with, all of which need to be suited to the material of the dishes, utensils or crockery being cleaned. The nature of these components affect the quality of the wash and are therefore briefly discussed.

Water

The two important aspects to consider in the water used for dishwashing are, its quality and temperature. The quality refers to its being unpolluted and soft. Water needs to be tested occasionally for its quality to decide what kinds of detergents are necessary for a good and safe wash. For water to be considered safe it should contain less than 22 coliform organisms per litre. Although these organisms are not all pathogenic, their presence indicates sewage contamination and calls for sterilization temperatures if it has to be used for dishwashing.

The terms *unpolluted* or *pure water* is generally used to indicate the absence of microorganisms, but water may still contain some dissolved chemical substances. When calcium and magnesium ions are present in the water it is known as *hard water*. When such water is repeatedly used for washing dishes scales form on the equipment, seen as a coating that prevents efficient heat transfer. Scaling may also block pipes or leave deposits on which microorganisms can grow, besides making cleaning difficult and affecting food quality. Hard water passing through boilers for dishwashing thus reduces boiler efficiency. The steam from such boilers also becomes alkaline and starts corroding aluminium and tin lined utensils.

If calcium (Ca) and magnesium (Mg) are present as bicarbonates, the hardness can be removed by simply boiling the water but as sulphates, they make the water permanently hard. In the latter case water can only be softened by a method involving *ionic exchange* whereby the magnesium (Mg) and calcium (Ca) are replaced by sodium, potassium or ammonium ions, and removed from true solution by precipitation. The use of ammonia softens the water as well as emulsifies fat adhering to dishes. Sometimes, traces of vinegar added to the water improves cleaning because it is not affected by the hardness of water. Use of washing soda softens water, but it is a strong alkali and is injurious to hands. It is used as an ingredient in cheap soap powders. It is useful for clearing waste pipes after the dishes have been washed.

The degree of hardness is expressed in parts million (ppm) of Ca or Mg salts present in water, or in grains per litre (one grain is equal to 0.064g of calcium carbonate). Table 20.1 indicates the content of calcium carbonate (CaCO_3) in hard and soft waters.

Table 20.1 *Calcium carbonate content of different waters*

<i>Water</i>	<i>Grains of CaCO_3 per Litre</i>
Soft	0.22–0.90
Medium	0.1–2.2
Hard	2.4–4.4

Besides being hard or soft, water varies in its pH, and thereby possesses cleansing properties. Soft water has better cleansing and foaming properties better with soaps. It also provides deeper penetration of detergents into the materials adhering to dishes and removes them completely.

Besides softening the water, the high temperature used in dishwashing helps to destroy microorganisms. Temperatures best suited to dishwashing are 50°C for the pre-rinse, 60°C for the wash, and 80°C for the final rinse. While slight variations make little difference the temperature of the wash should not go below 60°C.

Detergents

Detergents are products made up of a solvent, buffer, a wetting agent, and water. They are cleansing agents or substances capable of removing grease or foreign materials adhering to surfaces. The most common of them are soaps, in the form of powders or liquids, acid cleansers, grease solvents and abraisives. Water by itself also has cleansing properties but is generally used as a vehicle for carrying the cleanser to the soiled surface. Alkalies are added to some cheaper detergents because of their ability to form soaps with fat from the soiled surfaces. While these can take care of the food material adhering to the dishes, alkaline detergents harden the water and therefore have poor rinsing qualities. Besides, alkalies exert a corrosive action on the dishes affecting their sheen, and making surfaces rough and are at the same time harsh on the hands that wash the dishes. Addition of salts like sodium metasilicate and trisodium phosphate increase the cleansing power by helping to soften the water. The disadvantage, however, is that the calcium and magnesium salts in the water precipitate out and form a film on the surface of dishes. Poly phosphate detergents, however,

remove the problems of precipitation, corrosion and water hardening and have been found to be very satisfactory for hand washing of dishes.

A good detergent has the ingredients to soften hard water, dissolve out adherents and obstinate stains, without having a corrosive action either on the dishes or on the hands. It is not always possible to find a detergent which is equally good for metal, china, glass, wood and laminates, but a wide variety are marketed to choose from. The best choice would be one which is useful for glass, china and cutlery, while a separate one could be selected for utensils.

Action of Detergents

Detergents act in three phases *first*, they penetrate the materials sticking to the dish, going between the particles of the adherents and the surface of the dish to be washed. This process helps to reduce the surface tension between particles and the dish, permitting the water carrying the detergent to reach the greasy surface and remove the particles. Detergents which reduce the surface tension of water and help in its penetration are known as *wetting agents*. *Second*, the particles of the detergent get suspended in the water or washing solution, enabling fats to break up into emulsions with the agitation applied in the washing process. Soap is a good emulsifier, so also certain alkaline salts. The soluble adherents get dissolved in the water and can thus be washed away.

The principle underlying the cleaning action of detergents is the conversion of partly soluble organic or other particles into colloidal solutions—a process known as *sequestering*. Sequestering agents are important in controlling the forming of curds in hard water. *Third*, the detergent liquid should be removed by thorough rinsing of the dishes to leave them clean. To ensure that all the detergent is rinsed away it is desirable to rinse dishes at least twice, the final rinse being in hot water. Dishes should preferably be air dried instead of wiping dry with cloth as the latter can get wet soon and contaminate the surfaces of washed dishes.

Some detergents have non-toxic germicidal properties and therefore can operate at lower temperatures. But their action and therefore efficiency is increased by increase in temperature.

Detergents are classified according to their electric charges in water. Electrically negative detergents are anionic, while the positive ones are cationic or non-ionic, that is, neutral. Cationic detergents have good bactericidal properties, but may not be efficient cleaners. The non-ionics are usually in liquid form and are good 'wetting' agents. Another group of detergents is amphoteric possessing the properties of both anionic and cationic detergents.

Since different detergents exhibit different properties it is important to know the composition of detergents and to select the right one for a particular use.

Detergents suitable for handwashing are not fit to use in dishwashing machines, because a dishwashing detergent must not only have the ability to soften water, but must be alkaline, increase wetting action, dissolve stains, emulsify fats, be non-corrosive and protective for both dishes and the machines. The phosphates in dishwashing detergents react with the minerals present in water. The addition of pyrophosphates helps in eliminating the effect of water minerals, leaving the equipment clean and free from deposits. Sometimes, foams develop in the process of dishwashing because of the protein residues on dishes. In such cases, defoaming agents may be used. Detergents in which chlorine is added, in a form which will not react with the alkali of the detergent, help to prevent staining and a hazy effect on dishes which makes them appear unclean. Table 20.2 indicates the composition of a handwashing and a dishwashing liquid detergent.

Table 20.2 *Composition of liquid detergents*

<i>Hand washing liquid</i>		<i>Dishwashing liquid</i>	
Sodium lauryl ether sulphate	13.3%	Tetra potassium phosphate	10%
Sodium xylene sulphonate	26.6%	Anhydrous sodium silicate	4%
Sodium dodecyl benzene sulphonate (SDBS)	43.3%	Coconut	5%
Water	16.8%	Potassium toluene sulphonate	5.4%
		Potassium hydroxide	1%
		Water	74.6%

Sodium dodecyl benzene is the basic organic ingredient of most detergents, and efficiently removes adherants and stains, while sodium silicates provide good buffering action and help in preventing the redeposition of adherants on the surface to be cleaned. They inhibit the corrosion of stainless steel and aluminium.

Sodium tripolyphosphate (S.T.P.) helps to soften water and redissolve insoluble soaps of magnesium and calcium by combining with metallic ions to form soluble compounds. Sodium carbonates provide the alkalinity necessary to soften water by precipitating magnesium and calcium carbonates and coconut diethanol amides stabilise the foam in detergents and improve their cleaning power.

The composition of detergents for glass washing and cleaning of metallic equipment especially aluminium is presented in Table 20.3.

Table 20.3 Composition of detergents for glassware and aluminium

<i>Ingredients</i>	<i>For glassware (%)</i>	<i>Ingredients</i>	<i>For aluminium (%)</i>
Caustic soda	55%	Water	39%
Sodium meta silicate	20%	Tri Sodium Phosphate (anhydrous)	20%
Soda ash	17%	Soda	20%
Sodium gluconate	5%	Sodium Meta Silicate	20%
Sodium dodecyl Benzene sulphonate (SDBS)	3%	S.D.B.S.	1%

A detergent, however, only functions as a cleansing agent, but cannot sterilise what is washed. Some sterilants which are chemical in nature are marketed for catering use. In such cases it is advisable to follow manufacturers' instructions carefully.

Abrasives

An abraisive is a substance used with friction to rub off difficult stains from equipment. Stains which do not get dissolved with water and non-corrosive detergents, such as those of animal and vegetable fats and organic or carbon residues require abrasives or scouring powders. Table 20.4 gives the composition of a scouring powder that may be used.

Table 20.4 Composition of a scouring powder

<i>Ingredients</i>	<i>Per cent</i>
Volcanic ash	90
Sodium carbonate	6
Soap powder	4

Abraisives must be selected according to the severity of the friction required to remove the stains. Silver sand, pumice powder, steel and glasswool, are often used. Red brick powder mixed with tamarind is a good scourer for brass utensils. Nylon scourers are also available. Scouring powders are not so harsh as red brick powder and silver sand, which were used for obstinate stains, especially

those left on the base of pans from the scorching of milk. These powders contain soap or synthetic detergent and a chlorine bleach, the proportions varying according to the brand and the use to which they are to be put. The alkali is mainly soda ash and some phosphate with an abraisive in the form of fine powders are gentler in their action, both on equipment and on hands.

The Dishwashing Process

Since washing of dishes means handling crockery, cutlery, pots, pans and parts of equipment which come in direct contact with food, dishwashing is an area where sanitary hazards can easily be created if enough care is not given to the process. Figure 20.1 indicates the steps through which dishes go before they can be reused by staff or customers.

For cooking utensils pre-soaking is required before scouring with a hard brush and abraisive and then washing and rinsing, and drying for reuse. Glassware should follow the same sequence as for crockery, except that it can be emptied of remaining liquids and placed straight into the water with detergent.

Careful dishwashing can set the standards for a sanitary food service. The use of dishwashing machines for large volumes of washing have reduced the amount of handling and costs through reduced labour and lesser breakages. With power equipment, greater attention is now necessary on the storage of washed pans, dishes and glassware rather than detergents, hot water and staff handling practices.

Cooking utensils get resanitized when placed on the source of heat for cooking, but proper storage of tableware is important to prevent recontamination. A bacterial count of less than 100 is acceptable, but when it exceeds that figure, it means the washing, handling and storage needs attentions. Thus, at every stage of the production cycle, occasional checks are necessary to maintain standards of hygiene and sanitation, and to ensure safety of customers.

Guidelines for Efficient Dishwashing

Some guidelines for washing up are given below:

- (a) All plate waste, leftovers, and swill should be collected away from the dishwashing area, in covered bins, for final disposal before utensils or crockery are stacked for washing.
- (b) Equipment should not be collected to be washed at the end of a service period. Dishwashing should be a continuous process because this area can become a source of contamination.

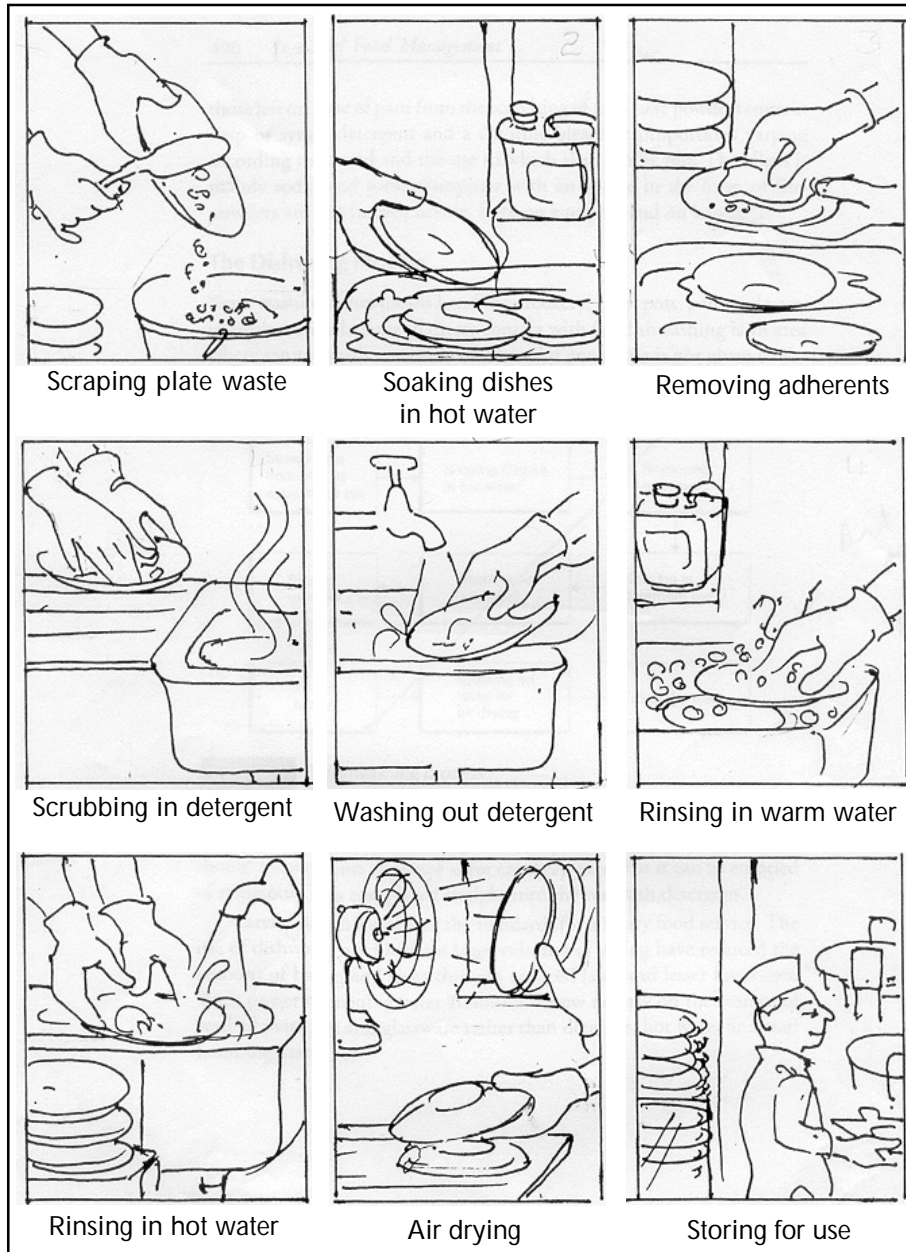


Fig. 20.1 The dishwashing process

- (c) Free flowing hot water should be made available for this task.
- (d) Knives and other sharp tools should be kept on the drainboard for washing, and never thrown into the sink with other equipment, where staff may not expect them thereby cutting their hands while washing.

- (e) Staff must be informed if a hot pan is placed on the drainboard for washing.
- (f) All cooking pans must be soaked immediately after use to loosen adherents and decrease washing effort.
- (g) Staff responsible for dishwashing should be equipped with non-slip gloves providing a good grip for the job, to protect hands from strong detergents and the heat of the water, yet prevent breakages caused by slipping.
- (h) Handling of washed utensils should be minimised. This can be done if they are allowed to drain and air dry in their storage racks, to be removed only when required for use.
- (i) Dishwashing should never be rushed, as this increases the health hazards for all staff and customers. To ensure this does not happen during rush hours, there should be adequate provision for crockery, cutlery and utensils.
- (j) All equipment should be dry before it is put away.

Dishwashing Units

Dish-washing may be categorized as *hand washing* and or *machine washing* depending on the nature of the equipment to be washed, skills available, progressive training preferably on the job and literacy levels of operating staff.

Handwashing

Handwashing units suitable for various food service establishments which operate on traditional methods, the most suitable arrangement for dishwashing is to make provision for a row of three sinks, one each for pre-washing, washing and rinsing. Small food service establishments can have a double sink arrangement for dishwashing, in which the water is changed frequently, while larger ones may resort to three to five sinks, for handwashing of crockery or cutlery. Figure 20.2 indicates the different arrangements.

The water used especially in handwashing of utensils pots, pans and crockery and glass ware should always be hand hot. Detergents need to be chosen with care depending on the nature of the dirt and food waste adhering to the pieces, and whether water is soft or hard. Improperly washed glasses and water has been targeted as sources of food poisoning repeatedly. While the law basically demands that glasses and dishes have to be hygienically cleaned there is no stated method for dish washing except in the U.S.A., and that too with emphasis

on hand washing. It therefore, falls on the caterers to keep in touch with new ideas and techniques, and closely supervise their normal daily hygiene routines.

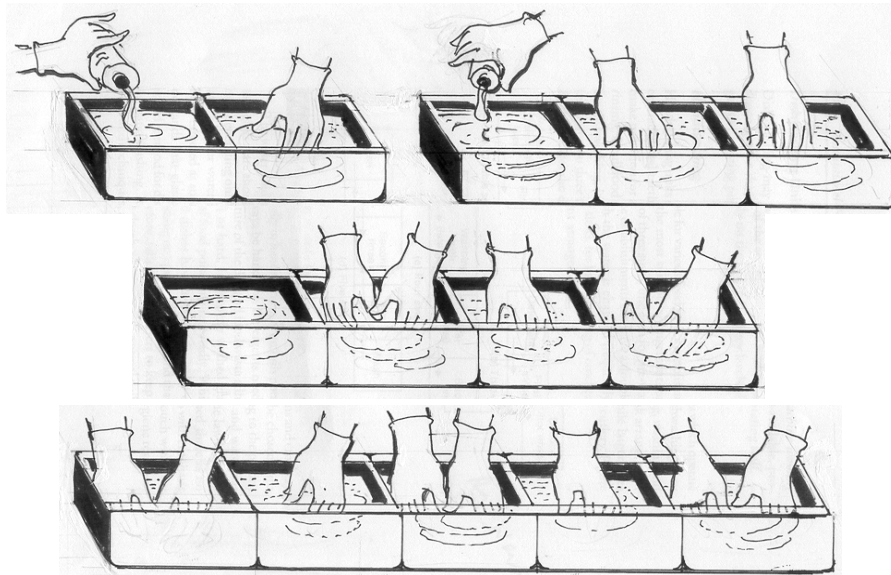


Fig. 20.2 Arrangements of sinks for dishwashing

Machine washing

Dishwashing machines are available in many models, designs, prices and functions, such as for specialist functions of dish washing, glass washing, pot and pan washing and general purpose machines. Plate gives an idea of their construction, but every establishment needs to study the feature and performance of a model while keeping electric load, space requirements, costs, simplicity and efficiency for use. Once installed the staff operating the machines may be trained in their use and maintenance routines.

Glass washing machines

There are basically three types of glass washing machines, these are brush operated, cabinet and conveyor machines. They all have their own special features and advantages and wash glasses better and more safely than through a dishwasher or when washed by hand. Glass washing machines are useful in establishments that offer bar services. When choosing which type and size of machine to invest on, it is important to compare the direct costs of washing by

hand and by any chosen machine. Such a comparison is indicated through Table 20.5

Table 20.5 *Comparison of costs in glass washing by different methods*

<i>Features of machines</i>	<i>Mechanical Hand-washing</i>	<i>Machines</i>		
		<i>Brush</i>	<i>Cabinet</i>	<i>Conveyor</i>
Water used	14 litres for 100 glasses	One litre per 20 glasses	1.2 Litres for 24 glasses	70 litres for 2000 glasses
Water per glass	0.14 litres	0.50 litres	0.50 litres	0.01 litre
Time taken		1 minute	2 minutes	1 hour
Costs per glass of washing at Re 1 per litre	14 paise	5 paise	5 paise	1 paise
Breakages			Regularly reduce to almost zero	
Injury	Yes	None	None	None

Impact on Costs

As seen from Table 20.5 glass washing machines cut water heating costs by over half or more compared to those incurred in hand washing. In addition losses through breakages are greater with hand washing which also results in injuries, that can sometimes be serious enough to keep people off work.

Washing machines are usually designed for automatic drying, and prevents the repeated use of dish cloths which may cause contamination on dish surfaces while adding to costs. In establishments where disposables are used for safety and hygienic services, the costs are too high, in terms of the investment on glass washing machines, especially in tropical regions where the number of disposables used are very high because of the hot climate. Further, hand washing of glassware usually involves a lot of overtime payment. For hand washing, cheap labour are often employed increasing costs through payments and breakages. In spite of the costs the glassware may not be as clean to use as when washed and dried in a machine, untouched by hand. The latter also prevents the unsightly appearance of a large number of used glasses lying around whereas with a glass washing machine a constant flow of clean glassware is available for use. However, the amount of glassware and crockery required increases to nearly 2–2½ times the seats in a food service establishment depending on requirements for peak hour service or washing cycle and machine capacity.

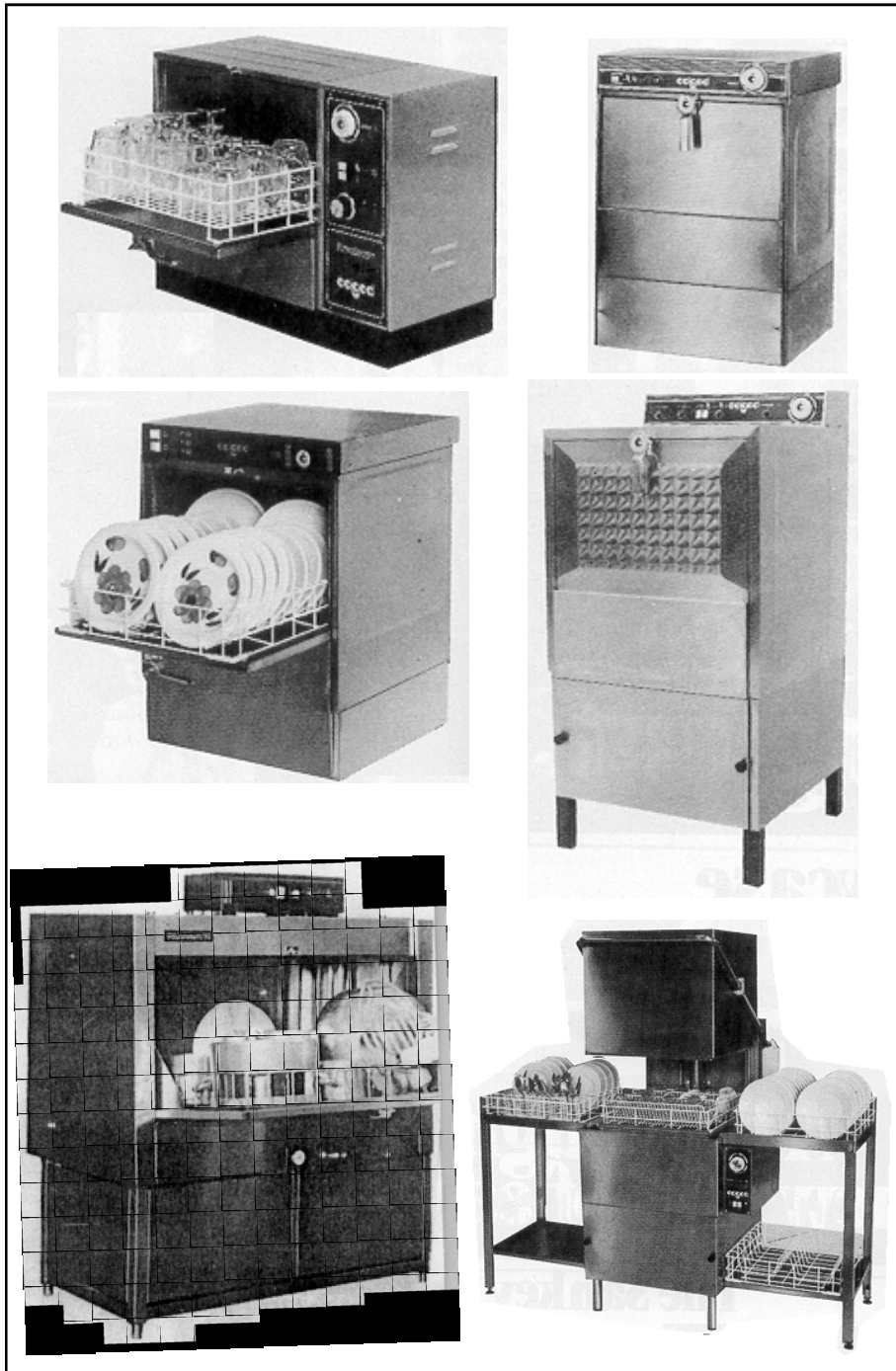


Plate 20.1 *Modern dishwashing equipment*

Thus the direct cost savings in using glass washing machines can be calculated when using any method of washing or cleaning. Such calculations are possible even for dish, pan, and cutlery washing units.

The average electricity costs on catering in an organisation excluding costs of bar, cooking, ventilation and lighting have been estimated at 13–15% of total electricity costs of the unit, while the gas costs amount to approximately 10% as used for catering only.

Washing by machines saves time and effort and increases safety because temperatures near boiling can be used. Automatic dishwashing machines usually have adjustable washing cycles to suit the washing requirements for crockery, glass and stainless steel while still offering flexibility in operation. Rinsing cycles are also built in for items which have to be put to use after long storage. It is good policy to follow instructions of manufacturers to get the best out of the equipment.

In all catering operations hygienically clean and sparkling dishes are a mandatory requirement, whether in a hotel, restaurant, hospital, industrial canteen or any other institution offering meals to customers or inmates. Any customer would want to choose a place where the table has sparkling glasses, cutlery, clean plates and other tableware. Commercial dishwashers achieve this result by controlling washing temperatures, timing the cycles, using detergents and rinse-aid products exactly suited in quality and quantity as directed by manufacturers. Dish washers are a valuable asset in terms of:

- Their ability to produce consistent and hygienic cleaning.
- Reducing costs.
- Constant availability of clean dishes.
- Clean environment.

Hygienic Cleaning

This is possible because once the machines are loaded, the dishes are untouched by hand, only to be removed in the baskets in which they are washed, depending on the models used or stacked in separate baskets for immediate use or storage.

Reducing Costs

A comparison of time and costs of washing have been tabulated and discussed in Table 20.5. In addition costs of staff, fuel, water, breakages is also considerably reduced.

Dish Supply

Although slightly larger numbers of dishes need to be used in the establishment because efficient machine use is possible only when the equipment is fully loaded, this is not a problem in commercial operations. What is important is that hygienically cleaned and sparkling tableware is available whenever required.

Clean Environment

The sparkling dishes give the impression of a hygienic, and orderly environment. This is possible only because used crockery and glasses need not lie stacked in view of the customer. The staff responsible for clearing can straight away stack them in the dishwashing machines.

Pot or Pan Washing

This should generally be done before the washing of crockery and cutlery, and done by hand using scouring powders. The abrasives have to be selected with care so that surfaces of pans are not scratched or chipped in the process of washing. If this happens, the pans must not be used for cooking. Pan washing includes the washing of all food holding equipment from bainmaries to heated trolleys.

Pots and pans should not be kept unwashed for too long because the food and fat adhering to them begin to deteriorate, giving off odours which can be absorbed by the utensils and affect flavours of foods cooked in them. Pots and pans after washing, should generally be allowed to air dry inverted on slatted racks. Similarly, small equipment may be hung from hooks to air dry.

The cleaning of tea pots and coffee urns requires special attention, to prevent obstinate stains, and must be washed out thoroughly everyday with long handled hard brushes. At night clean water may be left in them and emptied out before brushing them once more for use. Stain removers are also marketed in the form of tablets, which may be added to a filled pot and left overnight. The equipment is then thoroughly cleaned before using.

It is therefore clear from the above discussion, that even a job generally considered unskilled needs a certain amount of knowledge, skill and experience to do it well. More so, it needs to be organised with care to ensure a safe food service for customers, and a successful catering establishment.

WASTE MANAGEMENT

In any production system waste is inevitable and extremely important to remove or recycle as the case may be in order to prevent hazards to health. This is especially so in a catering environment, where the product of sale is food and health of staff and customers is vital for success of the establishment. Sadly, the food and its service takes precedence in most establishments and this extremely important area of clearing, cleaning and waste management is usually ignored as it is not an activity visible to the consumer. Today, with catering management getting progressively competitive and professional and the consumer more aware of health aspects, expectations about safety, quality and wholesomeness of food while eating out, is on the rise too.

Catering wastes

The wastes arising out of production and service of food may be classified into three basic categories:

- Storage waste
- Kitchen waste
- Food service waste

All these wastes are often clubbed together and referred to as *garbage*, meaning those materials which have no use in the production and service of food and are disposed off in one or another manner.

Storage waste

The waste materials arising from receiving and storage of foods and related materials fall into this category. They comprise of packaging materials in the form of jute bags, polypacks, cardboard boxes and the like, some of them can be returned to the supplier, others have to be sold as waste for recycling or discarded and dumped by the local authority responsible for waste collection in the area.

Kitchen waste

Kitchen wastes are usually classified as solid or liquid wastes depending on their consistency.

Solid waste

This comprises of peelings, seeds or pulp from vegetables and fruits, spent coffee and tea, bones of chicken, fish and other meat and dairy wastes. In

addition there are card board or polythene packing used for spices which usually are bought in small packs to retain flavours, metal tops of cans and caps of bottles, plastic bottles, paper and any adhering food that remains at bottom of pans or holding equipment during production and service. If the catering establishment is large it can invest on suitable equipment for compacting solid wastes.

The organic wastes like peels, cooking scrapings, bones etc can either be composted through pits dug up for the purpose and the manure when formed be used for gardens or green patches in landscaping. This is usually the function of the local waste management authority, but if caterers take an environmental protection view and recycle wastes in this manner, it would add to greening the catering environment. In addition the number of storage bins required for waste collection would be reduced thereby decreasing the attraction for rodents and pests around the establishment.

Liquid Waste

The liquid waste is generated from peeling machines, steamers, washing and cleaning water containing detergents and so on.

The solid wastes need to be segregated and collected in colour coded bins separately marked for the disposal of metal, glass, paper and so on. These are then kept covered for removal by local authority waste management staff.

Food Service Waste

This category comprises wastes emanating from service areas where the establishment comes in contact with the customer. These wastes fall into two categories namely plate waste and disposables.

Plate Waste

All food that is left uneaten by customers or staff is termed as plate waste. In some establishments any food served in bowls at the table and paid for by the customer is also not brought back to the food production or service areas and is treated as plate or table waste.

Plate waste is usually collected by separate utility staff who are not involved with the service of food to the customers. Their basic job is to remove used plates and cutlery from tables and wipe them clean for the next customer. These utility workers must be trained to remove such food wastes into collection bins placed away from kitchen and dining areas and then place dishes, crockery and cutlery in places allocated for them usually in baskets on trolleys that are then wheeled into the dish washing area for cleaning.

Plate waste is disposed off in the same manner as kitchen food wastes. It is good practice to fix sink-incinerators next to dish washing areas which crush solid food wastes and then pass them directly through the waste water drainage system built into the establishment.

Disposables

As the term indicates these include crockery, cutlery, glassware used once and then disposed off. Disposables are available in a number of materials for use with liquid and solid foods served at hot and cold temperatures. Some materials used in India traditionally are leaves, plastic, paper, cardboard or combination of paper and foil ad so on. A large variety of disposables are manufactured for catering use and differ widely in quality and costs.

Disposables are available in the form of paper or plastic, plates and napkins of single or double ply, table cloths, mats, etc. Some restaurants may get personalized disposables of a high quality manufactured to order if the quantities are sufficient for the manufacturing lot. However, for smaller quantities local print services can be used. The services however make disposables more expensive and therefore such disposables are meant to be used only occasionally. Managers must therefore work out the over head costs of disposables before deciding to use them. As far as the volume of waste resulting from their use, it is good policy to use degradable, biodegradable, and photo degradable materials rather than those which can be recycled. The reason being that if recycled napkins or other disposables come back to the establishment, they can be hazardous to health unless they are certified as safe for use for catering. Use of non degradable materials especially plastics should be strictly avoided in the interests of the consumer and the environment.

Disposables are widely used in travel services such as railway and air catering for packed or take away items, fast food services. Figure 20.3 exhibits some types and sizes used by catering establishments.

Although on average the plastics consumption per capita is only 1.2–1.5 kg in India, the danger of recycled bags coming into the catering sector is large. Waste management is therefore an important function of all catering managers who need to take well considered decisions regarding costs and wastes much before opting for various materials, whether they use them for food packaging, storing, freezing or what ever. They do need to be easily disposable and safe for everyone who handles them.

British scientists are however trying to develop a natural biodegradable plastic form rapeseed (Canola) oil for which trials are already on. If they succeed the costs of plastic too, would be reduced which add to the high cost of processed

foods, and be a boon to the catering and food processing industry. However, waste management techniques would still need the caterers attention.



Fig. 20.3 *Disposables used by catering establishments*

Waste Treatment

All wastes need to be treated according to the impurities they contain which may be physical or chemical in nature.

Physical Impurities

In food waste waters materials vary in size from coarse floating or sinking solids as well as colloiddally suspended matter. Other impurities may be dissolved in the water such as salts, oils and certain chemicals may also be present.

Chemical Impurities

Colloidal or dissolved impurities may be organic or inorganic in nature. The organic have a higher ratio of nitrogenous constituents to carbohydrate residues. Meats, poultry and sea food wastes fall into this category followed by vegetable wastes. Fruit wastes however are higher in carbohydrate materials. The composition of wastes therefore becomes an important indicator of the method of waste degradation to be used in treatment plants. However, after straining

out the gross particles waste waters are then acceptable in municipal sewage plants for treatment and so, no further treatment by the caterer is required.

THE CATERER'S RESPONSIBILITY

While the caterer's responsibility ends where the local authorities take over as far as waste treatment is concerned, the awareness of methods of waste management is of utmost importance as far as catering personnel are concerned especially at operative levels in establishments.

Managers need constantly to train staff in waste management techniques. They also need to remind them in various ways to ensure food safety, customer health and provide a pollution-free working and eating environment.

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Unit 5

Financial Management

- Financial Management
- Costing and Budgeting
- Pricing
- Accounting

A few decades ago financial management was thought of as mere book-keeping and accounting. Today, financial management is also concerned with the manner in which funds are procured for and used in a business. It has therefore an important role to play in making decisions concerning investment, operations and disposition. Financial management techniques are now applied to decisions for individuals as well as for organisations, whether they are profit-making or non-profit making. It has become an integral part of management in any sphere.

In any operation financial decision making involves three aspects:

- (i) Funding
- (ii) Investing in assets
- (iii) Controlling operations for profitability.

These aspects need to be coordinated in every organisations to make effective use of resources.

This unit deals with the scope of financial management as it applies to catering establishments, along with a glimpse of some non-conventional accounting techniques, which have become essential to enable managers to cope with the cost control pressures of the business environment of today.

Chapter 21

Financial Management

Financial management may be defined as that area of a business which deals with the effective management of all the resources of an establishment in monetary terms. It involves keeping accounts of all the transactions made, as well as recording any information in a manner that helps management to make decisions regarding the allocation of money or funds. This is required for each resource be it as premises, equipment, employees, purchasing, sales, and so on, to achieve the preset goals of the establishment.

SCOPE OF FINANCIAL MANAGEMENT

Financial management is extensive in its. Scope and basically helps in making different types of policy decisions with respect to the usage of resources. Financial decision making can be divided into three groups namely investment, financing and dividend decisions.

Investment Decisions

Investment decisions are concerned with the use of capital, which may or may not belong to the owners of the establishment. Decisions on capital investments must therefore, ensure a regular return through optimum utilisation. It is here that proper techniques of assessment of capital projects in terms of their assets and liabilities are useful. Changing taxation policies of the government have their effects on capital investments of an establishment, and its resulting profitability. Sometimes a caterer may find he has accumulated cash balances which are not required for current operational purposes. He is then faced with

an investment decision to be made from a number of choices open to him. He may:

- Consider expanding existing facilities to extend the present services.
- Take over other premises and form a chain of services.
- Decide to modernise existing facilities.

It is in such circumstances that the caterer requires accounting reports to assess each choice in monetary terms, and to arrive at the most suitable decision.

These decisions relate to the asset composition of organisations and represent the uses to which funds are put in expectation of earning profits. Since resources are always scarce, investment decisions become very important not only for creating profits but also for saving expenditure that may not have been necessary, for example, by increasing efficient use of a source.

Assets of a catering organisation are broadly classified into *fixed* and *current* assets. Fixed assets represent the capital investments as against working capital which relate to current assets.

Fixed assets

Earnings of an organisation basically stem from the fixed assets such as space, equipment, etc and therefore capital budgeting decisions become very crucial to success. Decisions have to be made among a number of alternatives, such as:

- Which equipment to purchase?
- Whether to hire it?
- To subcontract production of an item instead of investing in the equipment and staff.

Similar questions arise whether one thinks of space or furniture design for investment purposes, for which the pros and cons have to be weighed very carefully before funds are actually fixed. Care and thought is necessary because all decisions have long term effects on the outcome of the enterprise and are irreversible once taken.

Current assets

These do not directly contribute to earnings, but are necessary for the proper utilization of the fixed assets. There has to be a balance between shortage or excessive working capital, and therefore a trade off is required between accessible

funds or liquidity and profitability. Decisions about current assets many involve questions such as:

- What inventory should be maintained.
- How much of each item of stock should be held.
- How much credit should be given to customers etc.

Catering managers therefore have to estimate how much money they need at hand so that work may go on smoothly without affecting production and service. A little extra money to spend at hand, is better than losing the goodwill of the customer by not being flexible in providing what is wanted.

There are three main methods or assessing capital projects.

(i) *The pay back method:* This estimates the time period in years required for a project to pay for itself out of the profits of the establishment.

(ii) *The return on investment method:* This method concentrates on the percentage return on investment, that is, net profit before tax in capital cost of a project. The choice would be based on that project which gives the highest percentage return in a given period of time.

(iii) *Discounted cash flow or DCF method:* In this method the value of the cash to be received in the future is lowered to determine its present day value and vice versa, at a given rate of interest. These can be calculated with the help of annuity and present worth tables. The higher the interest rates the lower is the present day value of any amount receivable at a future date. After making adjustments in the future cash inflows, the costs of the projects can be compared more realistically. Where the discounted cash inflow is less than the cost of the project, it is clearly no use undertaking it. The greater the D.C.F. over the cost of the project the more its profitability. Since capital investments commit large sums of money for long periods of time, decisions on them need to be taken after careful scrutiny of detailed accounting information.

However, merely seeking financial returns in the form of net profit volumes (NPVs), rate of return on investments (IRR) or pay back period may be appropriate in a lot of cases, but all benefits arising from a decision can never be fully quantified.

The role of accountants in today's context therefore needs to grow beyond costs and profit data, and help in balancing internal and external factors. There is a need for molding qualitative and quantitative data, taking a general long term view of issues on hand.

Financing Decisions

These are decisions concerning where to invest the available resources, and how to generate funds. The two ways of raising funds is through borrowed money or shareholder funds. In the case of borrowing there is a fixed commitment to pay back principal amounts plus interest at predetermined rates, over a fixed time period. Borrowed funds however, though cheaper to raise involve a risk, which is called *financial risk*, that is, the risk of insolvency due to non payment of the due amount in the stipulated period. In the case of shareholder funds however, there is no committed outflow neither in the form of return or repayment of capital. This is however, only applicable to those catering organisations which have chains of hotels and are thinking of expansion. Therefore, this discussion would go beyond the scope of this book.

Dividend Decisions

These decisions deal with the use of after tax profits which may be retained for reinvestment, distributed to employees as bonus or used for interest payments for borrowed funds. These decisions are important because, if reinvestment into the organisation is limited, the slower will be its growth. There is no hard and fast rule as to how much should be reinvested in any organisation. Every organisation must decide according to its size, working environment and future goals. This leads us to the terms *accountancy* and *management accounting*.

Accountancy

Accountancy is used to describe the process of measuring in financial terms, the past, present and future operations of a business. It helps to assess the financial status of an organisation at any particular point in time.

Management Accounting

Management accounting covers more than just the preparation of financial statements or accounting reports. It is concerned with the interpretation of the reports and their presentation in a form that will enable management to make profitable decisions regarding the deployment of resources.

Financial management, therefore, covers two basic aspects *financial accounting* and *management accounting*.

Operational Decisions

Those decisions concerned with existing resources and their utilisation are known as operational decisions. For instance, decisions pertaining to the sale of food, cost of production, staff costs, overheads and other direct and indirect costs of meals and services offered to the customer, would all be classed as operational.

Disposition Decisions

These are decisions connected with the determination of prices at which products and services will be sold. For example, determining the percentage of profit to be added to the cost of production, so that the prices cover both costs and a reasonable level of profit. It also involves decisions regarding the mode of payment such as, selling on *strictly cash* terms, or offering facilities for credit by which customers can pay at a later date.

Accounting helps to make such decisions, by informing management about the existing number of debtors and creditors the amount of cash involved and the value of bad debts.

Disposition decisions are necessary in catering because the level of operational resources is relatively low compared to the higher fixed assets. Also the industry has to cope with constant changes in demand for food and accommodation; keep in touch with technological improvement, while also taking care of the competitive forces in the environment which tend to erode profits.

While the last two decades have seen greater attention focussed on the application of accounting techniques to the special needs of catering establishments, it must be remembered that the mechanics of accounting are only a means to an end.

For the smaller establishments, financial results chiefly measure the success of the operation. As the establishments become larger and greater degree of organisation is necessary, financial information becomes crucial to decision making.

Thus, managers will no longer accept the accountant as a passive historian or an autocratic controller. Accountants will need to regard other managers receiving their information reported as customers, rather than dependents of their output. To survive they will have to keep abreast with logical developments and changes in the environment of the organisation.

The following chapters deal with the nature and usefulness of different kinds of accounting information and how on the basis of it, controls can be established and pricing done to ensure financial viability of the establishment.

FINANCIAL ACCOUNTING

The purpose of financial accounting is to pass on relevant information to agencies outside the establishment for purposes of decision making. For example, if the organisation needs to borrow money for expansion from a bank, the latter would need information regarding the credibility of the establishment. Again, every business organisation needs to provide financial information to income tax authorities or other government agencies who can then assess the amount of tax payable. The two statements on which the establishment's soundness can be judged are the balance sheet and the income statement, which give relevant information regarding the increase in the assets of an organisation, or its failure to do so. All financial accounting is based on five main concepts as indicated in Fig. 21.1.

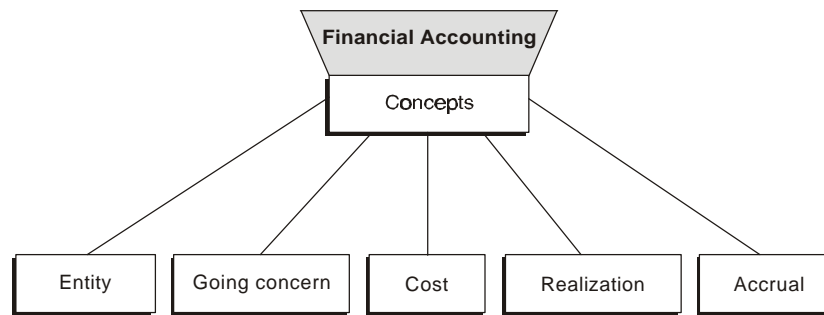


Fig. 21.1 *Concepts of financial accounting*

The Entity Concept

The entity concept refers to the establishment being a specific unit of accountability. The identity of the business is separate from that of its owner or manager. Financial accounting is done for the establishment and not for the manager. All transactions are thus undertaken on behalf of the establishment.

The Concept of Going Concern

This concept implies that the business is a continuing entity and its activities are not wound up at the end of the financial period. The financial statement prepared by every establishment enables management to review previous performance in terms of profitability and financial soundness.

The Cost Concept

This is the monetary unit concept and expresses transactions of an organisation in monetary terms. The concept assumes, that the purchasing power of the monetary unit is relatively stable from one accounting period to another. Thus, when a transaction is completed it can be recorded as an actual cost.

The Concept of Realisation

According to this concept, the revenue is said to have been realised when goods and services are delivered, irrespective of the timing of the payments or receipts in cash.

The Accrual Concept

According to this concept revenue accrues when it results in a net increase in capital because of transactions, that is, those involving trade exchange of goods and services.

MANAGEMENT ACCOUNTING

Managerial accounting, is meant to provide information on the day to day operations of organisation to managers who have to make decisions regarding the use of its resources. Unlike historical accounting, management accounting is a matter of attitude and approach. Although based on a knowledge of basic accounting techniques it also appreciates the complex nature of business problems.

Facets of Management Accounting

The different facets of management accounting are indicated in Fig. 21.2.

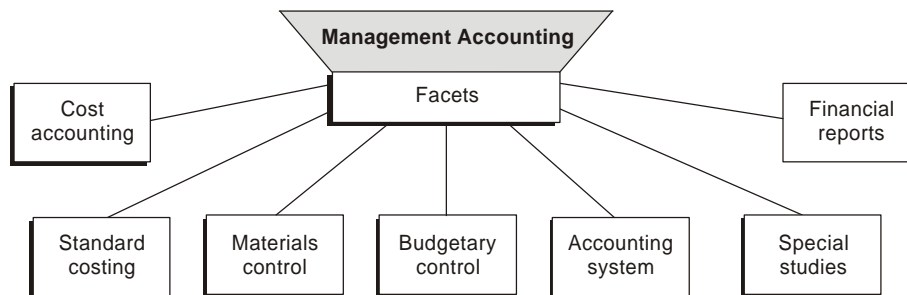


Fig. 21.2 *Facets of management accounting*

All the facets shown in Fig. 21.2 form indicate the scope of the subject and its utility in managing catering operations.

Cost Accounting

This includes the preparation of cost statements and cost estimates identifying direct and indirect costs involved in the process of production and service. The direct costs incurred in operating an enterprise refer to actual operating costs of materials, direct labour and overhead costs where as the indirect costs refer to costs of capital in the form of interest paid on loans, etc. These have been dealt with in Chapter 24.

The accounting system forms the backbone of conventional management control systems, which however, do not focus on key variables that are not expressed in financial terms, but are vital for monitoring the progress of an organisation towards its goals. These variables form the *Qualitative Performance Indicators* (QPI) for any establishment and can be grouped under four main heads as:

- Quality
- Delivery
- Process Time
- Flexibility

Quality

This is an evaluation of raw material quality, process control and customer acceptability and satisfaction. Quality has to be looked at through all the stages of production and service as discussed in Unit 4.

Delivery

This refers to the delivery performance of suppliers with respect to food materials, detergents, linen, equipment, uniforms or whatever they supply to the organisation. Delivery performance can be judged by the number of pending orders and the time schedule adherence for deliveries.

Process time

Dependence on manual process time is likely to decrease by the introduction of machinery in all areas of production, clearing, washing up etc. future decisions are likely to be based more on the ratio of process time to lead time rather than

only lead time for supply which make organisations overstock their raw materials in an effort to prevent time wasting through waiting for resources.

While staff may not be reduced appreciably due to mechanization or automations in catering being a service industry it will certainly speed up production per man hour and thereby increase profits.

Flexibility

The flexibility of an operation is of utmost importance in a food service and is largely dependent on the choices available to the customer, the extent to which the various sub-systems have to be coordinated and the number of new food products prepared to attract the customer.

It is important for the cost accountant to study the work procedures and the impact of introducing technology on them, so that he can understand the effect of various decisions on performance and productivity. Conventionally performance measurements get compared to industry averages. This however, increases the acceptability of non-optimum levels of achievement as is the case with organisations in India.

Standard Costing

This is a means of establishing 'standard costs' for every type of resource used, with the help of time and motion studies and research and development. Standard costing also includes comparison of actuals with standards and determines any variances arising in the production process. In catering the importance of standard costing for dishes, meals and functions cannot be underestimated. It is however, questionable whether the techniques of standard costing are appropriate in today's changing business environment, in which the emphasis has shifted to reducing costs constantly instead of maintaining standard costs. It would therefore seem inappropriate to calculate material and price variances. Standard costing would however, be a useful tool for budgeting and estimating future costs, although its role in controlling costs is gradually decreasing.

Materials Control

This involves planning and control of stocks to determine the extent of use of materials, details for which have been discussed under inventory management.

Budgetary Control

This is the preparation of fixed and flexible budgets, capital and operating budgets, used as standards for measuring actual performance.

Interpreting Statements

This is the preparation of monthly or quarterly profit and loss position statements, together with information on operating ratios and orders at hand.

The Accounting System

The establishment of the most appropriate system of maintaining accounts for a food service organisation is an important part of the management accounting function. This would involve determination of the books of account to be maintained, the procedures most suitable for collating data and preparing management information regarding say, use of equipment depending on the volume of the data and the speed with which it is required for decision making.

Special Studies

This refers to conduct of studies relating to cost-volume-profit analysis, break-even analysis and liabilities, so that a sound basis is established for investment decisions. A study of government policies in respect of licensing, taxation, minimum wage, food and service laws and so on is also imperative.

Financial Reports

These are used by management accountants to provide assistance to managers in the form of offering advice on the most profitable courses of action.

Irrespective of the size of the catering operation, accounting reports are useful, because they provide information of the quantities and manner in which resources have been used in the past and whether profitably or not. A knowledge of the relationships of resources to each other and their reactions to environmental changes equips managers of food services to predict the effects of resource use in the future. The importance of analysis sheets pertaining to costs, sales, production, etc. have been further discussed in this unit.

Reports of monthly review meetings often consist of complicated schedules only understood by the accountant or financial manager. It is therefore necessary to move to a simple costing approach that can adapt to external and strategic considerations without delays. Accountants must therefore adapt to the requirements of the new-age organisations instead of submitting delayed reports for post mortem analysis.

Today the role of the management accountant is to grow beyond analysis of costs and profit data and assist in balancing internal and external issues, mould qualitative and quantitative data keeping a long term view of issues in

mind. This is because all benefits arising from a decision can never be fully quantified. Financial analysis tools therefore, should be used only as a means to achieving organisational goals and not as ends in themselves.

MANAGEMENT ACCOUNTING IN CATERING

Catering being essentially a service industry has certain special features which make it different from other industries and, therefore, more complex to assess in terms of financial viability. These features are:

- There is a wide variation in the types of products and services offered to customers, such as food beverages, package services for parties, conferences, etc. The latter include arrangements for decorations, stationery, microphones and like, activities absolutely unrelated to the preparation and service of food. In addition, it may include accommodation as in college hostels, homes for the handicapped or aged or in other social institutions.
- There is a large variety of costs incurred by each of the services.
- The proportion of fixed costs is very high as they continue to be incurred whether the services are used or not.
- A variety of prices have to be calculated for the same commodities, depending on the combination of services offered to the customer. For example, the menu served to residents would be charged at a different rate than for guests in a hostel. The same menu if served for a conference lunch or a ladies' party would carry a different charge depending on the cost of extra service staff required, better quality tableware or more expensive garnishing used. The additional costs would necessarily be reflected in the price.
- There is a constant need to price competitively while still maintaining standards and, at the same time, knowing the costs involved for providing products and services profitably.
- Catering establishments are always subject to seasonal demand for their products and services. Besides seasonal variations and availability in food items, trading also gets easily affected by mood of customers and their paying power.
- One product or service can be more profitable than another, yet the latter cannot be dispensed with because of the need to maintain the *goodwill* of the customer.

- The product is consumed generally at the point of production, is perishable and therefore cannot be overproduced and stored for future sale like in other industries.
- Catering deals continuously with a large proportion of highly perishable raw and prepared products, so profit leaks are easy through spoilage.
- Foods also provide excellent media for growth of microorganisms and therefore, if not handled with care can become a potential health hazard.

All these diverse characteristics make financial management of food services a rather difficult job. Further, catering is not only a labour intensive but also a capital intensive industry, involving large investments in space, building and equipment and staff. Decisions are therefore required to be made at every stage, which would affect the future deployment of resources. For these decisions to be made effectively, an understanding of accounting information is necessary, which is the basis of management accounting.

It is therefore clear, that those persons who are in charge of controlling resources at each point of food preparation and service, such as the delivery and storage point, preparation and cooking areas and during service, or those who own the resources or consider buying or selling them, can make use of accounting information to make wise decisions. For example, at the ordering stage, decisions regarding buying quantities have to be made. Past reports of inventory can indicate the quantities of particular commodities that have been used and their rate or turnover from stores to user departments.

It might be argued that in small establishments large quantities are not required to be stored, because of limited menus and storage space. But decisions have still to be made regarding purchase, and some quantities are appreciably cheaper to purchase than others. For instance, buying eggs in trays or in hundreds from a farm located close by (space and funds permitting) may be far cheaper than buying by the dozen from the market according to customer demand.

Again decisions pertaining to the purchase of equipment have to be made even by small establishments. In catering, the decisions regarding equipment purchase depend not only on price or the initial investment required, but on the expected life of the equipment, efficiency in operation, effectiveness in terms of reducing labour costs, and so on. All such information and necessary advice for deciding on the purchase of a particular model, size or capacity can be had, from wage and investment reports.

In the case of environmental factors resulting in the movement of an establishment from one area to another, decisions regarding selling and buying of premises should be based on techniques for assessing capital projects, these are only possible through accounting information, which figuratively sets out the assets and liabilities involved, and various ratios for making comparisons and judging the profit potential of a new investment.

If the resource involved is a simple one like money, a person can measure it by simple counting. But when it comes to a complicated one like a building, machinery or a legal right, then the accountant's report becomes important. Accurately recorded financial information helps management to identify the quantifiable feature of the operation, and measure the extent to which changes have occurred during an accounting period in comparison to previous figures. It then becomes possible to assess the profit or loss incurred over that period and identify those factors responsible for any changes.

Financial control is one of the most important forms of control in any food service operation, because it helps to focus on any lapses that might have occurred in the control process along the line during production and service. For example, an accounting statement showing a lower net profit in one area of the service can draw management attention towards that particular area. It may have been that meat dishes were just not selling during a particular period, for which the reason could be that at certain times of the year, due to religious reasons Hindus do not eat meat, and although the number of covers sold remained the same, the sales revenue decreased bringing down profits too.

Application of Management Accounting

The applicability of management accounting is of special significance where the financial interests of the catering establishment are involved, because this area deals with all the aspects like building, machinery, sharp tools, processes and, most of all people, who have to be protected against any sort of hazards (Unit 7). More important, people today, staff and customers, are aware of their rights and without attention to these the food service cannot survive.

Although the importance of financial information has been emphasised, it is well to caution that, statements or figures seen in isolation have little significance. It is necessary to relate the information to that of technical, staff and materials control, to make it meaningful for making profitable decisions.

The accounting process is almost a continuous one, because of the wide range of services and products offered for sale in catering operations. The reports presented generate new choices and ideas for management, helping them to

pick up customer tastes and trends quickly and develop future targets realistically.

For any future planning, management needs to know the current status of the establishment in order to be able to evaluate the resources available for channelisation into various courses of action. A framework is also required for predicting the effects of decisions being taken for the future and making valid assumptions about future events. Besides, it is useful to have a basis for studying the cause and effect relationships between environmental factors and the establishment. These help to build flexibility into the operation. For example, a news report stating that animal fat is being incorporated in the manufacture of hydrogenated cooking fat in India, affects the food services immediately. With a vast majority being vegetarian in India, there suspicions regarding the fats being used for cooking in public eating places would prevent them from eating out. A shrewd manager however, would immediately react to the situation, and put up signs outside his food service saying *only vegetable cooking oils used* and limit the use of the hydrogenated fat held in stock for cooking of meat dishes only.

A number of examples of the usefulness of cause and effect studies have been cited. It is only accounting information that can help to establish authentic information regarding current status or provide the necessary framework for future decision making.

A uniform system of accounting has been followed by most catering establishments in the West, but with a large number of unorganised establishments mushrooming in developing countries, a disparity in the methods of maintaining accounts exists.

While accounting is an indispensable tool of management, it also makes the caterer aware of the standing of his operation in comparison to the average for other similar operations. Besides, records can help to see at a glance the performance of each area of the service, and constant comparisons help to improve resource allocation, shifting them from areas of low profit to those of higher ones.

With the development of the management accounting concept, it is now possible to have relevant financial information in a readily understandable form for use in making decisions. Production managers today do not accept the old-time view of the accountant as their controller. The emphasis is gradually shifting to *Just in Time* (JIT) techniques of managing inventory, in an effort to minimize costs and gain a competitive advantage in the ever changing catering environment.

Chapter 22

Costing and Budgeting

Any food service establishment is in business to make a profit, which basically means that what is charged to customers must be more than sufficient to cover costs, whether it is a dish, meal or event that is sold, over a unit of time say one week or month. It is necessary for managers therefore to ensure that the volume of sales is maintained at as high a level as possible, and that costs and sales figures relate in a manner that yield a profit.

In small establishments calculations may be done mentally, but with the complex nature of catering, guesswork will not always lead to the expected profits. Systematic calculations based on the relationship between costs and sales can help to remove the *chance factor*, and correct ventures before the damage is done.

COSTING

Costing is a continuous process through which the total cost of an item of sale is determined for establishing the selling price of each unit to be offered to the customer in a manner that is profitable.

Although food costs form the largest single cost in a restaurant, other costs which are less obvious often add up to more than the cost of food.

Cost Concepts

In catering, a cost may be defined as the price paid by an establishment for goods used up, sold or consumed and services rendered. Items are said to be consumed even when they are wasted, stolen or discarded, as happens frequently in food services. This is because they are no longer available for the purpose for which they were purchased.

The effort of every establishment is to maximise its profits, and to do that, costs would have to be minimised. To be able to exercise any control on costs therefore, it is important to understand some of the basic concepts underlying them. These include components of costs, their behaviour and control.

Costs Components

In every food service, there are basically three types of costs involved in its day-to-day operations, material, employee and overhead costs.

Material costs

Cost of materials includes raw food and other ingredients that make up a dish, meal or a beverage, and is commonly referred to as *material or food cost*. Food costs can easily be ascertained from purchase invoices. Thus materials include all commodities used in the production and service process, whether in raw partly processed or ready to use forms. Such commodities are called *direct materials* as they form part of the end product, or work process. When materials are used in the production process but cannot be related to a particular job or product they are called *indirect materials*. Such materials are linen, kitchen cloths, cleaning materials and so on which are used for many different units of production and service. These however do have to be accounted for as far as costs are concerned.

Employee costs

Efficient utilization of employees is vital for determining the costs and quality of the products and services in catering. Cost of employees include the salaries of staff and the value of all benefits provided to them such as meals, housing, medical facilities, uniforms, insurance, bonus, pension, and so on. It is generally referred to as labour, staff or payroll costs.

In large establishments the functions of employing staff rests with personnel managers or departments who work closely to control labour costs. There are different types of staff employed in catering establishments ranging from salaried permanent skilled employees to temporary, part-time and ad-hoc on-call workers who are paid daily or weekly wages according to rates fixed per hour of work. This is often referred to as a *time-wage system*. Since all catering employees are entitled to incentives, which may vary from free meals to bonuses according to their contracts of employments, all incentives as treated as labour or employee costs. Food service establishments are also known for overtime work resulting from sickness of employees, absenteeism, leave and so on, all adding to staff costs.

Overhead Costs

These include all such costs which cannot be directly identified with food products, such as rent, rates, depreciation, fuel, cleaning materials, administrative and selling costs. Overhead costs therefore have to be distributed evenly between units produced or activities of an organisation as they apply equally to all departments of production and service. They represent the indirect expenses of an establishment. Overhead costs may relate to a specific department or to the establishment as a whole.

These three categories of costs are known as the *components of cost*. While they give some idea of the nature of cost distribution, they do not tell us what happens to each of these components when there is a drop or an increase in the sales of an establishment. Yet, we know that some of these elements get affected and do change periodically to give different levels of profit.

If a manager can control and bring down even some of the above costs in his establishment, his operative profits will rise immediately.

A good cost control system is based on an understanding of behaviour of food and other costs in relation to the volume of sales; changes in selling prices or menu composition; and the extent to which changes in technology can affect cost structures of the establishment. Equipped with this understanding, and that of human behaviour (staff and customers), it is possible to predict the impact of a decision, before it is implemented, and thereby control costs, sales, and profits effectively.

Behaviour of Costs

The manner in which costs respond to changes in the volume of sales is referred to as the *behaviour of costs*. To understand how costs behave in various situations, all costs have been placed into one of the following three categories.

Fixed Costs

As the name suggests, these costs remain virtually unaffected by changes in the volume of business of an establishment. Examples of such costs are rents, rates, insurance, and so on. It may be argued that even these are subject to change, but for purposes of assessment of profitability, they remain fixed over an accounting period, since these costs are paid generally on an annual basis, and therefore remain unchanged as far as the establishment is concerned.

Semi-fixed Costs

Those costs which have a greater fixed element in them as compared to the variable element are termed as *semi-fixed* costs. These may also be termed as *semi-variable costs*, if the variable component is greater than the fixed element. The extent of variability differs with each cost and in particular circumstances. For example, when feeding more customers the fuel costs change very little, compared to a situation in which the menu is changed to include extra frying in preparation. On the contrary, if the menu is changed to include more items requiring no cooking, such as salads and *salads*, the fuel costs may actually be reduced for the same number of customers. Again the cost of cleaning materials may be reduced with increase in demand, if disposable tableware and crockery are used. Semi-fixed or semi-variable costs therefore include costs of fuel, cleaning materials, replacements, etc. and change with the output, but not in direct proportion. It is common experience that if more meals are prepared and served (indicating increased turnover) the gas or other fuel used to cook them will increase but not as much as the increase in the output.

Variable Costs

These include food costs which change in direct proportion to the output. In a food service establishment known for its standards, one would not expect portion sizes to be reduced if demand for meals goes up, and therefore, it stands to reason that for each extra meal demanded the amount of food materials will increase in the same proportion. In practice however, it may be noted that actual variable costs tend to decrease as the volume of sales increases, because food purchasing in bulk can reduce costs, and labour too becomes more productive with greater time utilisation. However, costs fluctuate considerably in catering for several reasons:

- Most food costs change seasonally depending on supply and demand conditions.
- Inflationary trends affect prices of food and ingredients consistently upwards.
- Legislated minimum wage rates and negotiated labour agreements affect labour costs over time.
- Over head costs increase with rise in rents, rates, fuel prices, use of disposables and so on.

All the above factors need to be anticipated and considered by managers while planning future costs of the establishment and price fixation policies.

Having established the nature and behaviour of costs every food service manager would be concerned with the effect that his costs will have on profitability. Example 22.1 illustrates such effects, and gives managers an insight into those elements of costs which may affect profits adversely.

Example 22.1

The sales revenue, costs and profits of two cafeterias is assumed to be as follows:

	<i>A (Rs)</i>	<i>% of Sales</i>	<i>B (Rs)</i>	<i>% of Sales</i>
Variable costs	10,000	50	6,000	30
Fixed costs	8,000	40	12,000	60
Net profit	2,000	10	2,000	10
Sales revenue	20,000	100	20,000	100

It would be observed that both the establishments have made 10 per cent of profit in spite of different cost structures. To see the effect on profits of a change in turnover, let us assume that there has been an increase of 10 per cent in the sales revenue. Then the effect on profits will be as follows:

	<i>A (Rs)</i>	<i>% Sales</i>	<i>B (Rs)</i>	<i>% Sales</i>
Variable costs	11,000	50	6,600	30
Fixed costs	8,000	36.4	12,000	54.5
Net profit	3,000	13.6	3,400	15.5
	22,000	100	22,000	100

It will be seen that the 10 per cent increase in turnover has increased the profits of the two establishments by 3.6 and 5.5 per cent respectively. The differences may be attributed to the lower increase in the variable costs of *B* (only Rs 600) as against the variable costs of *A* (Rs 1000) and hence the corresponding higher net profit in *B*.

In case a decrease of 10 per cent in turnover occurs, the impact on net profit is as indicated below:

	<i>A (Rs)</i>	<i>% turnover</i>	<i>B (Rs)</i>	<i>% turnover</i>
Variable costs	9,000	50	5,400	30
Fixed costs	8,000	44.4	12,000	66.7
Net profit	1,000	5.6	600	3.3
	18,000	100	18,000	100

The statement shows that the decrease has reduced the profit of A by 4.4 per cent (from 10% to 5.6) and the net profit of B by 6.7 per cent (from 10% to 3.3). The managers of the two cafeterias can therefore conclude that:

- Any given change in turnover will not lead to a proportionate change in costs.
- Net profit tends to increase or decrease, more than in proportion to an increase or decrease in turnover.
- The higher the fixed cost the greater is the effect on profit or loss for any given change in sales volume.

Although increase in sales volume increases total variable costs proportionately, the cost per unit of sale remains constant. This is proved by the fact that all customers irrespective of the numbers on a particular day, pay the same price for a particular meal.

This is, however, not the situation as far as fixed costs go. While these costs remain the same whatever the sales volume, the fixed costs per unit decrease when sales volume increases. The following example illustrates these effects.

Example 22.2

The fixed costs of a canteen serving 4,000 to 5,000 meals a month are Rs 3,000 every month. The average amount spent by customers is Rs 15.0 per meal, of which the food cost (variable cost) per meal is Rs 8.0. Find the total cost and net profit or loss per meal when the canteen serves 4,000, 4,200, 4,400, 4,600, 4,800, and 5,000 meals per month.

	Total cost and net profit or loss per meal					
	Meals served per month					
	4000	4200	4400	4600	4800	5000
Price per meal (Rs)	15	15	15	15	15	15
Variable cost per meal	8	8	8	8	8	8
Fixed cost per meal	7.50	7.10	6.80	6.30	6.30	6
Total cost per meal	15.50	15.10	14.80	14.30	14.30	14
Net profit or loss per meal	-0.50	-0.10	+0.20	+0.70	+0.70	+1.0
	-50p	-10p	20p	70p	70p	Re 1.0

Note: Fixed costs have been worked out to the nearest paisa. Minus sign shows loss, plus sign indicates profit.

It will be observed from the table in Example 22.2, that the fixed cost per meal decreases as the number of meals served per month increase, in contrast to variable costs which remain the same. The total costs per meal thus decrease ensuring a profit beyond a certain volume of sales.

Thus, costs respond to changes in sales volume in different ways, sometimes changing in direct proportion to the changes and at other times disproportionately depending on the cost structure of the establishments. Every establishment therefore functions profitably or otherwise on the basis of its costs and sales revenue or income, which contributes to their profitability to different extents.

CONTRIBUTION AND BREAK-EVEN

‘Contribution’ refers to the balance remaining after subtracting variable costs from sales revenue.

$$\text{Sales Revenue} - \text{Variable Costs} = \text{Contribution}$$

The concept of contribution therefore represents the amount of money that an establishment earns for covering its fixed costs and net profit margins. Certain establishments who cater to the needs of governmental or social organisations work on a target sales figure, which just covers variable costs and fixed expenses, without making any net profit. In such cases the ‘contribution’ would be equal to fixed costs. In such a situation the establishment is said to ‘break-even’, that is, it makes no profit or loss.

The contribution when calculated as a percentage of sales varies with the cost structure of different establishments. In food service establishments, the fixed costs are higher, and when, due to certain conditions the variable costs rise, as when expensive out of season foods are used, or when the number of customers increases, the contribution decreases because the fixed cost per cover or unit also decrease as seen from Example 22.2.

The concept of ‘contribution’ can thus be seen as that part of sales revenue which can be controlled, because any surpluses earned are affected by the extent to which control is exercised.

The application of these concepts is dealt with in detail when discussing food and other cost controls.

Cost-Benefit Ratio

It can be appreciated that all control measures cost the business, sometimes this may be as insignificant as locking the doors to prevent theft, or relocation

of the cashiers desk to prevent customers from leaving without paying. But the establishment of a system of time clocks for labour cost control is even more costly. In the light of the costs incurred it is important to judge the benefits received by the establishment.

It must be kept in mind that the purpose of any cost and sales control measure is to guard against excessive costs to ensure profitability. For example, if the telephone bills of a department or unit are excessively high because of non-business related calls, a simple lock can control the expenses and bring benefits to the establishment. Before instituting any control procedures therefore, managers must ensure through careful calculations that the anticipated savings will be greater than the new system. It is unwise to attempt controls whose costs exceed the benefits, including any un-quantifiable effects.

While cost control measures are important to the profitable operation of an organisation, cost control alone cannot ensure profitability unless sales are controlled as well. Additional effort for selling the products and services is required to ensure that profits actually come in through proper selling.

COST CONTROL

Controlling costs is the most challenging task in a catering institution since it deals with food which is the biggest temptation for any person. Further, it is a labour intensive industry and no matter what technologies may be introduced food services need to provide that personal touch for which the customer eats out.

In a competitive environment control really connotes reducing costs to gain an edge in the market. Control is thus a process by which managers attempt to direct, regulate and restrain the actions of people in order to achieve goals. This is essential in the area of food and other costs because of the many ways in which loss is possible at each stage in a catering operation.

Control may be exercised in many ways, through selection of techniques and devices suitable for each establishment. The techniques available to a manager are establishing standards and procedures, setting examples, observing and correcting employee actions, preparing performance records, reports and budgets.

Two of the main causes of excessive costs in an establishment are inefficiency and waste. The process by which costs are regulated and excessive expenditure guarded against is known as *cost control*. It is a continuous process at every stage of the catering cycle.

The areas which need to be focussed upon, in terms of control are variable costs, that is those costs that vary with demand. In food services these are:

- Food Costs
- Labour Costs
- Overhead Costs
- Hidden Costs

Food Costs

The food costs in any catering establishment whatever its size vary between 40–60 per cent of total sales, depending on the nature of the organisation. These costs being variable need to be controlled because the amount of profit that the establishment makes depends on them.

Besides the variability in costs due to different prices and quantities purchased and used, food is subject to losses in many different ways as it passes through the production and service cycle. The diligent control of these losses therefore, means control of money lost, and hence determines the viability of the food service organisation in terms of profitability.

In order to appreciate the methods used in controlling costs in any venture, it would help to enumerate the factors responsible for the leakage of profits in this area. Keeping in mind the sequence in which food is handled in the production cycle and served, these factors are briefly discussed below.

Strategic Points of Control

The points in the production and service cycles of an establishment where control of costs can be exercised, are briefly outlined through an assessment of the losses that can take place at each point of activity

Food Receiving Area

At the point where foods and other materials are received lack of proper supervision can result in losses through:

- Improper weights of commodities especially those which are loosely packed, or perishable such as fruits, vegetables, meats, etc. Cereals and pulses in bags not checked for holes in them can also affect weights.
- Improper weighing equipment that is use of non-standardised weighing or measuring equipment at the delivery point can affect the weights of foods received and cause errors in the records. Any extra weight recorded would push up the price of each portion obtained from the food and vice versa.

- Variable quality of foods received directly affects the number of portions obtained from a standard weight of the item. For example, apples of different sizes with blemishes or irregular surfaces can lead to loss of a lot of money through excessive peelings, trimmings, and so on. Similarly, vegetables like cauliflower with a larger proportion of stem give less portions on the plate and therefore cost more per portion. Also cereals, pulses, legumes, etc. if adulterated with inedible material, or packed without cleaning can lead to losses in portion sizes.
- Pilferage at delivery point is much easier without actually taking the food out from the establishment. Cases have been known in which the supplier directly delivers to the staff outside the establishment, while the invoices are routinely recorded in the books of the establishment. On checking, the number of packs received are in order, but perhaps each one slightly lighter than they should be. Minor differences in weights are generally undetected by an observer, especially when very large quantities are delivered.
- Inaccurate ordering of foods require longer storage leading to losses through moisture loss and spoilage, affecting quality of the end product too. If under ordering is done in an attempt to save on provisions, they may not be available by user departments when needed. This can result in losses through lesser portions produced, and denial of a particular dish to customers who would normally have chosen it if available.
- Overcharging by suppliers on invoices can lead to leakage of profits. This is often due to carelessness in checking the agreed rates at the time of receipt of invoice. A clerical error in writing the amounts which go unchecked, can also result in hidden losses to the establishment.

Storage

A number of food losses occur during storage due to spillage, rodents and or other infestation careless issuing of foods from stores, high temperatures and humidity, poor ventilation and lighting. These can be prevented by following strict procedures for cleaning and orderly maintenance of stock in stores under close supervision and tight security to prevent theft of items in common usage.

