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STORE MANAGEMENT

Store function is a vital part of the Industrial organization. The primary objective of the stores function is to provide a service to operating functions and this must be fully appreciated, all other stores activities, although this have their own importance, are subordinate to this main responsibility.

The stores organization normally comprises of the following 3 main functions :

i) Receiving the incoming stores.

ii) Stocking & safe custody of stores and material and to ensure availability of material at any time when demanded by the user sections; and

iii) Issue of finished goods and other materials from the factory.

The following are the specific responsibilities expected from the above functions:-

A) Receiving Department -

(i) The receiving functions involves unloading wagon loads, collecting various consignments from railway station and local firms and checking the consignments for safe arrival.

(ii) Unpacking of various packages received and verification of the consignments with seller's packing Note and verify the consignments with factory's supply order for proper identification of the stores. Checking the packages for safe arrival and to decide if any claim is to be lodged with the carrier, if any discrepancy is observed.

(iii) The Receipt branch is also to submit the material for inspection alongwith relevant documents.

(iv) The receipt Branch will also be responsible to handover the stores to the Store Stock after getting the same cleared by the Inspection Branch.

B) Stores Stock -

Store Stock Department bears the responsibility for safe and technically sound physical storage of materials. The stores Stock Department must protect the material in its custody against pilferage, unauthorized usage and unnecessary damage and deterioration, the Stores Department should also adequately classify, mark and locate all materials in a man which permit ready accessibility. The Store Stock Department should ensure control on the physical issuance of all the items in

a manner that provides effective services for the production operation and at the same time protects against unauthorized withdrawal of materials.

C) Store Issue Department -

This Department is primarily responsible for dispatch of the finished goods from the factory to various destinations. This department is also responsible fo dispatch of scrap and other waste products to sister factories and also issue of same to the private parties who have purchased against auction/tender. This department should ensure that all the finished goods which are to be dispatched to the other department/factories are properly packed and documented so as to avoid unnecessary correspondence regarding damage/short receipt etc.

STORING SYSTEM –

Two basic systems can be used in physically controlling stores material (i) closed stores system; and (ii) open stores system.

Closed Store System –

In this system all materials are physically stored in closed or controlled area. As a rule, on one other than stores personnel is permitted in the stores area. Materials enter and leave the area alongwith accompaniment of an authorizing document. This system is designed to afford maximum physical security and to ensure tight accounting control of the inventory materials.

Open Stores System –

In this system no store room as such exists. Each material is stored as chose to its point of use as is physically possible. Storage facilities are completely open and any worker has access to this storage facility.

The open system is designed to expedite production activities. It places little emphasis on the physical security of the material. Materials handled in open system should not be subject to pilferage nor they should be easily damages. If production requires delicate or pilferage items they should be controlled in a closed store room. Ordnance Factories follow closed stores system. The stores are received and issued by the stores (stock) on proper authority only. However, bulky materials such as steel billets required to large quantity may be stores in open near the production at to minimize handling etc.

Physical Identification –

To minimize identification problems it is necessary to record storage location. In a store room every storage location has a numerical designation. Each inventory items is assigned a specific storage location. The stores bin cards indicate the location of stores.

Each storage bin should be labeled with its part number, the tags attached to each bin indicate the brief nomenclature of the store as well as its Foils Number.

Storing of Materials –

A good store room layout and storage methods should take following into consideration –

i) The space required for storing the items properly.

ii) Quantity of items numerically withdrawn at a time.

iii) How often the item is drawn.

iv) Quantity to be stored at a time.

v) Storage facility best suited for the item consider such factors as weight, shape, handling etc.

vi) Whether the items is most frequently used.

While planning for storage facilities, future requirements should also be taken into account alongwith current needs. A good store-room layout and good storage methods yield the following benefits.

a) Ready accessibility of major materials permitting efficient service.

b) Efficient space utilization and flexibility of arrangement.

c) A reduced of material handling equipment.

d) Minimisation of material deterioration and pilferage.

e) Ease of physical counting.

The good store-room layout attempts to achieve the following five objects –

i) Straight flow of a activity through the store room with minimum back-tracking.

ii) Minimum handling and transportation of material.

iii) Minimum travel and waste motion of personnel.

iv) Efficient use of space.

v) Provision of flexibility and expansion of layout.

Equipments –

General type of equipments commonly used in storing of materials –

i) Pallets and skits.

ii) Open and closed shelving.

iii) Cabinets

iv) Bins

v) Stacking Boxes.

vi) Special storage racks.

vii) Gravity need racks.

viii) Out door platforms and racks.

STORE ACCOUNTING IN ORDNANCE FACTORIES –

As enumerated above, Store Department in Ordnance Factories comprise of Stores Receipt Section, Store Section and Stores Issue Section. The basic responsibilities of these are similar to what has been described earlier.

The Stores Receipt Branch receive the purchasing documents namely supply order placed by the factory, acceptance of tender by DGS&D etc. from Provision Section. After receipt of supply order the function of Store Receipt branch starts, is the responsibility of the Store Receipt Branch to keep a watch on the various intimations received regarding dispatch of material to the factory. It also has to ensure proper filing of the documents such as supply order, acceptance of tender etc. and should keep a watch on the receipt of dispatch documents such as RRS, GRs etc. On receipt of intimation from the firm for dispatch of the materials, the Store Receipt Branch should get in touch with the carriers namely railway and road transport organization to see that the delivery is taken as immediately as possible on receipt at the Railway Station etc. It is to mention here that is case there is a default from the Store Receipt Section in taking the delivery in time, there is a livelihood of payment of warfare charges etc. Similarly the materials are received in wagons load, they are normally placed on the siding of the factory and the wagons should be released after unloading the materials in time. Otherwise demurrage charge will be levied. The materials so received wither by wagon loads or smalls, should be properly accounted.

USE OF MATERIAL INWARD SLIP AND INSPECTION REPORT –

The form used in Ordnance Factories for accounting in incoming materials, is known as “Material Inward Slip, Inspection Report and Ledger Posting Voucher”, popularly known as “M.I. Slip”. It is an important documents as it is used not only to document incoming material but also it is used as inspection report i.e.I/Note and also used as final posting voucher in the ledgers maintained in the Account Office.

Without any exception whatsoever, all receipts which are received by the Receipt Branch will be entered without any delay on the Material Inward Slip and whether or not the materials are to come to Stores Stock or deposit ledger charge. There is no exception for miscellaneous items received such as machinery, medical stores, contingent stores or store received in the factory on loan if in fact such materials are handled by Receipt Branch.

The material Inward Slip will be dated and numbered as MIS in the space provided therefore in a single series consisting of five digits only. The sue of more than one series running at a time will be prohibited. There series will not be of more than 5 digits and may run from 1 to 99999. The date of MIS without any exception will be the actual date of arrival of material in the factory. The description of material received and other details such as the weight, qty. found on receipt, transportation particulars will be entered in the relevant column. One copy will be retained permanently in the Receipt Branch as master copy.

The material will be submitted by the Receipt Branch to the Material Inspection Group alongwith the MIS and other documents relevant to the stores. The receipt Branch should also watch early inspection of the material so that it can take up with the suppliers regarding rejection or any discrepancy in supply. The Material Inspection Group after inspection of the material will make suitable entries in the relevant columns of the MIS. After inspection process is over and the MIS is duly sentenced as acceptable, receipt voucher number will be entered at the appropriate place in the MIS form and the stores will be taken on charge by the concerned ASK of the Stores (Stock), the MIS so sentenced as acceptable and after allotment of the Receipt voucher No., will be forwarded to the Provision Section and also to Accounts Branch for making necessary payments to trade firms and for regarding any discrepancy, should also be mentioned in Discrepancy Voucher.

PROCEDURE ADOPTED IN CASE OF DISCREPANCIES –

The following procedure will be adopted for adjustment of discrepancy in stores received from other factories and indigenous suppliers against LP and CP Orders :-

1) Discrepancies in Inter – Factory Transactions

Discrepancies may arise in condition or quantity or both, and the ways they are dealt with are as follows –

(a) Discrepancy in condition

A discrepancy Report will be sent to the consignor. If the discrepancy in condition, affects the whole consignment, the consignor’s Issue vouchers will also be returned. The consignor may;

(i) Call for return of the consignment. If so, it will be returned to him a nominal voucher.

(ii) Not agree to the return of the consignment. If so, consignee will being the stores on charge as found on receipt. The consignor may then amend his IVs to make the description agree with that acceptable to the consignee, and in that case no further action is necessary on the discrepancy. If, however, the consignor does not agree to amend the IVs (or returns the original IVr sent to him as at (a) above, the consignee will make out a CRV for the quantity and description on the IVr and simultaneously prepare a Discrepancy (Deficiency) Voucher-cum—loss statement.

(b) Discrepancy in quantity

A DR will be sent to the consignor, the consignee will bring the stores on charge as found on receipt.

(i) In the case of surplus, the consignor may accept the DR and make a plus adjustment in his IVr or call for the return of the excess. Or he may disown responsibility for the excess, in which case the original MIS will serve also as a CRV.

(ii) In the case of a deficiency, the consignor may accept the DR, and make a minus adjustment in his IVr or dispatch further quantity on a nominal voucher which will be brought on charge on a Stock Rt. Voucher. Or he may disown responsibility for the shortage, in which case the consignee will make out a CRV for the amount of the discrepancy (if the quantity as vouchered by the consignor has already been shown in Col. 10 of the M.I. Slip prepared for the stores at time of receipt, a CRV is not necessary) and simultaneously a DD Voucher-cum-Loss statement for the same quantity.

(c) Discrepancy in condition as well as in quantity.

The procedure in (a) and (b) will followed, if however, he discrepancy in condition affects the whole consignment, the consignor's IVr will be returned. Unless the material is called back by the consignor, the consignee will bring on charge the actual receipts. If the consignor sends a replacement IVr with the description amended to agree with that reported by the consignee but does not amend the quantity, the consignee will make out a CRV for the deficient quantity and simultaneously a DD voucher-cum-loss statement.

2) The above principles will be followed in dealing with discrepancies in receipts from other service sources.

3) Discrepancies in Stores received from Indigenous Suppliers.

4) Normally the supplier cannot be held responsible for such losses unless the carrier's receipt is qualified by remarks such a (1) "defective packing" or "packing condition not complied with", (2) "side to contain", (3) "sender's weight accepted" or negligence in packing can fairly be attributed to claim.

5) A decision should normally be taken on whether the supplier can be held responsible for the loss immediately after the loss is discovered. Doubtful cases may arise when open delivery has been taken even when the carrier's receipt was a qualified one. In such cases a claim on the carrier will be preferred and the outcome awaited. The supplier will be informed about this. If the claim is turned down for the reasons that the carrier's receipt had qualifying remarks, the supplier should be asked to bear the loss. When, however, the claim is accepted in full or in part DD voucher action will be taken.

LOSS STATEMENTS –

1. The following are the usual occasions for raising loss statements of IAF (Fac. 144} by Store Receipt Section :

(a) Wen DRs raised for discrepancies in qty or condition on consignor factories are not accepted by them.

(b) When empty packing boxes charged as 'S' by consignor factories are sentenced as 'R' or U/S or when those charged as 'R' are sentenced as U/S receipt.

(c) When neither the supplier (including other factories) nor the carrying agency can be clearly held to be responsible for losses in transit.

(d) When it has been held that a supplier is not responsible for a loss in transit but a claim preferred on the carrier or the insurer has not been accepted at all or has been accepted only in part.

(e) When a discrepancy report raised on a supplier has been turned down and it has been decided that the loss should be borne by the state.

(f) When a loss of stores takes place while they are under the custody of Stone (Receipt) Section.

2. Loss statements on form IAFA 498 are raised on the following occasions:

(a) When demurrage/wharfage becomes payable because of the negligence or inaction of the consignor or consignee;

(b) When imported stores suffer losses in transit upto the port of disembarkation and the claims, if any on the shipping agents, or insurers are turned down either entirely or in part;

(c) When imported stores suffer losses while in the custody of the port authorities and a claim, if any, on the port authorities for the insurer is turned down entirely or in part;

(d) When claims on the carriers in respect of losses of imported stores during transit from the port of disembarkation to the factory are turned down either entirely or in part.

(e) When discrepancy reports raised on foreign suppliers for losses discovered during checking of the stores are repudiated by them.

3. The first step in dealing with cases mentioned at Note 1(a), (b), (c), (e) and (f) above is to prepare a CRV and DD voucher for the quantity involved for ledger action only. For cases mentioned at No. 2(a), (b), (c), (d) and (e), CRVs and DD/Vrs are not necessary but a loss statement on form IAFA 498 will be prepared straightaway.

RESPONSIBILITIES OF STORE STOCK –

Store Stock is responsible for receiving the material from Store Receipt Branch and to properly store them so that they are easily accessible for issue to the user sections without any loss of time. It is specific responsibility of Store Stock to maintain Bin Cards for the materials which are under their custody. Bin cards shows the detailed description of the material, alongwith folio number, the quantity received against receipt voucher and issued against Demand Note on any date and balance available on date. It is the responsibility of ASK to see that entries are made correctly and the quantity issued to the user sections are as per demand note placed on the stores by the user section. Demand Note, after issue of material to the user section, should be forwarded to Accounts for proper positing in Ledger sheet. Another important function of store Stock Section is to see that the deterioration and spoilage of stores are reduced to the minimum. When dealing with materials that tend to deteriorate or to become obsolete, it is necessary to issue old material ahead of new material. This is commonly referred to as storage of First in First out (FIFO).

Special protection is occasionally required for some items. The metal parts, subjected to rust or correction should be stored in dry areas and they may be covered with suitable rust-inhibiting compounds. The items which may be harmed by dust may be stored in air tight containers. Liquids sensitive to heat and cold and materials which are sensitive to moisture should be stored in suitable locations. Items subject to pilferage should be stored in locked cabinets.

Considerable importance is given to preservation of stores in Ordnance Factories. Inter Service Stores Preservation Organization formed by Govt. will be

responsible for safe guarding defence stores from ravages of biological as well as no-biological attacks and deterioration in storage.

