

HOUSEKEEPING 3
3RD SEMESTER
LINEN ROOM OPERATIONS

1.1 Introduction, classification and sizes of linen

The linen room is the centre-stage for the supporting role that the Housekeeping Department plays in the hotel. Most linen rooms are centralized and act as a storage point and distribution centre for clean linen. Usually, a par stock is maintained on each floor or at each unit to suffice immediate requirements.

The word linen is meant to refer to those fabrics, made from the fibre derived from the stem of the flax plant. However in common terms, the word linen is referred to a wide variety of fabrics, used for domestic purposes.

Linen may be classified into three types. They are:

1. Bed Linen
2. Bath Linen
3. Table Linen

1. BED LINEN:

Bed linen should be comfortable beds the linen should have a good appearance bed linen should and with stand abrasion while on the bed and during laundering.

a) Blankets

Blankets provides warmth in bed, it is usually to provide one under blanket (bed pad) two or three top blankets for each bed. The size of blankets for each bed. The size of the blanket varies tremendously. But they are generally little shorter than sheet. White of dale colored blanket are more often used in hotels.

Size of the blanket: 70" X 100" (or) 175 X 250 cm (single)
90" X 100" (or) 228 X 250 cm (double)

b) Bed sheet

Bed sheet should be long enough to give a good tuck in and a good win over at the top of the product. The blanket and oddity from grease newspaper print the base of the bed sheet.

Size of the bed sheet: 78" X 108" (or) 203 X 274 cm (single)
90" X 108" (or) 228 X 274 cm (double)

c) Pillow cover

Pillow slip will be made of the some materials as the sheet, frills and stitching are not recommended and the house wife. Flat is the most usually bottom burned and to the red slips need more attraction regarding repairs. Even with the house wife and hence so, the pillow is hidden slip should be fills, easily over the pillow.

Size of the pillow slip: 20" X 30" (or) 50 X 75 cm
200 X 200 cm (double)

2. BATH LINEN:

- a) Bath Towel
-

Bath towels are usually of cotton Turkish which has a looped pile on the both side, the towel are stronger.

Size of the bath linen: 30" X 54" (or) 76 X 137 cm

b) Bath sheets

Bath sheets are frequently used while longer size. It is normally provided in private bath rooms in first class hotel.

Size of the bath sheet: 40" X 70" (or) 100 X 178 cm

c) Face and hand Towels

They may be linen (or) cotton in the past were always of husk a back which is a close fancy weave and best quality is very smooth and always made of linen now Turkish towel, hand towels are provided in majority hotels.

Sizes of the face towels: 10" X 10" (or) 26 X 26 cm

Hand towels: 15" X 24" (or) 38 X 60 cm

d) Bath mats

Bath mats must to be very absorbent and are often made of turkey towel (or) candle wick, these are laundered frequently and so are considered more hygienic then bath mats.

Size of the bath mats: 24" X 36" (or) 60" X 92 cm

3. TABLE LINEN:

Table line should be good appearance and comfortable they should be durable and with stand abrasion. While on the table and during laundering.

a) Table cloth

The table cloth is perhaps only a little grubby; this is not as expensive to have re-laundered as would be slip cloth.

Size of the table cloth: 72" X 72" (or) 183 X 183 cm

72" X 96" (or) 183 X 244 cm

b) Slip Cloth

A slip cloth would be placed over it for the succeeding service this is not as expensive to have re-laundered as would be a table cloth.

Size of a slip cloth: 1m X 1m (or) 3 ft X 3 ft.

c) Serviettes

It is used by every waiter a protection against heat and to keep uniforms clean.

Size of the Serviette: 18" X 20" (or) 46 X 50 cm (linen)

14" X 17" (or) 36 X 42 cm (paper)

TABLE LINEN AND THEIR SIZES

Square 36" (or) 91 cm

54" (or) 137 cm

63" (or) 160 cm

64" (or) 182 cm

Oblong 52" X 72" (or) 133 X 183 cm

90" X 72" (or) 133 X 230 cm

Napkins 24" X 24" (or) 60 x 60 cm

Slip Cloth 1m X 1m (or) 3ft X 3ft

Serviettes 18" X 20" (or) 46 X 50 cm

1.2 Selection criteria for linen

1. Value for money

It includes the cost of buying linens & maintaining one mainly prefers blends as they are easier to use for longer time & maintains easily. Generally 65% cotton and 35% blends are considered ideal. E.g. silk, wool needs to be maintained in case of laundering i.e. dry clean

2. Type of establishment

5 star hotels prefer poly cotton while 5 star deluxe hotels go for silk or Egyptian cotton.

lower star hotel or a guest house goes for even a cheaper type of linen with less abrasion resistance since the frequency of change of linen is maximum once a day.

3. Durability of fabric

The fabric should give maximum use whether in circulation or after discards. Some fabric are also mercerized (addition of soda to cotton fabric is make it soft, shine and durable).

4. Thread count

This is the number of weft & warp in per inch of a fabric material. Warp is the thread stitched length wise in a loom where as weft is the thread stitched on the width of the loom. Ideal thread count is 180 sq per inch. The more the number of weft & warp yarns the more durable the fabric. e.g. Muslin cloth is less durable and Cotton cloth is more durable Selvedge This is the edge where the weft yarn turns back & prevents the ends from opening out.

5. Amount of dressing

Process of adding starch to make the fabric look stiff & durable is known as dressing. So even loosely woven fabric appears to be stiff and firm when starched. Hold linen in hand and rub it over a black surface. If you see white dust or starch particles falling out it denotes poor fabric. Higher the amount of dressing lesser will be the durability & cheaper will be the fabric. Look at the fabric under a magnifying glass.

6. Tensile strength

This is the stretching ability of fabric defined as the pressure that a fabric can sustain under conditions of humid & temperature. Higher the tensile strength more will be the durability. The tensile strength starts reducing after 20-30 wash of fabric.

7. Abrasion resistance

It is the resistance of fabric to the surface wear & tear. Denim has high abrasive resistance therefore more durable.

8. Shrinkage resistance

This refers to the shrinkage percentage of a particular fabric after washing. Fabric may shrink after 2-3 wash.

9. Resistance to Pest

The fabric should be pest resistant. Generally silver fish & cockroaches are common pest which damage the fabric

10. Thermal Power

Only in hilly areas where fabric is required to have a mixture of wool along with polyester.

This type of fabric also gives indication for laundry temperature & washing temperature

1.3 Calculation of linen requirement – Par stock

Linen Coverage is a term used to refer to the total number of sets of linen maintained by the hotel and their distribution. The number of sets is also referred to in terms of ‘par’.

PAR STOCK - Optimum amount of linen/ uniform required to meet the daily demands so as to ensure smooth operation of the hotel.

Pars Number of sets of an item in rotation

Floor set up minimum amount of each linen item required to outfit all guest rooms on one floor or section at a given point of time .House Set up minimum amount of each linen item required to outfit all guest rooms in a hotel at a given period of time.

Importance of par stock

- To help in effective budgeting
- To make correct & efficient investment
- To prevent over stocking and thereby avoiding chances of storage space problems or spoilage during storage
- To ensure proper supply of linen at all times
- To bring about manageable control

Points to be kept in mind while calculating par

1. LAUNDRY CYCLE

It means the number of wash cycle of linen. If washing is done on daily basis, the hotel needs to set up more pars, but in case of small hotels where frequency of wash is low, the par can be set low

1st

par circulation (room)

2nd

par laundry (wash)

3rd

par linen room (fresh issue)

4th

par floor pantry (replacement)

5th

par housekeeping store (emergencies)

Bath room linen par 6 (changed twice a day)

1 set - Linen Room

1 set - Laundry

1 set - Circulation

1 set - H.K. Store

1 +1 set - Floor Pantry

= 6 set

2. **REPLACEMENT** linen are stored in the floor pantry and these are used in case of wear and tear, damages or extra request from guest
3. **EMERGENCY** one set of linen is stored in housekeeping store for emergency like power failure, equipment damage/breakdown, union problem, which means disturbing the movement of linen in the hotel.
4. **NO. OF ROOMS** linens are decided according to no. of rooms where we have more number of rooms there is more par and vice versa as re-sheeting is done on daily basis in large hotel and in small hotel re-sheeting is done after guest departure. Depends on frequency of wash & change.
5. **STANDARD POLICY** while maintaining the par the Executive Housekeeper has to follow policy laid down by hotel
 - Formula Total Par= Items per bed x No. of Rooms x PAR

1.4 Purchase of linen

Purchase should be made from a reliable supplier. Executive housekeeper should ask for

catalogues, samples of the fabric before purchasing linen in bulk.

Fabric should be comfortable, smooth, soft and easily launderable. Bed sheets of high quality

may be combinations of linen & cotton or some hotels may use cotton only as it is less expensive. Cotton may be Percale or Muslin. Percale is more durable than muslin.

Nowadays

bed sheets are also made of combination between cotton & polyester (polycot) for easy laundering best blend 65% cotton 35% polyester

Advantages of Linen Purchase:-

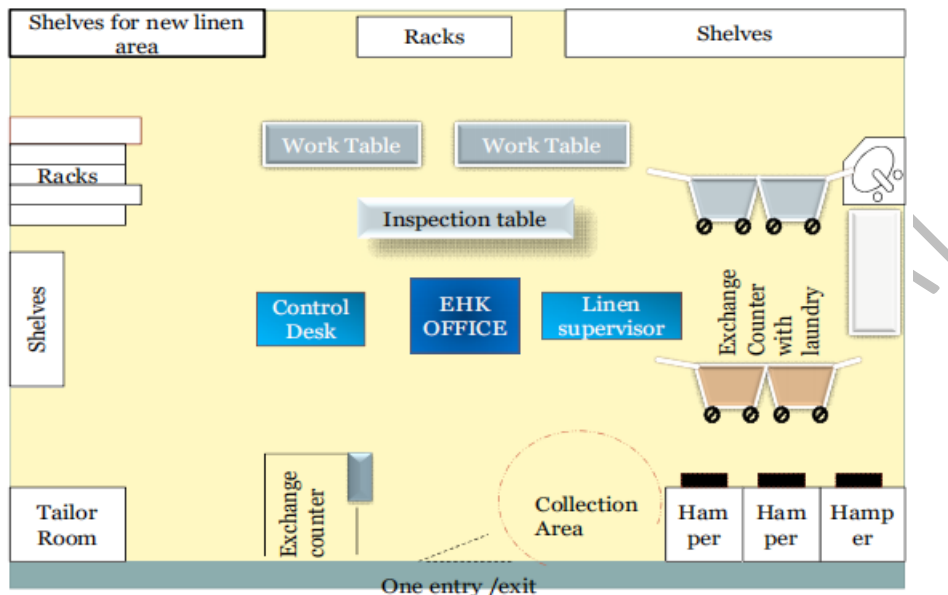
- Strict control on standards {EHK/ LINEN/ Laundry}
- Less Pilferage {stock book, record}
- No delay in supply {linen Room}
- Makeover possible for hotel
- Hotel has its own MONOGRAMMING
- Hotel does not need to depend on hiring company.

1.5 Layout and equipment in linen room

- - shelves both open and closed
 - hanging space
 - Reserve Stock storage
 - drop counter for exchange of linen (stable-type door)
 - Trolleys for clean linen
 - soiled linen hampers
 - Linen keeper's desk and storage space for records
 - telephone and computer
 - stepladder
 - washbasin
 - storage for materials required to clean the room
 - sink and drying rack (optional)
-

- iron and ironing board
- area for accumulation of soiled linen
- area for receiving laundered linen
- area for sorting and counting of linen
- sewing section (Tailor room)
- work tables (with table tops in contrast to white)
- traffic lane to laundry
- traffic lane to uniform room

Layout of Linen Room



1.6 Activities in linen room

1. Collection & transportation

Collection From different departments

Transportation from Floor pantry To Linen Room

This is facilitated through chutes, canvas bags, trolleys, collapsible wire carts, skips. It is an essential activity when laundry services are on contract. Guest laundry may also be collected and billing and marking undertaken, should the laundry be off-premises.