Menu Planning

Unplanned or poorly planned menus for customer requirements can cause unnecessary wastage of ingredients, and thereby push up food costs subsequently lowering profit margins. This can happen when:

- (i) Menus are planned without the use of standard yield recipes which can be financially disastrous, because the number of portions obtained are not predictable each time a dish is prepared.
- (ii) The menu planners own tastes rather than those of the customers are projected on the menus which end up with dishes unsold.
- (iii) Portion numbers for each dish on the menu are improperly forecasted. They can lead to one dish being completely sold out in the middle of service time while others remain unsold.
- (iv) There is an imbalance of high and low priced dishes on the menu, food costs increase lowering the margin of profit.
- (v) There is little or no flexibility in menu plans to incorporate leftover foods, food costs increase unnecessarily.
- (vi) An item is used for a dish for which it was not meant originally it can push up food costs. For example, an expensive cut of meat used for mince; or a dessert (table) fruit used in fruit salads or for cooked desserts.
- (vii) Dishes are placed on the menu only because they can be easily prepared by the staff, without attention to quality or customer choice and acceptability.

Kitchen Production

The tools, equipment and techniques used in the cutting, trimming and cooking of food can make or break the establishment in terms of profitability. Losses in this area need far greater control than in any other because they can occur in not so obvious ways like:

- Poor peeling or trimming, affecting the number of portions obtained for a unit purchase of food.
- The suitability of cutting and chopping vegetables or meat for each dish will affect the volume of the prepared dish, and hence its selling price. For example, cutting vegetables too finely when large pieces would be just as effective for its presentation, would reduce the volume of the prepared dish, unnecessarily reducing the number of portions for service.
- Using improper cooking methods leading to excessive weight losses and reduced selling portions.
- The art of garnishing completed dishes to make them attractive to the customer means recovering cost quicker through more sales. A very tasty dish presented in a sloppy manner can put off customers quite easily.

- Picking of food, or excessive indulgence on the pretext of tasting it before dishing out for service, can be a major cause for increasing food costs. If all the staff handling food started picking every tastable ingredient at all stages of production, it is not hard to imagine the effect on the consumer and the cash box.

Holding and Service

In any food service establishment foods have to be prepared and held for service. Food costs can increase in this area through:

- Inefficient temperature control in holding equipment leading to unnecessary losses in portions through the evaporation of moisture, and through shrinkage.
- Improper availability of portioning equipment.
- Lack of training in portioning correctly at the service point.
- Picking of finger foods and pilferage when service is slack.
- Method of service also affects the portions on the customer's plate, and also the loss in spillage while serving. For example, in a self service kitchen, not manned by kitchen staff, disproportionate amounts may be self-served by people who are charged a flat rate for meals. There may be spillage because of lack of practice in serving, by self-serving customers, while some may be very hungry, and hasty while serving themselves. Money lost through plate wastage is also more in a buffet type service, where the charge is fixed. In services where everything served is specifically charged for, the cost control is better.

Clearing

Foods can be lost if clearing methods are not planned properly. Food from serving dishes not used up completely can be utilised for service to staff and must never be discarded along with plate waste. This can only be done if completely separate sets of people clear service dishes.

Having outlined the areas through which food costs can increase, it becomes easier to formulate a system for their control and increase profit margins. A food cost control system basically requires the use of standard recipes; purchase specifications, operating policies and procedures which help to control the above mentioned losses at every stage of handling; preparation and service. Policies governing customers, cash control and security also play an important role in controlling costs.

Thus, food costs can be controlled in a number of ways but to implement these methods a lot of vigil, effort and commitment is called for on the part of

managers in charge of production, service, inventory management and staff relations. The methods involve:

- Ordering perishable foods in required quantities for immediate use in preparation and service.
- Ordering semi-or non-perishables in quantities which can be turned over fast enough to prevent spoilage.
- Close supervision and regular checks at strategic points in the catering cycle.
- Using modular equipment for storage, preparation and service, so that portions are not lost in transferring food from one piece of equipment to another.
- Portioning in the kitchen and recording the number of portions before sending them for service, and then recording the numbers that are returned to the kitchen.
- Offering incentives to staff, for achieving sales targets at established gross profit margins.
- Developing lists of customer favourites through kitchen, service and sales analysis. Then utilising these to plan imaginative and profitable menus. Table 22.1 shows a sample of a kitchen analysis sheet which indicates consumer trends from one week to another.
- Forecasting the quantities of each menu item that will sell so that excess leftovers are avoided.
- Developing staff initiative and creativity by inviting their participation in forecasting and planning activities.
- Investing on equipment which will save time of staff on routine jobs so that they can use their initiative better in meal production and food presentation.
- Making use of quantity discounts for purchases. Managers can only control food costs if they have knowledge of the shelf life, and variety available in the market for the different end uses that are possible in the production centres of their establishments. In addition, familiarity with marketing techniques and latest technologies available for control, are essential to utilize the advantages of higher productivity and thereby profits.
- Using standardised simple recipes from which portions can be clearly identified.

- Substituting low cost ingredients for those which are very expensive, out of stock, or rarely used.
- Maintaining control accounts to enable periodic assessments of profitability and efficiency. Such assessments help to pinpoint areas at variance with expected results, so that corrective action can be taken in time.

Table 22.1 indicates that the percentage of all foods consumed are slightly less in week II as compared to week I, except fruits and vegetables. The reasons for this can be looked into, and corrective action taken. Such comparisons made monthly can also give an idea of changes in trends when compared with the same months each year. Alternatively, it may show similar consumption patterns that can help to make more accurate forecasts for food ordering, supply and use.

Table 22.1 *Kitchen analysis sheet*

<i>Food</i>	<i>Week I</i>		<i>Week II</i>	
	<i>Proportion of total food cost</i>		<i>Proportion of total food cost</i>	
	<i>R</i>	<i>%</i>	<i>R</i>	<i>%</i>
Meat	350	14.0	410	13.7
Poultry	200	8.0	230	7.7
Fish	110	4.4	130	4.3
Fruit and Vegetables	280	11.2	400	13.3
Grocery	450	18.0	530	17.7
Provisions	480	19.2	570	19.0
Bread, Flour, etc.	180	7.2	210	7.0
Milk and Cream	250	10.0	290	9.7
Eggs	140	5.6	160	5.3
Sundries	60	2.4	70	2.3
	2500	100	3000	100

Labour Cost Control

Once the payroll contracts of staff have been finalised and the methods of payment and benefits to be provided to staff decided upon, control can be exercised by ensuring that the payments are suitably authorized. All payments

made to staff require to be signed to indicate that remuneration has been received. Payroll payments are more or less fixed as per time rates or contracts of employment and cannot be controlled, as can bonus payments or awards linked with productivity and efficiency, and incentive costs.

Labour cost control is thus a matter of efficient utilization of the abilities of staff to perform maximally. Some basic tools for control of staff costs have been developed and used by managers based on time and energy management. A few examples are presented to guide managers in the development of better versions suitable to their particular working environment. The methods of control suggested are based on maintenance of:

- Accurate records of time and work
- Supervision in relation to job descriptions
- Analysis and accounting for wages

Time Keeping

Time-keeping refers to the recording of time periods during which each staff member of a department is present and available for work, and the manner in which the time is spent. Different methods are used for recording an employees punctuality of arrival and the time when he leaves the work place. These are:

- Signing the time of arrival in a register in the presence of a time clerk.
- Keeping entrance open about 15 minutes before required time of arrival and 15 minutes after which is an allowance for permissible delay. There is no admission if an employee is more than half-an-hour late.
- Time cards bearing the name and identification number of the employee are punched for a week and analysed. New cards are issued for each week, and collected by the time keeper for record of overtime and regular work. A sample of a time card appears in Figure 22.1.
- Clock cards which on insertion at the entrance unlock the gate, automatically, punch time on the card and release it for the staff to remove accompanied by automatic re-locking of the gate. The same procedure is followed every time on employee exits. The machine records are then analysed for employee's exact presence at work. Apart from the total duty hours as recorded in a time or clock card, it is important to have information regarding the use of that time for various activities or jobs, as this information is required by the cost accountant, for charging different accounts with the labour cost for those activities. For this, cards such as the *job-time card* or the *time cost card* are used, samples of which appear in Fig. 22.1 and 22.2.

Name		Clock No.							
Dept.		I.D. No.							
Day	Morning		Afternoon		Overtime		Hours		
	In	Out	In	Out	In	Out	Regular	Overtime	
Mon.									
Tues.									
Wed.									
Thurs									
Fri.									
Sat.									
Sunday									
Weekly Summary									
Regular hours @ Rs per hour = Rs per hour = Rs									
Overtime rate @ Rs per hour = Rs per hour = Rs									
Total Rs									

Fig. 22.1 *Weekly Time Card*

Name		Department	
Post held		Account	
Job/Activity		Date	
Arrival	a.m./p.m.	To Pay	Rs
Departure	a.m./p.m. regular hours @ Rs	—
Hours overtime hours @ Rs	—
Regular		Total (Rs)	—
Overtime			
Approved	Posted	Entered in Summary	

Fig. 22.2 *Job time card*

The information from Fig. 22.3 can be entered into a staff summary sheet for different levels of the establishment and the earnings due, totalled and paid at the end of the week or month according to the policy of the establishment.

Name		No.....		Date			
Dept./Job/Activity	Time		Hours	Rate (Rs)	Amount		Remarks
	On	Off			Rs	P.	
Total							
Signature							
Entered							

Fig. 22.3 Daily time and cost card

Any tool that helps in controlling employee costs will assist in cost accounting, which is also helped by payroll and wage analysis sheets each instrument being designed or modified to suit each establishment a particular.

Since catering is a service industry, labour or staff costs form the largest expense next to food. Labour costs include salaries of staff and the value of all benefits provided to them, such as meals, medical facilities, housing, insurance, bonus, pension and uniforms. Controlling labour cost therefore involves control of expenses in all the areas listed, which is difficult because of the relatively fixed nature of the costs. They are however briefly outlined.

Meals

According to the policy of the establishment, a subsidy is generally given for staff meals, and therefore not subject to change in the short run unless the policy changes. The subsidy is worked out on the basis of average costs.

For determining the cost of employees meals therefore, the number of meals served are multiplied by the estimated average cost per meal. Then the cost of three meals is added together to arrive at the cost of employees meals per day. For example, if 20 breakfasts are consumed at Rs 5 each, 30 lunches at Rs 8 each and 20 dinners at Rs 10 each. Then the cost of meals per day can be easily calculated. The differences in the numbers eating the different meals is due to work scheduling, and are thus taken care of in the calculation of daily meal costs.

Another method by which management can control employee meal costs is by fixing the subsidy on meals, and issuing coupon books for a week. Anything eaten by employees beyond the coupon values is paid for by the employee at the same menu price as other customers. Some establishments may fix prices of meals for employees at lower (discounted) values without paying out a monetary subsidy to employees. Their meals can be accounted for separately by the accounts section. Other establishments may have separately cooked employee

meals as a set menu, which is served in an employees canteen, whether they eat all of it or not. Here also the employee meals can be costed easily.

Medical facilities

Every establishment has to provide medical facilities for their staff. Some may provide the facilities or reimburse the costs to employees when they need medical attention.

The surest way to control costs in this area is to ensure that employees remain in good health. This can be done by providing a healthy work environment, social hours of work, limiting hours to ensure that fatigue and exhaustion does not set in, and providing nutritious meals at work.

Housing

Housing costs are generally costed as fixed subsidies (usually 10 per cent of basic salary as house rent with maximum limit) as for meals. These vary slightly according to availability of accommodation which staff themselves find. In smaller establishments no housing is provided and the one or two workers may sleep on the premises for security reasons. Thus the control of housing costs is much more difficult, except by fixing a ceiling.

Insurance and pension

These costs are relatively fixed and worked out on the basis of salaries. The area of control is therefore limited.

Bonus

The payment of bonuses is directly related to productivity and therefore profits. Establishments will like to be able to pay bonus to staff as they will earn in only in proportion to sales revenue earned. Management control on bonus payments is limited as it is negotiated by staff unions.

Uniforms

The cost of uniforms to an establishment varies with its policy. Where employees are paid uniform allowances the costs can be easily determined, but where establishments take on the responsibility of providing uniforms, the costs will vary with the market prices of cloth and tailoring. These costs are beyond management control. The costs of laundry are also usually borne by the establishment with the latter policy on uniforms.

In spite of all these different components, labour costs can be controlled by paying attention to some key areas such as

- Type of Operation
- Volume of business
- Peak Periods
- Function and seasonal catering
- Equipment and technology

Type of operation: Whether traditional or fast food. If it is a traditional waiter service and is changed to a fast food the labour cost decreases as customers get self served over a counter.

Volume of business: This refers to the proportion of personnel employed to volume of customers, staff customer ratio. It is good policy to determine the minimum staff necessary even if business is low, and ensure that they are fully utilised.

Peak periods: Look at time of the day or the days of the when the maximum customers arrive. Schedule employees according to weekly forecasts.

Function and seasonal catering: Whether customers demands change with the seasons. If there are too many functions how best to schedule staff to prevent additional part-time staff from being used.

Equipment and technology: It is helpful to consider using labour and time saving devices such as:

- (i) Conveyors for moving goods, vertical and horizontal cutters, slicers, dicers and shredders to replace knife work.
- (ii) Liquid dispensers to speed up beverage service and save time on portioning and handling.
- (iii) Electric ovens.
- (iv) Convenience foods.

If layout of stores and kitchen is poor more staff will be required and labour costs increase. Certain concrete steps can be taken to control labour cost, after a total appraisal of the establishment has been made. Some suggestions are:

- (i) Schedule staff on shift basis, so that they arrive only when needed.
- (ii) Staff should report to work in uniform and not change after reporting.

- (iii) Some part-time staff should be maintained on a regular basis with fewer full-time permanent employees. Such employees can be available on call and paid on hourly or daily basis.
- (iv) Use of staff overtime, is dependent on the union contract situation, but should be limited as far as possible. It is however cheaper to pay overtime to a regular employee, then hire untrained outside staff. But overtime should be planned and prearranged, so that staff do not misuse the facility by slowing down during regular working hours.
- (v) Send personnel home early if they have no work on particular days. This idea however, works well only with service personnel, but there has to be a union agreement on paying them less when there is no work. For example, union policy may be that every employee gets a minimum of four hours pay if he reports on duty. These tips are important for high standards of service but may also act adversely when customer numbers drop.

The only real way to save labour costs is to retain staff once they join an establishment, so that costs of turnover are avoided. To be able to do this it is important to be aware of the costs of turnover. Every time an employee leaves a new one has to be recruited and costs are incurred on stationary, interview time, communications, initial low productivity, supervision, badges, uniforms, brochures on policy and procedures, time and materials for physical and medical examinations.

Although a certain amount of employee turnover is expected, because of temporary workers in the industry and retirement, much of the permanent employee turnover should be avoided. Turnover does bring fresh ideas into the food service but permanence of employees to implement ideas is essential too, for success.

Some managers think that an unfilled vacancy is labour cost saved. This is not a good policy because with overtime efficiency falls. If a very good employee leaves, a manager may have to hire two instead, which will increase costs. It is good policy to plan increases in salary on a regular basis and try and retain good staff.

Control of labour costs is therefore not always easy or very accurate because of the numerous, variables involved and the scope for time wasting because of the service nature of the industry, peaks and troughs of activity and changes in customer moods and demands, are all dependent on internal as well as external factors that tend to change fast, and often without notice. However some tools

are used to monitor labour costs such as job and *time-cards*, work-time schedules, and so on.

Time that is lost during working hours is called *idle time*, and may occur while in change rooms, during shift duty changes, visits to toilets, medical rooms, with visitors and the like. While idle-time is evident in any catering operation, it cannot be attributed to any particular unit of production, service staff too are bound to experience idle time while waiting for customers to arrive or finish their meal. They may also have to wait for an order passed to the kitchen and serve it only when ready. The time that passes between actual recorded time of arrival at work and the start of work, tea and lunch breaks also constitute idle-time which is to be expected and therefore is often called normal idle time. There are many other factors that can be over looked easily. Control of staff costs therefore requires a list of allowable idle time activities considered normal, beyond which it may be considered as wasted time reflecting inefficient management. Control then needs to be exercised because time costs money to the establishment and once lost cannot be regained, cutting into the profits of the organisation. The amount paid to staff for abnormal idle time therefore, is treated as a *loss* and not a *cost*, and is therefore directly recorded in the profit and loss account. However, idle time costs of indirect labour is included as overhead costs, besides idle time of ad-hoc workers or daily wagers can be controlled by effective supervision as they are paid on a weekly or daily basis and the losses can be adjusted before making the payments.

Overhead Cost Control

Overhead costs which are generally fixed over a period say a year, are termed as *fixed overheads*, and therefore do not change with changes in volume of sales.

Some overhead costs however, do change with changes in volume of sales, and remain stable only for short periods. They are therefore called *semi-fixed* or *semi-variable* overhead costs, such costs include repairs, maintenance, depreciation of equipment which do change with time but not in the same proportion as the change in the sales volume.

Another category of overhead costs are considered as *variable* since they change with the volume of sales. These include fuel costs power, stationery, costs of sale, normal idle time and so on. The variable overheads are subject to control just as any other type of variable costs.

Of these costs some are controllable and some are uncontrollable. Figure 22.4 identified the two categories of overhead costs.

<i>Controllable Cost</i>	<i>Non-Controllable Cost</i>
1. Heat, Light, Power, Gas	Interest
2. Stationary, Disposable plates, Cups etc.	Depreciation
3. Glass, China, Silver	Insurance
Disposables	Taxes (real estate and income tax)
4. Linen, laundry, uniform	Rent
5. Cleaning	
6. Security	
7. Advertising	
8. Donations	

Fig. 22.4 *Overhead costs of an establishment*

From Fig. 22.4 it is apparent that there are a lot more overhead costs which a manager can control as against what are beyond control. Each of these costs is discussed below.

Heat, Light, and Power and Gas

These resources constitute the energy resources of the establishment, and methods of controlling them have been discussed in Unit 2. Human effort however, which is also an important energy source, the use of which requires optimisation by proper work scheduling is not an overhead cost and therefore discussed under labour cost.

Stationery

Many food services use unnecessary paper supplies and stationery. This can easily be controlled by the use of appropriate equipment. For example installation of electronic cash register helps to do away with duplicate and triplicate vouchers, registers for sales records etc. Similarly the use of paper napkin dispensers and electronic hand driers can prevent wastage of serviettes and paper towels. Doubtless, the initial equipment cost will increase but in the long run they would fall, by control of stationary use. In addition the costs of paper and other stationery items such as pens, pencils, erasers, stamps etc. used by a manager and staff can be controlled by strict inventory and supervision for preventing undue pilferage.

Disposables

Expenses on disposable supplies such as plates, cup and napkins can also be curtailed by the use of good stocking methods and issue procedures with responsibilities being delegated to one person for their use.

Besides the costs of disposable supplies and stationary, getting rid of large amounts of used paper and supplies creates additional work for staff and adds to costs of disposal.

Glass, China, Silver

Glass and China costs in any establishment only increase because of breakage. While costs on silver are generally due to carelessness or ill-intentions of staff. Cutlery is often pilfered or unintentionally thrown into garbage along with plate waste. Since these are expensive items subject to constant use, expenses on them may be curtailed by the installation of a dish washing machine. Glass is more vulnerable to breakage than china, and can be preserved by such installations. If however, a dish washing machine is not affordable and the nature and volume of the business does not demand one, then only a glass washing machine may be installed. As far as silver is concerned better supervision during meal times and a total count of the silver after it is washed at the end of every meal, may be routinely done. This not only helps to pin-point the careless staff, but locates any lost silver by searching for it on the spot. This practice also instills in staff a sense of responsibility and caution particularly if the duty of counting is assigned to service staff by rotation every week.

Linen, Laundry, Uniforms

The only way to control expenses on linen and uniforms and therefore laundry costs is to distribute linen to staff who are responsible for their own washing and care. If the establishment is large and adopts a waiter service, laundry service staff remove all fresh napkins from a table which are not required during service. For example, when a table is laid for four customers and only three people arrive to use that table the fourth place setting including napkin and silver may be removed before the customers are served.

Another alternative is to replace linen by easy clean table mats or disposable mats. The cost effectiveness may be determined along with other effects like atmosphere, décor etc. when taking decisions pertaining to service areas. This is because while cost savings are important, customers expectations take higher priority. It is not worth saving on laundry at the cost of losing even one customer.

Cleaning

While cleanliness is of utmost importance in any food service, it must be remembered that the amount of detergent used for various types of cleaning, is not as important as the right type of detergent in the right quantities. An effective detergent is required only in small quantities to do a good cleaning job.

Cleaning costs can therefore be controlled best by proper training of staff in the use of the right quantities of a detergent, and by close supervision. Unfortunately this is an area which is least supervised in any establishment, without realising that along with extra detergents, lot of money is literally thrown down the drain. It is also more economical to use as few varieties of detergents in an establishment as possible.

Regular cleaning and maintenance of silver, floors, walls and work surfaces will require less cleaning materials and effort than cleaning occasionally.

Security

The general feeling of most managers is that anything spent on security is not a waste of money. But there must still be a limit. When expenses on security start digging into the profitability of an establishment, it is time to control expenses and make the food service more secure.

In small establishments one uniformed armed security man around the clock maybe enough to deter people from attempting to steal establishment resources. To get reliable security men is also not difficult these days because there are security agencies who supply staff on contractual basis. It is the total responsibility of the agency to see that someone is posted with the establishment all the time. For most catering staff a security check at the exit and a uniform is enough deterrent against theft. But against outside intruders a single man may be helpless. So expenditure incurred on an alarm system is well worth the cost. A variety of systems are marketed and the choice will have to be left to the management to decide which is the most suitable for each establishment, according to its size and requirement.

Advertising

The best mode of advertising for any food service, whatever its size, is *word of mouth* and the cost is high quality food and service at all times. Therefore the actual advertising costs. If a food service is spending on advertising it needs to divert the expenditure on improving the quality of its products, food and service. Once this is done the costs on advertising will automatically get controlled.

Donations

Donations given by any business for social causes, are from accounting point of view an expense but in effect, they bring about a cost saving, because such expenses are exempt from income tax payments. Donations therefore help to organise the profits of the establishment. Besides this donations are the cheapest way of advertising the food service.

Hidden Costs

Hidden costs refer to those expenses incurred by departments which are not very obvious or precisely accountable, as they cannot be charged specifically to a unit of production or any other head. The costs occur often unnoticed at every level and cut into the profits of an organisation.

In catering hidden costs occur at operative levels through loss of food materials in the form of spillage, spoilage, tasting of foods and evaluation before serving to customers and pilferage. Such amounts do not get sold but add up to sizeable costs in quantity food production and service.

At managerial levels, offering coffee and snacks to visitors are not paid for and considered as perks of the job but are never-the-less costs to the establishment. If these were calculated and apportioned to employee benefit accounts they would come under indirect labour or staff costs, but when not accounted for in any form they remain unnoticed or hidden. Similarly, office stationery may be pilfered.

Idle time during working hours has already been discussed under staff cost, and represents a hidden cost as it is difficult to quantify.

Every organisation has different kinds of hidden costs, which can be controlled through close supervision and a detailed knowledge of what a job involves, the steps carried out in its performance and so on. This would help to locate the points in production, service and storage that are prone to unaccountability. Once detected action can be initiated to ensure they are recorded under some kind of cost and thereby controlled to reduce losses at the end of an accounting period. A simple example will illustrate this point.

Example 22.3

In rolling of chapattis some dry flour is necessarily required, but the amount of flour that goes into a chapatti is only accounted for as 20g, 25g, or 30g. per chapatti according to the size prepared. Suppose 2g of dry flour is required to roll out one chapatti from 20g dough, what would be the hidden cost of dry

flour used for preparing 500 chapattis at one meal if the buying rate of flour is Rs 10 per kg?

Cost of 500 chapattis = $20\text{g} \times 500 = 10000\text{g}$ or 10 kg

Dry flour required for rolling = $2 \times 500 = 1000\text{g}$ or 1 kg = Rs 10

The hidden cost per meal for only one item prepared from dough is thus Rs 10/- and for 3 main meals, 7 days a week the cost would be $10 \times 3 \times 7 = \text{Rs } 210$ per week. This is a sizable amount if calculated for the entire year or accounting period. Once identified hidden costs should be added to the food cost of the chapattis and instead of 10 kg flour issued 11 kg would eliminate the hidden cost and consequent erosion of profits as it would be accounted for and selling prices fixed according to budgeted profits.

Example 22.3 only gives a glimpse of why small or medium sized catering establishments do not always make profits according to their expectations.

Hidden costs can be identified in every area of management activity. Some examples are taking time off for personal errands, or a smoke, or 10 minutes extra spent beyond break times etc. If idle time is accounted for, through close supervision and appraisal or self assessment techniques employed hidden costs can be reduced to permissible levels, and percentages worked out that can be absorbed under overhead or labour costs.

Cost Control Techniques

A variety of cost control techniques are thus available to managers such as establishing standards and procedures for measuring performance against set standards, observing and correcting the actions of employees, in case of deviations, maintaining records and reports, preparing budgets and disciplining employees. In addition forecasting as accurately as possible is important to prevent over production and waste.

Cost Calculations

In order to ascertain the efficiency of a food service certain calculations are necessary to establish the proportion of costs incurred on various activities in the establishment.

Forecasting

Forecasting can be done using a simple calculation of *percentage index*, which helps to forecast menu items to be prepared for a meal period or a day. The

forecast is based on the previous day's or week's sales records which should be maintained accurately. The calculation is done in two steps:

$$(i) \text{ Percentage Index} = \frac{\text{Total number of item A sold (A}^s)}{\text{Total of all items sold}} \times 100$$

$$(ii) A^s = \frac{\text{Percentage index of A} \times \text{Forecast of total customers}}{100}$$

Where A^s is the numbers of item A that is forecasted for sale.

Thus the practice of expressing all kitchen costs as percentages of sales helps in making comparisons with figures of previous periods and setting new targets for sales. It also focuses attention on any deviations from targets in particular areas of activity, which can be adjusted to achieve expected results at the end of an accounting period.

For any operation to succeed all costs need to be paid for by the cash received from sales. In addition, sales must cover the profit expected from a business whatever the target may be. All calculations are therefore based on certain ratios developed to measure profitability.

Gross Profit Ratio

Gross profit is the figure which represents the sum total of labour costs, overhead expenses and the net profit of the establishment. When this figure is expressed as a ratio of sales it is known as the gross profit ratio. If the figure is expressed as a percentage of sales it is referred to as gross profit percentage. Calculation of gross profit, therefore, is simply a matter of subtracting the food costs from the total sales as follows:

$$\text{Gross profit} = \text{Total sales} - \text{Food cost}$$

The proportions of the various costs differ with the nature of each establishment, the approximate percentages being as shown in Table 22.2.

Table 22.2 *The proportion of food costs expressed as a percentage of sales for different types of food services.*

<i>Establishment</i>	<i>Food cost %</i>	<i>Gross profit %</i>
Profit oriented	35–40	60–65
Low profit oriented	40–50	50–60
Non-profit oriented	60–80	20–40

These can be clearly seen when represented in the form of a pie chart as shown in Fig. 22.5.

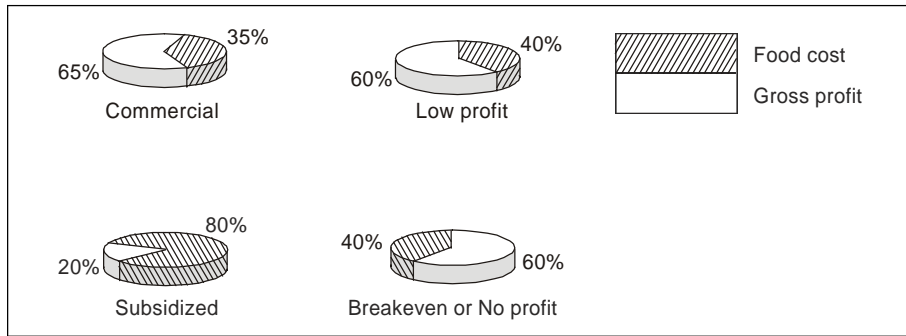


Fig. 22.5 *Gross profit ratios for various types of establishments*

As seen from Fig. 22.5 gross profit percentage is higher than the food cost percentage in the case of commercial catering establishments which are in business purely for profit. The gross profit covers labour costs, overheads and net profit percentage calculated on the basis of sales revenue represented by the pie chart and taken as 100 per cent.

Food Cost Ratio

While food cost percentage varies between 40–60 per cent of sales volume with different kinds of establishments, the split plan for expenditure on foods shown in Table 22.3 would be a useful guide.

Table 22.3 *Expenditure on different food categories in an establishment*

<i>Food group</i>	<i>Proportion of total food cost (%)</i>
Meats	25–30
Milk and milk products	15–20
Vegetables and fruits	10–20
Cereals	10–15
Fats and sweets	10–20
Miscellaneous	5–10

Using the above guidelines the following example will illustrate in actual money value, the amounts to be spent on each category of foods.

Example 22.4

If the volume of sales of a canteen over a week is Rs 10,000 and the gross profit at which it is operating is 60 per cent then the expenses on various types of food would be worked out as follows:

Values are expressed as a percentage of sales:

Food cost % of sales at 40%	Rs 10,000 × 0.40	= Rs 4,000
Meats at 25% of Rs 4,000	Rs 4,000 × 0.25	= Rs 1,000
Milk and milk products at 15%	Rs 4,000 × 0.15	= Rs 600
Vegetables and fruits at 20%	Rs 4,000 × 0.20	= Rs 800
Cereals at 15%	Rs 4,000 × 0.15	= Rs 600
Fats and sweets at 15%	Rs 4,000 × 0.15	= Rs 600
Miscellaneous at 10%	Rs 4,000 × 0.10	= Rs 400
Total food cost		Rs 4,000

Food costs can be calculated using simple formulae often called kitchen percentages illustrated through Examples 22.5 to 22.7.

$$\text{Food Cost Ratio or percentage} = \frac{\text{Food cost}}{\text{Selling price}} \times 100$$

Example 22.5

If the food cost of a snack is 80 paise and its selling price is Rs2, food cost percentage would be as follows:

$$\text{Food cost \%} = \frac{\text{Food cost}}{\text{Selling price}} \times 100 = \frac{80 \times 100}{200} \times 40\%$$

If the food cost is known and the target for the kitchen percentage is set, then the selling price can easily be worked out using the above formula. Methods of pricing are detailed in Chapter ??.

Example 22.6

If the food cost of a snack is Rs1, and the food cost ratio to be achieved is 45 per cent, then the selling price would be:

$$\begin{aligned} \text{Selling Price} &= \frac{\text{Food cost}}{\text{Food cost ratio}} \times 100 \\ &= \frac{1 \times 100}{45} = \text{Rs } 2.22 \text{ (2.25 rounded off)} \end{aligned}$$

Similarly, if the food cost and selling price are known then gross profit can be calculated.

Example 22.7

If the food cost is 40 paise and the selling price is Rs1.60 paise, the gross profit would be:

$$\begin{aligned}\text{Gross profit} &= \text{Selling price} - \text{Food cost} \\ &= 160\text{p} - 40\text{p} = 120\text{p}\end{aligned}$$

$$\begin{aligned}\therefore \text{Gross profit \%} &= \frac{\text{Gross profit}}{\text{Selling price}} \times 100 \\ &= \frac{120 \times 100}{160} = 75.0\%\end{aligned}$$

These simple calculations help managers to become cost conscious, a quality which is crucial to the profitability of a food service organisation. Being variable in nature food costs can easily erode profits.

It is therefore customary to calculate food costs over a period of four or five weeks. This is generally done with reference to the food purchased during that period, and not by listing all the ingredients of meals prepared in the month, as for the month, as for meal or dish costing.

The food cost is thus calculated by adding all purchases to what was in stock and subtracting the value of the remaining at the end of the costing period. All values are calculated on the basis of cost prices. The following examples will illustrate how this can be done.

Example 22.8

In a coffee shop, the value of purchases during January 2002 amounted to Rs 900. The stock in hand on January 1, 2002 was valued at Rs 120, and the value of the remaining stock on January 31, 2002 was Rs 180. Find the cost of food served during the month.

	(Rs)
Opening stock	120
Purchases	900
Total	<hr/> 1,020
Less closing stock	<hr/> 180
\therefore Cost of food used	<hr/> 840

Example 22.9

If the sales of the coffee shop in Example 22.8 were Rs 2,500, the gross profit would be calculated as follows:

	(Rs)
Sales	2,500
Less cost of food	840
Gross profit	1,660
∴ Gross profit percentage	$= \frac{1660}{2500} \times 100 = 66.4\%$

Example 22.10

The sales of the coffee shop are divided into plated meals, snacks and sundries. The menu prices are so fixed as to give different gross profit percentages on each type of sale. Prepare a statement to show the gross profit percentages earned from each category of sales at the end of the month, from the following information:

	Sales in Jan. (Rs)	Stock		Purchases during Jan.
		Jan. 1	Jan. 30	
Meals	2500	80	103	900
Snacks	200	12	4	95
Sundries	300	3	8	190

Gross Profit Statement for January 2002

	Total (Rs)	Meals (Rs)	Snacks (Rs)	Sundries (Rs)
Sales	3000	2500	200	300
Food cost:				
Stock on Jan. 1	95	80	12	3
Purchases	1185	900	95	190
	1280	980	107	193
Less stock on Jan. 30	115	103	4	8
Food cost				
∴ Gross profit (sales—food cost)	1835	1623	97	115
Gross profit % of sales	61.16	64.92	48.50	38.33

Example 22.11

If everything else remains the same, but the sales mix is changed to meals Rs 1100, snacks, Rs 1500 and sundries Rs 400, show the effect on gross profits achieved.

Solution**Gross Profit Statement Using Changed Sales Mix**

	<i>Total (Rs)</i>	<i>Meals (Rs)</i>	<i>Snacks (Rs)</i>	<i>Sundries (Rs)</i>
Sales	3000	2500	200	300
Sales	3000	1100	1500	400
Food cost:				
Stock on Jan. 1	95	80	12	3
Purchases	1185	900	95	190
	1280	980	107	193
Less stock on Jan. 30	115	103	4	8
Food cost	1165	877	103	185
Gross profit (sales—food cost)	1835	223	1397	215
Gross profit % of sales	61.16	20.27	93.13	53.75

It will be noticed that the gross profit contribution of meals, snacks and sundries has changed drastically even though the total gross profit remained the same. Now, if we assume that the percentage gross profits on each of the meals, snacks, and sundries remains the same as in Example 22.10, the effect of change in the sales mix (Example 22.11) on the total gross profit percentage earned by the establishment would be as follows:

	<i>Sales (Rs)</i>	<i>Gross Profit % (From Ex. 4)</i>	<i>Gross Profit (Rs)</i>
Meals	1100	64.92	714.12
Snacks	1500	48.50	727.50
Sundries	400	38.33	153.32
	3000	56.49% (56.5%)	1694.94 (1695)

From the above figures the effect of sales mix on profitability is evident, the total gross profit percentage showing a change from 61.16 per cent to 56.5 per cent. It is therefore apparent that the quality of foods served in an establishment need not necessarily be the best available, but must be acceptable to the customer

and management in terms of profitability. Unit 5 deals with ways of substituting cheaper foods of good quality to bring the meals served within the established cost structure desired. Chapter 15 on menu planning also covers this aspect.

Thus the quality of a dish or meal is determined by the quality of the ingredients used in its preparation. In general, proper attention to controlling portions in terms of weights and volumes at appropriate stages of the production cycle will take care of the quality characteristics aimed at. This is because if ingredients are mixed together accurately by standard methods one can reproduce the same flavours, textures, colours and portions acceptable to both customers and management.

The maintenance of quality, however, also requires adherence to the food laws and those regarding hygiene and sanitation and the development of clean working habits (Units 4 and 7).

It is essential for every establishment to make a profit at the end of an accounting period because all costs both fixed and variable need to be covered by the cash received from sales. The amount which remains after subtracting the variable costs would then be the *contribution* made towards fixed costs of the establishment.

It is evident therefore, that even in the so called non-profit making organisations, a minimum profit margin is necessary to contribute towards or cover fixed costs of an operation.

Profit margins may therefore vary according to the goals of an establishment. A government organisation for the handicapped may make a profit of 2–5 per cent depending on the social costs government and voluntary agencies are prepared to incur. University, college and school residences or hostels may aim at 5–10 per cent, while profit-making commercial organisations may even go up to a net profit figure of 15–30 per cent.

Break-even and Contribution

Establishments whose sales figures just cover their variable and fixed costs are said to *break-even*. Thus, they may be classed as non-profit organisations. In other words, when the net profit or loss is zero, the contribution made by the organisation just covers the fixed costs. There is a thin dividing line between profit, break-even point and loss, about 1 per cent between profit and loss. It is therefore not practical to expect a food service to operate exactly at the break-even point. The concept of a non-profit business is totally a method of organising the finances. Under tax laws, the finances can be organised to show a non-profit result, so that no income tax is payable. Every establishment therefore

plans for some project to avoid loss. Break-even point (BEP) in terms of the number of covers may be calculated using the formula:

$$\text{BEP} = \frac{\text{Fixed cost}}{\text{Average spending power(ASP) – Variable cost per cover}}$$

or

$$\text{BEP} = \frac{\text{Fixed cost}}{\text{Contribution per cover}}$$

In terms of Volume of Sales

$$\text{BEP} = \frac{\text{Fixed cost} \times \text{Selling price}}{\text{Selling price} – \text{Variable cost per unit}}$$

or

$$\text{BEP} = \frac{\text{Fixed cost} \times \text{Selling price}}{\text{Contribution per unit}}$$

Therefore, contribution therefore as a percentage of sales, depends on the cost structure of the business. Catering being labour intensive the fixed costs are generally higher than variable costs. When variable costs become high e.g. when certain foods used are out of season or the customers increase, the fixed costs per cover decrease, bringing down the contribution per cover too. Figure 22.6 shows the effect of price fluctuations on the contribution to fixed costs and net profit, assuming that the sales in a day amount to Rs 1,000 in a coffee shop where variable costs are Rs 400 and the contribution is Rs 600.

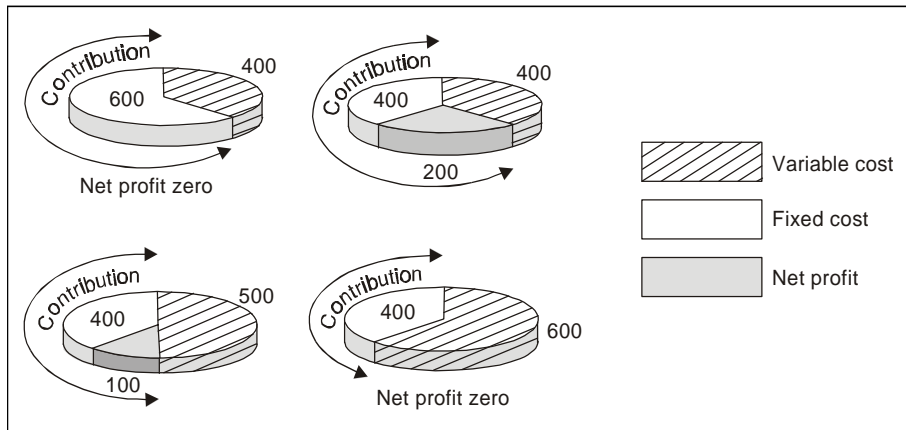


Fig. 22.6 *Impact of change in the variable costs on contribution and net profit*

Break-even point may also be calculated for any food service operation, if the kitchen analysis sheets are maintained and the fixed costs calculated accurately. Figure 22.7 is the graphic representation of the break-even point of a cafeteria.

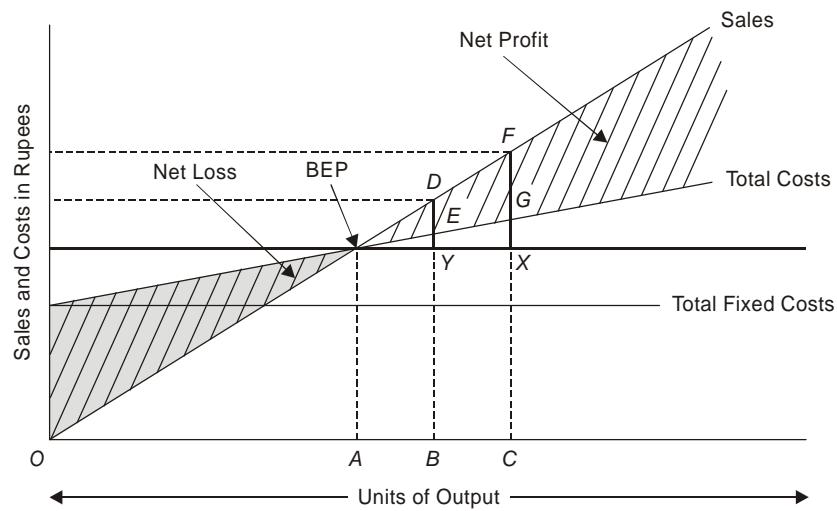


Fig. 22.7 Graphic representation of BEP of a cafeteria

As seen from Fig. 22.7 the break-even chart shows the sales revenue and the total costs and can therefore be used to assess, at a glance, the likely effects of changes in either of these elements on the profitability of the establishment. Even changes in any of the factors composing them, like changes in selling price or fixed or variable costs, can be studied, as explained below:

- (a) At a level of output represented by OA units the cafeteria just manages to cover its total costs, and therefore breaks-even (BEP) at the point of intersection of the total cost and sales lines.
- (b) When the level of output increases to point B and C respectively, the cafeteria starts making a profit equal to DE and FG respectively, providing a margin of safety against losses equal to DY and FX (Margin = Total Sales – Break-even).
- (c) A decrease in the selling price, flattens the sales line causing the angles between the total cost and sales line (*i.e.* the angle of incidence), to change, shifting the break-even point to the right from B to B₁–B or B₂–B units extra to break-even and start making a profit as seen from Fig. 22.8.

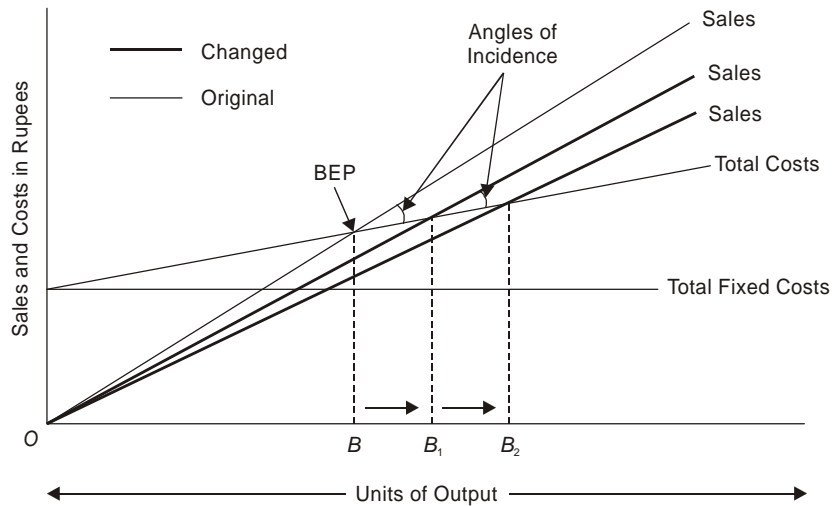


Fig. 22.8 *Effect of a decrease in the selling price on BEP and profit*

If the price is increased, bringing in a greater sales revenue the shift will be toward the left as shown in Fig. 22.9. But this depends also on factors like the elasticity of demand.

A change in fixed costs on the other hand, will lead to an increase in the total costs, but the angles formed between the total cost line and the sales revenue line will remain the same, as shown in Fig. 22.10. There is an initial fall in profit due to the increase in the number of units required to be produced to break-even, and a consequent fall in the margin of safety, but there is no change in the amount by which the margin of profit falls or rises.

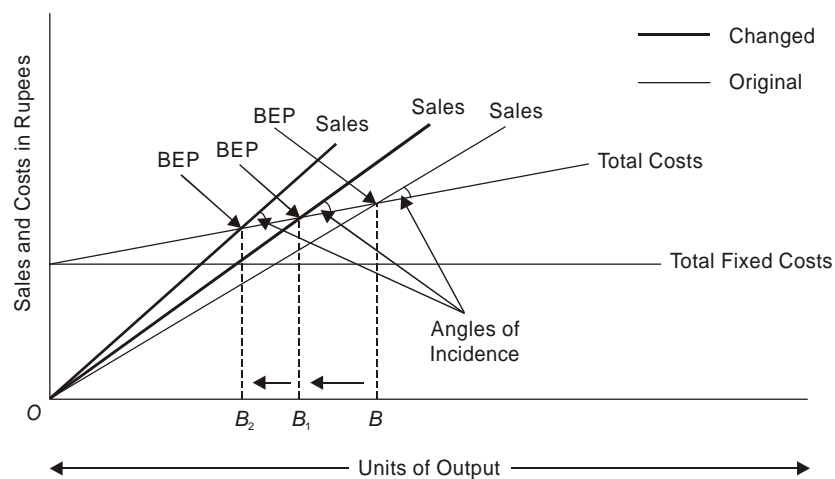


Fig. 22.9 *Effect of increase in price on profitability*

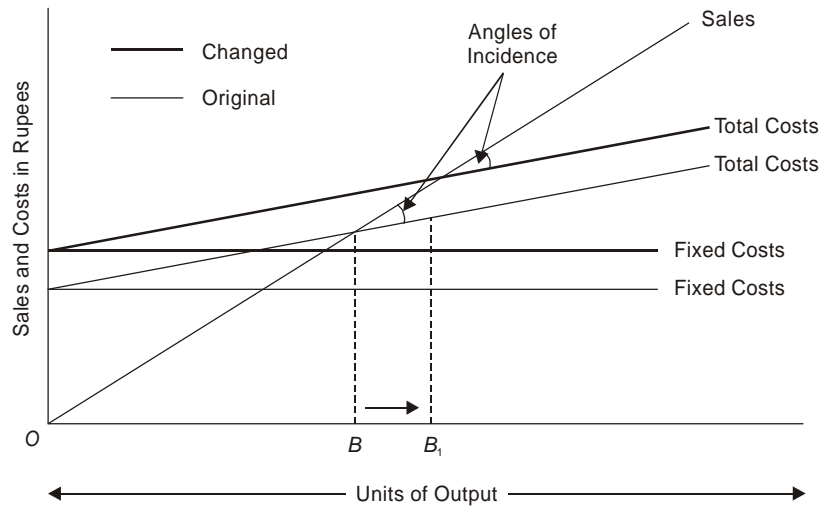


Fig. 22.10 Effect of a change in fixed costs on BEP and profits

The important factors which can be read from a break-even chart are:

- (i) The extent to which the production of meals or units must increase in an establishment to start making a profit.
- (ii) The profit which can be earned at alternate levels of activity due to changes in prices resulting from inflationary trends, reduced supply or expansion activities of the organisation.

When contribution is high, changes in sales volume have a tremendous impact on the net profit, because once the costs have been covered any increase in contribution is an addition to net profit. In food service establishments the variable costs generally lie between 35 to 40 per cent of the sales volume. The contribution therefore works out to be between 60 and 65 per cent.

The concept of contribution can be used by a food service manager to estimate whether a particular dish in a menu or a meal is profitable or not. Also through calculations of break-even points at different levels of turnover, the most profitable level of output in terms of production units can be determined. Example 22.** illustrates at which level of turnover a meal can be profitable and to what extent.

Example 22.12

A restaurant serves 1500–3500 meals a month. Its fixed costs are Rs 15000 and variable costs are 40 percent of sales. The selling price of a meal is Rs 15.00. Determine the total cost of each meal and the net profit or loss made by the

restaurant if it serves 1500, 1650, 1800, 2000, 2500, 3000 and 3500 meals in the different months.

<i>Meals</i>	<i>1500</i>	<i>1650</i>	<i>1800</i>	<i>2000</i>	<i>2500</i>	<i>3000</i>	<i>3500</i>
Selling price per meal (Rs)	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Food cost (variable cost at 40% of selling price)	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Fixed Cost per meal (1500 ÷ No of meals)	10.00	9.00	8.30	7.50	6.00	5.00	4.28
Total cost per meal (Variable cost + Fixed cost)	16.00	15.00	14.30	13.50	12.00	11.00	10.28
Net Profit or Loss Per meal (Selling price – total cost)	-1.00	BE	0.70	1.50	3.00	4.00	4.72

The results obtained indicate that meals served in numbers less than 1650 would result in losses whereas at 1650 meals, the restaurant just breaks-even (BE). Any volume of meals produced above 1650 would start bringing in profits, the latter increasing steadily with the volume of sales. This could also be determined graphically through the plotting of the break-even point on a graph as shown in Fig. 22.7. Break-even charts are also applied for working out pricing problems by projecting what net profits will be achieved at various levels of activity when the variable costs are a fixed percentage of sales. While sales volume is important in a food service, the composition of the sales known as the *sales mix* is also significant. Example 22.** indicates the levels of contribution that each dish makes in a menu towards achievement of net profits.

Example 22.13

A catering establishment budgeted for a total sales revenue of Rs 40,000 for the current year. The labour and overheads were estimated at Rs 18,000, while the figures for gross profit margins (contribution) in relation to sales mix were:

<i>Menu Mix</i>	<i>% Sales mix</i>	<i>% Gross profit</i>
Soup	25	60
Meat, fish, poultry	40	40
Vegetables	15	50
Sweets	10	60
Hot beverages	10	60

At the end of the year the actual sales, achieved were 50,000 but there was an increase in the labour and overhead costs by Rs 1500. The actual gross profit margins and sales mix percentages achieved were as follows:

	<i>% Sales</i>	<i>% Gross profit</i>
Soup	20	65
Meat, fish, poultry	30	40
Vegetables	10	60
Sweets	20	60
Hot beverages	20	60

Prepare operating statements to show the effect of change in sales mix on net profit.

Budgeted Operating Statement for 2002–2003

<i>Item</i>	<i>% Sales mix</i>	<i>Sales (Rs)</i>	<i>% Gross profit</i>	<i>Gross profit (Rs)</i>
Soups	25	10000	60	6000
Meat, fish, poultry	40	16000	40	6400
Vegetables	15	6000	50	3000
Sweets	10	4000	60	2400
Hot beverages	10	4000	60	2400
	100	40000	50.5	20,200
			Less labour and overheads	18000
			Budgeted net profit	2200
			Budgeted net profit %	5.5%

Actual Results for May 2002–2003

<i>Menu item</i>	<i>% sales mix</i>	<i>Sales (Rs)</i>	<i>% Gross profit</i>	<i>Gross profit(Rs)</i>
Soups	20	10000	65	6500
Meat, fish, poultry	30	15000	40	6000
Vegetables	10	5000	60	3000
Sweets	20	10000	60	6000
Hot beverages	20	10000	60	6000
	100	50000	55	27500
			Less labour and overheads	19500
			Actual net profit	Rs 8000
			Net profit % of sales	16%

It is evident from the above calculations that when the sales mix changes it has an effect on the net profit achieved at the end of an accounting period. In the above example, the sales mix percentage for meat, fish and poultry was reduced in favour of sweets and hot beverages. The latter could have accounted for the increase in labour cost as specialized skills are required for making fresh Indian sweets of different kinds in small batches as demanded. In addition more service staff are needed to serve more customers for hot beverages. The food costs have actually been reduced in spite of increase in the sales revenue by Rs10,000 during the period. This is due to the reduction of sales mix percentage for meats and vegetables which are expensive items.

The extent of contribution that a particular dish makes to fixed costs and profits is a guide for establishing the most profitable sales mix in a menu. The item with the highest contribution is the most profitable such as soups, in the above example. Hence, it is possible to construct menus and evolve a sales mix which will give the maximum contribution to fixed costs and net profit. Managers can thus control costs by keeping less quantities of non-profitable items and more of the profitable items on their production schedules. Keeping in mind the fluctuations in customer demand as affected by season, weather, purchasing power and so on.

It is evident from the above discussions that food cost control is vital to the profitability of any catering establishment. In addition, any decisions to close down an establishment during off seasons as in the case of small cafes in summer resorts, can be made by an analysis of production and sales percentages and calculations of contribution or profit volume ratios. It is relevant to state here, that any contribution from sales even when the sales volume decreases during off seasons, is paying towards fixed costs and overheads, and even if an establishment is running at a loss on an average, over the year, some contribution is better than none at all.

Standard Dish Costing

There is no doubt that the exact cost of a dish must be known before it can be served to the customer at a profitable price. Also in non-profit making institutions it is important to cost dishes and meals, accurately to ensure that they are cost effective and cover all costs incurred in their preparation and service. It is therefore the usual practice in catering to determine the total cost of materials used in producing a dish of a standard quality, and then adding to it, a certain percentage or supplement to cover labour and overhead costs to arrive at the selling price. This supplement is often as high as 60 per cent, so it is helpful to calculate all costs of food accurately and preferably to the third decimal place (Rs 0.052).

The method of costing dishes is known as *standard dish costing*. This method is also useful in setting the targets for price and usage of the materials, thus helping to detect differences that may occur in the process of food production and service. Once the variations are identified, they can be analysed and the reasons for their occurrence found out for correction.

Dish costing, however, needs to be checked and altered periodically when food prices change, to make sure that the values being used in calculations for prices, costs and usages are up-to-date. A sample of a standard costing sheet is given in Fig. 22.11.

Dish Spinach Poori Yield 12 Pooris		Date: 12.7.2002	
Size of Portion 4 No. of Portion 3			
<i>Ingredients</i>	<i>Qty. (g)</i>	<i>Price Rs/Kg.</i>	<i>Cost (Rs)</i>
Wheat Flour	160g	10.00	1.600
Fat	10g	50.00	0.500
Spinach	100g	12.00	1.200
Salt	5g	7.00	0.035
Chill powder	2g	20.00	0.040
Total Food Cost of 3 portions			3.375
Food Cost per portion			1.125
Food cost			40%
Gross profit			60%
∴ Selling price per portion			2.812
$\frac{(1.125 \times 100)}{40}$			or Rs3 (rounded off)

Fig. 22.11 Sample standard costing sheet

The recipe in Fig. 22.11 has been standardized to give a gross profit of 60 per cent.

Costing sheets for each dish on the menu may be filed and recorded for later use as a ready reference for pricing. It is preferable to write the figures in pencil, so that they can be easily erased when there is a change in the price of any ingredient. Costing sheets must be updated regularly once a month or quarterly depending on the variability in prices of ingredients used. Whenever the prices are altered on an existing sheet, the selling price must also be calculated again.

A common error made is to calculate the gross profit using the new food cost and increase the worked out selling price by the amount of reduction in the gross profit. Since percentages are proportions of sales or selling price and not absolute numbers, all the calculations require to be done afresh when food prices change. If food costs remain the same but overheads increase, then also selling prices have to be recalculated to cover them.

The food cost percent of any item can be lowered by raising the price charged on the menu, lowering the amount paid for food and other ingredients or by buying poorer quality or making portions smaller. However, lowering the quality of the main ingredient, or reducing the size of portions may depress the sales of the item considerably, so one has to be careful in making such decisions. Costs are important, but not more important than the customer who pays for them.

Menu Costing

While calculations similar to those for dish costing would normally establish the selling price of menus, other factors also need to be considered that will help to sell those menus at the calculated price. These are competitor's prices, policy decisions regarding promotion of new ideas or products, rounding up exact calculations of selling prices, which may not always give the estimated gross profit percentage desired. Sometimes, the use of convenience foods in food preparation result in decreased labour and overheads but increase the food cost, so logically less gross profit percentage is required. But prices are fixed according to what the customer is willing to pay, and therefore different items on the menu would give different profit percentages.

Meal Costing

For meal costing it helps to prepare costing sheets for individual courses, and then adding up the total costs from the dish costing statements or sheets according to which dishes are chosen for the meal. By this method flexibility can be built into set menus as well, when a dish can be easily substituted by another of the same cost, without disturbing the selling price of the meal or the estimated gross profit percentage.

Event Costing

In costing for functions like a children's party, or a conference lunch, it has been suggested that the charge to the customer should be at least twice the food cost. The margin being expected to cover the costs of decoration, linen, extra cleaning resulting in higher labour costs, detergent costs, and so on. In certain cases the charge may be two and a half or three times depending on the

requirements of customers for the occasion. The following examples show the costs and profits obtained by doubling the food cost and fixing the charge.

Example 22.14

A party of 100 guests is being arranged at the rate of Rs 15 per head. If the charge is double the food cost and wages are paid at 25 per cent determine the costs to the caterer and the balance remaining as profit for covering the overheads and net profit.

Total charge is (Rs 15 × 100)		Rs 1500
Food cost (50%)	750	
Staff costs (25%)	375	1125
Balance for overheads and profit		375 or 25% of sales

Example 22.15

If the charge to the 100 guests is fixed at three times the food cost i.e. Rs 22.50 wages remaining the same, calculate the balance available for overheads and net profit.

Total charge (Rs 22.50 × 100)		Rs 2250
Food cost (33.3%)	= Rs 750.00	
Wages (25%)	= Rs 562.50	Rs 1312
Balance for overheads and Profit.		Rs 937.50
		= Rs 41.66%

It will be noticed that when the charge to the customer is increased the profits increase because labour costs are relatively fixed over a period of time and therefore a higher selling price or a higher sales volume through increase in the number of customers can result in higher profits.

VARIANCE ANALYSIS

While the standard recipe and the standard dish costing sheet lays the targets for profit margins to be achieved if they are followed meticulously and calculated accurately, in practice this is not always feasible. Differences occur because of price fluctuations or changes in the amounts of ingredients actually used, due to differences in weighing and measuring equipment, and methods which different people use in an establishment often giving rise to hidden costs. These differences are known as *variances* and may be either adverse or favourable in terms of the effects on the profits of the establishment. Variances are generally

written as adverse (A) or favourable (F) as the case may be. Example 22.16 will explain how this can happen.

Example 22.16

Using the dish costing sheet in Fig. 22.11 we can assume that 100 portions (400 pooris) of the dish were prepared and sold. The standard cost for 100 portions is $(100 \times 1.125) = \text{Rs } 112.50$, but it is found that the actual amount spent for the preparation was Rs 114.0. On investigating it was found that 2 kg wheat flour was used instead of 1.60 kg, and this was actually bought at Rs 8.00 per kg. It is obvious therefore, that there has been a price and material-usage variance. These variances can be analysed in the following manner.

Cost of flour actually used for 100 portions (2 kg \times Rs 10.00)	= Rs 20.00
Standard cost of flour for 100 portions (1.60 kg \times Rs 10 per kg)	= Rs 16.00
Total variance	= 4.00(A)

The variance has resulted from increase in the quantity of flour used. So it is called on adverse (A) material variance.

If the standard costing was done at a cost price of Rs 10 per kg and the flour actually bought was on a quantity discount, at Rs 8 per kg, then there would also be a price variance which would be favourable, since actual price paid was less than that calculated on the standard costing sheet for the recipe. The calculations for the variances can be done as follows:

(i) *Material Usage Variance (MUV)*

$$\begin{aligned} \text{MUV} &= \text{Actual quantity} - \text{Standard quantity} \times \text{Standard price} \\ &= 2 \text{ kg} - 1.60 \times 10 \\ &= \text{Rs } 4(\text{A}) \end{aligned}$$

(ii) *Price Variance (PV)*

$$\begin{aligned} \text{PV} &= \text{Actual price} - \text{Standard price} \times \text{Actual quantity} \\ &= (8 - 10) \times 2 \\ &= 2 \times 2 = 4(\text{F}) \end{aligned}$$

In this case the variance is favourable to the establishment because the price actually paid was less than the calculated price.

In this example the total effect of the MUV and PV was nil because the values of the adverse (Rs 4) and the favourable (Rs 4) variances cancelled out. But this may not always be the case from day-to-day, or week to week for all the items prepared and served. Variances can thus have serious effects on profitability.

Similarly, variances in material yield, or material mix, may be determined and corrective action taken. An adverse material yield variance would indicate a loss of portions, through wastage, over-cooking, or pilferage. The reason can therefore be located and corrected to control profits. Cost variance includes both material and labour variances. While material variance refers to price and usage deviations, labour variances involve the rate (payment) and efficiency (time) deviations, and are useful guides in determining the relative usefulness of installing time and labour saving devices in work centres.

If an adverse variance is identified in any of the elements mentioned above, its effect would be a reduction in profits and therefore immediate corrective action is called for. If the variance is favourable, the effect would be an increase in profits.

BUDGETING

Budgeting is the process by which estimates of expenditure and receipts are made based on actual performance of establishments in the past, and adjusted for forecasting future outcomes. For example, estimates of customer numbers, sales revenue, food and other costs are forecasted and written out in what is called a *budget*, which helps to fix targets for future achievement.

A *Budget* is therefore a plan expressed in monetary or other terms which governs the operation of an enterprise over a predetermined period. Most budgets are expressed in terms of money such as sales budget, staff cost budget, while some may be written out as percentages or in units, such as staff numbers or expected customers or percentage room occupancy in a motel.

Budgets help to pin-point targets for various departments and provide a means of control for managers in production, service, sales and so on.

Budgetary control places responsibility for minimum levels of achievement on managers, who through constant comparison of actual results with budgeted targets can monitor progress from time to time and take corrective action. Where a competitive spirit exists the targets may be exceeded in some departments to the advantage of the staff who earn bonuses on extra profits that the establishment makes.

Types of Budgets

Budgets can be of many kinds when viewed from different angles in any food service establishment as depicted in Fig. 22.12.

<i>View point</i>	<i>Budgets</i>
1. Subject matter	<ul style="list-style-type: none"> ● Capital ● Operating
2. Comprehensiveness	<ul style="list-style-type: none"> ● Master ● Department
3. Level of Sales	<ul style="list-style-type: none"> ● Fixed ● Flexible

Fig. 22.12 *Classification of budgets*

Thus depending on the manner and view point from which targets to be set are seen by different managers the budgets will show the picture desired.

Capital Budgets

These deal with the capital funds and assets of an organisation, and cover budgets dealing with assets such as equipment, plant, cash, proposed issue of shares and other instruments for raising funds for the organization.

Operating Budgets

These are usually concerned with the direct operation of the business and cover for example sales, purchases, staff costs, administration, maintenance and so on.

Master Budgets

These represent the forecasted overall targets set for the organisation such as a profit and loss budget and incorporates all incomes and expenditures likely or estimated in an organisation. Similarly a budgeted balance sheet may be prepared showing assets and liabilities of the establishment based on previous records. The elements of a budget plan are indicated in Fig. 22.14.

Department Budgets

Each department of the establishment sets its targets and prepares a budget for achievement. Such budgets include banqueting budgets, maintenance, and so on depending on the number of separate departments that exist.

Fixed Budgets

As the term suggests these remain unchanged over a period of time, and are not related to the level of sales. Examples of such budgets are advertising, rents and rates, administration budgets.

Flexible Budgets

These budgets predetermine costs with respect to possible volumes of sales, called the cost of sales budget. The budget of college or school canteens, motels, seasonal hotels would all be flexible budgets.

It is important to keep in mind however, that any particular budget does not fall only into a single category or type. For instance, a labour cost budget is an operating budget but may also be a departmental budget and flexible or fixed according to the policy and needs of an establishment.

Operating Budgets

There are a number of operating budgets prepared in the catering industry such as sales, labour and overhead cost budgets, maintenance budgets, capital and cash budgets and so on, a few of which are being briefly discussed.

Sales Budget

The sales budget is the most important one in terms of budgetary control. This is because the other budgets work on the assumption of what is expected to be sold, and the sales revenue that can be generated thereby. It is also the most difficult to prepare, because there are a number of uncontrollable external factors that influence the level of sales. If budgeted sales are forecasted wrongly all other cost budgets will also be inaccurate. The cash budget too, which is affected, by the sales volume will also be out of proportion, and unrealistic. The preparation of the sales budget therefore is based on the following factors:

- *Past performance*: This is analyzed with respect to actual sales figures achieved in previous periods, the sales mix, seasonal trends, fluctuations and so on.
- *Current Trends*: Present state of sales menu mix, likes and dislikes of customers, changes in living and eating habits etc.
- *Limiting Factors*: Identification of factors which are limiting sales in a certain area.
- *Other Information*: This includes state of competition, employment, location, climate and weather changes, political situation, government policies and their effects on future turnover.

Example 22.17

The actual sales figures of a restaurant for three consecutive years were analyzed and found to be as follows:

<i>Sales</i>	<i>Year 2000</i> (Rs)	<i>2001</i> (Rs)	<i>2002</i> (Rs)
1. <i>Restaurant</i>	18,000	18,000	19,278
% increase on previous year (1998)	8	5	2
2. <i>Bar</i>	9,000	9,450	10,112
% increase on previous year	4	5	7
3. <i>Sundry</i>	3,000	3,150	3,330
% increase on previous year	5	5	6
Total Sales	30,000	31,500	32,760
% increase in year	6	5	4

The figures in Example 22.17 indicate the following trends:

- The percentage turnover in restaurant sales was continuous falling inspite of a slight increase in the sales revenue. When analyzed the limiting factor was found to be the dining space of the restaurant.
- There was a gradual increase in bar sales, but because of the identified space limitation the increase for the year ahead cannot be very much greater.
- Sundry sales too is expected to increase as above but not too dramatically.

The budgeted sales figures for the year 2003 were therefore forecasted to be:

<i>Sales</i>	<i>Annual Estimates</i> (Rs)	<i>4-Weekly Estimates</i> (Rs)
Restaurant	$19,278 + 5\% = 20,242 \div 13$	1557
Bar	$10,112 + 7\% = 10,820 \div 13$	832
Sundry	$3330 + 7\% = 3563 \div 13$	274
Total (Rs)	= 34,625	2663

At the end of each 4-weekly period the actual sales would be compared with the budgeted figures to ensure that targets are being achieved. In case of variances, corrective action would be taken in time to achieve the annual estimates. For instance if restaurant sales actually achieved are less than the

monthly targets a price revision may be the answer since the turnover cannot be increased due to space being the limiting factor. A sales budget may be represented in a standard format as indicated in Fig. 22.13.

The budget is then forwarded by the Divisional Manager to the budget committee for scrutiny and comments. As seen from Fig. 22.13. The sales budget must indicate the department to which it refers the budget period, description of items with sales in units analysed for type of sale with monetary value of units, the sub totals for each class of products sold and signatures indicating authorization for the department. Provision for comments at each level must be made for guiding the budget committee in case of suggested revisions.

Branch/Department							
Period to							
For Branch Manager				Completed by Sales Manager			
Item	Total	Analysis of Units by Type of Sale		Value of Units			
	Units	Units	Units	Units	Rs	Rs	Rs
Sub total							
Sub total							
Total							
Branch Manager:							
..... Signature Date							
Sales Manager							
..... Signature Date							

Fig. 22.13 A sales budget format

Stock Budget

This is intimately connected with the sales budget because the buying of raw materials and estimating stocks need to be coordinated with sales. Other factors

involved are capital commitment to stocks and storage space for them. Stock budgets are usually prepared at selling prices especially in larger organisations, but depends on the items of sale. It is however necessary, to keep abreast with any reduction in selling prices offered to customers due to an urgency to clear stock of perishable items or seasonal price variations. The selling prices once fixed should however, not be reduced without the authority of the purchase department. The amount by which the prices of goods are reduced is called the *mark-down*.

Maintaining stocks at selling prices provides greater control over sales, but for control over buying the cost figures need to be used. This can be done by the application of a cumulative *mark-up* rate for each type of stock used. The cumulative *mark-up* is calculated by reference to opening stocks and purchases to date at cost and selling prices as shown in Table 22.4.

Table 22.4 *Calculation of cumulative mark-up on selling price*

<i>Period</i>	<i>Opening Stock (Rs)</i>	<i>Selling Price (Rs)</i>	<i>Cumulative mark up (%) on Selling Price</i>
1. Opening Stock	1500	2000	$\frac{2,000 - 1,500}{2,000} \times 100 = 25\%$
Purchases	800	1000	
Close of period	2300	3000	$\frac{3,000 - 2,300}{3,000} \times 100 = 23.33\%$
2. Opening Stock	1500	2000	
Purchases to date (Periods 1&2)	1600	2000	$\frac{4,000 - 2,100}{4,000} \times 100 = 22.5\%$
	3100	4000	

It may be noted that original opening stock plus purchases does not go on indefinitely. At the end of say six months calculations are made with the opening stock at cost, the selling price being the figures at the close of the previous six months. All percentages however, are calculated on selling price.

Other factors associated with the stock budget which also affect the sales budget are wastage or surplus stock rate of stock turnover and age of stock.

Wastage or Surplus Stock

The stock wastage or surplus where reasonable is usually written off during physical stock verification, but where wastage figures are large, they need investigation as it may be due to faulty records or pilferage.

Discrepancies between stock book figures and actual physical stock may be due to a number of other reasons such as:

- *Items received and added to stock but invoices not received.* In such cases the purchase entry in the stock and the purchase entry in the stock book must be increased for the amount of outstanding invoice.
- *Items may be in stock on a sale-or-return basis.* These should be excluded from the stock check with the book figures.
- *Items on customer's approval* should be entered in stock till a sale is made.

All sales are deducted from stock lists while purchases are added.

Stock Turnover

A fast turnover is important to prevent wastage and block funds in stock. The rate of stock turnover is calculated by dividing selling price by the average stock during the period also at selling price. The rate will depend on the type of stock item.

Sometimes the value of stocks may be reduced because the item becomes obsolete, or deteriorates quickly as in the case of perishable items.

Control over buying stock can be calculated by preparing the stock budget shown in Table 22.5.

Table 22.5 Sample stock budget

<i>Budgeted sales at Selling price</i>	<i>R</i>
<i>Add</i> budgeted closing stock	—
<i>Less</i> budgeted opening stock	—
Purchasing allowance at selling price	—
<i>Less</i> budgeted gross profit margin	—
Purchasing allowance at cost	—

The statements in Table 22.5 are prepared from the sales and stock budgets. Control over buying is possible by adjusting the period figures. Where actual stock is greater than budgeted, the figures are reduced, similarly if sales increase

more than budgeted figures the stocks and therefore purchasing allowance is increased and vice versa.

Staff or Labour Budget

This would provide estimates of number of staff at each level in a department; their salaries; payments to ad-hoc or casual labour and for overtime work; proposed changes in staffing and the rates of pay. This budget would also include the cost of staff meals and other employee benefits offered by the organisation. The staff cost budget would be closely related to the budgeted volume of sales, as the degree of increase in sales determines whether existing staff can handle the workload or additional inputs are necessitated.

It is important to consider a department-wise analysis of staffing before adding on additional staff costs in the budget. This is all the more necessary in catering, where job rotation is the norm because of periods of peaks and troughs in production and service activities.

Other Budgets

A number of other budgets for costs and expenses are prepared to get an overall estimate from each department for their requirements of capital investments, overhead, maintenance, advertising and office expenses. These estimates help the organisation to prepare capital, cash and thereby master budgets for helping to make arrangements for availability of cash as and when required. The latter is essential for the uninterrupted performance of the organization.

Cash Budget

As already indicated this budget is prepared from the various operating and capital budgets, that is those concerned with the assets and capital funds of the enterprise. The cash budget gives estimates of cash receivable as from sales and other sources and cash payable over the budget period, which is obtained through the operating expense budgets and the estimates of fixed assets planned. Example 22.18 shows the layout for the preparation of a cash budget.

Example 22.18

Prepare a cash budget for six months starting 1 April 2002, given the following information:

Month (2002)	Sales (Rs)		Purchases (Rs)		Costs (Rs)	
	Food	Drink	Food	Drink	Labour	Overheads
Feb.	15000	4500	6000	2200	6000	5200
Mar.	15000	4800	6100	2400	6200	5200
April	17000	5400	6800	2700	6500	5400
May	17800	6300	7000	3200	6900	5600
June	23000	6900	7300	3400	7500	5800
July	25000	8100	8300	4100	7400	5700
August	22500	7100	7300	3600	6700	5300
September	20,400	6500	7100	3200	6100	5100

The Cash Budget would be drawn out as shown in Fig. 22.15.