STOCK VERIFICATION –

The physical verification of inventory and checking against the bin card balance is essential to find out any discrepancies. Normally one of the following ways can be adopted:

i) Fixed annual inventory – Physical verification is done of inventory at the end of the financial year. This may necessitate shutting down the production operation.

ii) Continuous Inventory – Physical verification is done continuously without interrupting production or upsetting stores activities.

iii) Low point inventory.

In Ordnance Factories the departmental stock verification is carried out by independent DGOF Verification Organisation. All and deposit stocks will be verified by the stock Verifier at least once during the financial year. Valuable items could be verified at more frequently intervals. If discrepancy is noticed, the factory will prepare a Discrepancy Voucher to maintain the desired party between store balance and physical stock.

Inventory articles, machinery, building, electrical installations and medical stores are also verified by the DGOF Stock Verifiers. Local Accounts Officer, in this official capacity it required to check that stock verification is carried out as per standing orders.

In addition to verification by DGOF Stock Verification organization, atleast ten percent of the total items of stores stock will be verified by the factory staff as additional check. The items selected should be those which are costly per unit, those frequently received and issued easily available in the market. Stock-taking sheets will be prepared and action will be taken to regularize the discrepancies. Annual report will be submitted to the DGOF in April showing the number of items verified in the past financial year.

Discrepancies

Where there is a suggestion that there may be an actual discrepancy in correctness of stock, a verification of stock is necessary to arrive at a conclusion. It would be necessary to ensure that necessary action is taken within 3 days from the conclusion of the verification so that the balance in stock ledger and actual stock are in agreement. Changes in condition of the store while they are in stock will not constitute discrepancy.

Discrepancies may be as a result of:

Departmental stock verification, internal stock verification or by the creation of the rule that when there has been deficiencies or damages in transit of certain classes of receipts full invoiced quantity will be brought on charge of the finding of an unorthodox balance in stock ledger etc.

When discrepancies are noticed, a discrepancy voucher will be made out. This will be numbered as a regular stock voucher will be kept in Accounts Office until cleared. Clearing of the Discrepancy voucher will be sentencing a loss surplus statement.

The final adjusting action may take various forms, depending on the circumstances:

1) Submission of sanctioned loss statement for an establish loss in stock or damage in transit which govt must bear.

2) Submission of sanctioned surplus statement for an established surplus.

3) Finding an old document which ought to have been posted.

4) Special adjustment of payment suppliers for deficiencies in transit for which they are responsible.

5) Forwarding by a supplier of supplementary material to replace deficiencies for which he is responsible.

6) Receipt of compensation from a carrying agency for deficiency or damaged material.

7) Recovery from an individual who may have been ordered to make payment for losses for which he is responsible.

PRICED STORES CUM PROVISION LEDGER –

Priced Store cum Provision Ledger are maintained by Ledger Group of Material Section of Accounts Office, in the provision office of the factory for facilities of the reference by the management. There is one ledger sheet (folio) for each item of material and posting of dues and liabilities in it will be carried manually by man of Provision section.

The ledgers sheets (folios) are also posted from the primary documents, which shows the code Nos concerned for the material dealt with, unit of qty, work orders, warrants etc. Every receipt transaction accounted for in the ledger should be supported by the receipt voucher, or a return note or an adjustment receipt voucher. Similarly, every issue transaction accounted for in the ledger should be supported by a Demand Note, or an issue voucher, or an adjustment voucher.

POWER TO WRITE OFF LOSSES –

I) Power of O.F. Board

a)	Loss of stores not due to theft, fraud or neglect Financial concurrence not necessary upto Rs. 50,000/-	-	Rs.2 Lakhs
b)	Loss of stores due to theft, fraud or neglect	-	Rs.15,000/-
c)	Loss of public money not due to theft, fraud or neglect	-	Rs.10,000/-
d)	Loss of public money due to theft, fraud or neglect	-	Rs.5000/-

II) Power of General Manager of OFs

a)	Loss due to theft, fraud or neglect	-	Rs.1,000/-
b)	Loss of stores not due to theft, Fraud or neglect	-	Rs.5000/-
c)	Loss of public money not due to theft, fraud or neglect	-	RS.1,000/-

In dealing with the cases of loss, promptitude action is of paramount importance. However, the case of losses shall be pursued vigorously to finality so that action both remedial and disciplinary, can be taken as earl as possible and delinquent (s) do not escape punishment by more or loss of time, all losses whether of public money or of stores, shall be subjected to preliminary investigation by the officer under whose charge they were, to fix the cause of lapse and amount involved. The Court of Inquiry should invariably be convened it investigate the loss under the existing rules and regulations requiring the sanction of Government of India to write off the losses.

STORAGE AND HANDLING OF CHEMICALS

1. GENERAL

The object of storage with respect to chemicals is to smooth fluctuations on the flows in and out. Storage is, therefore, closely connected with the topics of plant sitting and layout. Quantities in storage are much greater than those in process, for a large plant with a few hundred tones in process, when it comes to storage is of the magnitude of several thousand tones. It is desirable, therefore, to keep storage to a minimum. Nevertheless very large quantities are held in storage.

2. PROBABLE HAZARD

The hazards associated with the storage and handling of chemicals are Fire, Explosion, Toxic Release, Correctively, Loss of containment from storage of toxic chemicals could in principle give rise to the worst kind of chemical industry disaster. A very large release of a toxic chemical such as chlorine under the most in favourable conditions is usually regarded as having a disaster potential grater than that of very low, because stringent precautions are taken against it. It should be emphasized, however, that a large toxic release is a much less frequent occurrence than a large fire or explosion, Losses though fires in storage, on the other hand, constitute a major part of the losses sustained by the industry.

3. LEGISLATION

Storage which includes handling, is one of the areas in which there is good deal of legislation. To cite a few important ones :-

1) The Factories Act and the Fules.
2) The petroleum Act and the Rules.
3) The Inflammable Substance Act.
4) The Arms and Ammunition Act.
5) The Explosive Act and the Rules.
6) The Gas Cylinder Rules 1961.
7) Static and Mobile Pressure Vessels (Unfired) Rules, 1981.
8) Poisons Rules.

4. BULK STORAGE

Bulk storage is usually built in the open, since this is cheaper and allows dispersion of leaks. The site selected should have good load-bearing characteristics, the contour of the ground does not permit liquid or vapour collection, prevailing wind should be considered in relation to the spread of flammable to ignition sources or of toxic. Segregate storage from the process. Most of the materials held in bulk storage are flammable liquids of liquefied gases. Types of storage include –

1) Liquid at atmospheric pressure and temperature.

2) The Petroleum Act and the Rules.

3) The Inflammable Substance Act.

4) The Arms and Ammunition Act.

5) The Explosive Act and the Rules.

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1) Liquid at atmospheric pressure and temperature.

2) Liquefied gas pressure and at atmospheric temperature (pressure storage).

3) Liquefied gas at atmospheric pressure and at low temperature (refrigerated storage).

4) Gas under pressure.

5. LOCATION OF STORAGE

Location and layout of storage are of prime importance. Usually, there is a conflict in this. For process purposes, it is convenient to have raw materials, work-in-progress, and finished products stored within the production area. However in terms of loss, exposure, this is the worst possible situation. Generally, production in facilities provide ample sources of ignition but little opportunity for fire to spread, Stores materials are exactly the opposite. Two mixed together, you have the ideal situation for a tastrophe, with the entire production capacity at risk. The aim should be to restrict quantity of material at process areas to what is needed for immediate use. Replenish from feed stores or bulk storage daily. Bulk storage are to be located detached with a 4 hour fire separation.

6. HANDLING

A large number of incidents occur of the bursting or collapse of atmospheric storage tanks due to maloperation. Atmospheric pressure is maintained in a storage tank by a vent to atmosphere. The tank may be subjected to pressure or a vacuum which it cannot withstand not only if eh vent is blocked but also if it does not have the capacity to handle the flows required to equalize pressure :-

1. Over – pressure can occur.

1.1 By pumping in liquid too fast.
1.2 Increase in temperature of liquid contents.
1.3 Pumping hot liquid into water.
1.4 Blowing in air, steam, gas.

2. Vacuum can occur.

2.1 Pumping out liquid or emptying liquid under gravity too fast.
2.2 Decrease in temperature of liquid contents.
2.3 Condensation of steam or vapour contents or depletion of gas content.

7. PIPELINES

The pipework valves and other fittings for storage system should be as per approved practice. There should be good access to valves. There are three major sources of chemical injury in pipeline work

1. Failure of packing in value stem or of gaskets in bolted flanges.

2. Opening the wrong value – identification of piping.

3. Failure to insure that valves are closed and lines drained before tension is released on flange bolts.

The quantity of material released from a pipeline rupture depends on whether the section of line is isolated or not. The arrangements for line break detection and isolation are, therefore, of the greatest importance in minimizing escapes.

8. ANCILLARY EQUIPMENT

In storage areas pumps, refrigeration compressors and vaporizers are main types of ancillary equipments. It is important these items which effectively introduce a process element should not hazard the storage.

Pump should not normally be located inside a bond, where they introduce an additional hazard and are themselves at risk. Desirable to locate outside, this allows them to be used to pump down storage during a fire or heavy leakages.

9. WAREHOUSES

Warehouses are meant for storage of small and portable containers such as drums, bags, carboys, boxes. This constitutes a different kind of storage. A wide variety of materials is stored in warehouses in different forms. The storage area should be well ventilated. Housekeeping should be of the highest order. Handle containers carefully. Do not cause leaks, Use in a well-ventilated area. Do not storage or open containers near steam pipes, boilers or their sources of heat, do not pressurize containers for transferring the contents.

10. GAS CYLINDERS

Compressed Gas Cylinders when first put into use are safe for the purpose for which they were designed. However, serious accidents may result from their misuse, abuse or mishandling, they come within the category of gas under pressure. The Gas cylinders are closed metal containers intended for the storage and transport of compressed gas – permanent gas, liquefiable gas, gas dissolved in liquid under pressure or gas mixture.

GENERAL PRECAUTIONS

Cylinders should not be placed where they might become part of an electric current. Where cylinders are used near or in conjunction with electric welding, precautions should be taken against accidental grounding of cylinders and allowing them to be burnt by electric welding. Shall not be used as rollers, supporters. Should not be dropped or permitted to strike against each other violently. Acetylene cylinders shall not be implied completely. A little gas is left for saturating the solvent. Do not crack open hydrogen cylinder valves.

Cylinders shall be store in a cool, dry, well ventilated place under cover, away from boilers, open flames, steam pipes or any potential courses of heat. If exposed to heat, the internal pressure will increases, which may give rise to unsafe conditions. In case acetylene cylinder, the internal pressurize is about 5.5 lbs/sq. inch for every degrees centigrade rise of temperature.

11. HOUSEKEEPING

Good housekeeping contributes to safety in handling of material whether manually or mechanically.

12. LIBELLING

The provision of adequate information on the hazards presented by chemical substances and on the means by which potentially dangerous substances may be safely stored and handled is now very popularly & major preoccupation in industries. This concern has undoubtedly stimulated a broad spectrum of interest in labeling. A label is merely a functional means of providing basic health and safety information.

Labelling system is intended - -

1. to make dangerous good easily recognizable from a distance,

2. to make the nature of goods easy to identify by means of symbols and

3. Provides a crude guide for handling and storage.

13. LIMITATION OF INVENTORY

ILO has recently published a manual on control of Major hazards in India. The manual, inter alia, stipulates limitations on storage of hazardous chemicals and flammable gases. Any installation storing a quantity greater than the specified limit is treated as a Major Hazard Works by definition. Full information on the properties of hazardous materials should be stored on computer. The manual lists form groups of substances and one group of general categories of substance. It indicates the threshold quantity for each substances or category.
Definition of the works.

RECEIPT OF CONSIGNMENTS AT THE FACTORIES

Consignments dispatched by suppliers within the country.

i) Despatch by Rail
Delivery of consignments

(a) Action prior to receipt of consignments.

(i) The particulars of Railway Receipt will be entered in prescribed register and the estimated ate of arrival of consignment recorded.

(ii) The local railway authorize will be contracted at reasonable periods until arrival of consignment. In this connection it may be borne in mind that the Railways are absolved of the all responsibilities after a wagon is placed at the siding there delivery is required to be taken and the consignee is duly informed. At any rate, Railways will not be liable for any expiry of 7 days termination of transit.

(b) Delivery of full wagons

(i) Whether seals and rivets or locks of wagons are intact will be checked.

(ii) The wagon number shown on wagon will be checked with that shown on Railway Receipt. If the two do not tally, Railway Representatives must be preventative must be present to witness opening of the wagon and the checking of the contents.

(iii) If the seals and rivets or locks are not intact or show nay sign of tempering or if the seal is not clear or is not that of the consignor, this should be noted in the Railway Receipt and the Railway Representative must be present to witness the opening of the wagon and the checking of the contents.

(iv) Loaded wagons will be weighed to facilitate approximate check with weight shown or Railway Receipt, Railway authorities do not, however, recognize such check weighments, if the original seals and rivets airlocks are intact.

(v) All discrepancies will be recorded in the Railway Delivery books as far as possible within three hours after unloading the wagon. In the event of non-receipt of Railway Receipt at the time of receipt of the consignment, the Following remarks will be recorded in the Railway Delivery Book. Further remarks, in any, will be put on receipt of the Railway Receipt.

(c) Checking of consignments.

(i) Wagons will be unloaded under the supervision of a representative of the factory who, as far as practicable, should not be below the grade of a Chargeman of stores Section. The persons deputed to check the contents of wagons will be clearly defined in Factory Orders.

***Note*:** In the case of dispatch and receipt of full wagon loads of items of special value, e.g., nonferrous metal ingots, the gross and true weights of the wagons will in-variably be checked in all factories, where facilities to do so exist, in the presence of the Railway Staff. This will enable a checked to be made of the weight shown on the Railway Receipt.

(ii) Packages will be inspected to ascertain extent of damages, if any, caused to them during transit.

(iii) The contents of packages with particulars shown on relevant Issue Vouchers, either by counting or by weighting or both.

(d) Delivery of Small

When taking delivery from the local Railway Authorities particulars of discrepancies will be recorded on the Railway Receipt and in the Railway Delivery Book.