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Laundry Skip it is an elasticized net bag used to carry laundry

Linen Chute it is a vertical tube like structure from which soiled linen are thrown straight to laundry from floor pantries

2. Sorting & Counting



- Sorting is carried out primarily to make counting possible as well as for streamlining laundry procedures.
 - Linen is counted in order to make a record so that issuing to departments may be accurate and it is possible to tally the exchange of linen between the linen room and the laundry and a basis for billing exists.
3. Packaging
- Soiled linens are packed in hampers after sorting to avoid mix-ups and to prevent linen damage. Linens requiring repairs, or heavily soiled are put into different bags colour coded respectively
 - Linen should be properly arranged in trolleys as to avoid damages. Linen edges should not drag on the floor
4. Dispatch
- Dispatch of soiled linen to laundry after sorting and counting & packaging.
 - In case of commercial laundry the linens are dispatched outside for laundry or the hotel also has its own laundry for washing linens.
 - Generally dispatch time is between 3 to 5 pm after servicing the room.
 - A list of soiled linen is sent to laundry along with dirty linen. A duplicate copy is kept in the linen room (information like date, time, items, number of soiled linen and signature)
5. Deliveries
- Clean linen is delivered in the morning hours and evening deliveries are usually for guest laundry.
6. Checking & inspection
- After receiving linen from laundry checking the quantity to ensure that the amount of laundered linen tallies amount of soiled linen items sent.
 - Inspection of quality of wash i.e. stains & dirt removed, no damages, no loss of shape or colour, no blue streaks, or patches from optional brighter, properly ironed.
7. Storage
- Linen room storage depends on the size of the hotel, frequency of wash, change, type of operation, linen coverage (par), storage should have good space, shelves clean & safety factors being attacked by pests. Should be well ventilated and inaccessible to pests
8. Distribution to unit
- Collection of linen from different rooms to the floor pantry
 - Floor supervisor, checks, counts
 - Enters in “room linen control sheet”
 - Soiled linen send to linen room {hampers, linen chutes, canvas trolleys }
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- 2 copies of “RLCS” send to linen room with soiled linen
- Linen supervisor receives, record verifies, stamps “received”

1 copy RLCS Floor Supervisor
2 copy RLCS Linen Supervisor

- Against 2 RLCS Fresh Linens is issued on one to one basis

9. Monogramming

Monogramming- putting Name and Logo

- Identification- in Case of an off- premises laundry, where linen of different hotels may get mixed and in the hotel itself, where-in each department's linen may be identified.
- Advertisement
- Detecting Pilferage

Monogramming - Name and logo of the establishment is put onto the linen item for identification , advertisement & discouraging pilferage. This can be stitched, slicked (wax sticker), printed or embossed

Marking - Stamping is done for year and date on the new linen arrived. It also indicates the size of the article and date of putting it into circulation. Done by the linen room supervisor and it is said to be Quoting of linen. Done in many ways:-

- a) Marking pen which become permanent when applied at 400°F
- b) By heat seal machine
- c) Hand or machine embroidery
- d) Stitching labels or stickers which permanently stick to the fabric when applied with hot iron
- e) Marking is done on the right hand side of the linen item.

10. Repairs & alterations

Linen items are repaired in the linen room (sewing room) in case of damages (wear & tear, loose stitches, open stitches, loose buttons and can be stitched or darned.

11. Discards

Linen is said to be condemned or discard when it is not fit for use in the guest room and so it is taken out of the circulation. It is discarded when it has worn out or is damaged or torn or stained while handling by guest or staff.

12. Stocktaking

Physical counting of all linen items at frequent intervals to know the actual stock of linen and to check on to losses, a stock register is updated accordingly

13. Security

Linen room should have only one entry/ exit to restrict the movement and to prevent the misuse of linen. It should be a non- smoking zone (area)

1.7 Linen control

This is carried in four phase:-

- a. Routine checking for appearance and hygiene standards
- b. Quantity control of the daily flow of linen stock/ linen exchange procedure
- c. Stocktaking or physical inventory of linen
- d. Proper documentation of line through the master line inventory control sheet

1.7.1 Linen exchange procedure

Clean for dirty/ Fresh for soiled/ one on one basis Soiled linen Clean linen

Topping up Dirty linen is dispatched down the linen chute in laundry & floor stock is made up later in the day by houseman.

Set Amount Dirty linen is collected frequently from the corridors by the spotter from laundry and the floor linen, clean linen items are made up at set amount quantity. Set of linen issued on daily basis.

Requisition Requisition filled up by department is given to linen room for issue.

1.7.2 Inventory control – Procedures and records

STOCKTAKING (Physical Inventory)

Advantages of Stock Taking

- Helps in Budgeting / to order,
 - Control on misuse
 - Avoid linen mix- ups
 - Time saving, [different areas]
 - Helps in maintaining par stock
- Helps in storing safety stock level (optimum linens stored for smooth running)

Helps to record Number of Discards

Helps to know linen used on different areas eg:- Room, Laundry, Linen Room, Floor

Procedure of Linen Stocktaking

Fixed Periods/ Interval

- Date Fixed by EHK in Advance
- Written circular sent to department
- Details of date, time, place
- Lean time, 3.30 pm

Identify Linen locations

- Linens in Guest Rooms, pantries
- Laundry { wash, iron, fold, trolley }
- Linen room
- Linen Chutes
- Hampers, Laundry skips, linen trolleys

Stocktaking Activity at different Areas

- Time fixed for stock taking activities
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- Stop movement of linens to avoid Double counting
- Linen counted at different areas
- Fill up the Form
- Handed over to EHK
- Activities done in presence of Supervisors, EHK, Auditor, Accountant
- Fill stock details / stock book
- Maintain Discards/ EHK
- Final copy of stock book to G M for verification & Signature

Records

Room Linen Inventory Sheet

Floor No. _____ Floor _____
 Supervisor _____

| Location | B/S | P/S | H/T | F/T |
|----------------|-----|-----|-----|-----|
| # 102 | 3 | | | |
| # 104 | 3 | | | |
| Cart 1 | 10 | | | |
| Cart 2 | 10 | | | |
| Floor Pantry 1 | 50 | | | |
| Floor Pantry 2 | 50 | | | |
| Linen chutes | -- | | | |
| Hampers | 10 | | | |
| Skips | 10 | | | |
| Total | | | | |

Date: _____ EHK: _____ Auditor: _____



Linen Stock Book

| Item | Previous Stock Inventory | Receive | Sub-total | Condemned | Book Stock {=4-5} | Linen on Floor | Linen in linen Room | Linen in laundry | Actual stocktaking {=a+b+c} | Dis Crepeny {=10-6} | Par stock | To Order |
|-------------------|--------------------------|---------|-----------|-----------|----------------------|----------------|---------------------|------------------|--------------------------------|------------------------|-----------|----------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| | | | | | | | | | | | | |
| SIGNATURES | | | | | | | | | | | | |

1.7.3 Recycling of condemned linen

Linen can be condemned

at any of the following stages:-

- a) By room attendants by collecting it on the floor
- b) While sorting in the linen room.
- c) While inspecting it in the linen room or laundry
- d) While collecting it by F&B personnel

All condemned items are taken out of circulation stamped and noted in the discard register.

Discard procedure

- Identification of linen beyond state of repair or stain removal (may be done in laundry, linen room during stock taking)
- Linen taken out of circulation and placed separately in laundry on daily basis
- Discards done on monthly basis
- Discards counted, sorted
- Discards inspected by the EHK & a representative from accounts. Discarded items are stamped as “condemned”

Importance of linen discard

- a) Old linen can be recycled into useful items
- b) Helps to minimise hotel budget & avoid unnecessary wastage
- c) Records are maintained in the stock book for discards which help to monitor & detect pilferage

Prevention of damage of linen

- a. Check for faulty linen.
- b. Keep light on inside
- c. Keep the linen door closed when not in use
- d. Keep small linen like face towel inside trolley, bags
- e. Put restrictions on misuse. Always follow SOP set by EHK
- f. Avoid excess use of bleach as it weakens the fabric
- g. White fabrics should not be thrown on concrete floor as concrete stains are impossible to remove
- h. Damp linen should be dealt with care as to avoid any bad smell (wash & dry immediately)
- i. Exchange linen only one to one basis
- j. Do not drag the linen outside the trolley as it may get torn

Discarded linen items are also converted into useful items called Cut Downs & makeovers. Example- Damaged bed sheets can be converted into napkins, tray linens, baby cot sheet, dusters etc. The discard linen is used as rags, dust sheets and if the condition is good they can be converted and reused as “Cut Down” or “recycle item” for example:-

- A. Bed sheets can be converted into pillow covers & baby cot linen
- B. Table cloth into tray linen
- C. Blankets to be used as padding for ironing boards
- D. Condemned towels are used in staff cloak room

1.8 Linen hire

In this process the linen required for hotel are hired from outside on contract. These firms undertake to supply clean article in good condition and arrangement are made between the firm & hotel regarding the amount of linen required. Thus it is a contract of hotel with a company which hires & launders linen.

Advantages of linen hire:

- No heavy initial cost of buying linen.
 - No repairing, alteration on premises.
 - Less storage space required.
 - Less manpower, less salary.
 - Laundering facilities not required.
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- Ideal for sporadic trade eg:- Seasonal Hotels, resorts.

Disadvantages & linen Hire:

- No monogramming of the organisation [caters to different outlets]
- No discards, makeover for organisation
- Standards may not meet the organisation [folds, sizes, quality & wash]
- Supply affected by bad weather
- Damages to be paid at higher rate
- Extra requirement is charged at current rate.
- Hotel totally dependent

Unit 2 Chapter 1

UNIFORM AND SEWING ROOM

1.1 Importance of uniforms

Uniforms play a very crucial role in establishing and reinforcing the image of a hotel or restaurant. After all, other aspects of housekeeping are inanimate, material things. It is the people who bring warmth and friendliness into these spaces and these people are the employees of the hotel. Ill-conceived, and poorly co-ordinated uniforms worn by hotel staff can create a jarring note in the entire image projected by the hotel.

Providing uniforms for hotel staff is one way of ensuring proper grooming, thereby reflecting the standard of the hotel and creating a good impression on the guest. Having a uniform creates a sense of orderliness and enables the guest to identify staff and their position in the organization. To the employee, it is a status symbol, creating a sense of belonging and thereby boosting employee morale. Apart from the aesthetic appeal, uniforms are frequently designed to suit the task that is carried out.

TO THE COMPANY

(a) WELL GROOMED APPEARANCE

The company is successful in displaying a well groomed staff to the guest all times. As the overall upkeep of the uniform is taken by the hotel there is a standardization and uniformity. The guest is happy to interact with staff that are presentable and maintain proper hygienic standards.

(b) IDENTIFY HOTEL STAFF

Uniform allows the guest to recognize the hotel staff and ask for service accordingly, it serve as a security function also as unwanted people can be checked upon entering into back area. Guest Complaints can be managed appropriately as guest knows whom to approach.

(c) DIFFERENTIATE VARIOUS DEPARTMENT

Each department almost has a different style of uniform according to their requirement. This gives a variety to the overall appearance of the hotel and the guest and the staff can

easily identify the department of that particular employee and deal with any requirement at a given situation.

(d) WORK COMFORT

When employees are comfortable and at ease they can perform their work with their best of ability. The performance criterion will automatically increase and the hotel will in turn have satisfied staff with guest.