Cash Budget						
	6 months ending September 2002					
	April	May	June	July	August	Sept.
Opening Balance	20000	22500	25800	18100	29300	35800
<i>Cash Receivable</i>						
Sales –Food	17000	17800	23000	25000	22500	20400
–Drink	5400	6300	6900	8100	7100	6500
Other Receipts				1500		
Total	42400	46600	55700	52700	58900	62700
<i>Expenditure</i>						
Purchases –Food	6000	6100	6800	7000	7300	8300
–Drink	2200	2400	2700	3200	3400	4100
Costs –Labour	6500	6900	7500	7400	6700	6100
–Overhead	5200	5400	5600	5800	5700	5300
Other payments			15000			
Total	19900	20800	37600	23400	23100	23800
Closing Balance	22500	25800	18100	29300	35800	38900

Fig. 22.14 Sample Cash budget

The data shown in Fig. 22.14 has been taken from the capital and operating budgets of the organisation. Since all sales are against cash, they represent the month's cash inflow for that month. Where a time lag of 2 months exists between purchases and payments the purchase amounts have been taken for

February in April and so on. The same treatment has been accorded to the overhead costs where one month time lag for payments has been taken into account.

The cash budget helps to determine if the future cash position is satisfactory or not, and plan capital expenditure while ensuring optimum use of cash resources to build up the assets of the establishment.

Assuming that all sales are cash sales; the organisation's interest received on investment is Rs 1500 in July, 2002 and the time between purchases and payments to suppliers is 2 months and for payment of overheads the time lag is one month. In addition new equipment costing Rs 15,000 will be purchased in May, 2002 and paid for in June. The bank balance on 18th April, 2002 is Rs 20,000.

Master Budgets

These include the budgeted or estimated profit and loss account and the balance sheet. The former shows the sales and expenses and the budgeted net profit.

The budgeted balance sheets are compiled from the balance sheet of the previous year or period and includes the acquisition of new assets, amount of depreciation on equipment, premises and so on. The financial targets for an organisation are set through budgets and thus production and service activities can be planned according to set goals for the period in question.

Peperation of Budget

For formulating budgets it is important to involve managers of all departments who are in the best position to set the targets of the organisation and their departments. These personnel constitute what is called a budget committee, which decides how the overall system of budgeting will fit into the structure of the organisation. In the process authority and responsibilities of each manager are defined and the different budgets are then prepared for each department keeping the goals and policies of the establishment in mind expressing the targets in terms of turnover, profit margins, operating ratios and costs.

The budget proposals are then scrutinized by the committee which thoroughly analyzes past income, expenditure and fluctuations that may have occurred from time to time, along with the current states of the organisation.

The analysis may bring out areas of the enterprise which have been more profitable than others, degree of unemployment, competition, staff turnover and the like. While the committee sets the budget period it must also lay

down the time period for review of results also referred to as the control period, when actual results obtained are compared with the budgeted figures. For catering establishments it is usually one calendar year. For smaller establishments budget preparation is not the practice, but for larger establishments the operating budgets are reviewed every week, or month to ensure that they are progressing towards establishment goals satisfactorily. Where there is deviation from targets, corrective action is taken so as to achieve targets by the end of the year.

The first step in preparation of a budget is to forecast the volume of sales as accurately as possible. This will determine the level of variable and semi-fixed costs, as well as the cash position of the enterprise.

Forecasting

Good forecasting makes the difference between happy customers bringing in huge profits on the one hand and dissatisfied customers resulting in unwanted inventory on the other.

Simple data lead to the most effective forecasts. If forecasting for short periods such as a week the following information is required.

- The balance sales target for the year, obtained by subtracting the cumulative sales achieved from the annual target. The balance target is an indication of how much more effort is required to draw customers in the next week. If performance has slipped this week it is time to push harder in the next week and so on.
- The sales for the previous 2–3 years at the same time of the year.
- And the current sales for the last few weeks.

The last few year's sales indicate the long term market trend, whereas the last few weeks' sales help to predict short term targets. Forecasted figures may be adjusted up or down using a multiplier to account for seasonal variations in demand.

When forecasting it is important to keep in mind that certain factors may limit the volume of sales. These are referred to as *limiting factors* and commonly operate in the hotel and food service industry as indicated in Fig. 22.15 and discussed briefly.

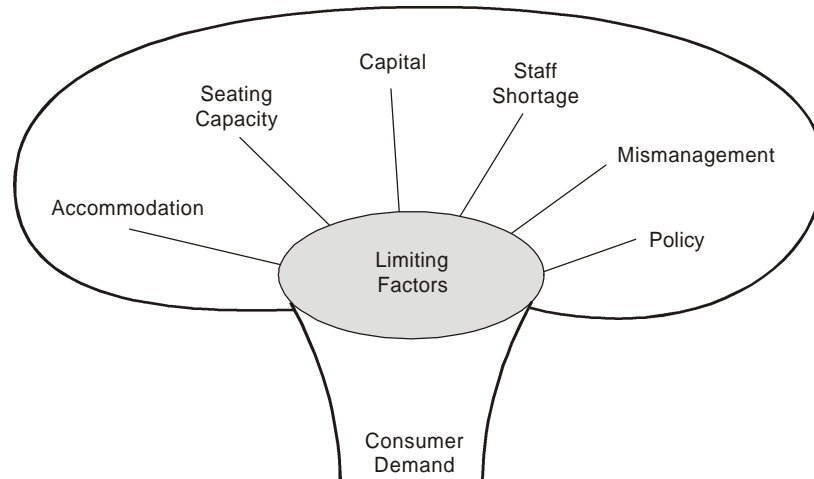


Fig. 22.15 *Limiting factors in catering*

Accommodation

In residential establishments like hotels, motels, hostels, old age homes etc. once the available accommodation is fully occupied the number of customers gets more or less static. The only way to increase sales revenue in these situations is increase prices.

Seating Capacity

The seating capacity in a restaurant, coffee shop, cafeteria is usually fixed beyond which it may be difficult to increase sales volumes except by adopting strategies to increase customer turnover per seat, or increase the prices on the menu.

Capital

If capital available is not enough for expansion, renovation or increasing choices on menus to meet demand it can become a limiting factor.

Staff

A shortage of staff affects production and service and can block quantity and quality of food and services offered.

Management

If leadership is inappropriate and managers do not lead by example, love and trust, it can hinder production and service affecting quality production, demand and sales revenue.

Policy

Management policies retracting production over certain limits through high staff turnover, low stock levels and so on, can all be causative factors in forecasting demand.

Customer Demand

Customers are dynamic and do not demand products or services at easily predictable levels. Variations appear from meal to meal, day to day and so on. The demand for eating out though increasing, the tastes and choices have shifted to fast services, to which establishments must adjust continuously. Sometimes the limiting factors may be high prices, fixed potential demand or competition.

Many more limiting factors may operate in the internal and external environment of an establishment which need to be identified and efforts directed to deal with the problems they generate. Some factors however, are not possible to counteract fully, and therefore forecasts can never be absolutely accurate, but only provide a starting point for setting targets.

In catering the biggest problem is predicting what customers want and when. The only way to predict true demand for products and services is to use technology to record data accurately, concerning customer turnover, products in greatest demand, number of times demand could not be fulfilled etc. Since the customer is the reason for the existence of organisations, the profit being only the reward, all efforts have to be directed towards providing customer satisfaction.

PREPARING BUDGETS

Budgets are usually prepared annually in advance for the following year. The methods of preparation of a few types of budgets have been indicated through examples to enable an understanding of the difficulties that may arise in planning estimates or targets in monetary terms.

Chapter 23

Pricing

The process of determining what to charge the customer for food items, menus or services may be termed as *pricing*. Pricing policies which establishments follow and the strategies they adopt in particular situations depend on a number of factors, varying from the type and size of the business and its environmental constraints to the customer profile targeted. These factors have been outlined in Fig. 23.1 and briefly discussed.

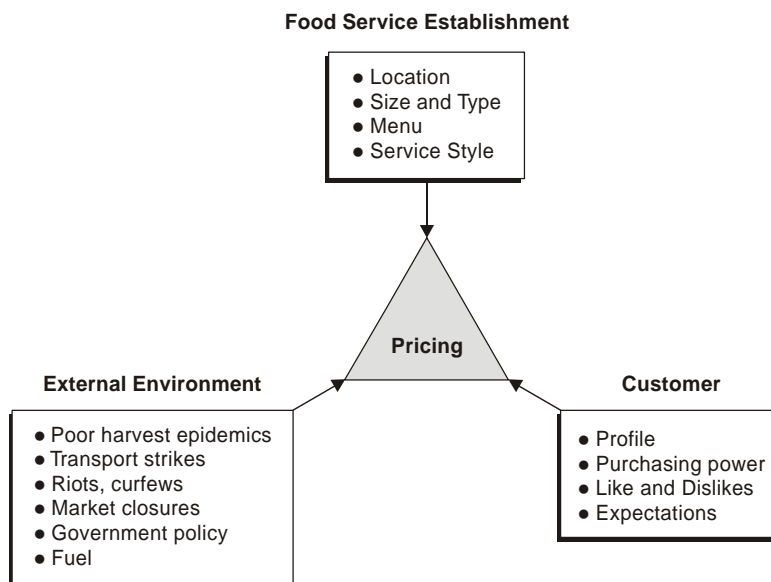


Fig. 23.1 Factors affecting pricing

FACTORS AFFECTING PRICING

Factors affecting pricing are based on the special features of a food service institution, the type of customer it attracts and the nature of the external environment in which it operates.

Food Service Establishment

Food Service Establishment comprises of factors like its location, size and type of organization, name offered and the service style followed.

Location

The location of the food service establishment largely affects the prices charged to the customer. It is common experience to find that a coffee shop situated in the market place prices, its products slightly lower than one in a posh residential area. This is because the former will have a larger sales volume than the latter, where only occasionally the residents may choose to have coffee outside their homes. The latter charges more because of its higher fixed cost structure which then has to be recovered from the occasional customer.

Size and Type of establishment

The size and type of establishment has a marked effect on the price structure of its menu and other services offered. For example, a plate of sandwiches or pakoras sold by a roadside café or *dhaba* may be priced at Rs 5 whereas, in a restaurant, the customer may pay double the price for the same product and portion to cover increased fixed costs per unit of sales. Alternatively, an adjustment may be made through a reduction in the portion size served for the same price.

The Menu

The composition of the menu determines pricing because of the direct relationship between food costs and selling prices. When sales are slack, cheaper substitute ingredients for dishes reduce food costs without altering the prices usually charged. This helps to increase the profit margin and offset the impact of lowered sales volume. Similarly, changes in consistency or texture can affect portions served and consequently the prices charged.

The type of menu planned also affects pricing. The larger the variety and flexibility offered on a menu the greater will be the range of prices charged. This is evident from a comparison of a la carte and table d'hôte menus in

which the latter always have a fixed price, since portions and variety offered can be better controlled.

Service Style

Pricing is greatly affected by the style of service offered by an establishment. If a self service system is followed the prices fixed would not be required to cover service charges to the extent that they would in a restaurant that offers waiter services. A lower price structure is possible in a self service or counter service facility because the sales volume is greater on account of higher customer turnover. For waiter services however, staff costs increase, customer turnover is lower as people tend to eat more leisurely, and larger amounts of cutlery, crockery and table appointments are necessary per cover. Thus, the total costs of the establishment increase per unit of sale, pushing up the prices to ensure that estimated profit goals are achieved.

Customer

Factors to consider with respect to the customer are his general profile, purchasing power, likes and dislikes and expectations.

Customer Profile

The socioeconomic status of customers largely determines what type of establishments they choose when they eat out. This is also influenced by the company they keep and entertain, the mood, occasion and so on, which therefore lead customers to various establishments. In order to keep customers coming back to particular place the managers of catering organisations need to be sensitive to the changes in customers moods, seasons, willingness to spend on particular occasions and so on. Goodwill once established with customers, the organisation stands to gain at any price fixed by the competition.

Purchasing Power

Prices are affected by how much a customer is willing to pay for a particular food item or meal related to affordability, as well as his or her concept of value for money. For instance, a customer may be prepared to pay only Rs 10 for a burger but, would easily pay Rs 15 for an ice-cream. Very often therefore, food services adjust their prices to suit the purchasing power or willingness of the customer to pay, in the hope of increasing their volume of sales.

Caterers generally have the impression that customers are very price conscious, and aware of the cost structure of various establishments. Some may therefore fix their prices too low to attract more customers while others may hike the price of their items in the hope that the customer will relate the price to high quality being offered. Both these attitudes to pricing are unrewarding, because customers are not that concerned about price once they have decided to eat at a particular food service.

In fact, people decide in advance the general price category of the establishment they wish to go to. This is based on a fair idea about the comparative prices at different types of food services, such as dhabas, takeaways, cafeterias, coffee shops and luxury restaurants. Further, their choice of menu takes care of their spending limits. Once customers have made their choice of the establishment where they wish to eat, then factors which do determine their preference are a place offering good food, well prepared and served in pleasant and clean surroundings.

Likes and Dislikes of Customers

More often than not people go out to eat for a change from routine meal patterns or for other psychological or social reasons. Customer favourites can affect prices of items just as their dislikes can push up costs for the caterer through large quantities of unsold items. Some hot favourites with children are burgers, pizzas, ice-creams, chips, tikkis, cutlets or chaat, while adults normally prefer a full meal of curry, naan, salad and a sweet to substitute meals not eaten at home on a particular day.

It is therefore important for caterers to study their sales records and menus to list out customer's choices and cash on their likes while avoiding dishes on menus which are not ordered frequently.

Customer Expectations

Basic expectations of customers eating out are variety, change from routine food, relaxed environment, wholesome food providing good value for their money in a pleasant environment. However, people eat out for various reasons such as hunger, social get together, serious discussion, loneliness etc. and expectations can vary considerably from one customer to another in the same food service. Also the same persons may have different moods and therefore different expectations at different times, to which food services should be able to adapt constantly.

ENVIRONMENTAL FACTORS

Any factors in the environment which have an impact on food costs, labour costs, overhead expenses or sales volume affect pricing. Some such factors are:

- Poor harvests leading to less production of fresh fruits and vegetables, cereals and pulses, legumes, etc. and thereby higher prices charged for of these food items.
- Sometimes diseases in farm animals can lead to shortage of good meats and them more expensive to buy.
- A transport strike may inhibit transportation of food from growing to manufacturing areas and to those of consumption as well, pushing up food costs.
- Riots leading to curfew conditions, can result in a drastic fall in the number of customers affecting the sales.
- Closure of markets affect the number of shoppers who generally visit coffee shops or cafes in the area, having its effect on sales volume.
- Inflationary conditions created by government policies involving export of foods, or taxation trends encouraging the setting up of more food processing industries would result in a price rise for raw foods.
- Changes in weather conditions which keep people indoors can affect the number of customers in food service establishments.
- Shortages of fuel like electricity, cooking gas, coal, etc. which are so common in developing countries, can be responsible for increasing overhead costs and thereby affecting prices.
- Staff strike *go slow* at work, or taking of mass casual or French leave by them results in increased labour costs per unit of sales, because adhoc or casual labour has to be employed.

The conditions in the environment both external and internal can therefore vary for each type of food service organisation, depending on government policies affecting food availability, and prevailing demand and supply conditions at a particular time.

PRICING POLICY, STRATEGY AND TACTICS

The terms policy and strategy have come to be used interchangeably by most managers, and therefore it is important to clarify their role in the management of institutions. While policy represents the mechanism for guiding

establishment goals, strategy chalks out the parameters within which an institution operates to achieve its goals.

Policy

Policy represents a framework of rules and constraints within which pricing decisions are required to be taken. The nature and scope of the framework varies widely within any industry and even between establishments with similar pricing problems. These variations help to provide the flexibility that enterprises of different types and sizes need and utilize in price fixation according to their particular requirements.

Pricing policies can operate between two extremes, one can be a little more than a rationalization of *rule of thumb* judgements based on custom and practice. This usually happens in small self-owned and operated establishments where pricing decisions like most others are made by one person. A situation thus arises in which whim, prejudice and ignorance can play a powerful role. At the other end policies may be formally spelt out in writing and constitute the following elements:

- (i) Raising return on capital by say 2% over a specified period.
- (ii) Passing on cost savings to high spending customers commensurate with the scale, continuity and stability of their demands, through establishing discount structures.
- (iii) Pricing non-standard items at levels related to their operating costs.
- (iv) Sharing with customers the benefits obtained from improved productivity.
- (v) In the case of new ventures aiming at setting prices on the basis of achieving a 70% production level with respect to the total expected production capacity of the enterprise. If the demand for products falls below their production levels over time, price revision decisions are indicated. In some cases unprofitable items may need modification or even total elimination from the menu or the sales mix.
- (vi) Retain flexibility to use marginal cost techniques for business opportunities that may arise.
- (vii) Review of standard margins to ensure equity across the range of items and services offered.

Simply having a pricing policy however, does not imply that it is either logical or sensible in the market, nor does it guarantee that it will be practiced.

A good pricing policy therefore aims at initiating ways and means of reducing costs to increase profit margins, rather than by tampering too often with the charge to the customer. Any accurate calculation of a profitable price which does not provide the customer good value for his money will reduce the sales and prove detrimental.

Strategy

Strategy involves a systematic plan for making pricing decisions over a period of time to achieve broader objectives of the enterprise. It involves a recognition of the role of price as an active and important component of the *marketing mix* rather than an obstacle which needs to be overcome to compete successfully in the market.

Strategies are lines of action to be adopted in management of external and internal influences which affect profitability of an institution. These are therefore subject to change when required, even though they are formulated within the policy framework of the establishment. It is therefore not unusual for an establishment to have a pricing policy and no strategy.

Pricing strategies in catering establishments have traditionally been designed for short term use, and may be divided basically into two categories as indicated in Fig. 23.2.

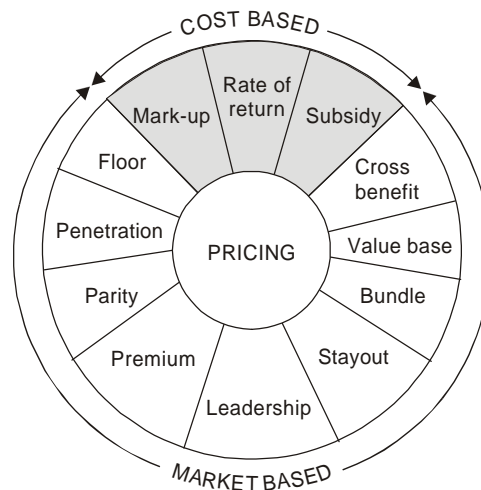


Fig. 23.2 Pricing strategies (adapted from Dobhal, 1995)

Cost Based Strategies

As the name suggests, the costs involved in an operations form the focus on which the prices are based. The methods of pricing commonly used are formal or quantitative in nature and are described under methods of pricing (p. 595).

Market Based Strategies

In commercial catering, prices depend a great deal on market trends because the proportion of fixed costs is relatively high and the profit margins expected are far greater than those for social institutions. The latter include hostels, schools, lunchrooms, homes for the handicapped, and so on. In these, pricing takes on a cost-effective rather than a profit-making goal.

As discussed earlier, there is a definite relationship between the price level and the volume of sales. High prices are almost always accompanied by a low volume of sales. In food service establishments, however, the volume of sales is the most important determinant of profitability. Therefore, if the right price levels are not arrived at, the desired volume of sales cannot be achieved. Meal pricing involves methods of determining the selling price of the food produced. For doing this the various costs involved are calculated according to the pricing policy of every establishment, which is predetermined from past experience. Thus, the pricing policy is the most critical factor in the assessment of the viability of an establishment, more so, when there is increasing competition in the field of food service.

The methods of pricing evolved from these strategies are based on market forces and their effects on profitability of the establishment. These methods are qualitative in nature and do not always cover costs to the same extent in every situation, and require knowledge of the market and the customer, both of which need to be innovatively and creatively managed for maximizing profits. These strategies vary widely as illustrated in Fig. 23.2 and are therefore briefly discussed below:

- (a) *Floor Pricing*: This refers to a pricing strategy that just covers the costs of an establishment such as used by non-profit making food services. Establishments such as orphanages and other government and social services operate on this strategy.
- (b) *Penetration Pricing*: This is a price for any product deliberately fixed lower than the prices of competitors, and one that customers are not used to paying. This is usually done when a new product, idea or innovation is introduced into the market.

- (c) *Parity pricing*: In this case the prices fixed for similar products and services are the same as competitor's prices.
- (d) *Premium pricing*: This strategy allows price fixation at levels higher than competitors, but ensure that they are what customers are used to paying.
- (e) *Leadership pricing*: This involves being the leader in fixing prices by benchmarking them, although on the conservative side, for the industry to follow.
- (f) *Stay-out pricing*: Prices fixed according to this strategy is indicative of the establishment wanting to stay out of the way of competition. The prices therefore are fixed lower than the levels which demand can bear.
- (g) *Bundle pricing*: In this a set of products and services are clubbed together and charged at lower than the sum of the individual elements in the mix.
- (h) *Value-based pricing*: Different segments charge different prices for the same product and services according to the value perceived in a situation. Managements use this concept when they subsidize the meals of employees to various extents, in the hope of increasing productivity and thereby adding value to the establishment through increased profitability.
- (i) *Cross-benefit pricing*: This strategy involves price adjustments between different products of the line that complement each other.

Tactics

Pricing tactics are methods of playing with the prices in a manner that they are presented to achieve optimum customer response against competition. Tactics thus work on the psychology of the buyer rather than on sound or rational economic judgements. Therefore tactics act only in the short term to lure customers and may be changed during the life of a strategy of which they are a part.

A number of factors both internal and external, provide the basis for defining pricing policy, strategy and tactics as illustrated in Fig. 23.3.

Internal	External
<ul style="list-style-type: none"> ● Business goals ● Cost structures ● Custom and practices ● Degree of market knowledge of key executives ● Feedback ● R&D and pace of new product development 	<ul style="list-style-type: none"> ● Competition (Pricing behaviour in the market) ● Purchasing power ● Pressure from suppliers of raw materials ● Price elasticity of demand

Fig. 23.3 Factors basic to formulation of policy, strategy and tactics

METHODS OF PRICING

Methods of pricing are largely based on any or all of the strategies outlined in Fig. 23.3 that may be adopted by an establishment depending on its size, value system and goals.

Pricing methods generally used in catering may be informal or formal in nature, the former being more extensively used in small to medium establishments dealing with only food and beverage service. Formal methods however, are usually quantitative in nature and employ the use of formulae which take into account the total investments made in the establishment. These methods are more specific and accurate with respect to profit management and pricing strategies of the establishment. They are therefore used by establishments which, besides food and beverage services also offer facilities for lodging, room services, office and conference facilities, event management and the like.

The methods of pricing are basically divided into two categories, with a number of different methods used by various organisations according to their convenience, choice and suitability Fig. 23.4 indicates the different methods of pricing.

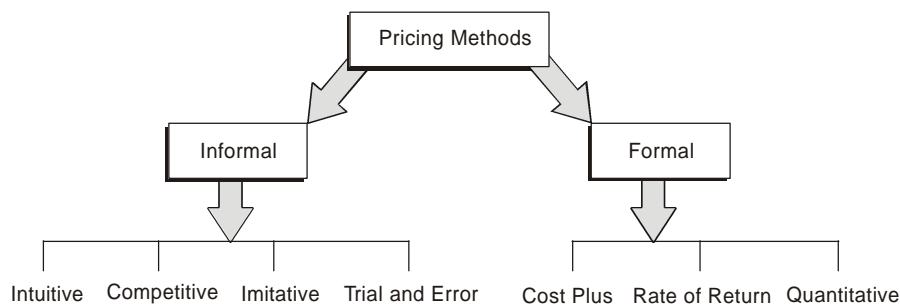


Fig. 23.4 Methods of pricing

Informal Methods

Informal methods of pricing are usually qualitative in nature and do not always take into account the total investments made in the business. There are basically four methods in this category used by establishments.

Intuitive

As the name suggests this method is based on intuition about what the market will accept, and not on any scientific analysis of investments and costs of investments. This method succeeds because of luck and cannot be depended upon for maximizing profits of the establishment or providing value for money to the customer. The intuitive method has for centuries been referred to as the *rule of thumb* method and is still used by food vendors, tea stalls, coffee shops, and dhabas in India.

Competitive

In this method a caterer sets prices of items based on what competitors are charging their customers. While this method is slightly better than the intuitive one, it assumes that the products sold are similar in quality and costs and that the competitors have priced them profitably. This method however, does not necessarily achieve the profit or rate of return objectives set for the success of the establishment. In fact the profits may fluctuate very easily with price rises, employee demands and so on.

Imitative

In this method the prices are set by following those of the most successful establishment in the same class of food services. This method however, has the same disadvantages as the competitive method because the costing structures of the establishments may differ dramatically, as also the guidelines by which a successful organization is judged. Such pricing methods may therefore not necessarily prove profitable in the long run or be customer friendly.

Trial and Error

As the name suggests, in this method various price levels are tried and the sales achieved at each price are recorded over time. The price at which the highest sales volume is achieved is then selected and used. This method has obvious disadvantages too as it does not take into account the seasonality of demand,

sales mix, competition or other environmental influences affecting the success of the establishment.

While informal methods of pricing are easier to operate they may not always be best for the establishment as they only take into account the revenue from sales on a short time basis with complete disregard to the cost structure of different establishments, customer orientation or needs and the environmental influences and associated costs affecting establishments from time to time.

Formal Methods

Formal pricing methods are usually based on mathematical calculations from which formulae are established for use in determining the prices. These methods usually take into account factors like capital investment and expected rate of return, expected sales volume and actual operational costs. While quantitative methods can provide well calculated profit margins, they may sometimes lead to unusually high price fixation. This usually happens when the focus is totally on costs while competitor and customer demands and expectations get inadvertently ignored, leading to drop in sales volume.

The catering industry being largely service oriented is subject to a lot of seasonal fluctuations in food availability, costs and customer demand. Therefore each establishment has to determine its own pricing policies and strategies with respect to profit planning. These may require the use of pricing tactics to counteract the fluctuations in the business environment, in order to achieve established goals.

Most establishments use their resources for more than one purpose for generating profits so that fluctuations from food services are counteracted by income from room rents, conferences, party arrangements and other events. Quantitative methods are useful for their greater accuracy in planning such diverse pricing strategies. The most common methods adopted are:

Cost based pricing methods

As the name suggests these methods are based on the cost structure of an establishment and are as follows:

1. *Cost plus pricing*: As the name suggests the food cost per unit of sales is calculated and a given percentage is added to the food cost. This is usually equivalent to the gross profit percentage estimated through the process of budgeting, and is intended to cover labor and overhead expenses along with an estimated margin of net profit. Although the net profit desired will depend on

the pricing policy of every establishment, food operations generally add 150% to the food cost to estimate the appropriate selling price. This is based on the estimate that the food costs of the operation would be 40% and the gross profit 60% of sales as illustrated in Example 23.1.

Example 23.1

If a restaurant is functioning at a gross profit estimate of 60% and thereby a food cost of 40% and the cost of ingredients for a dish or meal is say Rs 10 its selling price would be calculated by adding 150% of the cost to it i.e. $10 + 10 + 5 = \text{Rs } 25$ or using the formula *Selling Price = Food Cost + Gross Profit*.

The cost plus method is easy to apply and understand and is therefore widely used, but it has a number of disadvantages.

- (a) It is based entirely on costs and does not take into account the demand for the product or service, and therefore if used indiscriminately becomes irrational.
- (b) Net profit becomes the direct function of sales turnover which can therefore vary and deviate from estimated figures appreciably.
- (c) The gross profit margin is added to the food cost and the net profit is therefore unrelated to capital invested.

2. *Factor Pricing*: In this method a simple factor is calculated based on the estimated food cost percentage on which an establishment wishes to work by virtue of its catering policy or past profit and sales experience. This factor is called the mark-up factor (MUF), which is then applied to the food cost per unit to determine the selling price as shown in Example 23.2.

Example 23.2

A establishment whose catering policy is to work on a 40% food cost basis will calculate its MUF using the formula:

$$\text{MUF} = \frac{100}{40} \text{ or } 2.5$$

The selling price is then calculated by determining the food cost of a meal, dish or event and then multiplying by the MUF. If the food cost is Rs 12 the selling price will be calculated using the simple equation:

$$\begin{aligned} \text{Selling price} &= \text{Food cost} \times \text{MUF} \\ &= 12 \times 2.5 = \text{Rs } 30 \end{aligned}$$

If the food cost is 35% the MUF will be 100 divided by 35 or 2.857 and the selling price (SP) will be $\text{Rs } 12 \times 2.857 = 40.284$. or Rs 40 (rounded off).

The MUF should be calculated correct to 3 decimal places in order to arrive at the most accurate selling prices. The factor method is as simple to apply as the cost plus method but has the same disadvantages.

Most pricing in catering establishments is based on direct costs and calculated by adding an arbitrary percentage to cover overheads labour and net profit. Theoretically such an approach should produce profits, but in practice, it can also price a product out of the market or lead to an overproduction of less profitable items at the expense of more profitable ones. This is because traditional pricing methods often fail to consider the price of competing products, the need for optimum equipment utilization at any given point of time and restraining limiting factors or hindering forces.

3. Rate of return pricing: This method is based on the relationship of net profit to capital investment. Through its use the likelihood of reaching net profit targets is greater, provided that the estimated sales volume is achieved and the gross profit margins are maintained. The rate of return method however, also has some disadvantages:

- (a) It is purely profit oriented and has little scope for flexibility.
- (b) The approach to pricing is too simple to be realistic.
- (c) It generally does not go by the demands of the customer or the market.

This method is therefore not often used in everyday food pricing by food services. Large hotels which need to decide which one of two or three projects should be started, the rate of return method may be used for the selection but that too, along with other factors like short term profits, lag period between completion of the projects and profit generation, the interest on investment if on loan and so on.

4. Subsidy Pricing: This method of pricing is usually used by management for the benefit of their employees, with the objects of boosting their morale and encouraging higher productivity as in the case of employee canteens, school lunchrooms, university hostels and social institutions. Subsidies are generally offered to varying extents depending on the catering policy. Some establishments provide free meals to their employees and thereby subsidize their meals 100%, by bearing the total cost of the food consumed by the workforce. In other cases employees pay enough to just cover the cost of the food while management covers the other costs of production.

The prices to be charged to employees are determined by estimating ratios which can be applied to all items of sales. Example 23.3 illustrates how this can be done.

Example 23.3

An office canteen prepares and serves 250 lunches a day, for 300 days a year. The food cost for the meal is estimated at 2.00 per head, and labour and overhead expenses at Rs 5,000 and Rs 2,500 per year respectively. What would be the selling price of the meal and the subsidy paid by the management?

	<i>Rs</i>
Number of meals served in a year (250 × 300)	= 75,000
Food costs per year (7,500 × 200)	= 150,000
Labour cost per year	= 5,000
Overhead expenses per year	= 2,500
∴ Total sales will need to be	1,57,500
Average selling price would therefore be $232500 \div 75000 = 3.10$ approximately.	
Food cost per unit	= 2.00
∴ Supplement or subsidy (3.10 – 2.00)	= 1.10
The subsidy expressed as a percentage of food cost would therefore be $\frac{10 \times 100}{40} = 25\%$	

In other words, while no net profit is made for social reasons, the management would subsidise the meals to the extent of 25 per cent of the food cost. For determining the price including the subsidy therefore, 25 per cent of the food cost would have to be added to the food cost of every dish sold in the canteen.

Where college canteens are contracted to catering establishments, the prices charged from the customer include this supplement, and the net profit margins agreed with the contractors are paid for by the management as the subsidy. The terms and conditions of a contract depend on the pricing policy of an establishment. In any estimates or other calculations for a canteen, a subsidy should be deducted from costs, or treated as a net loss being paid for by the employer.

Price Differentiation

It is evident that irrespective of the size and nature of the food service establishment, price fixation must aim at covering all costs involved in the preparation and service of food. Whether the objective is to make a net profit or not, it must step up its food costs by a certain percentage to arrive at a selling price that can make a contribution towards labour and overhead expenses.

The price charged to the customer therefore, does not always reflect the quality or the quantity of the food that can be expected on a plate. This is

because pricing varies with the fixed cost and overhead expenses of every establishment.

This explains the differences in the prices charged for the same item, at a railway canteen, wayside *dhaba*, kiosk, cafeteria or a restaurant. Table 23.1 indicates the trend in the actual prices of some commonly consumed items, charged at the different food services.

Table 23.1 Price differences for the same item in different establishments

<i>Food Item</i>	<i>Coffee shop</i>	<i>'Dhaba'</i>	<i>Restaurant</i>	<i>College canteen</i>
	<i>Rs. P</i>	<i>Rs. P</i>	<i>Rs. P</i>	<i>Rs. P</i>
Chana poori (plate)	12.00	10.00	18.00	8.00
Boiled egg	3.00	2.50	5.00	2.00
Dosa with sambar	10.00	6.50	15.00	8.00

Note: These prices have actually been paid at the different establishments within a one week period.

From the example in Table 23.1 one cannot assume that a plate of any item served will be the best in the restaurant in taste, flavour, or portion size. In fact, experience has shown that pooris eaten at a *dhaba* are often the tastiest because they are made to order and are straight from the *kadai* (fryer)—fresh, non-greasy, well bloated and piping hot. The quality of the service is also good because it is a smaller establishment with personalised service. The price differences are obviously due to the lack of sophistication offered in the area of service and the equipment used.

5. *The Hubbart formula:* This was developed in the 1940s by a committee of the American Hotel and Motel Association headed by J. Roy Hubbart. The method quantitatively evolved a formula which helps to calculate the selling price of a room taking a number of factors into consideration such as initial investment, financial costs, projected occupancy, desired return on investment, income tax liabilities and other costs besides anticipated profit or loss from other departments of the establishment.

6. *Howrath the Toth method:* This is a mathematically supported rule of thumb method that is well accepted. The basic rule followed is that for every Rs 10,000 invested the room rate charged would be Rs 10.0, for example, if it takes Rs 70,000 to construct a room, the method suggests a rent fixation of Rs 70 per

day, assuming that the property will average 70% occupancy and result in a 55% house profit. This method should however, take into account owners, customer and the competition.

7. *Discount pricing*: Discounting involves the practice of charging the customer less than the declared rates on products menus, or services. This is usually practiced to enhance sales during festivals and other celebrations, by offering specials for the day, group discounts, buffets and providing corporate or contract facilities.

There are many variation in discounting practice such as resorting to quantity discounts, trade discounts, cash, seasonal and zonal discounts, trade-in allowances and so on. Discounts are offered for many reasons.

- (i) Seasonal clearance of stocks
- (ii) Attracting customers
- (iii) Promoting a novel or creative idea
- (iv) Closing down

All these factors are self explanatory.

Discounts are actually made in many ways based on the volume of sales position of the establishment.

- (i) percentage discount on list price shown as a flat rate or as net price.
- (ii) *on invoice* of *off invoice* in the form of formal or discretionary discounting to provide leeway to sales persons.

Formal quantitative methods are good starting points for a price range, which should then be checked against competitive pricing levels, the expectations of the market being served and the level of services and amenities provided, which should all determine the final charge to the customer.

At best, cost based methods can be useful in evaluating performance, or act as basic guides to pricing, but are not useful in appraising investments. There are however, major limitations to the classical cost-based strategies which ignore demand and customer value perceptions, because they are rooted in supply economics. They also assume that some basic volume of sales will in any case be achieved. Even when the demand is considered, the belief is that price will determine how much is sold.

Further, technological changes have altered the existing cost structures by shifting the emphasis from one type of cost to another. For instance, where certain jobs are totally or partially mechanised, the labour costs incurred

previously have shifted to capital costs. This shift has its effects on the methods of determining prices as explained through Example 22.4.

Example 22.4

Ten workers are producing 300 meals per day, at a labour cost of Rs 400 per day. Some labour saving devices are introduced which decrease work load to that of eight workers. A shift in labour costs has brought in an element of fixed costs in place of two workers. This will affect the contribution in the following manner:

	<i>Fixed costs</i>	<i>Variable costs</i>
Prior to mechanisation	Nil	400
After introduction of labour-saving devices	160	240

This means that the contribution in the latter case will be Rs 160 more than before mechanisation, because part of the variable labour costs shifted to fixed costs. This shift has its effects on the methods of determining prices.

PRICE MANAGEMENT

Price fixation apart, another important element often ignored is price management, which includes price monitoring, leveraging price changes and promotions to strategic and long term advantage.

The key elements of price management involve, tracking down brand loyalty, providing price stability, product substitutability and switching costs tactically to advantage. For example, a favorite item may be priced for a high profit margin to establish a high quality image and let other items remain at low profit. Price adjustments through slight changes in ingredients used, method of preparation, cooking and presentation can affect profitability of an establishment. Another method resorted to in price management is discount pricing (page ??) and product differentiation.

Price Sensitivity

In all probability increase in prices would result in less total revenue and lower profit. On the other hand, an exclusive unit with a highly differentiated product might conceivably raise its prices without very little adverse reaction from its customers. It is therefore important that each unit have some understanding of price sensitivity as it relates to product and service in order that sales and

profits are maximized. Generally this sensitivity varies with location and economic status, the customers from the lower income groups exhibiting greater price sensitivity than those in the higher income category.

Some establishments deliberately set prices to exclude certain customers and cater to specific groups or sometimes conditions change which forces a change in pricing policy in order to survive in the market.

MAKING PRICING DECISIONS

Pricing decisions are generally made at higher levels of management from where the establishment can be viewed in its total perspective, with an understanding of the impact of different pricing policies on profitability. Pricing decisions are affected by the elasticity of demand, the cost structure of the enterprise and its pricing policy.

All pricing decisions made should achieve the goal of profit maximization, whether the focus of decisions is maximizing sales through efficient resource utilization, reducing costs or by other means involving economic or public relations issues.

Economic Considerations

Economic theories of price indicate the manner in which markets behave in response to price changes, which may vary in degree according to their price elasticity. *Elastic markets are those in which the change in demand is more than a proportionate price change while Inelastic markets are those in which a change in price is proportionately greater than the effective change in demand.*

The more elastic the demand, the greater is the scope for an imaginative pricing policy. It is for this reason that special discounts, off season rates, or prices for 'specials' on the menu, can be offered on special occasions. These are primarily designed to optimise profits through increasing the volume of sales, capturing the mood of the customers during festive seasons and so on. Imaginative pricing, however, is only useful over short periods, because the *price tactics* resorted to are not often good enough to cover variable costs. This is also referred to as *contribution pricing*.

Contribution Pricing

The contribution approach to pricing is based on the fact that in certain situations, it may be better to sell individual products at a price just in excess of variable costs. This may not help the establishment to break-even, but at least

makes some contribution to fixed costs, rather than none at all. This approach is resorted to in cases where there are only seasonal customers, as in hill or tourist resorts in out of the way places which are prone to underutilised capacity during certain periods.

Price discretion require skill, initiative, creativity and an accurate judgement of the customers' mood and receptivity to new ideas. All these are developed with experience. When the variable costs are low, as in times of bumper crops; a wider range of prices can be profitably charged, while still offering the customer a wide choice. When the fixed costs of an establishment are high, profit stability decreases, because charges have to follow market forces. In such cases, the cost plus method of pricing becomes baseless.

In practice however, theories breakdown because the assumptions on which they are based often prove inappropriate in real situations. Also the goals set, do not remain constant in the ever changing market environment which is plagued with unprecedented hindering forces. To add to this, markets do not always function in a state of *perfect competition* and rational consumer behavior. Experience of markets and customer behavior patterns have however led to the use of four concepts on which pricing may be based.

Product Elasticity

The principle of the elasticity of demand for goods offered on sale is an important factor in making pricing decisions for sales maximization. Elasticity is calculated by using the simple equation:

$$E = \frac{\% \text{ change in quantity sold}}{\% \text{ change in price}}$$

If the ratio obtained is greater than 1.0, the demand is said to be elastic or sensitive to changes in price. That is, a change in the price of a commodity will result in a greater change in the volume. For example, if the price is increased by 10% the volume of sales will decrease by more than 10%.

If the elasticity ratio is less than 1.0 the demand is said to be inelastic and the sales volume less sensitive to price changes. Thus, an increase in price will result in a less than proportionate change in volume.

An elastic demand is one in which a change in price will result in a greater change in sales volume. For example, if prices are increased by 10% the sales decrease by more than 10% in contrast to inelastic demand in which the changes in volume are less sensitive to price changes. In the latter case the change will result in less than proportionate change in volume demanded, as evident in the

case of essential commodities, or items on the menus, such as cold beverages in summer months.

The degree of elasticity depends on how much the result of the formula is greater or less than 1.0. If one can determine through calculations at what point the demand for a product is inelastic, decisions to increase prices can be made without fearing a decline in existing sales volumes. *Inelastic demand usually occurs when there is a monopoly situation or one in which relatively little competition exists, and the demand for the commodity offered is strong.* A good example is that of creatively flavored ice-creams or chocolate products, which are favorites with all age groups and at all economic levels. Therefore if the demand for a product is inelastic, its price can be raised with little fear of a consequent decline in sales.

However, one of the problems of applying the concept of elasticity is that the theory assumes a constant relationship between demand and price, while consumers respond differently to the volume of the price change.

Price Sensitivity

The price sensitivity of the consumer determines the price range above or below which he will be reactive to price changes.

Price Flexibility

When a customer is offered more for his money or charged lower prices than he usually pays, there is an instant reaction to purchase the product or service. For example, if a catering establishment offers a free coke with meals during fixed hours it is usual to see customers go for it even though they do not consume it normally.

Price Customization

This is built around customer needs and competitive pressure for individual product categories, but still falling within the broader framework of time tested strategies. Richard Kotas explains the use of profit multipliers in making decisions for pricing, as indicated through Example 23.5 adapted from the author.

Example 23.5

The sales mix percentage of a food service establishment is as shown in Table 23.2 along with the gross profit percentage expected for each type of food offered for sale.

Table 23.2 Budgeted profit and loss account

<i>Sales</i>	<i>Sales mix %</i>	<i>Sales value R</i>	<i>Gross profit %</i>	<i>Gross profit R</i>
Soups	20	48,000	75	36,000
Meat, fish, poultry	35	84,000	55	46,200
Vegetables	20	48,000	75	36,000
Sweets and fruit	15	36,000	70	25,200
Beverages	10	24,000	80	19,200
	100	2,40,000		1,62,600
			Less overhead and labour	132600
			Net profit	30,000

The total sales revenue is Rs 2,40,000; the overhead and labour expenses are Rs 132600. Determine the profit multipliers for each category of items on the menu, and show how they can help management to make pricing decisions to suit their targets for profit, if there is an increase in prices by 10 per cent.

Table 23.3 Sales mix and profit multipliers

<i>Sales mix</i>	<i>Net profit budgeted</i>	<i>Sales mix value</i>	<i>10% of sales mix value</i>	<i>Increased net profit</i>	<i>Profit multiplier</i>	<i>% increased in price required</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Soups	30,000	48,000	4,800	34,800	1.60	6.25
Meat, fish, poultry	30,000	84,000	8,400	38,400	2.8	3.57
Vegetables	30,000	48,000	4,800	34,800	1.60	6.25
Sweets, etc.	30,000	36,000	3,600	33,600	1.20	8.33
Beverages	30,000	24,000	2,400	32,400	0.80	12.50
Total					8.0	1.25

Note: Column 2 represents the base net profit budgeted.

Column 3 represents the sales mix value.

Column 4 shows the increase in prices by 10 per cent.

Column 5 gives the amount of the new profit figure for each item. It will be noticed that in the case of soups the net profit is raised by 116 per cent of the base profit figure. (column 2 + 4).

Column 6 gives a price level multiplier, which for soups is 1.6, calculated as follows: column 4 divided by column 2 and multiplied by 10 i.e. $PM = 10\% \text{ Sales mix value} \div \text{Net Profit Budgeted} \times 10$.

Column 7 The figures in this column represent the percentage increase in price of each item required to increase the profit by 10 per cent. These figures are calculated using the formula: $\text{Percentage increase in price required} \times \text{Profit multiplier} = \text{Net profit per cent.}$ or $X \times PM = 10 \text{ per cent.}$ Thus, the prices of soups should be increased by 6.25% to achieve a net profit increase of 10% as desired ($6.25 \times 1.6 = 10\%$) i.e. $\% \text{ increase in profit} = \% \text{ increase in price required} \times \text{profit multiplier}$.

Having calculated the profit multiplier (PM) values for all the elements of the sales mix, prices can be reviewed in a number of ways to achieve a net profit increase of 10 per cent. These are:

- (i) The menu prices of all items can be increased by 1.25 percent to achieve a net profit increase of 10 per cent because the total of all PM values is 8.0 ($8 \times 1.25 = 10\%$).
- (ii) If we increase the prices of all meat dishes by 2 per cent, this will increase the net profit by 5.6 per cent (2×2.8 , i.e. PM). In addition, if the prices of sweets are increased by 4 per cent, the net profit increase will be 4.8 per cent (4×1.20). Together this will effect an increase of 10.4 per cent in the net profit which is slightly more than what is desired.

Thus, a number of pricing decisions are feasible by simple calculations using the profit multiplier. It is good pricing management policy to bring about only slight increases in the prices of popular dishes, without generally increasing the prices of all menu items, to achieve the desired results. This helps to achieve the necessary profit margins while still maintaining the goodwill of the customers.

In catering, pricing has generally been used as a short term tactical tool subject to frequent changes as evidenced through menu cards of various establishments, which frequently carry overwriting on printed prices as shown in Fig. 23.5.

Whatever pricing strategies are adopted, a movement away from short-term reactive methods to a systematic proactive perspective which is customer-market based is desirable especially for the food service sector. This is because, in spite of non-price factors operating in today's markets, price still remains a critical factor in determining profitability. At the same time it acts as an effective communication tool which strongly influences the buying behavior of customers.

Today's Speciality	
ORANGE TOMATO SOUP	Rs 18
FONDUE DE VOLAILLE MAREINE <i>(Boneless chicken in creamy almond sauce)</i>	Rs 60
POMMES DUCHESS SAUTE FRENCH BEANS	
ASPARAGUS FLORENTINE	Rs 35
ADELINA PATTI <i>(Vanilla ice-cream with cherries topped with brandy & whipped cream)</i>	Rs 20

Fig. 23.5 Menu card showing overwriting on prices (Source: Anon, 1994)

Ascertaining a Profitable Price Level

Whatever method of pricing is used by an organisation it is imperative that prices fixed for food items, meals and events need to bring in profits over an accounting period. Example 23.6 gives an idea of the manner, in which the most advantageous price level can be achieved.

Example 23.6

The manager of a cafeteria wishes to determine the best price at which he can sell a meal for maximum profits. He expects that over an accounting period, the number of covers will vary with the price charged. He wishes to operate at an average gross profit of 60 per cent. His estimates for labour and overheads for upto 1,600 meals is Rs 3000, but for additional sales, he expects they would increase by Rs 300. He therefore analyses his kitchen statement and prepares the profitability statement by determining the gross profit and then the net profit as shown in Table 23.4.

Table 23.4 Profitability statement for a meal

1	2	3	4	5	6	7	8
<i>Price charged per cover</i>	<i>Cover sold</i>	<i>Sales revenue</i>	<i>Food cost at 40% (Sales × 0.4)</i>	<i>Labour and overheads</i>	<i>Sum of (columns 4 + 5)</i>	<i>Net profit (Column 3 – 6)</i>	<i>Net profit (Column 7 ÷ 3 × 100)</i>
<i>Rs</i>	<i>Number</i>	<i>Rs</i>	<i>Rs</i>	<i>Rs</i>	<i>Rs</i>	<i>Rs</i>	<i>%</i>
12.00	2,000	24,000	9,600	3,300	12,900	11,100	46.25
13.00	1,900	24,700	9,880	3,300	13,180	11,520	46.63
14.00	1,800	25,200	10,080	3,300	13,300	11,820	46.90
15.00	1,600	24,000	9,600	3,000	12,600	11,400	47.5
16.00	1,400	22,400	8,960	3,000	11,960	10,440	46.6
18.00	1,200	21,600	8,640	3,000	11,640	9,960	46.1
20.00	1,000	20,000	8,000	3,000	11,000	9,000	45.0

Note: Column 2 is extracted from a previous kitchen analysis sheet.
Columns 1 and 3 have been obtained from the sales statement of the same period.
Column 4 gives figures calculated for food cost at 40 per cent of sales, since it is stated that the manager desires a gross profit of 60 per cent.
Column 5 is stated in the example.
Column 6 represents the gross profit plus food cost minus the net profit and is obtained by adding together columns 4 and 5.
Column 7 is the net profit in rupees, obtained for each level of price and is calculated by subtracting column 6 from column 3.
Column 8 is the net profit % at each price level.

Table 23.4 shows that Rs 15 per meal is the most profitable price resulting in a net profit of 47.5 per cent, indicating that price increases beyond a certain limit actually reduce the net profitability due to a drop in sales and increase in labour costs per unit.

Another method of calculating net profit would be to determine the gross profit figures and then calculate the net profits as shown in Table 23.5.

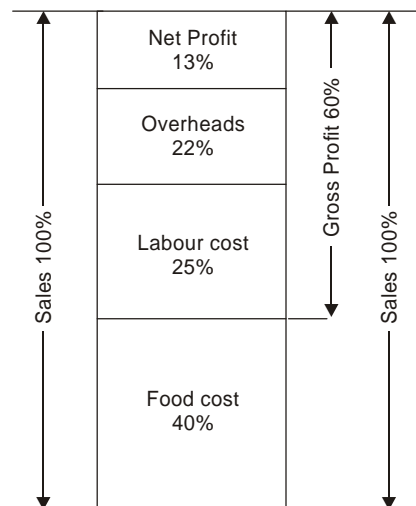
Table 23.5 Profitability statement of the same menu and prices as in Table 23.4

1	2	3	4	5	6	7	8
Price per cover	Number of covers	Sales revenue	Food/Cost (40% of sales)	Gross profit (3 – 4)	Labour and overheads	Net profit (5 – 6)	Net profit %
12.00	2,000	24,000	9,600	14,400	3,300	11,100	46.25
13.00	1,900	24,700	9,880	14,820	3,300	11,520	46.63
14.00	1,800	25,200	10,080	15,120	3,300	11,820	46.90
15.00	1,600	24,000	9,600	14,400	3,000	11,400	47.5
16.00	1,400	22,400	8,960	13,440	3,000	10,440	46.6
18.00	1,200	21,600	8,640	12,960	3,000	9,960	46.1
20.00	1,000	20,000	8,000	12,000	3,000	9,000	45.0

The statements in the above example indicate that the ideal price for the meal is Rs 15.00 per cover, as the maximum net profit % is obtained at that price.

Pricing Dishes or Snacks

For purpose of determining the price of a dish the costs may be calculated according to the distribution indicated in Fig. 23.6 shown in terms of the percentage of sales.

**Fig. 23.6** Distribution of various costs as a percentage of sales

Assuming that the selling price of snack item is Rs 5 per portion, the above cost percentages can be used to calculate the relationship of all costs to the selling price, as follows:

Food cost at 40% (5.00×0.4)	= Rs 2.00
Labour cost at 25% (5×0.25)	= Rs 1.25
Overheads at 22% (5×0.22)	= Rs 1.10
Net profit 13 % (5×0.13)	= Rs 0.65
Sales 100% (Selling price)	Rs 5.00

It is quite clear from the above figures that if there is a change in the first three costs, the net profit will be affected. For instance, if the food cost is reduced by buying at wholesale prices or using cheaper substitutes for expensive ingredients; or labour costs are reduced because labour saving devices have been installed; or overhead expenses are reduced through saving of fuel, the net profit can be increased without changing prices and vice versa.

Richard Kotas introduces very effectively the concept of *Profit Sensitivity Analysis* (PSA), and the use of profit multipliers in making pricing decisions. According to Kotas, *the aim of PSA is to establish how various key factors (price level, food and beverage costs, labour, etc.) influence profitability of the business as illustrated in Fig. 22.7.*

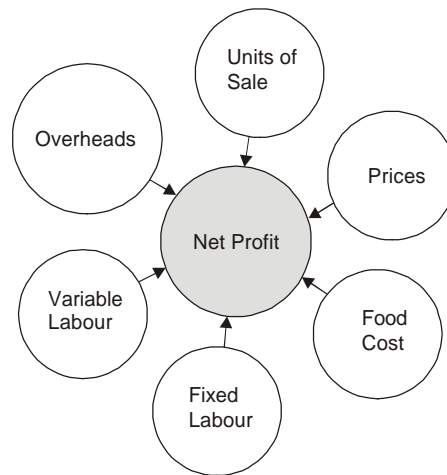


Fig. 23.7 *Factors affecting profitability*

Example 23.7 adapted from his article under reference would act as a useful guide to caterers in making a quick assessment of the results of their operations, to arrive at decisions which prove useful in ascertaining profitability.

Example 23.7

The results of a catering establishment at the end of a month are:

Number of covers sold		5,000
Average price per cover		Rs 5.00
∴ Sales		<u>Rs 25,000</u>
Less Food cost	10,000	
Labour cost	7,500	
(Fixed and variable)		
Overheads	5,000	<u>22,500</u>
∴ Net profit		<u>2,500</u>

Obviously, the key factors that influence net profit values are food cost, labour cost and overheads,. To establish quantitatively, the extent to which each factor affects net profit Kotas has suggested methods which have been adapted and presented through Examples 23.8 to 23.12.

1. Assume a change of 10 per cent in any one factor, while holding all others constant and calculate the percentage change in the net profit as shown in Example 23.8.

Example 23.8

Factor changed = Price level: If the price level is increased by 10 per cent that is from Rs 5.00 to Rs 5.50 per cover, what is the effect on net profit?

Numbers of covers sold		5000
Price per cover		Rs 5.50
∴ Sales		<u>Rs 27,500</u>
Less Total cost		<u>22,500</u>
∴ Net profit		<u>Rs 5,000</u>

A 10 per cent change in price with other factors remaining unchanged has thus resulted in a 100 per cent increase in net profit, that is 2500 – 5000.

2. Divide the percentage change in the net profit by the percentage change in the key factor to arrive at a figure known as 'profit multiplier'. In the above example, this would be:

$$\frac{\% \text{ change in N.P.}}{\% \text{ change in price}} = \frac{100}{10} = 10$$

This shows that net profit is very sensitive to changes in prices, there being a 10 per cent change in net profit for every 1 per cent change in price.

Example 23.9

Factor changed—Food cost: If the food cost is increased by 10 per cent the effect on net profit will be as follows:

Number of covers sold		5,000
Price per cover		Rs 5.00
∴ Sales		<u>Rs 25,000</u>
Less Food cost	11,000	
Labour cost	7,500	
Overheads	5,000	<u>23,500</u>
∴ Net profit		<u>1,500</u>

The Net profit has thus decreased by Rs 1000.

The above figures show that a 10 per cent increase in food cost lowers the net profit by Rs 1,000 from the original profit figure of Rs 2500. This means 40 per cent less profit is made. The profit multiplier would therefore be $40 \div 10 = 4$, i.e. % change in net profit divided by percentage change in food costs, showing that a 4 per cent change in net profit will occur with every 1 per cent change in food cost. If the food cost increases the net profit will decrease in the above ratio, and if the food cost decreases the net profit will increase, provided all other factors remain unchanged.

Example 23.10

Factor change—Number of covers: If there is an increase of 10 per cent in the number of covers (from 5,000 to 5,500) the effect on profit will be:

Number of covers sold		5,500
Price per cover		Rs 5.00
∴ Sales		<u>Rs 27,500</u>
Less Food cost (increased 10 per cent because of increase in the number of covers)	11,000	
Labour cost (variable element increased by Rs 250)	7,750	
Overheads	5,000	<u>23,750</u>
∴ Net profit		<u>Rs 3,750</u>

The increase in net profit is 50 per cent indicating profit multiplier of 5.0. This indicates that for every 1 per cent change in the number of covers, a 5 per cent increase in the net profit can be expected if other factors remain constant. In this example however, the total change in profit is Rs 1,250 cost too, has increased by Rs 1,250 because of the subsequent 10 per cent increase in food cost (by Rs 1,000), and the variable labour cost (by Rs 250), and therefore the effect on net profit has been offset completely.

Example 23.11

Factor changed—Labour cost: If there is an increase of 10 per cent in the labour cost, the effect on profit will be:

Number of covers		5000
Price per cover		Rs 5.00
∴ Sales		<u>Rs 25,000</u>
Food cost	10,000	
Labour cost (+ 10 per cent)	8,250	
Overheads	5,000	<u>23,250</u>
∴ Net profit		<u>Rs 1,750</u>

Change in net profit is Rs 750.

The percentage decrease in net profit is 30 per cent, therefore the profit multiplier is 3.0. This means that for every 1 per cent increase in labour costs there will be a decrease of 3 per cent in the net profit, and vice versa.

Example 22.12

Factor changed—Overheads: If there is an increase in the overhead expenses to the extent of Rs 500, the effect on profitability will be:

Number of covers sold		5,000
Sales @ Rs 5.00 per cover		<u>Rs 25,000</u>
Food cost	10,000	
Labour cost	7,500	
Overheads (+ 500)	5,500	<u>23,000</u>
∴ Net profit		<u>2,000</u>

Percentage decrease in net profit is 20 per cent, giving a PM of 2.0, that is, for every 1 per cent increase in overheads, the net profit will decrease by 2 per cent, whereas if overheads decrease by 1 per cent the net profit will increase by 2 per cent.

From the above examples it would now be possible to summarise quantitatively, the effects of changes in the key factors on the profitability as shown in Table 23.6.

Table 23.6 *Effect of changes of key factors on net profits*

<i>Key factor</i>		<i>PM value</i>	<i>Effect on net profit (of a 1% change in key factor)</i>
Price level	+10%	10.0	increased by 10%
Covers	+10%	5.0	decreased by 5%
Food cost	+10%	4.0	decreased by 4%
	-10%	4.0	increased by 4%
Labour cost	+10%	3.0	decreased by 3%
	-10%	3.0	increased by 3%
Overheads	+10%	2.0	decreased by 2%
	-10%	2.0	increased by 2%

Note: Plus sign indicates an increase in the costs.
Minus sign indicates a decrease in the costs.

It will be seen from Table 23.6 that prices and number of customers, both factors which have a direct influence on the sales revenue of an establishment, have high multipliers and appreciably affect profitability. The other factors, while exerting their influence do so to a smaller extent. It is also noticeable that of all the costs, the changes of food cost are of greater significance in their impact on net profits and therefore any control in that area would be of importance, in addition to controlling the revenues of the operations.

All these observations only prove what has been discussed earlier under factors affecting pricing of food, namely the importance of sales volume and mix, spending power of the customer and gross profit margins.

All pricing decisions are governed by the policies laid out for particular establishments. These are related to price, costs, demand and profit margins. Pricing has always been a challenge to the caterer because he deals with a large quantity of perishable commodities. It is therefore important to be able to understand the behaviour of all costs, and to predict the impact of changes in them on the profitability of a food service operation.

Today, with catering becoming more and more professional, and the variety of services demanded by the customer ever increasing, an intuitive approach to pricing is not enough. Accurate forecasting and tight controls through

constant monitoring are required, so that methods based on sound accounting systems can be developed. It is vital to bear in mind that all calculations of costs, menu prices, and profit margins need to be reviewed from time to time to inculcate changes in cost structures, resulting from fluctuation in variable costs, customer demand, labour problems, time allocation of people due to menu changes or staff problems. A manager must however, keep in mind that he is not only selling food but a package of services, charm, warmth, atmosphere, cleanliness, location and music all of which affect pricing decisions.

It also becomes clear therefore that management must be devoted to the revenue controlling aspects of the business, as well as to its cost aspects, in proportion to their respective effects on profitability. Without this understanding and the ability to predict the effects of pricing decisions prior to their implementation, food service managers cannot ensure success for his food service.

Chapter 24

Accounting

Every food service establishment needs to be assessed periodically to determine its state of efficiency. This assessment is greatly facilitated if accurate books of account are maintained for all transactions that take place. The process of recording transactions is referred to as book-keeping or record keeping. The preparation of statements for assessing the state of profitability, and their interpretation for guiding decisions regarding the operation of the business are considered as accounting function.

CONVENTIONAL ACCOUNTING TECHNIQUES

Conventional accounting techniques were based on entering most major transactions in books of account while those considered minor were treated as *petty cash*. There were basically two systems of book keeping, the single entry and the double entry systems.

Single Entry System

The single entry system is not, strictly speaking, a system as it is not based on sound principles. Some transactions are not recorded whereas there is only partial record for others and reliable results cannot therefore be obtained.

Double Entry System

The double entry system is more soundly based on the concept that all transactions involve giving and receiving a benefit. This system provides for an accurate and complete record of both aspects of all transactions in an establishment. For instance, if provisions are purchased the stock of provisions

will increase and either the cash in hand or cash in the bank will be reduced, or an obligation to pay the price at a later date will be created. Fundamentally, the record of a transaction must recognise both the aspects of giving and receiving the benefit or value, if it is to be a proper and useful record. This is what is done under the double entry system. Further, the two aspects of a business transaction may relate to any two or one of the elements persons or firms, properties, and expenses or incomes. For example:

- If equipment is to be purchased for cash, the two aspects of the transaction are, the incoming equipment (property) and the outgoing cash (property).
- If the rent for a building is received, cash received is one aspect (property) and the rent received is the other aspect (income).
- If salaries are paid in cash, salaries indicate one aspect (expenses) and cash payment indicates the other (property).
- If cash is received from a debtor, the cash received (property) is one aspect and the debtor (person or firm) who is paying the cash is the other important aspect to be recorded.

In this way the two aspects of every transaction can be picked out of the above three elements. Insofar as one aspect relates to a person or firm, it has to be ascertained whether the person or firm is a *receiver* or *giver*. If the aspect relates to properties, it may indicate whether the property is *coming in* or *going out*. Lastly, an aspect of the transaction may be concerned with either an expense or an income. Thus it is apparent that:

- Firms or persons may be either *receivers* or *givers*.
- Properties may either *come in* or *go out*.
- A transaction may be either an *expense* or an *income*.

It may be noted that each of the above elements contain two parts that have to be recorded. In order to have a systematic record each element will need to be recorded independently. Firms or persons will be provided with independent pages (Accounts), divided vertically in two parts—a debit side and a credit side. The amount will be written on the debit side if a person or firm is a receiver and it will be written on the credit side if a firm or person is a giver. Similarly, each property will be recorded on an independent page. Thus, whenever a property comes in, it will be recorded on the debit side and if the property goes out it will appear on the credit side. In the same way all incomes and expenses will be provided with independent pages in books of account.

Expenses will be recorded on the debit side and incomes on the credit side. In all accounts the debit side is the left hand side and the credit is on the right hand side of every page.

Advantages of the Double Entry System

The double entry system of book-keeping has a number of advantages:

- An establishment can know whenever it wants, how much profit it has earned, or how much it has suffered in a particular period. This information is essential to ascertain whether the business is being run on the right path or whether it needs correction.
- The precise reasons leading to profit or loss can be ascertained, and necessary remedial action taken well in time.
- It is possible to prepare a Balance Sheet at the end of a trading period, disclosing the financial state of affairs during that period, to know whether the firm is solvent or insolvent. Moreover, a comparative study of different years can be undertaken to ascertain the progress of the operations, over time.
- The amount owing from debtors and owing to creditors, can be known at any moment. This can enable reminders to be sent to debtors who fail to pay in time, and reduce chances of bad debts. At the same time a strict watch can be kept on creditors so that the firm knows what amount is to be paid and when.
- Accurate record of transactions is assured under the double entry system, as the existence of errors is revealed by the preparation of the Trial Balance—a list of the balances of all the accounts.
- Through this system, not only are errors prevented, but any frauds can also be discovered well in time to be prevented.
- Management can be guided in decision making through properly kept accounts.
- From the tax point of view, the figures of profit provided by the double entry system are accepted by tax authorities.

The double entry system can be adopted even by non-profit making organisations, like old age homes, school hostels, etc. with equal advantage.

TYPES OF ACCOUNTS

There are basically **three** types of accounts, personal, real and nominal accounts, on the principle of which all book-keeping is based.

Personal Account

When all transactions relating to a single person are set out on one page in a book of accounts, it is known as a personal account. The transactions shown on that page are in debit and credit form, the receiver is debited and the giver is credited according to the rules of double entry book-keeping system.

Real Account

When all transactions relating to a property are recorded on a single page the account is called real account. The rule of recording the transactions followed is to *debit what comes in*, and *credit* what goes out.

Nominal Account

When expenses or incomes are recorded independently on separate pages, they are termed as *Nominal* accounts. In recording transactions it is usual to *debit all expenses and losses* and credit all incomes and gains.

BOOKS OF ACCOUNT

The transactions of a food service establishment fall into three main categories namely:

- Cash receipts and payments, including payments and withdrawals from a bank account.
- Purchase of goods and materials.
- Sale of goods and services.

There will be one book to record cash and bank transactions including cash sales and purchases, another to record credit purchases of goods, and a third to record the credit sales of goods. If there is any other category of recurring transactions, a separate book can be maintained for say, return of goods from the caterer to suppliers, recorded in purchases return book. Thus, the following books are initially kept to record the transactions of different categories as shown in Fig. 24.1 and discussed thereafter.

- Cash book (for recording cash receipts and payments, including those for cash purchases, expenses incurred, cash sales, discounts allowed and discounts received.)
- Purchase book (for recording all goods purchased on credit.)
- Sales book (for recording all goods sold on credit.)
- Purchases returns book (for recording all purchases returned to suppliers, that is, creditors.)

- Sales returns book (for recording all sales returned by the customers. This book of account is generally not required in catering establishments, because food sold or taken away from the establishment is hardly ever returned.)

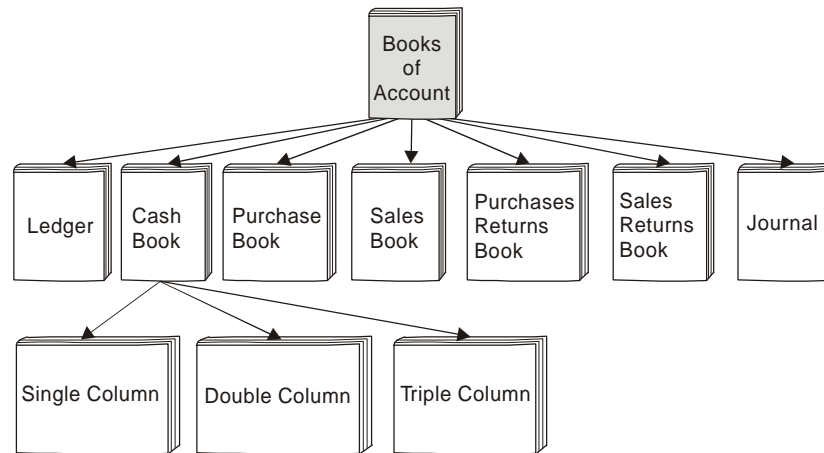


Fig. 24.1 *Books of account*

Except the cash book, all other books of account are auxiliary books of original entry and simply aid in recording the transactions further into the principle book of account, the *ledger*. All the entries in the ledger are made according to the double entry system, recording them both as debit and credit entries.

The Cash Book

The cash book maintains the daily record of transactions relating to receipts and payments of cash. As the number of transaction relating to cash are usually large and there is risk of cash being unaccounted, it is necessary to maintain up-to-date cash records which are properly supervised. The *Cash Book* is maintained on the basis of the principles of the double entry system, and it involves the record of transactions relating to a property (cash). All receipts are recorded on the debit side (what comes in), and all payments on the credit side (what goes out). The cash book has both debit and credit columns for recording cash receipts and payments, including those for cash purchases, expenses incurred, cash sales, discounts allowed and discounts received. Cash books were traditionally of three types, with single, double and triple columns for recording receipts and payments.

The book used for recording all those transactions for which there is no specific book maintained is called the *Journal*.

Of all the books of account, the cash book forms part of the double entry system of book-keeping and is maintained on the basis of the principles already discussed.

The Single Column Cash

The single column cash book bears a single 'amount' column on each side as shown in the Figure. 24.2.

Cash Book							
Receipts				Payments			
Debit				Credit			
Date	Particulars	L.F.	Amount	Date	Particulars	L.F.	Amount
			Rs P				Rs P

Fig. 24.2 Single column cash book

Example 24.1 gives some cash transactions for a canteen, followed by the entries as made in the cash book of the establishment.

Example 24.1

2002	Rs
Jan. 1 Commenced a canteen with cash	20,000
Paid into bank	10,000
Purchased provisions	2,000
Purchased kitchen furniture	3,000
Sale of tea and snacks	1500
Stationary purchased	250
Paid rent for the month	4000
Bought bread and butter	150
Paid wages to sweeper	45
Sold bread and butter	160

While finding the balance in the cash book, the two sides are totalled and the difference is entered on the shorter side. In the above case the total on the receipts (debit) side is Rs 21,660 and the total on the payments (credit) side is Rs 19,445 and thus the difference is Rs 2215 which is then entered on the credit (shorter) side, as the *balance carried forward (c/f)*. The two columns are

then totalled. On the debit side the balance is then written as *To balance brought down (b/d)* showing the cash balance on hand in the beginning of the next period. In order to keep a proper check on the person in charge of the cash, it is always advisable to balance the cash book daily and tally the cash in the cash box with the balance of the cash book.

Cash Book							
Receipts				Payments			
Debit				Credit			
Date	Particulars	L.F.	Amount	Date	Particulars	L.F.	Amount
			R P				R P
2002				2002			
Jan. 1	To Capital A/c		20,000.00	Jan. 1	By Bank A/c		10,000.00
	To sale of food A/c		1500.00	1	By provisions for Kitchen A/c		2,000.00
	To sale of bread and butter A/c		160.00	1	By Kitchen Furniture A/c		3000.00
				1	By Stationery A/c		250.00
				1	By Rent A/c		4000.00
				1	By Bread A/c & Butter A/c		150.00
				1	By wages A/c		45.00
				1	By balance c/f		19445.00
			21660				21660
Jan. 2	To balance b/d		2215.00				

Fig. 24.3 *Entry of transactions in a Single Column Cash Book*

Double Column Cash Book

This is known as the *Discount Column Cash Book*. In addition to the two amount columns on each side a discount column is also added to each amount column. Usually a cash discount is allowed to customers when prompt payment is made. Cash discounts accompany cash receipts from customers and payments to suppliers. It is therefore convenient to record discount allowed or received along with cash payment. The discount allowed (loss) on receipt of cash from a customer will, according to the principles of double entry, be recorded in the discount column on the debit side, and the discount received (gain) on payment to the supplier will be recorded on the credit side in the discount column. Figure 24.4 is a sample of the Double Column Cash Book.

Cash Book													
Receipts					Payments								
Debit					Credit								
Date	Particulars	L.F.	Discount		Amount		Date	Particulars	L.F.	Discount		Amount	
			Rs	P	Rs	P				Rs	P	Rs	P

Fig. 24.4 Sample of Double Column Cash Book

Entries of transactions in a double column cash book are illustrated through example 24.2.

Example 24.2

The transactions made in a newly established coffee shop are given as under.

2002	Rs
Jan. 1 Started coffee shop with a capital of	20,000
Purchased equipment	5,000
Opened bank account	10,000
Purchased kitchen provisions	2000
Paid cash for stationery	1200
Sold beverages	1050
Sold meals and snacks	1150
Sold meals on credit to Mr. Anand	250
Bought provisions on credit from Gargsons	2,500
2 Paid rent	1400
Cash sales of meals	1250
Sundry expenses	115
Provisions purchased	1000
3 Cash received in full settlement from Mr. Anand's	240
Discount allowed	10
Purchase of vegetables	240
Sales of food	455
4 Paid cash to Garg sons	1,480
Discount received	20
Meat purchased	221
Sundry expenses	105
Paid for gas	257

Enter these transactions in the double column cash book.

Figure 24.5 shows how these entries have been made in the cash book of the coffee shop.