Preferment of claims.

(a) All damages packages will be segregated for inspection and checked by a Gazetted Officers; in case which are important or show very unusual features, by a Committee or Board consisting of a Gezetted Officer and one or more other individuals.

(b) In case of deficiency in receipts, the packing case with their notes and wrappers will be retained until such time as the discrepancy is settled.

(c) The Gazetted Officer/committee/Board will record to the best of their ability the apparent cause of discrepancy and record it on the Material Inward Slip. Such entries on the M.I. Slip will be quite clear and it will be recorded whether a claim on the consignor or the Railway can be made or not. In border – line or in very difficult cases, the decision on this point will be that of the G.M. The principle for fixing responsibility for transit losses will be as under :

(i) In the case of contracts stipulating delivery F.O.R. Station of destination :

The contractor is liable in such cases for any loss or damage that may occur in transit and to make good the same by replacement fee of charges at destination or accept deduction from his bill for the quantity lost or damaged in transit.

(ii) In the case of contracts stipulating delivery – F.O.R. Station of dispatch:

(a) In cases where the contractor has agreed to the condition than they will be responsible until the stores contracted for are received in good condition at the destination, the responsibility is the same as in (i) above.

(b) In other case i.e. where transit risk has not been accepted by the contractor property in the goods passes to the consignee as soon as the same is accepted by the Rly. Administration for carriage, the Rly. acting as a baibe. Thereafter the contractor or is not ordinarily responsible for any loss or damage to the goods that may occurs en route, if he has been able to look the goods in a rail-worthy condition under a clear receipt without any adverse remarks as to the condition of the goods or the packing.

The case, however, where goods are sent under a “said to contain” receipt the supplier should not be absolved of his responsibility for loss in transit unless he is able to prove beyond doubt that he was not responsible. Each case should, therefore, be examined on its merits.

In case of (i) F.O.R. distinction contracts and (ii) also F.O.R. Station of dispatch contracts where the suppliers have accepted the transit risk as per (ii) above, the consignee will nearly Lodge the claims with the carrier and report the fact to the suppliers. There after, it will be for the supplier to pursue the claims with the Rlys. and settle the matter.

(d) Before coming to a decision to prefer a claim on the Railway the following points will also be considered.

i) Military stores are dispatched at confessional rate of freight under Military Credit Note at owner’s risk in terms of Risk Note ‘B’ which states that the Railway will be free from all responsibility for any loss, destruction, deterioration, or damage arising from is conduct on the part of the Railway Administration or its servants provided that in the following cases:-

1) Non-delivery of the whole of the said consignment or of the whole of one or more package forming part of the said consignment packed in accordance with the instructions laid down in the tariff or where are no such instructions, protected otherwise then by paper or other packing readily removable by bound, and fully addressed where such delivery is not due to accidents to trains or to fire.

2) Pilferage from package or packages forming part of the said consignment properly packed as in (1) when such pilferage is pointed out to the servants of the Railway Administration on or before delivery.

ii) The Railway Administration will be bound to disclose to the consignor or the consignee how the consignment was dealt with throughout the time it was in its possession or control an, if necessary to give evidence thereof, before the consignor/consignee is called upon to prove misconduct, but if misconduct on the part of the Railway Administration or its servants cannot be fairly inferred from such evidence the burden of proving such misconduct will lie upon the consignor/consignee. It should be noted that “misconduct” and not negligence” has to be proved.

e) Claims on suppliers I) If it is decided that a claim on the supplier can be made, brief reasons for the decision will be recorded and action taken immediately. In the case of losses during transit, immediate action should be taken to establish whether the supplier is responsible in any way for the loss. Suppliers cannot normally be held responsible for losses during transit unless the Railway Receipt is qualified with a remark such as (1) “defective packing” (2) “said to contain”, (3) “senders weight accepted”, or negligence in packing can fairly be attributed to the supplier.

ii) If it is finally decided that the supplier will make good the deficiency at his expense, the stores received in replacement of those lost or damaged will be accounted for by the Accounts Officer as “Miscellaneous Receipt”.

iii) If the supplier is a Govt. Department the discrepancy will be brought to notice on the Receipted copy of the Consignor’s Issue Voucher which will be returned to the supplier and in the case of supplies from Defence Establishment accompanied by a Discrepancy Report on the Prescribed form. If the discrepancy is not accepted by the supplier, it will be reported to DGOF for decision.

Such reports will be accompanied by 3 copies of important correspondence together with there Levant loss statement, in quadruplicate, and will be routed through the Accounts Officer to the DGOF for decision.

f) Claims on Railways I) If it is decided that a claim on the Railway can made, this should be recorded with adequate reasons and the claim preferred immediately.

ii) In all cases formal claims must received by the Railway within six months from the date of the Railway Receipt. They must include the required particulars and he addressed to the prescribed Railway Authority and arrangements made to secure proof of delivery.

iii) If on some later date the full consignment or a portion thereof is delivered by the Railway, the stores will be accounted for by the Accounts Officer as “Miscellaneous Receipts”, being brought on charge by the Factory by M.I. slips as Certificate Receipt Voucher under R.A.I. Instruction 913. In such cases the claims on the Railway should normally be withdrawn and the net less, if any, written off under normal rules. If however, it is considered that a modified claim can be established on the Railway the original claim should be modified and pursued to finality.

iv) Where iron and steel structures viz. angles, Bars, channels, joists (R.S.), poles, rods, stay rods and tees are booked in wagon loads and loaded in open wagons under special packing conditions as prescribed by the Ministry of Railways (R.B.), claims of losses or shortages occurring en-route should be preferred by consignees on the Railway Authorities in the following cases irrespective of whether the materials were booked under a said to contain Railway Receipt or under a clear Railway Receipt except in cases where the loss or shortage was due to an act of God. Civil emotion etc. over which the Railways have no control :-

1) In respect of dispatches in covered wagon the ‘seals’ are found broken at the destination station.

2) In respect of dispatches in all types of open wagons when the ‘lead seals’ of the package dispatched in an open wagon under “special packing condition” are found broken at the destination station and/or the binding wires on structural are out or broken and the contents of the open wagon are disturbed.

g) Assistance by DGOF – In the event of any claim on the Railways not being brought to satisfactory conclusion within 6 months from the date of preferment the case will be reported to DGOF. All such reports will be accompanied by clear resume of the case and three copied of all important correspondence including the actual claim.

Note:- ***Copies of routine correspondence issued by Factories in the ordinary course of pursuing such claims are not required by DGOF.***

Despatch by Road :

The procedure as for Rly. consignments will be adopted mutatis mutandis and all deficiencies/defects damages clearly recorded and noted down in the Challan/delivery Note accompanying the consignment. Claims should be lodged with the carrier or the supplier, as found appropriate according to terms of the contract (s).

Despatch by sea.

Such consignments are cleared at the port of embarkation by the concerned Embarkation Commandant.

b) Anticipated Out-turn Report - - Intimation of a shipment will be generally sent to the Embarkation authorities at ports by Bills of Landing, Packing Accounts/Invoices. On receipt of this intimation the Embarkation authorities will prepare the Anticipated Out-tern Report which will broadly contain the particulars of the cargo expected to arrive by the vessel and distribute to all concerned as a matter of advance information.

c) Clearance against Bill of Lading - - The Embarkation commandant on receipt of the stamped and negotiable copy of the original bill of landing will surrender it, duly signed, to the Steamer Agents and obtain the Delivery Order for the goods.

(Note:- In case the Bill of Landing is in favour of the consignee or any other authority, it will be ensured by such authority that it is endorse in favour of the Landing Officer concerned and sent to him immediately on receipt to enable him to obtain the Delivery Order from the Steamer Agents).

d) Clearance against Indemnity Bond – Where the relative Bill of Landing is not received in time, the Embarkation authorities will prepare an “Indemnity Bond” letter of Guarantee” on the authority of Packing Accounts/Invoice received by them and obtain in Delivery Order from the Steamer Agents. On receipt of the bill of Lading subsequently it will be surrendered to the Steamer Agents and the “Indemnity bond”/Letter of Guarantee” redeemed.

e) Clearance from the Customs – After the delivery is obtained, Customs Bill of Entry, completed in all respects will be submitted by the Embarkation authorities to the Customs to effect clearance of the stores through the Port Trust.

f) Clearance form the Port Trust - - “Port Trust Chappa” or “Wharf age Bill of Entry” will be prepared and submitted by the Landing Officer to the port authorities for effecting delivery of the goods.

Survey of cargoes landed damaged – As soon as the packages are landed, they will be checked up with the remarks list of the Port Trust and application will be made to the Steamer Agents to arranges survey of the package S) found damaged irrespective of the fact that they appear or not in the remarks list of the Port Trust. Immediate attention of the Port Trust authorities will be drawn to damaged stores, which do not appear in the “remarks list”. Application for survey will be made within 3 days of the landing from the vessel.

h) Booking of goods by Railway – Stores intended for Ordnance Factories will be generally booked by Rail at a confessional Tariff Rate against Military Credit Notes at owner's risk.

Despatch from the Docks by Rail will commence as soon as the cargo is located in the Port Trust Sheds. Endeavors will be made to dispatch each consignment as a whole. Consignments covering full wagon loads will be dispatched direct to the Consignees from the port.

Small consignments will be sent through the Ordnance Depots for reasons of economy in Railway freight. Ordnance Depot will receive the Small consignments from the Embarkation authorities and as soon as full wagon load is completed, they will dispatch them in a wagon to the consignee.

(i) Convoy Notes - - Is an accounting document between the forwarding authority and the consignee. Convoy Note will be issued by the forwarding authority. The distribution of the document will be 2 copies in each wagon and one cop to consignee with the Railway receipt.

If stores from more than one vessel are placed in one wagon, Convoy Notes will be prepared from stores from each vessel. The consignee factory will return one copy of the Convoy Note duly acknowledging the receipt of the stores to the Embarkation Commandant Ordnance Depot concerned within one month from the date of receipt of stores.

(j) Railway Receipt - - Railway Receipt (a copy of the Invoice or Way bill) is granted after the goods are booked by the Railway Authorities and sent to the consignee with a copy of Convoy Note without delay.

(k) Wagon Despatch Signal - - After the goods booked "Wagon Despatch Signal" will be issued to the Consignee Factory quoting wagon numbers, tonnage of stores dispatch, Railway receipt number and also quoting reference to the relevant item number in the Anticipated Out-tun Report.

(l) Final Out-turn Report – On completion of the clearance and dispatch of all consignments shipped per vessel, the Embarkation authorities at the port will prepare a Final Out-turn Report in respect of cargoes arrived by that particular vessel and distribute copies to all concerned. A cop of the final Out-turn report together with the "Returnable" copy of the Packing Account with it portion "A" of page 3 duly completed will be also sent to the consignee concerned as a matter of final information regarding the disposal of the cargo arrived by the vessel.

Claims :- a) Claims against Steamer Agents –

(i) Authorities responsible for such claims. The responsibility for handing claims in respect cargoes shorlanded (i.e. actually shipped from the forwarding station but not discharged at the port of destination) or landed damaged at ports is that of the Embarkation commandants at

ports who will deal with them form the time of initiation to the time of their final settlement.

As soon as a case of short landing or damage to an imported cargo becomes apparent, the Embarkation Commandant will at once make a formal application to the shipping companies calling for the Marine Survey the goods so as to assess the extent of loss/damage (Marine Surveys are conducted under the authority of the carriers by approved parties who record their observations in their report to the carriers). Marine surveys will beheld within the stipulated time limit (generally 3 days from the date of landing of the package and) claims against the Steamer Agents will be preferred within the prescribed time-limit (generally 1 year from the date of landing of the cargo), with all available supporting evidence and pursued till its final settlement or repudiation in accordance with the provision of Law.

A copy of the claim on account of stores shorthanded or damaged will be forwarded to the Controller of Defence Accounts in whose area the port is located for watching the progress of the claim. The amounts recovered from the shipping companies will be credited into the treasury on I.A.F.A. 507 (Military Receivable Orders) and the Treasury Receipts (triplicate copies of Military Receivable Orders, duly receipted by the Bank will be forwarded to the Controller of Defence Accounts concerned in whose area the post is located.

The Army Headquarters, New Delhi in consultation with the Ministry of Law and Ministry of Finance (Defence) will decide the question whether a legal action will be taken in a case or a claim will be dropped. The losses/damages discovered at the port of landing as also information on any claims preferred on the carrying companies will be endorsed on the relevant packing Accounts by the Embarkation Commandant concerned, to be transmitted to the transmitted to the consignee factories.

Procedure for submission of claims for stores imported from U.K./U.S.A. and the Continent under Bill of Landing received from the DGSW, London/USA.

According to the existing procedure claims for shorthanded or damaged stores in respect of shipments arranged by DGSW will be preferred on the Agents of the Shipping Companies in India for settlement. The following points will be carefully remembered while preferring claims against the Steamer Agents :-

i) That the claims will be at the Invoice rate i.e. C.I.F. cost.

ii) That in cases of shortages or losses in contents, claims will be lodged on the Steamer Agents irrespective of the tolerance, limits prescribed for claims against the suppliers.

iii) That in case of shortages damages to stores, proportionate customs duty will also be added.

iv) That claims will be submitted to the Steamer Agents within the prescribed time-limit.

Claims against the Suppliers Procedure to be followed:-

To ensure that the claims against the overseas suppliers for losses or damages due to their faults do not get time-barred, the consignee factories will checkup the contents of the packages immediately they are received from the post and forward at once a “discrepancy report” for shortages or damages detected to the Director General Ordnance Factories, Calcutta, with a copy to the purchasing Agency abroad DGSW London or I.S.M., Washington.

The discrepancy Report must be complete, precise and correct in all particulars, viz, quantity of stores found short/damages, value involved including the estimated cost of repair if repairable at the consignee’s end, and all such information that will be helpful to DGSW London to negotiate with suppliers for settlement of the claims, The reasons for damage/rejection of stores, including any manufacturing defects will be furnished in detail along with the conditions of packing noticed. It will also indicate whether replacement is necessary or not.

While preferring claims against the suppliers the tolerance limit as prescribed by the Depott of Supply will be adhered to where there is no prima-facie evidence of defective packing on the a part of the suppliers.