(e) FEELING OF BELONGINGNESS

When the staff is in uniform or the outfit which is same they develop a sense of belongingness which results in higher work performance.

(f) SPIRIT OF TEAM WORK

Employees within the department or in the hotel also build up the team work spirit with the presence of uniform which the hotel can cash continuously for its development.

TO THE STAFF

(a) PROTECTIVE

Uniforms are designed keeping in mind all the safety aspect and considering the nature of work, for example: housekeeping uniform staff is always provided with the antiskid shoes as they also work in area which is wet.

(b) PRESTIGE

When staff wears the uniform he/she is associated with the image of the hotel which serves as factor of prestige

(c) ECONOMICAL

Employee does not have to purchase clothes from its own account so it allows the employee to save money in that particular area.

1.2 Designing of uniform ,selection criteria(functional and aesthetic)

POINTS TO BE CONSIDERED WHILE DESIGNING OF UNIFORMS

(a) IMAGE AND REPUTATION OF THE PROPERTY

If the hotel wants to create a desirable impression on the guest, the uniform should be chosen and designed carefully with all accessories. Many hotels liaison with the designer to get a impressive uniform which is embroidered, customize, unique, attractive and represents the hotel brand. The uniform should also match with the décor and the theme of the hotel ,thereby reinforcing the image of the property.

(b) PROFILE OF THE EMPLOYEES

The cultural background, age, gender of the hotel staff should be kept in mind along with hotel's

ethos and the employees work profile. Some hotels even involve the staff concerned while designing their uniforms; it makes the working environment more inductive for the staff as they are comfortable in performing their duties and task.

(c) PURPOSE OF WORK

Designing of uniform should consider the job role of the employee; so that the employee can comfortably work wearing that uniform. Pockets is an important part of designing. A pair of dungarees must have several pockets for the maintenance/engineering employees to keep tools handy. A steward must have pockets that are enough space to keep a pen, lighter, docket etc. shoes chosen for the cooks and housekeeping staff must be skid-proof. Short sleeves are more comfortable for front office staff. Some uniform accessories such as the headwear of kitchen staff, also fulfill an important hygiene function in addition to making their work easier.

Housekeeping uniform which is loosely fitted so that the body movement is comfortable.

Front Office uniform is well fitted and is accessorized with bow and vest coat to reflect complete professionalism

(d) COMFORTABLE IN WEARING

Hotel staff is especially involved in lot of work operationally and continuously has to be active with lot of physical movements. Uniform with involves labor has to designed with the suitable quality linen and is well fitted. The fit of the uniform should be such that it does not bind or restrict movement. Chef uniform which is white in color and is made up of fabric which allows proper absorption.

(e) APPEARANCE AND STYLE

Uniform color and design should be such that it suits all personality and equally looks good on the tall and short, stout and thin. Well- made garments use fabrics that are designed for heavy wear, and their workmanship must support that. This way they will stay bright and looking through countless launderings. the accessories or head gear should be stylish but at the same time, should fulfill all other criterion.

(f) CLIMATIC CONDITIONS OF THE PLACE

These must be considered especially if the hotel is not equipped with the function of centrally air-conditioned. A full sleeve shirt with a tie and waist coat for a steward in humid area will not serve the purpose of working comfortably; similarly a short sleeve cotton gown for a hostess in a

cold area will not allow her to work effectively.

(g) BUDGET

Uniform stitching and maintenance involves lot of investment so uniform that look good, are

comfortable, and maintain their appearance through laundry cycles are more economical than

cheap fabric that do not perform or last. Blends are easier and cheaper to maintain; however

blends are not recommend for employees working in humid or greasy areas as grease and

perspiration stains easily.

(h) QUALITY OF FABRIC

Fabric selection is also a critical factor to consider when purchasing material for uniforms.

Cotton outfits are preferred as uniforms because they are absorbent than polyester and cotton

blends. However, blends with cotton are increasing in popularity because they have better soilrelease

qualities in general and the same time retain some coolness.

(i) EASE OF AVAILABILITY OF MATERIAL

The fabric and the accessories chosen for the uniforms must be readily available whenever new

uniforms are required.

(j) STAFF TURNOVER

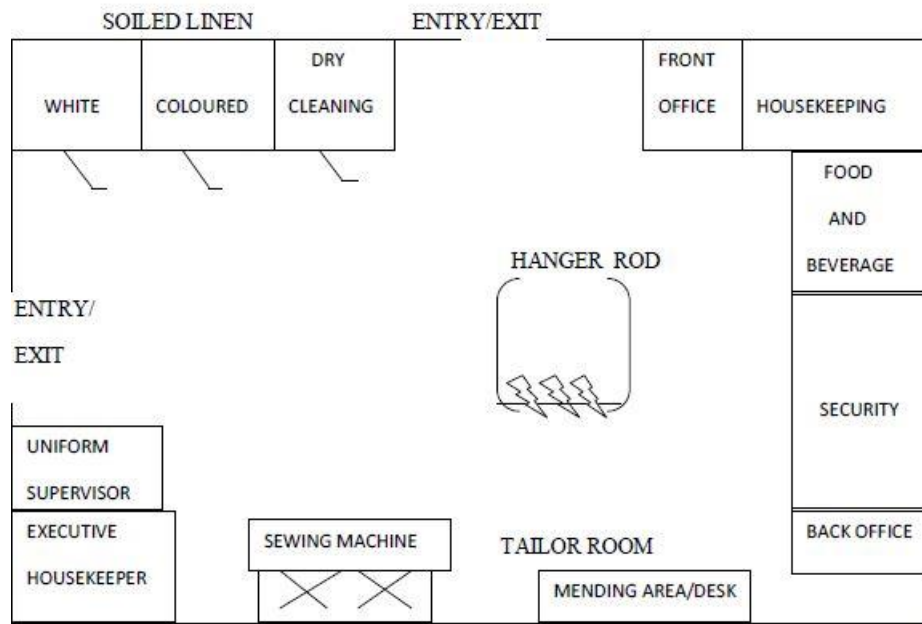
This is another area which requires attention .Free-size uniforms can be used in high turnover

areas to address this. Trousers or skirts can have elasticized waistbands to accommodate different

size.

1.3 layout of uniform room





When planning the layout of the Uniform Room, it must be borne in mind that some uniforms will be kept on hangers while others will be folded. Consequently the storage space must include hanging space as well as shelves.

The uniforms must be segregated according to the department.

To make the task of issuing uniforms easier, it is usual to arrange them according to size or alphabetically according to name.

The Uniform Room usually incorporates the sewing section and in some organizations both these areas are sections in the Linen Room due to their interrelated functions.

It is advisable to have a trial room that may double up as an emergency changing room if the need arises. However, for security reasons, entry should be restricted to Uniform Room personnel only and uniform shelves should not be accessible to staff from other departments. For operational purposes, space must be allocated for uniform attendants to be positioned at the exchange counter, where they can enter the necessary records. There must be a provision near the exchange counter for storing uniform co-ordinates and accessories.

Adequate hampers into which soiled uniforms can be segregated and deposited, as well as trolleys for hanging as well as folded uniforms are also an operational necessity.

1.4 Issuing and exchange of uniforms

ISSUING UNIFORMS TO NEW EMPLOYEES

Whenever a new employee joins the organization the uniform is issued by the uniform area by showing the authorized joining letter to the uniform supervisor provided by the human resource department. He then makes all the required entries in the uniform issue register which is duly signed by the employee for the record. The uniform supervisor then issues the staff the uniform which is coded for identification.

ISSUING UNIFORMS TO REGULAR EMPLOYEES

Uniforms are usually given to employees on a one-for-one basis, one fresh uniform for a soiled

one. One leaving the organization, employees has to submit his uniform back and obtain the

clearance from the uniform department, failing which the last pay cheque is with held.

UNIFORM EXCHANGE PROCEDURE

1. Employee should ensure that arrive at a stipulated time which is mentioned.
2. Deposit the soiled linen after checking for any left over's in pockets and damage.
3. Issue a fresh uniform strictly on a one-for-one basis, ensuring that it is of the correct size and name or the coding identified for that employee.
4. The uniform supervisor will make out the uniform exchange slip in duplicate only when the employee deposits a soiled uniform and then takes the clean one on the following day.
5. The employee has to produce the uniform slip to claim for uniform
6. The original uniform slip is given to the employee and the duplicate retained in the uniform exchange slip book.
7. If the soiled uniform is found to be damaged such that it can be mended, warn the employees, if the uniform cannot be mended, report the matter to the manager

a. Clean for Dirty Basis one to one

Soiled uniform ----- Fresh Uniform

(Deposit) (Issue)

b. Uniform Slip Method

Deposit Uniform ----- Next Day ----- Fresh Uniform

(Soiled) (Show Slip) (Issued)

c. Hanging outside lockers (usually only for senior executives)

Employee ----- Soiled Uniform

Employee hangs soiled uniform outside the locker

Attendant -----□ Clean Uniform
Collects the soiled uniform and replaces with clean one

1.5 Storage of uniforms

- Fresh uniforms received from the laundry by the linen room are stored according to the department and designation of the staff.
- Each uniform should bear the department's name, the employee's designation, and a serial no. on the collar of the shirt or other garment.
- The storage area should be properly aired.
- The humidity of the room should be less than 20 %.
- In many hotels, staff members are not allowed to take their uniforms outside the hotel. Instead, the employees are provided with lockers to keep their uniforms at the end of the shift.

1.6 Importance and activities of sewing room SEWING ROOM

Introduction & Importance

Sewing room is an area where all work regarding fabrics used in the hotel- uniforms, hotel linen, soft furnishings, and guest clothing, - example – stitching, mending, altering, etc. are carried out. The sewing room is essentially a part of linen room operations and may be located in the linen or uniform room or serve both these areas. A well-run sewing room can definitely be an economy for a large organization. Many hotels maintain a separate sewing room with tailors and seamstresses to do odd jobs in mending and repairing uniforms, linen and furnishings. Some hotels may outsource the sewing functions if the volume of business demands or in case of constraint of space. The sewing room is managed by the Linen Keeper with a team of tailors, upholsters and seamstresses.

The sewing room area should have the following:-

1. Good lighting in the sewing room.
 2. Space for working table
 3. Space for 2-3 sewing machine and ironing board.
 4. A pegboard screen for hanging tools, cloths, and storage bags.
 5. Storage space for fabrics, pattern, and small equipments.
 6. Cupboard for storing accessories.
 7. Work surface should be large enough minimum of 2x2 sq meter for cutting and pinning
 8. Good quality tools and equipment should be used for easier work completion in sewing room.
-

□

Activities of sewing room

1. Repairing guest garments if necessary
2. Preparing of linen items
3. Machine marking or monogramming may be carried out in the sewing room and when marking linen, it is usual to mark on the right hand side of the article, the name of the organization and the department and the date it was put into circulation. The latter shows the wearing quality of the article and helps to estimate the life span of the article.
4. Frayed parts and tears frequently occur in towels, table and bed linen and these are repaired by machine darning.
5. Patching, repairing flaps of pillowcases and torn pockets are among the common sewing tasks.
6. Ideally, mending should be carried out before laundering, but dealing with soiled or wet articles is unpleasant, so mending is usually done on laundered linen.
7. Straight-forward , ordinary machining is done for hems on sheets or towels.
8. New items which require straight stitching like bedsheets and tablecloths, may be made.
9. Creating makeovers and cut-downs involving the innovative use of discarded linen.
10. Stitching of buttons, hooks etc and the mending and alteration of uniforms.