Cash Book									
<i>Receipts</i>					<i>Payments</i>				
<i>Debit</i>					<i>Credit</i>				
<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Discount Rs</i>	<i>Amount Rs</i>	<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Discount Rs</i>	<i>Amount Rs</i>
Jan. 1	To capital A/c			20,000	Jan. 1	By kitchen Equipment A/c			5,000
	To sale of beverages A/c			1050		By bank A/c			10,000
	To sale of meals & snacks A/c			1150		By provision A/c			2000
2	To sale of meals A/c			1250	2	By stationery A/c			1200
3	Ro Mr Anand A/c		10.00	240	2	By rent A/c			1400
	To food Sales A/c			455		By sundry Expenses A/c			115
						By provisions A/c			1000
					3	By vegetables A/c			240
						By Garg Sons A/c		20.00	1,480
						By meat A/c			221
						By sundry Expenses A/c			105
						By Gas Expenses A/c			257
						By balance c/d			1127
			10.00	24145				20.00	23018
Jan. 5	To balance b/d			1127					

Fig. 24.5 *Entry of transactions in a double column cash book*

Note: The two credit transactions on January 1 are transactions in which cash is not involved. These transactions will not, therefore, be entered in the cash book, but in sales book and purchase book respectively.

Triple Column Cash Book

This is also known as the Bank Column Bank Book. Today, in almost all establishments, transactions are made through the banks rather than in cash. Organisations prefer to keep cash in the bank rather than on the premises due to various reasons. Moreover, money in the bank is as good as cash. Under these circumstances therefore, it is advantageous to have a column for bank transactions along with the other two columns of the cash book, on both the debit and the credit sides. These columns will record all payments made into the bank and all amounts withdrawn from it, in the same manner as the cash receipts and payments are recorded. With the addition of a bank column on each side, there will be three columns on each side of the cash book and therefore it is known as the Triple column cash book.

As explained above, the receipts of cash will be entered on the debit side (cash column) and the payments of cash on the credit side (cash column). Cheques issued by the organisation represent payments out of the bank and hence the amounts will be entered in the bank column on the credit side. when cash or cheques are paid into the bank account, the amounts represent receipts into the bank, and will therefore be entered in the bank column on the debit side. Cheques received by the establishment should be entered in the bank column straight away because the cheques have to be sent to the bank for collection and clearance.

When cash is withdrawn from the bank for use it should be entered in the cash column (debit side), and it must at the same time be entered in the bank column on the credit side indicating that the cash has been withdrawn from the bank and then used. Similarly, if cash is deposited into the bank, the amount is entered in the bank column (debit side) and in the cash column (credit side). Since these entries are made simultaneously on both debit and credit sides of the cash book they are known as *contra entries*. In order to indicate this feature of these transactions, the letter 'C' indicating *contra*, is written in the ledger folio (L.F.) column on both sides. This means that the double entry for these transactions is completed in the cash book itself. discount columns will continue to be used in the same way, whether it is a payment out of the bank or cash, or whether it is a receipt of cash or a cheque.

The two columns, that is , the bank and cash columns would be balanced separately. The total of the cash column (debit side) will always be bigger than the total of the cash column (credit side), and there will always be a debit balance. On the other hand, the total of the bank column (debit side) is usually bigger than the total of the bank column (credit side), and generally there is a

debit balance, but it can be the other way round, when the bank account is over drawn. In that case the credit total of the bank column will be larger than the corresponding debit total indicating that the bank account has been overdrawn. This shows that the payments have exceeded the amount in the bank. The balances of both these columns are then carried forward to the next period. A sample of the triple column cash book appears in Fig. 24.6.

Triple Column Cash Book

<i>Receipts</i>						<i>Payments</i>					
<i>Debit</i>						<i>Credit</i>					
<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Discount</i>	<i>Office cash</i>	<i>Bank</i>	<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Discount</i>	<i>Office cash</i>	<i>Bank</i>
			<i>Rs</i>	<i>Rs</i>	<i>Rs</i>				<i>Rs</i>	<i>Rs</i>	<i>Rs</i>

Fig. 24.6 *Sample of a triple column cash book*

The Ledger

The ledger is a book of account in which individual accounts are opened for suppliers, customers who buy on credit, such as, sales on account page for Messers, xyz furniture, postage and so on. For contra transactions, both the aspects are recorded. The individual accounts help to complete the double entry record, as when, a person or an organisation has paid some amount, it is entered in the debit side of the cash book and the double entry is made on the credit side to the individual or organisations account in the ledger. Items marked 'C' need not be posted as their double entry aspect is already completed in the cash book itself¹. Thus, every transaction is recorded twice, once on the debit and once on the credit side of various accounts.

1. For posting of such entries reference may be made to *Catering Management—An Integrated Approach*, M. Sethi and S. Malhan.

Purchases Book

This book is maintained in order to make a preliminary record of the goods purchased on credit from the suppliers. There is no record in the form of debits or credits. It is merely a memorandum book. After a purchases book is prepared and totalled, it is posted according to the principles of the double entry system. The suppliers being the *givers*, their accounts will be credited with the amounts. The total of the purchases book will be posted to the debit side of the purchases account at the end of a particular period, as it represents the expenses incurred on purchase, and expenses are always debited according to the double entry system. A sample page from a purchases book is shown in Fig. 24.7.

Purchases Book				
<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Debit Amount</i> Rs	<i>Credit Amount</i> Rs
	Total			

Fig. 24.7 Purchases book

Sales Book

This is also a memorandum book and there are no debit and credit columns in it. It is maintained in order to record credit sales of goods to customers during a particular period. The total of this book represents total credit sales made to customers. The total, therefore, will be credited (being a gain) to the sales account at the end of the period, and the individual customer's accounts (being the receivers of benefit) will be debited in the ledger. In this way, with the help of the basic records in separate books, the double entry records are completed. The format of a sales book appears in Fig. 24.8.

Sales Book				
<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Debit Amount</i> Rs	<i>Credit Amount</i> Rs
	Total			

Fig. 24.8 Sales book

Purchases Returns Book

This is also a memorandum book and records the return of goods to the suppliers. The format of this book is similar to that of the purchases book. While posting, the total of this book will be posted to the *Returns Outwards Account* and the supplier's individual accounts will be debited, he being the receiver of the value.

Sales Return Book

The returns from customers are recorded in this book on a memorandum basis. It has already been mentioned that in catering establishments there is practically no occasion for customers to return the product since it is consumable generally on the premises. In establishments which offer a takeaway service, there may be a single instance when the food is brought back with a complaint. In such cases even, it is general practice to replace the item with a fresh one for the customer, therefore such stray occasions do not warrant the necessity to maintain a separate Sales Returns Book. It is however, useful to know that this account book too is not part of the double entry system, but helps to complete a double entry record if returns do take place frequently. Perhaps in establishments which sell packaged goods or provisions in addition to running a coffee shop, this book would also help to determine the quality of goods to stock. Those items which are being returned too frequently can thus be deleted from the purchases list.

The total of the Sales Returns Book is recorded on the debit side of the Sales Returns or Return Inwards Account and the individual customers' accounts are credited with the amounts of the goods returns. The ruling of this book is the same as that of the Sales Book.

Journal

This book records an analysis of every transaction that takes place in an establishment. It states the two accounts which are involved in the transaction and which one has to be debited and which to be credited. There are certain transactions which cannot be recorded either in the Cash Book, Sales Book, Purchases Book, Purchases Returns Book or the Sales Returns Book, neither can these be recorded in any subsidiary book. Such transactions are credit purchases and sales of assets, bad debts, depreciation on assets, outstanding expenses and income earned but not yet received, etc. the initial record of such transactions are made in the journal. At the end of a given period, the various accounts involved in the transactions are posted with the help of the journal

entries. Entries in the journal are recorded on the basis of the double entry system. Figure 24.9 illustrates the manner in which the pages of the journal are set out.

Journal

<i>Date</i>	<i>Particulars</i>	<i>L.F.</i>	<i>Debit Amount</i> ₹	<i>Credit Amount</i> ₹

Fig. 24.9 Format of the Journal

While posting entries in the Journal, the amount appearing in the Debit Amount Columns are debited to the individual accounts and the amounts in the Credit Amount columns credited to the individual accounts.

A complete set of account books which would normally be maintained by a medium sized catering establishment would therefore include a cash book, sales book, purchases book, journal and ledger.

Trial Balance

Once all the transactions are recorded in various the books of account, it is necessary to check their accuracy by preparing a statement known as the *Trial Balance*. This lists the balances of all the accounts in debit and credit from. As each transaction has been entered twice, both in debit and credit, the total of the two sides should be equal. The equality of the totals will prove that the accounts have been correctly prepared. While preparing the Trial Balance, the personal and real (property) accounts are balanced, and the amounts of the nominal accounts are noted against each item in the respective column. With the help of a Trial balance, which is prepared at the end of a financial year, the profit or loss for the year and Balance Sheet can be determined as on that date. In fact, with the Trial Balance for the month, the profit or loss for the month can also be calculated. A sample Trial Balance of the restaurant appears in Fig. 24.10.

Profit and Loss Account

If the Trial Balance is analysed, it is seen that items appearing on the debit side represent nominal expenses, properties (cash and furniture) and personal accounts of debtors (from whom amounts are due, like M/s Modern School).

On the credit side there are items representing incomes (sales, etc.) and personal accounts of creditors, along with the capital account.

Trial Balance as on 31st January 2002

<i>Accounts (Dr. Balances)</i>	<i>Amount Rs</i>	<i>Accounts (Cr. Balances)</i>	<i>Amount Rs</i>
Furniture	14,950	Capital	2,00,000
Provision purchases	29,000	Sales	67,475
Cutlery and glass	6,000	Discount	125
Discount	59	M/s Roopak Stores	4,500
Kitchen equipment	9,140	M/s Jagdish Supplies	7,000
Rent	600	M/s Actual foods	1,960
Stationery	150		
Postage	10		
Wages and Salaries	950		
Vegetables	20		
Eggs	100		
Bread	50		
Repairs	50		
Gas	60		
Fruits	150		
Advertising	1,500		
Insurance	500		
M/s Cooperative Society	600		
M/s Modern School	400		
M/s Sports Club of India	50,300		
Depreciation	110		
Cash in hand	17,806		
Cash at bank	1,48,555		
	2,81,060		2,81,060

Fig. 24.10 *Trial Balance*

In order to find out profit or loss, expenses are matched with the incomes. Therefore while preparing the profit and loss account, the real accounts and personal accounts are not taken into consideration.

**Profit and Loss Account
for the Month ending 31st January 2002**

<i>Dr.</i>		<i>Cr.</i>	
<i>Accounts</i>	<i>Amount</i> <i>R</i>	<i>Accounts</i>	<i>Amount</i> <i>R</i>
Provision purchases	29,000	Sales	67,475
Discount	59	Discount	125
Rent	600		
Stationery	150		
Postage	10		
Wages and salaries	950		
Vegetables	20		
Eggs	100		
Bread	50		
Repairs	50		
Gas (fuel)	60		
Fruits	150		
Advertising	1,500		
Insurance	500		
Net Profit (taken to balance sheet)	34,291		
	67,600		67,600

Fig. 24.11 Profit and loss account of the restaurant

The amounts given in the profit and loss account have been extracted from the trial balance indicating the assets and liabilities of the establishment.

Balance Sheet

The balance sheet is prepared at the end of an accounting period and indicates the financial position of the organisation. In preparing this document all real and personal accounts are taken into consideration.

Real accounts are all assets. Personal accounts representing debtors (with debit balances) are treated as assets, and those personal accounts with credit balance (creditors and capital accounts) are treated as liabilities. Profit or loss shown by the Profit and Loss (PL) Account is added to or deducted from as the case may be, from the Capital Account in the Balance Sheet as indicated in

Fig. 24.12 with amount extracted from the trial balance for the assets and liabilities of the establishment.

**Balances Sheet of the Restaurant
as on 31st January 2002**

<i>Liabilities</i>		<i>Amount</i> <i>Rs</i>	<i>Assets</i>		<i>Amount</i> <i>Rs</i>
Capital	2,00,000.00	2,34,291	Furniture		14,950
Add Net Profit	34,291.00		Cutlery and glass	6,000.00	
Creditors:		13,460	Kitchen equipment		9,140
Roopak Stores	4,500.00		Cash in hand		17,806
Jagdish Supplies	7,000.00		Cash in bank		1,48,555
Atul Foods	1,960.00		Debtors:		
			Cooperative		
			Society	600.00	
			Modern School	400.00	
			Sports Club		
			of India	50,300.00	51,300
		2,47,751			2,47,751

Fig. 24.12 *Balance sheet of the restaurant*

Assuming that there is no unsold stock of provisions, the Profit and Loss Account and the Balance Sheet of the restaurant will appear as shown in Figs. 24.11 and 24.12.

Irrespective of the size of an establishment, it is important to maintain a full set of account books accurately in order to ascertain the viability of the operation.

Through the Trial Balance, which can be prepared at any time during the year, the accuracy of the accounts can be maintained. The profit and loss account gives the profitability situation at any time desired. The balance sheet projects the present financial position of the establishment in terms of its assets and liabilities. This can guide future plans for investments in fixed assets and help in the provision of necessary working capital.

PRESENTING ACCOUNTING INFORMATION

Accounting information needs to be presented to many different people and organisations, who view the same from their different points of view. Proprietors look at accounting information from profit angles, management sees it as a

source of self appraisal and economics, bankers view it from the point of soundness of the organisation to pay back loans. Similarly, suppliers judge an organisation's success and ability to pay promptly, the tax department will look for profitability of the organisation or evasion information, viewing it as a source of tax collection. Today even employees and their trade union representatives want a lot of information to ensure that organisations are fair, just and transparent in their operations, so that employees are fairly treated. Government departments concerned with legal issues regarding wages, pollution and more, also need information.

The presentation of accounts therefore should be in conformity with the viewpoint of particular receivers of that information. It is however, not possible to prepare a single information sheet which suits the purpose of each and every receiver, and at the same time does not divulge too much information about the working of the organisation. A few principles to follow for presentation of accounting information will serve as useful guidelines, which are presented in Fig. 24.13.

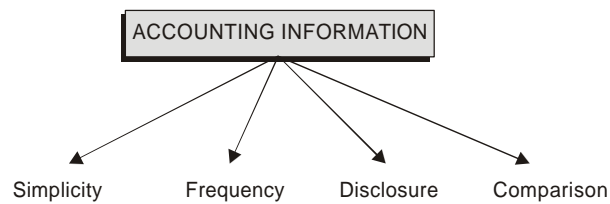


Fig. 24.13 Guidelines for presentation of accounting information

Simplicity

The accounting information should be simple enough to be understood by a reasonably intelligent person with no special knowledge of accounting. Accounts should therefore be free from unnecessary detail and misleading terms, the different items presented with suitable headings and subheadings.

Frequency

Accounts should be presented to management at frequent intervals for scrutiny to be valuable as a timely control tool. The usual interval in catering organisation is fortnightly or monthly. For higher management it may be quarterly or half-yearly depending on organisational policy.

Disclosure

The layout of the accounts should only disclose what is important. In a hotel and catering establishment which has many revenue producing departments, like rooms, coffee shop, restaurant, banqueting, conference, outdoor catering, separate trading results should be presented. Similarly, a balance sheet should show separate totals of current assets and liabilities as well as the working capital.

Comparison

This is meant to give an indication of the progress of the organisation and therefore, figures given in accounting formats, for previous year or accounting period are useful to the receiver of the information. This is now mandatory for all businesses in establishments which operate on a system of budgetary control, all current figures are shown in relation to budgeted figures for comparison. Profit figures shown in rupees may be large but when percentages are compared they become more meaningful.

The principles discussed are however only guidelines for presentation of accounting information but need to be applied differently for different situations.

For example, the food and beverage (F & B) manager would be interested in stock levels, prices paid to suppliers and discounts received or the composition of sales whereas the managing director of the organisation would only be interested in the overall profit on food sales. Thus only essential information and not details need to be provided depending on the purpose for which it is going to be used.

Methods of Presentation

There are two basic methods used for presenting accounts, the *Conventional* and *Vertical* accounting layouts.

Conventional Layout

Conventional accounts also referred to as historical accounting have the debit and credit arrangement, and are therefore read horizontally from left to right. To the non-accountant these type of accounts are confusing, and therefore various improvements have been suggested on which the guidelines for layout have been discussed. Today all relatively unimportant detail with respect to purchases, returns, allowances to customers, stocks etc. are shown in separate supporting schedules, or as notes along with accounts, instead of the

conventional final accounts layout. *Cost of sales* figures have become an important way of summing up expenses of service departments, advertising, marketing etc. The profit and loss accounts and balance sheets now have suitable headings.

Vertical Layout

A vertical layout is an idea generated by large American organisations, to make presentation simpler and highlight essential information. In this method the accounts are read vertically from top downwards and are therefore convenient and easier to understand. A sample of such a layout is presented in Table 24.1.

Table 24.1 Vertical layout of trading account

ABC Restaurant						
Trading, Profit and loss account ended 31 March, 2002						
	<i>Sales</i> (Rs)	%	<i>Cost of</i> <i>Sales</i> (Rs)	%	<i>Gross</i> <i>Profit</i> (Rs)	%
Food	24000	100.00	9500	39.58	14500	60.4
Beverages	14000	100.00	7000	50.00	7000	50
Total	38000	100.00	16500	43.42	21500	56.6
<i>Less: Labour Costs</i>						
Salaries	Rs 7000					
Wages	2400					26.6%
Staff Benefits	700		10,100			
<i>Overheads</i>						
Rent	2250					
Light & Heat	1400					
Depreciation	1870					
Repairs	500					
Stationary	300					
Advertising	250					
Miscellaneous	300		6870	18.1	16,970	
Net Profit				4530		11.9

Notes:

1. Corresponding figures are not indicated for previous year, but a column may be added on the left side of the account if required.
2. Stock level details if required may be attached separately.
3. All percentages relate to the total sales.

The gross profit percentage and profit volume ratio needs to be watched carefully because if gross profits expected or budgeted for, are not achieved control mechanism needs to come into force. Through a vertical layout these indices are clearly seen.

Conventional accounting systems however, are very cumbersome, time consuming and costly. Small establishments still prepare monthly accounts using traditional costing techniques with periodic management accounts, subordinate to external reporting requirements. This approach although acceptable in environments where there is little or no competition, reports based on outmoded methods become irrelevant for making efficient business decisions.

Today, the greatest challenge before organisations is to reduce costs and improve the value of the enterprise, in the highly competitive market environment in which it is placed.

Competitive advantage can be gained only by performing activities at lower cost or providing a differentiated product or service for which a customer is willing to pay a higher price. Integrated information systems geared towards areas for cost reduction therefore, are the need for the day.

CONCEPTS OF PROFITABILITY

The most effective method of measuring profitability is to relate the net profit with the assets of an enterprise, also referred to as capital or *net worth*. However, there are other measures of profitability as indicated in Fig. 24.14.

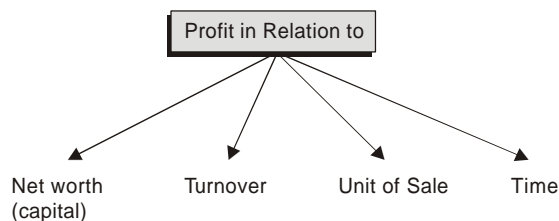


Fig. 24.14 *Measures of profitability*

Profit assessment to capital is the most commonly used method. In most catering establishments profitability is related to turnover, a simple method of assessing the operating efficiency of the establishment over a period of time.

Turnover

There are some enterprises which have a very high *turnover* but require relatively less capital investment. This is seen in the case of contract catering, in which the caterers only have to organise and manage the catering for their clients without investing on the premises, or fixtures, as is the case in office, school, college, some industrial units, or even for special events in which case the host rents out halls or farmhouses.

Profit per unit of sale is an additional measure of profitability irrespective of whether it is a meal or snack that is sold, or a party, or accommodation.

Time

In particular types of catering the time factor becomes important in assessing profitability, as in the case of functions where the duration is fixed such as for marriages, cocktail parties, exhibitions, conferences and the like. The time factor also becomes important for profitability in highly seasonal establishments such as tourist spots, fairs, flower shows and so on. This is so because one needs to budget for higher profits during the season in order to provide a reasonable annual return on capital.

Measures of Operating Efficiency

In addition to selecting the correct measures of profitability, an organisation needs to use certain measures of current operating efficiency. These are called *operating ratios*, and can be applied daily or weekly to check the progress of the establishment towards goals. Some of these ratios are discussed briefly as under.

Gross Profit Percentage

This is one of the most important measures of operating efficiency. Separate gross profit percentages are worked out for each product of a sales mix on the menu and forms a tool for controlling food production and service efficiency. The percentage in relation to food sales may be shown before or after deduction of staff meals, the calculation of gross profit percentage has been dealt with in Chapter 22 dealing with costs and their control.

Net Margin

The net margin also known as the *after wage percentage* and is the gross profit less labour costs. This is a useful ratio in establishments where labour costs vary considerably in relation to sales.

Occupancy Rate

The rate of occupancy in a restaurant shows the number of meals sold in relation to the seating capacity. If there is provision for 100 seats, its capacity to seat is 200 for main mealtimes of lunch and dinner. If on any particular day it serves 400 meals its occupancy rate can be calculated as follows:

$$\frac{\text{Meals served}}{\text{Seating capacity}} = \frac{400}{200} \text{ or } 2.0$$

The rate of 2.0 indicates that on that day each seat was occupied twice. This rate also shows the economical utilization of equipment and other facilities in the food establishment.

Average Spending Power

The turnover in an establishment depends on the number of customers and the average amount spent by them. This can be calculated over regular periods of time, or seasonally. This helps managers to plan menus more realistically or improve prices upward or downward for certain items to regulate the sales volume and customer goodwill. The purchasing power is a particularly useful index for adding on specials for the day on menus to increase sales revenue. Average spending power (ASP) is calculated by using the formula:

$$\text{ASP} = \frac{\text{Sales}}{\text{Number of covers}}$$

If sales revenue amounts to Rs 4000 and number of covers sold are 100 per day, then

$$\text{ASP} = \frac{4,000}{100} \text{ or Rs } 40$$

In this manner a coffee shop or canteen can calculate how much is spent on an average on snacks, beverages and meals, and adjust its pricing accordingly to increase revenue and thereby profits.

Besides operating ratios there are some other indices or accounting ratios for assessing the success of an establishment which measure the state of liquidity or current assets that are the source of liquid cash, debtors and temporary investments.

Current Ratio

The current ratio measures the relationship between current assets and current liabilities, the latter representing a claim on such funds. If the current assets of an establishment are Rs 24,000 and liabilities are Rs 10,000 the current ratio is calculated as:

$$\begin{aligned}\text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\ &= \frac{24,000}{10,000} = 2.4\end{aligned}$$

A positive current ratio indicates that the establishment has liquid funds for day to day operation of the business. In organisations where long period credits are extended to customers, the working capital required is much larger.

Acid-Test Ratio

This measures the relationship between liquid assets and current liabilities. A food service may have an adequate current ratio, but if too much money is blocked in stocks the cash available for operating expenses may become insufficient. The formula for calculating acid test ratio is:

$$\text{Acid Test Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

If liquid assets of a food service are Rs 15000 and liabilities Rs 8000 the acid test ratio will be:

$$\begin{aligned}\text{ATR (Acid Test Ratio)} &= \frac{\text{Liquid Assets}}{\text{Current Liabilities}} \\ &= \frac{15,000}{8,000} = 1.87\end{aligned}$$

Debt Collection Period

The average collection period with respect to debts though not strictly a ratio, it measures how quickly or otherwise debts can be collected. Assuming that the debts amount to Rs 4000 and average daily sales Rs 180. The average period will be calculated as follows:

$$\frac{\text{Debts}}{\text{Average Sales per day}} = \frac{4,000}{180} = 22.2 \text{ days .}$$

Rate of Stock Turnover

This measures the speed with which stocks move through the business. A high rate of stock turnover indicates that stocks are been used up fast enough indicating efficient purchasing, as against a low turnover in which funds are blocked in stocks pointing to overbuying of commodities.

If cost of sales is Rs 5000 and average stock at cost is Rs 150, the rate of stock turnover can be calculated as:

$$\frac{\text{Cost of Sales}}{\text{Average stock at Cost}} = \frac{5,000}{150} = 33.3$$

The rate of stock turnover varies from one type of sales to another and from one establishment to another. In food sales it may vary from 25–50, the average stock held representing the use-up levels for 1–2 weeks.

Non-perishable stock items like liquor, preserved foods may be held for longer periods. A rate of turnover of 12 indicates a stock level replenished through purchasing on a monthly basis.

All the ratios and indices discussed above are pointers to an organisation's functional and management efficiency which may be indicative of controls needed or appreciation of its operational success, as the case may be to guide future goals of establishment.

Today, traditional accounting systems have been made easier by the introduction of information technology, with the speed of decision-making and communication increasing through the use of computers. These have helped to develop techniques for quantification and evaluation of the effects of inflation and accurate measurement of results after elimination of inflationary effects. The accounting information and its presentation is evolving so that it is valid not only for financial purposes but also for making speedy and more efficient management decisions.

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Unit 6

Personnel Management

- Personnel Management Concepts
- Staff Employment
- Employee Benefits
- Staff Training and Development
- Legal Aspects of Personnel Management

Food service organisations being essentially service oriented tend to be relatively labour-intensive depending largely on the varied skills of people. At the most technology advancement can speed up routine jobs but cannot totally replace the personal touch so important to food production, presentation and customer service. Therefore, the success of every establishment depends on the willingness of people to give of their best and identify with the goals of the organisation. This however, does not happen on its own, because the personnel or staff in catering institutions constitute a group which is formed of people from diverse back grounds, having varied skills and needs. They need to be guided, motivated and even coerced at times, to work towards the achievement of preset goals.

Lawrence Appleby a former president of the American management association (AMA) has defined personnel management very aptly as

... a function of guiding human resources into a dynamic organisation that attains its objectives with a high degree of morale and to the satisfaction of those concerned.

Personnel management is thus concerned with getting results through the willing efforts of people. This will only become a possibility if people are made to feel that their knowledge, skills, productivity, creativity and innovation form the organisation's biggest assets. Institutions need to inculcate and develop in their staff the core norms of work excellence, duty commitment and cooperation, while at the same time fulfil their own individual goals.

Only by drawing on the combined skills of people working in unison in an establishment through sound policies can an organisation face the constraints and competitiveness of today's business and social environment.

The development of sound human resources through inspiring leadership and vision, is the key to success for every establishment irrespective of the nature of its goals.

This unit deals with the development of personnel management in India, its functions, methods of recruitment and selection of staff, their orientation to the organisation, employee facilities, training and developing staff to suit the requirements of catering establishments.

Chapter 25

Personnel Management Concepts

Personnel management refers to the management of people in any organisation, in a manner that they achieve preset goals in a willing and dedicated manner. It is that part of management which is concerned with people at work and their relationships within the enterprise as applied to all fields of employment.

Personnel management aims to achieve both efficiency and justice, enabling people to contribute their best to the success of the establishment both as an individual and a member of a working group. It strives to provide fair terms and conditions of employment at the same time satisfying those employed (Curson, 1980). Robert Owen added the dimension of welfare for employees to the personnel functions in the 1800's and is known as the father of personnel management. His influence in producing the 1819 Factories Act in UK helped to stop the employment of children under 12 years of age, provide free schooling, housing, recreational facilities and limit working hours. All these measures resulted in contented workers and more profits for organizations. Today, personnel management is referred to as employee or staff management and human resource management in various enterprises, and forms an integral part of the functions of every business enterprise.

DEFINITION AND SCOPE

Various definitions are found in management literature, as the personnel function is viewed from different angles, depending on the concepts of managers and goals of organisations. Some are presented to illustrate the scope of this very important management function.

Dale Yoder

Personnel management is that phase of management which deals with the effective control and use of manpower. The methods, tools and techniques designed and utilised to secure the enthusiastic participation of labour, represent the subject matter for study in personnel management.

G. Terry

Personnel management requires constant alertness and awareness of human relations and their importance in every day operations . It is concerned with obtaining and maintaining a satisfied workforce.

Pigors & Myers

Human resource management is a method of developing the potentialities of employees so that they get maximum satisfaction out of their work and give best efforts to the organisation.

E. B. Flippo

Personnel or human resource management involves the planning, organising directing and controlling of the procurement, development, compensation, integration and maintenance of people for the purpose of contributing to organizational, individual and social goals.

These definitions point to the scope of the subject and indicate its dimensions in modern management.

CONCEPTS OF PERSONNEL MANAGEMENT

The term personnel management gives an impression that people can be used by managers for achieving goals of an organisation, through the power they wield in the hierarchical structure. This concept found expression in the autocratic leadership styles that were prevalent in the early 20th century when managers only gave orders to their staff and subordinates. The communication channels were unidirectionally downward, and employees were compelled to work long hours as the focus of management was on productivity and profits, the staff being a means, who had no say. Examples of this nature are seen even today in self-owned family enterprises, which employ cheap untrained labour.

With the gradual development of catering to the status of an industry, all sizes and types of establishments grew and skills of various types varying from craft skills to supervisory and service skills were considered necessary. This led to a change in the concepts related to staff management and there was a clear and progressive shift from the autocratic through bureaucratic, democratic,

scientific, participative to technological approaches in personnel management thinking.

APPROACHES TO PERSONNEL MANAGEMENT

Approaches to staff management have tended to shift as a response to changes, constraints or pressures mainly from the internal and external environments of organisations.

Autocratic

This comprised a state of authority exercised on subordinate employees by virtue of placement in the organisational structure. This approach tended to centralize all power and absolute responsibility with top managers giving rise to the *I and You* or *We and They* situation causing psychological divide between managers and staff.

This approach was based on the assumptions of theory *X* (McGregor, 1957), that *people dislike work and responsibility and will avoid it if they can*. It also stated that they are self-centred, indifferent to organisational needs and resist change. So management philosophies were pressurizing and coercive towards staff in an attempt to push them towards goals.

Bureaucratic

McGregor (1960) also put forward alternate assumptions about employees through his theory *Y*, which stated that *work is as natural as play or rest and people are not inherently lazy*. He stated that they become lazy if they are not committed to the objectives laid down. They have potential and exercise self control and direction and when given the right work environment they can be creative and apply their imagination at work.

This theory indicates that the managers role is to develop the potential of employees to achieve goals. This resulted in a shift of approach to the bureaucratic model of working with people in an environment in which discussions were carried out and then orders passed along hierarchical levels.

Democratic

William Quich (1981) proposed an integrated model through behavioural prescriptions for management, that needed to be woven into the organizational environment. The distinguishing features of this theory *Z* were believed to

foster close, cooperative and trusting relationships between managers and members of work groups.

Scientific

This streamlined work into interconnected and interdependent units and sub units in which the focus was on higher productivity and team work. The importance of productivity continues to rise as organisations tend to optimise the use of their resources through three main sources, people (human resource), processes and technology. Athreya (2002) has stressed on the vital link between productivity and team work. He stressed that team play by each person is the most crucial and relatively the more critical missing link on which depend the success or failure of organisations.

Technological

Since the industrial revolution, advances in technology have lead to quantum leaps in productivity, although the acceleration was primarily due to intense competition in the single-market world of globalization. Today, the focus is not so much on the technologies per se, as on promoting the development of people who can boost innovation, entrepreneurship, creativity and so on.

In spite of visionary and strategic management policies involving technology, newer methods, investments and the like, implementation has to be ultimately, through the staff, who can be encouraged to unlock their latent productive talents and utilize resources optimally.

Managers of the future will need to focus on clarity of roles and requisite responsibilities, through processes which foster motivation, human relationships, team work and cooperation. Core values and a culture that encourages trust, ownership, creativity, service and development needs to be inculcated in organisations to encourage teams to function harmoniously and effectively.

Team Work

The three important determinants of team work are leadership, building the right kind of groups or teams for better productivity and membership which reflects the individual contributions people will make towards team goals.

Team work which was the strength of the Indian family community and the society in preindustrial India, has now dwindled due to the changes in family structures from undivided joint to nuclear families. Organisations therefore need to redevelop this unity in their internal group culture in order to maximise outputs.

The leader of any group can help to build up its members into a well knit team by sharing visions, goals and strategies with them. Team oriented behaviours can be encouraged through recognition and reward while at the same time discouraging team breaking behaviours using disincentives.

A leader needs to be a role model team player himself to inspire others, and therefore needs to acquire *Knowledge*, develop correct *Attitudes*, *Skills* and work *Habits* (KASH). The competencies necessary for developing KASH in staff are exhibited in Fig. 25.1 as adapted from Athreya (2002).

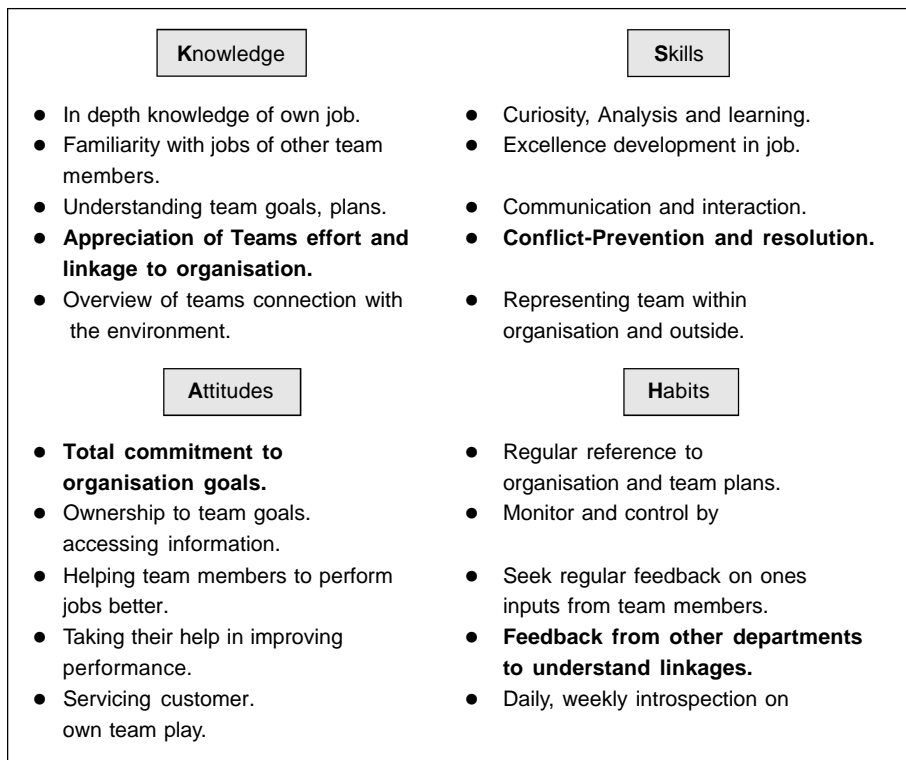


Fig. 25.1 Competencies required for managerial productivity

While the KASH attributes are relevant to all staff in an organisation, some are more critical for managers such as K4, A1, S4 and H4 as indicated in Fig. 25.1. These and the possible reasons are spelt out as follows:

K4 The Knowledge area in which managers are deficient is in linkages of their team performance with the rest of the organisation. This is probably due to inadequate information, interest and curiosity.

A1 Because of lack of curiosity and analysis, the attitudes towards learning become skewed, even though they know the organisational goals. They generally give importance to their departmental and group goals.

S4 The gap which managers need to fill is on conflict prevention and resolution. They tend to make little or no effort to prevent disharmony and encourage team spirit, but only wait for conflicts to be brought to their notice before they take any action. In this process the minor disagreements or unharmonious behaviour escape unnoticed and un-prevented, and fuels into conflicts and generates disharmony at work.

H4 Managers often do not show interest in feedback from subunits of the organisation or from the external environment, focusing mainly on output of their own staff.

If the above competencies can be strengthened by a little self introspection by every manager it will raise the total productivity be it personal, material, or other, leading to all round efficiency.

In smaller establishments, the function of managing people rests with the manager or owner of the establishment, while with larger organisations separate managers or departments of personnel may exist. Irrespective of the size of establishments all human resources must be used optimally and this can only be done if every employee develops the right balance of Knowledge, Attitudes, Skills and Habits required for his job, all done in the spirit of team work and play.

PERSONNEL POLICIES

Personnel policies are general guidelines formulated within the framework of the broader objectives of the establishment set by top management. These are passed on to managers at all levels for implementation when dealing with their staff. There are three main objectives or personnel policies.

- (a) Effective utilisation of human resources;
 - (b) Establishment of healthy working relationships, and
 - (c) Encouragement of maximum development of individuals, within the goals of the establishment.
- (a) *Effective utilization of human resources* The key to utilizing human resources optimally is to identify their skills and utilize them in jobs where they would be most productive. For this managers need to understand the goals of the organisation clearly and the critical areas which affect their own planning. A holistic approach is necessary to

make department plans and then execute them knowing fully well how their achievement will fit into enterprise goals. Further, the people who implement must know as well, therefore communication is the key to effective utilization of talents and skills. In order to foster trust or employees or staff in their management, a cooperative approach for productivity improvement and achievement is essential.

- (b) *Establishment of healthy working relationships* Healthy working relations are built up over time, and depend largely on faith and trust between managers and employees. This requires the participation of both parties and it is important that employees appraise the manager's input just as the latter do the employee's productivity. Employees should be able to communicate their thoughts, feelings and ideas to managers without fear or apprehension of being reprimanded. Healthy relations develop only in an environment of give and take, and where ideas are generated.
- (c) *Development of people* The staff resources of an organisation need to be developed keeping in mind the rapid changes in the business environment taking place from time to time.

Being incharge is no more about being the centre of attention. Today's leaders need to show genuine interest in whatever they are trying to achieve. They have to be kind, gentle and more empathetic to their staff if they want them to achieve optimally for the organisation. Team work is the key today and not the 'you' and 'me' attitudes that most managers adopted in the past.

Thus, using the power of human resources is not done by managing or leading them but by inspiring them. Managers must build self-confidence in their team, by praising every little achievement in the presence of others. Pick out the persons who have a strong set of personal values in setting high standards, and use them to lift the spirits of the team to achieve to potential. Managers should be like the conductor whose power depends on his ability to make other people powerful without a sound. Give clear goals for achievement and reassess after a set time period. Staff should feel restless to achieve, then they develop.

It all starts with spending time to build and nurture a relationship, above and beyond the immediate task at hand. As Charles F. Kettering has so aptly stated:

We work day after day, not to finish things, but to make the future better ... because we will spend the rest of our lives there.

When dealing with people, therefore cleverness is not a substitute for good intentions and sincerity. Don't try to fool people because they will see through it even when they appear quiet and timid.

In order to achieve these objectives, it is important to set individual interests (goals) of staff against those of the employers (management) and see how well the two can be integrated. Figure 25.2 highlights these interests for comparison.



<i>Organisation</i>	<i>Candidate</i>
 <ol style="list-style-type: none"> 1. Good pay. 2. Permanence of job. 3. Safe and healthy working environment. 4. Sociable working hours. 5. Opportunity for development. 6. Recognition. 7. Justice. 	<ol style="list-style-type: none"> 1. Low unit staff cost. 2. Maximum productivity. 3. Stable workforce 4. Loyalty. 5. Cooperation. 6. High morale. 7. Initiative. 

Fig. 25.2 *Comparison of employee and employer interests*

The interests indicated in Fig. 25.2 are not completely incompatible and can be satisfied, to a large extent, by the proper interaction of all the resources of the establishment as indicated in Fig. 25.3.

<i>Condition necessary</i>	<i>Employee expectations Fulfilled</i>	<i>Employers expectations Fulfilled</i>
1. Good pay and permanent employment.	Basic need satisfied. Economic security.	Stable workforce Low turnover.
2. Safe and healthy working (conditions) environment.	Job satisfaction. Contentment.	High productivity. High morale and low unit staff cost.
3. Sociable working hours.	Interest in work showing creativity, initiative, attachment to job.	Cooperation.
4. Recognition	Emotional security opportunity	Loyalty. Development.
5. Justice.	Confidence.	Loyalty.

Fig. 25.3 *Basic conditions necessary to bring about interaction of staff and employers*

It is clear from Fig. 25.3 that, to be able to work to their highest potential, people need the physical conditions necessary for safety and comfort at work, in addition to emotional and economic security.

FUNCTIONS OF A PERSONNEL MANAGER

The functions of personnel manager or department may therefore be summarized as:

- Manpower planning
- Maintaining staff records
- Staff recruitment and selection
- Placement and induction
- Training and development
- Setting fair remuneration structures
- Developing appraisal system
- Developing incentive schemes
- Maintaining good public relations with unions, staff and customers.
- Designing achievement-oriented union management relations
- Establishment of clear and simple discipline and grievance procedures.
- Outline promotion policies
- Planning health and safety procedures for all at work, customers and visitors.
- Establishing liaison with educational and other institutions.

Thus the functions of personnel managers basically refer to man-power planning, their recruitment and selection, orientation, placement and continuous monitoring of their contributions to the growth of the organisation.

Manpower Planning

The success of any organisation depends to a very large extent on the contribution its manpower or human resources make to the achievement of its goals. Those incharge of human resources therefore need to ensure that the establishment has the right number of staff with the required skills, at the right time and place, to achieve maximum organisation and employee goals. Human resource planning (HRP) therefore aims at acquiring, improving and retaining its people and their skills, at the same time training and developing them with time, for better and greater productivity. HRP has seven basic constituents on which the functions of personnel departments rest.

- Assessment of staff requirements of an organisation.
- Inventory of existing staff.

- Estimation of vacancies, leading to additional staff needs as in cases of retirement of staff.
- Advance planning in case of proposed expansion of services or re-designing in the light of equipment technology use.
- Development of employees to maintain continuity in the light of changes in staff requirements and availability.
- Planning staff retention schemes.

The objective of manpower planning are to ensure that staff are available when required, and anticipate future employment needs commensurate with trends, replacement needs and growth of organisation. Planning for staff also helps to control labour cost, especially in food service establishments where operations normally face the problems of peaks and troughs of activity. All these require the ability to cope with both internal and external pressures of the business environment, such as internal policies involved with pay, productivity and participation, and external pressure through union agreements or government legislation or simply changing equipment, style of service and menus to suit the changes in tastes of customers.

With the catering sector becoming more and more unionised, collective bargaining and writing clauses for management rights are important functions of the personnel manager.

The successful integration of physical, financial and human resources is made possible by drawing up a functional programme which can be systematically put into practice by the personnel managers or departments of organisations. Such a programme should cover four aspects concerned with people at work namely, organisational planning, staffing, terms and conditions of employment, and personnel administration.

Organisational Planning

This includes planning for the future of the organisation in terms of the number of people and types of skills required to man the jobs. This is normally referred to as *manpower planning*. There are a number of factors which would seriously affect the number of people required and the nature of their skills. These are:

- Plans to expand the services to cater to a larger number of people affecting service staff more than kitchen hands.
- Any future plans to install labour saving devices requiring existing staff skills to be modified by training.

- A change in the style of service envisaged to meet the increasing demand of customers for quicker service would necessarily affect staff numbers and skills.
- Plans to introduce mobile catering services, and take away or pick up services in additions to the existing operation would also affect staffing.

Staffing

Staffing involves hiring people for work in a manner that their skills are matched to job requirements. Staffing is a very specialised field concerned with the recruitment, selection, placement, induction, training and the development of people. All these factors are dealt with later in this Unit.

Terms and Conditions of Employment

For staffing any organisation adequately, it is important to draw up certain terms and conditions of employment which are mutually acceptable to the prospective employee and the employer. It is customary for the employer and employee to sign a mutually acceptable written contract which presents the terms and conditions of the employment. While this would be the ideal way of staffing an organisation, it does not always happen in practice. Particularly in catering establishments situated in areas of dire poverty and unemployment, people including children are willing to take up jobs of errand boys, or servers, and dishwashing personnel. Especially in underdeveloped and developing countries this is common in wayside cafeterias and other small food service outlets. This also suits the employer who can reduce his labour costs by paying a pittance for unskilled jobs. In such cases, the employee is ignorant of any terms and conditions and is happy to receive his meal and whatever else in terms of pocket money he gets to carry home.

Thus, although formal terms and conditions are not exchanged, they are set by the employer and communicated verbally. In most small establishments, the terms are simple such as Rs 5 per hour with free meals and tea. There is generally no union involvement because of poverty and illiteracy among the employees.

As the size of the establishments increase and the staff employed are more qualified, they know their rights and insist on a written contract. This contract generally takes the form of an appointment offer indicating the terms and conditions of employment. The law requires every employer to include in the contract, names of the parties, date of start of the employment, date for continuous service, pay, working hours, paid holidays, pension scheme, notice

periods, job title, disciplinary rules and grievance procedures. If these are accepted by the applicant in writing or through a signature, the contract is concluded.

The terms and conditions cover salary, its mode of payment, weekly, monthly, by cash or cheque, and the services and benefits available to the employee. In addition, conditions in which compensation would be due to the employee, the period and nature of employment such as six months or a year in ad hoc, temporary or permanent capacity, are also stipulated.

Personnel Administration

Personnel administration covers the maintenance of personnel records, staff relations, manpower research and staff training and development.

Personnel records in terms of age, date of joining, length of service, qualifications, skills, pay scale, performance on the job, training and development needs, health status, date of retirement, in addition to maintenance of recruitment lists and so on.

Staff relations: Negotiating with trade unions, setting up grievance procedures, developing incentives and bonus schemes; initiating employee development schemes, improving communication methods, and keeping all departments well informed.

Manpower research: Working out percentages for turnover in different job positions, investigating where necessary the reasons for the same. Then relating these to qualifications, personality and health status and utilising this knowledge in recruiting wisely in the future. Finding out personality traits in people which make them accident prone and therefore unsuitable for certain jobs.

Training and development: Setting up procedures for internal promotions. Identifying training needs and job development areas. Development of schemes in relation to identified needs. Establishing liaison with educational institutions for training off the job through refresher courses and on the job for improving skills for promotions.

Having drawn out a functional programme, every progressive organisation works towards implementing it in a manner that will provide greater harmony, job satisfaction, high morale and a sense of identity and loyalty to the organisation.

Chapter 26

Staff Employment

Employing staff is a tedious, complex and costly exercise involving a number of procedures which have all to be formulated within the legal framework in the country. Since the laws keep on changing to meet newer needs of citizens and government policies, they require organisations to adjust to those changes in their working environments. Many steps are involved in staff employment such as:

- Advertising
- Recruiting
- Selecting and Placement
- Orientating
- Training

ADVERTISING

Advertising seems a good way to attract the type of personnel that an establishment may like to consider for employment. With a number of media options available today it may however require some thought before choosing how to advertise. Catering establishments have often resorted to the print media as indicated through Plate 26.1, but it will be noticed that this is done usually by large hotels or food services with expansionary goals. The smaller establishments preferring alternate personalized methods such as work of mouth, contact with employment agencies and the like.

For medium sized food services, advertising should be considered very carefully since they are on restricted budgets. A few questions should be answered especially if advertising for the first time, to arrive at the most economic way of spreading the message that staff are required. These questions are:

ABC GROUPS OF HOTELS
REQUIRES

KITCHEN STAFF	FOOD & BEVERAGE STAFF
<p>1. CHEF de PARTIE (CODE 01/HSP) Candidates with a Diploma in Hotel Management, with 2-3 years experience in a Luxury hotel/ Restaurant in a similar capacity; or higher Secondary with a Certificate Course in Cooking and Baking with 6-8 years trade experience & at least 1-2 years in a similar capacity. All candidates must have command over the English language. Age: Around 30 years.</p> <p>2. COMMIS-I (CODE 02/HSP) Candidates must be Matriculates or Higher Secondary and/or have passed a Craft Course in Cooking and Baking from a Food Craft Institute, with a command over English language. Age: Below 35 years.</p> <p>3. COMMIS-II (CODE 03/HSP) Candidate must be Matriculate having experience of 3-4 years with at least 1-2 years in a first class hotel/ restaurant. Age: Below 35 years.</p> <p>4. COMMIS (CODE 04/HSP) Candidates who have completed their apprenticeship training under the Apprenticeship Act/or having 3 years experience with at least 1 year in a first class hotel/restaurant may apply. Age: Around 25 years.</p> <p>5. KITCHEN STEWARDS (CODE 06/HSP) Candidates should be a graduate with a minimum 2-3 years experience in the Kitchen Stewarding department of a first class hotel. Diploma in Hotel Management from a recognised institute will be an added qualification. Must speak English fluently and have a pleasing personality. All posts carry attractive emoluments plus other benefits as per Company's rules. Please apply within ten days with full particulars and a recent passport size photograph to:</p>	<p>1. CHEF de RANGS (CODE 02/HSP) Candidates should be Matriculate or Higher Secondary with a Certificate in restaurant & Counter Service or 3 year Diploma in Hotel Management from a recognised Craft Institute. Must speak English fluently and have a pleasing personality. Experience: 1-2 years in a similar capacity in a leading hotel. Age: Around 25-30 years.</p> <p>2. COMMIS de RANGS (CODE 03/HSP) Candidates must be Matriculate or Higher Secondary with a pleasing personality and good command of spoken English. Experience in a similar capacity is desirable. Age: Around 20-25 years.</p> <p>3. TRAINEE ASSISTANT COMMIS de RANGS (CODE 07/HSP) Candidates must be Matriculate or Higher Secondary with a pleasing personality and good command of spoken English with aptitude to work in hotel industry.</p> <p>4. ROOM SERVICE ORDER TAKERS (CODE 05/HSP) FEMALE Candidates should be Higher Secondary or Diploma holders in Hotel Crafts with a good command of English. Knowledge of a foreign language is desirable. Experience of work in a Luxury hotel in a similar capacity preferred. Age: Below 28 years.</p> <p>5. RESTAURANT HOSTESS (CODE 06/HSP) Candidates should have presentable personality, graduates/Diploma holders in Hotel Management with fluency in English. Knowledge of foreign language is desirable. Age: Below 26 years. Relaxation in age & qualification may be considered in exceptionally good candidates.</p>

The Personnel Manager,
ABC Group of Hotels,
New Delhi-110057

All envelopes and applications must bear the Code Number of the post applied for, with the name and post.

Nirula's®

REQUIRE
FACTORY MANAGER

Should have a Degree in Food Technology with at least 10 years' experience in Fruits/Vegetable processing.

MANAGERS (F & B)

Should have a 3 year Diploma in Hotel & Catering Management with at least 7 years' experience.

F&B CONTROLLER

Should be a Cost Accountant with about 10 years' experience of audit, pricing, cost control and MIS.

RESTAURANT MANAGERS

Should have a 3 year Diploma in Hotel & Catering Management with a total of at least 4 years' experience.

CHEF (CONFECTIONERY)

Should preferably have a 3 year Diploma in Hotel & Catering Management with 5 years' experience of working in a reputed Confectionery.

ASSISTANT CHEF (CHINESE)

Should have at least 5 years' experience of working in a reputed Chinese Restaurant.

ADVISOR (REFRIGERATION)

Retired Engineer from a reputed company in the field of Refrigeration, with in depth practical exposure to all areas of Refrigeration.

Excellent remuneration package commensurate with experience and qualifications assured.

Apply in confidence, with latest resume and passport sized photograph, within 10 days to:

Sr. Manager - Personnel & HRD, Nirulas Corner House Ltd, L-Bock, C.Circus, New Delhi -110 001.

THE TAJ GROUP OF HOTELS
INDIA'S FINEST HOTEL CHAIN

REQUIRES

Sales Managers

at Bombay, Delhi, Madras, Bangalore.

The Taj Group of Hotels is seeking Sales Managers for its hotels in Bombay, Delhi, Madras and Bangalore.

The job involves preparing and implementing the sales strategy for the hotel, working closely with corporate houses, travel agencies, and other national and international organisations that are the source of the hotel's business in tracking expenses of such houses etc.

Applicants should have the following qualifications:

- Understanding the general nature of hotel business.
- Implementing changes in new policies.
- Working with opening departments like: food cost and expenses, inventory.
- Using the advertising agency, etc.

Applicants will lead a team of staff, manage and coordinate with other departments and will be responsible for achieving corporate targets.

The ideal candidates should be 30-35 years old, preferably with a management degree, a minimum of 5 years' experience with atleast 3 years as a Sales Manager, and strong leadership, creative and aptitude skills.

It is an excellent opportunity for those who are ready to take up the challenge, presented in a full time, a seven day-a-week contact position. It is an exciting opportunity to work for the world's finest hotel chain.

For more information, please contact the Personnel Manager, The Taj Group of Hotels, L-Block, C.Circus, New Delhi-110 001.

Plate 26.1 Sample advertisements

Taj Air Caterers
Indira Gandhi International Airport Complex,
 Gurgaon Road, New Delhi-110037

THE TAJ GROUP OF HOTELS

Taj Air Caterers, with units located at Delhi and Bombay, is the Airline Catering Division of the Taj Group of Hotels.

We are the market leaders catering to large number of reputed international and domestic airlines. We are now poised for major growth and to meet our increasing Human Resource requirements we require dynamic professionals for the following positions at Delhi immediately :

TRANSPORT MANAGER

We have a large transportation fleet, comprising hydraulically operated Hi-Loader Trucks, delivery Vans and Cars. We are looking for a seasoned professional, at least a diploma in Automobile/Mechanical Engineering, with 10-15 years of relevant experience in a reputed organization, out of which he must have spent at least 3 years in a similar capacity. We expect Transport Manager to ensure very high degree of reliability of the entire fleet. Candidates possessing lesser experience can also apply. They will be suitable considered for the position of Assistant Transport Manager.

TRAINEE FLIGHT SUPERVISORS

Graduates with pleasing personality and excellent command over English. Candidates with a catering background will be given preference.

These positions offer excellent remuneration and perquisites.

Please send your detailed resume with a recent passport size photograph within seven days at the following address.

**The Manager (Human Resources)
 TAJ AIR CATERERS
 I.G.I. Airport Complex, Gurgaon Road
 New Delhi-110037**

VACANCY NOTICE

LOCATION: New Delhi
 JOB TITLE:
 DEPARTMENT:
 GRADE:
 EMOLUMENTS: Basic + Allowances
 JOB SUMMARY:
 QUALIFICATIONS & EXPERIENCE:
 AGE RANGE:
 HOURS OF WORK:
 CLOSING DATE FOR APPLICATIONS:
 Date Signature

Catering &
RESTAURANT

Company with more than 50 outlets and over 1000 employees require the following senior staff

PERSONNEL & ADMINISTRATION MANAGER
(IRS 40,000 - 50,000 p.m.)

MATERIALS MANAGER
(IRS 40,000 - 50,000 p.m.)

MARKETING MANAGER
(IRS 40,000 - 50,000 p.m.)

SECURITY OFFICER
(IRS 30,000 - 40,000 p.m.)

SENIOR ACCOUNTANTS
(IRS 30,000 - 40,000 p.m.)

FOOD & BEVERAGE CONTROLLER
(IRS 30,000 - 40,000 p.m.)

RESTAURANT MANAGERS
(IRS 20,000 - 30,000 p.m.)

SEN. OPERATIONS MANAGERS
(IRS 30,000 - 40,000 p.m.)

ASST. GENERAL MANAGER OPERATIONS
(IRS 60,000 - 80,000 p.m.)

All the above posts carry free Furnished Accommodation, Food, Conveyance, Air Ticket etc. Those who have minimum 3 years experience in similar position and in the age group 30 - 40 apply to Fax +974 321110 OR Write to P. O. BOX 4746, DOHA, QATAR

A LARGE REPUTED PUBLIC LIMITED COMPANY NEAR DELHI REQUIRES THE SERVICES OF :

"CATERING SUPERVISOR"

The Incumbent should be Graduate and have passed diploma in Hotel Management/Catering and Nutrition/or any other equivalent diploma from recognised institute. The applicant should have sound health and good physique and have at least 5 years working experience in any large Industrial Complex.

Deserving candidates will be given attractive salary alongwith other perks a per rules of the company.

Please apply stating age, qualification, experience, salary drawn and expected within 10 days of this advertisement, superscribing the post applied for on the application and envelope to Post Box 0000, New Delhi.

Plate 26.1(Contd.) Sample advertisements

Q1. *Do I need to advertise at all?*

Advertising can spread to a large readership very speedily, but it is necessary to consider which particular audience you want to reach, in your own areas of operation.

Literature distribution, or a small scale Public Relations (PR) campaign may be more effective.

Q2. *What do you want to achieve through advertising?*

A product, organisation name or a service that will live up to the message.

Q3. *Who do you want to reach?*

Competitors, students of catering colleges, house wives who are good cooks, retired teachers of catering or other?

All this may sound basic but is very important for chalking out cost-effective precise messages.

Advertising while being time consuming also results in the collection of response mail and a lot of paper work trying to sort-out suitable candidates for each job position.

Q4. *Are you ready for all the administrative work involved with advertising?*

Would you rather go for personalized word of mouth, or less costly ways of spreading vacancy positions in your organisations. Cooks usually know of others in the field who would like to change their jobs or who are unemployed and can be recommended if desired.

Advertising through local papers, professional journals, on notice boards of the organisation or through notices sent to catering and allied institutions and food service organisations. can be effective for medium to small sized food services Advertising however, need to be well designed and worded precisely to attract only limited applicants. If it is vague the number of applications will be so large that the initial screening would take up a lot of useful time and effort. Plate 26.1 gives samples of advertisements and notices for different posts in catering establishments.

RECRUITING

The process of recruiting involves attracting qualified candidates for the purpose of filling vacant positions in an establishment and is also called recruitment.

For recruiting, the tasks to be performed in a particular position must be identified, and the personnel requirements for the job listed out. This helps to match the skills of candidates with the job requirements and finally get suitable employees. Effective recruitment therefore requires:

- (a) A clear idea of job requirements.
- (b) Information regarding the applicant's age, qualifications, experience, skills, objectives, interests, health status and background.
- (c) Projection of a fairly realistic but favourable image of the establishment, in order to attract qualified people.

Food service establishments are characterised by a variety of jobs, ranging from relatively unskilled ones like dishwashing to semi-skilled ones like peeling, chopping, cutting or using kitchen machines and skilled ones such as food preparation and service. The latter requires not only knowledge and skill but an artistic and aesthetic culinary sense to present the food attractively. It has to be accepted that one cook is not as good as another. Recruitment of catering staff has to be considered from the job content as well as the personality point of view as staff need to develop good rapport with customers as well. Sometimes a well prepared dish may not attract customers because the service staff do not take pains to present it properly to the customer.

Recruitment Sources

A number of sources can be tapped for recruiting catering staff some internal and other external. These are indicated in Fig. 26.1.

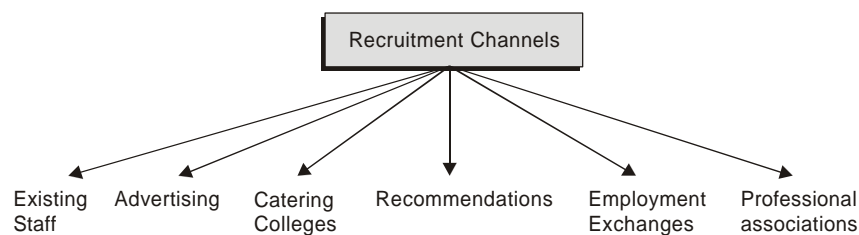


Fig. 26.1 Sources of recruitment

Existing Staff

Family members, relatives and friends of existing staff of the establishment. The advantage of this source is that the bonafides of recruits can be easily

checked. Further, existing staff stand guarantee for any persons they recommend. Also if two relatives are working in the same department the degree of cooperation and understanding between them is likely to be greater at work. Although this may not always be true. Cases have been reported where this sort of placement creates distractions and inefficiency.

Advertising

Advertising is a good way to invite talent on merit and introduce new ideas and creativity into organizations from a large number of applicants with suitable qualifications and experience.

Catering Colleges

Students from catering colleges may be picked up during periods of internship training, when their abilities can be judged. The advantage of this source is that the recruit has a basic knowledge of all catering skills and is keen to get employed soon after qualifying. The recruit is likely to pick up any work quickly, and would be keen to prove his or her worth by doing their best. The likelihood of getting some fresh ideas for work improvement and job development is greatest from this source.

Recommendations

People in the catering trade who may be laying off qualified people who are temporary on ad hoc, may be recommended for their skills against a permanent vacancy.

Sometimes personal contacts with friends and relatives may recommend trusted people who have skills that can be used to advantage such as accounting, management, purchasing or cooking skills.

Employment Bureaus

Employment exchanges or bureaus, maintain lists of unemployed people who are looking for jobs. They can suggest names after matching the skills required by the establishment.

Professional Associations

These bodies too maintain a list of its qualified members from which names can be recommended that match the required skills. Recommendations by

such bodies made directly or through the mailing lists maintained by them are a useful source of recruiting the right people for the vacant positions.

Recruitment Procedure

Those in charge of recruitment are provided with job requirements of the vacancies to be filled. In large establishments which have personnel officers or departments, requisitions are filed on prescribed forms by the departments in which the vacancies exist. These are then advertised or suitably communicated to recruitment sources as discussed above.

It will be noticed from the samples of advertisements given in Fig. 26.1 that the recruiting organisation gives the details necessary to project its image to the applicant. It would be apt to state that organisations with a good public image are likely to attract better qualified candidates than others. For example, a post of catering supervisor in a public school hostel would be more attractive to candidates than a midday meals supervisor in a government school. Similarly, a new self service cafeteria would need to put in lot more effort to get staff than, say, a unit run by a well known fast food organisation in Mumbai or Nirulas' in Delhi, although they may be offering equally excellent growth and development opportunities.

All recruitment procedures require that candidates send their applications for the posts by a specified date. Some provide a designed application form to be completed by the applicant, others leave it open to receive information in the applicant's own handwriting or typed as they may choose. Application forms are expected to help the organisation to obtain data regarding age, basic qualifications, experience, background, health status, etc., of the applicants. The personnel manager or department then sifts out those applications which comply with the overall requirements of the job, and passes them on for further scrutiny to the selection committee. This then deals with the applicants to make the final selection for employment.

Recruitment Policy

Recruitment policies are guidelines which help to standardise selection procedures. The policies usually lay down minimum qualifications, relaxation limits, age preferences, weightage for experience and other qualities depending on specific job requirements. Policies also determine the establishment of selection interview and testing procedures.

Once developed, policies help to deal with unusual situations because of the flexibility built into them. Policies help to screen applications quickly,

with little chance of disagreements occurring between members of screening committee. However, policies require to be reviewed periodically and revised in the light of past experience with personnel or skills available to the employer.

Staff services can be better utilised if recruitment policies and procedures are laid out in advance of the need to recruit. In catering, it often happens that managers do not think of staff replacement until a position falls vacant. This is common particularly in small establishments where the time and the costs involved in recruiting, selecting and employing people methodically, is considered as time and money wasted. Another reason is that in catering operations one person willingly fills in for another, because of the spirit of team work present in small establishments. This is more so if the vacancy is for a position senior to the one the person is working for and 'filling in' therefore brings extra money as well as status. Managers fail to understand that overworking existing staff who 'fill in' vacancies for long periods, can cause a serious drop in efficiency, loss of customers, rise in accidents and ruin personnel relations lowering the morale of staff. All these effects may prove more costly in the long run when compared to planned recruitment and timely employment.

It is good policy to determine the manpower requirements of an establishment over a set period or time, and prepare recruitment lists through personal contacts, in advance so that advertisement is not required each time a post falls vacant.

For instance, well maintained records will indicate the number of persons on temporary fixed period employment or those retiring within the period. Vacancies can thus be forecasted well in advance to enable proper selection to be made. This also helps to organise selection or train existing staff for promotion or transfer as the case may be.

According to Michael Allmond¹ while factors like pay attract staff, it is the intrinsic factors like good supervision, team spirit, communication and training which influence whether or not they will stay. Thus, equal to the problem of staff recruitment is that of retaining staff.

SELECTION

Selection is a process of identifying and picking up people whose probability of success in the job is maximum, and who are likely to stay long enough with the organisations to add to its development. The process involves a number of objective and subjective evaluations with a view to separate potential employees from those unlikely to fit the requirements of the job.

1. *Hospitality*, February 1989, p. 7.

Irrespective of the nature of the job, a very large number of applications is normally received. The reasons for this are, the existing high levels of unemployment, people wanting to improve their opportunities or perhaps a very vague advertisement for the post. Systematic procedures for selection are therefore essential.

Selection is generally made by a committee comprising a number of members representing personnel departments, employee unions and managers of departments in which the vacancies are to be filled. This is to ensure that qualifications and not personal factors are the basis for the choice of the candidate. In smaller establishments the owner manager may be performing all the functions and may therefore select candidates with the help of his supervisor or assistant. Alternatively, he may be the sole person to decide.

The selection process is based on exchange of information between the organisation and the candidate. The former provides a description of the establishment and the job, while the latter shows his capabilities as outlined in Fig. 26.2.

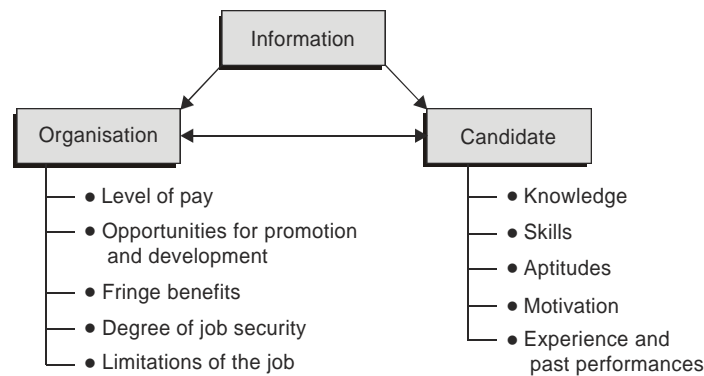


Fig. 26.2 Information exchange between organisation and candidate

While exchanging information, objectivity must be maintained and the image of the organisation not projected in an unduly favourable manner. This will raise the expectations of the applicant and if employed, will later result in low job satisfaction and absenteeism due to frustration. Such a situation proves very costly to an establishment. From the applicant, only information that is related to the job should be requested without going into irrelevant personal history.

The following criteria should therefore guide staff selection

- Age, qualifications and experience.
- Compatibility with job requirements.

- Social skills indicating ability to work with other people.
- Family background, optimistic outlook.
- Health status
- Special interests.
- Self confidence, presence of mind and initiative.
- Ethical values.

Steps in Selection

There are seven distinct steps involved in the selection process:

Step 1 Preparation of job requirements as shown in Fig. 26.3. This statement should be prepared after a thorough analysis of the job and the staff who have manned it in the past. If carefully prepared it can increase the chances of selecting just the 'right person' for the job.

Job Title:	Head Chef
Permanent/Temporary/Ad hoc:	
Age: 25–40 years	
Basic Qualifications: Cooking and Presentation skills.	
Experience required: 5–10 years in a catering organisation.	
Personality traits:	
Confident	
Inspiring	
Sociable	
Pleasant	

Fig. 26.3 *Job requirements for a head cook*

Step 2 Screening applications which conform to the job requirements. Other information may give a lead to the personality traits which can be further known through tests and interviews.

Step 3 Objective tests of skill, not longer than 30 minutes need to be organised, involving written and practical work. These are intended to test basic knowledge and ability to apply it to practical situations.

For supervisory skills candidates may be subjected to written tests, followed by observations on the job after which only selection may be made on temporary basis to be confirmed after a year if found suitable.

Step 4 Appraisal or test evaluation is done by a simple process of scoring to pick up a few top performers for interviews.

Step 5 Holding interviews indicate personality traits, like confidence, stability, poise and presence of mind, which may not be evident from the applications or written tests. For senior positions more than one interview may be conducted to choose the best candidate.

Individual interviews are normally conducted by a board of four or five members selected for the purpose. However, group interviews may also be held for evaluating social skills of candidates, so important to catering jobs.

In group interviews a problem is presented to a group of candidates who are asked to discuss it among themselves and present a solution within a fixed time period. The behaviour of the candidates is observed and an assessment of their abilities to work in groups is made on a predetermined rating scale.

Step 6 The assessment of candidates who are successful at the interview is called for from two separate referees, whose names are indicated by the candidates on their application forms. This is particularly done in the case of management positions.

Step 7 The final stage is the medical examination which if clear, entitles the candidate to a contractual agreement with the organisation as its employee.

While these seven steps are formally laid out to be followed in a selection procedure, they involve a great deal of time and administrative work. In food service establishments, the most frequent vacancy area is at the operative level, where food is actually prepared, cooked and served. It is here that the highest turnover is recorded. The reasons are that certain jobs like those of dishwashing or peeling, cutting, etc. become so routine that work fatigue sets in. In addition, the wage levels in the catering sector are so low in comparison to other industries, that there is no incentive for people to stay on. Even those jobs which require special skills have little or no promotional avenues. For this reason, while selection procedures are important, they have to be reinforced to offer incentives and benefits particularly for positions involving routine work.

STAFF RETENTION

It is as important to retain staff as it is to select the right people for the right job. This is specially so with catering establishments which are plagued with absenteeism and staff turnover for various reasons.

The high rates of absenteeism and labour turnover characteristic of catering establishments result in higher ultimate costs to the organisation. In fact, a vicious circle gets established as indicated in Fig. 26.4.

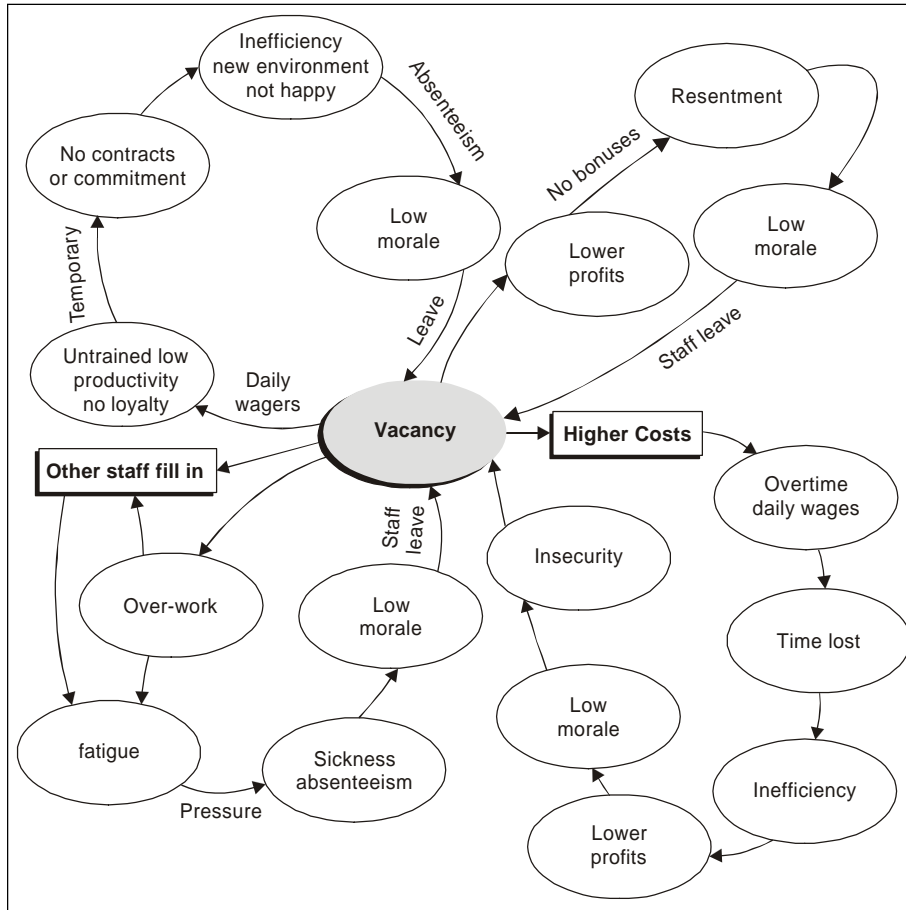


Fig. 26.4 *Effect of unplanned recruitment and selection*

Most leave and absenteeism among catering personnel is due to boredom, overwork, fatigue and frustration. Surveys conducted on a range of catering units indicate an average of 8–10 days sickness per employee per year. However, 32 per cent of the total units surveyed showed above average sickness days as shown in Fig. 26.5.