2) Time limit for submission of claims to the DGSW London.

i)	For shortages, damage etc.	6 months from the date of sailing of vessel.
ii)	For defects and faults in material work-manship,	As per terms of the contract including manufacture etc. warranty.

Limit up to which claims can be waived - - The discrepancies will be considered at trivial and need not be perused, if the total value does not exceed 15 dollars in the case of imports through India Supply Mission, Washington and 5 in respect of stores imported there DGSW, London. However, claims for the loss of vital components, which are quite essential for the running of the entire machinery/instruments, should always be preferred irrespective of the value involved.

Claims against the Port Trust – The Embarkation Commandant at ports are also responsible for preferring claims against the Port Trust Authorities on account of stores “landed but missing” or “found damaged” while in their custody. In cases of claims for stores “landed but missing”, wharfage charges and customs duty will invariably be added to the value of claim in addition to other charges, while in respect of damages, customs duty only will be added.

Despatch by Air :-

OFB have powers to authorize dispatch consignment by Air under certain circumstances upto Rs. 1.50 lakhs in freightage in each case. Limited powers for air dispatch are available to the General Mangers of VFJ and HVF also. As far as possible air-despatch should be arranged through Air India International.

2) Clearance of consignments by Air – freight - - a) The responsibility of clearing parcels received by Air freight is vested in the respective. Embarkation Commandant. The parcels will, therefore, be generally sent to the consignee C/O Embarkation Commandant/The Officer concerned.

3) The Embarkation Commandant ion receipt of the documents (Air – way Bill, Invoice etc.) will obtain the delivery order fro the Air Lines and thereafter will effect clearance in the normal procedure.

4) Clearance of Foreign Parcels by Air Mail/Sea Mail - - The parcels arriving in India from abroad by Post will be collected by the consignee concerned from the postal authorities after paying the customs duty and other charges in cash.

All claims logged against either the carrier of the supplies in respect of consignments received against central purchase should be reported to the concerned central purchase organisation also and their intervention sought, wherever necessary, for settlement of the claims.

Inspection by the consignee.

As already stated, the General conditions of contract continued in DGS&D-68 (Revised) provides for inspection of stores by the consignee on receipt at his end, and, if found no conforming to prescribed specification, rejection thereof by the consignee not withstanding acceptance accorded by the Concerned Inspecting Officer. The procedure to be followed for such inspection, rejection, final acceptance etc. has been enumerated at para …… of Chapter……

Bringing receipts to stock

Introduction:- These instructions relate to the receipt of stores and materials of various kinds from outside a factory. Only very few classes of receipts do not come within the purview of these instruction. These instructions are in application, and not in super session, of the instructions contained in Factory Accounting Rules and other basic regulations on the subject.

Use for Forms :- a) Without exception what over, all receipts handled by the Receipts Branch will be entered in accordance with the following instructions without delay on a Material Inward Slip, and whether or not the materials are to come to stock or deposit ledger charge. In addition, there will also be entered upon a Material

Inward Slip all materials which although not handled in the first pace on the arrival in the Factory by the Receipts Branch, are to come to stock or deposit ledger charge. There is no exception for miscellaneous receipts, such as machinery, medical stores, contingent stores or stores sent into a Factory on loan if an fact such materials are handled by the Receipts Branch.

(b) Other material, not handled at the outset by a Receipt Branch, such as material received by post, will be similarly entered on a Material Inward Slip on its being made over to the store holder's custody, if it is to come to stock or deposit ledger charge.

(c) There is therefore, an exemption for material from being entered on a material Inward Slip only if both (i) the material is not handled by Receipts Branch and (ii) the material is not to come to stock or deposit ledger charge.

Number and Dating :- (a) Material Inward Slip will be dated and numbered in the space provided therefore (in the top left hand corner) in a single series consisting of digits only, the use of more than one series running at any one time being prohibited. Although GMs are at liberty should they wish to commence the series afresh at the commencement of each financial year, this need not be done and the series need only be started afresh when it has reached its defined end. In this connection a series will not be of more than five digits running from 1 to 99,999. The schemes of repeating only at the end of a series is recommended since under such a scheme, except for old M.I. the end of a series is recommended since under such a scheme, except for old M.I. Slip, they are defined by serial number along without necessity for quoting date as well.

(b) The date associated with the serial number and entered on the M.I. Slip will, without any exception other than that dealt with in para 3(3), be the actual date of arrival of the material in the factory. This date will not be the date of making out the M.I. Slip of that date is not the same as the date of arrival of the material.

(c) Material Inward Slips will ordinarily be mad out, numbered and dated on the same day as the arrived of the material, it being borne in mind that this applies to the entry of a brief description, for example in some instances a description or note of packages, in any case where the entry of full particulars must await further examination. Only in absolutely unavoidable cases will the Material Inward Slips not be made out, numbered and dated as described above with at least a brief description or note of the consignment on the day of receipt of the material.

(d) If there is any minor difficulty in keeping these numbers and the dates in the same sequence, the dates override the serial numbers, the rule being absolute that the date must represent the actual date of arrival of the material in the factory, where the exception mentioned does not operate.

(e) When Material, such as material by post, is not at the outset handled by Receipt Branch but because it is to come on stock or deposit ledger charge, is made over to the Store holder, it will have a M.I. Slip made out for it at that stage, the date of the M.I. Slip being entered accordingly and without reference to actual date of arrival of the material in the Factory.

Number of copies to be prepared :- (a) the number of copies to be prepared will be according to local requirements.

(b) Although the entries in columns 2,3,4 & 5 serial number and date and transportation particulars will be the same in all the copies prepared, it will not necessarily be the case that entries subsequently made in the form, on its front or on its reverse side, will appear on all the copies of the form in existence.

(c) Among the copies prepared will be one which will be retained permanently by Receipts Branch and which will not any stage leave that Branch. Whatever registers may be maintained in connection with receipt, such as register of railway wagons, or of railway receipts the maintenance of a register of Material Inward Slips is prohibited, in view of the fact that the Receipts Branch will have permanently in their possession one copy of each M.I. Slip prepared.

(d) These Receipts Branch copies will, immediately on being made out, be pasted into a guard file. The M.I. Slips in that file will be in serial number order, without reference to order of dates, if different. Blanks number in the serial numbering will not be allowed to exist except for compelling reasons and in the case of blank numbers a sheet will appear in the file, in its appropriate place, bearing the number and an explanation of the circumstances.

Responsibility for entries :- (a) On initial preparation of the Material Inward Slip, it will be the responsibility of the Receipts Branch to make the appropriate entries in the spaces for :

i) Number as an M.I. Slip and date of arrival of stores.

ii) Reference to Suppliers Invoice, bill, voucher etc., if known

iii) Supplier or Consignor and particulars of Acceptance of Tender, Supply Order etc., so far as known.

iv) Transportation particulars in respect of whole consignment (i.e. Railway Receipts and/or Wagon No. note No., No. of Packages, Weight, Railway charge, etc.) so far as known.

v) Nos. and dates of all M.I. Slips pertaining to the above transportation particulars.

vi) Column 2. At least a brief description or note of packages of consignment if the full description of the material or articles cannot at that stage be given.

vii) Column 3. Unit in words if it is possible to make these entries at that stage.

viii) Column 4. Unit in by code.

ix) Column 5. Found on Receipt, if it is possible to enter this at that stage.

(b) Whether or not other signatures or initials, with date, appear at this stage or subsequently in the space headed “Receipts Branch” there will be, at this stage in that space, one such signature or initials in token of the M.I. Slip having been prepared and serially numbered, even though further particulars of receipts have subsequently to be added to make it complete. The Storeholders will arrange for and designate one or more individuals to perform this definite function.

(c) The G.M. and Accounts Officer may mutually arrange for any desirable variation, to meet local needs, as to the parties responsible for making further entries in the various columns of the Material Inward Slip. In the absence of any special arrangement the responsibilities will be as follows:

The Storeholder will arrange that staff under his control makes an entry, in those cases where appropriate, in column 1: where appropriate, number and dates of the M.I. Slip as a Stock or other (e.g. Deposit or Nominal) Receipt Voucher; where appropriate, enter in the space provided the reference to any Discrepancy voucher made out initially to adjust a discrepancy found on receipt; and to the extent possible, supply omissions in the particulars earlier arrangements that a Factory Inspection Authority makes the required entries in column 6 and 7 for quantities said to be accepted and/or rejected. If some other local authority other than a Factory Inspection Authority is concerned with inspection, his entries will be on the reverse of the form.

(d) The order in which these various steps will be taken vary from Factory, to Factory being dependent upon local conditions, and further may vary for different categories of material received. The Storeholder will also make suitable arrangements for the disposal of those material Inward Slips with which he is not further directly concerned by reason that the stores on them are not to come to the stock or deposit ledger.

(e) The Accounts Officer will be responsible for causing entries to be made by his staff in column 8, 9 and 11 and in the heading of column 11 should delete on or the other of “provisional” or “final” as description of

the Total Value, it being understood that a value being described as final means that is final so far as is known at the time.

(f) An entry of fundamental importance is that in column 10 for “Total quantity to be brought of change”. The arrangements for making the entry in this column will be the responsibility of the Storeholder. The principles governing to the category of receipt.

(i) Direct Purchase - - The quantity in column 10 will be the same as that entered and column 6 - - Accepted. In the case of a deficiency, the entry in column 5 should be the quantity found on receipt by the factory. The actual quantity accepted after inspection should be entered in column 6. The quantity in column 10 should be the total quantity as vouchered minus the quantity found discrepant, both entries being linked up with the respective documents quoted on the top left of the M.I. Slip.

(ii) Central Purchases with the contract specifying inspection at destination or at the Supplier’s works by the G.M. or his representative. The arrangements here are the same as in the case of Direct Purchases. The quantity in column 10 will be the same that entered in column 6 - - Accepted.

(iii) Central Purchases with the contract specifying inspection by an independent Inspector and the Factory not seeking to alter the Inspector’s sentence. The quantity in column 10 will be the quantity passed by the inspector and dispatched by the supplier.

(iv) Central Purchases with the contract specifying inspection by an independent inspector and the Inspector’s sentence being questioned by the G.M. In all such cases the decision whether to pursue the question should be taken normally by the G.M. personally, if delegated, will be delegated to an officer not lower than a Works Manager. In these cases Factory Inspection Authorities should enter in columns 6 & 7 there sluts of examination according to their judgment. The cases fall into two categories:

1) The G.M. deciding not to pursue the question of challenging the independent Inspector’s sentence. The action is an in Sub-clause (iii) notwithstanding that different figures appear in column 6 & 7.

2) The G.M. deciding to challenge the independent Inspector’s sentence. This should be done by making the appropriate reduction in payment to the contractor (even a reduction of the total amount due to him) in the prescribed form of receipt certificates for Central Purchases. In these case any quantities in the consignment not affected by the dispute will be entered in column 10 but if the whole consignment not affected by the dispute, no entry will be made in column 10 of the Material Inward Slip, which will be kept in suspense until rejected stores are returned or

disposed of, when it closes short as an M.I. Slip and Inspection Report only.

v) Receipts from other Ordnance or Clothing Factories – The entries of quantities in column 10 will be governed entirely by the provisions in Section V, “Discrepancies” sub-section III, “Inter-Factory Transfers”. In general, the reply of the consignor factory to the Discrepancy Report issued in cases of discrepancies will have to be awaited or, if no reply is received within one month, action taken on the assumption that a reply to the discrepancy report has been received disclaiming responsibility for the discrepancy. The exceptions are generally in cases where material as found on receipt has to be brought on charge immediately because it is required for immediate use. Where no documents from the consignor factory are available at the time of receipt of stores they will be brought on charge, as found (in accordance with already existing instructions) and any discrepancy late coming to light dealt with independently and without reference to he disposal and posting of the Material Inward Slip if it is of the Kind which has to be posted in the stock or deposit ledger.

vi) Receipts from Military Departments :- The quantity to be entered in column 10 is the quantity (as well as the condition) as vouchered by the consignor, except in the case of stores which are to come on the deposit ledger when the condition will not necessarily be the same as vouchered by the consignor, adjustment of discrepancies to make the ledger show from the outset the actual position at the consigner factory, will be carried out under the ordinary rules therefore. If the consignors documents are not available at the time of receipt of stores, they will be brought on charge as found and action in connection with any discrepancy later coming to light will be dealt with independently and without reference to the disposal and positing of the Material Inward Slip if it is of the king which has to be posted in the stock or deposit ledger.

vii) Receipts from Non-Military Government Departments and Public Bodies. The quantity (and condition) to be entered in column 0 will be that found on receipt. If in connection with discrepancies a General Manager, after correspondence or negotiation, is eventually forced to accept the consignor’s vouching of material, the discrepancies will be dealt with and adjusted as a transaction independent of and separate from disposal of the Material Inward Slip. That is to say, the disposal and posting of the Material Inward Slip is in no way delayed by final settlement of such disputes.

viii) Receipts from Overseas :- These fall into two classes.

1) Where there is no evidence that the quantities and/or condition of material found are different from those existing when the material was unloaded from a ship or aircraft and came into the hands of a clearing agency. In such cases the quantity to be entered in column 10 is the

quantity (and condition) as found on receipt. Reports of any discrepancies in relation to consignor's documents will be made in accordance with instructions as a matter separate from disposal of Material Inward Slip.

2) Where there is evidence that the quantities and/or conditions of material found are different from those existing when the material was unloaded from a slip or aircraft and came into the hands of a clearing agency. In such a case the quantity (and condition to be entered in column 10 will be the quantity which according to the evidence of documents was unloaded from the slip or aircraft. The discrepancy resulting will be dealt with as a matter separate from disposal of Material Inward Slip in accordance with the principle of sub-paras. (vi) and (vii) above and in relation to whether the Shipping/Clearing Agency is a military or non-military Government department or a commercial firm.

Signature or Initials – (a) All signatures or institutes will be dated, the significance of all the essential signatures or initials appearing on the M.I. Slip is as follows:-

1) In the space headed Receipts Branch, whatever other signature or initials may appear there under local arrangements will be one of an individual, from one or more detailed for the purpose in accordance with entered upon the form after it has been prepared, numbered and dated, in token that all the essential steps of preparation of the form have been completed.