GLOSSARY

- Cutdowns or make-overs : these refer to the using of any discarded materials for some other purpose, such as bed sheets being used as dust sheets or made into pillow covers.
 - Darning: a reweaving process to repair small holes in a fabric. It should follow, as closely as possible, the way the original fabric was made.
 - Seams: A seam is a method of joining 2 or more pieces of materials together by a row of stitching.
 - Thimbles: Protective covers worn on the thumb and second finger when sewing.
 - Shears: Fabric Scissors
 - Readymade: also called 'ready-to-wear', 'off-the-rack', 'off-the-rails', 'off-the-hanger', and 'free size'.
 - Custom made: also called 'tailor made', 'made to order', and 'fitted'.
 - Seamstress: staff who works under tailor and is responsible for all the work in the sewing room which is to be done manually by hands.
 - Tailor:- Responsible for alteration of uniform, the main repairing, mending or any other minute repair.
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- Upholsterer:-Responsible for preparing expensive and delicate linen item like carpets, sofas, curtains, frills.

CHAPTER 2 LAUNDRY OPERATIONS

2.1 Introduction to Laundry operations

In any residential establishment, a lot of dirty linen accumulates in the various units and departments. It is essential to ensure a continuous supply of linen, which is well laundered, so that operations can be carried out smoothly and efficiently. Linen is an expensive item, so how it will be laundered requires serious consideration. People involved in handling linen should have some knowledge of the process.

Although it is essential that good quality linen be purchased, the life of the linen depends on the care of linen in use and the treatment it gets at the laundry.

A good laundry facility ensures the following:

- Careful handling of linen articles while laundering
- Correct processing and use of a suitable laundry agent
- While materials are kept white, excessive bleach is not used
- Proper counting and records maintained to avoid shortages of linen
- Speedy operations to meet with operational requirements

2.2 & 2.3 Type of laundries –commercial /in house (OPL)Advantages and disadvantages of OPL

Commercial Laundry

A commercial or off-premises laundry refers to laundering activities performed outside the establishment i.e. it is given on a contract basis to specialists in the field. In a rare circumstance, the laundry is contracted and on-premises. The laundered items can be expected to be returned to the hotel in one to two days. Contracting out the laundry services comes with its own set of advantages and disadvantages.

Advantages:

1. Heavy investment in space and equipment is avoided.
2. Reduction in labour costs
3. Expensive technical experts need not be employed

Disadvantages:

1. Higher linen par stocks are required
 2. Reduced control over standard of cleaning
 3. Greater chances of loss and damage of linen
 4. The contractor may be less flexible in case of emergencies
-

On site/ On premises Laundry (OPL)

An on-site or on premises laundry refers to laundering activities carried on within the establishment by staff employed by the hotel. The decision as to whether to buy your own laundry or to use a rental service that provides clean linen according to a contract is difficult and many factors must be considered. Whether there should be a laundry on the premises in a property is a decision that the management must take long before the building is built or is extensively remodel. Only occasionally is it possible to fit a complete facility into a property after construction is completed. The decision is made after careful comparisons that-Sound policies regarding damages or loss take into consideration not just the fairly substantial cost of equipment, but also of labour and Supplies

Advantages

1. Time taken for laundering is reduced because transportation is eliminated.
2. Linen is readily available especially in the case of emergency requirements.
3. Control can be exercised over the wash process and the laundry agents used making the wear and tear on linen comparatively much lesser.
4. Pilferage is reduced.
5. The 'par' stock required is reduced.
6. Revenue is earned from guest laundry

Disadvantages

1. Cost of equipment and its maintenance is fairly high.
2. Related expenses like water taxes, energy costs, printing of forms, employee taxes and
3. insurance are high.
4. A larger number of technically qualified staff is required
5. Investment must be justified by an adequate amount of linen.

2.4 Laundry agents

Detergents

Strictly speaking, the term detergent can be applied to any cleaning agent. Its usage is known generally restricted to those cleaning agents containing significant quantities of a group of chemicals known as surfactants. A number of other chemicals are frequently included to produce a detergent suitable for a specific use.

Essential properties

A good detergent will possess many or all of the following properties:

1. Reduce the surface tension of water so that the cleaning solution can penetrate the soil and surface.
 2. Emulsify soil and lift it from a surface.
 3. Suspend soil in the cleaning solution
-

4. Be soluble in cold water
5. Be effective in hard water
6. Be harmless to user and surface to be cleaned
7. Rinse easily to leave no streaks or scum
8. Be economical in use

composition

Detergents are formulated from the types of chemicals described in the following: Surface active agents (surfactants) are chemicals, the molecules of which when dissolved in water possess a water seeking (hydrophilic) end and a water repelling (hydrophobic) end.

They may or may not carry a negative or positive electrical charge. The molecules are dispersed through the water so that they reduce the surface tension of the water by overcoming the forces of attraction between the water molecules, thus allowing the water and surfactant molecules to penetrate the soil and surface. The hydrophobic ends of the surfactant molecules are attracted to the soil, surrounding particulate soil particles and lifting them from the surface while breaking and rolling up grease into small particles and lifting them from the surface. The hydrophilic ends of the surfactant molecules point out from the soil particles into the surrounding water. As individual particles approach each other the hydrophilic parts of the surfactant molecules on different particles repel each other keeping the soil in suspension and preventing it from settling back onto the surface.

Builders are alkaline chemicals that influence the effectiveness of a cleaning agents in one or both of the following two ways:

1. They sequester (combine with) calcium ions in hard water to form water-soluble salts, thus preventing the adverse effects of calcium.
2. Enhance the emulsifying and dispersing properties of the detergent.

Complex phosphates e.g. Sodium Tripolyphosphate, are included in manydetergentspowders and act in both of the ways described.

Sodium metasilicate and sodium carbonate are included in many liquid detergents and function in the second of the ways described

Builders in general can have damaging effects on many surfaces e.g. chrome, aluminium, wool, silk, paints, wood and linoleum.

Water softeners are frequently comprised of complex phosphates e.g. Sodium hexametaphosphate because of their sequestering properties.

Foaming Agents Increase or stabilize the foam formed by a detergent. Foaming can be used to indicate surfactant activity, the level of foam being dependent on the amount of surfactant

active in a cleaning solution. Alkalonamides derived from coconuts oil are frequently used for this purpose.

Other foaming agents can be used to produce stable, relatively thick foams in which the other chemicals are dispersed. The foam will stick to non-horizontal surface and the cleaning chemicals.

Chelating agents are relatively complex chemicals which are included in many liquid

detergents to sequester calcium ion. In simple terms a combination of sodium carbonate or metasilicate and a chelating agent will have a similar effect to tripolyphosphate alone.

Tripolyphosphate is not normally included in a liquid detergent because it tends to break

down in alkaline solution. Chelating agents are now frequently used as descaling agents, being a more acceptable alternative to strong acids.

Suspending agents e.g. Sodium carboxymethyl cellulose (CMS), increase the amount of soil that can be held in suspension in the cleaning solution.

Bleaches Will break down by oxidation, stains which have not been removed from a surface by surfactants or builders. Sodium perborate, weak bleach is included in detergents intended

for washing textile.

Bulking Agents

Eg:- Sodium sulphate, contribute to the volume of detergent powders

Conditioning Agents Ensure that the granules in detergent powders are crisp firm and dry

Whiteners

- Absorb ultra violet light and transmit it as visible white light. The whiteness of a surface will normally depend on the amount of natural light reflected from it and received by the eye.
- Whiteners therefore increase the amount of light received by the eye.

Enzymes

- Are complex proteins that will break down organic substances e.g. blood stains, adhering to a surface. They are most effective at 30-50°C and are inactivated at temperatures above 60°C

Anticorrosive Agents

- Inhibit the formation of water films on a surface. Chemical reactions resulting in corrosion are generally dependent on the presence of water

Perfumes and dyes

- Are included to increase consumer acceptability, but increases the risk of allergic reaction.

Suspending Agent

- The role of the suspending agent in cleaning is to hold the dirt in suspension and prevent it from re-depositing onto the surface of the article.
- It plays a crucial role in the laundry agent due to the amount of time that the clothes rotate in the machine while the dirt is in suspension.
- The suspending agent is carboxyl methyl cellulose.

Sequestering Agent

- These act along with the suspending agent to hold dirt in suspension. They assist by holding a greater amount of dirt in suspension thereby reducing the likelihood of redeposition.
- They also have the additional ability to dissolve lime salts that are responsible for temporary hardness in water.
- Sodium polyphosphates act as sequestering agents.

OTHER LAUNDERING AGENTS

Alkali

Alkalis used in the wash process include

1. Washing Soda (sodium Carbonate $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$)
2. Sodium Phosphate
3. Sodium Hydroxide
4. Sodium Metasilicate
5. Borax ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$)
6. Ammonium hydroxide (NH_4OH)

- The role of the alkali in the wash process
- Combines with calcium ions in hard water to form water soluble salts, thus preventing
- the adverse effects of calcium
- Enhance the emulsifying and dispersing properties of the detergents

Bleaches

- These are used on white articles only.
- They remove colouring matter by their oxidizing or reducing action.
- If not in liquid form, they should be dissolved in hot water in order to ensure that no
- powder residue remains in the washing machine which may affect later loads.

The bleaches commonly used in the laundry process are sodium perborate and sodium hypochlorite (Javelle water).

Antichlors

- These are agents used to neutralize the chlorine bleach and are essential particularly in the case of polyesters.
- The use of chlorinated bleaches has a tendency to leave yellow deposits.

Sour/acid agents

- This is used only in industrial laundering in the final rinse, to neutralize any alkaline soap residues that may be present.
- It brings the pH of the linen articles to a level between 5 and 6.5, which is agreeable to the human skin and also gets rid of yellow or brown deposits caused by residue alkali.

a. Oxalic Acid

- Sold in white crystals
- Used for removal of fruit stains, bleaching of brown stains after using potassium permanganate and tannin base of ink stains together with Hydrogen peroxide.

b. Salt of lemon

- Salt of Sorrel
- Compound of Potassium Oxalate and Oxalic Acid referred as Potassium binoxalate
- Used for neutralizing strong alkali

c. Acetic Acid

- Removes excessive bluing agents and as a neutralising agents

d. Oleic Acid

- Unsuitable for colored fabrics
- Produces soap when mixed with alkali
- Used for grease and oil stain

Fabric conditioner/Softener

- A fabric conditioner or softener has surface active agents like a detergent but they
 - do not perform the function of cleaning.
 - Fabric conditioners are based on cationic surface-active agents, carrying a positive
-

- charge and creates anti-static properties.
- A fabric conditioner is never used on loads where starch or sizing will be used.
- The role of the fabric conditioner in laundering

Optical brightener

- This is an optical brightener/ whitener, which is in fact a very fine dye, which gets bleached in course of time.
- It has a fluorescent effect by reflecting the UV rays of the sun.
- The laundry blue in a powder form tends to accumulate in the weave of the fabric and causes it to turn grey and is no longer used in modern laundries

Starch

- This is a stiffening agent used to impart a better appearance to the fabric.
- The use of starch has declined due to the minimum-iron finishes on fabrics and garments and the reduced use of cotton in favour of man-made fibres.
- However there are some articles that have a better feel and drape when starched and it is particularly essential for napkin folds.
- Since polyesters do not have the ability to absorb starch they are stiffened with sizing agents.

Types of starch

1. Hot-Water Starches
2. Cold-Water Starches
3. Gelatin
4. Glue
5. Synthetic Sizing

2.5 laundry equipment

WASHER-EXTRACTORS

It consists of a large perforated drum of stainless steel that hold the laundry encased in an external stationary shell which holds the wash water of varying capacities ranging from 7-350 kg. Soiled linens are fed into the drum and suitable temperature, detergent and water are introduced at appropriate times. The inner drum washes and rinses by rotating backwards & forwards agitating the water & articles inside. The alternating of the rotating direction ensures prevents the roping of the items in the drum. To extract water, the drum spins at a high speed using the principle of centrifugal force. The spin will whirl out 70-80% water which is suitable for ironing. Machines may be programmed to give specific number of different wash, rinse or extract cycles. Water temperature is generally kept between 30-95°C The compact mass of hydro-extracted clothes is referred to as 'cheese' and the water level is referred to as 'dip'

Washing machines may be top or Front loaded, semi-automated or fully automated. Some machines have automatic sensors to monitor, overloading, wash or excess detergent and give alerts. These sensors are known as Fuzzy Logic.