The relationship between recruitment and labour turnover is that they rise and fall together, that is, when turnover increases, increased recruitment becomes necessary and vice versa. This is an important factor to consider in manpower planning. To reduce the chances of staff turnover, an understanding of the attributes which are important to recruits is essential. Figure 26.6 indicates the expectations of recruits from jobs. It illustrates that the range of expectations of job-seekers have gradually increased and pay and promotions alone do not

prevent staff turnover, although Michael Riley² has proposed that *an employee's propensity to leave an organisation declines with age and length of service.*

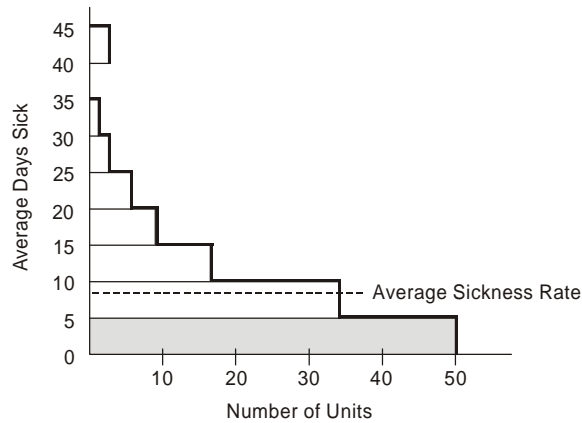


Fig. 26.5 Employee sickness rate per year

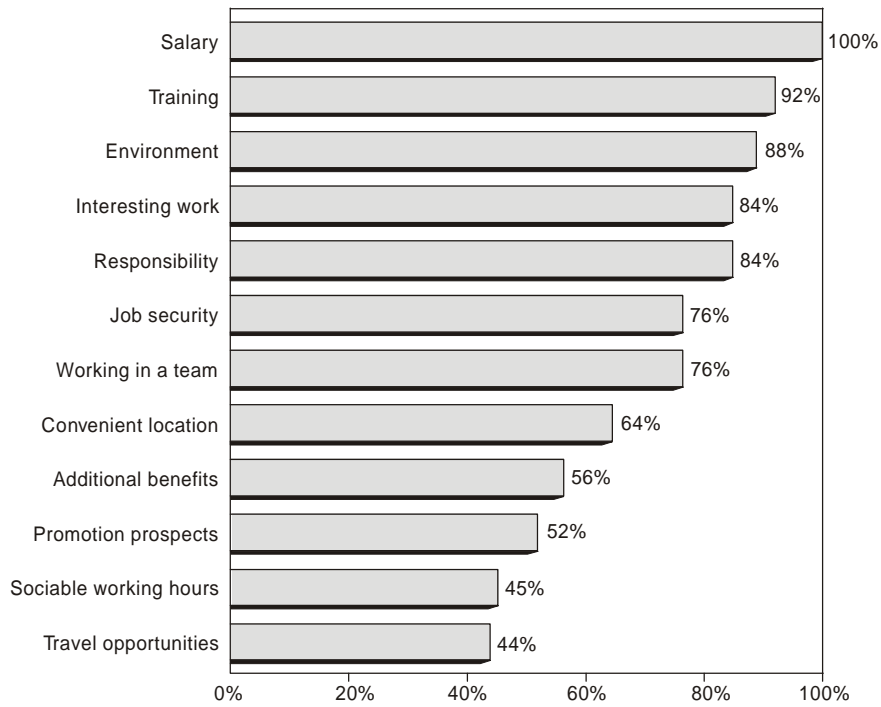


Fig. 26.6 Expectations of Recruits from jobs

2. Riley, M., Recruitment, labour turnover and occupational rigidity, *Hospitality*, March 1981.

A selection procedure should enable an organisation to be the *chooser* instead of the *beggar*. The situation depicted in Fig. 26.4 however, proves the latter, in which case the establishment brings upon itself a situation of urgency, where it has no choice but to take in the first person available. This is because the nature of catering is such that the work must go on and the food served on time to customers irrespective of the problems in the kitchen or behind service areas.

As seen from Fig. 26.6 every prospective employee works for an attractive salary package, as shown by the 100 per cent expectation graph. It is therefore of utmost importance that clear employment and wage agreements, or contracts are offered, commensurate with the skills management is looking for.

EMPLOYMENT AND WAGES

There are a number of laws enacted in every country which regulate and affect policies and procedures for appointment and employment of staff. While the laws are discussed in Chapter 29 some basic matters are outlined to provide guidelines to employers. In any case employers need to consult legal advisors for specific problems that may arise such as accidents at work, compensations and so on.

Contracts of Employment

These are basically of two main types, oral and written.

Oral contracts

A verbal offer of a job at a stated salary and benefits amounts to a contract of employment. It is binding by law and just as valid as a written signed contract. The contract has been accepted when an employee starts work. The terms of a verbal contract cannot be changed unilaterally by the employer unless the employee accepts those changes. In practice all oral contracts should be followed by a written statement confirming the terms offered and the date of start of the appointment. This ensures that oral agreements are not misinterpreted, and subject to recollection or memory lapses.

Written Contracts

A written contract details the terms under which an employee agrees to be legally bound in the case of employment. It is signed by both employer and employee to indicate the obligations they are expected to fulfil towards each

other and thereby the organisation. Figure 26.7 indicates a sample of written contract.

Dear Sir,

With reference to your application and subsequent interview we have pleasure in offering you an appointment as a catering management trainee on the following terms and conditions:

1. Appointment: This appointment will be effective from 1 Jan. 2003. You will be on training for one year, followed by one year on probation before being confirmed. The training and probationary periods may be curtailed or extended at the sole discretion of the management.
2. Duties and responsibilities: During the training you will be placed in all the departments of the catering establishment for both operative and managerial experience. At the end of each placement, you will be expected to submit a report of your work which will be evaluated by your supervisor to assess your abilities.
3. Remuneration: A consolidated salary of Rs 3,000 per month will be paid while under training, increased to Rs 4,000 during the period of probation. On confirmation, a regular salary scale will be followed suited to position. Conveyance and house rent allowance will also be paid as per the rules of the establishment.
4. Employee Benefits: Provident fund, medical expenses, leave facilities, retirement benefits, etc. would be provided as set out for other employees.
5. Termination of Service: During the period of training or probation, the appointment may be terminated by either party, on a notice of one week or on payment in lieu thereof. This may be done without giving any reason. After confirmation, services can be terminated only if one month's notice for every completed year of service is given, subject to a maximum of three months or payments in lieu thereof.
6. Verification: This appointment is based on the information supplied by you in the application form and will become null and void if an error is discovered at any time.

Please sign and return the duplicate copy if the appointment offer is accepted by you on above terms and conditions, so that this contract can be treated as concluded.

Your faithfully,

MANAGER
(Personnel)

Ref:
Dated:
Encl: As above.

I fully understand the terms and conditions of my service and accept the same without reservation.

Signature of employee

Fig. 26.7 Sample contract of employment

As for oral contracts, the written ones too cannot be changed or amended without the agreement of the employee, or without due notice.

Interpretation of Contracts

Contracts not only express the terms spelt out but some *implied terms* as well, which may be read into the contract by a court in case of a dispute. These may be:

- Terms which reflect established normal practice at work which are general, reasonable and definite—often referred to as custom and practice.
- Terms referring to the primary rights and duties with the employment relationship such as mutual trust and confidence.
- Terms which are necessary for operating the contract, filling any gaps in the contract which were apparently intended.

If preferred, an employee may be informed that specific details of some of the required information, on pensions, deductions, taxes, safety procedures grievance procedures, leave, benefits and so on are contained in a reference document with the employer.

It is surprising however, that many managers in the industry still think that a contract of employment benefits the employee only, with very little if any in it for the employer. This is however, not true. Contracts have a lot of advantages for the employer too, as indicated below. They:

- Allow for flexibility in operation.
- Ensure confidentiality and the rights to protect an establishment's ideas and information.
- Prohibit staff from leaving without notice.
- Prohibit leaving staff from taking away the best staff or customers with them.
- Provide the right to deduct money owing, from an employees salary.
Set the right conditions for meeting changing business requirements.

Besides the selection method of employing staff, there are two more approaches which may be adopted for filling vacancies. These are the placement and promotion approaches.

Placement Approach

In this approach candidates are placed in the job for a period of one to six months. This is common in catering establishments, which generally prefer to

take catering students for training in different positions by rotation. This serves a twofold purpose. Teaching institutions are able to give students training in the practical situations while the catering establishment can pick up potential employees by noting their strengths for a particular position. It is possible to prepare reliable recruitment lists for various jobs in this way, which can be used when vacancies arise.

Promotion Approach

This offers a higher position with more pay, greater responsibilities and status to existing staff. In this method of employment the staff member must apply against the advertised post and compete for selection with outside applicants. A promotion so gained reflects outstanding performance and also raises staff morale and self confidence, acting as a motivator for staff and increasing their commitment to the organisation.

Selection for promotions also eliminates the mistake sometimes made, of promoting a member to the next higher position simply because he is very good at his present job. If the latter is done without competitive selection, one overlooks the possibility of the staff member not having the ability to cope with the demands of the new position. This is often referred to as the *Peter Principle* (Peter and Hall, 1969).

Irrespective of the approaches used in staffing an organisation, it is important to maintain a balance between skills and age of employees. More so, when employing for management positions. Where technical, human and decision making skills are necessary. it is hard to find all these in any one person, so selections should result in the skills of one person complementing those of another. For example, a catering manager who is a good decision maker with excellent technical knowledge may lack the human touch by virtue of being authoritative. Such a person requires a catering supervisor who can develop a good rapport with operational staff and get the work done efficiently.

Age is another important consideration. Staff of similar ages if employed in the same department are liable to retire at about the same time. This can pose serious problems for the organisation. Thus a balance is necessary to ensure that experienced people are there in every department to guide and train others. Also, managers at one level in different departments too, should not be the same age because it is not desirable to fill all posts of important interaction within the organisation with new entrants.

Thus, systematic staff planning can ensure a fair distribution of staff of different age groups complementing skills to suit organisational needs which change from time to time.

Finally, it must be remembered that no matter what techniques are used for selecting the right man for the right job, one element that overtakes them all is human judgement. While objective techniques are only information collecting exercises, this information has finally to be interpreted to determine suitability for the job.

ORIENTATION

The recruitment and selection process completes the formalities of bringing a new employee into an establishment, and every newcomer needs to be introduced to people and the environment in which (s)he is expected to work, and do his best. This introduction is called *orientation*, and if the employee is left in the midst of other people to find his or her own way, even the best person for the job may get lost or unnerved.

Orientation is thus, the guided adjustment of a new employee to the organisation, his work environment and the job. It marks the process by which employees are integrated into the organisation and its expectations.

The process also known as *induction*, communicates the organisation's basic philosophy, policies rules and procedures.

Orientation programmes can either be formal or informal. Formal programmes are planned and structured sessions conducted at a fixed time as is the usual practice in large establishments. Planned programmes usually cover the following aspects:

- History of the organisation.
- Its general policies and practices.
- Departments, their locations and functions.
- Staff benefits: location of employee facilities like toilets, change and rest rooms, medical rooms and canteens.
- Safety and other procedures and regulations.
- Positions of employee and relation to other staff in his or her department.

Different methods of communications are used for inducting the employees to the establishment, such as formal talks, films or slides, demonstrations formal get togethers and so on.

Formal Methods

These may be in the form of special lectures arranged with speakers from all departments to familiarize new comers with the total work of the organisation, its disciplines, achievements and goals.

Films or slides These may be used to introduce pictorially employees at work in all departments of the organisation, focussing on activities and processes adopted. Newcomers can therefore see at a glance where they fit into the organisation.

Demonstrations Experts from fire departments may be invited to speak about safety procedures and demonstrate the use of safety devices built into the establishment. This could be supplemented by taking a round of the different areas indicating the positions of fire alarm systems, extinguishers and fire or emergency exits. Sometimes colour codes are used for various devices which need to be explained. In establishments where fire drills are conducted regularly to give practice to employees for acting in an emergency, the procedure should be explained at the time of orientation.

Informal Methods

In such approaches programmes are usually unstructured in content and comprise of informal introductions to people and departments within the organisation. Informal get togethers organised for the new entrants, help them to make their own circle or friends, ask questions, identify superiors and gradually understand their jobs. These get-togethers may be at coffee breaks or lunch time or after working hours at the end of the day. Whatever the manner in which the new employee is inducted into the organisation, his first, orientation meeting is the official welcome to his new work place by the organisation. It should therefore be conducted with warmth and understanding, because the first few days on a new job are always accompanied by doubts and fears. The new entrant therefore needs assurance, self confidence and the right direction. The more involving and pleasant this is, the more comfortable the employee feels, and the quicker he finds his footing in the organisation.

Orientation however, does not include training in job performance and the responsibilities that go with it. It only provides basic information on working conditions, rules and regulations, pay and benefits and introduction to management and colleagues. It is for the employee to show his skill on the job in due course.

Thus, orientation marks the beginning of a process of socialization and development of work attitudes through which the employee is indoctrinated to the norms, values and procedures of the organisations.

Socialisation

Takes place over a period of adjustment by which employees learn what is expected of them in terms of acceptable behaviour and performance.

An ideal induction program is one that instills confidence and a sense of pride leading to attachment and generating a sense of loyalty to the establishment. It makes newcomers feel part of a productive team. By facilitating the socialisation process orientation contributes to organisational effectiveness by helping employees to get integrated into the organisation and become productive as soon as possible.

However, the ease with which employees adjust to a new job and the work environment varies with individuals, and often depends on the expectations they bring to the job. If these are realistic, adjustment becomes smooth and easy. If expectations are unrealistic adjustment becomes more difficult and sometimes people take a very long time to settle in the latter case orientation can be instrumental in modifying employee expectations.

Work Attitudes

Orientation programmes if structured well, can be critical in affecting attitudes of employees to their work. Most managers realise the entrants first impressions affect their future job satisfaction, competence and the degree of loyalty and respect they will have for the organisation and its goals. The attitudes formed in the first few days on the job tend to persist and are difficult to change, therefore orientation programmes need to be well thought out and structured to the needs of each establishment and conducted in a disciplined manner.

On the other hand a lot of time and money is spent on selecting employees and therefore, organisations want their best efforts on the job, with the highest level of efficiency and as quickly as possible.

Evaluation

Like any other personnel function orientation programmes should be evaluated to determine their effectiveness in communicating and cultivating those aspects which are desired in the employee such as values, performance standards and so on. Personnel records and exit interviews can also be used as tools

for evaluating the effectiveness of programmes. For example, the rate of employee turnover can reflect deficiencies in the structure of orientation programmes which can then be redesigned for greater effectiveness.

Orientation Responsibilities

Managers and or supervisors play an important role as responsibilities of orientation need to be coupled with a complete understanding of the establishment's policies and goals which have to be shared with prospective staff. Preparing a checklist of items to be covered is a good tool to use, but needs to be structured according to the requirements of each department. A sample is indicated below.

Orientation Checklist

- Make employee feel easy and important by talking to him.
- Encourage and build confidence by assuring success on job.
- Build company image and spirit through correct emphasis on history of organisation and importance of its products and services.
- Invite senior executives to share company philosophy with new employee.
- Provide a tour of the organisation introducing people along the way, and describing importance of every department.
- Explain duties of job and how it fits into goals.
- Explain job performance standards expected.
- Introduce to immediate supervisor.
- Conditions of training or probation.
- Make employee aware of his/her career path.
- Help him to relax and feel stress-free.

Such a list would also help in following up the progress of those items through the work of the employee on the job.

The supervisor is responsible for providing all the information needed by a new employee when (s)he reports for work, and to answer any questions the employee may have.

The checklist mentioned above may be used to ensure that all relevant areas have be covered in the communications, and that the employee has clearly understood the policies and practices of the organisations and the department in which be is placed.

Orientation programmes should provide interest, motivation, team spirit and lead to good work performance.

Once the employee has been inducted into his new job environment, the focus of his supervisor can shift to training and development of new employees.

While orientation programmes are structured mainly for inducting new employees to an organisation, it is important for managers to *reorient* their staff from time to time. This would help to foster smooth communication processes at all levels especially when changes in policies take place, or sharing of information with regard to achievements, awards, innovations in the organisation or department. Reorientation or continuous reintroduction of jobs to employees also helps managers to analyze existing jobs and interact with employees and their experiences at their jobs helps to improve on a continuous basis.

These are usually conducted by supervisors or coworkers of the new employee, on the first day at work, when he should be exposed to the structure, policies and procedures, working hours, attendance rules, coffee breaks, etc. followed in the establishment.

In small establishments induction is generally informal and may be just a matter of going round the establishment meeting superiors and colleagues. Depending on the size of the establishment, the period of induction may last from 1 to 7 days during which the employee is expected to completely familiarise himself with the organisation. This period may be expanded or reduced to suit the needs of each establishment.

For example, a kiosk offering bottled drinks, boiled eggs, ready wrapped snacks and fresh fruit juice employing one assistant to help the owner, may complete orientation in a few hours. The assistant would be shown the location of the tap and waste bin; method of disposing off all peels, crumbs or bottle tops; method of cleaning the kiosk floor and service counter, where and how to replace broom and mopping cloth; time of reporting on duty; order in which tasks have to be done, and then checking that the work is performed properly, correcting where necessary for the first few days till he knows the job.

In contrast, in a café serving lunches, snacks and beverages, an employee would need 3–5 days for orientation, because he has to be shown around, and made familiar with the types of equipment and their operation, e.g. a juicer or a coffee machine. He needs to be introduced to his superiors, the work schedules, his job, working hours attendance system and so on.

The final stages of induction take place in their own departments where duties and tasks are allotted along with the accompanying responsibilities. Here the staff get familiar with their own tasks and also learn about those of

other staff in the department. In a few days they learn how their job fits productively into the pattern of activities. The levels of authority are identified and the employee knows whom to go to in case of a problem or for assistance.

While an orientation programme can be handed to an employee in cyclostyled or printed form, taking him around the establishment helps him to meet people, giving him an opportunity to ask questions regarding a procedure or the job and feel his way around. Generally, orientation programmes are chalked out and conducted by the personnel manager but the primary responsibilities of orienting the employee lies with his immediate superior within his job environment.

The induction process also helps to develop relationships with people, learn different methods of behaviour and imbibe a sense of values followed at work, and talking or shaking hands with people helps the newcomer to feel free to ask when he needs help while at his job.

Placed in a new job environment usually creates a sense of insecurity and a feeling of anxiety about one's success in it. therefore, the first experiences in an establishment are very significant.

The best people in an establishment should therefore be chosen to orientate newcomers as they positively can mould behaviour towards the organisation and people at work. Effective induction helps to remove any anxieties about the place, people and work that might exist. It stabilises employees, helps friendships to develop quickly reducing the chances of conflict and possibility of turnover. It must be remembered however, that every person comes to a new job with hope and enthusiasm. A smooth induction is likely to capture this enthusiasm and help to raise his hopes still further, encouraging him to contribute to high levels of performance. To maintain the level of motivation and impart a sense of security to employees, a written statement of their terms and conditions must be received by the employee within thirteen weeks of joining. These should also include specifications of disciplinary and grievance procedures which are important from the employers view point to prove that they are fair in their dealings with staff, should the need arise.

Orientation is, however, a very neglected aspect of staffing. When one enters food service establishments one often gets the feeling that the newest employee is the one who is pushed around and made to work the most by his coworkers. This is typical experience in a restaurant where a number of waiters just stand around and one of them is made to take all the customer's orders. This only shows ineffective orientation by the superiors. In the same situation, if one of the waiters takes the newcomer with him to see what he is doing against a

particular order from the customer, a process of communication resulting in learning, develops. This strengthens relationships and confidence, with which the employee can then begin to use his own knowledge and ideas to develop skills on the job.

Chapter 27

Employee Benefits

Every organisation aims at gaining maximum at minimum costs through a loyal and cooperative workforce. To achieve this it is necessary for every establishment to provide a comfortable convenient and pleasant work environment for its staff. Besides, it must fulfil the needs of individuals if they are to contribute to their fullest potential to achieve organisational goals. Towards this end employers need to provide certain facilities and benefits to their staff. These are often referred to as *staff welfare provisions* and are discussed under three heads namely physical needs, physiological needs, and socio-psychological needs.

PHYSICAL NEEDS

The physical needs refer to the needs for comfort at work, for which welfare activities would be directed towards provision of:

- Proper lighting to prevent undue strain on the eyes and ensure good visibility.
- Temperature and humidity controls for comfort. This is particularly essential in kitchens where excessive heat and sweating can lead to fatigue and exhaustion resulting in lower efficiency, morale and interest in work.
- Fresh air free from fumes and gases, through proper fitting of exhaust fans, and cross ventilation systems.
- Low noise levels conducive to efficiency. Too much noise can cause irritation, annoyance and lack of concentration. The level can be

reduced by sound proofing ceilings, walls and provision of suitable floor coverings.

- A clean and sanitary environment.
- Safety procedures and location of safety devices at strategic points in the work environment.
- Well designed and placed equipment and furniture to avoid undue physical strain at work, in additions to seating facilities where employees have to work in standing positions for long hours.

PHYSIOLOGICAL NEEDS

The provision of safe drinking water, canteen facilities, rest periods and rooms, clean toilets and medical facilities are the needs of all persons and therefore it is imperative for employers to provide these.

Provision of rest rooms and rest periods are essential amenities because catering staff generally perform most of their jobs in standing positions and for long hours. Rest periods provide the breaks in their work and improve efficiency through delaying fatigue which can be a source of accidents apart from inefficiency.

Canteen Facilities

It is statutory requirement to provide canteen facilities in establishments where staff exceed 250 in number. Irrespective of this, it is moral obligation on employers, to provide them with safe drinking water and partly or fully subsidised meals even if the establishment is small enough to employ only four or five people. This benefit also helps to reduce pilferage of food during cooking and eating, and disciplines staff not to eat at work, safeguarding health of customers. Canteen facilities for catering staff usually take the form of highly subsidised or free meals while on duty, depending on the policy of the establishment.

In addition, they may be offered the facility or purchasing any food item for the family at discounted prices especially biscuits, cakes, desserts, bread rolls, etc. While subsidised meals and related benefits actually cut into the profits of the establishment they do bring back returns in terms of improved work. Allocations towards employee benefits are also easier to account for in monetary terms than putting a figure on food that may be eaten unnoticed or pilfered in the absence of these benefits.

Toilet Facilities

While toilet facilities must be provided for staff, care is necessary to position them away from food handling areas. Also, attention must be paid to provision of hand washing facilities, separate from dish or food washing sinks. These should preferably be located near entrances to kitchens and service areas or in rest rooms where the practice of washing hands before going to work areas is inculcated. Provisions of and the practice of using waste disposal equipment correctly cannot be missed out in any discussion of hygiene and sanitation. Proper drainage and its maintenance to ensure cleanliness has been detailed in Unit 7.

Health Facilities

Health facilities generally include regular medical check-ups, treatment for ailments or injuries, preventive medical care, health education, health insurance and a clean working environment.

SOCIO-PSYCHOLOGICAL NEEDS

These cover the needs for security through adequate wage payments, provision for housing, infant creches for working mothers, transport, social working hours, leisure and holidays, counseling services for problems stemming from stress at work or home. Paid holidays and leave for sickness, maternity or other reasons help in reducing absenteeism and staff turnover.

Wages

Adequacy of wage payments is closely related to the salaries fixed for various job levels and the basic needs of staff as a welfare measure, however, subsidies on meals, housing, etc. help to enhance wages in indirect ways.

Housing

Housing facilities may be provided in the form of staff quarters at subsidised rents or payment of a house rent allowance, facilities may be offered through house building loans provided at low rates of interest to employees.

Financial Benefits

Financial benefits help to increase the sense of family security through provision of health, life insurance and pension, or offering of credit facilities in times of need.

Welfare

Welfare covers the families of workers especially in India, where, because of strong family ties, the well-being of workers is closely affected by their family welfare.

Staff welfare services are provided in two ways. Some amenities are compulsorily to be provided because they form part of statutory requirements. These include medical benefits, meals subsidies, uniforms, safety requirements, staff toilet facilities—in short, all amenities important to a healthy or sanitary working environment.

Statutory welfare is guided by the promulgation of various Acts expected to be followed by all employers, such as the Minimum Wages Act, 1948 which guards against exploitation of workers through underpayment by employers. Similarly, other legislation covers health and safety at work making it obligatory for employers to provide safety measures, conduct periodic checks to ensure safety devices are in working order, and so on. Other Acts governing employment have been discussed under labour laws. Legislation relating to working hours binds employers to provide rest periods after every two to three hours of continuous work in addition to not working an employee for more than 10 hours on any single day, limited to a total of 48 hours a week. One weekly holiday either fixed or compensatory is a must, and any one working more than his or her stipulated period is entitled to overtime payment or leave in compensation.

The other form of welfare covers those provided over and above the legal minimum requirements. These benefits are often referred to as *service programmes*, *non-wage payments* or *fringe benefits* and are purely accorded to employees by the employers as a voluntary welfare measure. In short they are like valuable supplements to wages, and employers are not bound to provide them.

However, all organisations do provide *fringe benefits* to varying degrees, because they find that it helps to raise the morale of staff, reduces absenteeism and staff turnover while at the same time employers are able to discharge a social responsibility.

PRINCIPLES OF EMPLOYEE BENEFITS

The basic principle underlying decisions to provide employee benefits is to give incentives towards some measurable return to the organisation. This may take a number of forms, but it essentially makes it worthwhile for the employer to invest in. Employee benefits can result in:

- Improved morale and greater commitment to the establishment.
- Lower absenteeism and staff turnover.
- Good employee relations.
- Improved efficiency.

Improved Morale

This refers to the increase in motivation of employees to perform their duties with greater commitment to the organisation through efficiency improvement because of the benefits they enjoy in addition to their wages.

It is debatable however, as to how long a benefit will be considered of value by the employee, and whether it would continue to motivate him to higher productivity and improved morale over a long period of time.

Absenteeism and Staff Turnover

What is absenteeism?

It is the syndrome of absenting from scheduled work without prior notice, placing pressure on the department to cope with less staff. Absenteeism does not however include absence on account of strike, lockout or lay-offs. Absence from duty may be attributed to a number of causes such as illness of self or family, looking for a better job, fear of supervisor or poor leadership, boredom at work or simply dissatisfaction with job and the social interactions at work. The employees own inability to adjust to behaviours at work may also make him feel unwanted, neglected or isolated.

The high rate of almost 40 per cent absenteeism so common to food service institutions can only be stemmed if employee commitment is obtained by the employer. This may result from a number of factors at work of which employee benefits play a crucial role. Other factors that motivate and reduce absenteeism include, good leadership, harmony at work, satisfaction with job content, social working hours and value for work and leisure.

Employee turnover

This refers to the frequency with which a job position falls vacant because employees leave at frequent intervals. Turnover is another indicator of low staff morale. It may be noted that employees who are prone to regular absenteeism are likely to leave their jobs. This can be stopped in time by good supervision and leadership. The moment a watchful supervisor notices symptoms of disinterestedness in employees, opportunities may be provided for motivating them by redesigning jobs, planning rewards, promotions,

changes of position through job rotation and so on. However, managers should note that a low turnover does not necessarily signify that employees of the organisation have high morale. They need to be constantly motivated in creative ways to improve their spirits and those of the group by encouraging creativity and innovation resulting in retention of staff and avoiding the unnecessary costs of frequent staff selection and placement in the face of high turnover rates.

Employee Relations

If staff are motivated to work in unison to achieve organisational goals they develop good relations with each other and with management and the results expected of them are achieved. People who are willing to adjust individual goals for the sake of others and the organisation are motivated. If the atmosphere at work is harmonious and tension free, employee relations are said to be good. On entering such an establishment one can feel happiness, among people, yet there is seriousness at work, a sense of duty and achievement and a welcoming atmosphere.

Improved Efficiency

What a human being can do is determined by his knowledge, skill, habits and psycho-physical ability. But what he wants to do depends entirely on his motivation. Since all these factors are interdependent the effect of human activities may be simply expressed as $E = C \times W$ where C represents capability and W the degree to which he wants to do a job to achieve.

MOTIVATION

Maslow's hierarchy of needs is evidence of the fact that a factor acts as a motivator as long as it satisfies a need (Fig. 27.1). He states in his theory that man's needs constantly change from basic to progressively higher needs. As long as a person's basic needs for food, shelter, clothing remain unsatisfied, money acts as a powerful motivator. But when these get satisfied, factors which satisfy higher needs of recognition, status, achievement and self-actualization, become stronger motivators than financial incentives.

Employee benefit schemes to be effective, therefore, need to be reviewed from time to time and adjusted to provide a source of motivation to staff.

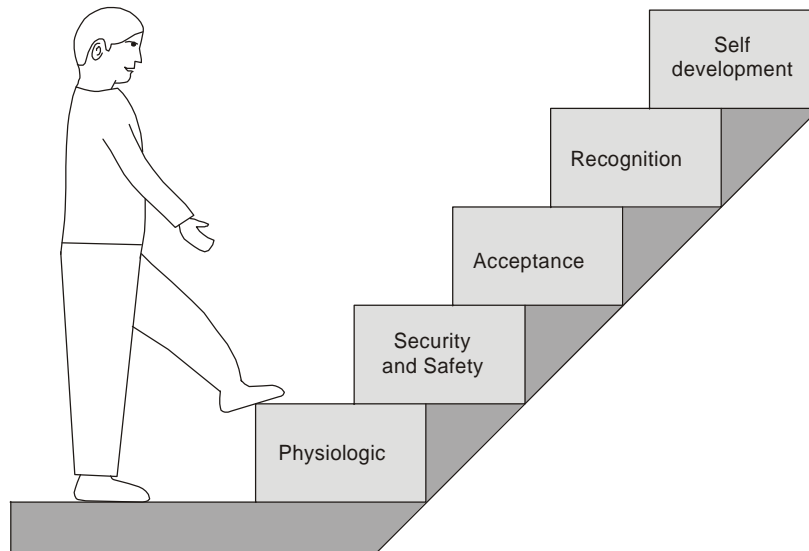


Fig. 27.1 Maslow's hierarchy of needs

Financial Incentives

It is often helpful to establish compensation programmes to improve performance as against purely non-financial incentives, such as payment of bonus according to profits achieved, or equal distribution of service charges to all employees of a catering department or establishment. Such financial benefits act as the incentive aspect of pay, because they vary in value to the amount of collective effort put in. If the number of customers served increases sales volume also goes up and the net profits too increase. These also push up the incentive payments through service charges collected and bonus paid out to employees.

Fringe benefits in the form of interest on provident fund or management contributions towards pensions even though financial in nature do not motivate people because of their long term nature. Staff take these for granted after some time, because they reflect basic pay and therefore experience, and not present performance.

Work Environment

This refers to an environment that is conducive to work efficiency, one in which the temperature, humidity and noise levels are controlled to provide

comfort. There should be adequate ventilation and clean air, in addition to being safe for people to work in for 8–9 hours a day.

Hygiene, Sanitation and Safety

Apart from the work environment being pleasant and comfortable it is important to provide facilities through which it can be kept sanitary and clean. These measures include the provision of toilets, change and rest rooms, effective waste disposal and drainage facilities to promote health of employees and prevent sickness. In addition, protective clothing and footwear are essential the staff being ideally provided with clean uniforms consisting of a complete set of working clothes, apron and headgear. This however, is often restricted to apron and headgear only, and in very small establishments in India, like kiosks or office canteen kitchens, uniformed staff are rarely seen handling or serving food items. This is an area which requires serious attention to safeguard health of employees and customers.

Sanitation of surrounding areas is also a welfare measure related to the health and welfare of employees. Surrounded by cleanliness, employees get motivated to keep their individual work areas clean. Its importance cannot be overstated in a food service establishment where it is the responsibility of the establishment to ensure health of customers as well. Such an environment no doubt attracts customer to the benefit of not only the employees but the establishment as a whole, especially at operative levels.

Safety and Health Schemes

Safety and health schemes are statutory for every food service establishment, because this affects not only the health and well being of the employees, but that of the employers and customers too. The Health and Safety at Work legislation is carried through to the extent that food service establishments are subject to surprise checks by Health Department staff, and any unsatisfactory conditions can make establishments liable to closure.

The health schemes established generally cover medical check-ups of employees at regular intervals to ascertain that they are not carriers of infection. Safety and health procedures are detailed in Unit 7.

Welfare Services

These include, provision of canteen services, potable safe drinking water, health and medical services, to ensure that employees handling food production and service are in good health at all times.

In addition paid leave facilities need to be given to prevent staff from getting fatigued and uninterested or incapable of performing to potential. The types of leave usually include casual leave which can be utilized for personal work, sickness, holiday, maternity and paternity leave. A classic example of unparalleled incentive offers in India is seen at the National Institute of Information Technology (NIIT) Delhi which is offering incentives to its employees in the form of paternity leave, gifts for wedding anniversaries and monetary benefits for dependents, extending even to dating allowance equal to 15 days basic pay allotted annually, which has been recently increased to 1 months basic emoluments.

The sincerity of such schemes created a climate of closer interaction, greater work commitment and emotional bonding with the institutions. In addition it attracted younger, more vibrant staff who would work and stay for a longer duration with the organisation.

Paternity Leave

NIIT has been the pioneer of a major shift in attitudes in society by offering paternity leave, under the *Little NIITian* care scheme. Under this all staff who have completed two years of service can avail half-time working hours on half-pay to take care of their baby. The leave can be utilized in a number of combinations:

- Half-day or every alternate day
- Every alternate month
- 6 months off at a stretch
- Compulsory off-days on birthdays.

Till 1994, the scheme was open to women only as 42% of staff were women. Now it is extended to the men as well in the form of paternity leave.

Housing Facilities

Food service and most other establishments cannot provide housing facilities to staff but help by paying House Rent Allowances (HRA) calculated as 10 per cent of the basic salary and considered as a subsidy. Cheap loans too, are sanctioned when required. Some employees however are accorded living accommodation if their jobs require them to be available on the premises even during non-duty hours. For example, wardens of hostels, boarding houses, those incharge of orphanages or other residential institutes.

Recreational Facilities

These are useful measures and include library and reading room facilities, T.V, video films, sports and games. Large hotels or clubs which have a gym can offer the facilities to staff at fixed times. This is important especially for employees at operative levels, who have to be on their feet for long hours. In addition if space permits courts can be chalked out for badminton, volleyball and so on. Indoor games may be provided by smaller establishments in rest rooms for employees to relax during rest periods.

Training and Development

Training schemes act as motivators for employees when they are sent to other departments or job positions for training in language, communication, craft skills through demonstrations and so on. This aspect is not merely an employee welfare measure but is as important for the organisation to upgrade staff skills for better productivity and is therefore dealt with in detail in Chapter 28.

Other Incentives

Other incentives include transport facilities and schemes for creating healthy competitions in recipe development for production staff, or reward schemes for profit goal achievement of departments or generating innovative ideas that become important for gaining a competitive edge in the market.

These moves have paid off in the competitive market for computer education and have to a large extent ensured that trained and valued staff are retained. The above example shows that if thought, care and creativity is exercised in the area of welfare measures and incentives for motivation, harmony and loyalty needs no attention as it will automatically prevail. This example can be emulated by the food service industry which is prone to frequent turnover of staff, as it would encourage mutual respect between staff and management at the same time create a bond that is difficult to break.

A motivation system should stimulate the worker even when his work is unsatisfactory. With the required psychological push and encouragement, he should be helped to improve the quality of performance.

Non-financial Incentives

Money is an important motivator of people's behaviour as far as it can help to satisfy basic physiological needs. After that it is the non-financial incentives that take care of psychological and social needs.

Non-financial incentives are what Herzberg terms as the 'Hygiene factors' in his *Hygiene Motivation Theory* of human behaviour. These incentives may be divided under seven headings as indicated in Fig. 27.2.



Fig. 27.2 Employee welfare measures

The following points would provide a general guide to establishing employee benefit schemes for adaptation to various types of establishments:

- (a) Any employee benefit should satisfy a real need of the majority.
- (b) Benefits should be confined to activities by which group efficiency is improved rather than that of the individual.
- (c) An efficient communication system must be established in order to give or receive value from any employee benefit scheme.
- (d) The cost of employee benefits must be determined accurately for sound financial management. It is therefore advisable to venture into schemes which can be accurately accounted for, such as membership fee for use of recreational facilities. The maintenance of these facilities

can then be carried out from employee funds, while management could provide the capital base. Such schemes also generate among employees, a feeling of owning the facilities, which they then use more carefully.

While employers have to consider costs of employee benefits on the one hand, they have to weigh the effects of not offering them on the other. The problem arises because it is difficult to put a monetary value on most non-statutory welfare activities. These, therefore, often turn out to be more expensive than estimated. Hence, the need to adopt techniques of Cost Benefit Analysis (CBA) and Planned Programmed Budgeting (PPB) arises, to evaluate social costs for purposes of budgeting employee welfare.

Sometimes, management may become over-exuberant about providing employees with benefits either to cut down on their net profit figures for tax purposes, or due to paternalistic attitudes towards staff. Whatever the cause, this can make employees over-dependent on benefits who then begin to treat them as their rightful dues. In such cases, the benefits cease to motivate performance. On the contrary, if withdrawn to be replaced by newer incentives they can have a demotivating effect leading to lowered morale and efficiency.

Benefits should therefore be linked to schemes which encourage workers' involvement and lead to job enrichment rather than provide a purely social service scheme. Organisations genuinely interested in the welfare of their staff will plan out schemes which will provide a benefit to their employees and add more meaning to their jobs. An excellent example is for a catering manager to buy seasonal vegetables or fruits grown on farms owned by the families of employees. This helps the staff to sell their farm produce to one buyer, saving their transportation to markets. The employer also benefits in terms of cost saving and quality while providing to the customer fresh flavour, taste and colour.

Another example is the provision of free meals to catering staff who are on duty. Through such a decision, management not only relates the provision of the benefit to work performed, but discourages people from absenteeism.

Management need to attract the best employees and try in creative and innovative ways to retain them as long as possible. The example set by NIIT and cited already have stood the test of time. The vision of their management in the starting of a Public Provident Fund (PPF) in the name of children of their staff is exemplary. This ensures the continuity of families in careers for which the organisations trains them in their own environment or abroad as the case may be.

Most welfare measures have been concerned with creating conditions for greater employee involvement in a job. Therefore, managements genuinely interested in employee's welfare must work towards providing meaning to their jobs, in addition to inviting their participation in decisions which affect them. Job enrichment has been dealt with in Chapter 4.

It must be remembered however, that staff loyalty can only be gained when people see that managers are genuinely concerned about their welfare. For this exchange of pleasant words and warm feelings are not always necessary. A manager may appear cold and severe but focussed, to ensure that the employees work as a team and achieve goals, but he distinguishes between the time when they require a compassionate approach. Such managers who do not only dole out welfare, command respect and loyalty and do not have to demand it.

In effect one of the essentials of good industrial relations is management ability to get rid of people who hinder work and harmony. If people know that you are really concerned about their welfare, they will in turn do everything possible to be loyal to you and the organisation.

Thus, staff welfare activities should portray a humanistic approach to help people lead fuller lives, be economic to both staff and the organisation through improving efficiency, while at the same time help to develop a sense of responsibility and dignity among people.

EMPLOYEE WELFARE SCHEMES IN INDIA

Employees State Insurance Scheme

Commonly referred to as the ESIS, this scheme was designed as a financial contribution scheme. In this, monthly financial contributions were made by employees, employers, and state governments towards benefits of employees. This scheme was compulsory for all establishments having 20 or more employees, the funds from this scheme were then utilised to pay for sickness, maternity, disabilities, funeral, and other needs of employees whose monthly pay was within Rs 1,000 only.

Employee Participation

Regarding participation of employees in decision making, the objective would be to induce the I feeling at work. The advantage is that any decision in which employees have expressed their views, makes them more committed to carrying them out. Further, communication becomes free flowing at all levels, giving

rise to better understanding and cooperation. The result is lesser conflicts because of staff commitment to decisions, and greater involvement in the success of organisational schemes. Participation also helps in managing any resistance to changes which are important for the survival of any organisation in its environment. The five ways to establish employee participation are:

- Sharing of information pertaining to overall results of the organisation in terms of production, assets, liabilities, and so on. This helps to boost employee ego and lead to greater satisfaction.
- Consulting employees through unions in matters relating to employee welfare programmes.
- Seeking their views on decisions that affect operations directly, such as buying a piece of equipment for the kitchen or service area, or changing attendance procedures or working hours of staff so on.
- Inviting decisions from staff after a number of alternatives have been selected. Here the degree of participation and responsibility for the decision is more than in other methods of participation.
- Decisions directly concerning employees like their welfare schemes, may be taken jointly by management and staff.

The extent to which employee participation is encouraged will, however, depend basically on the policy of individual establishments, but also on the style of leadership of managers and the effectiveness of communication existing between people.

Employee benefits act as motivators only if good employer-employee relationships have been established. For this the essential prerequisite is a well established communication system.

In small establishments where staff are few in number and directly in contact with owner or manager for all activities, the communication is simple and the scope for distorted messages limited. But, as the organisation expand and staff increase in number, giving rise to more levels of authority, the communication channels need to be well established. It is then that a feedback system has to be consciously developed, to ensure that information is not lost in the process of transmission. Communication methods and networks have been discussed in detail in Unit 1.

Chapter 28

Staff Training and Development

Employee benefits alone cannot make people achievers, they require training and retraining for development as needs change with time.

Catering staff are generally inclined to believe that experience alone in the kitchen or service areas is all that is required to keep a food service viable. This may have been applied to catering operations a few decades ago when tastes of customers were very traditional and eating away from home was not the norm as it is today. Can a food service survive in today's competitive environment on experience alone?

With competitive forces working in the catering field, fast changing and increasing demands of customers, inflation and shrinking labour markets, it is important to realise that training and development have become indispensable for efficient utilisation of dwindling resources.

In the kitchen, once a cook puts on the head chef's cap, he is viewed by his staff as the knower of all there is to know about cooking and presenting food. It is seldom realised that the chef can only put together the ingredients given to him in the few ways learnt through his limited experience. Very often catering managers too depend so heavily on chefs that they fail to sense the need for training and development.

If one remembers that there is always something more to know, whatever the job content, establishments can be continually progressive. In the field of food preparation and service there is much to learn about preparation techniques, new recipes and flavour combinations, quality characteristics, nutritive content, consumer dynamics and so on. Similarly, presentation of

food in different forms, matching texture to service dishes and table appointments, methods of service, all require additional knowledge and retraining.

The aim of all training is to impart knowledge and skill to equip people to fit into their job positions better. Since the environment of every establishment is subject to change, training and retraining takes on a vital role in helping staff at all levels to adapt to change.

TRAINING

The need for training and development of staff in service institutions is a matter of management concepts and vision for the organisation.

A few decades ago people joined work with an organisation and stayed there till retirement. Loyalty was defined through the number of years for which an employee served an organisation. Seniority played an important role and a member lived with the culture of an organisation on the premise of reaching the executive positions by mere hard work, being promoted in the natural course as and when vacancies occur. Today, this scenario has changed dramatically and while operative level staff change jobs for better terms of employment, executives too have started looking for fresh thinking in their organisations.

In the competitive market environment of today therefore, managers need to balance skill and talent with their visions and try and retrain staff who can be trained and developed in a manner that the organisation can benefit from them, to achieve present and future goals effectively. *No turnover* is just as detrimental to the development of an organisation as *high turnover* and therefore it is essential to invest on staff development and arrive at a positive balance, so that ambitious, creative and innovative staff can be retained for a reasonable period of 3 to 10 years depending on their level in the organisation (Anon. 1992).

Catering managers have plenty to keep abreast with, such as new equipment on the market, the forms of goods available, types and prices of seasonal foods, tastes of customer, inflation, management accounting, newer techniques of assessment and appraisal, control and much more.

In each area of work there is a need to update knowledge of materials and techniques and apply them to suit the job situation. While information can be gathered in various ways, the need for training has to be identified in specific areas at work. This can only be done by a close look at every process in each area of activity to locate areas of inefficiency. Experience has shown that there is a

need for training at all levels of catering management even managerial and executive levels.

An interesting example is one of a catering manager who used to stand in the kitchen while food preparation was in progress. In fact, she actually prepared the desserts or a special dish everyday. While this may seem a good thing, in that it displays the craft skills of the manager and helps close supervision of staff without standing on their heads, it damages human relations and morale. The staff feel their skills are being underestimated and a feeling of distrust grows in such a situation.

In addition, it is uneconomical for the establishment to have managers performing craft skills for which a lower salaried person could be employed or existing ones trained. Besides, the quality of management suffers, in that there is little time left to attend to planning, costing, analysing work efficiency of staff and appraising progress. This example points to the need for training the manager in the following skills:

- The art of delegating work which others can do equally well or perhaps better, if taught.
- The art of assessing the work of other people through developing and analysing management information.
- Teaching staff to develop new recipes by giving them ideas. The new recipes could then be sampled for quality characteristics.
- The staff could be given craft training on or off the job in food preparation especially in those dishes in which they lack expertise. This could be done in areas such as bakery, Indian cooking, desserts and so on as required.

Katz and Kahn (1975) pointed out seven ways of bringing about change in an organisation as depicted in Fig. 28.2.

Providing information: This can be done through letters, pamphlets, leaflets, journals, magazines or other media. This method is only useful, however, if staff are motivated enough to be affected by the information.

Staff counselling: This involves creating in people the desire to change their attitudes towards problems. The idea is to bring about changes in behaviour and through them a change in the organisation. Once attitudes become favourable to the change, they can be directed towards desired goals. Counselling may be done on individual basis or in groups. An important aspect of counselling is to assist employees in the art of managing stress arising at work and affecting their lives.

Managing Stress: Stress is a disease of modern technologically advanced countries and is common among highly qualified professionals, but is unfortunately affecting the working environment in developing countries too. Stress is a syndrome which seeps into peoples lives for various reasons, at the physical, physiological, mental and emotional levels irrespective of literacy levels, are, gender or economic status.

At work, stress may be due to heavy work load, inadequacy at job, decreased leisure sickness and so on. The possible counselling techniques to use in stress management would be related to the cause which needs to be determined. A few examples are indicated in Fig. 28.1.

<i>Cause</i>	<i>Counselling</i>
Overwork	<ul style="list-style-type: none"> ● Redistribute or redesign work to provide intervals of relaxation. ● Read-just the way we look at work to increase our capacity to bear heavier loads.
Weakness	<ul style="list-style-type: none"> ● Build up physical and emotional strength to cope.
Cluttered mind (to many thoughts)	<ul style="list-style-type: none"> ● Control thoughts to work methodically, doing one job at a time. ● Eat while eating ● Work while at work ● Do not take home to work or work to home
Worry or anxiety	<ul style="list-style-type: none"> ● Learn to relax as worrying decreases efficiency and even simple tasks cannot be completed on time. ● Act and do not think too much. ● Concentrate mind through meditation and yoga ● Erase anger, fear, jealousy hatred. ● Share and help ● Remove negative emotions from the mind. ● Build inner strength through self-surrender ● Act as an instrument. ● Do not think about results too much, just work with dedication.

Fig. 28.1 *Counselling in stress management*

If counselling for stress is effective it helps employees to build harmony at work and brings results for them and the organisation.

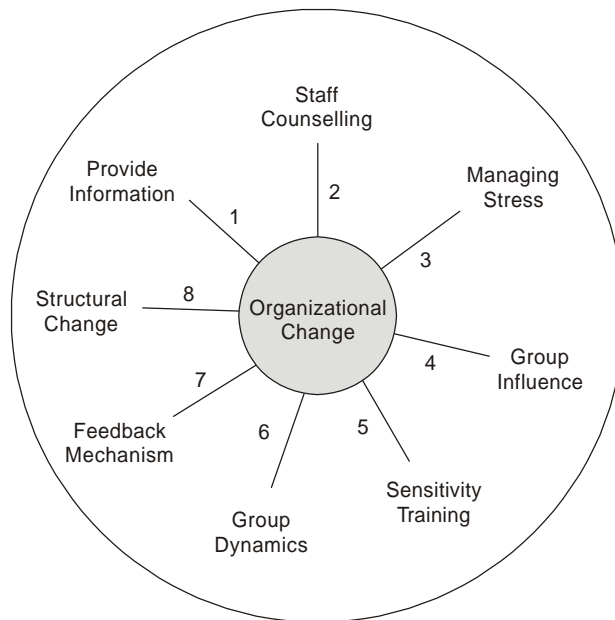


Fig. 28.2 Factors changing behaviour in organisations (Adapted from Katz and Kahn, (1975)

Group influence: Friends or group leaders exert a strong influence on the behaviour of an individual. This is an effective way to reinforce ideas and harness group energy to introduce change.

Sensitivity training: This method cashes in on the fact that people are more sensitive to their own strengths and weakness than to those of others. Training that can make people aware of their strengths, can help to bring about changes, by offering an environment in which the individual’s strength is challenged.

Group dynamics: In group dynamics training, all the employees are involved in bringing about the change. They are made to participate in discussions say about introducing computerization for accounting and its advantages. They are then given time to think and it is the group that later agrees or disagrees with the idea giving reasons for the latter. If their doubts are resolved by management the change is attempted because it is the group members who have to implement the changes.

Feedback: Getting feedback through surveys helps to produce a strong impact on people for bringing about change, and is often used for deciding whether a job needs to be redesigned or not. The findings from surveys are discussed

by working groups with their leaders, through every level of the organisation. The outcome therefore is bound to have the agreement of all the staff in the organisation.

Structural change: The structural approach is the basis of redesigning jobs. As Singer (1977) has aptly said,

Training is no longer viewed as a process of doing things to people but rather as a structuring of situations in which the learning processes are optimised. When the learning process lasts for more than a few days we say training is taking place.

While there is no dearth of published material to aid the training process for all types of jobs in catering, each individual's training is dependent on his particular needs and those of the job situation in which he is expected to operate. True learning therefore takes place within a work situation where relationships with other people and groups at work, are exercising their influences. *On-the-job* training has the advantage of the learning process becoming immediately implemented in the organisation. It also helps to create an atmosphere at work in which people learn and develop. Since the trainees know their jobs basically, they can direct their own learning by applying suggestions made to them on the job, or by imitating procedures as demonstrated to them at work.

Training is effective only when the knowledge gained is applied at work and tested for its usefulness, whatever be the level of the job involved. Thus, training must be regarded as an integral part of operation and not a side activity for siphoning off staff when they are not required. McGregor (1960) summed this by saying:

Managers cannot be manufactured by sending them on training courses; they must be allowed, by careful training and development on the job, to grow over a period, to competent executives.

The impression that there is little or no skill left in jobs these days because of labour saving devices and automatic machines is a misplaced notion. In fact, the more the automation at work, the greater is the mental skill required although hard physical effort may be reduced. The training for such situations involves an understanding of the machines, which if not operated rightly, can prove a menace rather than a help.

In catering, training has greater significance when a machine is to be introduced. For instance, without a thorough understanding of the oven, mixer or the juice extractor, the food prepared may vary in texture, consistency, colour,

taste and therefore acceptability each time. Not only that, expensive equipment like microwave ovens or freezers which are useful for even small food service establishments may be completely damaged through ignorance, lack of maintenance and proper use. In fact, with the increase in demand and supply of labour saving devices, catering staff would not only need training but will have to be retrained every time a model becomes more sophisticated in its construction and use.

Whenever the performance of an establishment falls, it can generally be traced to inadequate or outdated equipment, lack of knowledge or inability to physically perform a task.

Training, therefore, must be aimed at developing the capabilities of staff to enhance their skills because they are the assets of a food service organisation, and their potential must be explored to the maximum. For this, training needs to be planned to suit the goals of the establishment and the potential of staff. a good training programme, needs to be thought out carefully, because it involves costs in terms of money, time and effort of planners, trainers and trainees.

NEED FOR TRAINING

The first step is to establish the need for training in any department of the organisation. Establish a process of just appraisal which is carried out in every department to ear-mark areas of deficiency, or inefficiency.

The Second step is to identify areas which require training and list according to priority.

Third step is to determine what type of training is needed in each area.

Fourth Step is to plan the training programmes and set the time periods for implementing each, in or outside the concerned department.

Identifying Needs

Suppose that there is a shortage of permanent staff in the service area and customers are getting irritable and reporting poor service constantly. There is obviously a need for minimizing complaints by recruiting more staff and training them, or redesigning the service area to improve customer service without employing additional staff.

Similarly, needs can be identified in all areas of food production and service management including training managers or retraining them as required. This

is because needs are dependent on goals and these change with the pressures of the market and the moods and wants of customers, as well as government policies which have their effect on the organisations. A classic example of government policy to boost the tourism industry in the 1990s, had direct impact on facilities available in food service institutions to cope with the needs of tourists. With increasing competition in the hospitality sectors institutions realized that training and motivating staff was necessary to be able to offer world class facilities and service standards. In response to this felt need Sterling Holiday Resorts (India) Ltd. took the step in 1996 by organising a series of training workshops, called *The Restaurant Supervisor's Training program*. The course was designed for supervisory staff of hotels, restaurants, hospitals and airline food service operations by senior faculty of leading hotel chains. The training methods used were lectures and practice sessions supported by slides, films, case studies and so on. In addition regular written and oral quiz sessions were organised. The 3 day workshop was well attended, the trainees being nominated by their respective institutions.

More such training programmes have been underway in different parts of the country and camps emphasizing all aspects of institutional management from housekeeping to financial management have been conducted successfully in different parts of the country. Unfortunately, there are very few institutions in India which are equipped to impart such training especially with regard to catering services, functioning of restaurants, coffee shops and the like. Catering associations and hospitality professionals should continue in their efforts to bridge this gap.

Training Programmes

Programmes may be designed in collaboration with teaching institutions like catering schools, vocational colleges or university colleges imparting education in various fields of foods and nutrition, food science and catering management. These teaching establishments can then design short courses according to the needs of the various food service establishments. This would not only help food services to utilise existing teaching facilities and experience, but also help teaching institutions to fashion their courses to the needs of the industry. Colleges can thus build into their own courses an industrial placement for students to expose them to actual practical job situations.

However, there is need to be cautions about planning and designing training programmes to suit job conditions. Sometimes a well designed program may prove useless to the establishment after staff return to their jobs. There are two main reason for this:

- (a) The style of teaching is not appealing enough to the trainees and communication breaks down as a result.
- (b) The trainees are sent for the course before they are convinced of its utility at work, or are afraid their seniority may be lost.

Training is effective only if it stimulates people into thought provoking activity, brings to them a feeling of confidence in task performance and a sense of satisfaction at the end of the day.

Catering staff are generally apprehensive about the introduction of change particularly automation in kitchens, because of a fear they may become redundant. Training in the proper use of equipment and knowledge of the variety of ways in which various equipment can be used to advantage can alleviate this fear. Once a person realises that a machine is meant to save his time and make the boring, hard, routine jobs more interesting, introduction of change is easier. Employees must however, be convinced that they are there to do the task which machines cannot do and are, therefore indispensable to the organisation.

Redesigning Jobs

Just as people need training and retraining to be able to cope with environmental changes, jobs too require to be redesigned to meet changed requirements of the organisation and its customers. Redesigning jobs is the most effective way of bringing about changes in an establishment through staff participation. Redesigning is the process of changing the way in which a job is performed.

A typical example is that of redesigning the job of serving food in a cafeteria. A little restructuring of the service from waiter service to counter service changes the jobs of staff immediately. The service staff get behind a counter and instead of going to each customer to serve, the latter comes to the employee, gets served and takes the food to a table to eat. The service too becomes faster as kitchen staff refill the dishes kept hot in a bainmarie for service on demand.

In developing countries particularly, food service establishments tend to spring up as one-off operations managed singlehandedly. Roadside establishments in the form of tea shops housed in shacks; vending services; and mobile catering through hawkers are typical examples. These services are generally located close to where the entrepreneurs live. The owners or their dependents are not well educated and generally take to catering in one form or another to augment family income.

It is in these small establishments that the importance of training becomes apparent. The man running a kiosk, often having put in all his savings and or

borrowed money to own it, needs to know how to price his goods for sale in order to make his operation viable. More than the owner of a fashionable restaurant, the kiosk owner needs to return his loans in the shortest possible time. Pricing by 'hunch' can make him poorer. His food costs are also higher because he is purchasing in small quantities. Besides he has to be able to forecast accurately because he does not have enough storage space for leftovers, so important in tropical summers, and he can ill-afford to waste by spoilage. While small establishments cannot afford to close down and indulge in training, they can take a step forward by training their dependents who could help to run the establishment in due course. This is vital for growth and survival in today's competitive environment. Unfortunately, it is the smaller establishments which get into a vicious circle of lack of expertise leading to low profits that has to be broken in more money and the ability to invest on training, as shown in Fig. 28.3.

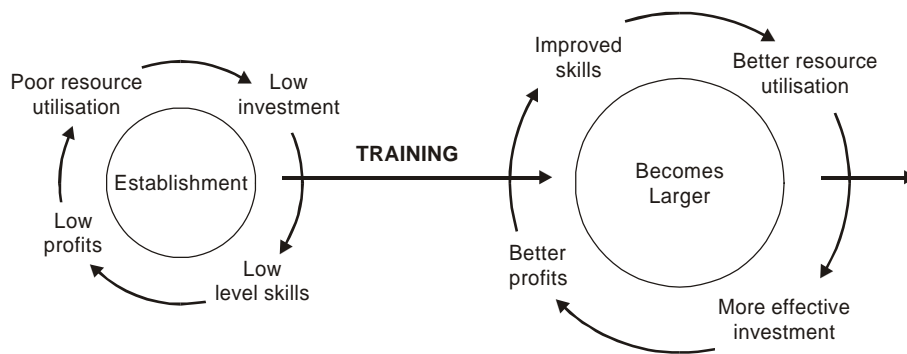


Fig. 28.3 *Effect of training on establishments*

Since training is a costly affair, the best strategy is to start with training of the manager(s) or people in key positions. They can then impart training in the right methods and procedures to the staff throughout their departments. This is not to state that one person can be trained to do all the jobs in his department, but experience shows that trained managers can retain their staff and efficiency much better. It is obvious that if staff turnover is reduced, more can be invested on their development.

Areas of Training

Training can be imparted with the object of developing skills in people at all levels in an establishment. Programmes may be designed to impart management, supervisory or craft training.

Craft training is specific in the sense that cooking and serving methods can be demonstrated or methods of using newer equipment taught. But, supervisory and management training is a matter of teaching principles and techniques mathematical and other wise, of assessing work, people and situations to make decisions for the future of the organisation.

Apart from craft training it is important to educate staff in techniques for combating stress. Pressure of work can be as harmful as smoking yet it is the most ignored aspect of staff management and training. Stress is a fact of today's competitive environment and food management services are no exception. It is a time-bomb that needs to be diffused before the organisation explodes. Therefore all training must include the art of diffusing stress in particular situations common to every level in the organisation. Stress counselling must be a part of every institutions, creating a culture of being direct, open and honest. If there is pressure, every one should talk about it and get help or help each other. Where stress can be managed well staff love to come to work, as result there is less absenteeism and turnover.

While pressure at work cannot be eliminated totally, its all about locating pressure jobs and making changes to reduce the pressure and educating people to handle it better. However, there will be some people who are more vulnerable than others and require individual counselling. There is no better way of stress management than organised leisure, to include gymnastics, team games, yoga classes and meditation, benefits which can be offered to staff especially in stress prone institutions like catering which have to deal with peaks and troughs of activity while working unsocial hours.

In essence management cannot be taught, because no one decision is valid for similar situations at all times. Management is also closely linked to people's personality and attitudes which affect behaviour at a particular moment. However, people can be trained to develop an analytic mind to help them to make decisions. How well they manage in their jobs is still a matter of their experiences, sense of values, presence of mind, judgement and attitudes.

While people who are generally appointed in management positions are expected to have completed some formal course in management, this is not so in all small food services which are self-owned. Managers of small mushrooming food services not only need a formal education, but training in all the areas of food service management, mentioned earlier.

It is important to emphasize that training has got to be a continuous process because no one working in a catering establishment today can keep abreast with the fast changing technologies, and management techniques without

updating his knowledge. Working in the trade for 40 years is no credit to a manager without his having undergone retraining periodically. E-learning today provides a flexible resource for training, while at work.

Training, therefore needs to become an essential activity in every progressive establishment, suiting programmes to its particular requirements. More aptly, training cycles should be established as indicated in Fig. 28.4.

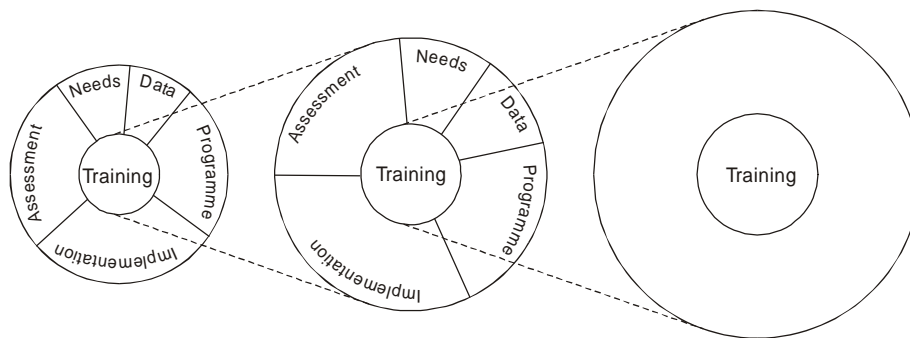


Fig. 28.4 *A continuous training cycle*

Training in an establishment is, however, influenced by factors external to the organisation as well as those within it. The external factors include, government policy on training, legislation and industrial relations, trade unions and professional bodies like the Hotel, Catering and Institutional Management Association (HCIMA), training establishments, institutions for laying down standards for food, equipment, building and so on. Besides these, are factors such as the availability of staff (state of employment), skills, suppliers, customers and technological advance requiring newer or changed skills. Internal factors which would affect design of training programmes are resources, combining training with production and service and the level of success expected in terms of profit, growth, cost reduction, reduced labour turnover and reputation of the establishment. Training whatever the kind therefore, must be suitable to the job for which it is acquired. Finally, the trainee must feel he needs training and it should not be a management decision alone, if the organisation is to reap the benefits.

STAFF DEVELOPMENT

There is a close link between training and development. Every progressive organisation aims at developing its employees and through them the jobs to be performed.

Development is said to take place when people acquire new values, attitudes and understanding. These help in achieving individual as well as organisational goals, by enabling favourable responses to environmental influences. Some changes are visible or quantitative, others affect attitudes. The latter are qualitative in nature and may be termed as developmental because they provide a sense of direction, and a feeling of elation in people.

In every organisation, tasks, attitudes and sources of motivation change. Original policies, job structures which are effective to start with become outdated and inefficient with time. There is therefore a constant need for every establishment to reorganise itself with time.

Studies of organisations and behaviour of people at work have given rise to a whole new field of management known as *Organisation Development* or OD. This offers ways by which the abilities of people can be renewed and stability brought about in organisations, in spite of rapid changes affecting them from the external environment.

When an organisation develops, a number of changes occur in the:

- Manner in which work is organised, delegated and controlled.
- Authority relationships, and those between individuals and groups through role changes.
- Styles of management
- Complete change in the structure and overall character of the organisation.
- Degree to which people are self-reliant, assisted, trained and developed.

It has often been questioned whether the development of adults is at all possible. Evidence of this is seen when small organisations grow larger and larger and finally into chain organisations. While growth in size alone is not an indicator of development, the quality and increase in the diversity of services offered and meals prepared show that people do develop given the right environment, training and motivation. Those which do not develop are often influenced by strongheaded managers with narrow-minded views, who have fixed ideas and are opposed to change. Such establishments cannot survive for too long in a competitive and changing environment. Managers with a negative approach see their employees as McGregor (1960) did in his X-theory. He assumed that *every person has an inherent dislike for work and has to be coerced, controlled, directed and even threatened in order to achieve objectives*. In such circumstances attitude, controls, organisational structures and leadership styles

develop to fit into McGregor's views resulting in inflexibility and resistance to change. These conditions inhibit development and are created by the managers themselves.

Development requires more than just putting in extra time at the work place. It requires upgradation of skills, learning new ones, expanding the knowledge base in the field or related areas and practicing the new skills at the workplace.

Many persons simply get comfortable in a job and before long inertia sets in. They have no desire to advance and stay in their job as long as there is no plausible reason to change. A fortunate few get help from their organisation to plan and develop a career without taking the initiative themselves. They little realise that even if organisations wanted to develop them they cannot do so fully, till the individual realises that he needs to develop himself to achieve his own ambitions and aspirations. The organisation can never know a person's motives, dreams, likes, dislikes, family circumstances, emotional situation or personal goals. No one else knows what an employee finds challenging, satisfying and intellectually rewarding.

The onus of self-development therefore lies with the individual employees. Just as boredom with the job is his responsibility so also is lack of opportunity for personal growth, financial gain or career development. People who conscientiously follow their own plans for self-development and growth reach the top. Self development is a process by which people improve their knowledge, skills and abilities through self-directed efforts to achieve some set goals.

Learning is more than just absorbing information, it involves putting into practice what is absorbed. If failures occur they inhibit further chances of success by inhibiting energy output and reducing confidence and initiative. On the other hand, only when barriers to effectiveness are identified and the individual experiences the possibility of progressing beyond them, does development take place. The absence of genuine desire to succeed undermines achievement and development.

In today's fast changing environment an organisation requires competent and committed staff. To acquire competency, individuals have to continuously update their knowledge and skills so that they can contribute fruitfully to the survival and growth of the organisation. Individuals need to grow and improve continuously and feel a sense of self-worth which benefits all around and at work.

Organisations can however help in the process of people's self development effort in many ways, some of which are enumerated as:

- Provide sponsorship to conferences, seminars, workshops, and training programmes.
- Reimburse exam or course fee for furthering education.
- Organise internal training programmes workshops for staff of similar developmental needs from various departments or units.
- Arrange contact or interactive sessions with specialists in various fields to enhance learning.
- Provide information through monographs setting up professional clubs, reports, audio visual screening.

Staff should be encouraged to develop themselves through self-approval and awareness. Awareness can be expedited through counselling, discussions and feedback from peers and superiors and most of all introspection for strengths and weaknesses. The weak areas require development and may be listed in order of priority on an achievement calendar, for which the means may be expedited.

Once the self-awareness comes, it is usually followed by a determination to improve, achieve and succeed, by identifying and using opportunities and resources creatively. The individual becomes willing to adapt to change, learning from past mistakes and willing to take risks, control emotions and behaviour, as well as receive and give feedback constructively.

Principles of Development

The process of development is slow but generally requires advice to make it progressive. Once initiated, development becomes a continuous process. The principles underlying the process of development are:

- Need + Location
- Small groups + Cohesion
- Structure and tasks + Relationships
- Learning + Feedback
- Planning for change + Leadership style
- Motivation + Choice
- Participation + Responsibility

Thus, training and development are important to the survival of every organisation whatever its size or nature, because through it the cost of people's mistakes can be reduced.

Process of Development

The process of development occurs in five stages:

Stage 1: The need for development is felt in a particular area of the establishment. For instance, there may be long queues at lunch times because food preparation or service arrangement is inadequate to meet demand at peak hours of service. This indicates opportunities for development that were not anticipated, such as resorting to expansion of facilities. Figure 28.5 shows how training and development needs can be analysed from the sales volume figures in a food service.

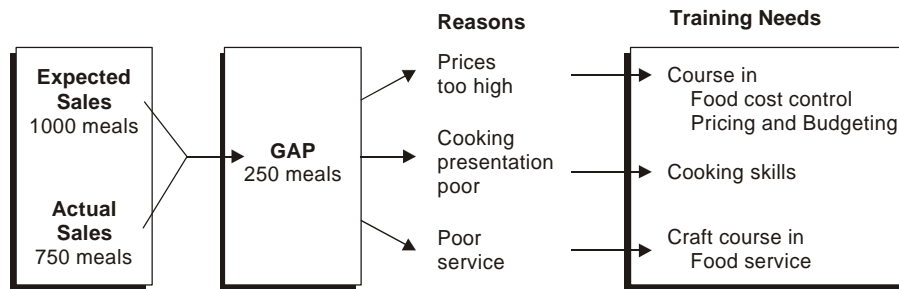


Fig. 28.5 Identifying training needs from budgeted and actual results

Similarly, a development need can be identified from figures for employee absenteeism or turnover. Again when an establishment is planning for expansion, the need for newer skills is generated. Existing staff may then be developed to take on the responsibilities of new or changed jobs. It is not uncommon to find establishments resorting to promotions from within the organisation or appointing internees developed to fit into higher or changed job positions.

Stage 2: Involving individuals, generally group leaders (or groups), to diagnose the area for improvements in the departments in which the need is sensed. Conflicts within groups are bound to occur in this process but these can be resolved by a shared appreciation of the situation and a conviction by the majority that changes are needed.

Stage 3: From stage 2 it is possible to set goals on which an action plan can be prepared after ascertaining the degree of motivation created in the workforce.

Stage 4: From the plan, activities would need to be developed, roles of the staff identified, structures modified, if required, any training necessary

organised. Training may be arranged within the food service while staff are on the job or by liaising with catering colleges or other teaching institutions. When roles have been modified and allotted, a gradual change in attitudes, staff relations and understanding needs to be developed.

Stage 5: Finally, every stage of development has to be constantly assessed in terms of the extent to which staff have gained knowledge and experience to improve themselves; and, how favourably their attitudes have changed to develop further without being directed.

Sometimes, however, development programmes do not produce the desired results at work. Such failures can only be attributed to an unplanned approach to training and the sensing of future developmental needs. It is therefore important to plan developmental efforts towards results without getting carried away with programmes. In addition, it is important to select only a few employees for training who have the potential for development, and design the programmes to maximise their potential.

For the development of personnel, it is necessary for employers to be able to send their staff for higher training. The need arises when environmental and organisational needs change and past education and experience of employees becomes insufficient to deal with the changes. Training should therefore be need and work based, to be relevant for the existing job. It may be a specialisation such as bakery, accounting, marketing or personnel management depending on the needs of the food service.

With training and development, employees can provide better level of job performance, at the same time becoming more reliable, loyal and conscientious.

Although training and development are costly, the investment is worth the benefits received by both the organisation and its employees. The most important gain to the establishment would be a level of employee continuity. Further, it is an excellent means of establishing good working relations and gaining loyalty which are so important to the success of an organisation.

Today the catering industry is faced with a number of serious problems like reduced labour supply, rising wage costs, increasingly sophisticated labour force aware of its rights. It is therefore important to try and retain trained staff and avoid the costs of frequent recruitment resulting from labour or staff turnover.

In today's changing environment trained staff are not easily available, unemployment is rampant and fake certificate rackets exist too. In such a situation it is no use trying to buy skills off the market. It is much better to collaborate with training institutions and try to build a home-grown pool of

quality people and provide them with the right tools and environment to perform better.

But, it must be accepted that ambitious managers will not remain with an organisation for a life time especially after training. This therefore calls for a change in management philosophy and thinking. Some guidelines are:

- Don't recruit habitual job hoppers
- Structure the organisation to encourage staff retention.
- Have a broad grade-cum-designation structure for internal promotions.
- Plan for staff turnover.
- Train staff through sandwich courses.
- Encourage job rotation
- Do not go for the brightest, as they will be the first to leave.

Bring in fresh ideas occasionally to motivate existing staff and change policies with the times to gain the competitive edge at the same time focussing on the customer.

In the 2000's personnel or staff management concepts changed their focus from salaries to providing opportunities for learning and development. In other words money alone did not motivate people to offer their skills to any organisation. Today the attracting forces are self-development and extraordinary achievements through a mutually supportive environment created by friendly teammates. Work is expected to satisfy the needs of power, achievement and social affiliation. Just three needs are primary driving forces namely, *Power*, *Achievement* and *Affiliation*. Retaining employees especially executives today, would require more than job satisfaction, what they aspire for is *life satisfaction*. In such a scenario leisure time is expected to decrease and commitment increase thus gaining life satisfaction through work.

Strategies for staff management therefore would need to provide a clear vision, harmonious internal environment with good industrial and public relations, in addition to organisational capabilities, specificity in job designing and reduced hierarchical levels in organisational structures. Staff want to expand as much as organisations do and opportunities would need to be provided if staff with commitment, vision and ambition are to be retained. Organisations of the future will need to develop an image with which managers and other personnel would like to affiliate.

Chapter 29

Legal Aspects of Personnel Management

Every food service organisation is governed by laws affecting the employment of staff that may vary slightly for every country, according to government policies prevailing from time to time.

Personnel managers therefore need to know the legal implications concerning hiring of staff their welfare and retention measures to take in order to avoid problems with employee unions.

For the successful operation of any establishment therefore managers need to fulfil certain legal obligations, some are in the form of employment contracts, other are unwritten mutually agreed upon. Still others, by virtue of having been practiced over long periods develop as codes of practice to be followed for all time to come in an organisation. These form the base on which the work culture of an establishment rests. In addition there are legal obligations to be fulfilled for safeguarding the health and well-being of people within the establishment whether staff, customers, suppliers or visitors.