2) Inspection signature or counter signature:- This will always be a signature not initials of a member of the factory staff from one or more individuals nominated for the purpose in Factory Orders. It should be observed that he is signing the form for General Manager. The signature means that the individual is satisfied that all inspection action required to be taken has been taken and that the entries on the form as to condition of material and quantities in columns 6 & 7 are in accordance with the results of that inspection action.

3) In many case inspection action will have been completed before the material reaches the factory. In such case the inspection countersignature means the individual signing is satisfied from examination of other documents that everything required that regard has been done and again, as always that entries on the M.I. Slip as to conditions and quantities in columns 6 and 7 are in conformity. In some cases, local rules for particular categories of material may required a local examination even though a formal inspection has previously been done. In such cases the countersignature attest that the requirements of these local rules have been met; and if the local inspection given results different from the earlier formal inspection these different results may, nevertheless, be entered in columns 6 and 7 or as remarks regarding condition in column 2. But whether these different results are

conclusive or whether, for instance they govern quantities to be entered in col. 10 depends on circumstances as explained elsewhere.

b) Where local rules require certain classes of receipts to be inspected at the Factory by T.D. Establishment, the T.D. Establishment will be requested to confine the whole of the their entries to the reverse side of the M.I. Slip form, all of which reverse side is available for local inspection entries including, possibly, lengthy details. The final results of T.D. Establishment inspection would, by factory staff, be entered on the front of the form in columns 6 & 7 and vouched by the Inspection Countersignature on the front of the form. Inspections personnel, should make their entries on the M.I. Slip form in the Stores Receipt Branch wherever practicable, and arrangements for the should be made accordingly.

c) The reverse side of the M.I. Slip form dealing with details of inspection results, need not necessarily be filled up on the copies of the M.I Slip from in use. In certain instances, a formal inspection having been carried to previously, this reverse side of the form will not be required for sue at all.

d) With a view to possible saving of time in passing from Branch to Branch to be dealt with, G.M. should detail a member of the Stores staff, not lower than a Storeholder, as one of those authorized to give an inspection countersignature, defining the class of receipts for which a Storeholder can so act. The class of receipts would be confined to that where both formal inspection has been carried out earlier and by local rule no further examination locally on receipt is needed and, in consequence, only check of documents relating to earlier inspection is required. In cases of incoming stores which have not been previously inspected and are to be inspected by factories won Inspection Staff, the signature should be of an officer not below the rank of a Foreman. If the G.M. considers it necessary or desirable, on the basis of the value of the incoming stores, he may nominate Gazetted Officers of lessor or higher rank, as appropriate, at his discretion of the purpose.

e) The inspection countersignature cannot be placed on the form until inspection of the whole consignment has been completed.

f) Certificate of bringing on charge in a ledger :- The signature here (it will not be initials) if “for G.M. and is the ordinary certifying signature required to appear on regular accounting vouchers of various king. It will be subject to any general rules in force in that regard.

g) Godownkeeper’s signature or initials :- These will attest the taking on charge by the godownkeeper, or other person acting as godownkeeper, and the appended date will be the actual date when the stores move into the godownkeeper’s custody, or the completion date for the process when on account of bulk of material the process is spread over more than one day. This signature or initial cannot be

entered on the form, nor material be received by a godownkeeper into his charge, until the inspection countersignature has been placed on the M.I. Slip.

h) The quantity brought on charge and entered on a bind card by a godownkeeper will invariably be the actual quantity he receives which would be found entered on the M.I. Slip in column 6. This will not necessarily always be the same as entered in column 10 on account of the special rules for dealing with discrepancies when posting the stock ledger.

i) The spaces against the three headings 'Priced by', 'Checked by' and 'Posted by' are available for the Accounts Officer in dealing with M.I. Slip in his office.

Miscellaneous Previsions:- (a) Release of locally inspected material by installments. If on account of urgency of need for material it is necessary to release inspected material by installments, the quantities released will in each installment be entered separately in column 6 and the signature of a countersigning inspection authority placed against each such installment quantity so entered. This will enable a godownkeeper to take that quantity on charge in a bin card.

(b) If the urgently required material has in practice to be issued direct from the Receipts Branch to a Demanding Section, this issue will be made to the Section representative in the presence of the godownkeeper concerned. To the godownkeeper at that time will be made available, to see, a copy of the M.I. Slip bearing the necessary entry and inspection countersignature permitting the release of material together with the necessary demand note for the issue. The godownkeeper will pose in his bin card the receipt and issue of the same quantity of material simultaneously.

(c) A godownkeeper will in such cases post in bin cards installment quantities from M.I. Slip in accordance with general orders governing posting installment quantities from documents of any kind, e.g. from demand note, and at the time of posting will place his initials against the installment quantity on the M.I. Slip. Demand Notes, in such case, will be help up from being sent to the Accounts Branch for posting until the fully completed M.I. Slip can be sent for posting. Neither the countersigning will place their respective signatures in the usual places provided for them on the M.I. Slip until the inspection action is completed.

(d) Modification of description:- If a local inspecting authority considers that material which otherwise would be rejected might be accepted with a modified description or nomenclature, e.g. material purporting to be "serviceable" is acceptable as "repairable" or, to be acceptable, requires its nomenclature to be modified or amended, he will confine has remarks on such points or proposals entirely to the reverse side of the M.I. Slip form. The final settlement of whether such

material shall be taken on charge involves questions of provision and resets not with inspection but with other authorities who will make the necessary entries on the front of the M.I. Slip form, in columns 6 & 7 for quantities and in column 2 for descriptions. Any addition by was of modification to the entries in column 2 regarding description will be attested by the signature or initials of the individual making it.

(e) Example of cases where, in connection with M.I. Slips which have previously been sent to the Accounts Branch for posting, supplementary quantities have subsequently to the brought on charge are.

(i) There is a dispute about a portion of the quantities on a M.I. Slip (if the whole quantity is in dispute the M.I. Slip would not be sent to the Accounts Branch for posting until the dispute is resolved). Later, on settlement of the question, supplementary quantities may have to be brought on charge.

(ii) As the material is received, consignors documents are not available. Later, on receipt of such documents and as a result of accounting rules, it may be necessary to being supplementary quantities on charge.

(f) In such cases the supplementary quantities will be brought on charge on a voucher in form I.A.F.Z. – 2009 or any other form of general voucher in use, satisfactorily linked or referenced to the original M.I. Slip to which it relates, and bearing there on a specific written order signed by a Competent Authority detailed by the G.M. that the material is to be brought on charge by a godownkeeper on bin cards. The reason for the special order to be recorded in these cases in that the general order to godownkeeper's is that they are not empowered to take stock or deposit material (from outside the factory) on to bin cards excepts on a Material Inward Slip form bearing the necessary authenticating signatures.

(g) The rule will be that a Material Inward slip which has once been passed to be Accounts Branch for posting cannot again be used for supplementary quantities and that in connection with such supplementary quantities no further Material Inward Slip can be made out if it does no relate to the actual movement of material into a factory.

(h) For the purpose of these provisions the term 'GM' will include the Officer in-Charge of a factory, however he may be designated and the term 'Godownkeeper will include any individual performing a godownkeeper functions.

(i) Serial numbers and date and stock or other voucher numbers and date will be entered under and not to the right hand side of the words "No." and "Date" printed on the M.I. Slip form.

(j) Material Inward Slip will be the only document from which posting is to be made in a ledger in the case of material which is to come on stock or deposit ledger charge. In other cases, e.g. machinery, etc., a voucher on form I.A.F.Z. – 2096 or other form of general voucher is use, will be made out for posting in Block register, etc. Apart from other consideration an adequate description or nomenclature in such cases is frequently lengthy and could not easily be dealt with except on an ordinary voucher from, providing adequate space.

(k) The footnote to the M.I. Slip form with regard to not entering on the form more than one item with its packages, will apply in its full rigidity only to material which is to come on stock and deposit ledger charge. In other cases such as machinery or medical stores, the entries for which on M.I. Slip usually relate to packages rather than to their detailed contents, the number of packages received at one time may be all entered together, as convenient, provided sufficient particulars to identify them individually are entered on M.I. Slip to facilitate their check with the Receipt Vouchers prepared in addition, for posting in Block Register, etc.

(l) In a number of cases special terms and conditions regarding inspection and acceptance of stores are included by the D.G.S. & D. Organisation in the Acceptance of Tender. On receipt of stores in Factories and before undertaking inspection for final acceptance, factory Works Inspection Office should study the terms and conditions of the Acceptance of Tender, a copy of which should be attached by the Store-holder to M.I. Slip drawing the attention of Works Inspection Officer to the respect of Local Purchase Supply Orders placed by the Factories direct.

As delay in inspection will ultimately result in loss to the state in most cases, inspection of all stores received in the Factories from any source should be carried out within 14 days or with the least possible delay.

Ordnance Factories are manufacturing from a pin to a Tank. Effective Store keeping is playing vital role in manufacturing store in the Ordnance factories.

Desired degree of provide at minimum ultimate cost can be made available to the production/service shops by effective control of stores (know as inventory Control) taking following points into the consideration.

1. SYSTEMATIC LOCATION
2. STORAGE
3. RECORDING

Min Record of stores in stores. Section is maintained through bin Cards, another record is maintained jointly by Provision Section and Accounts in knows as STORE – CUM – PROVISION LEDGER.

According to the various function involved, Main Store is divided into the following units.

1. RECEIPT GROUP
2. STOCK ISSUE

FUNCTION OF RECEIPT GROUP

The receipt group as responsible to receive a material intended for the factory against proper authority such as Firms Challan, Invoice Railway Receipt (RR), Issue Voucher, Registered post Parcel, Value Payable Post (VPP) etc. The stores one receipts, are carefully checked up by counting, measuring or weighting, as the case may be by this group. On receipt of material, MIS (Material Inward Slip) are prepared in five copies within 24 hours which are forwarded to WI (words Inspection alongwith stores for inspection to accounting specification and quality as manipulated in the supply order.

On receipt back of MIS from WI after inspection (if the full quantity is accepted) receipt voucher number is to be allotted on MIS and sent to stock for taking material on Bin Cards i.e. stock charge) The receipt Data Processing Section/Provision Section.

If there is any rejection on the MIS after inspection, Discrepancy report (DR) should be raised on the consigner factory in the Form No. IAFZ 3045 within one month from the date of receipt of consignment. This reports (DR) are prepared in six copies – tow copies for consigner factory/depot one copy for consignment A.O. one copy for L.A.O., one copy for local planning office and the rest for office records.

Material in dispute will only be returned at the consigner's specific request/agreement, in the absence of such agreement it will be retained by the consignee. It will be used if useable, otherwise it is to be disposed in the usual manner.

Authority for Accepting material All material are to be accepted based on:

I. LOCAL PURCHASE

II. CENTRAL PURCHASE

III. FOREIGN PURCHASE

IV. CASH PURCHASE,

V. ONE TIME BUY (OTB)

VI. INDENT ETC.,

PLACE OF COLLECTION :-

Collection of stores is made by Receipt Group Generally form

a. Local items against supply order.

b. Ordnance Depot/A.S.C. (Army supply against demand/indent.)

c. Sister Ordnance Fys., against I.F.D.

d. Govt. Store, Govt. Stationery Office against Demand/Indent.

e. Railway yard/Godown/Station.

f. Embarkation Hqrs. Incase of stores shipped by foreign supplier.

MI Slips are prepared in five copies, the distribution of which is as following:-

a. One copy for office record,

b. One copy for record on WT

c. Two as plan for ammunition of flow

d. One copy for p section payment.

The following service of receipt voucher are allotted to MIS after inspection depending upon categories of stores. Hence for the MI slip will be renamed as Receipt Voucher.

"S" Denotes serviceable item
"M" Denotes machinery items
"R" Denotes reserve stock
"H" Denotes nominal transactions

REGISTERS MAINTAINED : For proper functioning the following registers are maintained in the Receipt Branch.

i. RR/PWB (Parcel way Bill) Register

ii. Wagon Register

iii. Central record for incoming stores

iv. Discrepancy Register

v. Claim Register

vi. Receipt Voucher/Guard File

vii. Book for incoming and outgoing papers

Stop Payment to supplier on the spot can be made only after inspection and acceptance of stores by the authorized inspection.

ONE TIME BUY : The stores of non-recurring nature are purchased as one time buy. These stores procured against transit ledger should not be taken on tock charge.

PROCEDURE OF CLAIM TO RAILWAYS : As for DGOF's instruction the following procedures are adopted in claiming compensation in case of consignment booked under the IWB/RR by the firms/factories etc.

a. Notice of informal claim should be served to Rlys (Chief) Commercial supdt. /(G.H.) copy endorsing to the consigner in case of non arrival of stores within 30 days from the date of booking.

b. Notices Formal claim (Monetary claim) should be made within 90 days from the date of booking in case of non-arrival of the consignment.

c. No claim shall be entertained by the Rlys., if the claimant fails to submit his claim within 6 months from the date of booking.

d. No claim can be made from the Rlys. if the value of the lost stores does not exceed Rs. 25/-.

e. If any packet/case/drum is found in damaged, broken or in doubtful condition at the time of collection of the same the consignee if the quantity is found short on joint survey.

f. Reports of damage/shortage of store after opening of the case should be intimated to the consigner within 30 days from the date of receipt of stores.

On the basis of "Short Certificate" consignee factory should survey on informal notice of claim and after receiving the assumed values survey from L.A.O.

g. Ledger should an maintained by trained staff who are well aware of the financial aspects of the transaction for which the ledgers are kept.

C. INVENTORY OF STORES

a. Annual inventory though stock verification Group once a year between 1-4 to 31/3 and preparation of SV sheets to this effect for valuation.

b. Perpetual inventory of stores – Whenever any receipt or issue is made the BCB (Bin Card Balance) after postings available after that posting. This will be called perpetual inventory – i.e. to reflect the stock at any item after every transaction.

c. Departmental verification by senior staff.

d. Surprise check of any item by Orderly Officer/Manager/GM or any one depute by them.

e. Inventory is the means of verification of physical stock and Inventory Control is the means of regulating the stocks in terms of value and to control the cost so as to recycle the money as many times as possible during the financial year to avoid idle capital/dead capital.