Laundromats are self-service laundries where washer-extractors and tumble dryers are available for the individual user, operated with the help of a coin, card or token. They may be found in public areas like hostels, apartment blocks etc.

HYDROEXTRACTORS/ SPIN DRYERS

Separate spin dryers of a small capacity may also be installed. They, too, have a dual drum like the washer-extractors but are designed solely for hydro-extraction at high speed using centrifugal force.

TUMBLE DRYER

Dryers are machines that dry laundry by tumbling it slowly in a perforated drum exposed to hot air ranging from 40°C to 60°C in low capacity dryers and going right upto 85°C in an industrial dryer. There are programmes for delicate articles with low or no heat. For speedy drying and less wrinkling the volume of the dryer should be 25% more than the washer extractor. Most dryers have a microprocessor computer control system. Although suitable drying times are usually recommended for specific fabrics, some dryers have sensors hooked onto their microprocessors so that they can gauge the moisture in the load and cut the dryer off automatically the moment the laundry is dry. This is a major preventive factor against spontaneous combustion, as hot air blowing on 'bone dry' fabrics can easily set it on fire. Furthermore, the dryer may have a post-drying cool down cycle that also reduces the fire hazard as well as prevents the formation of wrinkles in no iron fabrics. The process creates a great deal of wear and tear on the fabric as particles of lint come off in the drying process. A lint screen traps the lint particles and must be cleaned regularly. Lint build-up restricts airflow and reduces the rate of moisture removal, thereby increasing energy consumption and costs. The length of the cycle is dependent on the absorbency of the fabric, the residue of moisture and whether the fabric is to be completely dried (approximately 40 mins.)

HAND/ FLAT IRONS

Hand irons fall into two categories- those using an external heat source and those heated by electricity (the electric iron). The former are box-type irons using heavy charcoal or coconut shells. Another type using external source of heat is made of heavy cast iron & faced with polished steel. They weigh about 8-10 kilograms & are heated over a stove. Electric irons are much more lighter and easier to use than these traditional irons. Most are thermostatically controlled. Thermostat makes it possible to reduce the weight of the iron by as much as 1.5 kg. It allows selection of different temperature settings for various fabrics as well & maintains the iron at these. Steam irons eliminate the need to moisten clothes or use a damp cloth while ironing. Water filled into compartment or reservoir in kettle-type steam irons. It brought to the boil and, at the press of a button on the handle, a shot of steam emerges perforations & grooves in the sole plate.

IRONING BOARD:

It is used with hand-held irons. The ironing board should be well padded smooth. It should stand firm & be of the correct height- 75 cm. from the ground. It typically has tray of asbestos on the right-hand side, on which hot iron can be safely rested.

CALENDER/ROLLER PRESS/ FLATWORK IRONERS

It consists of pairs of heated, padded rollers which rotate and iron flat items of linen such as tablecloths, bed sheets etc. These are fed in from one end, pass between the rollers and are retrieved ironed from the other end. Only large and flat linen items like bed sheets, napkins, table cloths can be pressed and ironed. It is not suitable for napped items such as blankets

FOLDING MACHINES

Machines may be semi-automated which do not exactly fold the linens but holds the ends of the linen from the other end. Fully automated machines may fold the linens automatically immediately after being calendered.

SPOTTING UNIT

This is a machine which aids in cleaning and removing stains from fabrics. It consists of a spotting board, spotting gun, vacuum and a steam nozzle. Fabric is laid onto the board, spotted with gun, steam is applied and the stain is removed by vacuum.

CABINET DRYER OR DRYING ROOM

This is a chamber where low-crease garments are suspended on hangers and steam or hot air is circulated through the cabinet.

PUFFER OR SUZIE

This is used for coats and articles that do not crease heavily. The articles are put onto a dummy that is inflated with steam to remove creases and then with hot air to remove the moisture created by the steam. It is ideal for ironing gowns, coats.

SHIRT PRESS UNIT

This consists of several units designed for pressing different parts of the shirt which are padded and shaped appropriately. These units are:

i) Cuff, collar and yoke unit ii)Sleever

I) COLLAR –AND-CUFF PRESS

This press consist of three spring-loaded bucks that are firmly padded.The collars & cuffs of shirt are placed on these.A pivoting head of chrome-plated steel bears the same shapes as the buck and, when pressed over the buck, applies uniform pressure on the collars & cuffs. The head is uniformly heated by steam. An automatic timer allows the operator to perform other tasks while the machine presses the collar & cuffs.

II) Sleeve Presses

There are primarily two types of sleeve presses, one giving the sleeve a top crease & the other circular and so resulting in no crease. In both cases, the sleeves are fitted onto the buck & are then moved into the sleever cabinet. Air fills into the sleeves, pressing them against the head and removing all the wrinkles.

HOT HEAD/ TROUSER LEGGER PRESS/ FLAT BED PRESS

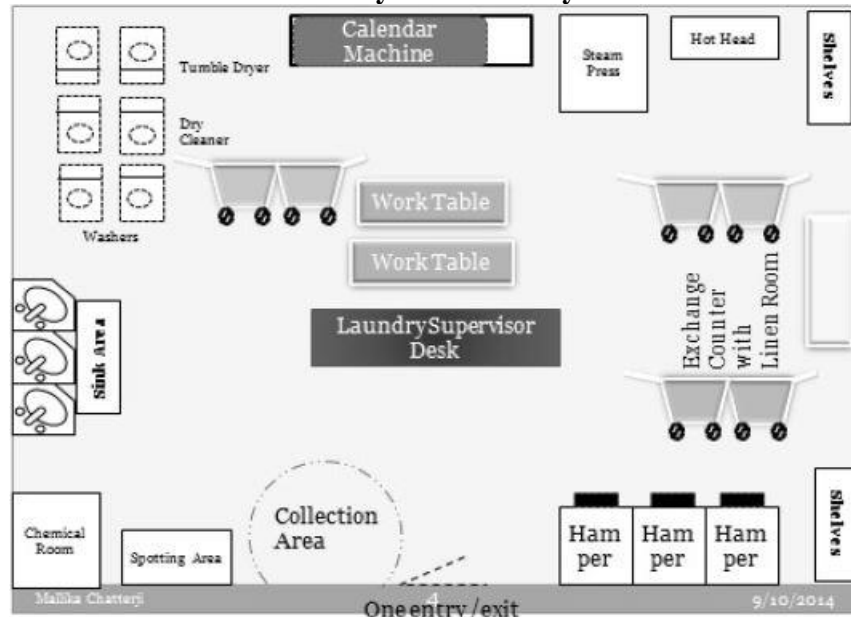
This consists of a flat padded base on which to lay the fabric along with an attached hot head which is controlled with the help of foot pedals to lower and raise it in a

scissor like fashion to iron the garments. The application of heat, pressure and steam helps to iron the article.

CARTS, TROLLEYS, & SACKS:

These are used for the transfer of clean linen from the laundry to the linen room & from the linen room to the floor pantries & so on. Linen carts & trolleys may be made of aluminium or steel. Laundry sacks may or may not be mobile. They may be made of wicker, fiberglass or plastic. Very popular choice is made of tough cotton, with drawstrings, which can be washed frequently.

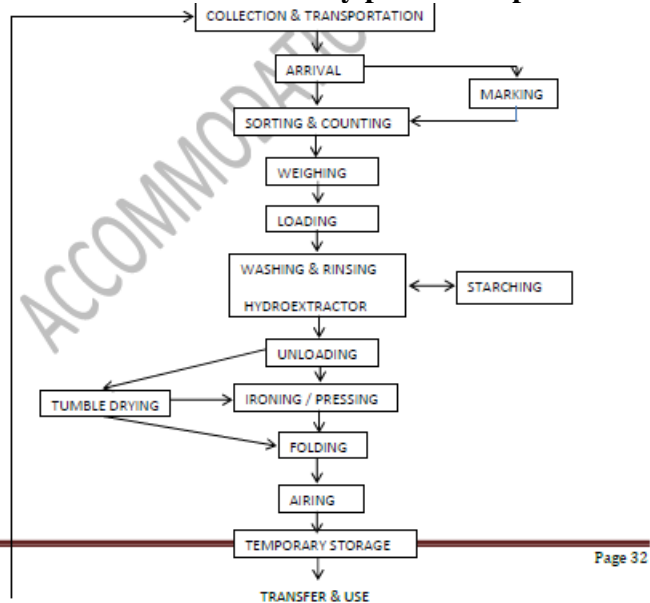
2.6 Layout of laundry



When positioning laundry equipment, the following must be considered:

- Entrances and exits
- Support columns and beams
- Space between adjacent machines and space between the back of the machine and the wall should be adequate to facilitate servicing and repair.
- Power points for electrical supply and the required voltage.
- Water supply lines with adequate pressure (10 gallons per Kg of linen approx.) and preventing the occurrence of 'water hammer'
- Water softening plant
- Drain locations and proper drainage system that will keep up with the rapid discharge rate of modern equipment.
- Energy and water conservation

2.7 Laundry process-on premises and off premises



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1. Collection

Collection of linen may be done in the Linen Room, if the laundry is off-site but is usually in the laundry itself, if the laundry is on-premises. Certain linen items are collected separately.

For example, kitchen uniforms or dusters are collected separately, as are butchery aprons and dusters, because they have a specific type of soil. Similarly, in a hospital, linen from the surgical ward would be collected separately. The linen is usually packaged in canvas bags lined with polyvinyl. Eyelets on the rim of the bag facilitate passing a nylon cord through, which can be tightened in order to shut the opening of the bag. In some cases elasticized net bags called 'skips' are used to collect and carry linen. Trolleys are most popular for transportation and the collapsible wire cart can be used to transport clean as well as soiled linen. If planned at the construction stage, an in-built chute is used for transporting linen from the floor pantries. It is preferable to put linen into canvas bags before dropping it down the chute so that wear and tear is reduced.

2. Arrival

On arrival, linen must be dealt with as quickly as possible. There must be a separate section for guest laundry that is usually handled by the most experienced staff.

Processing linen for laundering as quickly as possible is necessary:

- to ensure that linen items are available as and when required.
- to avoid transfer of stains and to prevent stains from becoming permanent.
- so that it does not provide a breeding ground for bacteria and pests.
- to prevent the formation of mildew on damp articles particularly bath linen.
- to reduce the possibility of linen getting misplaced or lost.

3. Sorting

Gloves may be used when handling or sorting linen. Sorting is carried out according to the type of fabric and item, colour as well as the degree and type of soil. Sorting is done to separate those articles that need dry cleaning from those that will go through the normal wash process. Those that need mending or stain removal will be separated so that they can be dealt with accordingly. Also, different articles take a different wash process in terms of temperature of water, type of laundering agent, length of wash cycle, whether hydro extraction should be done and if so, the length of the hydro-extraction cycle. It takes less effort to presort linen than to post-sort washed linen which is 50% heavier in weight due to water retention. Post-sorting is often essential in health care processes.

4. Marking

Marking may be temporary (guest laundry) or permanent (monogramming of hotel linen). It is the temporary marking that is carried out at this stage. Most good establishments have a marking machine that attaches a heat sealed tape in an inconspicuous place. The tag has scope for six characters and is intended to indicate the initials of the guest as well as the room number. It provides a clear identification for correct billing, and although it does not come off in the normal wash process, it can be peeled off if so desired.