In considering the legal implication of any food service, it is important to be aware of the fact that laws keep changing or get amended by courts or through Acts of parliament from time to time to make them applicable to the changing patterns and needs of society. Those laws affecting people at work in any establishment are called *Labour Laws*.

LABOUR LAWS

Formalised personnel management in India dates back to the Royal Commission report on labour, which recommended the appointment of labour officers to

recruit and select people for work in industry and look into their working conditions. In 1827, with the introduction of the Industrial Disputes Act, the function of these welfare officers changed to that of handling disputes relating to wages, leave, retirement benefits, bonus payments, and so on.

Although labour legislation is over 150 years old, the first useful law was passed in 1923 in the form of the Workmen's Compensation Act. This was followed by the Trade Unions Act in 1926 which gave legal protection to trade unions and their members from criminal and civil court action for indulging in trade union activities, then 1929 saw the introduction of the Trade Dispute Act followed by the Payment of Wages Act in 1936 and the Maternity Benefit Act. In 1946, further legislation was introduced to cover industrial employees through the Industrial Employment Act and Minimum Wages Act, 1948 promulgated to guard against exploitation of workers, by defining the minimum wage levels for different occupations. The laws tended to be protective and more beneficial to employees rather than restrictive.

There was a further upsurge of legislations after Independence with their basis in the Directive Principles of State Policy. Other factors to influence employee legislation were the new national objectives of establishing a socialist society and pursuing programmes of planned economic development. However, it was only in 1960 that all aspects relating to people at work, namely welfare, industrial relations and personnel administration were covered by law.

There are over 110 laws today governing people at work, and more would probably emerge to cover recruitment, housing, unemployment and old age pensions.

Legislation forms the core of personnel management activity in any organisation irrespective of its size or nature, although it stands to reason that the larger the work force employed, the greater will be the task of maintaining harmonious relations between people in an organisation. It has become imperative for management to look after staff welfare and provide the benefits considered necessary for maximising output.

Legislation concerned with people in India has come of age, as depicted through the brief discussion of the laws that affect employees of any organisation. Some laws applicable to the food service industry have been presented yearwise with suitable examples.

Apprentices Act, 1850

This Act was amended four times in 1961, 1973, 1977 and 1986 and created an obligation for employers to teach and train employees in skills that would

safeguard their future job security. It included training of graduates and vocational technician apprentices, for the benefit of the 10 + 2 vocational education stream. The amendments tried to improve the performance of the Apprenticeship Training Programme.

Fatal Accident Act, 1855

This was passed to compensate families in case employees met with a fatal accident at work.

Breach of Contract Act, 1859

This assured an employee's job security within the limits of the contractual agreement with the organisation.

Employees and Workmen (Disputes) Act, 1860

This Act enabled settlements of grievances arising at work within the guidelines provided.

The Indian Contract Act, 1872

This defined the nature of contracts and employers obligations to abide by them, whether written or verbal. The Act deals with the general principles of the law of contract. It ensures the realisation of reasonable expectations of both employers and employees entering into a legally enforceable agreement between them at the time of employment while the Act does not spell out the rights and duties which it will enforce. The Act provides the structure within which both parties can chalk out their on rights and duties. The essence of a contract thus involves a full and final agreement on the details of the contract, that is there must be *concesus ad idem*. In 1995, the Supreme Court ordered that contract labour employed by public sector organisations be given permanent jobs and directed the central and state governments to determine ways of abolishing the contract labour system, as it was considered an unfair labour practice.

The 107 page verdict said *The only ostensible purpose in engaging the contract labour instead of direct employees is monetary advantage of reducing expenditure.*

The judges noted that economically too is was a short-sighted and unsound policy from the view point of the country's *economic growth, which should not be measured only in terms of production and profits, but gauged primarily in terms of employment and earnings of the people. Man has to be the focal point of development.*

The court directed establishments to absorb as many workers as feasible, as direct employees according the section 10(2) and clauses (a) to (d) of the Industrial Disputes Act.

Workmen's Compensation Act, 1923

The Rules were formulated in 1924, and an amendment to the Act made in 1938. The Act provided rules for payment of compensation to employees and their dependents for injury disability or death occurring at work. The rules provided guidelines for transfer of money as well.

The Trade Unions Act, 1926

This Act applies to all trades in which unions play a part. The catering sector being a fast growing industry and workers becoming more and more unionised The Trade Union Act becomes applicable to it as well.

Trade Unions are basically associations of workers formed for the regulation of relations between people at work. Whether among employers, employees or both. These unions are expected to function in a manner that enable people to act together and strengthen their bargaining power to negotiate with employers on progressive or controversial matters.

The central government has considered a comprehensive law on industrial relations (IRs) with a view to promote peace and harmony at work through good employer-employee relations.

This Act was amended in 1947, 1960, 1964 and 2001. It basically provides for registration of trade unions. Any seven or more workers may, by subscribing their names to the rules of a trade union, complying with the provisions of the Act, apply for registration under this Act. The Act also defines the responsibilities of employers and rights of employees.

Payment of Wages Act, 1936

Payments include those made to employees in lieu of work done. These may be in the form of wages, bonuses, insurance premiums, provident fund and gratuity payments. Sometimes employers are liable to make cash payments in the form of the compensations for injury or loss to employees at work. These are covered by the Workmen's Compensation Act, 1923. However this applies only to those establishments which are not covered by the Employee's State Insurance (ESI) Act, 1948.

This legislation was enacted to regulate the payment of wages to employees. Its object was to help in providing an effective remedy to employees in case of illegal deductions made from wages, or unjustified delay in paying wages. At present the Act applies only to those employees whose average wage is below Rs 1600, which is now being considered for enhancement in the next amendment.

In the 1950s and 60's non-statutory wage boards were set up which comprised of workers, employers and independent members, because the employees were not organised and trade unions were not adequately equipped with respect to bargaining power. The last such wage board was set up in 1985.

Since then, trade unions have grown in strength and are able to negotiate wage agreements for their members.

Insurance Act, 1938

Under this Act, the employers had to insure their employees against injury, theft-death and so on. A number of schemes have been offered by the government to employees or workers in both the organised and unorganised sector of industry. In 1995, the labour ministry raised the Group Insurance Scheme (GIS) cover for the 230 million workers in the unorganised sector from Rs 3000 to 5000 in the case of death and from 6000 to 10,000 in the case of disablement. Workers were also encouraged to join the Provident Fund Scheme (PFS) and therefore enjoy the benefits under both the schemes.

Weekly Holiday's Act, 1942

This laid down the guidelines for weekly holidays to be provided to all employees.

Industrial Disputes Act, 1947

The Act made provision for harmonious working relationships through the establishment of free communications and negotiation between people at work.

This was enacted to provide guidelines to employers, through rules formulated in 1957, for handling disputes relating to conditions of service, salaries, leave, pension benefits and so on, if supported by a large number of workers or a trade union.

The amendment Acts, were passed in 1982 and 1984, to deal with regulations of layoffs, retrenchments and closures. Any worker who has

completed not less than one year of continuous service is entitled to a minimum amount of compensation for retrenchment or closure.

The Factories Act, 1948

This Act is a piece of social welfare legislation governing working conditions of people in *factories*. The term factories includes establishments which prepare articles of food and drink for service to the public. It also classes as *workers* all persons employed in a kitchen for preparing food for sale, and canteen workers supplying basic, essential amenities to workers engaged in the production or manufacture of goods for sale. The legislation thus broadly covers industrial canteens, commercial food service establishments irrespective of their size or nature.

This covers obligations of employers for providing comfort, health, safety and welfare activities at work. The Act was amended in 1976, and forbids employment of children below 14 years of age in any industry, involving heavy or dangerous work.

The Act applies to all establishments employing more than 10 workers and using power for its operations. It also applies to premises where there are 20 to 200 + employees even if no electricity is used. It does not however, apply to premises operated by self-employed persons or their families.

The Factories Act expects all employers to provide minimum safe guards for the safety, health and welfare of people at work. To fulfill the conditions laid down by the Act, every owner or manager of a catering establishment must look after those aspects, concerned with welfare of employees. The provision of welfare by an employer usually includes the following:

- Washing facilities along with toilets and rest rooms.
- First-aid facilities.
- Paid annual leave.
- Uniforms including footwear that is comfortable for work.
- Working hours not exceeding 10½ hours a day, including rest periods. The maximum hours per week must not exceed 48 hours. Provision is also made for overtime work.
- Paid annual leave at the rate of one month's salary for every year of service for permanent employees.

The Factories Act 1948, also lays down conditions to safeguard the health and safety of people at work. In order to conform to the Act, employers are liable to provide an environment which does not in any way affect adversely,

the health of any person, or injure or disable him in any way. To ensure a healthy environment, therefore, it is necessary to guarantee:

- The cleanliness of the establishment and staff.
- Proper ventilation to prevent dust and fumes from collecting in the work environment, and to control humidity through provision of exhaust fans. Unduly high humidity in kitchens causes fatigue and sweating, affecting the food being handled. And through it, the health of the people.
- Lighting should be such that it does not affect the visibility and eyesight of people at work.
- Overcrowding should be avoided by proper planning of areas.
- Clean drinking water should be provided.
- Proper washing and toilet facilities are essential.
- Proper disposal of waste materials.

The procedures suggested for the safety of employees at work should be formulated within the safety policy of the establishment. These include:

- Periodic maintenance of electric appliances.
- Proper placement of fire fighting equipment, and its regular maintenance.
- Establishing good working habits.
- Adequate supply of safe water.
- Immediate and safe disposal of wastes.
- A high level of building and equipment maintenance.
- Comfortable working temperatures.
- Adequate sanitary facilities for staff and customers.
- Training in the use of equipment to eliminate risk of injury.
- Eradication of rodents, insects and pests of all kinds.

The enforcement of minimum standards of safety and sanitation in food services is usually the responsibility of the local health and sanitation authority of each state or area. In some states, the local authorities have specified the kind and number of facilities that a caterer is obliged to provide in accordance with various sizes and types of establishments. One toilet to 12 persons has been suggested.

The Directorate General of Health Services (DGHS) is responsible for setting up inspection cells to ensure the health and safety of the environment,

and to certify that premises where food is prepared and served to a large number of people are free from and health hazards.

The Minimum Wages Act, 1948

The Minimum Wages Act, 1948 was an effort to prevent employers from exploiting their employees, in terms of underpaying them. The catering industry is particularly is prone in this respect and the employment of cheap labour is still existent in small family based operations which are not often covered by legislation. The criteria set out for wage fixation in the Act are:

Living wages: These are expected to be linked with the cost of living index and the supply and demand situation for labour.

The ability to pay: The payment of wages is related to the conditions provided by each type of establishment for work and wage, and salary agreements between employers and employees made according to specific job requirements.

Fixing wages: The wages are fixed according to the going rate within the catering field.

The minimum wage rate may be fixed for time and piece work and also for overtime work. The fixation must be in relation to different types of jobs, age and experience of the employee, the location of the establishment on which depends the availability of staff, permanence of the appointment and so on.

Permanent employees are generally paid a basic salary with allowances adjusted according to the cost of living index. The minimum wage rate may be fixed on a per hour, per day or monthly basis, depending on whether an employee is an adhoc appointee or temporary for a few hours a day or part-time for a few hours a week. Where wages are not linked to the cost of living index, benefits in the form of subsidised meals or a facility for purchase of food items at concessional rates for the family may be existent. In some establishments, a rate may be fixed which includes the basic rate, concessions and benefits.

Thus, wages may be paid partly in cash and partly in kind. From the viewpoint of the employees, his wages are as good as the purchasing power that they confer, and the security they give to him and his family. The wage policy of any organisation must not only help to fulfil the basic needs of the employee but also motivate him to work better and reward him for success and achievement.

What various establishments are paying in a particular areas is further related to the productivity of employees and the bargaining power of recognized trade unions.

A good wage policy is one that pays fair wages, while still maintaining a control over labour costs, which are one of the highest costs in the catering industry. Every wage policy must take into account the relationship that exists between duties and responsibilities of particular jobs for which the wages are paid. The pay scales must reflect the differences in experience, ability and responsibility required for particular jobs. Usually, this is clearly seen through the organisation structure of an establishment.

The Act is accompanied by Central Rules, 1950 and lays down the lower limit of wages for employees for strict implementation. The central government has also introduced Variable Dearness Allowance (VDA) which is linked to the Consumer Price Index (CPI) at any given time.

Employees State Insurance (ESI) Act, 1948

This is applicable to establishments using power and employing 10 or more persons or non-power using units employing 20 or more people. This Act has now been extended to include hotels and restaurants. It covers employees drawing wages not exceeding Rs 6500 with effect from 1st January, 1997. The ESI Act provides medical care in kind and cash benefits in sickness, maternity and employment injury.

Full medical care including hospitalization is also being made available to family members of the insured persons. As on 31 December 2000 there were 139 ESI hospitals and 43 annexes with 26,905 beds and 1,443 dispensaries under the Employees State Insurance Scheme. The total number of employees covered were approximately 86 lakhs.

The Employee State Insurance Act, 1948 also takes care of the provision of benefits to employees, which are financed from contributions of employees, employers and the State. The Act was designed to help the employees cover their expenses during periods of sickness, maternity or injury. The benefit is also expected to be paid in the form of a pension to the dependents of workers who may sustain fatal injuries at work. The Act applies to all food service establishments employing 20 or more persons. Other benefits under the Act include canteen facilities, housing facilities, financial and legal services, purchasing services and recreational activities.

Canteen facilities: The provision of canteen facilities and meals at subsidized rates need to be provided especially where more than 250 workers are employed. As far as food service establishments are concerned, the provision of meals (free or subsidised) has become custom and practice even in small establishments, with less than 20 workers. This is because the product of catering institutions

is food, and the benefit acts as a deterrent to pilferage. Besides, it is an established fact that if refreshments are given at regular intervals during working hours, the efficiency remains good throughout the day. Managements however, adopt different practices for the provision of these benefits. Some develop a separate menu for staff meals, so that the costs can be calculated accurately. Others fix the amount of subsidy per head and pay it out in the form of coupons to be used by the employees to buy their meals from the service counters. If any extras are desired or bought the employees pay the price listed. Still others may pay out the subsidy to the employees weekly, to be used by them as and when they like, for meals and refreshments.

Housing facilities: These may take the form of housing or payment of a proportion of the salary disbursed as House Rent Allowance (HRA) for renting of accommodation. Management may also offer loans for building and so on.

Financial and legal services: These involve offering credit and loan facilities to employees who are in need of money for various reasons. Legal advice may also be given when necessary, to maintain the morale of the staff.

Purchasing services: Some establishments may set up a scheme for the benefit of employees, for purchase of food items in stock at discounted prices. This is beneficial both to the institution and the employees, because in catering it is better to sell out the prepared food items at the end of the day, than to risk storing them for use the next day, especially if cold storage facilities are inadequate. This saves the establishment the expense on unduly large storage spaces too, and helps employees to carry home ready meals and snacks cheaply, without having to stop and shop on the way home, after a full day's work.

Recreational activities: The provision of physical and mental diversion at work is becoming increasingly important for people. Even in very small establishments, it has become practice to provide music through radios or tape. It is not uncommon to find vendors tuned to their transistors while on their rounds selling food items. In larger establishments, the concept of providing indoor activities like reading, cards, carrom, etc. for employees during breaks is gaining significance.

All welfare activities however, should preferably be designed according to the needs of the employees and related to their job requirements. For instance, if a job requires standing for long hours, the recreational activity should provide rest to the legs in particular. In many instances, establishments spend a lot of money on providing welfare which is not fully utilised by the employees, and often not even appreciated. While welfare is an important measure, it should

always be considered secondary to the job requirements and encourage efficiency, thus helping to achieve the goals of the establishment. The above mentioned legislation also covers aspects of sanitation and safety, so vital to the successful planning and operation of food services. Any welfare provision would be worthless if the environment provided for work is not safe and healthy.

Employees Provident Fund and Miscellaneous Provision (MP) Act 1952

Under this Act, retirement benefits in the form of provident fund (PF), family pension and deposit linked insurance are covered for employees. Originally the coverage was restricted to those employees drawing wages up to Rs 5000 per month. From June 1, 2001 however, this ceiling has been raised to Rs 6500. Minimum rate of contribution under this Act was 10 per cent which has now been enhanced to 12 per cent. The employers are required to make a matching contribution and therefore the legislation is sometimes referred to as Contributory Provident Fund or CPF as different from the General Provident Fund or GPF for which the government pays the contribution as for government run or aided institutions. The Employees Provident Funds and Family Pension Fund (Amendment) Act, 1973 further prevented defaults in payment of contributions by employers by making existing penal provisions more stringent.

There are a number of schemes offered by the legislation as social security measures such as the Employees Deposit-Linked Insurance Scheme and Pension Scheme.

Employees Deposit-Linked Scheme

This scheme was introduced for members of the Employees Provident Fund and exempted provident funds from 1 August, 1976. On the demise of a member, the dependents would receive the accumulated P.F. plus an additional amount equal to the average balance in the PF account of the deceased during the proceeding twelve months. The maximum amount of benefit payable under the scheme is Rs 60,000 and the employees do not have to make any contribution to it.

Employees Pension Scheme

This scheme, has been effective from 16 November 1995, under which pension at the rate of 50 per cent pay is payable to employees on retirement or superannuation on completion of 33 years contributory service. A minimum of 10 years service entitles employees to pension.

At the time of death, the scheme also provides for grant of family pension ranging from Rs 450 to 2,500 per month depending on the salary and service of the employee at the time of the demise. In addition a child pension at the rate of 25 per cent of family pension is permissible subject to a minimum of Rs 150 per child for upto two children only. The scheme, is financed by diverting an employers share of PF representing 8.33 per cent of the monthly wage to the pension fund. In addition the central government also contributes to the scheme at the rate of 1.16 per cent of the wage. The upper limit has been raised from Rs 5000–6500 with effect from 1 June 2001.

Shops and Establishments Act, 1954

This covers the conditions of work which must be provided by all employers in catering establishments. Employers need to:

- Specify working hours for each employee.
- Ensure that no one works more than 5 hours at a stretch without a break of at least ½ an hour or a total of 9 hours a day or 48 hours a week. In emergencies no employee should work more than 54 hours a week.
- Every employee should have a fixed lunch break.
- Every employee must have at least 24 continuous hours off in a week with full wages.

The period during which wages will be paid need to be specified and payment made promptly therein every month.

Further, employers are expected to intimate these conditions to the Chief Inspector incharge of the area, so that he can check periodically that the Act is being complied with. The Act also prohibits children below 18 years of age from being employed.

Payment of Bonus Act, 1956

According to the Payment of Bonus Act, 1956 employers are required to pay a bonus of 8.33 per cent of the basic salary of each employee, in establishments where 20 or more persons are employed. This is irrespective of whether or not net profits are made at the end of the accounting year. Establishments which pay more do so at their own discretion and the power of trade unions to negotiate. This Act was amended in 1965, 1972, 1973 and 1976 and the rules under this were framed in 1975.

The Act provides for the payment of bonus to employees that is, any person employed on a salary or wage (excluding apprentices) not exceeding Rs 3500 per month, performing any skilled or unskilled work technical, supervisory, managerial, administrative or clerical. According to section 12 of the Act. The bonus is payable to only those employees whose salary or wage exceeds Rs 2500 per month.

The above wage ceilings were last revised under the *Payment of Bonus (Amendment) Ordinance, 1995* promulgated on 9 July, 1995 and made effective from 1 April, 1993. The government is now again considering proposals for reviewing the wage ceilings.

Monopolies and Restrictive Trade Practices (MRTP) Act, 1969

The restricts unfair trade practices of any kind resorted to by organisations or employees and ensures just dealings with employees and customers. The Act which was amended in 1984 and 1986, incorporated five categories to curb unfair trade practices which is applicable to food processing industries (Seetharaman and Sethi, 2002).

The Equal Remuneration Act, 1976

This provides for the payment of equal remuneration to men and women for the same work with a view to preventing discrimination on grounds of sex.

Child Labour (Prohibition and Regulation) Act, 1986

This Act prohibits employment of children in any industry, and protects the interests of children.

Payment of Gratuity Act, 1972

The Payment of Gratuity Act, 1972 was legislated to provide security to employees after retirement, and to their families in the event of their death. The Act placed the entire responsibility of their security on the employers.

This is applicable to food processing units and other establishments. It provides for the payment of gratuity at the rate of 15 days wages for each completed year of service, subject to a maximum of Rs 3,50,000. In the case of seasonal establishments, gratuity is payable at the rate of 7 days wages for each season. The Act however does not affect the right of an employee to receive better terms of gratuity under any award, agreement or contract with the employer.

The Air Prevention and Control of Pollution Act, 1981

This Act provides the guidelines for the prevention, control and removal of pollution from the air we breathe. It ensures clean air especially in an around establishments by use of proper waste management techniques.

The policy statement on Abatement of pollution adopted in 1992, provides instruments in the form of legislation and regulation, fiscal incentives, voluntary agreements and education and training.

Information and Technology Act, 2000

This Act was promulgated to facilitate the growth of e-commerce and electronic communication through internet. Brought into force on 17th October 2000, the Act provides the legal framework for recognizing electronic contracts, prevention of computer crimes, documentation, digital signature and so on.

National Environment Tribunal Act, 1995

This Act has been enacted to provide for strict civil liability in accident cases arising from activities involving hazardous substances. An enterprise engaged in activities with potential threat to the health and safety of persons residing in surrounding areas owes an absolute duty to ensure that no harm is caused to the community.

Gas Cylinder Rules, 1981

These were formulated to ensure safety of employees at work and to prevent exploitation of organisations and customers.

The Water (Prevention and Control of Pollution) Cess Act, 1977

This Act is now being amended to enhance the water (cess) Rules for augmenting the resources of PCBS. A bill was introduced in the Lok Sabha on 15 December, 2000.

During 1999, forty nine bills were passed and converted into Acts, where as 56 Acts were promulgated by the government in the year 2000. Among these, some apply directly or indirectly to employees, employers and institutions. These are listed in Table 29.1.

Table 29.1 Acts Passed in 1999–2000

<i>S. No.</i>	<i>Description and Year</i>
1.	Trade Marks Act, 1999
2.	Income Tax (Amendment) Act, 1999
3.	The Recovery of Debts due to Banks and Financial Institutions (Amendment) Act, 2000
4.	Information Technology Act, 2000
5.	The Workmen's Compensation (Amendment) Act, 2000
6.	The Protection of Human Rights (Amendment) Act, 2000
7.	The Electricity Regulatory Commissions (Amendment) Act, 2001
8.	The Trade Unions (Amendment) Act, 2001
9.	The Juvenile Justice (Care and Protection of Children) Act, 2000
10.	The Copy Right (Amendment) Act, 1999

Under these amendment Acts some schemes were initiated by the government. These are briefly outlined.

Hostel Scheme

This scheme involves supply of food grains to SC/ST/OBC Hostels and was introduced in October, 1994. Hostels with two-thirds of students belonging to SC/ST/OBC category are eligible to get 15 kg food grains per resident per month.

The Annual requirement of food grains under this scheme is estimated at 2.45 lakh tonnes. 1.75 MT have so far been allocated for the current year (GOI, 2002).

Annapurna Scheme

The Department of Rural Development is the nodal department for the scheme which commenced in 2000–2001. This was meant to cover senior citizens above 65 years of age, who though eligible for old-age pension are not getting it for some reason. Under the scheme they are supplied with 10 kg of food grains per person per month, free of cost. The off-take in 2000–2001 was 9000 metric tonnes (MT) of wheat and 10,000 MT of rice as against 1.65 lakh MT allocated at economic cost. In 2001–2002 therefore 1.62 lakh tonnes have been allocated.

The Acts briefly discussed above indicate that the areas covered by legislation for employees are working conditions, welfare, health and safety, harmonious working relations and payments.

Working conditions refers to fixation of working hours, regular and timely payment of wages, paid leave, creation of a healthy working environment through the provision of basic necessities such as toilets, washing facilities, rest rooms, comfort at work, and the establishment of good human relations.

Legislation thus covers all possible aspects of health, welfare, and safety of people at work. All managers of food service establishments therefore, should concentrate on training staff to comply with the standards laid down. It is also important for every member of an establishment to be aware of legal, financial and other implications of not achieving the standards laid down by the law. Contravention of any of the provisions of any Act are liable for punishment and fine.

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Unit 7

Hygiene Sanitation and Safety

- Hygiene and Sanitation
- Safety and Security

Hygienic in a food service establishment refers to the general cleanliness of its environment and the people in the work situation; while sanitation involves activities which help to maintain healthy and hygienic conditions, free from the hazards of infection and disease. Due to the close interrelationship between the two terms they are often used synonymously.

The cleanability of walls, floors and ceiling, sanitary upkeep of equipment, furniture and fittings, and the quality of air and water available, are important determinants of environmental hygiene.

Hygiene with respect to people focuses on their personal cleanliness; development and maintenance of hygienic habits while handling, preparing, cooking and serving food.

Besides hygiene and sanitation, safety too is a vital aspect of institutional management. All managers need to ensure the safety of people within the establishment at any given time, be they staff, customers or visitors. Lack of attention to any of these aspects can have serious legal and economic implications besides affecting employee health and performance and goodwill of customers and visitors.

This unit emphasizes the importance of hygiene, sanitation and safety in the different areas of an establishment. It brings to light what can happen if they are ignored, and suggests methods by which a safer and healthier environment can be established. In addition it focuses attention on food laws which need to be adhered to for quality food production and service.

Chapter 30

Hygiene and Sanitation

Hygien refers to the general cleanliness of the establishment and its surroundings including people, their work habits and behaviour. *Sanitation* on the other hand, encompasses all the activities necessary to bring about, establish and maintain healthy and hygienic conditions free from the hazards of infection and disease. Because of their interrelationship, hygiene and sanitation are words that are used synonymously when it concerns food service establishments and the quality of the food expected to be served in any unit.

The preparation and service of food requires handling of materials which are extremely vulnerable to becoming the media of contamination thereby leading to the spread of infection and disease. In institutional food handling, therefore, hygiene and sanitation play a vital role in promoting and protecting health and well-being of people for whom food is prepared and served, be they customers, staff or visitors.

The maintenance of good standards of hygiene are of particular importance and therefore kitchen and service staff must be told what standards are expected of them, since achievement of food safety standards is the prime goal for any food establishment.

In order to practice proper sanitation, it is important to build it into the catering environment right from the point where the site for a food service is being examined, through the designing stage of the kitchen, service, storage and disposal areas, to the establishment of procedures for ensuring good food handling practices throughout the meal production and service process.

To assess the hygiene and sanitation requirement of a catering establishment, it is important to look at its various aspects operating in the food service

environment. Hygiene and sanitation may be considered under four broad categories namely:

- Environmental hygiene
- Food handling practices
- Personal hygiene and
- Customer perceptions and hazards.

Figure 30.1 indicates the specific areas that need to be focused on by all managers and trainers of staff in hygiene and sanitation.

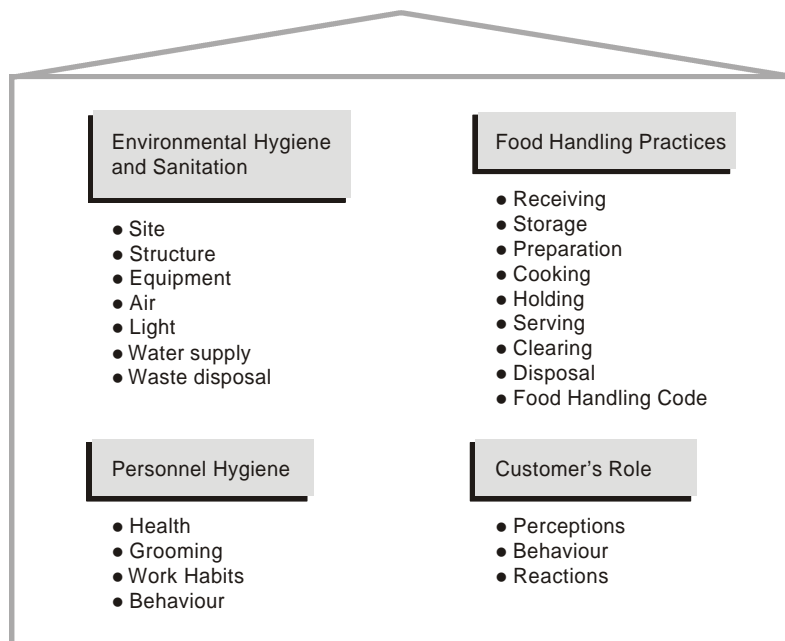


Fig. 30.1 *Factors affecting hygiene in food service establishments*

ENVIRONMENTAL HYGIENE AND SANITATION

This refers to the total environment in which food is delivered, prepared and served. Unfortunately, hygiene of the environment and the habits of the people handling food are both factors which are most often neglected in the food preparation and service areas of an establishment.

The discussion that follows will indicate how hygiene and sanitation can be built into the environment at each stage of establishing a food service.

Site

When a site is being examined for establishing a food service, it should be scrutinized for the amount of air pollution or whether it is free from the potential hazards of infestation by insects and rodents, and not only for what it costs, or how beautiful the landscape is, or how busy and well inhabited the surroundings are to attract customers.

If the food service unit is part of a large building, the location of water supply and sewage disposal lines need to be examined. They should not run too close to each other, because in the event of a leak, the water supply can get contaminated. Separate sanitary conveniences for catering staff should be provided located away from food storage, production and service centers. The location of routes by which deliveries are made and refuse removed need consideration as well.

The site should also be checked for whether it constitutes filled up waste deposition pits. Buildings on such site appear fine, but in the long run would become unhealthy and insanitary once food production activity starts. If hygiene is ignored at this stage, it can mean a drop in customers in long run, because of the potential danger of infecting the food no matter how well it is cooked.

Structure

The cleanability of floors, walls, ceilings or any other surfaces built into the establishment is the basis for maintaining a structure free from the hazards of infection. The materials selected therefore should be non-absorbent, non-corrosive and easy to keep clean. Details of suitable materials for floors, walls, ceilings have been discussed in Unit 2 for kitchen and other spaces. Facilities for proper sewage disposal and the construction of adequate plumbing for kitchen and service areas is of consequence in sanitation, as serious outbreaks of food poisoning have often been traced to carelessness in this area. All sewage lines must be directed into the public sewage system.

Faulty plumbing can prove a hazard as it leads to frequent blockages of drains or results in backflows. Provision of floor drains is a must for all catering activity areas, where spillage is likely.

Provision of sufficient handwashing facilities is also necessary at strategic points in the establishment. While the structure may have taken into account all hygiene and sanitation considerations it would have to be subject to regular pest control treatment once food is handled, prepared and served on the premises.

Equipment, Furniture and Fittings

Equipment includes production and service equipment as well as furniture and fittings. The construction and arrangement of furniture, equipment and fittings in spaces have already been discussed in Unit 2 and the selection of materials for equipment in Unit 3. It would suffice here to say that, in general, these should be designed so that they do not harbour dust or dirt, which is the source of microorganisms. It is important to discard any equipment which are chipped, dented or damaged if in use for food preparation or service activities. In addition, a knowledge of the use of proper detergents to keep surfaces, equipment and fittings clean is essential to avoid leaving chemical residues on surfaces that may contaminate food.

Ventilation

The need for proper ventilation in all areas of food service establishments has been emphasised in Unit 2. However, it is evident that where a number of people are working together, handling, cooking and consuming food, the atmosphere gets heated up and polluted with carbon dioxide as a result of normal respiration. This creates conditions conducive to the growth of microorganisms.

It has been estimated that if a man is breathing normally in a room containing 28.3m³ of air, the air will contain 0.6 per cent carbon dioxide in 20 minutes. This is the maximum permissible limit beyond which the atmosphere would be considered polluted or unhealthy. One person should therefore normally have 28.3 m³ (1000 cu. ft.) of space, which is not always possible in catering establishments. In service areas especially, there is always overcrowding at peak times. Ventilation, therefore, takes on a very important role in clearing the hot air and bringing down the temperature as well as the carbon dioxide content. All kitchens must be provided with exhaust fans and extraction hoods above cooking ranges to remove steam and organic impurities.

In service areas while overcrowding needs to be avoided, the provision of ceiling fans to push out the warm air, and enough windows and ventilators to replace it, are important to hygiene. Windows and ventilators should be hinged in such a way as to allow air to enter a room in an upward direction.

Equipment are now available which can help to purify the air in congested areas or areas subject to fumes, dust and other forms of pollution.

Lighting

All areas should be well lighted to make dirt, grease and infestation easily detectable.

Sometimes, for comfort in winter or to produce aesthetic effects coal or wood fires are lighted in some food service areas. The organic impurities given off in such atmospheres are more harmful than the carbon dioxide from normal respiration. If accompanied by poor ventilation it can lead to headache, giddiness, fainting and even vomiting. Long exposure to overcrowded and warm conditions affects general health, increases susceptibility to infections, produces lethargy and loss of appetite. Besides producing discomfort it also affects the efficiency of people at work.

Water Supply

The water supply to all catering establishments should be treated to ensure that it is fit for drinking, cooking, and washing of utensils. Although safe water supply is primarily the responsibility of the government water supply departments, in some areas due to lack of trained staff or facilities for testing the microbial count or level of dissolved impurities, the supply can become a source of contamination. This is then easily passed on to the customers through contaminated utensils and the food washed or cooked in them. It is, therefore, equally a responsibility of the catering authorities to ensure that good water is used for food production and service activities. The characteristics of water with which every caterer is concerned are colour, taste, corrosiveness, hardness and safety.

All natural water supplies contain mineral salts and organic materials in addition to dissolved gases from the air. Microbial activity too, influences the colour, odour and taste of the water.

Water for food preparation purposes may be considered hygienic when it is sufficiently pure to have only very small quantities of substances dissolved in it which do not prove injurious to health.

Impurities in water may be present as fine suspensions or dissolved in true solution. These may be in the form of salts of metals like lead, iron, zinc or others like carbonates, chlorides and sulphates of calcium and magnesium which tend to cause hardness in water.

The degree of hardness in water used in cooking depends on how permanent it is, temporary hardness can be removed by simple boiling, but more than 25 degrees of hardness have been found unsuitable for drinking, cooking and

washing of equipment. Hard waters may cause dyspeptic symptoms leading to diarrhoea and other digestive disorders.

Table 30.1 lists the types of impurities that may be found in water and the effects they can cause.

Table 30.1 *Impurities in Water and their Effects*

<i>Dissolved impurities</i>	<i>Effect</i>	<i>Suspended impurities</i>	<i>Effects</i>
Mineral salts from the soil	Some toxic salts act as slow poisons	Particles of sand, wood, etc.	Irritation of bowels—diarrhoea
Organic animal and vegetable matter	Toxic to some extent, depending on concentration.	Pathogenic microorganisms	Cholera, typhoid, dysentery
	Repulsive odour of hydrogen sulphide	Eggs of parasitic worms	Suck up nourishment causing, weakness, stomach pain, diarrhoea, loss of appetite, palor
Excessive amount of chemicals used as purifiers	Excess chlorine affects taste of water and food		

Drinking impure water generally leads to gastrointestinal disorders, the severity depending on the degree of impurity. The dissolved impurities can be removed completely only by a process of distillation, which is not practical for catering establishments to set up. In any case, a certain amount of dissolved salts are useful in neutralising acids in water and thus prevent dissolving out lead and other metals from the pipes in which the water flows to various outlets. This is important also where large volumes of water need to be stored in galvanised iron tanks, which can get corroded because of metals dissolving out into the water. However, for softening very hard waters on a large scale a number of processes have been recommended (Appendix 1). The suspended impurities of water settle to the bottom in storage tanks and can be removed by installing filters to suit the needs of the establishment.

Different types of water filters and purifiers are now available which can be filled at the source of the water supply to an establishment. This would ensure that only potable water is available in the food service especially at operative levels where food is handled for production and service by many different people. Large units may install water purification plants.

Figure 30.2 shows some water purification equipment which can easily be used by small food service outlets. It is necessary for roadside cafes or kiosks in out of the way places which may be tourist attractions, but where the water supply is doubtful. For larger establishments the aquaguard is a useful water purifier. The equipment is more convenient to use as it is a wall fixed and requires no floor space, as it is directly connected to the main water supply line. So the purified water is available continuously.

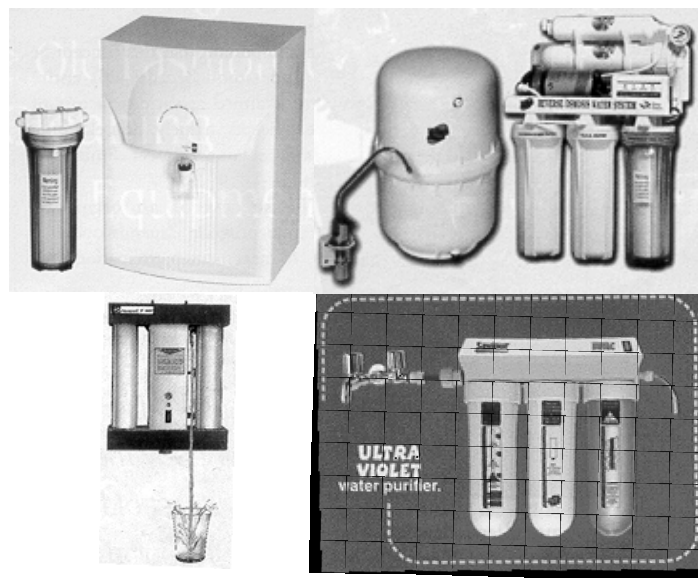


Fig 30.2 Water purification equipment

The aquaguard has a 3-stage purification process. First the candle filters out all physical impurities like dirt and other articles. Then an activated carbon filter absorbs organic impurities like colour, odour, free chlorine. Finally, the ultra-violet treatment inactivates any water-borne bacteria and viruses. The electronic system monitors the quality of purified water by stopping the flow immediately if the purity level falls below predetermined standards. Today, a number of different models are available although the principle functions are similar. However, it is advisable to follow manufacturer's instructions for use and maintenance.

Waste Disposal

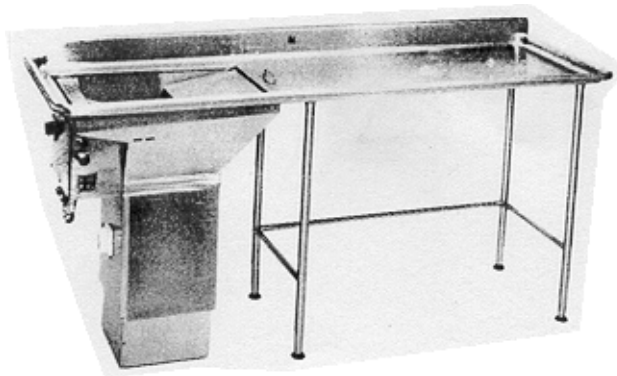
Kitchen waste comprises peelings, trimmings, plate waste, spillage, empty cans, bottles, packing materials, etc. These must never be allowed to remain anywhere

near the production, storage or service areas, because they can attract insects, flies, rodents and even stray dogs and other animals. All these then become agents of contamination for wholesome food. Arrangements must be established for collecting all waste materials at the end of the day and completely destroying them or removing them to garbage disposal centres in sealed, leakproof bags. If the establishment is a large one or the food service a supportive facility of a large organisation such as a hospital or an educational establishment, incinerators may be installed in the back yard away from the catering premises. All waste materials can be burnt up in this at the end of the day.

Waste compactors are also available which crush waste materials like cans, corks, lids of bottles and other disposals, reducing the volume of trash for storage until it is disposed of.

Small establishments can fit waste disposal units, into sinks used for washing equipment. The advantage is that all kitchen wastes can be ground and passed through the drainage system so that it does not have to be held for any length of time in the food service environment.

Figure 30.3 shows the construction of some disposal units which can handle peels, plate waste, bones, etc. with ease, minimising the hazards of spreading infection and causing cross contamination to raw and cooked food and equipment in the food production and service environment.



Food disposer fitted into sink and worktop



Free standing waste compactor

Fig. 30.3 *Waste compactors*

Depending on the size of the establishment and requirement of menus, free standing disposal units are also available directly plumbed to water supply for use.

If waste material has to be stored in or outside the kitchen for any length of time it is advisable to use covered foot operated pedal bins made of durable, non-leaky, non-absorbent materials, which do not take up liquid or odours. They can then be emptied out for disposal by waste collection staff.

Improper disposal can pollute water and through it contaminate equipment and food.

FOOD HANDLING PRACTICES

In food services, the foods, materials and equipment are subject to constant handling by people, at every stage of the food production and service process. Hygiene with respect to each activity of the production cycle is therefore important as discussed below.

Receiving Food Materials

The principles of hygiene and sanitation need to be applied right from the point of receiving food and other materials till the final product is cooked, served and tables cleared of waste or droppings. A strict check on the quality of the food received will go a long way to provide wholesome food to the customer. The quality particularly needs to be checked for each category of items, in terms of any signs for predisposing factors to contamination by microorganisms, accidental chemical additives due to pesticide residues or insect infestation. Table 30.2 provides a guideline to the precautions necessary when receiving food materials to safeguard against health hazards from entering the production cycle.

Table 30.2 *Checks to ensure hygiene in foods*

<i>Food category</i>	<i>Checks to ensure hygiene</i>
Fresh fruits and vegetables	<ul style="list-style-type: none"> • Examine each lot for degree of ripeness and categorise accordingly. • Very ripe items which become tender should be used immediately, others kept in original packing to protect them from dust and spoilage. • Use all perishables within one or two days, especially in tropical climates.

(Contd.)

<i>Food category</i>	<i>Checks to ensure hygiene</i>
Fresh meats and poultry	<ul style="list-style-type: none"> • Reject blemished, cut, leaky or discoloured fruits and vegetables or those with holes in them as these indicate insect infestation and are likely to harbour microorganisms. • In storage microbial and enzymatic activity is speeded up and leads to contamination of other foods as well. • Examine for freshness by colour, firmness of flesh and odour. Even slight deviation from expected standards should be accepted with caution. • Fresh birds should have tight flesh, bright colour, good sheen and medium weight. • If too heavy for breed, it indicates aged meat and likely to harbour parasitic worms. • If frozen, reject birds with 'freezer burn'.
Fish	<ul style="list-style-type: none"> • Check for freshness by colour, firmness of flesh, brightness of eyes and gills, odour.
Milk and milk products	<ul style="list-style-type: none"> • Check for good seals, signs of curdling, odour, acid or bitter taste. Colour and texture are a good index for fresh cottage cheese, <i>Khoa</i>, etc.
Cereals, pulses and legumes	<ul style="list-style-type: none"> • Examine for presence of insects and foreign materials like dust, stones, hair, etc. • Reject if lumpy, discoloured or with odours characteristic of infestation.
Cereal products (bread, biscuits) Semolina, flour, broken wheat, etc.	<ul style="list-style-type: none"> • Reject if stale odour, colour and texture changes. • Prevalence of insects; lumpy because of excess moisture.
Fats and oils	<ul style="list-style-type: none"> • Any signs of leakage or an unusual seal are indications of replacements and resealing, may indicate spoilage or rancidity; or wilful contamination with other than cooking oils. • Reject if colour is not as expected or product has off flavour.
Nuts and fat rich foods	<ul style="list-style-type: none"> • Reject if colour change and off flavour; presence of insects or their residues • Unsealed or damaged packs.
Canned foods	<ul style="list-style-type: none"> • Bloated or bulging cans are dangerous sources of pathogenic organisms especially if the food product has a high pH, particularly meats and green peas and beans • Test contents of damaged, dented or leaky cans • Reject if intended for storage • Cans not labeled for date of manufacture and use must be treated with suspicion.

In general, the handling of perishable foods such as fresh meat, fish, poultry, milk and milk products, fruits and vegetables, should be minimal while receiving these items. It is therefore advisable to check weights and packings and send them directly for use to preparation areas, to be utilised as quickly as possible. In view of this, it is wise to arrange deliveries of perishables at frequent intervals to prevent any risk of contamination through excess handling, in the process of having to store them. Other products after thoroughly examining for signs of contamination may be stored till required.

Storage

The different types of food materials used by an establishment need separate storage conditions for maintaining their wholesomeness and expected shelf life. This is because foods vary in their moisture content, acidity and temperatures according to which they become susceptible to spoilage or remain wholesome. Storage conditions therefore need to ensure that foods do not become hazardous to health while in storage. Figure 30.4 indicates the factors that need attention.

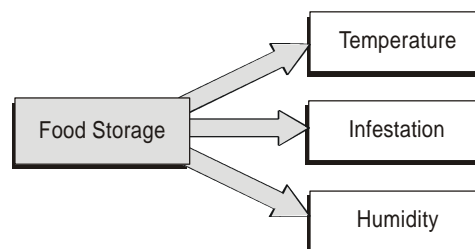


Fig. 30.4 Factors important in food storage

Temperature: The temperature to be maintained in a particular store will depend on the type of foods to be held and the period for which they have to be stored.

In general, most bacteria are inactivated at freezing point *i.e.* 0°C and below. Between 1.7°C and 4.4°C they start becoming active but grow slowly. As the temperature rises the activity increases becoming optimum at 37°C which is the normal body temperature. Table 30.3 indicates the temperatures at which foods need to be stored to prevent their deterioration through contamination by microorganisms.

Table 30.3 *Recommended storage temperatures for food materials*

<i>Foods</i>	<i>Temperature range</i>	<i>General remark</i>
Frozen foods	-10°C to -20°C	Maximum temperature for all perishable food is between 7.2°C to 10°C. Bananas are best stored at 20°C to 25°C or normal room temperature.
Fish and sea food	-5°C to -1.1°C	
Meat and poultry	0.6°C to 3.3°C	They are best bought raw in bunches, that can be hung in the store and used as they ripen.
Milk and milk products	3.3°C to 7.8°C	
Fruits and vegetables	5.1°C to 7.2°C	
Eggs	7.2°C to 10°C	
Canned products	21.1°C	
All dry stores like flour, sugar, condiments	15°C to 22°C	

As Table 30.3 indicates most perishables should be kept at temperatures below 10°C, semi or non-perishables at 10°C–20°C, to arrest microbial growth.

Humidity: The humidity in a room and thereby moisture content of the air around stored foods affects the rate of growth of various organisms. Foods that can be safely stored at higher temperatures are those which have a relatively low moisture content, like flours, sugar, spices, cereals, pulses and legumes. But these foods also have the ability to absorb moisture when exposed to it. In humid conditions of storage, therefore, and in the presence of air, microbial growth and insect infestation is prevalent. This is due to the fact that when food absorbs moisture, it becomes more perishable and then requires a lower storage temperature. Since the temperatures of dry storages cannot be changed with the change in perishability of foods, the existing temperatures become relatively too high to protect the foods against microbial attack. Humidity also deteriorates the quality of foods through insect infestation making it relatively unfit for consumption.

In tropical countries where humidity in the atmosphere changes drastically with the seasons, the best method of protecting food in storage is to store in quantities that are consumed fast enough to prevent deterioration, and while in stock to store in air-tight containers so that the humid air cannot get to the foods. This is possible in the case of small food services where the turnover of food items is fairly fast, and the quantities held at one time are restricted by the small storage space possible. Also the range of menus offered in smaller outlets do not warrant the stocking of ingredients that have to be stored because they are likely to be in short supply.

The humid conditions in a store can also be counteracted by a good ventilation system as discussed in Unit 2 under storage spaces.

Infestation: The presence of infestation in or around a store can contaminate food in storage and make it unfit for human consumption, even though the principles of hygiene and sanitation may have been carefully adhered to in the preparation and service of the food. It has been reported that every minute nearly ten children die from diarrhoea somewhere in the world. Of these, a substantial number of cases have been attributed to unsafe food, directly contaminated with microorganisms. Apart from these, the type of infestations due to the presence of insects, fleas, cockroaches, rodents, etc. are not uncommon. When any of these pests come in contact with the food it becomes unfit for consumption. If served to customers or consumed, it can lead to food poisoning. Contamination by pests occurs through the droppings they leave behind. Flies habitually ease themselves on food while feeding, through saliva or dirt collecting on the fine hairs of their body which may be left in the food. Some may deposit eggs of parasitic worms on food.

Pests may find their way into food through defective drains, holes in food packages or bags, doors, and waste material storages outside or within kitchens. Flies settle on kitchen waste, in dustbins if they are not covered whereas some pests like cockroaches remain in dark, uncleaned corners, crevices of walls, backs of cupboards, under equipment and in drawers. It is also difficult to locate a cockroach infestation unless it is very heavy, because cockroaches generally do not come out of their hideouts in the day time. An inspection is therefore necessary at night. Plate 30.1 shows a collage of media reports indicating evidence of food poisoning.

Prevention of Infestation

Prevention of infestation is the most sensible approach for ensuring safe production and service of food. The general principle to adopt in any establishment is cleanliness. This can be practised best where there is enough light, proper ventilation and no overcrowding. In addition, surfaces, equipment design, method of work and people's habits play an important role in maintaining an environment free from dust, dirt, humid corners, etc. which would harbour insects and attract rodents.



Plate 30.1 Media evidence of food poisoning occurrence

Signs of Infestation

Signs of the prevalence of an infestation vary with the type of pests. For instance, insects can be actually seen in certain foods such as cereal product like flour, rice, porridges and so on. Pulses and legumes may have holes in them indicating infestation. Sometimes grains can be seen to lump together in humid conditions, due to droppings in the food product. The odour of some foods change, sometimes being distinctly different at other times offensive. Cockroaches especially leave a persistent, objectionable smell which is easily taken on by equipment and food alike. Even use of equipment which has been thus contaminated can cause food poisoning in spite of high temperatures used in the cooking of food.

The presence of flies can be detected very easily by sight and their prevention has now become very easy, because of the manufacture of equipment (Pest-O-Flash) which attracts all kinds of insects and flies and exterminates them. Pest-O-Flash is now available in quite a few designs and sizes suitable for wall installation and as lamps to be placed in all areas of a catering establishment (Fig. 6.1). Since prevention is always better than cure, vigilance is important, to detect any source of infestation if it does occur.

Control of Infestation

If an infestation is detected control measures must be taken immediately as insects and pests multiply very rapidly and are often not detected till they have reached dangerous proportions. The measures necessary vary with the type of pests. For rodents, all openings need to be sealed by covering with fine gauze. Regular maintenance and cleanliness of areas surrounding the building is important, and any animal should be kept away from catering establishments.

The only way to get rid of a rodent infestation is to use poisoned baits or traps. Such treatments have to be repeated at regular intervals for long periods of time till the infestation is completely eradicated.

A number of different rodent poisons are marketed, the most popular of which is *Warfarin*. Others containing zinc phosphide or arsenic are also formulated. For heavy infestations it is desirable, however, to contract with pest control agencies to eradicate the rodents rather than buy and use the chemicals. This is because the poisons are very harmful to people, and unless the baiting is done under strict supervision food can easily get contaminated.

For insect infestation sprays are available which leave an insecticidal film on walls and ceilings and prevent insects from settling on them. These films

remain effective for 2–3 months and are useful for small establishments especially kiosks and roadside cafeterias, which are more prone to flies.

For porous surfaces water dispersing powders containing DDT or *Lindane* may be mixed with whitewash, concrete, brick, etc. to make surfaces insect-repellent.

For infestation with cockroaches the insecticide usually effective is *Dieldrin*. This is marketed as 0.5 per cent emulsion which can be sprayed easily in dark corners, crevices, under equipment, etc. or *as oils*, powders and lacquers. The latter can be incorporated into paints and brushed over walls near the floors.

The complete eradication of cockroaches needs to be ensured because they become easily resistant to the insecticide if they survive, and not only that, this resistance is passed on to subsequent generations. The problem of eradication then becomes more and more difficult. Ants and wasps may pose a problem too. For each type professional advice needs to be sought. Generally, preparations of *pyrethrum* are effective.

Whatever be the nature of an infestation, two factors to remember in eradication are:

- (i) The process must not leave a single survivor.
- (ii) No food handlers should be allowed to use the insecticide sprays or prepare the baits.

Any of these pests can cause serious food poisoning in addition to monetary loss through damage of foods. All foods found infested must never be used for food production and service.

Preparation

Handling food at the stage of preparing for cooking is as important from the hygiene point of view as is receiving and storage. It is at this stage that contamination can take place easily even from one food to another, so every type of food requires special attention.

Fresh fruits and vegetables, especially roots and tubers which grow nearer the soil, need to be washed very thoroughly in plenty of water, to remove adhering soil or other particles.

High protein foods such as eggs, milk, meats must be kept separately as they are likely to take up microorganisms very fast, being excellent media for their growth. If complete birds are being cleaned and prepared for cooking, the viscera must be removed and immediately sealed off for disposal. This is because

the intestines of birds and animals can be infested with worms or bacteria which can be passed on to other foods.

Cooking

Food should be cooked as quickly as possible after preparation, unless frozen for later use. Cooking meats requires high internal temperatures to make them safe for consumption. As a rule food should be served hot soon after preparation. Some customers who prefer their meats cooked rare or medium run a greater risk of infection. Pork, particularly, must be well done, more so in tropical countries where breeding of hogs for meat and manufacture of pork products, and quick freezing technology for their safe treatment, storage and transportation is still being developed. Worm infections can be passed on through improperly prepared pork with serious effects on the digestive and nervous systems. Milk and milk products too are hazards to health if not handled properly. Fortunately, viable bacteria are destroyed by pasteurization and cooking temperatures (70°C and above), but bacterial spores may survive cooking and then grow if cooked food is not stored correctly.

Holding

In most food service establishments cooked food needs to be held for sometime before it can be served, as all customers do not come at the same time. Also because of larger quantities involved, food has to be prepared and kept ready in advance for display and service when demanded.

Safe Zones

Holding temperatures for foods must therefore be carefully watched to prevent them from coming within the *danger zones* of 10°C to 62°C, as microorganisms multiply very rapidly at various temperatures depending on the nature of the foods. A holding temperature of 59°C for all cooked food is safe. This is because in all Indian cooking some amount of fat and oil is used in addition to acids through use of tomatoes, vinegar, curds and spices. The fats limit contact of food with air while the acids bring down the pH, inhibiting microbial activity.

Higher holding temperatures than necessary, are not advisable because they affect the quality of the food. Therefore temperatures that will maintain both quality and safety have to be arrived at for each kind of food. Figure 30.5 indicates temperatures at which different foods should be held to safeguard health of consumers. In practice, hot foods should be held above 63°C; cold foods below 10°C and frozen food below 0°C.

Meats and Main Dishes	59°C to 64°C
Hot Beverages	85°C to 88°C
Sauces	64°C to 81°C
Salads	4°C to 7°C
Frozen Desserts	-3°C to -9°C

Fig. 30.5 *Holding temperatures of different foods at 85–90% humidity*

For most bacteria no growth occurs at -18°C , the temperature maintained in deep freezers. Their growth is slowed down at refrigeration temperatures of $3\text{--}10^{\circ}\text{C}$ while bacteria grow very rapidly at 37°C , the normal body temperature.

Serving

While serving food, care is necessary to ensure that all serving equipment is clean, and the server is not in any way contaminating the food. All tableware must also be kept clean at all times, washing in enough hot water with a detergent to ensure that microorganic load is minimized after use.

Where sterilisation is possible as in the use of dishwashing machines, the expense is worth it in terms of hygiene.

Clearing Up

While clearing up is not a very interesting activity, it is a vital part of serving food as far as hygiene and sanitation are concerned. This activity has the greatest potential for spreading infection. Care is therefore necessary in the removal of used and unused plates from tables. A system in which different people remove used and unused items and dishes from the table while clearing up, minimises the chances of cross-contamination of food. All plate waste should be emptied into covered pedal bins.

Disposal

All table wastes should be emptied into the garbage collection bin placed covered outside kitchens; or in leakproof sealed polythene bags. These can then be removed from the premises by the municipal authorities and burnt in an incinerator away from the establishment.

Methods of disposal depend also on the methods of service adopted by establishments. In the case of trolley service for meals or snacks, disposal arrangements are necessary at the site of service. In case of mobile catering,

provision is necessary in the form of covered bins which can be placed outside the vans, where they park for service. In all cases waste food and raw or cooked materials should not be transported open through any spaces to safeguard the health of people doing the job or customers.

PERSONNEL HYGIENE

Personnel hygiene refers to the general health, personal grooming and working habits of all people who work in a food service establishment.

While it is important to adopt regular procedures for maintaining the hygiene and sanitation of the environment and the processes through which food is handled in any establishment, all these efforts would be in vain if the staff handling the food are the cause of the contamination. To safeguard this a few general rules will act as a guide, which all persons handling food should follow strictly:

- All staff reporting on duty must be fresh, well groomed and clean, not half asleep, or unkempt in appearance.
- They must change into fresh, clean overalls and those working in kitchens and service areas should wear head covers to protect food from loose hair falling into it.
- Fingernails should be short and clean, with no nail lacquers.
- Hands should be washed well with soap before starting work and after using toilets. Extra care is necessary to clean nails properly.
- All cuts must be covered with waterproof dressings.
- Infection is easily transferred from hair, nose and mouth, therefore:
 - combs should be kept out of kitchens.
 - spitting or smoking in the kitchen or service areas should be strictly prohibited.
 - when sneezing, while handling food, the face should be turned away from food and a handkerchief or tissue used.
- People with colds, sore throat, boils, diarrhoea or any other gastrointestinal disorder, should not handle food.
- Leaning or sitting on the work table is an objectionable habit.
- All peels, etc. should be thrown into a covered container and not kept lying around on the work table near the prepared food. The containers should be emptied into covered bins as soon as the work is done.

- All kitchen cloths and equipment must be washed in hot water preferably at 43°C to 45°C with a suitable detergent. A grease layer on the surface of the water means the detergent is not enough to be effective. Ensure that all stains are removed from equipment and cloths.
- All crockery and cutlery should preferably be immersed in hot water at 77°C for over two minutes, and then air dried, to prevent contact with clothes which are often used for wiping these dry.
- Food should be kept covered and maintained either ice-cold or piping hot.
- Food must be handled as little as possible.

These guidelines can help managers to formulate a clear code for food handlers as suggested below.

CODE FOR FOOD HANDLERS

An eleven-point code is suggested for everyone handling food at any point in the production and food service cycle.

1. Always wash hands before touching food.
2. Always wash hands after using toilets or other facilities.
3. Cover cuts and bruises with water-proof dressings.
4. Wear clean working clothes.
5. Never smoke in kitchens or food service areas.
6. Do not sneeze or cough over food.
7. Keep kitchen and utensils clean at all times.
8. Keep all food clean, covered and at safe temperatures.
9. Handle food as little as possible.
10. Keep hands off hair, nose, eyes while working with food.
11. Keep dust and waste bins covered.

This code should be written out in bold letters and pasted in every area so that it acts as a reminder for every worker to follow. If this is not implemented strictly, there is always the lurking danger of food poisoning for all who partake food. One careless slip by a food handler in an otherwise perfect kitchen can cause an outbreak of poisoning. The results are detrimental not only to the reputation of an organization leading to drop in customers, but also to productivity, if staff have to be off work due to illness, and thereby profits.

FOOD POISONING OUTBREAKS

Food poisoning outbreaks can be caused just by lack of proper supervision and training in personnel hygiene. Besides inculcating hygienic habits, all catering staff need to be periodically put through a medical check-up to ensure that they are not suffering from worms, T.B. and skin or other infections that can be transmitted.

To develop the hygiene habit it is also necessary to provide flyproof toilet facilities; clean water, antiseptic or germicidal soap, towels and hand washing facilities.

For establishing and maintaining a food service free of harmful agents, those responsible for the health of others must have knowledge of how food poisoning is caused. They should also be able to convey the same to the staff handling food and performing related activities of washing up, storing leftovers, cleaning and maintaining the premises and so on. Only then will every person involved, be able to detect unhealthy or risky conditions and take necessary preventive action.

Some agents responsible for outbreaks of food poisoning are summarised in Table 30.4 along with the manner in which it can occur and the effects. It will be noticed from the table that food poisoning may be caused by bacteria and other microorganisms in foods, and occasionally by chemical contaminants. The growth of bacteria can be slowed down or stopped by cold conditions.

The practice of hygiene and sanitation requires vigilance in all areas of food service. Staff need to be trained so as to develop an awareness of the hazards that can occur in every possible situation.

Recent years have seen a growing concern in countries like India, about the conditions in which food is prepared and served. Food hygiene regulations place a heavy responsibility on every caterer to maintain certain standards, expecting him to fulfil not only moral and social but also legal obligations

Connoisseurs of the French wine, *Chateauneuf-du-Pape*, for the past nearly 50 years would be surprised to learn that its vintages from the 1950s contained high levels of lead. According to a study published in *Nature*, Belgian and French researchers analysed 19 vintage wines and found toxic compounds such as trimethyl and triethyl lead in them. These are usually degraded products of lead added to petrol. It was however interesting to note that the vineyards in which the grapes for the wine were grown were situated at the junction of two heavily used auto routes. The concentration of lead in wines followed the consumption pattern of leaded petrol.

Table 30.4 *Agents and effects of food poisoning and infections*

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
PEOPLE		
Carriers	People can be carriers of pathogenic microorganisms without themselves showing any symptoms of communicable disease. Transmitted through hands, breath, etc. to food.	Vomiting, diarrhoea, giddiness and even fevers, typhoid
Infected persons	Same as for (i) except through persons actually suffering from infections. Showing signs and symptoms.	As for (i)
Bacteria	Transmitted through unclean habits of healthy individuals, as bacteria grow best at body temperature of 37°C and are passed on to the food through hands, breath, etc.	Cholera, typhoid, tetanus, etc.
(a) <i>Clostridium botulinum</i>	Toxin produced in low or medium acid foods, especially canned foods such as peas, beans, meat, fish and other sea-foods.	Nausea, Vomiting, Diarrhoea, dry skin, weakness, even paralysis and death.
(b) <i>Staphylococcus aureus</i>	Toxin causing poisoning through stale custards, cream filled baked goods, meat, poultry, gravies, sauces with cream, sandwiches and dairy products.	Nausea, vomiting, diarrhoea, sweating cold extremities, abdominal cramps.
(c) <i>Clostridium perfringens</i>	Toxins through poorly cooked meats, fish, poultry.	Nausea, abdominal pain and diarrhoea.
(d) <i>Salmonella</i> bacteria	Infections through meat products, warmed up leftovers, salads, meat pies, etc.	Abdominal pain with fever, shivering, headache.
FOOD		
(i) <i>Bacterial infections</i>	Pathogenic strains transmitted through poor sanitary conditions in which water supply gets contaminated with sewage, etc. Also passed on to food through human excreta when hands are not washed well before touching food.	

(Contd.)

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
(a) <i>Salmonella</i> organisms	Insanitary conditions and habits of food handlers. Infection transmitted through food.	Enteric fevers which occur endemically.
(b) <i>Shigella</i> microorganisms	In tropical climates, passed through flies feeding on excreta and then settling on food. Transmitted also through poor hygiene of people handling food.	Dysentery.
(c) <i>Streptococcal</i> infections	Hemolytic strains and others spread through milk and milk products, contaminated drinking water.	Diarrhoea and other gastric disturbances.
(ii) <i>Spirochaetes</i>		
(a) <i>Leptospira</i> ictero-haemorrhagiae	Transmitted by rodents, skin and mucous membranes.	Hepatitis.
(iii) Worms		
(a) <i>Taenia solium</i>	Infested pork.	Form cysts in the brain.
(b) <i>Taenia saginata</i>	Through meat infested with tapeworm.	Loss of appetite, palor, weakness.
(c) <i>Diphyllobothrium latum</i>	Through sea fish.	Results in Vitamin B ₁₂ deficiency.
(d) <i>Ascaris lumbricoides</i> (roundworm)	Through people, food and water.	Abdominal pain, palor, cramps.
(e) <i>Trichinella spiralis</i>	Fine worm transmitted through infested pork meat and its products.	Nervous system gets affected, sweating, acute pains, loss of appetite, may also lead to severe conjunctivitis.
(f) Threadworms	Through food infected with human faeces. Generally infects the lower bowel.	Anal irritation.
(iv) Viral infections	In areas of poor sanitation, therefore a serious health hazard in under-developed countries.	Yellow fever, hepatitis or viral jaundice.

(Contd.)

<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
AIR		
(i) Yeasts	Through air causing fermentation in foods, giving them a sour taste, and fermented odour.	Acidity and gastric disorders.
(ii) Droplet infections	Through sneezing, coughing, speaking loudly or shouting.	Cholera, typhoid, fevers, etc.
(iii) Molds	Through air and moulds settling on moist foods like fruits, breads, etc.	Fuzzy, cotton-like appearance on foods. Causes gastrointestinal disturbances.
WATER		
(i) Viruses	Through water polluted with sewage, the viruses, however, only multiply in living cells and not in food.	Varied symptoms—hepatitis, polio, infections, etc.
(ii) Protozoa	Through water in insanitary conditions. Becomes active only in the intestinal tract.	Amoebic dysentery and other intestinal disorders.
<i>Agent</i>	<i>Mode of Transmission</i>	<i>Effect</i>
CHEMICALS		
Antimony, arsenic, lead, zinc, cadmium (from enameled utensils)	Chipping of coatings on equipment into food, careless use of rat and insect powders, insecticidal sprays, storage of detergents or insecticides near foods like starches, flours, baking soda, etc. which can be mistaken for food. Pollution through wines.	Diarrhoea and digestive disorders.
NATURAL TOXINS		
In plants or plant products, sea foods (mussels, clams, poisonous alkaloid)	Foods of toxic varieties like mushrooms, rhubarb, greens, snake root, etc. Some fish develop poisons during breeding seasons.	Gastrointestinal symptoms, enteric fevers, allergies.
FOOD ADDITIVES		
In all processed foods.	Soft drinks, canned and dehydrated foods, spices, cereal products.	Long term effects on health, additives having different effects.

Apart from cases of unintentional chemical poisoning, food has often been used as an easy vehicle for intentional adulteration with the objective of poisoning consumers. A classic case was reported in 1994¹ of poisoning among doctors eating conference lunches supplied to them in Pune. The food was used as a sabotage tool or for political mileage. As usual no evidence was found. Many cases of food poisoning in epidemic form are reported from time to time resulting from careless handling of food or unhygienic food production environment and eating habits.

Hygiene and sanitation is a continuous but essential process which needs serious and constant consideration at all times. Every establishment therefore, must develop a procedure for good food handling practices which can be followed by staff as emphasized by E.W. Kingcott who stated that, *No matter how much the staff are warned, unless there is a rigid kitchen routine there will always be danger of cross-contamination from raw to cooked food.* A sample food handling procedure is shown in Table 30.5.

Table 30.5 Good food Handling Practices

<i>Activity</i>	<i>Procedure</i>
1. Stock Control	<ul style="list-style-type: none"> • Date all incoming foods. • Use stock in order of dates of manufacture of receipt
2. Storage	<ul style="list-style-type: none"> • Store each type of food at appropriate temperatures. • All foods should be kept covered.
3. Refrigeration	<ul style="list-style-type: none"> • Always operate below 5°C. • Check temperatures regularly. • Arrange regular maintenance and not only when there is a breakdown. • Do not put hot food in refrigerator. • Store raw, cooked food in separate refrigerator. If one refrigerator, raw food should be placed below cooked food and should not come in contact with it.
4. Thawing	<ul style="list-style-type: none"> • Thaw thoroughly before cooking. • Drips should not come in contact with food because they are potent source of bacteria.
5. Cooking	<ul style="list-style-type: none"> • Pork and poultry to a minimum internal temperature of 75°C. • Cook well.

(Contd.)

1. *Times of India*, 17 October, 1994.

<i>Activity</i>	<i>Procedure</i>
6. Cooling	<ul style="list-style-type: none"> • Cool as quickly as possible to prevent bacteria from growing during cooking. • Hot food should not cool more than 90 minutes before refrigeration. • Small pieces can be cooled quicker than large ones.
7. Reheating	<ul style="list-style-type: none"> • All foods must reach at least 70°C for a minimum of two minutes.
8. Warm holding	<ul style="list-style-type: none"> • Above 63°C. • All warmheld foods unused should be discarded.
9. Leftovers	<ul style="list-style-type: none"> • If in doubt throw them
10. Cross-contamination	<ul style="list-style-type: none"> • Keep food covered overall. • Use clean wiping clothes and towels. • Use tongs, gloves, etc.
11. Vermin	<ul style="list-style-type: none"> • Prevent contamination by touching food as little as possible.

Recently, the New York State Department of Health has introduced the 'Hazard Analysis Critical Control Point' (HACCP) form of hygiene inspection². It is a preventive programme for hygiene control based on time-temperature standard worked out for specific control points in conventional food production systems. The objective is to exercise control over levels of bacteria at points in the food production and service cycles when bacteria are likely to multiply. The HACCP system has now become popularly accepted worldwide. The system acts as the primary means by which the food industry can ensure safety and quality of its products. HACCP involves five steps as outlined in Fig. 30.6.

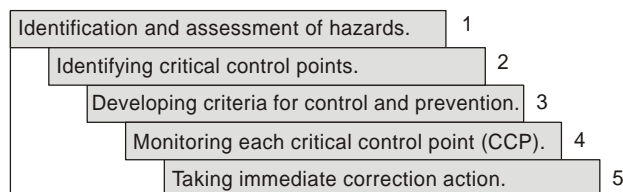


Fig. 30.6 Steps of HACCP system

2. Reported by James Graham, Department of Hotel Management, Gloucestershire College of Arts and Technology in *Hospitality*, 1990; p. 15.

HACCP has thus evolved as a management technique for achieving higher degree of assurance on food safety. Every manager therefore needs to, identify their CCP's throughout the food production cycle followed in their establishments right from receiving to waste management.

This system provides immediate feedback from the chef in contrast to microbiological testing, the results of which are too late for the actual meal in preparation.

A similar system devised for Indian conditions by food managers and their staff will prove a very useful tool in preventing outbreaks of food poisoning.

THE CUSTOMER'S ROLE

The customer's own perceptions of hygiene both personal and environmental to a large extent affect the food service environment as far as hygiene and sanitary practices are concerned. It is his expectations and demands that a food service will strive to fulfil.

In addition the customer's own eating habits and behaviour will affect the cleanliness, hygiene and sanitation status of his eating environment. Very often a customer may be the cause of infection to food when he is sneezing, or coughing while eating. He may also be a carrier of infection. Food therefore should be well covered and guarded by screens especially in establishments offering self services to customers.

The customer therefore, has a prominent and crucial role to play in terms of what food quality and service he accepts from others, when he chooses a particular food service for meals.

Chapter 31

Safety and Security

Food Service Institutions have a lot of capital invested in land, staff and stocks, therefore every effort needs to be made to keep investments safe and secure.

SAFETY

Safety implies a concern for providing conditions at work, which will protect people from infection, injury and theft. It also includes the protection of premises, equipment and food resources from infestation, damage and destruction providing premises and people with a sense of safety and security. Safety may be viewed basically from three angles namely, physical, mental and emotional, and the third and most important to a food service institution is food safety.

Physical Safety

This refers to the safety of buildings with respect to being designed in a structurally sound manner so as to withstand natural as well as man-created stress, which the catering environment imposes, by rough and often overuse. It is needless to add that a safe and secure environment motivates people to work more efficiently, while providing a harmonious environment for customers as well.

Physical safety can only be ensured if all members of an establishment are aware of the causes of accidents and work towards preventing them.

Every establishment therefore, needs to develop a safety and security policy which ensures protection to property, equipment, materials and people within the establishment at all times, whether staff or customers.

In order to do this a detailed appraisal of all possible safety hazards is necessary.

CAUSES OF ACCIDENTS

While attention to safety is important in all areas of an establishment, the one most vulnerable to accidents and therefore injuries is the kitchen. This is because it is the centre where a variety of fuels are used and a number of people with different mental and physical abilities work together. Besides, they handle large volumes of food often at steaming temperatures, lift heavy equipment, use sharp tools and often work under pressure especially during peak periods.

Accidents may result from a number of causes leading to falls, cuts, shocks, burns and collision at work. These may be categorized as:

- Physical
- Psychological
- Environmental

Physical Causes

These include the presence of inadequacies in the structural design of the establishment, improper installation and placement of equipment and related physical facilities.