INVENTORY CONTROL METHODS

i EOQ (Economic ordering quantity) to avoid overstocking/idle capital.

ii. Phased supplies to spread over certain period to avoid overstocking/idle capital and to conserve storage space.

iii. Control charts by the respective material control/Production control Departments to picture out the correct position of stocks/dues in with deltas.

iv. Control charts by the respective material control/production control Departments to picture out the correct position of stocks/dues in with dates.

v. Release of correct qty of material for each job against each work order and warrant.

D. COSTING

Costing is one part of stores accounting so far as the production items are concerned. For this purpose the ledger called “Priced production Ledger” is employed with the help of cost cards. Cost cards will show the materials used and the labour used. Besides material cost, labour cost, over head charges like fixed overhead and variable overheads are also charged to make up or arrive at the cost of the product i.e. item produced at the Factory.

E. DISPOSAL

Disposal is also a part of Stores accounting so is to * costs to the maximum extent to possible Disposal shall be as under :-

a. Disposal of surplus and products at premiums (Discount Sales).

b. Disposal of raw materials used as well as unused to avoid over stocking/idle capital.

c. Disposal of scrap by open tender or Public Action periodically.

d. Disposal of material to sister units as stop gap arrangements only to re-call it any time as the need arrives.

e. Disposal of products at concession to employees as incentive.

f. Retrieval of useful parts or salvage of useful parts that could be re-used and the balance may be disposal of by any one of the methods stead above account of units.

CODE FOR UNIT ACCOUNTING

UNIT	CODE NO.	UNIT	CODE NO.
MILLIMETER	01	PAIR	41
CENTIMETER	02	DOZEN	42
DECIMETER	03	GROSS	43
METER	04	SHEET	50
SQ. MILLIMETER	11	QUIRE	51
SQ. DECIMETER	13	REAM (50 PCS)	52
SQ. METER	14	BOTTLE	60
SQ. CENTIMETER	12	PACKET	61
CU. CENTIMETER	22	BAG	62
CU. MILLIMETER	21	TIN	63
CU. METER	24	BOX	64
CU. DECIMETERS	23	CARTON	65
LITRE	25	SKEIN (QTY OF YARN)	70
HECTOLITRE	27	REEL	71
CENTIGRAM	32	ROLL	72
GRAM	34	CALORIE	73
DECIGRAM	35	MEASURE	75
HECTOGRAM	36	BAR	77
KILOGRAM	37	SET	78
METRIC TONNE	38	LOT	79
NUMBER	40	WHOLE JOB	80

DISPOSAL OF STORES

Disposal of Stores is a complex job by itself. The purpose behind the whole concept being to retrieve as much money (Value) as possible for the surplus stores, to the best advantage of the State and at the same time follow the norms stipulated by the state for such disposal.

Detailed instructions to be followed by all concerned in case of disposal of samples stores are contained in circular 212/2/MM dated 15th June 1981 of DGOF, 6 Esplande East. Calcutta – 700 060. However guideline for information of the dealing assistance, the following may be noted and action taken as per the DGOF Circular of 15.06.81 cited above.

CAUSE FOR THE STORES BEING DECLARED SURPLUS

a. OVT Provisioning of stores and non moving of stores.

b. Slow drawl of stores by the user shops.

c. Stores held in stock beyond shelf life.

d. Stores being declared obsolete due to revision of drawings/functions etc.

e. Cut in the production programme.

f. Accommodation of Stores, especially the scrap material which are the bye products of the production program.

g. Inability of the Factory/Unit to utilize the existing Stocks.

h. Replacement of worn out machinery stores.

WAY AND MEANS OF DISPOSAL OF SURPLUS STORES

i. By Mutual Aid – In such cases, circular of surplus stores with all details to all the Factories and priority indentors as listed in the DGOF Circular.

ii. By Public Auction through an approved/authorized Govt. actioner at site.

iii. By calling open Tender by advertising in local dailies.

iv. By negotiated limited sales agreement with know parties.

v. Through DGS&D and through the local DGS & D offices located near the Factory/Unit in case of capital items and high value items beyond the value of Rs. 10,000/-.

vi. Destroying by burning, such of those classified and Top Secret stores, but under the direct supervision of a board of officers approved/appointed by the state.

CLASSIFICATION SURPLUS STORES

1. Standard stores that could be used by all. For E.g. M.S. Plates/Sheets/Bars, Blooms, Billets, Mild Structural materials like MS Angles, Channels, I - Beams etc. special Steel Materials, Stainless Steel, Bronze Brass, and Aluminium Materials.

2. Standard machine Tools, like Lathe, Milling, broaching Drilling, Centralis Grinder, and Tool Grinders etc.

3. Standard Misc. items like Ele. Bulbs, Cables, Cloth, Unused Timber Oils, paints, Cement etc. of consumable nature.

4. Special stores such of the stores procured specifically against specific production requirements which are peculiar only to such production job and which cannot be used by others. This can also be said as non-standard items the usage of which is restricted to certain production only.

5. Scrap materials like steel turnings and borings Scrap HM Alloy Scrap (steel), Brass, Bronze. Aluminium, Nisc Scrap used oils, used Timber, used barrels, jerricans etc.

6. By General Condition of Stores such as;

   A. SERVICEABLE
   B. REPAIRABLE
   C. UNUSABLE
   D. DOUBTFUL

FIXING OF THE PRICE FOR DISPOSAL

Normally while fixing the reserve price for the Action, for negotiated sales. Sales to priority indentors, the last Auction price shall be taken in to consideration. Alo the book value of the items shall be taken in to consideration. The GMs of Factories in liaison with the local Accounts Officers can fix the price for such stores subject to the limitations specified in DGOF's circular from time to time. In case of dispute between the GM and the Accts. In fixing of the prices, the matter shall be refereed to DGOF.

A. STORE KEEPING

a. Basic documents involved in Stores Accounting are :-

   i. MIS/Inspection report/Receipt voucher for items received through Receipts Bonds.

   ii. Return Notes from shops.

   iii. Inspection report for HVF manufactured items.

   iv. Demand Notes.

   v. Civs/Crvs.

b. The Bin Cards will contain the LF No, Nomenclature Accounting Unit, Location, Minimum level, Danger level and Maximum levels as well to guide the material Division of the inventory Central. Min level, danger level, and maximum levels will be given by the respective material divisions for endorsement on the Bon Card.

c. Basically the stores are classified and codified into convenient Groups blocks for accounting purpose.

d. Once the stores are received, they are binned and vis cleared to all concerned with the “bin Card Balance” after that posting.

e. Care and custody of stores is also part of store keeping hence periodical preservatives, turnover, issue of first in first out is also part of this duty.

f. Bulk – handling of stores.

Where there is bulk of stores involved, a percentage 10% or 20% will be physically verified for Qty/Quality and on the basis of test certificate/I. Note, the data obtained in the percentage check will be utilized to clear the bulk of stores while under receipt or under issue.

B. LEDGER KEEPING

a. Basic documents involved in ledger keeping are :-

i. The receipt voucher.

ii. The supply order.

iii. Return notes

iv. Inspection Notes

v. Issue vouchers

vi. Demand notes

vii. CIVS/VRVs

viii. Transfer Vouchers.

b. Ledger sheet which will contain Nomenclature, LF no A/U/Code, Qty. Unit Cost, Total value Source of receipt, to whom issued, work order no warrant no etc and the balance at any one time in qty and value.

c. Ledger sheet is the basic record from which the value is taken and the balance sheet, Profit and loss statements are also prepared. This is very important document maintained by the accounts and will contain all the information required for any transaction whether “receipt” or Issue”.

ACCOUNTING OF STORES

Accounting stores accounting has five distinct functions such as :-

i. Store Keeping.

ii. Ledger Keeping.

iii. Inventory Control.

iv. Costing.

v. Disposal.

STORES ACCOUNTING

RESPONSIBILITY

STORE KEEPING	DREDGER KEEPING	INVENTORY CONTORL
NUMBERICAL ACCOUNTING	FINANCIAL ACCOUNTING	EOQ/PHASED SUPPLIES
BY STORES DIV	BY ACCOUNTS	MY MATERIAL DIV
COSTING		DISPOSAL
NUMBERICAL ACCOUNTING		REALISATION OF RESIDUAL COST OF MATL
PRICED PROD LEDGERS		LEDGERS
BY ACCOUNTS		BY PUBLIC ACTIONS AND OPEN TENDERS JOINTLY BY MANAGEMENT AND ACCOUNTS.

ISSUE OF STORES

GENERAL PROCEDURE :

The ultimate aim of any production unit is “Delivery of goods to the consumers or the concerned at the right time, at right place the right material as efficiently and as quickly ad possible. This is the cases with all the Ordnance Factories in Delivering the goods the Defence Forces/Defence Det. It is the quantum of the Goods delivered

(Issued) that is recognized in the overall performance of the Factory. Hence “Issue of Stores” is a very important function of Ordnance Factories and to effect the ISSUES, certain norms are laid down which are evolved by experience and commonsense.

(A) NORMS OF ISSUE

i. An indent from the Army, a demand from other Factories a requisition from other units or firms specifically indicating the requirements and delivery schedules.

ii. Acceptance of the indent/demand/requisition and proceeding the for production by release of work order on shops and advice to stores on the made of dispatch and schedule of dispatch. This will be the authority for issue.

iii. Release of material/stores for issue against specific work orders. Besides authority for issue a release from PC/MC/PV is essential in all cases to provide required materials.

iv. Release of material/stores for issue against specific workorders. Besides authority for issue a release from PC/MC/PV is essential in all cases to provide required materials.

v. Quality assurance by an independent inspection authority for having inspected the stores as per specifications and passing the same as “serviceable for immediate use.

vi. Preparation of Issue documents like Issue Vrs, packing notes, forwarding notes, export documents etc. as case may be.

vii. Packing of stores as per specifications.

viii. Despatch of stores as per the authority, as per made of dispatch advised, Freight paid or To Pay.

ix. Despatch documents to all concerned in time to clear the consignment and also release the Issue Vouchers with all dispatch details to PC/PV/Accounts.

B. ADJUSTMENT OF THE COST OF STORES ISSUED

i. “P” Vouchers Ordnance Factories by book debit.

ii. “S” Vouchers on other units/Estt by book debit voucher cash.

iii. “NI” Vouchers Watch kept for accounting at both the ends.

iv. “NM” Vouchers Nominal Check only without any financial implications.

C. PREPARATION OF DOCUMENTS RELATING TO ISSUE OF MATERIAL

A. AUTHORITY FOR ISSUE OF MATERIAL

i. Extract of workorder.

ii. Letter authorizing the issue, method of packing mode of transportation and whether Freight paid or To Pay.

iii. Release order/letter from PC/Malt Control/PV stating specifically that the material can be issued against the authority given.

iv. Inspection report from the independent Inspector or works Inspection as the case may be.

v. Examination order in respect of stock items.

B. PREPARATION OF ISSUE VOUCHERS.

Having received the documents cited above and having decided the type of issue involved, the IVr will be prepared on IAFZ-2096 (Specimen enclosed). The Issue Voucher will contain the following information IVr No an Date, the consignee – Name and full address authority for issue. Inspection Note no and date consigned reference LF No. if any, nomenclature, Qty, in figure and words, as brief as to why issued and how issued packing details and dispatch details. The issue voucher will be aligned by unofficial not less that the rank of store Holder or Asst. manager.

In case of “P” Vrs demand note for the stores also will be released by the PC/MC PV which will be signed and delivered at the Stock Godowns. The Stores will then be collected an labeled and sent to Issue Bond Packing Area.

In case pf stock items the items will be collected against the issue voucher at the respective stock godowns labeled and sent to Issue Bond packing Area. The same applies to Nominal Loan and Nominal Issues also.

Development of procedures for – communication, co-ordination (between material control, engineering, production control, provisioning/purchasing receiving, inspection and other related functions.

7. DEVELOPMENT OF BUDGETING AND MANAGEMENT STANDARDS.

Organizational set up to cover the various functions depends on the situation. It is usually good practice to separate units concerned with physical custody of materials from record keeping and to divide the record keeping functions.

In Ordnance Factories, the following units/sections are concerned with material management:-

MCO
PROVISION
STORES
DATA PROCESSING
ACCOUNTING
PLANNING BUDGET

A person concerned with material management may have a fair knowledge in the following :-

1. Inventory control

2. Data processing

3. Accounting and Budgeting

4. Material and material Handling

5. Care & Custody of materials

6. Various procedures rules/regulating connected with procurement/ provisioning purchases etc. and connected matters.

7. Organisational set up of each function.

8. Various documents connected with Storage receipt, custody, issue, layout disposal, insurance etc. and

9. Obsolescence and deterioration.

FUNCTION OF MCO

1. To take timely action for ensuring that no bottleneck exists.

2. Receiving indents and purchase requisition from the demand sections and keep record thereof.

3. Asking for justification for abnormal increase in consumption, new requirements, proprietary items.

4. Receiving requirements of all direct items as per load target.

5. Reviewing requirements of all consumable (regularly), indirect items based upon the part 18 months, requirements.

6. Checking of Indents/requisitions to be in order.

7. Preparation of SHIS and keeping record thereof and handling over of SHI to PV for further action.

8. Security of quotation received and recommendation, thereof, after getting clarifications required.

9. Posting of S.O. in ledger.

10. Opening/Closing of Ledger folios.

11. Vetting indents, IFD's Pls and SOs.

12. Variety reduction.

13. Mutual aid schemes.

14. Disposal.

15. DPs functions.

16. Correspondence and Liaison with outside inspection authorities.

17. To efficiently control Inventory Holdings.

18. Releasing of material warrants giving availability/non availability.

The Following steps are for purchasing any material :

1. Raising of Indent/Requisition.

2. Checking the availability and preparation of SHIS.

3. Selection likely suppliers and Tendering.

4. Opening of tenders and preparation of comparative Statement.

5. Recommendation of Comparative Statements Holdings of TPCs.

6. Preparation of Supply Order sending to the supplier.

7. Vetting and pre-audit of supply order.

8. Expediting to the supplier.

9. Inspection of Material

10. Collection of material and payment to the party as per the terms and conditions.

PURCHASING MANAGEMENT (FUNCTION & SCOPE)

INTRODUCTION :

The basic goal of any industrial activity is the development and manufacture of product that can be marketed to profit. This goal is accomplished by appropriate balanced blending of Five 'Mis' viz.