5. Weighing

Weighing is carried out to conform to the capacity of the washing machine. In case of overloading there is reduced centrifugal action because the linen articles are too tightly packed in the drum. As a result, there is inadequate friction and the deeply embedded soil is not removed so the wash process is ineffective. Certain synthetics develop creases as a result of overloading that are difficult to get rid of in the subsequent ironing process. Repeated overloading can cause the machine to breakdown.

In case of under loading, there is inadequate friction because the linen articles are too far apart. It causes a good deal of wastage in terms of time, labour, laundry agents, water and power. Many modern machines have sensors that can gauge not only the load but also the length of cycle, temperature of water, water level, the type and amount of laundry agent and when it will be dispensed in the wash cycle. This is highly beneficial in the conservation of water and energy as well as reducing wear and tear on the linen articles.

6. Loading

This is often done manually or with a certain degree of automation. Shovel type cranes may be used for lifting and depositing linen, thereby providing complete automation by eliminating the need for handling by operators. Alternatively, weighed linen in bags is transported along a track and directed to the opening of the washer extractor with the help of a nylon cord. A lock in the lower half of the bag is released, dropping the

soiled linen into the washer extractor. Machines that tilt provide ease in both loading as well as unloading. Machines may be top loading, front loading or side loading.

7. Washing

This is the stage during which the actual cleaning of the items takes place. It is designed to perform three basic functions i.e. remove soil from the textiles and suspend it in solution so that it can be discharged from the machine through the drain.

8. Rinsing

Once the wash cycle is completed, rinsing becomes essential. A running rinse with an open drain is more effective but a larger volume of water is utilized. Rinsing is carried out at least twice so as to ensure removal of residual laundry agents and suspended dirt. It may also help to lower the temperature of the wash load by using a cold water rinse.

9. Hydro-extraction

Draining followed by hydro-extraction will remove excess moisture through centrifugal force by spinning the load at a high speed. The absorbency of the fabric affects the length of the cycle (6 to 8 minutes) and the residue of moisture. The most efficient extraction for cottons takes place at temperatures higher than 38° C but lower than 55° C so that they are not too hot to handle. Polyesters and blends should be extracted at a temperature below 38° C to prevent wrinkling. The compact mass of hydro-extracted clothes is referred to as 'cheese'.

10. Unloading

Transferring washed linen from the Hydro-extractor to the Tumble dryer is a difficult task because of the added weight of moisture. Articles may be manually removed and put into trolleys. Tilting and dumping machines reduce the physical effort of manual unloading. A laundry cart can be positioned under the door and a push button operated to rotate the cylinder and empty its contents. Alternatively, the machine can unload onto a conveyor belt that will transport the linen to the next set of operations.

11. Tumble Drying

This process is capable of rendering the linen completely dry by blowing hot air between 40°C to 60° C onto the articles as they are slowly rotated in the drum. For articles that are susceptible to damage by heat, there is the option of simply airing by circulating air at room temperature. To avoid wrinkles and the risk of spontaneous combustion, many dryers have a cool-down cycle at predetermined intervals. The process of tumble-drying creates a good deal of wear and tear on the fabric as particles of lint come off the fabric in the drying process. The time taken is approx. 30 minutes depending on whether the article is to be completely or partially dried.

12. Finishing

For those articles that require a pressed finish, ironing and pressing are usual. Articles like blankets, towels, candlewick bedspreads, hosiery, etc. that do not require a pressed finish are only tumble-dried.

13. Folding

This can be done by machine but in most cases is carried out manually. The use of a folding stand helps minimize this otherwise very labour-intensive operation. Manual folding makes it possible to achieve the desired fold as well as ensure quality control. Employees in this area are the one ones who 'reject' stained linen and are a good source for ascertaining what types and quantities of stains commonly occur. Correct folding is important to the appearance of the article and makes it convenient to store and use.

14. Airing

This is essential prior to storage, especially if the articles are to be stored in closed shelves. It ensures that any moisture that is likely to cause mildew will be got rid of.

15. Storage

This should be properly done in a well-designed storage space. Linen should be allowed a rest period to recuperate before it is used again. The life span of linen is greatly increased if proper rotation of stock is carried out, thereby ensuring a 'rest period' between uses. As a general rule, at any given time, approximately 50% of the total linen inventory should be on the shelves, 25% in use and 25% in processing. The storage area must be isolated from the soiled linen and kept clean

Transfer & Use The linen is issued to the concerned department for use. Since transfer of clean linen is usually done by linen trolleys, it is important to keep the trolley clean. The linen is utilized for the purpose intended and the cycle begins all over again.

2.9 Dry cleaning –chemical and process

This is a process by which textiles are cleaned using a solvent other than water. This solvent is usually an organic liquid that acts first to remove the layer of grease which bonds most grease particles to the surface and then to carry this dirt away.

The solvents used are

1. Perchloroethylene
2. Tri-chloro-tri-fluoro-ethane

The solvent is removed first by centrifugal action and finally by evaporation. The solvent being expensive is filtered and recycled.

Darker coloured articles are dry-cleaned after the lighter coloured ones. All articles require to be aired after the dry-cleaning process.

Dry-cleaning is a process where the linen is not washed, i.e., it is not wetted by water as the name suggests. It is cleaned by petrol or spirit. It is called dry-cleaning because during the cleaning process the fibre does not get wet although spirit or petrol is used.

The linen after sorting is marked 'dry-cleaned'. The dry-cleaning solvent is kept (Per Chloro Ethylene) in an enclosed machine in which the washing, extraction and drying are carried out. The solvent is not wasted but distilled and filtered for re-use because of its high cost. These

solvents don't affect the fibre, unlike water.

In dry-cleaning there is no danger of shrinkage, severe creasing, distortion or fading.

Sometimes

to remove water borne soil and stain, a little amount of water and detergent is mixed with the solvent (known as charged systems). After the linen has been cleaned, they are spun to extract the excess solvents and then dried with warm air. They are then hung to remove the smell.

Check

for stains before pressing. If any special care is required it is done before pressing.

2.10 Handling guest laundry/valet service

Among the many amenities provided by a hotel, one of them is laundry service for the guest. It is an amenity which is essential in resort hotels where guests are long-staying and

prefer to travel light. Even if a full-fledged laundry service is not available, at least some

facility for ironing is required as clothes get crumpled in packing. It is a source of revenue in hotels and may serve as a means of preventing them from washing clothes and hanging them out to dry in hotel guest rooms.

Laundry service may be Normal (Ordinary) or Urgent (Express) and provide Drycleaning,

Washing and Ironing. The time gap between the collection and delivery is dependent on

whether the laundry is on-premises or off-premises.

A guest may avail of laundry service by either telephoning the Housekeeping Desk and a

Room Attendant is sent to collect the laundry. Alternatively, if the Laundry is on premises, the Order-taker in the Laundry cabin will receive the call and the Valet Runner will collect the laundry. If the hotel provides a Laundry Hanger, the guest may hang this out on the doorknob indicating that there is laundry for collection. Laundry lists are provided in the room or the format is printed on the laundry bag.

Should the guest wish to avail of laundry services, the necessary details will have to be entered like the date, room no., name of guest, no. of type of articles and service required. If a list is filled in, it is signed by a guest and kept along with the articles to be laundered in the laundry bag. The staff collecting the laundry must check the articles given against the entries made. They must also look out for tears and damages or guest belongings left behind on/in the articles. It is especially important to check if the guest has left laundry for collection when the laundry is off-premises.

It is absolutely essential to mark guest articles before despatch to an off- premises laundry in order to prevent any mix-up. Marking is done on a marking machine which usually indicates only the room number but may also indicate the initials of the guest. The heat-sealed tape used for marking does not come out in the normal wash procedure but can be peeled off if so desired. The laundry list is used for making the bill which is charged according to the service requested.

Extra care must be taken when handling guest laundry. If stains and damages are present,

they must be dealt with prior to the laundering process. As it is directly related to guest satisfaction, staff working on guest laundry should be most experienced. The machine capacity is also smaller to deal with smaller loads and control the quality of wash. Instructions for washing and washing symbols on the garment must be strictly adhered to and small items are tied loosely in a net bag prior to loading to prevent them from getting lost. When delivering guest articles, some will be folded while others are placed on hangers.

Folded articles are put together in a laundry bag with the room number written on it, while

hanging articles are clubbed with a tie label indicating the room number.

Unit 3 Chapter 1 FLOWER ARRANGEMENT

1.1 Introduction to flower arrangement

Flower arrangement may be defined as the art of organizing and grouping together plant materials (flowers, foliage, twigs, etc.) to achieve harmony of form, colour, and texture, thereby adding cheer, life, and beauty to the surroundings. It is essentially a decorative piece and should be the centre of attraction. An arrangement can be composed of only flowers and/or foliage or in combination with vegetables and fruits. Flower arrangements have an ability to introduce a personal touch in an otherwise staid and impersonal hotel room. Arrangements can be used in lobbies, restaurants, suites etc. Guests appreciate flowers for the freshness they bring to the surroundings. Arrangements need

not be reserved only for parties or special occasions. They can be used regularly depending upon the season and the theme. Unconventional and dry material can also be used to make arrangements which are more economical and last longer.

FLOWER ARRANGEMENTS IN HOTELS

In hotels, flowers are used extensively. Various types of arrangements are chosen, as appropriate to the area and occasion. Medium-sized 'round' arrangements are often provided at the guest relations executives' desk in the lobby and on coffee tables in the lounges. In most five star hotels, one can see huge, spectacular arrangements in the lobbies. Restaurants generally have bud vases on each table, with one or two flowers in them. Table arrangements for conferences must be low so that guests may see over them. At informal banquets, large arrangements may be seen. At wedding banquets, wall arrangements using gerberas are very popular nowadays. On special occasions and festivals, some hotels even make beautiful traditional flower carpets for the lobby.

1.2 Flower arrangement materials flower filler, and equipments tools accessories

BASIC INGREDIENTS

1. Mechanics
 2. Equipment
 3. Containers
 4. Bases
 5. Accessories
 6. Plant material
 7. Support
-

MECHANICS:

These are items used to keep flowers, foliage, and stems in place within the container.
Mechanics

must be fixed securely and should be hidden from view.

Examples – florists' foam (oasis), pin holders (Japanese term – kenzan), chicken wire, prong,

adhesive clay and tape, florist cone.

Floral foam, also called **oasis**, is a cellular plastic material, available in two types – green foam and brown/grey foam.

Pin-holders, also called **kenzan or needle-point holders**, is a series of sharply pointed pins are

firmly held in a solid lead base, to hold thick and heavy stems securely by impaling them on the pins.

Chicken wire, also called '**wire mesh**' or '**wire netting**', is a fine-gauge wire used to cover floral foam blocks in large displays.

Prong is the simplest type of floral foam anchor. It is a small plastic disc with four vertical prongs.

The base of the prong is attached to the container with adhesive clay and the floral foam is pressed down onto the prongs.

Florist's cone, also called a '**flower tube**' or '**flower funnel**'. It acts like a miniature vase. It is used in large arrangements, where foliage or flowers need to be placed above their stem height

EQUIPMENT:

This includes tools used to ensure that a satisfactory arrangement of plant material is created within the container.

Examples – bucket, scissors, knife, watering can, mister, wire cutter, cocktail sticks, turn, wire, floral

tape, candle holder, cut flower preservatives, and secateurs.

Mister is a hand-held spray bottle to produce a fine mist of water droplets to keep an arrangement

look fresh in warm weather.

Secateurs are used to cut through thick and woody stems.

Cocktail sticks or a tooth pick is used to make holes in florists' foam for a soft stem of flower.

Cut-flower preservatives is a bactericide, available in powder or liquid form, to prevent slime and smell from developing in the vase water, plus sugar to prolong the life of fresh flowers. A preservative can be made in-house by adding 3 teaspoons of sugar and 1 drop of bleach to half a litre of water.