Structural Inadequacies

All structural designing should aim at a smooth work flow in every area of an establishment. Accidents generally occur when this cannot be maintained for some reasons, or when due to negligence safety factors are overlooked in the design of the establishment. Given below are some of these factors which can jeopardize safety at work:

- The presence of blind corners or cross-traffic aisles increasing the chances of accidents by collision.
- When the level of floors is uneven, causing people to trip and fall. If change of levels is unavoidable due to architectural reasons, each level should be demarcated for different activities, to limit movement between the two levels.
- Floor coverings not fixed properly provide crevices and cracks causing falls due to tripping. Too smooth or shiny a flooring can also cause slips. Concrete floors are safer in terms of fire hazards than wooden ones with coverings.

- Spaces too small for the activities to be performed in them, lead to overcrowding, noise and confusion, as well as physical and mental stress. The results can be collision, injury through breakages and much more.
- Doors opening on to work areas can hit people at work, if opened unexpectedly. Swinging doors are particularly dangerous if opened too forcefully. Also doors opening into passage ways in busy areas become sources of accidents. Sometimes safety is overlooked for aesthetic reasons, or glass structures built for catering managers, from where they can watch kitchen activities while at work. People often walk into glass panels especially if highly polished and clean, and therefore not visible.
- Cracked, chipped or broken window panes in work areas are a safety hazard.
- The positioning of switches, electric or gas, are sometimes placed too high or too low in wall sockets for comfort. Repeated unnecessary stretching or bending may result in muscular or spinal injury. Further a loss in balance while overstretching can lead to serious accidents.
- Inadequate lighting may produce glare in certain areas and shadows in others affecting visibility and causing injuries, and compromising wholesomeness and quality of food.
- Improper ventilation, leading to exhaustion and fatigue, makes people vulnerable to accidents. The excessive heat of poorly ventilated kitchens causes discomfort, irritation, reduction of physical and mental effort, increasing the risks. Effects are sweating, dizziness and even fainting.
- Fatigue can also set in when spaces become congested or overcrowded. Also when staff turnover is too high, the limited numbers present are expected to cover up by working long hours. These conditions expose the premises to hazards which can be avoided by proper designing of spaces to avoid congestion and reducing staff absenteeism or turnover.

In all premises, therefore, it is important to plan structures with safety in mind. First aid facilities should be made available in all catering establishments, particularly in kitchens. Fire extinguishers are essential at strategic points and fire exits need to be clearly marked for use in case of emergencies.

Improper Equipment Placement

Equipment placement in work areas is an aspect on which the manufacturers or suppliers of equipment do not advise the user. It is therefore, the task of the

user to position equipment in a manner that will optimise its use as well as increase the safety of the user and the premises. Very often attention to placement for use is neglected and equipment tends to be installed where it fits best in the space available. The following examples will throw some light on the placements that can become hazards at work:

- An electric hot plate placed between two work tables can cause burns even when it is switched off, because the appearance of the plate when off, does not indicate it is hot. People can therefore, accidentally touch it. This could be avoided if it was placed in a separate area only used for cooking, so that people only approached it for the purpose of using a hot plate.
- Equipment with exposed sharp edges like chopping and slicing machines placed with their sharp edges towards a traffic aisle increases the chances of anyone placing their hand on it accidentally. This can be avoided by placing the blade side in a manner, that it is protected by a wall.
- Mobile equipment like trolleys placed in traffic lanes can cause congestion and collision.
- Electric switches placed near sinks and on walls behind hot plates, are dangerous arrangements. They can lead people to touch switches with wet hands and suffer shocks; or be the source of fire in case of short circuiting.
- Wall cupboards too close to cooking ranges can provide a grave risk of fire. Also the floor space below cupboards must be fitted with a unit so as to prevent people from banging their heads against the cupboard.
- Cooking ranges positioned in a manner that handles of pans placed on them can easily be knocked over by people walking past are obviously undesirable and unsafe. Placement of mops, brooms, loosely placed cartons, crates and other packages in traffic areas cause obstruction to work, tripping, falls and consequent injuries.
- Inadequate provision of and improperly placed fire fighting and other safety equipment, can cause delay in reacting to emergencies.

In general, the placement of equipment should allow a smooth work-flow, minimise cross traffic and provide adequate space around it for intended activities.

All motorised equipment should be sealed, pressure equipment must have safety valves, and all switches need to be labeled and located where they can be switched off by anyone in an emergency.

Mental and Emotional Safety

A food service establishment is people intensive and therefore it is of utmost importance to ensure their mental and emotional health. This feature enables all persons associated with the establishment for work or leisure to feel, safe, free from hazards and happy. In such conditions staff absenteeism and turnover too can be substantially reduced.

Food Safety

The safety of food produced, served and consumed is of utmost importance to everyone, but more so to those who habitually eat outside their homes and are unaware of the intrinsic quality of food that is served to them, even though their taste buds approve of it. Food production centers or kitchens provide all conditions necessary for growth of microorganisms, such as food, humidity and the right temperatures all of which are conducive to the spread of infection, disease, and infestation if not controlled and monitored through strict regimens with respect to hygiene and sanitation practices. The attention to hygiene in kitchens and other areas therefore is of prime importance in any food service facility. The food service industry and institutional food services therefore have a social responsibility to serve foods prepared in hygienic and sanitary environments to ensure the health of those who will consume it.

The use of home methods of food preservation indicate that people do have a basic knowledge about foods that are fresh, preserved or spoilt, the last being often detected only after consumption when it produces disturbances of the gut. But how many of the staff handling foods in canteens, restaurants, hostels or even on roadside cafes realize the importance of hygiene and sanitary practices in food handling or recognize the signs of poor quality meats and care about taking action, of not cooking them for others? The answer is *very few*, as they treat food production and service as a job to be finished on time rather than think about the consequences for those who will consume the products including themselves.

There is enough evidence of food poisoning episodes that occur in epidemic or stray forms as a result of eating in food service institutions, often the result of ignorance or unnoticeable presence of toxins present in the food that is visibly normal to look at and taste.

Food Safety and Culture

Ancient religions combined cleanliness with their practice by laying down norms which were blindly followed with devotion. The concept of hygiene and

contagious diseases are discussed in details in the *Torah* of the Hebrews which amounted to laws that were followed by the whole community. The Greeks developed the concept of personal hygiene and contributed to the understanding of the link between man and his environment. Hippocrates focused on causes and cure of epidemic diseases. The Romans related control of disease to control of the environment and took the concept to an institutional level. They appointed officials to oversee civic functions related to garbage collection and destruction of unwholesome food.

In India too, life styles emerged and no one cooked home meals unless they had bathed, prayed and offered the cooked meals to the Lord before the family ate the same. The *Charaka Samhita* stresses on the importance of food hygiene, avoidance of insect damaged foods and the like.

The relationship of safe food and health is well established and has been linked to the cultural practices of the country such as the practice of boiling milk before consumption in any form. This was done to destroy any disease-producing microorganisms that may have entered the milk during the physical milking operation carried out on domestic animals as a daily practice in the remotest areas. Today, even with the development of technologies for providing safe pasteurized milk this practice continues, in contrast to developed countries which consume it direct from the packs for consumption.

Food safety with respect to the naturally present toxins in some foods is a matter of knowledge of how to destroy them during cooking and or processing so that foods can be made fit for consumption. However, the additives added during processing either intentionally for profit or unintentionally to improve certain sensory characteristics of food may, if consumed excessively or in combination with certain compounds present in food, prove detrimental to health.

Food Safety in Institutional Feeding

The problem of getting safe food is more severe in public eating places where large quantities of food are pre-prepared, held and finished on demand for service. Alternately, the meals are prepared and held hot for service at least two hours before service as in institutions like hospitals where the meals have to be delivered to the wards for service. Other institutions as well where meal deliveries are to be made to distances, require prior cooking and holding. This system poses hazards since staff often do not realize the importance of correct storage and holding temperatures.

THE E's OF SAFETY

Food safety problems can be tackled at various levels in different ways with training in safety being organised. The training in safety should be designed for all, irrespective of their positions in the hierarchy or job content. This is vital because managers can only build safety into the establishment if their own awareness for it is aroused. All efforts to introduce safety procedures can fail if a manager walks into an area marked *No Smoking* with a cigarette in his mouth. The best method of teaching is by example, and it is therefore only right to expect supervisors to be trained before expecting those under their care to work safely.

Safety education and training of staff can only be carried out through formal education about the agents that can cause spoilage and hazards to food and environment. Training in safety can be organised under three distinct categories usually abbreviated as the 3E's, namely safety education safety engineering, and enforcement.

Safety Education

Safety programmes and policies can only be effective if the staff are trained to think and act safely at work. For this, educating them in the following areas is necessary:

- Teaching safe methods, with particular emphasis on areas of potential dangers, and how these can be guarded against.
- Demonstrating the use of safety equipment installed in the establishment, and location and use of first aid material.
- Inculcating in people the ability to recognise the signs of hazards around them, in colleagues and equipment, e.g. a particularly tired person at work, or an unusual sound from an equipment, and so on.
- Teaching staff the legal implications of non-adherence to safety procedures.

The best time to start educating an employee in safety is during his induction to the establishment, so that every new employee is well versed in the safety procedures and policies of the establishment before he actually starts his job. Teaching safe methods of performing different tasks particularly while on the job, making people aware of the dangers of careless and irresponsible behaviour at work, and the ways in which to tackle emergency situations, are all important to the safety of people at work, and the safety of the establishment. The regular practice of fire drills helps to make staff aware of danger signals and

react immediately without panic. The formation of safety committees has been found very effective in safety education, because of the participation of all staff in a department. The legal and financial implications of accidents must be taught to all employees. Holding audio visual sessions every week taking up certain issues for open discussion helps to make staff hear and think of safety. Besides these general information on bulletin boards with illustrative colourful charts are a good way to remind people of safety.

A change of these representing a weekly safety theme like accidents in kitchens may be put up for view and impact created by highlighting statistics, examples and methods of prevention.

Employees should be encouraged to come up with ideas for inculcating safety into methods, and best ideas should be put into practice and praised or awarded.

Safety Engineering

This involves the building-in of safety features in the structure of the establishment in the equipment, furniture and fittings, and their proper arrangements within the spaces. Particular emphasis needs to be laid on the training for safety in buildings for the handicapped. For example, the need for a higher level of illumination and provision of lights inside cupboards, and working heights made adjustable to the nature of the handicap.

Equipment used in the catering environment should be selected with care to ensure safety in design, that can make it possible to maintain sanitation of parts that come in contact with food.

Enforcement of Safety

Enforcement is another term for implementation or practice. It is not enough to know about safety themes and procedures, but more important to motivate people to put the knowledge gained into practice. This does not come to everyone easily and therefore needs to be enforced by rule, law or custom and practice.

Safety regulations need to be enforced through:

- Discipline at work.
- Close supervision of all activities in vulnerable areas and at peak hours.
- Closing all switches for fuel supply and water taps when not in use.
- Immediate attention to repair of leaks and regular maintenance and servicing of equipment to ensure optimum operation.

Discipline

Discipline at work involves an awareness of safety not only of self but of all people in the work environment. In the case of food service institutions this includes customers and suppliers as well.

The basic disciplines which should guide safety considerations are:

- No overcrowding at work.
- No smoking.
- Not eating while preparing or serving food.
- Silence as far as possible except work related interaction.
- Orderliness in terms of personal neatness, work areas and so on.
- Work related cleanliness. Cleaning up spillage immediately. Regular counter cleaning.
- Not using wet hands to touch electric switches.
- No peels on counter after a job is done.

The above guidelines can be unending because each institution varies in its layout, nature of activities involved and so on. Therefore every establishment needs to be clear on its own guidelines for each work area and job content as well as suited to the nature and behaviour of people in the respective job environment.

The mode of imparting knowledge can be enforced at work through posters placed at work centers reminding staff of safe handling practices for each area of activity. Close supervision is necessary to enforce implementation.

However, supervisors need to continue their efforts to motivate staff to develop safety habits, till it becomes natural to them. Disciplines are more effective if supervisors are seen as examples of what they want to inculcate in their staff.

HUMAN FACTORS IN SAFETY

A number of factors relating to the habits and behaviour of people at work, affect their attitudes to safety. These are improper working habits, psychological and emotional factors as well as the working environment.

Improper Working Habits

Proper work habits develop when a sense of identity is established with the work place, thereby placing caution foremost in the minds of people, who would like to protect, look after and preserve or extend their resources as much

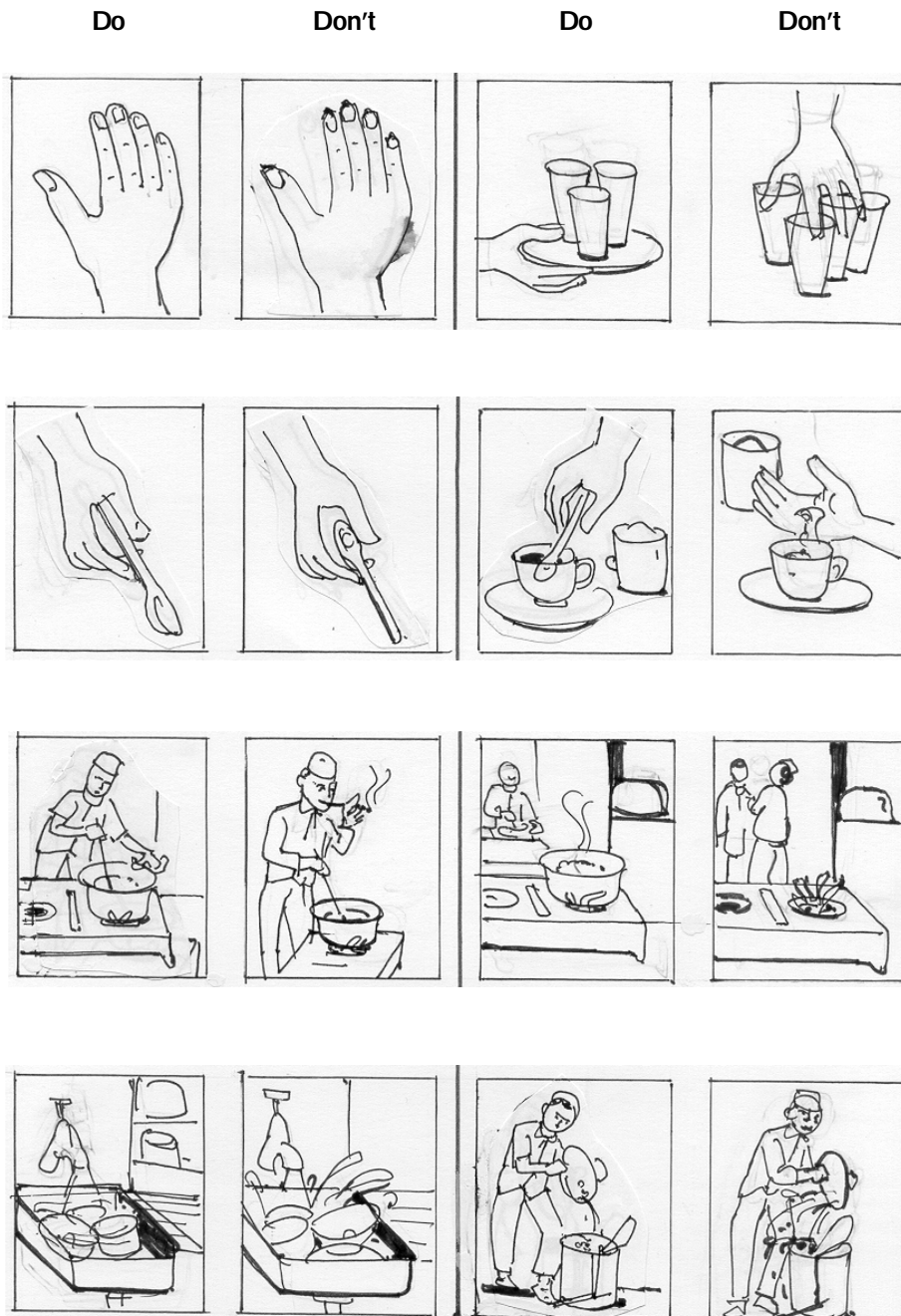


Fig. 31.1 *Some correct and incorrect working habits*

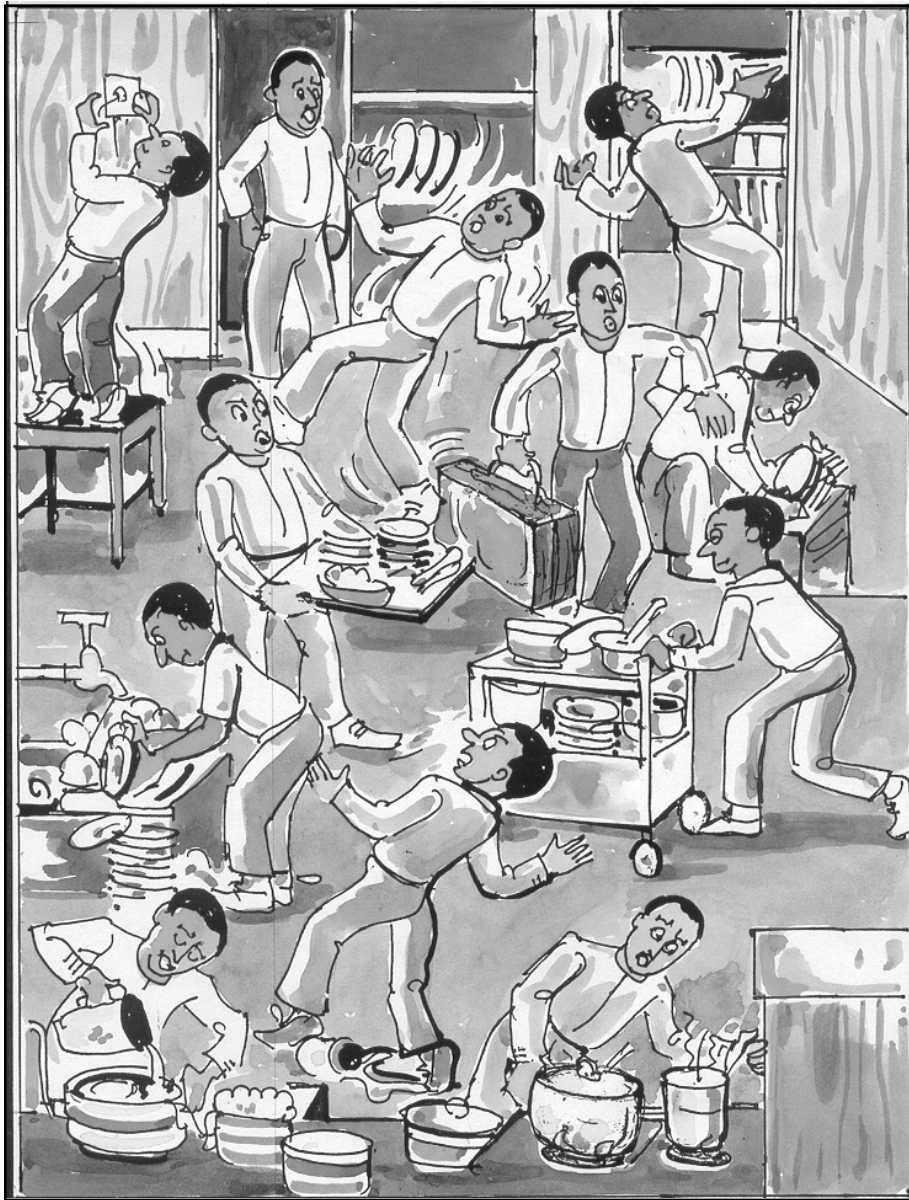


Plate 31.1 *Result of lacking safety awareness*

as possible. Some common working habits which can be identified as safety hazards in catering situations are enumerated below:

- Staff on entering a kitchen often light the gas of cooking ranges, without having anything ready to place on them for cooking. While this may have become a habit to warm themselves on a cold day, it can be a potential hazard.
- The habit of keeping electric switches on while dismantling an equipment for cleaning can lead to shocks.
- Placing knives and other sharp kitchen tools along with other equipment in a sink for washing, can cause cuts, because they are not visible to the person doing the washing. Even storing such tools in drawers without guarding the blades can cause injury.
- Not wiping spillage immediately especially when liquids and hot oils are involved results in dangerous slips and falls.
- Sometimes, broken glass may be disposed off with the wastes, or complete clearing up of broken debris postponed and brushed behind or under equipment. This can cause injuries to those responsible for cleaning the equipment or floors and kitchen wastes being unaware of the presence of broken glass.
- Leaving the handles of hot pans extending over the edge of cooking ranges, can cause spillage of hot liquid or oil if people brush past it.
- Pushing loose wires into electrical sockets when plugs are missing or broken, especially with wet hands can even be fatal.
- Handling hot bulbs to change them because they have just got fused while working, can cause burns.
- Not warning other people of hot electric or gas tops or pans.
- Lifting lids off pans suddenly and exposing oneself to burns through steam.
- Smoking while working.
- Unguarded coughing, yawning or sneezing during cooking or serving food.
- Not reporting gastrointestinal or other infection and returning to work without complete cure.
- Wearing street clothes in kitchens without overall and head gear.
- Using short cuts for cleaning and not following instructions.

The above are only a few examples cited to indicate what a wrong working habit can do to destroy the safety of an establishment. Some correct and incorrect working methods have been illustrated in Figs 31.1 and Plate 31.1.

Very often, this happens because people employed in kitchens are expected to know correct working methods. Newcomers are allowed to learn by observing others who handle electricity or gas, instead of formal instruction being given.

Noise Levels

Another common working habit that can be injurious to health of employees as well as customers and often ignored, is that of talking and socializing while working in kitchens. This can jeopardize food safety and increase noise levels at work affecting concentration while also infecting food inadvertently.

Sound vibrations especially emanating from heavy machinery makes it difficult to hear, think or move. Even though noise is a part of urban culture yet it has received the least attention as a pollutant and health hazard. It has been established that sound levels of 85–90 decibels (dBA) damage hearing affecting the auditory nerve causing irreversible damage. Table 31.1 indicates the number of short term exposures to noise per day in hours and the corresponding sound pressure level in dBA that is considered as permissible exposure.

Table 31.1 *Permissible noise exposure*

<i>Short term exposure (Hours per day)</i>	<i>Sound pressure (dBA)</i>
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
¾	107
½	110
¼	115

A decibel scale ranging from 0–140 means that the variation in pressure is as wide as a 100 million fold since sound is measured in a logarithmic system. Simply put, this means that if the noise level at a workplace is reduced by 10 dBA, then nine noisy machines have often been eliminated.

Food production areas are subject to the noise of heavy duty as well as medium and light equipment when in use or during cleaning activities.

Customers and furniture movement noise in dining areas also increases during peak service hours. It will be noted that certain types of institutions are more noisy than others, for examples, fast food establishments as against restaurants where leisurely eating and dining is the norm.

With the current trend of increase in fast food outlets and impatience of customers, noise hazard control will need management attention, more than it did before.

The steps that can be taken may vary from pasting of signs reading *Silence Zone* or *Silence Please* to formal education in noise control through lectures, and on job supervision. Others steps include segregation of machinery by making partitions or walls of sound absorbing materials and using ear protection gear. Reducing volume of music in dining areas is another important step. Efforts to reduce noise calls for serious attention of workers, unions, management and customers.

Psychological Factors

A number of psychological factors play important roles with respect to assuring the safety of people at work. These various factors can contribute to work-related behaviour that can lead to accidents, depression, fatigue and boredom.

The nature and behaviour of people makes them more prone to accidents than others. Some types of behaviour and attitudes which increase the potential for accidents at work are summarized in Fig. 31.2 and briefly discussed.

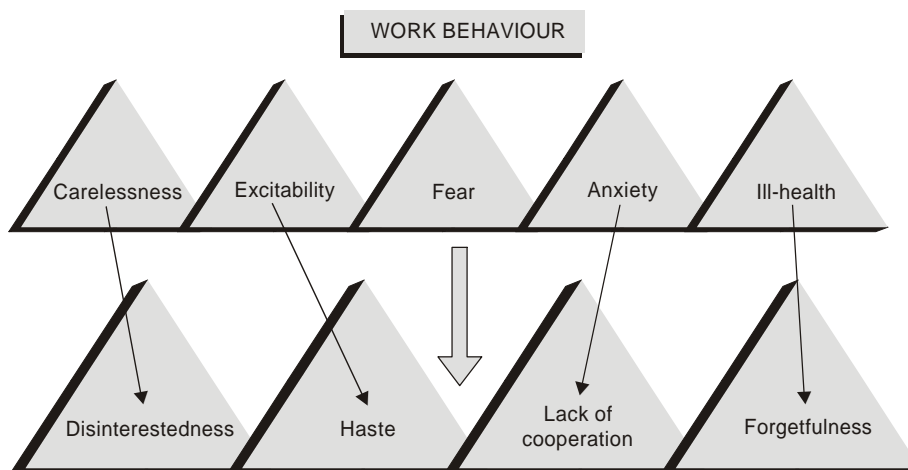


Fig. 31.2 Factors affecting work behaviour

- *Carelessness*: Some persons are habitually careless and this attitude gets reflected in the performance of their work. They create conditions around them unconsciously which are charged with risk. For example, careless handling or positioning of hot liquids especially oils, lighting an oven with a piece of paper instead of a lighter.
- *Excitability*: This tendency leads people to a state of extreme excitement at the slightest provocation. Whether the result is anger or joy, it puts the mind out of balance, sometimes leading to careless actions. It is not uncommon to find a bad tempered kitchen supervisor responsible for workers cutting or burning their fingers or spilling oils or hot liquids while working, making floors more slippery and igniting fires.
- *Fear*: Those who are afraid or hesitant to ask how a job is to be done, for fear of being reprimanded or ridiculed, can adopt unsafe work methods unconsciously.
- *Anxiety*: This can result from some problems outside the work situation, or related to adjustment in a new job or to a changed equipment. Often the psychological pressure of getting meals ready on time may lead to spillage, slips, burns. It is the anxious or tense person who is relatively unsafe at work.
- *Ill-health*: This leads to loss of stamina and easier fatigue, general weakness, poor eyesight and hearing, lowered concentration; and lethargy at work. All these make persons more vulnerable to accidents.
- *Disinterestedness*: Lack of interest in work makes people more easily distracted and indifferent to the dangers of handling equipment and other resources in their care, making the environment unsafe.
- *Haste*: The *man in a hurry* is a source of confusion and almost always creates conditions which are unsafe for himself and others at work. If he pushes trolleys too fast or handles glassware recklessly or uses cartons as ladders to reach top shelves in stores and kitchens, the results are only too obvious.
- *Lack of concentration*: Attention and involvement in the work being done is important especially when working with cutters, slicers or sharp knives and choppers. Very talkative people distract themselves and increase their risk of injury.
- *Forgetfulness*: It is common to find people working on two pieces of equipment or doing two jobs at one time. Food and equipment get burnt if placed in an oven and forgotten. When the smell of burning is detected, it is often too late. Apart from the food having spoiled, the risk

of fire is great. In the case of kitchens designed for the handicapped *forgetfulness* is a common cause of accidents, especially if elderly people are working in it. They also tend to be physically less stable, and cannot move fast enough to act promptly in case of danger. In such environments, it is advisable to avoid gas appliances, because they may be left unlit causing leakages.

Over and above the nature and behaviour of people at work, it is important that supervisors have presence of mind to react to emergency situations quickly and intelligently.

Technical Committees of the Bureau of Indian Standards (BIS) have formulated a number of safety standards in the field of electrotechnology. Today standards on safety, concerns not only equipment safety, but safety of persons and surroundings too which are increasing. This includes protection against electric shock, effects of excessively high or low temperatures, radiation, explosions and fire. The standards aim at total safety through protective measures in equipment design itself as well as its safe installation and expert maintenance.

SAFETY PROCEDURES

A safety procedure for any food service establishment may be clearly spelt out as follows:

- The controls for all kinds of fuel supplies must be located within easy reach.
- Spaces where fuel in the form of loaded gas cylinders are stored, need to be guarded and isolated from possible sources of ignition and short circuit.
- Mark all broken or chipped glassware to indicate that they are to be put out of use till written off. It is well to store them in metal containers for disposal. A record of these may indicate certain designs that are more prone to breakage than others. They can then be discontinued for purchase.
- Oven pads must be provided for lifting food out of ovens or from the top of hot ranges.
- Regular training and retraining of staff must be planned to inculcate safety in their work methods, and develop a consciousness of the dangers that can result from a single careless act. Quite a few accidents are caused through ignorance of the dangers accompanying the use of specialized equipment.

- Regular maintenance procedures must be set up for upkeep of premises and equipment to keep them in safe working order.
- Every work area should contain aids which remind people of safety, such as posters communicating right and wrong working methods, e.g. *Now wash your hands* written clearly at entrances to kitchens and service areas.
- Install fire extinguishers and alarms at convenient points in the establishment in case of an emergency. It is not enough to demonstrate their use to employees once in a while, but regular fire drills must be built into the routine operations so that the alarm is recognized by all staff and correct action taken following it.
- It is good practice to invite experts from fire fighting departments to demonstrate the use of fire-fighting equipment, and make suggestions to improve the safety of the premises by using latest equipment in the field of safety.
- All accidents which have occurred should be reviewed periodically with employees so that action can be taken to avoid them in the future. Records help to assess the frequency of particular types of accidents for planning remedial action.
- While recruiting staff, safety should be kept in mind, so that accident prone people can be screened in the process.
- Provide safe tools and equipment, safety clothing and footwear in work areas.
- Provide first aid facilities in each area of work, along with training for use of first aid kits.
- Institute awards for departments for every accident-free month.

While a safety procedure may be available in a catering establishment its practice is often unknown. This is because a procedure is generalized to cover all personnel and departments, and tends to lie in the files of managers. It needs to be translated into simple instructions to be followed in each area of activity, so that it is understood by those for whom it is meant. An example of such instructions for kitchen staff is given in Fig. 31.3.

It would be more effective in its impact on employees if the instructions relevant to each area of activity were picked out and pasted in the appropriate area within clear view of each worker.

While it may seem a complicated or tedious task to put safety into practice, lack of a procedure built into the establishment can lead to heavy losses. Apart from the costs of repairing damaged property or replacing equipment, there

are the costs of medical expenses for employees hurt in accidents, man hours in production lost, plus excessive wages paid to replacement staff. In addition, in serious cases legal costs can ruin an enterprise. The most damaging of all is the loss in reputation of an establishment which can never recover its image because lack of safety is always associated with inefficiency.

1. Keep all areas clean and dry at all times.
 2. Wash hands with soap and water before touching food and equipment.
 3. Dry hands completely before touching electric plugs.
 4. Keep all knives on drain boards for washing and not in the sink.
 5. Keep matches covered in metal containers.
 6. Light matches, before turning on gas.
 7. Wipe spillage immediately.
 8. Do not overfill pans with hot liquids.
 9. Store fat away from open sources of heat.
 10. Carry cartons and equipment on trolleys, or on shoulders to prevent spinal injury.
 11. If you have to walk with knife in hand, insure that it is tip down.
 12. Stock top shelves of cupboards with light objects and those without sharp edges.
 13. Walk at work, do not run.
 14. Do not sit on broken stools, or use defective or unsafe tools.
 15. Turn off all taps and electric switches before closing work.
 16. Do not store detergents along with food.
 17. Never pour water on fat or oil fire it only gets worse. Cover with lid or blanket to cut out the air.
 18. Do not rely completely on automatic controls, check equipment for overheating.
-

Fig. 31.3 *Safety instructions for kitchen staff*

Training staff for safety may seem unnecessary expense, but these costs are well worth it, compared to those which have to be incurred when accidents take place.

SECURITY

Any discussion on safety of the people and their work environment would be incomplete without a mention of the hazards caused by theft or pilferage. A food service establishment therefore, needs, to be well guarded to provide security for the employees and the organisation. The areas most vulnerable to theft are the stores where daily use items are stocked in large amounts and provide temptations to staff working in them. While small pilferages are accepted as normal where people are handling, cooking and serving food, when these exceed over 5 per cent (which is normally accounted for as natural wastage) they

make the difference between profit and loss. Certain precautions are therefore necessary to safeguard stocks and minimise thefts:

- The storage areas must always be kept locked unless stores are being issued.
- Issues must be made at fixed times only and at no time during working hours should the place be left unattended.
- Minimum staff should operate stores, depending on the size of the establishment.
- Keys must be kept securely by only one person, who is responsible for the stores.
- In case of emergency, such as a fire, the person responsible should be informed.
- It is important to provide iron doors to all stores and there should be only one door used by staff for entry and exit.
- Security guards are desirable, who can look after the security of the whole premises after working hours.

As far as security of kitchen and service areas is concerned, a safety procedure for checking all people entering and leaving the catering department, against theft of already issued food items and small equipment and tools.

A lot of losses can take place due to lapses in security of establishments and therefore vigilance is required to cut on hidden costs occurring due to pilferage and theft.

Some Useful Safety Devices

Some useful safety devices to use are fire extinguishers, fire blankets, sand pails, safety catches, alarms, gas indicators. Some devices available in the market are the 'SUBKA' gas leakage warning instrument with a sensor and audible alarm to warn of gas leaks; and the 'Clap switch'—an electronic sound operated switch which switches any electrical appliance 'on and off' and is effective from 10 feet. It is remote controlled by clapping¹.

Advances in technology have now a number of safety devices to offer to establishments for enhancing their security systems such as closed circuit T.V., access control systems, digital voice recorders, door phones, alarm systems against fire and intruders and surveillance systems.

1. Reported in *Indian Hotelkeeper and Traveller*, July, 1983.

Closed Circuit T.V.

A wide range of closed circuit televisions (CCTV) are available which help to keep an eye on stocks and record events in places which are not visible to the eye directly from the position in which the managers are seated at work.

The system offers cameras for various light conditions such as mono chrome or colour and are based on telemetry control operated through microprocessor technology. They are weather and bullet proof motion detectors fitted with time lapse VCR's and wireless links. Apart from keeping an eye on the goods and people, movement of it can also store and reproduce the sequence of events that have taken place for the purpose of monitoring, providing evidence and thereby control in an organisation.

Access Control Systems

This allows only authorized persons and prohibits the entry of others in restricted areas of a building. Based on contact-lens technology that uses smart cards which can be written and are also readable. The device records time-in, time-out, late arrivals, early departure as well as absentee and leave details and are available in on-line and off-line versions. These provide a useful aid to security and discipline for any organization.

Voice Recorders

Digital voice recorders are now available for recording messages, meeting and seminar or conference proceedings and are subject to easy handling and operation without complicated training procedures. what ever is recorded can be retrieved for editing or rerecorded on an ordinary cassette or connected to a phone. It functions like a normal tape recorder and is a useful device or retrieving sequences of events in any emergency.

Door Phones

These consist of audio-video door phones which enable you to see who is at your door and also hear them irrespective of where your are wherever in an organization or office within a building or complex. When a visitor presses the push bell at the entrance a hand set may be used to talk to the visitor and see him or her too if the set is also video linked. The person may then be allowed or disallowed entry as the case may be. The equipment is supplied with a lock which works on a pin-cylindrical mechanism that opens the door automatically, and the system is compatible with multistoreyed complexes.

Alarm Systems

Alarm systems are now available that warn against fire and intruders. It consists of a smart control panel that receives signals from various detectors or sensors connected to it. The panel can be activated using a personal identification number or PIN, and it will trigger an alarm in case of fire, emergency or intrusion. Through an auto dialer it can help to eliminate chances of hoax calls by communicating in the owner's voice.

Surveillance Systems

These protect equipment and articles from being tampered with or stolen by providing special electronic stickers that can be pasted on various articles. Any customer attempting to pick up items without paying can be picked up at the exit point of the establishment. For paid articles the tags are deactivated at the payment point by the cashier through a scanner.

A remote surveillance system which enables complete surveillance of premises from remote locations are also available now which fixed with cameras and connected to computer terminals. With these devices incidents and events can be viewed and stored on hard disc for future monitoring and control.

Remote Controlled Devices

These are particularly useful when large amounts of cash or valuable documents are being transported and are in transit. A wireless remote control button fixed on the briefcase or bag can simply be pressed for activating a loud siren which attracts public attention. the snatcher too receives a high voltage non-lethal shock and tends to drop the bag. The system is available with rechargeable batteries.

LEGAL RESPONSIBILITIES OF A FOOD SERVICE

The primary obligation of every establishment is that it should be registered, so that it has the legal sanction to operate as a place of public service. Registration of the establishments may be carried to by Municipal Corporations of regions or controlled by a Central Government department depending on the location and size of the facility.

The process generally requires owners and or managers to obtain a prescribed form of registration from the relevant department, complete it with the information asked for, and submit it with the prescribed registration fees. Every

caterer needs to provide the following information to the registrar's office. Name of the employer and/or manager.

- Area of the premises.
- Value of the premises.
- Water and light connections existing or required within the establishment.
- Number of employees on the premises.
- Medical and other employee facilities provided.
- Contribution of employer to provident fund and other insurance schemes of employees.
- Postal address of the establishment.
- Name in which the establishment is to be registered.
- Category of the food service such as kiosk, coffee shop, cafeteria, restaurant or any other.

Anything that happens within a food service establishment to endanger the safety of people (staff or customers) or premises is the legal responsibility of the manager. He is liable to provide conditions reasonable enough to ensure that people are not injured as a result of any action in the establishment. Actions can take the form of misbehaviour of employees with guests; careless in food preparation and service to cause food poisoning to employees, visitors and customers, negligence leading to accidents of a fatal nature. All such happenings in an organization, result in the latter having to pay heavily through loss of productivity, staff turnover or absenteeism, fines and compensation to employees for injury or death.

In every country, laws are passed to safeguard the health and well-being of people at work. For the caterer it is important that he is aware of the legislation regarding food quality, employment, etc. In the case of employment and work, the laws enacted have already been elucidated in chapter 29. Here the food laws which ensure safety of people who consume the products of catering will be dealt with briefly.

Food Laws

Food laws came into existence for a number of reasons:

- To maintain the quality of food produced in the country.
- To prevent exploitation of the consumer by sellers. This could only be done by making consumers aware of what to expect in terms of quality when they bought food.

- To safeguard the health of consumers.
- To establish a criteria for quality of food products, since more and more foods were eaten in processed, rather than in natural forms. This has resulted in the inability of the consumer to identify the quality of the contents of a packet or can, except through the label, or a mark of quality that could be identified easily.

A number of laws which affect the production and service of food have been enacted from time to time starting from 1860, to the present day. these have been briefly discussed along with any amendments that have taken place post independence.

Sale of Goods Act, 1930

This Act is important to those catering establishments which are involved with the sale of prepared food and drink. The provisions of the Indian Contract Act however, continue to apply to contracts of sale of goods.

The provision of the Indian Contract Act, however, continue to apply to contracts of sale of goods. A contract of sale has some features which are special and not common to all contracts. These are:

- (i) What conditions are implied in the contract?
- (ii) When does the ownership of goods sold pass on to the buyer?
- (iii) In what circumstances does a buyer acquire the good title?
- (iv) What are the duties of the sellers and buyers in respect of the goods and their price?
- (v) What are the remedies of the buyers if the goods are not delivered to him?

Thus, a contract of sale of goods is a contract whereby, a seller transfers or agrees to transfer “the right of ownership” of the goods to the buyer for a price. When the transfer to be made at a future date that is subject to encashment of cheques or other conditions, the sale is only made when the mutually agreed conditions are fulfilled. Some of the conditions which are implied in a contract of sale of goods are:

- (i) *Conditions as to title* This ensures that trade marks are safeguarded and there is no infringement.
- (ii) *Sale by description* Just as selling meals from a menu card, where the implied condition is that the goods shall correspond to the description presented to the customer, food service establishments also have

constantly to contract for food items of all sorts of description and specifications and therefore the conditions need to be met in order to maintain quality.

- (iii) *Sale by sample* This implies that any bulk order shall correspond in quality to the sample approved, and that the buyer should have a reasonable opportunity for making the comparisons. A second implication is that the items should be free from defects which are not easily noticeable and which could make goods prepared from them unsaleable.
- (iv) *Sale of description and Sample* The conditions in this case should correspond to those under sale by both description and sample. In the case of prepackaged items, special provisions have been made in the Standards of Weights and Measures Act, 1976 and the Standards the Weight and Measures Packaged Commodities Rules, 1977 to guide the buyer. These ensure fair trading and prices of pre-packaged items sold.
- (v) *Conditions as to quality and fitness* In a contract of sale, the quality and fitness is not implied. The responsibility of examining the product and satisfying himself according to its suitability for a particular use, rests on the buyer. But, if the buyer communicates the purpose to the seller, then the condition implies, as the responsibility shifts to the seller.
- (vi) *Condition of merchantability* This implies that the goods are of saleable quality, in that, an average person acting reasonably would accept them after a thorough examination. Packing of goods is an equally important consideration in judging their merchantability.
- (vii) *Condition of wholesomeness* In the case of eatables and provisions wholesomeness is implied, in addition to the condition of merchantability.
- (viii) *Condition implied by custom* This also covers quality or fitness for a particular purpose.

Implied conditions in a contract of sale may be varied by a verbal agreement or the manner of dealings between parties or persons. If the contract contains any special terms as to delivery and acceptance, these have to be complied with. If not, then the delivery of goods and payments for them, must take place at the same time as in a cash sale over a service counter.

Food service managers, however, equipped with the knowledge of what and how best to buy in food, and with the standards of hygiene and sanitation

laid down for food service and consumption areas, can contribute a lot to the setting up of standards for their own establishments, This will not only be beneficial to the food service establishment but will safeguard the health of the customer while maintaining a reputation worth the name.

A contract of sale of goods ensures that trade marks are guarded for quantity, and where sale is by sample, there is no deviation.

However, the quality and fitness are not implied in the contract of sale. The responsibility of examining the product and deciding on its suitability for use is totally that of the buyer. Only if the buyer communicates the purpose of the purchase to the seller, the responsibility shifts to the seller.

The sale of goods Act, is based on the rules of justice, equity and good conscience. It provides a legal solutions in case of breach of contract or warranty between buyer and seller, virtue of which damages can be claimed against a defaulting party in a court of law.

Agricultural Produce (Grading and Marking) Act, 1937

This enactment often referred to as AGMARK Act, and later amended is now called the APM Act, 1986. This was the result of efforts by the government to standardise and control the quality of agricultural produce. The implementing body for the Act is the Directorate of Marketing and Inspection which is attached to the Department of Rural Development, Ministry of Agriculture. The salient features of the Act are:

- Consumer protection measures
- Authorized packers
- Laboratory for analysis
- Chemists (Training)
- Power to obtain information
- Supply of unagmarked goods.
- Agmark Act contd.

The detailed procedures for all these features are listed in the amended Act 1986, and the new general grading and Marking Rules 1988. Which were notified in June 1989 replacing the 1937 rules. Information on agmark offices and product testing laboratories available through five regional offices at Mumbai, Kolkatta, Chennai, Guntur and Delhi.

Emblems and Names (Prevention of Improper use) Act, 1950

This was enacted to safeguard consumers from exploitative manufactures and traders who stamped substandard products and its packing with emblems resembling well known brands and their packaging designs. The provisions of this Act are now covered under the BIS Act, 1986.

Indian Standards Institutions (Certification Marks) Act, 1952

An amendment Act was passed in 1961, to extend the scope of Indian standards, to providing standards of quality control for various raw materials, products, practices and processes.

Standards of Weights and Measures, Act, 1952 and 1976

The 1976 Act, was the result of governmental efforts to introduce standards for weighing and measuring commodities to protect consumer interests. The Act provides for:

- Use of metric system for weighing and measuring.
- Formulation of specification for weights, measures and equipment used for the purpose.
- Approval of equipment models prior to manufacture.

Certification Marks

Certification marks stamped on packages of foods and food products whether they be ISI, FPO or AGMARK or any internationally recognised seal of quality help the consumer of the products to buy foods with confidence. Figure 31.4 illustrates the certification marks which appear on processed food products.

These marks represent the guarantee of quality. Licences to manufacturers for the use of the ISI certification mark are granted only if the processes of production, and the state of the premises in which the foods are to be handled meet the requirements laid down. The inspections are carried out by the staff of the Bureau of Indian Standards, or the Directorate of Inspection in the case of FPO and the AGMARK certification marks.

The ISI and the AGMARK are not compulsory for manufactures to have on their products if they do not choose to but, they are useful for meeting the requirements of export quality goods. The utility of these marks are therefore limited for the consumer, in the country. The PFA and FPO standards are in any case only marks indicating minimum acceptable quality and are generally not

good enough for export purpose for which international standards need to be followed. They, however, make it easier for the caterer to purchase items which are required for food production and service without doubt about its acceptability.

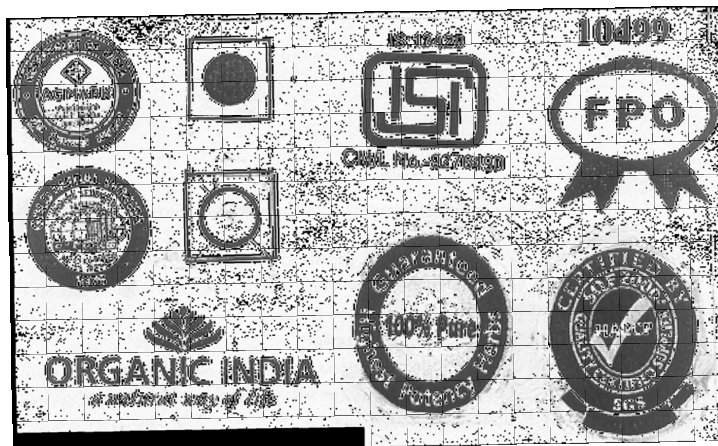


Fig. 31.4 Certification marks used on processed food products

There is however, much to be done as far as grading fresh food is concerned. The buyer of fresh foods has to buy whatever is available in the markets in India, sometimes even at the cost of being misguided by the sellers or suppliers who themselves may be quite ignorant of the presence of natural toxins in foods, or contaminants deliberately or inadvertently added to the food at various points from fields and farms to the markets. Annexures II and III give some of these substances along with those which can be added to food to enhance colour, flavour or keeping quality of foods.

Amendments to the prevention of Food Adulteration Rules make it mandatory for manufacturers to clearly declare by colour code and symbol on labels, if the food contains whole or part of any animal including birds, or marine and fresh water animals or eggs as an ingredient. these amendments however have been appealed against by the Poultry Federation of India.

In 1976, The PFA (Amendment) Act was promulgated to provide deterrent punishment to adulterators including life imprisonment with five. The manufacture of adulterants was also brought within the purview of the Act.

In India, the PFA Act does not include sorbitol in the list of sweetening agents (A .05.01). However, in the standards of identity for sweets and confectionery sorbitol is included in the list of permitted sweetening agents for *sugar boiled confectionery whether sold as hard boiled sugar confectionery or pan*

goods confectionery or toffee or milk toffee or modified or lacto-bonbon or by any other name ... (A.25.01), and in lozenges which means confectionery made out of pulverized sugar or being sugar

Prevention of Food Adulteration (PFA) Act, 1954

The legislation which is directly concerned with the protection of the health of consumers, and the quality of food products marketed is the Prevention of Food Adulteration (PFA) Act. 1954 which states that an article of food shall be deemed to be adulterated:

- (a) If the article sold by a vendor is not of the nature, substance or quality demanded by the purchaser and is to his prejudice or is not of the nature, substance or quality which it purports or is represented to be.
- (b) If the article contains any other substance which affects, or if the article is so processed as to affect injuriously the nature, substance or quality thereof.
- (c) If any inferior or cheaper substance has been substituted wholly or in part for the article so as to affect injuriously the nature, substance or quality thereof.
- (d) If any constituent of the article has wholly or in part been abstracted so as to affect injuriously the nature, substance or quality thereof.
- (e) If the article has been prepared, baked, or kept under in sanitary conditions where by it has become contaminated or injurious to health.
- (f) If the article consists wholly or in part of any filthy, putrid, disgusting, rotten, decomposed or diseased animal or vegetable substance or is insect infested or otherwise unfit for human consumption.
- (g) If the article is obtained from a diseased animal.
- (h) If the article contains any poisonous or other ingredient which renders it injurious to health.
- (i) If the container of the article is composed, whether wholly or in part, of any poisonous or deleterious substance which renders the contents injurious to health.
- (j) If any colouring matter other than that prescribed in respect thereof and in amounts not within the prescribed limits of variability is present in the article.
- (k) If the article contains any prohibited preservative or permitted preservative in excess of the prescribed limits.

- (l) If the quality or purity of the article falls below the prescribed standard or its constituents are present in quantities which are in excess of the prescribed limits of variability.

The PFA Act, 1954 thus lays down the guidelines for setting up standards for various food items like cereals and cereal products, pulses, ghee, etc. All processed items which are mass produced for public use are expected to conform to these standards.

Amendments to the Act have been made and standards laid down by the Central Committee For Food Standards, on the basis of the standards laid down by the International Codex Alimentarius Commission, a body set up jointly by the FAO and WHO to prepare international food standards, for the protection of consumers and to ensure fair food trade practices.

In 1989, the Department of Prevention of Food Adulteration picked up 522 samples of spices and condiments out of which 100 samples (19 per cent) were found adulterated. Prosecution was launched against the traders.

The penalty for adulteration that is injurious to health involves a minimum punishment of one year in jail and a fine of Rs 2,000, extendable to six years and a higher fine as fixed by the Court. Adulteration which is not injurious to health, is punishable by six months in jail and a fine Rs 1,000, extendable to 3 years and a maximum fine as decided by the Court.

Consumers can also take samples from shops and file complaints to the Consumer Forums established under the Consumer Protection Act (CPA), if they get adulterated goods. In addition, the PFA department can be contacted on phone.

The PFA Act, 1954 however suffers from the lacuna of not distinguishing between an adulterated and a sub-adulterated item.

FOOD STANDARDS IN INDIA

Some food standards have been formulated and rules laid down to be followed under the Act, the most important of which are the

- PFA standards
- FPO standards
- Agmark standards
- Indian standards

- (i) *The PFA Standards* These lay down the minimum standards for all types of foods, and are revised periodically to meet the requirements

of the manufacturer and the consumer from time to time. The PFA standards, first formulated in 1955 were subsequently revised in 1968, 1973 and 1981. Any food not conforming to these standards is said to be adulterated.

- (ii) *FPO Standards* The Fruit Products Order passed in 1946, under the Defence of India Rules, was revised under the essential Commodities Act, 1955. The FPO standards are mainly concerned with the standards required for maintaining the quality of fruits and vegetables and any products manufactured from them. The Fruit Product Order also specifies the conditions of hygiene and sanitation required to be maintained by manufacturers of fruit and vegetable products. In addition, the specifications for the labelling and packaging of these products have been laid down. Under the Fruit Product Order it is necessary for manufacturers to get a licence for the manufacture and sale of fruit and or vegetable products. The licence is only issued if the conditions of manufacture and the quality of the products conform to the standards laid down by the Order.

Under the FPO, an expert committee—the Central Fruit Advisory Committee has been set up to advise the government on standards and policy matters relating to the production and manufacture of fruit and vegetable products.

The main objective of the PFA and the FPO standards is to determine the minimum level of quality that can be attained, under the farming, manufacturing and retailing conditions in India. When qualities above the minimum are attained they are identified by other standards set up by the government, through the Directorate of Marketing and Inspection. These cover definitions of quality for various agricultural products such as, cereals, oils, butter, ghee, legumes, etc. Depending on their quality the products are graded in four categories as ordinary, fair, good and special (4–1). The standards which identify the above are:

- (iii) *The Agmark Standards* These standards are formulated on the physical and chemical characteristics of food, both the natural as well as those acquired during processing. Products graded under 'AGMARK' include vegetable oils, ghee, cream, butter, rice, gur, eggs, groundnuts, potatoes, fruits, pulses and spices. These standards ensure accurate weights and correct selling practices.

- (iv) *Indian Standards* These standards cover vegetable and fruit products, spices, meat products, condiments and processed foods such as biscuits, sweets, flour, texturised soya products, tea, coffee and other beverages, and so on. The standards are set up by the Indian Standards Institution², whose certification mark is ISI, seen on all products indicating conformity to laid down standards. The ISI (now BIS)² is the national organisation for standardisation and lays down criteria for standardisation of products, materials, practices and processes. It is also involved with the standardisation of items like building materials, safety standards for equipment, etc. which the caterer must be aware of when decisions regarding premises and equipment are required to be taken.

The food standards are currently under review as far as domestic provisions are concerned. The review will include provisions on technical barriers to trade and sanitary and phytosanitary measures according to the Department of Food Processing Industries.

Further, harmonization of food standards across countries is an important step in meeting the challenges thrown up by the World Trade Order WTO, to which India is now a signatory. Under the WTO standards, all food standards imposed would have to be justified on socio-economic and scientific grounds and therefore harmonization of domestic food standards will reduced costs and improve export competitiveness. The government had already commissioned a study for identifying the opportunities and challenges arising from the WTO agreements relating toe agriculture.

The Codex Alimentarius Commission meanwhile, appointed ad hoc inter governmental task force on foods and is in the process of developing standards, guidelines or other principles for such product traits introduced into foods, with respect to safety, keeping in mind consumer health and promotion of fair trade practices. The task force is expected to look into the area of safety concerns voiced by many countries and the risk of transferring toxins from one life form into another, or creating new toxins and allergenic compounds.

2. The Indian Standards Institution has since been renamed the Bureau of Indian Standards (BIS) to give more statutory powers for formulation and promotion of standards consumers are represented on its various technical and advisory committees. The certification mark however is unchanged and continues to be the 'ISI' mark shown in Fig. 30.1

Essential Commodities Act, 1955

This was enacted to control the production, distribution and procurement of all *Essential Commodities*, as declared by the central government and one of them is foods. The Act was amended in 1974 and 1976 to include stricter provisions against boarders, black marketers and profiteers with particular emphasis on boarders of food grains, edible oilseeds and oils. The amendment required fixation on a graded basis, the quantity to be sold by a produce having due regard for the estimated production of the crop. It also provides criteria for price fixation. In addition under the law all traders are required to display the prices of essential goods of mass consumption at the point of a sale. Offenders can facelin prisonment of up to 3–5 year.

The Act was further amended in 1986 to give the consumer or a recognized association the right to lodge a complaints directly in court.

The Spices Board of India, through the government of India (GOI) has taken the initiative to formulate a Codex Alimentarius International norm for *maximum residue levels* (MRLs) for pesticides in spices under the Act.

Fruit Products Order, 1955

The Fruit Products order was passed in 1946 under the Defence of India Rules and revised in 1955 under the Essential Commodities Act. The FPO standards ensure that the quality of fruits and vegetables, and their products is maintained with respect to hygiene, sanitation, packaging and labeling. The licence is only issued to manufacturers if their premises, equipment, processes and materials meet the standards laid down by the FPO. Under the FPO, an expert committee the Central Fruit Advisory Committee is set up to advise the government on standards and policy matters relating to the production and manufacture of fruit and vegetable products.

The Vegetables Oil Control Order (VOCD)

This specifies the standards desired for edible oils and hydrogenated fats to be marketed.

The Meat Products Order (MPO)

Relates to the quality of meat products manufactured for sale. Quality refers to the health of the animal being slaughtered, hygienic conditions of slaughter houses and microbial quality of meats.

Milk and Milk Products Order (MMPO)

This was passed by the government in 1992. The MMPO provides for setting up of an advisory board to advise the government on the production, sale, purchase and distribution of milk. The Joint Secretary in charge of Dairy development in the Department of Animal Husbandry has been appointed controller of all units with installed capacity of handling over 10,000 litres of milk per day or milk products containing milk solids in excess of 500 tonnes per year. It is mandatory for such units to be registered and licensed to operate. Any dairy with more than 5 cows has to be registered and consumers or customers buying milk from vendors must ask to see the registration certificate. Any stray cows that are branded are owned and should not be on the streets by law. It is also illegal to sell calves for slaughter by starving them to death.

Ecomark

This system launched by the BIS was introduced to preserve the environment from pollutants. The mark ensures the consumer that products certified do not produce hazardous waste materials, are biodegradable and can be recycled. Food items covered include edible oils, tea, coffee, beverages, infant food, processed foods along with food additives, preservatives and packaging materials as well.

In case the law is violated the penalties can vary from fines to closure of the establishment depending on the seriousness of the offence. It is the interest of management employees and customers, therefore, to obtain a certificate of clearance for the establishment from local health, sanitation and safety departments after getting the premises inspected from time to time.

In fact, it is good policy for every food service to lay down an inspection routine which can be followed fortnightly. An example of such a routine is as follows:

Regular Inspection Routine

1. Quick, cursory inspection.
2. Detailed inspection generally commencing at the farthest point and working back:
 - (a) Refuse storage areas—general conditions of bins and area, evidence of rodents, frequency of collection, etc.
 - (b) Outside drainage—leakages and blockages, evidence of overflowing cisterns, yards gullies, etc.

- (c) Staff sanitary accommodation—whether adequate and in a safe conditions, separation from food rooms, proper ventilation, hand washing facilities, clothing lockers, provision of notice boards for instructions etc.
- (d) Food storage accommodation—ventilation, rodent and insect evidence, condition of products, codes, storage of non-food products, etc.
- (e) Kitchen—general, walls, floor, ceiling.
 - (i) Ventilation of entire area.
 - (ii) Lighting.
 - (iii) Food preparation areas—condition of sinks—whether adequate; potato peeler, other equipment, pastry preparation, mixers, can openers, drawers for knives, etc.
 - (iv) Cooking areas—condition of stoves, ovens, etc. pots and pans, hoods and extracts, especially filters, lighting, handling clothes.
 - (v) Storage in the kitchen—refrigerators and freezers, check temperatures, plate and equipment storage, drawers.
 - (vi) Personal washing facilities, toilets and change rooms; and evidence of recent use?
 - (vii) Servery areas—storage of food, temperatures, hot plates, bainmaries, protections of open food, display of food, labeling, checking of ice-cream fridge, cupboards under counters, chill cabinets conditions of plates, cutlery etc.
 - (viii) Wash-up areas—plate and crockery, use of machines, detergents, drying racks, tea clothes, steriliser, pot was, sinks—adequate, drainage space, waste pipes grease traps etc.
- (f) Areas likely to create accident hazards—stairs, handrials, floors surfaces, spillages, us use of step ladders electric points, guarding of dangerous machines etc.
- (g) Personnel—general observation, clean and tidy, clothing, general conduct of managers (ess), evidence of smoking, enquire regarding illnesses, availability of first-aid kit and stock, enquire what training is given in food hygiene and accident prevention.

- (h) General—offer advice, stress importance of awareness of food poisoning, offer guidance leaflets and posters, introduce food hygiene courses, reiterate defects, and offer constructive suggestions for improvement.

While routine inspections are important, what is usually lacking in food services is proper communication with employees regarding their safety policy. It is good practice to put up posters at vulnerable points in the establishment which will remind employees and customers about their contributions to the hygiene and safety of their environment. In addition the provision of the Health and Safety at Work Act should be displayed in simple and clear form on employees' notice board. Occasionally a video film on hygiene and safety in catering may be shown to employees during rest periods. This should definitely be part of the induction of new employees in every establishment.

Indian Standards Institution (Certification Marks) Amendment Act, 1961

This was an amendment over the 1952 Act which was followed by the promulgation of the BIS Act, 1986.

Monopolies and Restrictive Trade Practices (MRTP) Act, 1969

The MRTP commission was set up under this Act to prevent any organisation from indulging in monopolistic, restrictive unfair trade practices. The Act enables consumers to approach the commission for justice against exploitation, by manufactures and traders. The Amendment Act, 1984 introduced the curbing of unfair practices through inclusion of five categories of practices as follows:

- False and misleading statements
- Publishing false and misleading advertisements leading to bargain sales.
- Prizes or contests offered with the intention of not providing them free as announced, or covering the charge partly or wholly in the transaction as a whole. Conducting contests with the aim of sales promotion, rather than in consumer interest.
- Sale or supply of goods not complying with standards as laid down and or claimed.
- Hoarding or goods with the intention of liking prices and creating shortages for consumers.

Another addition to the amendment Act, was that manufacturers have to prove the correctness of their claims on packaged goods or through ads.

The commission has also been empowered to award monetary compensation to aggrieved consumers through Section 12B.

However, the lacuna still remains that government run or. Controlled organisations do not fall within the purview of the Act. Cooperative societies are also exempt.

With pressure from consumer groups however, the government has approved proposals for setting up statutory Boards to take charge of civic services in Delhi such as water, sewages, power and so on.

The 1986 Amendment is considering replacing the Act by a competition Act, for which the competition bill was introduced in parliament in August 2001.

Prevention and Control of Pollution Act (Water), 1974

Pollution control legislation in India may be summarized as:

- The Water (Prevention and Control of Pollution) Act 1974, amended in 1988.
- The Air (Prevention and Control of Pollution) act 1981, amended in 1987.
- The Water (Prevention and Control of Pollution) Act, 1974 Amended in 1988.
- The Environment (Protection) Act, 1986.
- The Motor Vehicles Act, 1939, amended in 1988.
- The Public Liability Insurance Act, 1991.

All legislation and implementation is monitored by the government through the Central Pollution Control Board, Ministry of Environment and Forests, New Delhi.

Amended in 1981 to apply to Air and again in 1988. This provided for the prevention, control and removal of pollution from the air we breathe. Contravention of any of the provisions is liable for punishment and fine.

Legislation protects buyers against the abuse of monopoly position or restrictive practices, through establishing greater competition, controlling prices, enhancing quality or encouraging product innovation.

It is, however, not enough to have certification marks on processed food products, but to be aware that even these may sometimes be violated by manufacturers. The Trade and Merchandise Marks Act, 1958 provides a

safeguard to help the buyer of quality food, as well as protect the genuine manufacturer. Under this Act, any person who deceptively uses a registered trade mark, can be held responsible for violating the trade mark rights of the genuine manufacturer, and is liable for civil as well as criminal proceedings in a court of law.

India's legal framework for environmental management was initiated by Late Prime Minister Indira Gandhi after the 1972 Stockholm conference on Human Environment. As a result environmental protection and conservation of natural resources became the key national priorities. A stable organisational structure was set up for the implementation by the early 1990's. In 1993, a notification was issued under the *Environment (Protection) Rules, 1986*, requiring all industries to submit an environment statement for each year before or on 30 September every year in a prescribed format to the state pollution control boards.

The statement required information on water and raw material consumption, pollution generated, hazardous waste and solid wastes along with disposal practices, which could then be monitored.

ROLE OF CONSUMERS IN MAINTAINING STANDARDS

Consumers of food play a very vital role in maintaining high standards of quality, whether the products are bought prepackaged or served as a cooked meal or snack in a food service establishment. If customers are unconcerned and show apathy towards what they buy or consume, which often happens, then the importance that quality needs to be given, gets undermined. It is not uncommon to find people relishing the food served on a chipped plate, or drinking water from an unclean glass without realising that they could be jeopardizing their own health.

While packaged goods bearing certification marks of quality provide some safeguards, those prepared in restaurants, canteens and other institutional kitchens require greater vigil both by consumers as well as catering staff. There is no doubt that if customers refuse to eat or pay for a dish which appears or smells hazardous, food service establishments would be kept on their guard as far as maintaining acceptable standards are concerned.

In underdeveloped or developing countries, customers are often ignorant of the dangers of consuming microbiologically and chemically unsafe food, and tend to make choices according to their paying power, or be guided by the price of the food item. It is, however, not uncommon for sellers to sell inferior products at high prices and take advantage of consumer psychology, which relates high prices to better quality. Sometimes consumers choose a dish simply

because of its attractive colour or extra strong flavour or because the portion appear large. Very often they even overlook unhygienic surroundings in which the foods may be prepared, displayed or served.

Consumer education and awareness regarding what to accept in terms of quality while eating out, is a slow but sure method of maintaining standards of food preparation and service. This is because the effort of every caterer would be to try and meet the demands of his customer.

In India, raw fresh foods like meats, vegetables, eggs, milk, etc. are not yet subject to a strict grading system for quality, and so the question of grading meals prepared from them in food service establishments is a far cry. The only precaution advisable to food buyers is, that they should be guided by seals or certification marks on packaged goods and use their sensory judgements in the case of raw fresh foods.

The responsibility of the consumer is greater because of the lack of sufficient governmental controls in the areas of quality pertaining to fresh foods.

Public concern about the safety of additives and other substances present in food has increased in recent years. The most recent concern is about the presence of Brominated Vegetable Oils (BVO) which have been used in the manufacture of soft drinks for some years. The WHO and FAO expert committee on Food Additives evaluated their safety and have advised that these oils should not be used as food additives. Consumers should therefore make a conscious effort to stop taking processed drinks unless their composition is clearly labelled. Catering establishments too would do well to serve only fresh food drinks till the government clears its warning on processed soft drinks. Managers of food service establishments need to beware of propaganda designed to alleviate public fears, unless issued by a reliable government or public agency.

In developed countries, the guidelines for food service establishments are legislated through a Health and Safety at Work Act, and Food Hygiene Regulations. In India, however, food laws have not received much attention, and therefore the standards of food preparation and service followed by various establishments are as varied as the people who make the policies for their establishments. The rules are generally those laid down by custom and practice and blindly accepted by the customer.

While legislation provides consumer protection, by covering a number of related aspects such as physical protection of the consumers, their economic and social interests, protection against adulteration, poor quality, black marketing, false weights and measures exploitation by vendors through any other means further controls in this area are required. This will provide services that will not only serve quality food, but bring about a general awareness and

education regarding standards of hygiene and sanitation that can be adopted in one's environment.

The development of consumer guidance associations in India is a healthy step, necessary to help the enforcement of laws. A consumer protection movement will help the consumer to know his rights to be safe, well informed, to be able to choose, and be heard.

With the enforcement of the Consumer Protection Act, 1986, institutions are bound to ensure that their customers should not leave their interests totally in the hands of others, because institutions can only protect them to a point.

The PFA Act gives power to any consumer association to draw food samples for testing, and if found adulterated or injurious to health, to complain directly to the consumer forums or national court. Any consumer too, has the right to invoke the provisions of Articles 32 and 226 of the Constitution of India and to appeal to the High Court or Supreme Court by filing writ petitions against food services, if they have been unfairly treated. The consumer Protection Act, 1986 was a landmark legislation, since in theory, the legal principle of asking the buyer to beware of violation of the law has been replaced by one that asks the seller to beware of the law.

In the field of consumer protection, the civil supplies department has started a weekly programme called 'Apne Adhikar' on All India Radio (AIR). The thrust of the programme is to educate consumers on their rights under various legislation and measures taken by government to protect their interests.

Further government interest is seen through the MRTP (Amendment) Bill, 1991 through which the scope of the MRTP Commission has been enlarged. The Commission can take effective steps to curb monopolistic, restrictive and unfair trade practices which are prejudicial to public interest. The Commission has also been empowered to punish for contempt of Court.

The role of consumers in demanding quality food services should not be underestimated. The better quality they demand the more of it food service institutions will offer to survive in the market.

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Unit 8

Marketing

- Marketing the Products of Catering
- Food Service Management: Challenges Ahead

Marketing is more than a set of skills and techniques used for delivering mutual satisfaction to buyer and seller. It represents a basic way of conducting transactions in an institutional environment.

Marketing the products of catering in Food Service Institutions is quite different in many ways when compared with products of manufacturing industries. The former generally have to be sold fresh and in a wholesome state at the point of production because they cannot be stored or held for any length of time, being perishable in nature.

The food service manager therefore has to develop special understanding of customer requirements which change with mood, time of day, whether eating alone or in company, celebrating an occasion or just satisfying hunger.

Food services therefore need to establish a sustained long term relationship with customers, especially in the face of stiff market competition. Sellers will need to keep in mind that monopoly situations are few and far between and customers always have choices to go else where. The focus of marketing strategies therefore, would have to work towards customer retention and not depend only on short term policies.

Further a customer data base would have to be prepared and used to project consumer trends in eating out, favourite dishes, dislikes, long and short term visitors and so on. Technology will be a forceful tool for formulating marketing strategies.

Relationship marketing will be the focus aimed at cost reduction instead of profits alone. This will require training a team of sales professionals with excellent social skills along with in-depth knowledge of the products and services being offered to the customer.

This unit comprises of two chapters, one on marketing of products and services and the second discusses the challenges which food services will have to meet in future if they are to survive, in the dynamic environment of today.

Chapter 32

Marketing the Products of Catering

Marketing the products of food service institutions is quite different in many ways as compared to those of manufacturing industries, since they have to be sold at the point of production and cannot be stored or held for any length of time without jeopardizing their quality.

Selling freshly prepared or finished food, ready for immediate consumption therefore, is a matter of understanding the customer and establishing a sustained long-term relationship between the seller and the buyer in the increasingly competitive and demanding market environment (Levit, 1983).

MARKETING

The rapport developed with customers will largely depend upon the credibility of the service provider and his sensitivity and promptness in meeting customer needs. It is interesting to note however, that the size of a food service establishment does not determine its sensitivity towards customers, but other factors play an important role as indicated in Fig. 32.1.

Listening

Listening needs to be active and not passive or indifferent. This means studying survey responses for indicators that lead to services which will be more acceptable to the customers. These may include menu favorites or preferences, or a demand for takeaway or event services and the like. In short, a caterer must know the culture and pulse of his clients and be sensitive to changes that are noticed in

order to serve them better. Good food service managers are therefore usually proactive listeners and always visible to their customers making an effort to be in touch with them.

It is important to design a survey form to study customer satisfaction index periodically to record their views, both positive and negative, for analysis and implementation if considered useful.

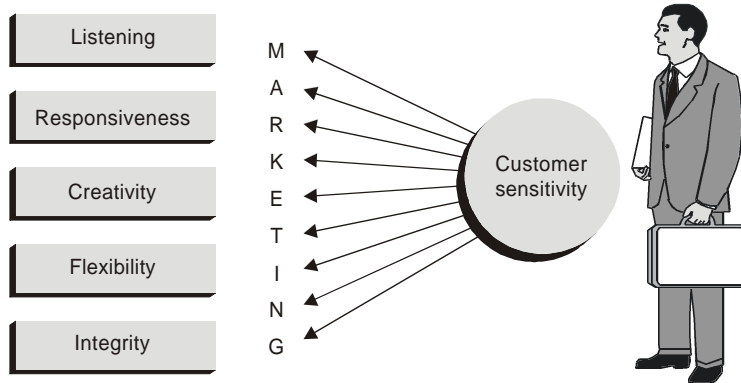


Fig. 32.1 *Factors in organizational—customer sensitivity*

Responsiveness

It is important to respond to customer suggestions especially if they make fiscal sense. Responsiveness thus means developing a positive attitude at all levels and reacting or considering even the minutest suggestion if it makes business sense. Implementation of even one suggestion makes customers feel they are being noticed by getting what they wanted even though some of their views may have been ignored. It is thus a sincere willingness to do a little extra for your customer through an unexpected gesture which makes the customer feel special.

Creativity

Healthy creativity means providing an imaginative, positive yet practical response to the needs or requests of customers. An example would be to offer a small token to a customer who is dining out with friends on her birthday. Creativity can be expressed by offering a cake as dessert on which a birthday message is written and make the customer cut it to appropriate music.

Flexibility

This involves not only flexibility of cooking and service style but also the order in which the customer wants his food, or immediate settlement of grievances without argument or discussions even though the customer may at times be unreasonable in his demands or behavior.

Integrity

Integrity leads to honest and fair dealings with all concerned with the establishment and not trying any exploitative or deceitful ways of profiteering. Integrity is what builds up the reputation of an establishment.

The food service must be perceived by customers as offering fresh quality foods, maintaining hygienic and sanitary standards of food preparation and ensuring safety while charging fair prices.

The single most powerful tool for formulating or managing a marketing strategy is that *the customer has a choice*, and in India this choice has expanded beyond competing organizations in the same product or service, to new services that meet same need. Also customers spend more time than the service provider on deciding what they want and this fact is often underestimated by the marketer. Businesses who through market research have tried to establish what a customer would buy have proved that they can be better targeted or lured through product or service differentiation.

Educating the customer or trying to influence or change his behavior therefore, is part of every service establishment's endeavor, so that their products or services can be differentiated in a competitive sense. It is therefore important to emphasize that every industry whether dealing with products or services or both is there to satisfy *customer needs*, irrespective of the nature of the enterprise.