1. MACHINE
2. MEN
3. MATERIAL
4. MONEY
5. MANAGEMENT

of these five 'Mis' materials are the life blood for any industry to today. With the introduction of better machines coupled with scientific management to develop and utilize more sophisticated man machine system and with the increase in volume of production unit, labour cost has increased, the relative cost and importance of material in the manufacturing process. Percentage wise labour cost has come down and material cost has gone up.

In Indian, material represents 60% of the total if expressed as a percentage of gross output of goods. In Iron and Steel Industry it varies between 66 and 77 percent whereas in Motor Car Industry, the figure is 65 percent. In Ordnance Factories, the material represents 60 percent of the cost of production.

IMPORTANCE OF PROVISIONING :

Thus purchasing (provisioning) of material is one of the most vital and basic functions of material management and forms of major part of it. Material management involves may intricate decision on what to buy, when to buy, where to buy, how much to buy, how creative function such as development of new sources, introducing new materials and processes in the undertaking standardization, variety reduction and value analysis. It needs considerable expertise not only in negotiating nut also in the machines of competition and studying of economic trends in respect of materials to be purchased in large quantities.

The Purchasing process includes all the functions involved the procurement of materials from the time and approved for use. In this purpose, apart from the usual routine steps, the purchasing personnel have the responsibility of establishing the sources of supply and obtaining all relevant information, including details regarding price. It is their responsibility to judge who would be able to supply the required material at the best ultimate value for money and in the best combined factors of price, service and quality. They have to decide the most economic methods of transportation consistent with reliability of delivery. Agreement with the selected

supplier is followed by the issue of a purchase order whose terms and agreement price, delivery and other conditions have to carefully scrutinized then there is flow-up and expending to ensure timely delivery this often requires a considerable amount of technical knowledge.

Effective performance of the purchasing function is vital to the smooth operation of many other departments in any industrial undertaking the five essential of right purchasing are :

1. Right Quantity
2. Right Quality
3. Right Price
4. Right Delivery
5. Right source of supply

These five essentials, thought most important to purchasing, are applicable to most aspects of material management.

Right quality means that the quality should be just right, neither too high or too low. It is for the material manager to being to the notice of the using departments materials of different qualities, so that wherever, possible, the using departments can carry out shop test to determine the right quality. Specifications can then be abase on these test.

Right delivery has two aspects. Firstly it determines when exactly the delivery is required and when the purchasing process should be initiated initiated so as to obtain the requirements about the right time with a short margin of safety. Otherwise material may arrive very much before the actual time of use and a large amount of money may unnecessarily be blocked up for an appreciable period. This is particularly the case in large projects where various materials including capital equipment are required at different times during the project work. Secondly, after the purchase order is placed, the right type of follow-up and expediting is done by the purchaser, so that the materials arrive at the right time and avoid a stock-out.

Right source means that the source which supplies the requirements should be reliable in respect of quality delivery, after sales services etc.

POLICY AND PROCEDURE FOR PURCHASE OF STORES

The purchase/procurement of stores required by Ordnance Factories are governed by certain general policies laid down by the Government. These policies are based on a principle of extending financial powers to the authorities at various levels to effect purchase of stores the limit and extension of these financial powers

vary with reference to the purchasing authority and to different sources of supply, through which the purchases are effected.

FUNDS :

In order that the purchases are effected through various agencies it would be necessary to provide adequate funds. The provision of funds is made with reference to the forecast estimates submitted by the Ordnance Factories to the O.F. Board who, in turn projects the requirements of funds to the Ministry of Defence. After obtaining the sanction of Parliament of annual budgets, funds are placed by the government at the disposal by the OF board by allotting specific funds under different heads of expenditure of Ordnance Factories in each Financial Year. So far as the Purchase of Materials is concerned the various heads of account against which the funds are allotted are.

i. Local Purchase

ii. Central Purchase including Foreign purchase and Rate Contracts.

iii. Miscellaneous and Contingent grant for items of miscellaneous nature.

iv. Customs Duty and

v. Transportation charges.

INVENTORY CONTROL AND MATERIAL PLANNING

As stated earlier it is essential to keep adequate stocks of raw materials, components and other materials so that these would be available in time for carrying out the production without any interruption. In Ordnance Factories the principle of provisioning lays down that six months requirements in case of indigenous stores and 12 months requirement in case of imported stores should be procured at a time with reference to firm demands from services and other Indentors. It also lays down sufficient lead time for timely materialization of supplies from different sources.

The provisioning procedure also envisages that optimum levels of stocks held by factories at any item in respect of imported stores, difficult indigenous items may be as follows :

1.	**IMPORTED ITEMS**	:	12 months requirements for non-stockpile items, 9 months requirement (exclusive of stockpiles) in respect of items for which stockpile is authorized
2.	**ORDINARY INDIGENOUS ITEMS**	:	6 months requirements.

The various items of stores and materials required for production as well as maintenance are broadly classified in the following categories :

A. DIRECT MATERIAL (PRODUCTION ITEMS): These includes all materials, components including packages that become a apart of finished product and also those used or consumed in the various process of manufacture.

B. INDIRECT MATERIAL: Representing materials that are required for maintaining the service lines for production as well as items for general maintenance/shop use.

BASIS OF PROVISIONING

In case of direct materials the basis of provisioning is the rate of requirements of materials as shown in the standard material estimate prepared and up-dated by R&E section of the Factory.

In case of indirect items of stores (maintenance and general purpose stores) the requirements cannot be directly co-related to production. The provision is therefore, based on past average actual consumption of previous 18 months.

In case of items which are considered as on time by of provision is restricted to actual requirements as per needs of the shop.

BASIS OF CALCULATION OF ACTU AL REQUIREMENTS :

A. IMPORTED STORES : In case of imported stores provisioning is to be made to cover 12 months for general Purpose and maintenance items. In other words, for production items, provisioning can be made to cover a maximum period of 48 months (12 months + 36 months) and for general purpose stores and maintenance items to cove a maximum period of 36 months (12 months + 24 months) less stocks and dues.

B. INDIGENOUS ITEMS DIFFICULT TO OBTAIN: Where past experience shows that certain items are difficult to obtain and sufficient lead time is considered necessary, provisioning can be made to cove 6 months requirements, 36 months in advance in case of production items and 12 months requirements in advance of 24 months for general purpose and maintenance items less stocks and dues.

C. ORDINARY STORES: For production and general purpose/maintenance stores 6 months requirements, 24 months in advance (i.e. for a period of 30 months less stocks and dues can be provided.

In order to avoid over provisioning, it should be ensured that the provision is made on the basis of the entire demand of the services but on the basis of what the factory realistically expects to produce out of that demand during a particular provisioning period. The delivery period shown in the indents should be staggered so that as far as possible the actual stock at the factory is restricted to the optimum levels.

For the purpose of emergent provisioning the General Manager of Ordnance Factories should fix critical level in respect of individual items at their own discretion keeping in view the production programmes. However, for their guidance, the critical levels which should be treated as ceiling and which should not ne exceeded are given below :-

A. IMPORTED ITEMS	:	9 months requirements for non-stockpile items. 12 months requirements inclusive of stockpile for stockpile items.
B. DIFFICULT INDIGENOUS ITEMS	:	6 months requirements inclusive for stockpile, where authorized.
C. ORDINARY INDIGENOUS ITEMS	:	Three months requirements.

PROCUREMENT OF MATERIALS TO MEET ACTUAL REQUIREMENTS

After knowing the actual requirements Store Holder Inability Sheet (SIS) form No. IAFO/1962) is prepared indicating the nomenclature of Stores, total requirements, stock in hand, due expected against firm orders and the quantity to be procured. In other words total requirements minus stocks in hand and dues is the quantity for which provision procedure laid down by the Ministry of defence from time to time.

Depending upon the source of supply explained, later on the SIS goes to the respective person of the group of provision section i.e. Central Purchase group, IFD Group or LAPS per set up of the Provision Section of each factory.

STOCKPILING OF STORES :

The final authority for sanctioning of stockpile of material to be built in the factory rests with the Ministry of Defence. Once the quantity has been approved an addition and alternation thereto will also require Government Approval.

An material to be held in stockpile should fulfil both the following conditions :

1. It should be non-perishable.

2. It may be of imported origin not normally obtainable in India or Indigenous but difficult to obtain quickly in Indian.

Stockpile of non-perishable imported materials can be built upto 9 months requirements and that of indigenous materials difficult to obtain upto 4 months.

Provision of funds for stockpile purchase will be made under defence capital outlay. In order to ensure that the stockpile items do not deteriorate due to long storage, it will be essential that the holding factories should adequately turnover such items from time to time.

SOURCES OF SUPPLY

The various sources for procurement of materials and agencies for procurement are as follows :

I. TRADE SOURCES :

i. The procurement is done through DGOF in case of imported stores and exclusive items, the procurement is also done through DGS&D/Department of Defence Supplies and also by Ordnance Factories depending upon the value of purchase.

ii. Canalised items are procured through MMTC, STC and other canalized agencies.

iii. Against DGS&D Rate Contracts stores are procured by Ordnance Factories.

II. INTER – DEPARTMENTAL : The material are also procured from Sister Factories ex-manufacture as well as ex-stock.

III. INTER – DEPARTMENTAL : The Factory can also procure the stores from other Central Govt. and State Govt. departments Ordnance Depots and Asc Supply Depots.

PERIODICITY OF PROVISIONING :

As explained earlier, normal provisioning is done to cater for six months requirements at a time (12 months for imported items) in advance of the lead time required for materialization of suppliers through the concerned sources. This six months cycle of provisioning enables necessary advance action for procurement of stores on long terms basis to cover four years production programme based on firm demands of the factory. However, whenever new extracts of IFDs are received special review may be necessary.

In order to have effective provisioning and inventory control, the reviews are carried out a under :

I. SIX MONTHLY REVIEW: As per existing instructions all items held in stocks have to be reviewed once in six months for taking necessary action for provisioning of deficiencies and for liquidation of surpluses. All items of stocks covered by various local sections are grouped into three batches for the purpose of undertaking six monthly reviews.

II. ADHOC AND SPECIAL REVIEWS. : It becomes necessary to undertake special/Adhoc reviews on receipt of new extracts/Adhoc demands for immediate supply.

III. **SELECTIVE REVIEWS :** Such reviews may be necessary on account of changes in the production programmes.

IV. **FIXED REVIEW :** In case of certain categories of stores. A fixed time-cycle is adopted in accordance with the instructions on the subject for reviewing and initiating procurement action at fixed intervals i.e. annually, six monthly or quarterly basis.

Items which are required to be reviewed at fixed intervals are as follows :

A. **NON – FERROUS VIRGIN METALS :** The review out in the month of April and October for catering of the requirements of 48 months against firm demands.

B. **COAL/COKE :** A review is carried out in September of next years requirements.

C. **CEMENT :** Quarterly requirements are to be projected three months in advance.

As per the above procures the reviews and carried out and the total requirements are worked out by Material control Office of the factory and after taking into account the quantities held in stock and dues outstanding, the store Holder's Inability Sheets are prepared which form the basis for initiating the procurement action. The Store Holder's Inability Sheet indicates the following detail :

i. Competent Description of stores with detailed specification, size and tolerances etc.

ii. Details of Service Extracts and IFDs based on which the requirements have been calculated. The relevant Estimate No. should also be quoted in case of Production items. In case of general purpose stores and maintenance items, the basis of calculating the requirements such as past 18 months. Consumption and monthly requirement etc. should be shown.

iii. Inspection Authority and Inspecting Officer.

iv. Last paid rate for the store.

v. Last source of supply.

vi. Details of Dues, if any.

vii. Details such as delivery period and mode of dispatch should also be shown.

viii. Name of the proprietary firm incase of procurement of stores on proprietary Article Cetificate.

LOCAL PURCHASE

The local purchase action is taken when the value of purchase fails within 50,000/- per items or when the items are urgently required to overcome the bottlenecks in production as well as maintenance, for exclusive items the orders upto Rs. 25 Lakhs can be placed by the General Manager of Ordnance Factories.

In order that the Materials are procured from proper source it would be necessary to maintain a list of approved suppliers. The help is taken also of the list of approved suppliers. The help is taken also of the list of suppliers enlisted by the DGS&D. The firms who are interested to get enlisted as registered as per prescribed proforma (ABC forms) alongwith Income Tax Clearance Certificates and other details such as registration with NSIC, DGS&D etc. Before any firm could be registered as an approved suppler, it would be necessary to have a capacity of the firm by proper authorities.

Local purchase will be made in any of the following manners by inviting tenders in the prescribed forms.

1. By Advertisement (Open Tender).

2. By direct invitation to a Limited number of Firms (Limited Tender)

3. By invitation to one firm only (Single Tender).

The Tender are opened at an appointed date and time in the presence of two officers. Comparative Statements of Tenders are prepared clearly indicating the rats and other livable taxes and charges to have a proper appreciation and selection of the contractor for placement of supply Order. Last paid rates will invariably be indicated in all comparative statements of Tenders to correctly assess the quotations under consideration. If the items to be purchased are new, suitable remarks will be made on the comparative statement of tenders.

When the value of purchases exceeds Rs. 50,000/- per item the cases are discussed in the purchase Committee.

Supply orders are placed after acceptance by the competent authority of the recommendations made by the purchase Committed. All supply orders placed by the Factories are to be accepted in audit by the Local Accounts Office, depending on the value of the purchases.

INTER FACTORY DEMAND :

Inter Factory Demands are raised on Sister Ordnance Factories for arranging supplies of stores either ex – manufacture or from their stocks under Mutual Aid Scheme. As per instructions Inter Factory Demands are to be placed on the feeder Factories for production items by the indenting factories for their own requirements irrespective of their period utilization. The IFD will, however, indicate the supply schedule, the feeder factory returns the IFD duly accepted indicating the acceptance

and delivery schedule within two months period. If the IFDs are not returned by the feeder factory within two months, the demanding factory can take alternative action.