CONTAINERS:

These are receptacles that hold the flower arrangement. They may or may not be hidden by the plant material. The container must be waterproof and neutral colours such as soft grey, dull brown, offwhite, or earth colours are most suitable because they are inconspicuous and do not detract attention from flowers displayed. Theme and simplicity should be kept in mind while choosing the design of the container.

Example – vases and jugs, basket, bowls and trays, wreath frame etc.

BASES:

An object that is placed underneath the container to protect the surface of the support and/or to add to the beauty of the display is called a base.

Example – table mat, tree section, wood base, stone base, and oriental base.

SUPPORT:

This refers to the structure on which the container stands.

Example – tables, sideboards, alcoves, and shelves.

PLANT MATERIALS:

These can be divided into 3 basic types

a) **Flowers (dominant/ focal/ point material) –**

This consists of bold flowers or clusters of small showy blooms. The dominant material provides a centre of interest.

Example – Gerbera, Chrysanthemum, lilies, Anthurium, Tulips, Poppies, Roses, Dahlias, and Daffodils.

b) **Fillers (secondary material) –**

This consists of smaller flowers and all sorts of leaves and foliage that are used to cover the mechanics and edges of the container and also provide added interest and colour to the display.

Example – Asters, Ivy, Button Chrysanthemum, Carnations, Gypsophila (Baby's breath), Limonium and Marguerites.

c) **Foliages (line material) –**

This consists of tall stems, flowering spikes, or bold leaves that are used to create the basic framework or skeleton. This line material may be straight or curved and it sets the height and width of the finished arrangement.

Examples – Gladioli, birds of paradise, golden rods, larkspur, asparagus ferns, palms, tuberose, and Peruvian lilies.

ACCESSORIES:

These are non-plant materials included in or placed alongside the arrangement. Their purpose is generally decorative but could be functional at times. Accessories are added to the design for extra interest or to 'stretch' the flowers when they are in short supply.

Example – miniature dolls, hats, ribbons, beads, painted wire, wooden fruit shapes, silk flowers and foliage, candles, driftwood, shells, idols, interesting pebbles etc.

CARE AND CONDITIONING OF PLANT MATERIAL

A flower or leaf cut from a plant has a short, though beautiful, life. It is possible to prolong this for a little while by a few methods. Flower arrangers use the term '**conditioning**' to refer to the preparation of cut plant materials for a long life, the filling of stems with water, and prevention of wilting.

1) A bucket of water at room temperature should be carried into the garden and the cut flowers should be immediately plunged into it. This helps retain their moisture for a longer period of time.

- 2) Plant material should be cut at a slant, using sharp scissors or knife, either early in the morning or after sunset. At this time, they are crisp and filled with moisture.
 - 3) As a general rule, it is best to cut flowers before they reach maturity.
 - 4) Carry cut flowers in a heads-down position so that heavy-headed flowers will not snap off.
 - 5) Wrap the flowers in newspaper till the neck of the flowers. Plunge this bunch into a bucket of water for 3-4 hours or overnight to condition. This is called '**hardening**'. In case of foliage, submerge them in water for about 2 hours.
 - 6) Use a good pruning knife or scissors to make clean, slanting cuts, causing minimal damage or bruising to the little ducts in the stem which carry water.
 - 7) Make slanting cuts in stems rather than straight ones – preferably underwater, as this helps expose a larger surface area for water suction by the stems.
 - 8) When stems are woody, they may be cut crushed or split at the end, e.g. cherry, etc.
 - 9) To revive wilting flowers, snip off half an inch of the stem underwater and plunge in a deep container of water. Dead flowers should be cut off.
 - 10) Re-cut any stem that has been left out of water, doing this underwater if possible and removing about 2 inches of the stem.
 - 11) To reduce underwater decay, strip the stems of all foliage and thorns that fall below the waterline.
 - 12) Never place a fresh flower arrangement where it will be exposed to direct draughts from a fan or window. To prevent dehydration, keep cut flowers away from direct sunlight and large appliances as well.
 - 13) Do not put flowers near a bowl of citrus fruits as they emit ethylene gas when ripening, which causes wilting of flowers.
 - 14) Prolong the freshness of the arrangement by spraying with lukewarm water from a mister morning and night.
 - 15) Change the water every day if the arrangement is meant to last a while. Never use chilled water, as cut stems fare best in warm water of about 45 degree Celsius.
 - 16) Listerine, ammonia, charcoal, salt, lemonade, sugar, camphor, aspirin added in small amounts to the water, or commercial cut-flower preservatives slows down bacterial growth, thus prolonging the life of flowers.
-

17) Use clean containers to prevent premature fouling and bacterial growth. Do not use aluminium containers for flowers.

18) Every 3 days, re-cut the stems, clean the vase, completely replace the water, and add more preservative.

How to cut

When cutting from a plant, cut the stem on a slant as this exposes a greater surface of the inner tissue

which takes in water more easily than the protective outside tissue.

Re-cutting

Stems which have not been placed in water immediately should be recut, removing about 2 inches

from the ends. There are two reasons for this:

1. When the stem is cut from the parent plant, air enters the cut end. Sometimes this forms an air

2. Use of Water Temperature in Conditioning

Warm Water

Most living processes take place better and faster at a warmer temperature. If warm water is used for

soaking the stems, it enters more easily and moves into flowers and leaves more quickly.

Boiling Water

Excessive heat, such as from boiling water, kills cells subjected to it, but this can have several uses in conditioning:

1. The cut ends of stem are sterilised when held in the boiling water for a minute. The result is

that the microorganisms which are normally present and can produce slime to block the water channels are reduced.

2. Dead cells at the stem ends cannot channel out sugars and other nutrients into the surrounding water. These solutions can also promote the growth of slime which

prevents uptake of water.

bubble which can prevent water travelling up the stem and causes wilting even though the

stem may be standing in water. The air bubble can normally be removed by cutting off two

inches of stem. If the second cut is made under water then no further air can enter the end.

2. When a stem is cut, the end begins to seal over (as with a cut finger) and a hard callus can

form which does not allow water to enter the stem and again wilting will occur. Re-cutting

removes the callus

3. Dead cells at the stem ends cannot grow into a callus which would seal the end and prevent water entering.
4. The heat expands any air in the stem which might be causing a blockage. Most of the air is forced out of the stem end in bubbles and replaced with water.

There are many styles which experts are already using and new styles keep on adding up as it becomes popular and appreciated by people. Before even starting flower arrangement it is essential to know which style of flower arrangement you will prepare, it can be based on different forms of angle from which they are seen, basically a all around arrangement which can be viewed similar from all angles or a facing arrangement which can be viewed front one or two dimensions. The amount of space which is present to display the arrangement will it be a mass style; line style where only peculiar pattern will be formed. The style aspect will also include type of plant material; it could be a foliage arrangement or dried flower arrangement, based on the effect of the arrangement it can be formal, informal, abstract or free style.

There are different types of line arrangement which forms different shape.

Examples: C shape (Crescent shape), S Shape (Hogarth), Triangular shape, circular shape, Right angled shape, Diagonal shape, Flame shape, Fan shape, Horizontal shape, Vertical shape, Parallel shape etc.

Traditional /Classical/Western Style

This refers to ordered mass arrangements which are often in the shape of a triangle, circle or oval. The chief characteristics are a mass of material with an emphasis on the outline of the arrangement. It is a popular style as it is highly decorative.

C shape (crescent shape)

This arrangement is dramatic and eye catching; if it is not balanced with frame worthy items it will not give this particular shape. This refers to ordered mass arrangements which are often in the shape of a triangle, circle or oval. The chief characteristics are a mass of material with an emphasis on the outline of the arrangement. It is a popular style as it is highly decorative. Recognisable geometric shapes could be formed so that the outline conforms to a triangle, a circle, a Hogarth (S-shape) curve, a crescent etc. These styles can be either mass arrangements or line.

Abstract Design

This refers to arrangements that look more unrealistic than others. A great deal of space is used within the design. Material used will have a clear shape, exciting texture or strong colour and it may be used unchanged or it can be twisted, tied, bent or cut to achieve the desired pattern.

Free Form

This refers to designs without a definite geometric outline. The balance is asymmetrical and is achieved by assembling plant material with equal eye pull on either side of the design. For example : a long branch on one side may balance a brilliant flower on the other.

IKEBANA (Japanese/ Oriental flower arrangement): the word literally means '*living*

flowers' in Japanese. These arrangements are more than an aesthetic grouping of plant materials. They are symbolic representations of an ideal harmony that exists between earthly and eternal life. In each arrangement, there is an imaginary triangle. Its tallest line represents 'heaven'. Facing and looking towards heaven is 'man'. The lowest line, looking up to both, is 'earth'.

- In all such arrangements, Heaven, man and earth are represented by means of three main branches. **Shin**, the main spray, is the tallest and symbolizes heaven; it ends to the central axis of the vase. This stem should be 1 1/2 to 2 1/2 times the height of the container. **Soe**, the second highest stem, represents man. It provides width to the arrangement and is about three-fourth the height of the tallest spray. This stem forms an angle of about 45 degree with the rim of the container. **Hikae**, the lowest spray, denotes earth. This branch is about half as tall as the one signifying man and extends very little beyond the diameter of the container, forming an angle of about 115 degrees with the rim of the container. It is placed opposite the branch signifying man and is used to balance the arrangement.
- The Japanese use tall vases as well as low bowls.
- They always use an odd number of flowers, as they believe that odd numbers are lucky as well as more aesthetic. Thus, in all arrangements, three, five, or seven flower sprays are used.
- There is no overcrowding and all the plant materials are seen as separate units, but as a part of the whole. There are various schools of oriental flower arrangement. **OHARA** School is the most popular one. In this school-
 - ü When a flat or low container is used, it is called a **moribana** style. **Moribana** is an informal arrangement in a shallow container in which a pin-holder or **kenzan** is used as mechanics. Landscapes are portrayed or large, colourful flowers are displayed.
 - ü A formal arrangement, basically a triangular one is called the **seika** style which has strict rules governing the lengths and angles of the stems.
 - ü A floating arrangement is called **ukibana**.
 - ü A arrangement using vegetables, fruits and nuts is **morimono**.
 - ü A classical arrangement in a tall cylindrical vase with a flowing and natural effect is called **nageire**.

1.5 Principals of western flower arrangement

1. SCALE –

Scale is easy to understand as we can all recognize when small flowers look wrong in a large

container, etc. However size is relative – an object seen by itself is not big or small unless it is seen next to another object for comparison. If the difference is great then objects do not go well together.

In flower arrangement –

- a) Each piece of plant materials should be related to the others in size.
- b) The base should neither be too big or too small for the rest of the design.
- c) Any accessory used should be in scale with the remainder of the design and should not seem huge or dwarfed.
- d) The whole design should be in scale with its setting. E.g. on a dining table, the flower arrangement used should leave enough room for china and should not inhibit conversation.

2) **PROPORTION** –

Good proportion refers to pleasing amount of things and again it a matter of relationships. The same amounts of material that appears too much for one container may seem correct for another. **Scale**

concerns relative size and proportion concerns relative amounts. A number of arrangements can be made for a room and all may be in scale with their setting but the number of arrangements may be too many, so the proportion of arrangements to the room is not pleasing.

A guideline is that the plant material should be one and a half times the height or the width, whichever is the greatest, of the container. Equal amount of things lack interest and on the other hand too much of one thing is also not pleasing. Here the eye is the only judge.

3) **BALANCE** –

Here, physical as well as visual balance needs to be considered.

Physical balance: this is vital for any arrangement. If it is too asymmetrical, then there is a danger that the whole arrangement will tip over. The mechanics must always be securely fixed and the container should always be heavy enough to support the plant material. The more one-sided the display, the heavier the container should be. Sand and gravel can be added to achieve this.