The 1990's have witnessed dramatic shifts in the market place due to changes in lifestyle and eating-out patterns as well as a revolution in communication technology. All these have introduced a clear shift from mass marketing to a one-to-one marketing strategy leading the customer to demand services rather than merely taking what is produced and offered.

Today the Indian customer is no longer satisfied with average service as he knows that he is being charged for every little odd job that goes into the product or service. He therefore, has the right to expect top quality for his money. Thus it is a great challenge for food service institutions to create conditions for customers which they expect, and try to deal with their clients in a manner that will that make them return time and again for their products and services.

Remember, the customer has the choice to go elsewhere, and therefore will not compromise in the quality of what he wants.

Institutions that cannot change with the rapidly changing market conditions are those that gradually move away from their customers, and face problems of catching up with them. The visible changes in the operating environment of establishments include:

- intensifying market competition
- increasing market availability of products and services
- varied distribution systems and
- media

Intensifying Market Competition

This is expressed as a difficulty in assessing demand patterns because of inconsistencies in consumer behaviour resulting from other environmental, social, physiological, emotional and mental changes that constantly affect people's approaches to products and services.

Increased Market Availability

This results from two main factors namely, the competition and an increase in customer knowledge about available products and services through the various media forms as well as social influences. These lead to more complex buying behaviour because of brand choices offered, making it difficult to assess the demand reasonably accurately.

Distribution Systems

These are undergoing drastic changes showing greater professionalism through dependence on technologies which enable faster and better networking with respect to customer behaviour and market trends in supply chain details. A higher involvement of the organized sector in the distribution function has also expanded the retailing sector of the market. These rapid changes are questioning the relevance of existing policies and traditional practices of managing distribution systems.

Media

The options for the customer have vastly increased with changes in communication patterns from the traditional *word of mouth* communications

to internet, making contact with sources of supply and distribution fast and more effective in terms of the living styles as they exist today.

Service enterprises are witnessing reducing demand and are therefore becoming more dependent on volume sales rather than finesse and style in their services. This is evident from the increase in *direct marketing* systems through which the manufacturer involves his customer as a partner in the business, setting up a supply chain of customers themselves.

The food service sector too is banking on volume of sales as seen from strategies of take-away and home delivery services now started by practically all food service institutions to keep in line with customer behaviour and demand trends.

What needs to be stressed is that people make all the difference to the customer in the service industry and therefore investing in high quality human resources and a high degree of employee satisfaction is the key to good service delivery and that too is not enough, the customer must perceive it at the point of contact.

Today tolerance of the customer is at a low edge and the Indian consumer is setting high standards for service providers. Therefore, those who can create new concepts in the market place, with the conviction that their actions benefit their customers, will survive, progress and win the trust of their clients.

Further, the market is facing fundamental shifts caused by deregulation, technological discontinuities, all changing customer needs, and to add to this is the global flow of well established and developed products and services to attract the gullible consumer. Therefore establishment that provide the right leadership, adapting to the changing market environment is bound to gain the competitive edge.

Competitive Advantage

Competitive advantage grows out of the *product value* created for its buyers that exceeds its cost of production. Value is what buyers are willing to pay for, and superior value means offering lower prices than competitors for equivalent benefits, or a uniqueness that more than offsets a higher price. Well known companies have failed because they did not realize that their activities, skills and methods would become irrelevant with time or with change in the country of operation. As a result, we are today witnessing a number of mergers within the hotel and food service sectors of the industry.

Value Delivery

Product-service characteristics, customer expectations and perceptions and the availability of competitive alternatives are factors which collectively offer limitless choices to attract customer attention, to those values which he is seen to cherish most because of his vulnerability in the market. The challenge for the seller therefore, is to identify which value will appeal to the customer at a particular time and then convince him or her that the product provides it.

While the concept of value is universal its delivery is what gives the uniqueness to a product or service. Professor Philip Kotler's concept of *derived value* is a useful one both for the seller and the buyer in terms of what is conceived of as *value for money*. Figure 32.2 summarizes the options of derived value as perceived by the customer.

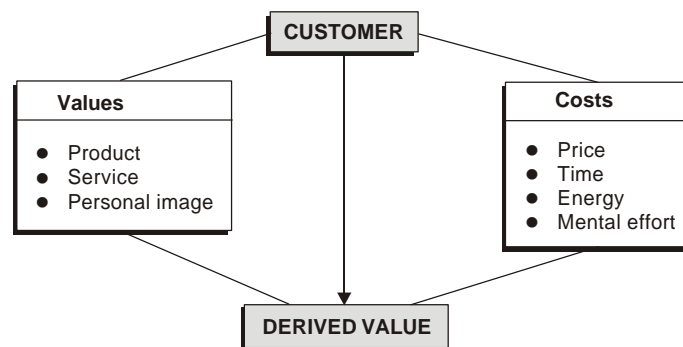


Fig. 32.2 Value perception of customers

If the perception of derived value is the value delivered to the customer then satisfaction results. It is however, extremely difficult to predict what a derived value from a product or service means to each customer. This is because what customers *say* and *do* are two different things since, the power to decide what to buy lies with the customer, who also decides what others eat, as in the case of parents buying for the family, selecting menus at a food service while eating out or taking food home for them.

Even when manufacturers target their products towards children the parents have the right to decide for them. This must be kept in mind when marketing efforts are made to woo the child consumer, whether through advertising, demonstrations, free sample tasting and so on.

Kurt Lewin (Fuller, 2001) developed the concept of customer being a gatekeeper when referring to the housewife who allowed or disallowed certain foods into the household. This concept is still valid today but in a wider context

to include any individual or group who purchases food for use or consumption by others or that is processed by them to give added value.

Many marketing professionals forget this concept and its impact on marketing functions while selling products and services. The smile that a service provider gives to a customer is not enough in today's marketing environment, what he has to ensure is that the customer smiles after using or consuming the product and returns for more. Understanding the customer therefore, is value to any successful marketing effort.

Fuller (2001) states, that much information about customers and consumers can be obtained through mere observations which he classified as being of two types, measurements and real observations. The former include head counts as in a restaurant every day, or spending power seen through average sales per customer and so on. The latter category includes direct observations by merely watching customers to see their menu selections, eating habits and reactions on tasting the foods. Such data can then be analyzed for planning food production, service trends and marketing strategies.

With the emphasis shifting to services, information systems are gradually creating the databases that can help managers to tailor-make new products to individual preferences and buying behaviours. Customers have more shopping options today, with the market providing all kinds of shopping arenas from departmental stores in malls, supermarkets, mail order and home shopping networks and telephone services. The customer too, has become more aware of a available brands of products and services from advertisements which although sometimes misleading makes the customer extra careful in making choices.

For the success of any establishment, behaviour of customers needs to be fully understood. Sole dependence on traditional or modern purchase or consumption patterns may be totally out of line for future marketing efforts. Understanding consumer behaviour and forecasting it accurately will form the basis of success of organizations.

What the marketer must remember is that the traditional Indian marketing paradigm, targeting the lower, middle and upper income and social groups has witnessed a total shift as confirmed by NCAER survey data. Consumers in general are now opting for high price and sophistication irrespective of income, occupation or social status. Therefore markets would need to target customers not so much by-product differentiation, but by how much value customers attach to the potential benefits received from the products or services. These may be functional and or symbolic while still keeping an eye on the price. Today products and services will need to be evaluated by the consumer and not by the marketer.

In the present competitive environment well designed awards, monetary or in kind, attached to products and services can attract valuable customers. Some food services who advertise meals at half price upto 12 noon on weekdays or any one day of the week, can easily lure customers away from competitors. Similarly, fast food establishments which offer two pizzas for the price of one or give a beverage free with every item ordered, can boost their product sales.

The Food Service Consumer

There are two types of customers for food services, those who eat out for a change or pleasure and others who eat away from home because of necessity or a compulsion due to pressing circumstances, having no other option available to them at the time.

Type I Customer

This customer chooses establishments which offer ambience, comfort and good food which is well presented, and is adventurous with food often willing to try out new dishes. This is because he or she chooses to eat out occasionally, and usually revisits establishments which provided the enjoyment in the past. Not only that, such a customer advertises well for the establishment by word of mouth to other associates.

Type II Customer

This customer eats to appease hunger, has less time and purchasing power and usually finds the food too routine and standardized, causing menu fatigue. Such a customer is therefore not motivated to try out new items, and in a sense is a *captive* customer as in hostels, boarding houses, prisons, orphanages and such other institutions which cater to their needs over long periods or perhaps for a lifetime.

CUSTOMER BEHAVIOUR

Customer behaviour is the most difficult to predict as it can change with mood, season, events or just boredom or depression apart from the multiple influences of the social or work environment. Customers can thus, make or break an organization by sudden swings in demand, therefore past or present profit positions may not last unless customer consistently remains the central focus of an enterprise. Certain reasons can be listed however as guidelines for managers, who need to be on their toes in order to gauge the customer's mood for certain

products and services, responding to felt needs rather than looking for the causes of change. The causes may be :

- Increase in demand for quality but with low cost options.
- A rise in competitors, offering value added products and services.
- Adoption of technologies that can ensure better and safer products.
- Quicker access to information by customers who switch to other products and services.

From the customer's view point, *five* elements determine value in the market. These are cash value, choice, relevance, convenience and motivational value.

The present dynamism of customers and competitive market orientation requires a deliberate effort to upgrade and create values appreciated by customers. Mukesh Pant (1995) refers to such improvement through the word *emendment* offering it as an appropriate synonym. He states that through brand emendment a product can be better sold and popularized by the introduction of extra services, that not only generate revenue by themselves but in the process help to enhance brand value. Suitable examples are the starting of Oberoi Catering Training School, which not only generated income but also produced future employees for the hotel chain to upgrade the services offered to clients according to established quality needs. Another example is the priced publication of cookery books by the food companies manufacturing *Dalda* and Nestle food products.

The process of emendment forces managers to think about the core values of their products and services offered to the customer and this becomes their strength for revitalizing sales.

Most marketers see the physical products only but, it is worthwhile to see them as delivering services in the form of satisfying customer's felt needs, and then go further to provide service extensions using the rapport created with the clients. Especially in the case of franchising, specialists may be hired to deliver the services depending on the needs of the region in which an outlet is expected to operate profitably. Very often, language and cultural barriers can be taken care of by subcontracting services to specialists such as, in networking for home delivery to customers and so on. It is important to identify the functionality of a product or service to which the consumer responds. Products, service outlets fail where the motives are geared to manufacturer needs rather than to those of the customer. The failure of *Kentucky Fried Chicken* (KFC) outlets is an example of a franchised outlet which did not off in certain regions because it did not cater to the local tastes of customers as against McDonald's that took notice and added the Indian flavour to its products.

Time tested concepts of mass marketing are becoming obsolete as they fail to gauge the behaviour of new generation customers. This behaviour is characterized by the uniqueness of individual expectations and preferences for multiple options, abandonment of brand loyalty and easy switching to competing brands that are perceived as giving higher value for money. Customers today, demand consistent quality and improved price—performance ratio, more customization and availability of products anywhere anytime. This has resulted in the catering services resorting to strategies like providing *takeaway* and *package* services as well as *home delivery* and *contract catering* options.

Most organizations do not collect information about their customers, those who do, have it in bits and pieces in various departments resulting in non-traceability of even regular customers. Thus customer focus is not translated into information that affects service to individual customers but only acts as a philosophy for planning strategies.

Organisations need to develop data bases which can record personal information like birthdays, anniversaries, general and economic profiles, eating out patterns, frequency of eating at the food service and try to follow up the customer to retain rather than lose him or her. Customer satisfaction index studies should be conducted at least by large organizations, because simply building information is useless if not updated for implementation from time to time, to build up long lasting relationships with customers.

Relationship Marketing

Today, relationship marketing is the trend in the form of direct marketing to buyers making them partners in the progress of organizations so that both benefit in the process. Expenses are diverted from sales-force to customer value by turning customers into highly effective sales people. This also prevents them from switching to competitors. As Peter Drucker said *the basic purpose of marketing is to create customers and retain them*, because the cost of attracting a new customer is five times that of retaining an existing one. Any marketing effort that accomplishes this goal would be working in the right direction for success.

According to Kotler (1984) relationship marketing *is the process of building long term, trusting win-win relationships with customers, distributors, dealers and suppliers*. Over time this effort leads to delivery of high quality, efficient service at fair prices to the customer, strengthening economic, technical and social ties between seller and buyer of goods and services.

Most enterprises lose 25 per cent of their customers annually. If this could be reduced by a mere 5 per cent the profits per customer gained can be phenomenal. It must be remembered that customers are more profitable over time because they gradually purchase more and operating costs get lowered while new customers follow because of *word-of-mouth* passed on to friends and associates.

Customers engage in relational market behaviour because of personal and social influences. The three E's critical in relationship marketing are *Empathy*, *Eagerness* and *Empowerment*.

Empathy

This is the ability of the seller to put oneself in the customer's position and read the latter's signals in terms of expectations, mental worries about products and services by being a good listener. Empathy has to be developed by training.

Eagerness

Eagerness to serve the customer is difficult to find in today's market environment. It is possible only if care is taken to recruit the right individuals in service areas, who exhibit patience, tolerance and service orientation followed by early indoctrination and training.

Empowerment

This is essential to succeed in selling goods and services because, for a customer a particular employee may become the main representative of the organization. For example, a customer does not want to be told by a service employee that he will have to check with the kitchen for the availability of what is being ordered for a meal from the presented menu. It is important to pay attention to attitudinal and psychological dimensions of training service personnel in order to improve their focus on customer perceptions.

Customers today, know what they want fairly well and sellers of products and services should be sensitive to customer expressions to improve their offerings. The consumer no longer takes marketing messages at face value, he filters them and then makes choices. It is therefore important to adapt to customer needs swiftly enough to be ahead of the competitors in the market, and information technology can help to do this by maintaining continuous contact with the customer.

Building Customer Partnerships

It is becoming more apparent that sellers will have to build partnerships with their customers to motivate them to stay with a food product, brand or service, as it is customer's decisions that can cause discontinuities and split loyalties between competitors. In fact outsourcing by customers may provide an opportunity to organizations to create value through supply chain management and strategic partnerships with customers, making the enterprise more competitive.

When discontinuities are caused by slow growth, marketing will require more customer focus, development of new markets to suit requirements and streamlining of internal operations. Examples of this are seen in the development of the pizza concept by Amul to target populations with lower purchasing power while creating a market for their cheese through products that fulfill customer demand for fast mini-meals at reasonable prices. The other side of the spectrum is the rethinking of strategies by fast food chains such as Nirulas who are shifting strategies to focus on chain retailing to offer competition to multinational outlets by aggressive advertising and marketing efforts, in order to expand their restaurants, fast food outlets and ice cream parlours. In addition they are planning to retail condiments, preserves and accompaniments to compete with the best in the world.

Thus, building partnerships with customers so as to retain them requires skills of application, supply-chain and information management, recognition and acceptance of the fact that markets change with altered conditions. The future belongs to those who are flexible and adaptive or else they perish.

Marketing of Services

Marketing of services is different from product marketing because unlike products services are :

- Heterogenous
- Intangible
- Perishable
- Inseparable

Heterogenous: Customers demand a variety of services which are evaluated differently by each customer before purchasing them. Some evaluate the physical aspects such as food, room, availability of gym or swimming pool and where they are located, whether open when desired, while others go by their feelings or cost of the services.

Intangible: Services cannot be sampled or evaluated physically like products before purchase, and therefore marketing them requires special communication skills to highlight the benefits of a service to the consumer.

Perishable: Services are highly perishable since they cannot be stored, therefore the seller has to build support and constantly interact with the buyer to get an order for a service delivery.

Inseparable: The service is inseparable from the product or customer and therefore quality control becomes difficult. Without the product or the customer it is not possible to provide a service facility to the customer. Examples are home delivery services for food orders telephonically placed by the customer, or packaging the products suitably for a convenient take-away service to the customer. Service marketing is therefore confined to those exchanges in which the service element forms the core activity in a sale. The food service industry is an important member of the service sector, because of the varied nature of the services it provides besides the service of food and beverage such as accommodation, leisure, atmosphere and more. Whether we recognize it or not, we are all involved willingly or unwillingly in marketing as buyers, sellers and consumers of food and its services, shoppers, readers of advertising and communicators of feelings to others.

The concept of *exchange* is thus central to the process of marketing, an exchange between mutual satisfiers, both in profit and welfare sectors. In the former service providers try and innovate to improve products and services to increase customer appeal for profit, whereas in welfare sectors the main marketing function is to maximise customer satisfaction within certain budgetary, social and other constraints. This applies to all situations whether the customer is a patient, prisoner, pensioner, student or employee.

Service marketing may thus involve a number of features.

- Finding or creating a dissatisfied group of consumers.
- Designing products or services to satisfy their wants.
- Selling at a price the consumer is willing to pay
- Making it conveniently available.

At times institutions may even resort to *bartering* for example, a restaurant may offer free hospitality to a local radio station and its guests in exchange for unpaid advertising time. Such exchanges are also called *trade-outs*.

Thus, marketing is more than a set of skills and techniques used in the process of delivering mutual satisfaction and represents a basic way of conducting transactions in an institutional environment.

In the welfare sector too, studies and surveys need to be constantly carried out professionally to determine changes in customer eating habits, patterns, likes and dislikes to monitor their requirements and achieve satisfaction goals. This is because poor quality food besides being hazardous is always a dissatisfier anywhere.

Marketing Activities

Three main marketing activities can be identified.

- Researching customer needs and desires
- Translating the knowledge into product concepts
- Developing promotional and advertising material to communicate the availability and desirability of the products to consumer

Collection and spread of information through surveys using information technology (IT) has speeded up the process. In addition telemarketing has enabled skilled staff to collect information directly from consumers.

Whatever methods are employed the goal of all food services should be *safe food* for the customer. The customer of the catering industry can be a food manufacturer, a chef, a food service institution, a mess, a club kitchen manager, mother, dietician, family and just about anyone irrespective of their occupation, economic or other status.

The last few decades have made the customer a force to reckon with in the market, as we have entered the era of consumption and the opening up of competition in the market. It remains to be seen however, in which direction the wind will blow in the future, whether the consumer is controlled by the productive and innovative forces of the market or remains a controlling power over it, in the present knowledge based century.

Food Service Management: Challenges Ahead

The management of food service institutions has seen dramatic changes through the twentieth century and more lies ahead as we enter the global century. The changes in the catering sectors have occurred in response to opportunities created as a result of the country's development in various spheres of life.

DEVELOPMENTAL CHANGES

Development has brought with it, shifts in a number of areas of family and community life that have impacted on the living and eating patterns and behaviour of people. Global influences continue to erode traditional concepts and are here to stay. The resultant scenario is:

- A change in the basic family structure from joint to nuclear leading to breakdown of the traditional community help systems that were in place. Without the development of a corresponding social service system, women are now pressurized to bear and or share the economic burdens of the separated family.
- Home cooking and eating has largely given way to eating away from home, a trend which is increasing for various reasons. This has led to the replacement of nutritionally balanced traditional meals by skipped, hurried and scanty ones.
- The leisure and pleasure of dining with loved ones in the informal home environment has almost vanished, as each member is busy becoming independent and therefore individualistic. This has created

homes which are mere places of rest rather than, places for sharing joys, sorrows, stresses and enjoying as sense of comfort, achievement and relief from physical, mental and emotional turmoil of the day.

- The economic situation has led the large middle class to shrink, creating a visible divide between the rich and those who are unable to afford three full meals a day.
- Size of home kitchens have also become smaller making people more dependent on food service establishments for meeting their daily food needs partially or wholly.
- The nature of foods available has also changed from fresh farm products to convenience, packed and manufactured items, with temptations offered through advertising. Foods which require only finishing before mealtime are in demand for home and institutional cooking.
- Developments in technology and equipment design have revolutionized cooking and serving methods, making them faster and more customer oriented.

These changes have encouraged the demand for growth of catering establishments which are responding to the perceived expectations of customers, varying according to their varied exposure to foods in different regions of the country and the globe.

Today, it is not uncommon to find in all urban environments, eating places catering to coffee time demands, South Indian, Gujarati, Punjabi, Kashmiri and other food services representing all the regions of the country. Specialty restaurants offer menus for acquired tastes serving Chinese, Mexican, Japanese, Italian and other foods representative of world cuisines.

FOOD MANAGEMENT IN INDIA

The management of food services in India can be categorized into three distinct classes, unorganized, organized and institutional catering sectors.

The Unorganized Sector

This covers all establishments which started as entrepreneurial ventures by families or individuals who perceived an unfulfilled need in their surroundings either expressed by others or felt wanting in the environment. This was done generally with the sole purpose of augmenting family income, by people who had limited means and aspired to improve their status by sending children for higher education, or to acquire comforts they could not afford.

These businesses therefore, grew in an unorganized or haphazard fashion starting with vendors making single or two items and carrying it to customer's doorsteps in residential colonies or positioning themselves on road-sides or in market places to draw attention of thirsty or hungry customers. Thus, it was mainly a form of mobile vending service except that the food was transported to vantage selling points on foot, carts, cycles, two wheelers and then motorbikes and vans. Others who used fixed locations stayed at railway platforms, bus locations, street corners and so on.

The management was a very simple *rule of thumb or trial and error* exercise since the vendor returned home after his goods were all sold. With experience he adjusted the number of portions for the next day. The prices were fixed a little above his food costs with labour not being costed, since he felt that if he brought in more than his food costs he had earned his reward for the effort put in.

Unorganised units usually employed autocratic or paternalistic management techniques, neglecting areas of staff development, food, labour and safety laws as well as customer needs. They simply offered their wares and the customer could take or leave them.

As the efforts expanded and the business grew, a single person could not handle it and these one-off operations enlarged into establishments that employed cheap child labour which continues to plague the industry even today. An NCAER status report (1993) indicated a staggering figure of 10,000 children employed in catering units, the highest in any small scale industry.

Such units mushroomed to cover both urban and rural locations of the country but, in an unplanned manner although having expertise in the production and service of limited food items and menus. This development was also happily accepted by customers, who found it convenient to buy food, drink and snacks at their door. So, as long as the population increases and poverty and illiteracy remain, the existence of the unorganized sector is assured.

Over the years the urban unorganised sector has gradually been taken into the organized fold with expansion of food service institutions, who contract the production and service of special items or rent out space for their businesses, in order to attract more customers. This trend is seen in the form of *chaat, kebab, juice, paan* and other corners expected to get more and more organized in the future although they are expected to remain independent as far as their operations are concerned.

Organized Sector

The establishments in this sector employ more than 20 workers and are required to be licensed and registered after adequate inspection for health, hygiene and safety of the premises, production processes and the end products intended for sale. The inspection is conducted at the start of operations and periodically thereafter. Examples of such establishments are hotels, restaurants, cafeterias, canteens, coffee shops and others operated for commercial use. These establishments offer a wider range of a la carte menus for customers to choose from and maintain the services according to their respective management policies laid down from time to time.

The techniques of management used by the organized institutions though more planned and transparent, for a long time operated on the lines of the establishments in the unorganized sector, although operating from fixed locations and having structurally enlarged premises. Catering operations have always followed unidirectional downward communication techniques and authoritative management styles although this is changing to more flexible management with increasing competition at least in very large organizations.

This trend is expected to continue and spread in the face of competition from multinationals for which delegation and participative management styles will become necessary. More intensive effort will be needed in the areas of food safety, quality and a greater focus on the customer and competitors. Management will need to build in greater accountability, team spirit and flexibility in its policies. Franchising and staff-customer participation in decision making will prove paramount.

Institutional Sector

This group comprises institutions which require catering facilities as a necessary support service for people living or working on site in offices, educational institutions, hospitals, prisons and the like. These catering services may be termed as semi-commercial as they operate on lower profit margins with intention of being self-sustaining. Most such services are subsidized by government or the managements of offices and industry in which catering plays a supplementary but essential role.

In spite of catering being an industry today and contribution to the foreign exchange earnings of the country, there are areas which require urgent attention to make it achieve its full potential. Studies have shown that food service sectors are even today plagued with a number of maladies such as:

- High rate of staff turnover and absenteeism
- Poor cost control techniques
- Inadequate attention to hygiene sanitation and safety norms
- Obsolete equipment design
- Inappropriate technology use.
- Inadequate research and development efforts
- Lack of social responsibility and active participation in achievement of national policy goals.

CHALLENGES AHEAD

The areas that require urgent attention as we move ahead are enumerated briefly.

- Staff development
- Resource use
- Cost control
- Technology use
- Food safety
- Catering management education

Staff Development

The training and retraining of staff on and off the job is the prime area of focus for the future. The food service industry is the only one in which so many different jobs need to be performed at the operative level and which are heavily dependent on people's skills. No amount of technology can give that personal touch which is so important to food services as far as the customer is concerned. Further this is the only sector in which people speaking different languages and of varied literacy levels are employed to give the specialty menus on offer.

To face the ever increasing competition from franchisees of MNC's it will become necessary to upgrade skills of existing staff to meet newer challenges in a global business environment. Greater impetus will need to be given through development of staff and their retention in order to reduce turnover and absenteeism.

Transparency and accountability with greater focus on customer orientation, will be the goal of all staff training. For efficient management computerization skills will play an important role for maintaining master files of staff covering their work and general profiles to enable formulation of staff policies for recruitment, selection etc. in a more realistic manner. Training and retraining

of managers, will become more important, as is evident from the spurt in training schools in the last few decades, attempting to train managers for the hotel, catering and tourism sectors. Managers of the future would need to have a greater understanding of finance, taxation, national and international markets and legal aspects pertaining to operations. They would have to develop themselves and manage by example instead of direction or coercion.

Staff can no longer be seen as a revenue item consumed as a cost of production as was done when cheap labour was available and each establishment worked on small scales in a stable non-competitive environment.

A fresh innovative strategic approach to staff recruitment, training and retention will help to cope with the increasing demands of the industry. Group excellence rather than individual development will be necessary to harness human energies and emotions to achieve goals.

The benefits of staff training and development will accrue to all, that is staff, customers and the organization at the same time increasing mutual trust and increasing loyalty to the establishment.

Resource Use

Space being the most expensive resource, it is likely that kitchens will become smaller and service areas larger, in an effort to increase the revenue of an establishment. It is anticipated that this will be achieved by greater investments on mobile, multiuse equipment, increased staff training for perfecting craft skills and procedures, all leading to greater standardization and efficiency.

Kitchens are likely to be more streamlined in appearance, arrangement and effect, making them less messy more aesthetic and compact. A better working environment is expected with concealed plumbing and wiring, preventing extra cleaning jobs, and making work more pleasant. In addition, greater use of prepared, half prepared and convenience foods are expected to contribute to less waste accumulation and therefore cleaner and more compact kitchens.

Storage spaces are likely to become more compact, storing more packets, cans and jars of pre-packaged processed foods instead of a raw ingredients. The likelihood of having central low temperature storages in every area, where catering establishments could pay for storage space to store their frozen or fresh foods, cannot be ruled out.

Dining and service areas are expected to be designed to seat more people per square metre of space. This means adjustable furniture designed more for better space utilisation than for leisurely dining. Other resources too, need attention such as equipment in terms of being multiuse and modular, food

utilization techniques which will increase yield and improve quality of end-products suited to varied situations.

At present a lot of wastage occurs in catering institutions because of unorganized production and service schedules. A close look at the organization in terms of staff skills, menus, purchases, storage facilities, production and service techniques and quality of food product would point to strategic areas where wastage occurs and could be prevented.

A well conceived evaluation and monitoring system is a prerequisite to optimum use of all resources be it money, time, energy, ingredients, food and other materials, equipment, space or management skills involving recruitment and selection of staff, forecasting customer numbers, their tastes and so on.

The institutional sectors too need to make use of available resources maximally by streamlining operations to achieve optimum productivity and aim at self sustenance.

Cost Control

Controlling costs in food services is difficult because of uncertainties in every area of operation, which depends on the customer to a large extent. If food prepared is not sold it cannot be stored without quality deterioration if proper storage facilities are not in place, because of the perishable nature of most foods and the need to consume them fresh at the point of production. Controls will need to be tightened at all strategic points of the production and service cycle.

Conventional accounting techniques are likely to lose their importance in the fast changing competitive environment which would demand speedy information for management decisions. A movement away from monthly review reports towards a costing approach will help to adapt to internal and external change. Emphasis will increasingly shift from conventional or traditional food production techniques to those involving JIT management approaches with greater focus on quality, innovation and flexibility. For this, traditional accounting techniques would prove inadequate. The role of standard costing and calculations of variances are already decreasing as tools for controlling costs.

Gandhi (1982) reported that Digital systems International (DSI) have developed software packages suitable for small food service operations. Such packages are expected to take care of costing, stores records, book keeping and the lot, through the spread of IT in all sectors of the industry. Time and energy costs are expected to be controlled through the use of technology, which would speed up menu planning or any management control function besides providing transparency in establishments.

A classic example of the start of this trend and its success is visible through the example of specialist food service operations with sophisticated logistics management set up by the Radha Krishna Hospitality Services (RKHS). The mission of the company is to *go where no man has gone before*, be it on the high seas, oil rigs or remote sites, taking food service at every conceivable place irrespective of how remotely situated it may be.

Figure 18.1 shows the five star kitchen and cafeteria at the Dholal power plant site, serving freshly baked bread, fish fresh from the sea, with chops and exotic sauces.¹ Foodland, Mumbai's pioneering food super store or ticket restaurant are all ways in which RKHS established the feeding chain for employees of Enron, attributing to the latter's success through the stomach. Raju Shete, who heads the enterprise (RKHS) believes that it has more to do with understanding the logistics involved in remote site catering. Today, RKHS operations are spread across Burma, Bangladesh, Singapore, Thailand, Malaysia, China, Oman, UAE and South Africa.

It has even catered to US forces in Bosnia. Its clients are MNCs like Compaq, Daewoo, Siemens, Hyundai and others this was achieved by developing processes, software and personnel to manage the total food supply chain from farm to users and consumers.

Clearly there is movement towards contractual catering and specialization in the years ahead.

Food Safety

Food safety would have to be the primary concern of all food production and service managers and staff at all levels of the establishment. Just as food is food for us it is also good for microorganisms and therefore provides an excellent medium for their growth and transmission of disease. Even today the media is full of reports of food poisoning cases, which need to be completely removed with high standards of hygiene, sanitation and safety in place, in food services. Regrettably the kitchens of establishments irrespective of their size or location do not maintain standards which can be benchmarked or spoken about with a sense or pride.

Hygiene, Sanitation and Safety

The future prospects in this area are very encouraging, as can be expected with the reduction of activities in the kitchen, which traditionally involved collection

1. *The Economic Times*. 28 May –3 June, 1999

of peels and other waste materials. The future compact streamlined kitchens are expected to be cleaner and safer to work in, besides being safe for customers.

With fast food services in the offing, resorting to increased use of disposables is envisaged. This would reduce washing up activities to a large extent and prevent equipment used by customers from cross contaminating kitchen and service equipment, in dishwashing areas. In the case of vendors selling food on the streets or at bus and railway stations, there is already evidence of growing awareness of cleanliness. Foods are found to be more and more protected from flies, dust, and smoke. Customers will have a heavy responsibility to increase this awareness, by demanding clean food and service, and rejecting food from vendors that may be objectionable, because of inadequate cleanliness, or facilities for maintaining them.

Easy to handle, fix and or move, safety equipment will also need to be designed to suit the needs of various food services.

In order to be able to respond to the trends apparent in the future, every caterer will need to view his operation with a professional eye. Catering managers will need to keep in touch with technological, economic and legal developments; be bold enough to take risks; be competent in their tasks; have the courage to disagree with people when pressurized to take wrong decisions, and possess the ability to uphold their convictions. But, all this is not so easy for managers of food services, since the competitiveness of catering establishments is also increasing rapidly. The winners in the race will therefore be those who can foresee a change in the trends, well in time, to respond to them first.

In the present competitive environment institutions of all descriptions will be required to maintain not only national standards of food safety but international codes if they are to survive. To achieve this every food service will need to adhere to certain set hygiene and sanitation procedures to be followed as instructed and monitored for compliance. Medical checks of staff on recruitment, as well as when they return from leave of any kind should be made mandatory by all employees.

Awareness about food safety is also expected to increase and therefore food services will need to strictly follow quality control procedures at all levels of food management.

Catering Education

The 1990s have witnessed a spurt in institutions offering diplomas and degrees in hotel and catering management supported and recognized by hoteliers in the industry or by private trusts. The training imparted however, does not

train managers to contribute management skills to other than the hotel industry. There are practically no statistics available to confirm that outgoing graduates have joined existing catering establishments in institutional or social sectors and improved the quality of food standards being offered to the captive customer. This is a big challenge before us.

The need for better standards of catering education is without doubt the only way to improve progressively in all spheres of food production and service activity. With postgraduates qualifying in Foods, Nutrition and Dietetics every year from universities and having a broad based Home Science education, this century requires their intervention in all sectors of catering management, be it entrepreneurial in nature, or as a service to the less privileged, or supportive of government feeding programs for school children. Managers would need to be aware not only of their economic functions but also develop a sense of social responsibility.

Education in the classroom would need to be increasingly linked with the ground realities to help to improve the state of health in the country. This link will help food institutions to train and retrain their staff using educational facilities available in universities and colleges, while motivating trained graduates to join the industry to the benefit of both and customers who would be ensured better quality of food and service.

The awareness of staff to the changing needs for special diets for customers with chronic diseases will enable customers to eat outside normally, as they would be able to order special foods to suit their requirements. Staff too will get sensitized to the needs of people and participate willingly and actively to help achieve the goals of eradicating malnutrition in the country, thus discharging a social responsibility as well.

It is a positive sign that hotels and other institutions have started employing trained dieticians and nutritionists and women in food management and operational positions on their staff, for the welfare of their customers. This trend is expected to grow into other sectors of the industry as the awareness of customers for healthy eating gains momentum. When catering staff begin to focus on customer requirements rather than profits alone, the future will be bright for all concerned.

Customer Perceptions

Customers already judge a food service by the value they get for their money in terms of the amount and quality of food and service. They pay much less attention to decor, furniture or seating comfort than before, focussing mainly

on the food quality, cleanliness of environment and promptness of service by professional staff.

Ethnicity will continue in menus although customers will want variety to be available to choose from. While *dal-roti*, *chaat* and Indian spices and flavours will be the mainstay there will be an increase in the demand for regional cuisines and so specialty restaurants are expected to grow. The *food court* concept which has become popular in urban areas especially in market places, around movie halls and in clubs is evidence of this trend. The fast food trend is here to stay and expand but only with creative menu planning, use of indigenous foods and preparations, newer but acceptable flavour combinations and textures that can be handled easily. Use of disposables and self-service is expected to increase.

The caterer will therefore need to attract the customer through creativity and innovative ideas. Fast food items will be in demand especially with younger and middle aged customers while the elderly will require comfort in a leisurely eating environment to enjoy traditional, special menus or snacky foods but served in style.

Since the elderly are increasing in the population and have time on their hands to enjoy eating and drinking in company, large hotels and restaurants too will be in demand. Although, they will need to adjust to the purchasing power of their customers. To do this a variety of services such as coffee shops, buffet breakfasts and meals, snack bars and takeaway services would need to be provided.

Prompt *home delivery* services will prove an attractive offer to customers who do not wish to move out of home when they are hungry or like to entertain friends informally.

The objectives of future food services therefore will need to be based on :

- Minimizing costs
- Increasing sales volume
- Providing Quality service and safe food
- Maintaining the traditional touch
- Providing choice and value for money
- Making investments to provide speedy, convenient and profitable services.
- Shouldering social responsibility

Thus the selling points of food services will increasingly have to be centered around freshness, purity, satiety, safety and value for money. Cafeterias in which the cooking is done in view of the customer are likely to become more popular

because of the cleanliness exhibited and the feeling generated that food is specially prepared for each customer. Without doubt food prepared to order is safer too, as it is consumed immediately and not held hot for chances of spoilage.

In short, every establishment irrespective of size would need to become more professional in its approach to catering with focus on customer rather than profits alone. It is encouraging to find professionalism entering the sector through Tatas, McDowell's, Modis and others who are expanding into this highly profitable arena of food service.

Contract or partnership will be the answer to amalgamating the expertise in all areas of food production and service management, right from material handling, storage, inventory management to the satisfied consumer.

The expansion is expected to be horizontal in the form of mid-sized satellite establishments spread all over the country and the globe. Networking of operations with the help of IT will help exercise off-location control of quality and services, according to demand trends.

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Annexure 1

Indian Speciality Restaurants

(Source: J.C. Negi, *Indian Hotels and Restaurants*,
Authors Press Global Network, 2002)

<i>Name</i>	<i>Special Features</i>
<i>Baluchi</i>	<i>Kebab and curry menus</i> typical of North-west Frontier region, with Afghani decor.
<i>Dum Pukht</i>	Specialises in <i>slow steam cooking</i> which was used in the kitchens of the Nawabs, typical for the preparation of Avadhi cuisine. The dishes on the menu constantly indicate adaptation to suit modern tastes with creativity.
<i>Delhi ka Aangan</i>	Serves <i>traditional Delhi cuisine</i> , menus showing a mix of typical influences of the mughals at the same time reflecting the typical cuisines of neighbouring states of the <i>Kayastha</i> and <i>Bania</i> communities. Food is served in courses according to customer choices. Offers a fine range of vegetarian dishes.
<i>Durbar</i>	Offers quick North Indian lunches, with extensive use of spices. Menus typical of states of U.P., Punjab.
<i>Frontier</i>	The Bukhara tries to recreate an Afghani fortress with service and menus restricted to traditional dishes of the North. West frontier region, modified to suit customer tastes. The <i>Rann Aleeshaan</i> is typical of this food service. The service staff also dress typically in kurtas, salwars and jackets to create the ambience.

(Contd.)

<i>Name</i>	<i>Special Features</i>
<i>Handi</i>	Serves Indian food with unique food presentation style, with specialities being the 'thalis' representing tabled hôte menus for vegetarians (Begumi) and non vegetarians (Nawabi parosa) respectively other traditional dishes too are on the menu like <i>Sikandri Rann</i> , <i>Ajwani Jhinga</i> and the like.
<i>Dehlvi</i>	This is a pot pourri of North Indian Food. Some innovations are <i>Murgh chaat</i> , <i>Murgh makhanwala</i> , <i>Seena noor jehani</i> , <i>Murgh ke parche</i> are well known.
<i>Corbett</i>	Specialises in tawa and barbeque, <i>Chicken bijarani</i> and <i>Paneer kundan</i> , and <i>Tandoori murgh</i> served in an open air jungle type refreshing atmosphere recreating the natural Corbett Park.
<i>Pakwan</i>	Predominantly moghul in its cuisines and therefore specializes in Tandoori items.
<i>Naivedyam</i>	Meaning offering to South God Indian wholesome food in traditional atmosphere resembling the fragrances of a temple in the south. Others offering cuisines typical different regions of the south are the Udipi restaurants, <i>Sagar</i> , Madras Cafe etc where typical south Indian fare is served followed by filtered coffee.
<i>Coconut Grove</i>	Serves South Indian non-vegetarian food such as keema dosa or an Appam with chicken stew promptly served.
<i>Moti Mahal</i>	Known for its special 'dal' and tandoori fare, kebabs and butter chicken. The pulse preparation has become a house hold favourite and is called as <i>Moti Mahal dal</i> all over the world.
<i>Karim</i>	Best kababs in town. Old restaurants of the 1950's are United Coffee House, York, Madras cafe which are still popular for their specialities.

Annexure 2

Permitted Colours in Foods

Both natural and synthetic colours are permitted for addition to foods by the PFA (Act), 1954 which has been ammended from time to time through the setting of rules, that need to be enforced by the food industry. The table given below shown lists some permissible natural and synthetic colours.

Permitted Food Colours

<i>Natural</i>	<i>Synthetic</i>
<ul style="list-style-type: none">● β carotene● β-apo-8-carotenal● Methyl ester of β-apo-8-carotenoic acid	<p><i>Red</i></p> <ul style="list-style-type: none">● Ponceau● Carmoisin● Erythrosine <p><i>Yellow</i></p> <ul style="list-style-type: none">● Tartrazine
<ul style="list-style-type: none">● Ethyl ester of β-apo-8-carotenoic acid● Canthaxanthin● Chlorophyll● Riboflavin (Lactoflavin)● Caramel● Annato● Saffron	

(Contd.)

<i>Natural</i>	<i>Synthetic</i>
<ul style="list-style-type: none"> • Ratanjot • Curcumin 	

Note: Maximum limit of synthetic colours should not exceed 100 ppm in foods or beverages. Maximum limit for foods is 200 parts per million. Use of synthetic colours is permitted only in the foods indicated in the table.

Foods in which Synthetic Colours Permitted

<i>Group</i>	<i>Foods</i>
Milk and milk products	Icecream, frozen desserts, flavoured milk, yoghurt, etc.
Vegetables and Fruits	Processed peas, beverages, preserves, tomato products, jams.
Confectionery	Crystalline candies, toffees, chocolates, fudges, fondants, gums.
Miscellaneous	Jams, Jellies gums ices.

Any preparation containing one or more permitted synthetic colours must conform to standards laid down. Colours may be in powder or liquid form.

Preservatives, stabilizers dilutants or filler materials may be added in addition to colours in processed products that are listed only. Use in other foods are strictly prohibited.

Annexure 3

Food Additives

Natural Food Colours

Carotenes—Yellow, orange, red

Chlorophyll—green

Ratanjot—red

Saffron—orange red

Turmeric—yellow orange

Tannins—brown red

Coal-tar Dyes

Brilliant blue FCF

Indigo Carmine

Fast Green FCF

Wool Green BS

Tartrazine

Sunset Yellow FCF

Amarnath

Carmoisine

Erythrosine

Fast Red E

Ponceau 4R

Note: No dye is allowed to be used in a concentration greater than 0.2 gram per kilogram of the ready food as consumed.

Synthetic Food Colours

Allura Red AC

Annatto Extract—Rocou, Orlean, Terre Orellana. L. Orange 3.

Azurobine-Carmosine.

Brilliant Black PN

Brown HT—Chocolate Brown HT. Brown RS. Food Brown 3.

Canthaxanthin.

Carmines—Cochineal Carmine

Beta-Apo-8'*—Carotenal—L—Orange 8

Beta-Apo-8'*—Carotenoic acid Ethyl Ester—L—Orange 9

Erythrosine

Indigotine

Paprika Oleoresin

Flavouring Agents

Amyl valerate or butyrate

Amyl acetate or butyrate, acetaldehyde

Butyric acid, Diacetyl

Benzaldehyde

Butan1-OL

Butan-2-OL

(+)—Carvone

(-)—Carvone

Cinnamaldehyde

Ethylbutyrate

Ethylphenyl glycidate

Estragole

Eugentyl methyl ether

Monosodium glutamate

Flavour

Apple

Banana

Butter

Cherry

Caraway like odour

Spearmint like odour

Cinnamon like odour and
a burning aromatic taste.

Honey

Strawberry

Anise like odour

Cloves

Meats

AGENTS WHICH IMPROVE KEEPING QUALITY OF FOODS**Antioxidants**

Butylated Hydroxy Toluene (BHT)

Butylated Hydroxy Anisole (BHA)

Calcium Ascorbate Dehydrate

Lecithin

Tocopherol

Preservatives

Class I—Salt, sugar, dextrose, glucose syrup, spices, vinegar or acetic acid, honey and wood smoke.

Class II—Sulphur dioxide and its salts, benzoic acid and its salts, nitrates and nitrites of sodium and potassium, sodium potassium and calcium salts of sorbic acid, and the antibiotic nisin.

Emulsifiers

Calcium Stearoyl Lactate

Hydroxy Propyl Cellulose

Methyl Cellulose

Note: In diets consisting of a wide variety of processed foods the collective effects of different additives could be hazardous. It is therefore good policy to purchase foods bearing a seal of quality to ensure that the concentrations do not exceed PFA permitted levels for any category of additives used.

Annexure 4

Water Purification Processes

A. DEGREES OF HARDNESS

According to Clark, each degree of hardness corresponds to the soap destroying power of 60 grams of calcium (CaCO_3) in 4.5 liters of water. Different waters have been classified according to their degree of hardness as follows:

Soft or moderately soft	less than 10°C of hardness
Moderately hard	10°–15°C
Hard	15°–30°C
Very hard	over 30°C

Hard waters having up to 25°C of hardness, however, are not harmful for drinking. In fact, they are more palatable than soft waters.

B. PROCESSES FOR SOFTENING WATER ON A LARGE SCALE

Five main processes have been used for softening hard water in bulk amounts, for us in catering.

1. *Clark's Process*: Mixing often per cent milk of lime with waters at regular intervals and allowing sedimentation to take place. The clear layer of softened water is then drawn out.
2. *Porter-Clark's Process*: In this the water is filtered through coarse cloth under pressure and is therefore a more effective method and quicker than the Clark's process.
3. *Houston's Excess Lime Method*: This is suitable for bacterial purification of hard water. Excess quicklime is added and then removed by passing carbon dioxide through it or adding unlimed water.

4. *Lime-soda Process*: In this, a mixture of lime and caustic soda is used because the water contains a mixture of temporary and hard water.
5. *Base-exchange Process*: This method is one of simple filtration through a permuted media containing sodium and aluminium silicate. It helps in the exchange of sodium base with other bases like calcium and magnesium from the hard water.

Annexure 5

Some Indian Food Standards

SOME INDIAN FOOD STANDARDS

(*Source:* Bureau of Indian Standards) (BIS), New Delhi.

- IS: 2639–1972 A revised specification for papad, which prescribes the requirements and methods of sampling and testing papad. A new characteristic namely, the pH of the water extract has been added.
- IS: 6287–1972 This is a standard specification for sugar confectionery which prescribes the methods of sampling and analysis for confectionery.
- IS: 6364–1971 Specification for tamarind pulp.
- IS: 1982–1971 A revised Indian Standard Code of practice for Antemortem Inspection of Meat animals, which prescribes the procedure for anti- and post mortem of the animals. The camel, horse, mare, ass and mule have been excluded since these are not slaughtered in India. The terminology has been aligned with the last draft of the Meat Products Order, and detailed instructions on dealing with anthrax-infected carcasses have been included.
- IS: 1932–1971 A specification for glass milk bottles, prescribes the requirements and methods of sampling and test for one litre, 500, 250 and 200 ml cylindrical bottles for liquid milk other than sterilized milk.
- IS: 2791–1972 Specification for soluble coffee powder.

- IS: 1007–1971 Custard powder specification revised and modified for total ash content, additional sulphur dioxide, tapioca starch. The latter permitted as a major ingredient in manufacture.
- IS: 6541–1972 An Indian Standard Code for hygienic conditions for establishment and maintenance of Mid-day School Meal Programmes, which prescribes the general hygienic conditions required for establishment and maintenance of central kitchens, food transport vehicles, food distribution centres in the schools, taking into consideration the conditions prevailing in the country.

Annexure 6

Natural Toxins Present in Foods

<i>Toxin</i>	<i>Foods affected</i>
Antivitamins	
(a) Avidin	The antivitamin in raw egg white; makes biotin unavailable.
(b) Antivitamin K	Dicoumarol present in some green leafy vegetables.
(c) Antivitamin D	In raw soyabean.
(d) Thiaminase	In some freshwater fish.
Aflatoxins	Peanuts, legumes and nuts especially when stored in humid conditions.
Allyl iso-thiocyanate	Moist crushed mustard.
Capcacin	Capsicum.
Cyanogenetic compounds	Bitter almonds, apple seeds and some beans.
Erucic acid	Mustard oil
Fluorine	Water, tea, seafoods
Gossypol	Cotton-seed and flour
Goitrogenic compounds	Cabbage, red skin of groundnut
Hemagglutinins	Soyabeans

(Contd.)

<i>Toxin</i>	<i>Foods affected</i>
Lead	Shell fish, spices, herbs, edible gelatin flavourings, food colours and processed foods which are exposed to lead in the process of manufacture through equipment packing, etc.
Myristicin	Nutmeg and mace
Nitrates	Water through fertilizer contamination.
Oxalic acid	Spinach, amaranth and other green leafy vegetables.
Phalloidine	Mushrooms
Solanine	Potatoes
Toxins	Some varieties of fish. Pulses like 'kesari dal' or lathyrus sativus.
Trypsin inhibitor	Soyabeans

Annexure 7

Conversion Tables

<i>Temperatures below freezing point</i>		<i>Temperatures above freezing point</i>			
<i>°F</i>	<i>°C</i>	<i>°F</i>	<i>°C</i>	<i>°F</i>	<i>°C</i>
0	-17.8	35	1.7	170	76.7
1	-17.2	40	4.4	180	82.2
2	-16.7	50	10.0	190	87.8
3	-16.1	60	15.6	200	93.3
4	-15.6	70	21.1	210	98.9
5	-15.0	80	26.7	212	100.0
6	-14.4	90	32.2	220	104.4
7	-13.9	100	37.8	230	110.0
8	-13.3	110	43.3	240	115.6
9	-12.8	120	48.9	250	121.1
10	-12.2	130	54.4	260	126.7
20	-6.7	140	60.0	270	132.2
30	-1.1	150	65.6	280	137.8
32	0	160	71.1	290	143.3

Note: The general rule for temperature conversions is indicated in the formulae below:

(a) $(^{\circ}\text{F} - 32) \times \frac{5}{9}$ for converting Fahrenheit temperatures of Celsius.

(b) $\left(^{\circ}\text{C} \times \frac{9}{5}\right) + 32$ for converting Celsius temperatures to Fahrenheit.

Ovens Temperatures used in Cooking

Ovens are of different kinds and designed to work with gas or electricity. The temperatures are indicated by gradations from 1–9, high, medium, low, etc. and often difficult to interpret. The equivalence of the various markings are:

<i>Description</i>	<i>Gas mark</i>	<i>°F</i>	<i>°C</i>
Very hot	9	475	246
Moderately hot	8	450	232
	7	425	218
	6	400	204
	5	375	191
Moderately	5	375	191
Very moderate	4	350	176
	3	225	163
Slow	2	300	149
Very slow	1	275	135
	1/2	250	121
Cool	1/4	225	107
	—	200	93

Note: The Celsius temperatures are exact conversions, to the nearest whole number.

Recommended Room Temperatures for Kitchen, Dining and Storage Areas

<i>Area</i>	<i>°F</i>	<i>°C</i>
Kitchen	60	15.6
Dining	65	18.3
Storage (dry)	50	10.0
Storage (cold)	40–45	4.4 to 7.2
Storage (chilled)	30–40	0 to 4.5
Storage (freezer)	30–0	0 to –18

Commonly Used Weight Conversions

<i>Pounds (lbs)</i>	<i>Ounces (oz)</i>	<i>Grams (g)</i>	<i>(rounded off) kg</i>	<i>g</i>
—	1	28.350	—	25 or 30
—	2	56.699	—	55 or 60
—	3	85.049	—	85
—	4	113.398	—	115
—	5	141.478	—	140–145
1	16	454	—	455
2	32	907	—	910
3	48	1361	1	366
4	64	1814	1	815
5	80	2268	2	270

Kilogram to Pounds

<i>Kg</i>	<i>lb</i>	<i>Rounded off</i>
1	2.210	2 lb 3 oz
2	4.409	4 lb 7 oz
3	6.614	6 lb 10 oz
4	8.818	8 lb 13 oz
5	11.023	11 lb

Commonly Used Volume Conversions

<i>Pints</i>	<i>Litres</i>	<i>Litres</i>	<i>Pints</i>
1	0.568	1	1.759
2	1.136	2	3.520
3	1.705	3	5.279
4	2.273	4	7.039
5	2.841	5	8.799

For quick calculations the following factors may be used:

$$\begin{array}{ll} \text{oz} \times 28.34 = \text{g} & \text{cup} \times 235 = \text{ml} \\ \quad \times 0.028 = \text{kg} & \text{pint} \times 0.43 = \text{litre} \\ \text{lb} \times 453.5 = \text{g} & \text{quart} \times 0.946 = \text{litre} \end{array}$$

Linear Conversions

<i>Centimeters (cm)</i>	<i>Inches (in)</i>	<i>Inches (in)</i>	<i>Centimeters (cm)</i>
1	0.393	1	2.540
2	0.787	2	5.080
3	1.181	3	7.620
4	1.575	4	10.160
5	1.969	5	12.700

<i>Meters (m)</i>	<i>Feet (ft)</i>	<i>Feet (ft)</i>	<i>Meters (m)</i>
1	3.28	1	0.305
2	6.564	2	0.610
3	9.846	3	0.915
4	13.128	4	1.220
5	16.410	5	1.525

Note: The Bureau Indian Standard has a publication (I.S. 1020–1957) dealing with standard conversion tables for ordinary use, which is helpful when rounding off figures or their equivalents for particular uses.

Conversion Factors Useful When Planning Layouts

$$\begin{array}{ll} \text{Inches} \times 2.54 & = \text{centimeters (cm)} \\ \quad \times 0.0254 & = \text{meters (m)} \\ \text{Square inches} \times 6.451 & = \text{cm}^2 \\ \text{Feet} \times 30.48 & = \text{cm} \\ \quad \times 0.304 & = \text{m} \\ \text{Sq. ft.} \times 0.092 & = \text{m}^2 \\ \text{Yard. 1} \times 0.914 & = \text{m} \end{array}$$

$$\text{Sq. Yds.} \times 0.836 = \text{m}^2$$

$$\text{Miles} \times 1609.3 = \text{m}$$

$$\text{Miles} \times 1.069 = \text{km}$$

Abbreviations

A/c	Account.
AGMARK	Standard Mark for Agricultural Produce.
AIIMS	All India Institute of Medical Sciences.
AIR	All India Radio.
AMA	American Management Association.
ASP	Average Spending Power.
ATR	Acid Test Ratio.
AWAKE	Association of Women Entrepreneurs of Karnataka.
b/d	Brought Down.
BEP	Break Even Point.
BIS	Bureau of Indian standards.
BVO	Brominated Vegetable Oils.
BYST	Bhartiya Yuva Shakti Trust.
C	Contra entry.
Ca	Calcium.
c/d	Carried Down.
c/f	Carried Forward.
CBA	Cost Benefit Analysis.
CCTV	Closed Circuit Television.
CFTRI	Central food Technological Research Institute.
CO ₂	Carbon dioxide.
CPA	Consumer Protection Act.

CPF	Contributory Provident Fund.
CPI	Consumer Price Index.
Cr.	Credit.
dBA	Decibels.
DDT	Dichlorodiphenyltrichloroethane.
DGHS	Directorate General of Health Services.
DM	Decision Making.
Dr.	Debit.
DSI	Digital Systems International.
DWCD	Departments of Women, Child Development.
ESI	Employees State Insurance.
ESIS	Employees State Insurance Scheme.
F&B	Food and Beverage.
FAO	Food and Agriculture Organisation.
FAOP	Firm at Opening Price.
FC	Food Cost.
FCEM	World Association of Women Entrepreneurs.
GIS	Group Insurance Scheme.
GOI	Government of India.
GP	Gross Profit.
GPF	General Provident Fund.
GSFC	Gujarat State Financial Corporation.
HACCP	Hazard Analysis Critical Control Point.
HCIMA	Hotel Catering and Institutional Management Association.
HRA	House Rent Allowance.
HRP	Human Resource Planning.
Hz	Hertz.
ICWE	Indian Council of Women Entrepreneurs.
IDBI	Industrial Development Bank of India.
IQF	Instant Quick Freezing.
IRS	Industrial Relations.
ISI	Indian Standard Institution.
IT	Information Technology.
JIT	Just in Time.

KASH	Knowledge, Attitudes, Skills and Habits.
KFC	Kentucky Fried Chicken.
LC	Labour Cost.
LF	Ledger Folio.
LPG	Liquefied Petroleum Gas.
Mg	Magnesium.
MMPO	Milk and Milk Products Order.
MNC	Multinational Company.
MP	Miscellaneous Provisions.
MPO	Meat Products Order.
MRTTP	Monopolies and Restrictive Trade Practices.
MUV	Material Usage Variance
MT	Metric Tonnes.
N ₂	Nitrogen.
NB	Nationalised Bank.
NCAER	National Council of Applied Economic Research.
NGO	Non Governmental Organisation.
NIIT	National Institute of Information Technology.
NIN	National Institute of Nutrition.
NORAD	Womens' Economic Program.
NP	Net Profit.
OD	Organisation Development.
OH	Overheads.
PCI	Pest Control India.
PF	Provident Fund.
PFA	Prevention of Food Adulteration.
PFS	Provident Fund Scheme.
PIN	Personal Identification Number.
PL	Profit and Loss.
PM	Profit Multiplier.
PPB	Planned Programmed Budgeting.
PPF	Public Provident Fund.
PPM	Pacts Per Million.
PSA	Profit Sensitivity Analysis.

PUNWAC	Punjab Women and Children Corporation.
PV	Price Variance
RBI	Reserve Bank of India.
RKHS	Radha Krishna Hospitality Services.
RMK	Rashtriya Mahila Kosh.
SAP	Subject to Approval Price.
SDBS	Sodium Dodecyl Benzene Sulphenate.
SHGs	Swa-shakti/Self Help Groups.
SIDBI	Small Industries Development Bank of India.
SMS	Speed Message Service.
STEP	Support and Training for Employment.
STP	Sodium Tri Phosphate.
TB	Tuberculosis.
TC	Total Cost.
V	Volts.
VC	Variable Cost.
VCR	Video Cam Recorder.
VDA	Variable Dearness Allowance.
VOCD	The Vegetables Oil Control Order.
W	Watt.
WEGC	Women Entrepreneurs Guidance Cell.
WHO	World Health Organisation.

Glossary

a la carte: A French term for choice menu.

Abbeys: Places where priests stayed.

Anthocyanins: Pigments in fruits and vegetables responsible for blue to purple colour as in plums, grapes, brinjal, red cabbage and so on.

Anthoxanthins: Impart creamy yellow colours to vegetables like mushrooms, onion, etc.

Boulangier (boullion): French term for soup and stew maker.

Chana: Hindi name for whole bengal gram. It is often used dehusked and boiled in chaat, and in the form of curries. The gram with husk is generally eaten dry roasted or as a curry, but hardly ever as an ingredient of chaat.

Chappati: Indian bread made from wheat flour dough. While a number of variations are possible, the name chappati is given to dough rolled into rounds and cooked on an iron griddle known as a 'tawa', and when both sides are partly cooked (indicated by a change in colour and a few brown spots), the chappati is placed on live coals, a gas fire or radiant element to bloat. When bloated it is eaten as such with the rest of the meal. Sometimes it is smeared with butter or ghee, on one side are served.

Chullah: Traditional equipment in which coal is ignited for the purpose of cooking. This often took the form of a structure of bricks covered with a mixture of mud and dung, which when dry was filled with fuel, lighted and used for cooking on. The iron bucked treated similarly in which coal was

burnt as the fuel was the later chullah which could be moved in and out of the kitchen as convenient.

Chutney: Spicy preparation with a base of herbs, onions, garlic ginger, spices, etc. all the ingredients to be used are ground fine the mixed together, every chutney contains some sour ingredient such as lemon juice, tamarind, green mango powder or fresh raw mango, pomegranate seeds, etc. Some preparations contain sweet ingredients in additions, in which case the chutney becomes a sweet and sour one. A great variety of chutney are possible depending on the individual tastes and food habits of people. Basically, a chutney is an accompaniment to a meal or a savoury snack, comparable to a 'dip' in western meals. Chutneys are sometimes used as sandwich fillings especially when they contain nuts, fruits, etc.

Confucian: Traditional management philosophy originated in China and spread to neighbouring countries.

Creches: Institutions where employees could leave their children under care for a few hours to cover their working day.

Cryptoxanthin: A Carotene in yellow corn and other foods which gives Vitamin A activity in the body.

Curd: Milk which is allowed to sour and set by injection of lactic acid bacteria. In practice, this is done by using a teaspoon of pre-set curd as a starter and preparing a fresh dish of set curds. It is similar to yoghurt, and is eaten as such or used as a base for the preparation of raitas, or as an ingredient in curries, soups, salad dressing, chutneys or even sweets.

Curry: Name given to a dish in which there is a gravy forming the base. The gravy is generally prepared from browned onions, garlic and ginger pastes, tomatoes (or puree) or curd, etc. alongwith spices to taste. The vegetable or browned meat is then cooked in this gravy till tender. The thickness of the gravy is adjusted by the amount of liquid added. The total preparation is a curry. A number of variations are possible in the methods of cooking and the variety of ingredients used.

Dal: A pulse preparation made with any pulse and 4–6times the volume of water. It s consistency varies with the nature of the preparation desired but is generally that of medium or thick custard. After boiling till tender, it is seasoned with salt, turmeric, ginger, garlic and onion, which are lightly sauteed is ghee (clarified butter). The spicing may be done at any stage of the cooking according to tastes and eating habits.

Dhaba: Traditional roadside cafeteria in India. It was originally characterised by a small area covered with tin or other roofing, where the tandoor or mud oven or solid fuel chullah were constructed. The menu was, the generally still is, a curry, chappati, vegetable, onion and green chilli salad. The seating for travellers was provided by jute knitted cots called charpoyas in front of the cafeteria.

Dharamshalas: Places where pilgrims stayed.

Dosa: A pancake like preparation made from a fermented batter of rice and split black gram. Both soaked and ground finely in the proportion of 3:1. The preparation is typically from south India but is now a popular snack or meal all over the country. A similar preparation made from a mixture of fermented maize and wheat flours called 'Anjero' is eaten in Somalia.

Fast food: Food that could be served speedily in minutes.

Flavonoids: Water soluble pigments responsible for many types of colours in plants. These appear as anthocyanins, anthoxanthins and tannins in foods.

Ghee: Clarified butter.

Gurdwaras: Places of worship for those who follow the teachings of 'Guru Nanak'.

Guru: Teacher

Halal: The word 'halal' is a Arabic word which means sanctified and holy. When an animal or bird is slaughtered for the purpose of eating, muslim law requires that the slaughter be in the form of an offering to the Lord. This is done through a recitation 'Bismillah ur-rahim' which means in the name of God who is king and compassionate. In this method of slaughter, the neck of the animal is not severed completely and it takes longer to die.

Halwa: A general term for an Indian dessert which has a grainy texture. The preparation involves reducing the ingredients of the dessert to a fine form, frying in ghee or fat and then adding sugar to taste. These desserts are generally made with equal quantities of fat to dry ingredients. The main ingredients vary from vegetables, fruits, milk or its products, pulses, eggs, etc. and therefore, a large variety is possible. Some examples are semolina halwa, egg halwa, pumpkin halwa, green gram halwa, etc. All these desserts are served garnished with nuts or powdered cardamom or both.

Haram: Means unsanctified and unholy and is a word used for methods of slaughter other than 'Halal'.

Holiday resorts: Guest houses offering paid bed and breakfast facilities.

Idli: A steamed food prepared from a fermented batter of ground rice and spilt black gram mixed in the proportion of 1:2 and diluted to the right consistency for steaming. The steaming is done in a vessel designed for the purpose, which has perforated depressions to give standard size idlis. For large scale catering, equipment has been designed to prepare upto 120 idlis at a time.

Intangible: Qualities that can only be felt and are used for effective management, such as value, experience, knowledge, skills, etc.

Jamuns: Dark purple fruits of the jamun tree.

Jhatka: This is another method of slaughter which involves the application of sudden blow to the animals neck, by which it is completely severed from the body.

Kadai: A vessel used for deep frying or sauteeing of foods, which closely resembles the Chinese 'wok'.

Kebab: Boneless pieces of meat which are marinated, skewered and then spit roasted. These are known as 'boti' kebabs and are served as snacks with cocktails, or as hors d'oeuvres. These kebabs may also be served as part of a meal on a bed of rice topped with gravy. Another type is known as the 'seekh' kebab, which consists of seasoned minced meat wrapped around a greased skewer, and then spit roasted on order. This kebab when removed from the 'seekh' or skewer takes its shape and has a hollow space through its centre, equal to the width of the skewer. A third type of kebab is known as the 'shammi' kebab. This is virtually a meat cutlet, prepared from a mixture of minced meat, spices and a binding agent shaped into bite sized rounds and then deep fried. Kebabs may also be prepared from meat substitutes for vegetarian meals.

Kheer: An Indian dessert prepared by cooking cereals, seeds vegetables or cottage cheese in milk till it thickens to the consistency of thick custard. It may be served hot or cold according to the weather and taste.

Khoa: Whole milk which has been evaporated to the extent that it forms a ball of concentrated milk. This is a delicacy in India and forms the base for the preparation of most Indian sweets and some desserts.

Kofta: The name given to deep fried balls of vegetables, meat, fish or mixtures of other foods. In India, these are usually cooked and served in a gravy. The dish is referred to as a kofta curry. A great variety of kofta curries can thus be served, depending on the main ingredients used.

Kulcha: A type of fermented Indian bread partly baked and then griddle heated or fried. It is made from refined flour fermented with yeast, and is generally relished with chana or keema (curried minced meat) curries.

Kulfi: A type of Indian ice-cream prepared by evaporating full-cream milk, whisking it in the process, adding chopped pistachionuts and freezing it in individual moulds.

Langars: Free distribution of food after prayers in temples.

Lassi: A beverage prepared by churning curd and normally diluting with water or crushed ice. It is then seasoned with salt and pepper if taken with meals, or seasoned with sugar if used as a breakfast beverage. The term is sometimes used for butter milk. 'Lassi' is a very popular beverage in tropical summers.

Lauki: Indian name for green or bottlegourd.

Lycopene: Carotenoid pigment of tomato.

Limiting: Restricting, hindering.

Lodges: Offer basic lodging facilities

Lutein: Carotenoid pigment present in green leaves but does not contribute to vitamin A activity.

Midways: Wayside stop-over amenities

Mithai: A common name for all Indian sweets, like burfi, rasgulla, gulabjamun and other milk used based or vegetable based sweets.

Monal metal: An alloy of Nickel and Copper.

Naan: Indian bread made from fermented dough. It is baked in a tandoor or traditional oven.

Niwas: Lodge

Orphanages: Places of care for children who are without parents or abandoned.

Paan: A special leaf in which different mixtures are wrapped consisting of lime and katha, beetlenut, green, cardamom, asofoetida, mint and other flavours

and herbs. The preparation is used as a digestive and generally eaten after meals. Sometimes stimulating as well as intoxicating ingredients like chewing tobacco are also added, if desired.

Pakorras: Deep fried snacks served with drinks or at tea time. They consist of vegetables or meats cut into bite sized pieces, dipped in batter and deep fried. They are usually served with pungent dips or chutneys.

Paneer: A term used for fresh cottage cheese in India. It is made from fresh milk whenever needed. The milk is coagulated by bringing it to a boil and then adding lemon juice or sour curds. The whey is then drained off and the cheese obtained used in various ways, such as in the preparation of Indian sweets, breads, stuffings, chappatis, snacks and for curries.

Papad: Pastes of starch foods made thin enough to be spread into rounds, the size of a pancake, and sundried. Papads are water like in appearance and are used as accompaniments to a meal after deep frying or dry roasting on a hot griddle or direct fire. Papads may be seasoned with a variety of spices and herbs before drying and storing for use.

Paratha: A chappati layered with fat or oil and lightly fried on both sides on a griddle. The variations possible are similar to those of chappati or poori.

Phaluda: Long strands made from starchy pastes resembling noodles. These are boiled in water till soft, cooled and served as an accompaniment of kulfi.

Poori: A type of Indian bread made from a dough of wheat flour and water. This is then rolled into rounds approximately 15–20 cm in diameter and deep fried in hot oil, till fully bloated and golden brown in colour. A number of variations are also prepared by the addition of extra ingredients like vegetables, meat, spices, etc. used as stuffing or kneaded in the dough.

Prasadam: Food that has been offered in temples and considered blessed and holy.

Princely states: States of India which were governed by princes or royalty.

Pulao: A term given to different forms of fried rice, the variety depending on the ingredients added to the rice. For example, if only jeera (cuminseed) is added to the rice, the preparation is known as jeera pulao. If carrots are added to fried rice during the preparation it is carrot pulao and so on.

Rabri: A dessert prepared by thickening milk on a slow fire with constant stirring then adding sugar to taste and cooking till or dropping consistency.

The dessert is served chilled topped with powdered cardamom and chopped nuts.

Raita: Beaten curd in which are added cooked or finely chopped vegetables, fruits and herbs or nuts. It generally forms a side dish in an Indian meal, and is best served salted, spices, and chilled. It may also be used sweetened with fresh or preserved fruits as a dessert.

Ramadaan (Ramzan): is a holy month in which Muslim devotees fast vigorously for a whole month. They take food before dawn and break their fast after sun set each day. The month calculates according to the lunar calander, and is devoted to prayer and complete abstinence. The devotes do not take even water throughout the day.

Rasgulla: A sweet prepared from fresh cottage cheese preferably made with cow's milk. The cheese when still warm is blended with a little semolina or flour to bind, made into balls and the vigorously boiled in syrup for 8–10 minutes or till the balls nearly double their size. It is a very popular sweet, used either as a snack or dessert.

Restaurare (*restauer*): To repair, replenish or restore, the origins of today's restaurant.

Roti: A term used for a thick chappati, generally eaten by the rural families of Northern India. Certain types of thick chappaties are considered a delicacy too such a roti made from maize flour, called 'makki ki roti', or 'gur ki roti' made from wheat flour and jaggery and so on.

Sambar: A preparation of arhar dal (dehusked and split 'lathyrus sativus') similar to any other dal preparation, except the vegetables are cooked in it, as for to a stew. If is different to other pulse preparation in that it is a sour preparation, usually containing tamarind or lemon juice. Sambar is generally served with rice or fermented batter preparations like dosa and idli.

Samosa: The Indian equivalent to short crust pastry, in which fillings, sweet or savoury may be enveloped. The snack is then deep fried and generally served hot. In minute sizes the snack may be served cold at cocktail parties.

Sauce: A thick flowing liquid adjunct to a dish, used to moisten the food, enhance flavour, provide contrasts in colour, taste and flavour. A sauce is prepared by extracting the flavours of various foods and then using starch thickeners like corn flour, arrowroot, etc. to produce a smooth, glossy

appearance. A sauce has a light texture and a definite taste, as in mint, mushroom or tartar sauces.

table d'hôte: Means “table of the host. It is a fixed menu planned by the establishment” for the guests.

Tandoor: The traditional Indian oven originally made entirely of mud mixed with cow dung, later large drums were used as the base and the coating given which imparted mobility to the equipment.

Tandoori: Prefix used for foods cooked in a traditional oven or tandoor.

Tangible: That which can be seen, handled and used.

Tannins: Colourless phenolic compounds which play an important role in colour and flavour of food—impart brown colours as in tea, coffee and around seeds of fruits and vegetables.

Taylorism: Scientific approach to management founded by F.W. Taylor.

Thali: A steel plate, generally round and about half to one inch in depth. It is used for serving meals in traditional Indian style. Thalīs may be made of silver or copper too, but the former are more practical to maintain and are the obvious choice especially when used for serving large numbers.

Tikka: A term for small boneless pieces of meat, chicken or fish, or cottage cheese marinated in a spicy mixtures of curd, chillies, garlic and other seasonings’ and then spit-roasted or grilled. Suitable for service as cocktail snacks or a starter to a meal.

Tikki: A type of potato cutlet in which the binding agent may be a cereal or pulse flour. Generally, no coating is given, and the product is shallow fried on a hot griddle. A tikki may be prepared stuffed or plain and is usually served with a chutney or pungent sauce.

Uppuma: A preparation of semolina lightly fried in ghee or oil, to which peas, nuts and tomatoes are added. The cooking is done with just sufficient boiling water, which is totally absorbed by the semolina. The final product is therefore soft but grainy. It can form a cereal dish for a main meal or be used as an accompaniment at tea time.

Vada: A mixture of ground dehusked, split black gram dal, which is soaked, ground into a paste and seasoned with ginger, salt and other spices. Portions are then taken and deep fried into rounds, resembling doughnuts in shape. The product is used as a hot snack with tea, or steeped in curd as a side dish

with a meal. Vadas may be used as ingredients for making 'chaat' as well. Other dals may also be used singly or in combination in the preparation.

Yatri: Tourist

Yatrikas: Places of short stay for tourists.

Zeaxanthin: Carotene in yellow corn but makes no nutritional contribution.

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