Visual balance: this calls for the arrangement to look stable even if it is one-sided. To increase the visual weight of the lighter side, keep in mind that –

- a) Dark flowers look heavier than pale ones.
- b) Round flowers look heavier than trumpets and conical ones.

Top to bottom balance also needs to be considered. Large flowers placed centrally and close to the bottom of the arrangement give a feeling of good balance.

Symmetry and asymmetry:

This refers to the outline or the shape of the design. If design is symmetrical, then its shape is exactly

the same on either side of the centre. If asymmetrical design, then shapes are dissimilar and balance

depends on the eye being attracted to both sides of the design equally by the use of different colours, shapes and textures.

4) **RHYTHM OR MOVEMENT:**

This involves using techniques and materials that guide the eye from one part of the display to another.

Rhythm in flower arrangements may be achieved by –

- a) Using curved stems
- b) Hiding all or part of any tall, straight stems.
- c) Placing flowers 'in and out' through the arrangement.
- d) Having flowers at various stages of development in the arrangement.
- e) Using foliage of various sizes and contrasting shapes.
- f) Having an irregular line of various- sized blooms.

Rhythm is best achieved by repetition and easy gradual change.

5) **CONTRAST:**

Contrast and variety add interest to life and opposite things emphasize each other. A flower

arrangement can be dull without contrast. Contrast can be created in shape – by turning the flowers to different ways when all round flowers are used. Contrast can be achieved by introducing line plant material. Strong contrast in textures can be used for interest. Very strong contrasts should be avoided as too much contrast may upset the unity of the arrangement.

6) **EMPHASIS/ DOMINANCE:**

This involves having one or more areas in the arrangement to which the eye is drawn and on which it rests for a short time. This point is known as a 'focal point' or 'centre of interest'. The usual methods to achieve emphasis are as follows-

- Include a small group of bold flowers (dominant material).
- Use an unusual container.
- Use striking foliage.
- Have sufficient plain background.

7) **HARMONY/ UNITY:**

In a pleasing flower arrangement, the plant material, container, base, accessory and setting should all be in harmony. Similarity in appearances between materials help s give repetition and a feeling of harmony, e.g., the curve of a piece of driftwood, etc. The resemblance in all cases need not be identical but a link in appearances is an echo giving a feel of relationship. The important fact here is that all plants look as if they belong to the arrangement and give a look of unity.

1.6Glossary

Flower bud: half or not opened stage of a flower.

3. Foliage: green or brown leafy material used in a flower arrangement.

4. Searing: it means drying up the leaves and flowers

5. Shearing: cutting the stem or leaves of flowers.

6. Principle of unity: all plants look as if they belong to the arrangement and give a look of relationship.

7. Principle of harmony: in a flower arrangement, the plant material, container, base and accessory should all be in same appearance.

8. Difference between Ikebana and traditional style of flower arrangement: in Ikebana, lines are an important feature of design with lots of space left in between whereas in Traditional style, emphasis is given on the outline of the mass rather than on individual plant material with little space within the design.



COMMON FLOWERS AND FOLIAGE

Flowers –

1. Roses
2. Arum lilies
3. Gladioli
4. Dahlias
5. Chrysanthemums
6. Gerberas
7. Tulips
8. Asters
9. Carnations
10. Tuberoses
11. Lotuses
12. Anthurium
13. Birds of paradise
14. Marigold
15. Orchids
16. Petunias
17. Hibiscus
18. Poppies
19. Gypsophila (baby's breath)
20. Bottle brush

Foliage

1. True ferns
2. Asparagus ferns
3. Palm leaves
4. Umbrella Palms
5. Goldenrods

ERGONOMICS



The term 'ergonomics' is derived from two Greek words, 'ergon', meaning work, and 'nomoi', meaning natural laws. Ergonomics is the study of how working conditions, equipment, and information can be arranged in an order that people can work with them safely and more efficiently. Ergonomists study human capabilities and limitations in relationship to work demands. They contribute to the design and evaluation of tasks, jobs, products, environments, and systems in order to make them compatible with the needs, abilities, and limitations of people. Improperly designed equipment, furniture, or physical procedures can cause physical strain and fatigue in workers. Such strains can lead to long-term physical disabilities, referred to as musculo-skeletal disorders (MSDs). The prevalence of MSDs, also called Repetitive Stress Injuries (RSIs), is very high among people who are exposed to certain tasks for long periods of time. Two elements—static work and

force—are known to contribute to MSDs and RSIs. According to American ergonomist, Holly A. Sweeny, 'static work' refers to the musculo-skeletal effort required to hold a certain position, even a comfortable one. For example, when we sit and work at computers, keeping our head and torso upright requires either small or great amounts of static work depending upon the efficiency of the body positions we choose. 'Force' refers to the amount of tension our muscles generate. For example, tilting your head forward or backward from a neutral, vertical position quadruples the amount of force acting on your lower neck vertebrae. This increase of force is due to the increase in muscular tension necessary to support your head in a tilted position (Sweeny 2005). Proper ergonomic design helps to prevent injuries that are caused by such repetitive strains.

Principles of Ergonomics

Over the years, ergonomists have defined postures which work and reduce the forces acting on the body by applyingh minimize principles (Sweeny 2005): the following

All work activities should permit the worker to adopt several different, but equally healthy and safe postures. here muscular force has to be exerted,, it should be done b appropriate muscle groups available. work activities should be performed with the joints at about range of movement. This applies particularly to the head, trunk, and upper limbs

These can be achieved by adopting following practices :

Avoiding prolonged static postures

Promoting use of neutral joint postures

Locating work, parts, tools, and controls at optimal anthropometric locations

Providing comfortable seating, arm rest, back rest, and foot rest

Utilizing feet and legs, in addition to hands and arms

Using gravity

Conserving momentum in body motions

Providing strategic location (power zone) for lifting, lowering, and releasing loads

The power zone is the lifting region that is considered optimal by ergonomists. area extends from approximately standing elbow height to standing knuckle height and as close to the body as possible. The power zone optimizes worker strength and durability with the most comfort, by providing the arms and back with maximum leverage. Very often, housekeeping activities such as lifting or lowering occur in locations that are out of the power zone.



Apart from safety and efficiency, the use of ergonomic principles leads to work simplification. Work simplification is defined as the use of equipment, ergonomics, functional planning, and behaviour modification to reduce the physical and psychological stresses caused by activities at home or work. Reducing the physical demands on the body during regularly performed tasks acts to preserve the joints, eliminate fatigue, and reduce the risk of injury or re-injury. Within the workplace simple guidelines be used regarding task set-up, equipment design, equipment storage, work techniques and routines that can assist in reducing the physical strain in the body. The main of work simplification at workplace is to 'work smarter, not harder'.

ERGONOMICS IN HOTEL HOUSEKEEPING

The very nature of their duties puts hotel housekeepers in high risk category of MSDs and RSIs. Hence, the principles of ergonomics can be applied to mitigate the physical stress level among the housekeeping employees. We shall study the role of ergonomics under the heads:

- Significance and need of ergonomics in housekeeping
- Analysis of risk factors in housekeeping: ergonomical perspective
- Mitigation of risks in by applying ergonomic principles

Significance and Need of Ergonomics in Housekeeping

Daily duties of hotel housekeeper make them vulnerable to contracting physical pains and disorders related to work. A GRA, on an average, cleans 15 rooms a day, and does so under the incncge time pressure that characterizes work. addition to the in-room tasks, they also load cleaning supplies, fresh linen, and amenities on heavy carts and push them across thickly carpeted floors of hotel corridors.

The way housekeeping work is organized, i.e., 'room quota' system, it also contributes 10 and high injury incidents among GRAS, According Co thig system, the GRAS are allotted a certain number of rooms Co clean each day. The greater the room quota, the faster the work needs to be done by an individual. If a GRA has a 16-room quota, he/she must clean each room in less than 30 minutes. Housekeepers routinely report that they race through their Casks in order to complete them on time. While rushing through lifting a heavy mattress or cleaning a slippery bathroom floor, GRAS are more likely to get hurt. In addition to static postures, awkward postures are assumed while lifting mattresses, cleaning tiles, and vacuuming in every shift. Further, in order to complete their room quotas, GRAS, many a time, end up skipping meals and breaks that are requisite rest periods. Time pressures are even more intensified when clean linen and towels are under-stocked and supplies are

short. Chronic understaffing and increase in number of guest supplies and time-consuming amenities have placed housekeepers at a great risk of injury. The focus should not be on measuring the number of accidents but the behaviours and potential causes that may lead to accidents. It is here application of ergonomics contributes significantly towards reducing physical stress, which in turn translates into improved productivity and among employees.

Analysis of Risk Factors in Housekeeping: Ergonomic Perspective

Prevention of injury and accidents is easier if action is taken early through effective analysis of risk factors. An extensive ergonomic risk factor analysis for all tasks needs to be carried out by the executive housekeeper who is responsible for the staff working in the housekeeping department. The ergonomic risk factor involves finding answers to the following questions:

What kind of work do employees do in the housekeeping department?

What are the risk factors in each of these tasks?

How can these risk factors be reduced ?

There are three major risk factors that lead to MSDs:

Awkward posture : This refers to postures beyond neutral. The more the joint away from the neutral, the more awkward the posture. Such postures increase the strain on ligaments and joints. This can lead to fatigue and discomfort, and increase the risk of injury. Making beds, cleaning carpets, floors, and bathrooms is hard on the shoulder, back, and knees.

Excessive repetition: In this case the same muscles are used over and over on repetitive work. Repeated forceful movements, especially in awkward postures, increase the risk of injury. For example, making beds, changing linen, replenishing toiletries etc.

High forces : come into play while lifting pulling heavy objects such as carts, especially in awkward postures. High forces are also required to hold a posture, especially for long periods. Muscles produce force to move or hold a posture, thus high forces can result in injury.



Risk factors in housekeeping tasks

| Potential risk factors | Comments |
|------------------------|--|
| I. Awkward posture | Awkward refers to postures beyond neutral. The more the joint angle is away from the neutral, the more awkward the posture. Awkward postures may include reaching, stooping, crouching, squatting, twisting, and climbing. |
| Joint posture | These include postures affecting the joint areas such as the wrist, elbow, bendine, neck |
| Static posture | These postures and positions are typically dynamic and not sustained for more than |
| High force | This refers to placing extra pressure and strain on a particular body part; includes lift, lower, carry, push, pull, pinch or power grip and surface (walking up ramps). |
| Excessive repetition | This refers to performing the same movement continually; includes frequency of an duration, and exposure; leading to Repetitive Motion Injuries (RMI). |
| Objects | Weight, location, size, shape, handles, and stability. Design and use. |
| Equipments | Work surface height, layout, seating, and space. Layout, flooring, temperature (cold stress), noise, vibration, chemicals, light, and glare Schedules, workload (lack of rest), and interruptions. |
| Work area | |
| Environment | |
| Work organization | |

Mitigation of Risks in Housekeeping by Applying Ergonomic Principles

Housekeeping is a highly challenging task. It can be classified as 'moderately heavy' or 'heavy' work because the energy required is approximately four kilocalories per minute. There is no escaping the work to be carried out by the housekeepers. However, housekeepers can modify their tasks and personal habits in conformity with ergonomic principles to avoid injuries as also reduce their workload. Application of ergonomics to modify housekeeping activities can broadly be studied under the following heads.

Modifying the workplace layout and equipment



Modifying loads lifted/way of lifting Modifying personal habits

Controlling the work environment

Redesigning work practices

Using proper equipment and work practices results in the safest way to vents workplace injuries. Employers must provide user-friendly equipment and ill safe work practices to reduce the risks of MSI. Employers must also instruct workers.

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