INDENTS ON ASC DEPOTS

Indents on ASD Depots are placed for the procurement of P.O.L. items, Salt, Milk etc.

Forecast requirements are submitted for stores of ordnance Origin to Army Hqrs. Through DGOF. The forecast is to be submitted for a period for four years, which is reviewed and updated every year while submitting the yearly forecast. Indents are subsequently placed on concerned Ordnance Depots for supply of the requirements during the Year.

PRIORITY ITEM :

Some particular items like Gasket, Piston etc. of Machinery items and parts may not to be manufactured and marketed as common item and only one particular firm may be procured form that particular firm, at the time there is not need for the purchase department to float enquirers to different firms etc. In this case the purchase Department can indirectly call for quotation from that particular firm and place supply order.

Inspection and acceptance test for incoming materials and collection of material.

The materials which are received by the factory either through the supplier (against supply orders) or through the sister factories (against IFD) are known as incoming materials. It is very necessary to inspect all those materials to determine whether they are in acceptable condition or not. In case if the inspection is not carried out at the initial stage then there will be lot of problems at the time of utilizing the materials and sometimes this will hamper final production targets also.

Incoming materials are comprising of all the items required by the factory such as machineries, stationery, casting, forging, raw – materials, standard parts, measuring instruments, tool and accessories, bearings, machined blanks and all types of general purpose items. Items like casting, forging, raw material, standard parts, machined blanks are to be checked materially in material testing deptt. To verify whether they are made from correct material or not. Normally the items depending upon the accuracy and cost, through inspection is carried out for all quantity. Items like Nuts, Bolts, Screws & Washers are normally received in bulk quantity and in such case a few samples as per the sampling plans chart are selected at random and theses sample are tested dimensionally and materially to determine the quality of the bulk lot. After inspecting the sample lots, the defects observed are classified in the groups. (i) Major defects (ii) Minor defects. The defects which render the items totally unfit or will result failure in its use are known as major defect and the defect which will not affect the usability of them items is know as minor defect such as little poor finish or workmanship.

Items which are observed with major defects are rejected in the initial stage itself and the items with minor defects are accepted in the first time and these defects are intimated to the supplier to rectify in future lots.

New let us see how the inspection is carried out for different types of items.

INSPECTION OF CASTING & FORGING

Few samples are per the sampling plan chart level IV for visual level II for dimensional and material is selected at random from the bulk lot an they are dimensionally checked by marking as per the drawing, and the discrepancies observed are noted. Few samples are materially checked for its chemical composition and hardness etc. Basing on the dimensional and material inspection reports of the sample, the sentencing of the bulk lot is done.

INSPECTION OF RAW – MATERILA

Raw materials consist of ferrous and nonferrous materials of different cross sections such as round, flat, square, hexagon and sheet metal etc. The bars or the sheets are first dimensionally checked and then few samples as per the sampling inspection chart are selected from the bulk, form each sample pieces cut pieces are cut for material checking. The material testing is done at MTD for its chemical composition, hardness, and crackness etc. If the sample pieces are found dimensionally and materially in acceptable range, then the bulk lot is sentenced as acceptable.

INSPECTION OF BEARING

From the bulk lot few samples are dimensionally and materially checked first. If the sampled are found acceptable, then the whole lot is visual inspection they will be rejected and the balance quantity will be accepted.

INSPECTION OF BLANKS

For the inspection of machined blanks a good quantity of sample are selected from bulk as per chart level IV for dimensional and level II for material and all the dimensions are checked for all the samples. If necessary a second sample lot also inspected to determine the suitability. Few samples are also materially inspected at MTD before sentencing the bulk lot.

INSPECTION OF STANDARD PARTS

Normally standard parts are procured considerably in good numbers and so inspection is carried on sampling plan method. Few samples at random as per the chart level IV for dimensions and level II for material are selected from the bulk

quantity and these are dimensionally and materially inspected as per drawing. If they are found conforming to the required specification then the bulk lot is sentenced as accepted.

INSPECTION OF TOLLS – INSTRUMENTS 7 ACCESSORIES

Items like precision instruments, gauges, jigs fixture and tools, taps dies, drills, reamers and hobs are very critically inspected at the measuring room with the help of precision measuring machine.

Milling cutter, Turning Tools Grinding wheels and diamond tools etc. are practically tried out on few samples and the bulk is sentenced basing on the particle trail result.

INSPECTION OF STATIONARY AND MISCELLANEOUS ITEMS

Stationary and all other general items are inspected for its quality and size etc. and the lot is sentenced basing on the above aspect.

INSPECTION OF MACHINERIES :

After the receipt of the machineries in the factory the maintenance section makes arrangements to erect the machine at the proper place and after giving electric connection etc. the machine is commissioned with the help of “Machinery Manual” book. It is necessary the supplier’s technical representative is also called at the time of commissioning and after successful commissioning the machines are sentenced as accepted.

In general for all the above items, defects observed at the time of inspection are intimated to the supplier to eliminates the defects in-future lots and maintain the specification as per supply order requirements of IFD requirements.

STORES FUNCTIONS – RECEIPT – STOCK – ISSUE

STORE RECEIPT – OFFICE FUNCTIONS

1. Collection of stores from various sources of suppliers.
2. Measuring, counting and checking of the material.
3. Linking up stores against supply orders/IFD's.
4. Preparation of Material Inward Slip (MIS) within 24 hours of receipt of the stores.
5. Placing of stores for Inspection.
6. Raising of Discrepancies/Rejection Memos.
7. Receiving of Packing Accounts/Invoice.
8. Watching of Anticipated Out Turn Reports.
9. Checking and linking up of Final Out Turn Reports.
10. Raising of Railway Claims wherever shortage damage found during transit.
11. Informal Claims should be submitted within 6 months from the date of issue of R.R./PWB.
12. Allotment of Receipt Voucher Numbers to the MI Slip after acceptance of the stores by the Inspection authorities.
13. Reply to the Audit Quires.
14. Up-loading of Wagons.
15. Open delivery demanding of, in case of tempering of seals of the consignment enrout.
16. General correspondence, Maintenance f files and registers.
17. Liason with Embarkation for receipt of Foreign packages.

STORES STOCK

INTRODUCTION :

Stock as the term indicates, is the source from which the sections of the factory draw supplies for their day to day functioning. Raw Materials, spares and sundry stores regularly required for the factory are kept in stock for drawls as and when required. It is imperative therefore, that adequate/optimum stock levels are to be maintained to avoid bottleneck arising out of stock outs. The main function of stores is to properly maintain its stock and release it, when maintained up to date. Godowns are eitogral part of stores where stock is held.

FUNCTIONS:

Any item on being received is inspected and accepted and is passed on to the Godown. Let us now examine as to how the material is brought on stock and removed from stock.

1. Material is received in the factory and a Material Inward Slip (MIS) is prepared.

2. Material is inspected with reference to specifications and accepted.

3. On acceptance of material, the MIS is allotted a Stock Receipt Voucher Number.

4. The accepted material is collected and properly stocked in the Godown against the Receipt Voucher mentioned at (3) above.

5. The Receipt voucher is posted on the Bin card maintained in the Godown and the total grand balance of the material in stock is sturck.

6. Material is adequately preserved to protect it from deterioration/damage while in stock.

7. Material is issued to demanding sections against proper demand notes.,

8. Demand Note is posted on the Bin Card and fresh balance of the stock of the item is entered on the Bin Card.

PRIMARY DOCUMENTS:

(A) BIN CARD :-

This is a document (MSF) 363) used to record the transaction pertaining to an item in record, the transaction pertaining to an item held in stock. This is kept in the Godown and correct maintenance of this document is the primary responsibility of the storekeeper. On any given time the physical stock of the items held in stock is

reflected on the Bin Card. It provides information such as **Nomenclature, Material Code, Unit of Accounting, location, Receipts, Issues and Balance in Stock.** All entries are to be checked/re-checked to ensure correctness by the storekeeper concerned and the stock Supervisors. Over-writing/erasing are viewed seriously as this is an auditable document. The Bin Card is reconciled from time to time by the Accounts Staff.

B) RECEIPT VOUCHER:

This is a document on the basis of which the accepted material is brought on stock charge. This document gives details such as **voucher number with date, source of supply, order reference, Nomenclature of the item, L.F. number Accounting Unit, quantity received, Liability** for consumption etc.

C) DEMAND NOTE

This document is used by the user section to demand and draw item from stock as authorized by the material warrant issued to them. The details such as Demand Note number, section demanding, work order number, warrant number, LF number, Nomenclature, Accounting Unit, quantity demanded and quantity issued appear on Demand Note.

D) RETURN NOTE :

This document is used by the consumer section to return scrapped or excess material (Already drawn against Demand Notes) to the stock charge. The document provides identical details as Demand Notes. All materials to be returned to stock are to be certified as serviceable by the Inspection Authority prior to take on stock charge.

E) STOCK RECORDS :

The following records are maintained n stock group to facilitate easy transaction of materials :

i. Index Register

ii. Receipt Voucher

iii. Demand Note Register

iv. Return Note Register

v. Inventory Register

vi. Preservation Register

F) STOCK VERIFICATION :

Each item held in stock charge is subject to verification by the staff of DGOF's S.V. Group at least once in a year. For valuable items, the frequency of verification is increased for better control. In addition to this, Departmental verification by senior stores staff is also carried out in case of pilfer able/costly items such as Ball Bearings and spares. Stock taking sheet on proforman (IFA Fac 154) is prepared by the verifier and signed by the storekeeper holding the stock. Any discrepancy (difference) voucher or Discrepancy (excess) voucher, as the case may be, to be settle within 24 hours of the finding of such discrepancy.

STORES (ISSUE) FUNCTIONS

1. Receiving of Inspection Notes/'P' vouchers from planning.
2. Preparation of Issue Voucher with full details of stores, mode of dispatch, weight, freight etc.
3. Preparation of Forwarding Note & M.C. Notes.
4. Preparation of Forwarding Note & M.C. Notes.
5. Packing of materials, loading of consignment in wagons/trucks.
6. Transportation of stores to Railway Stations.
7. Booking of consignments to different destinations.
8. Forwarding of documents to consignee such as RR, I/Vouchers, Inspections Notes. Etc.
9. Reply to discrepancies with 90 days from the date of receipt.
10. Maintenance of various Registers.

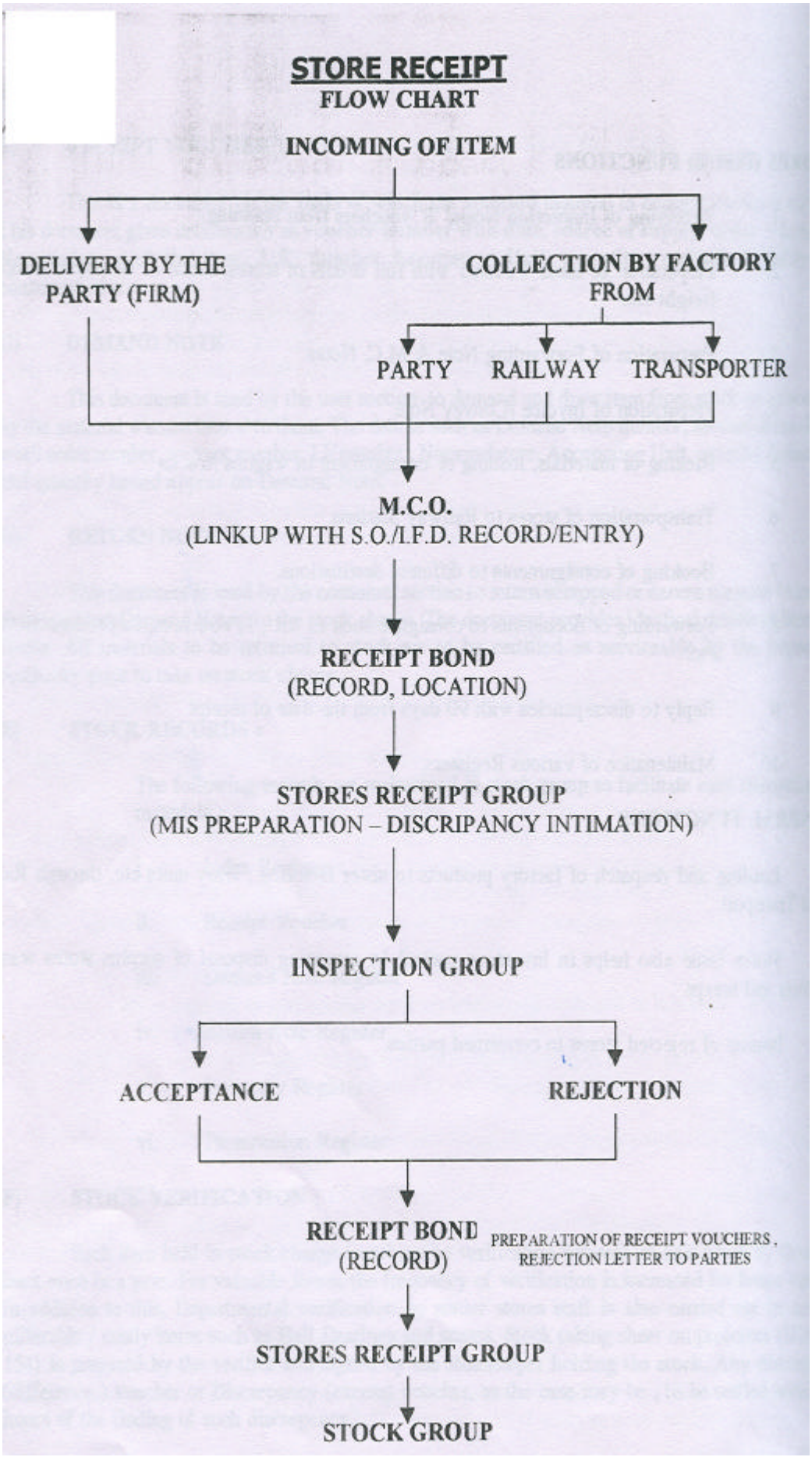
GENERAL FUNCTIONS

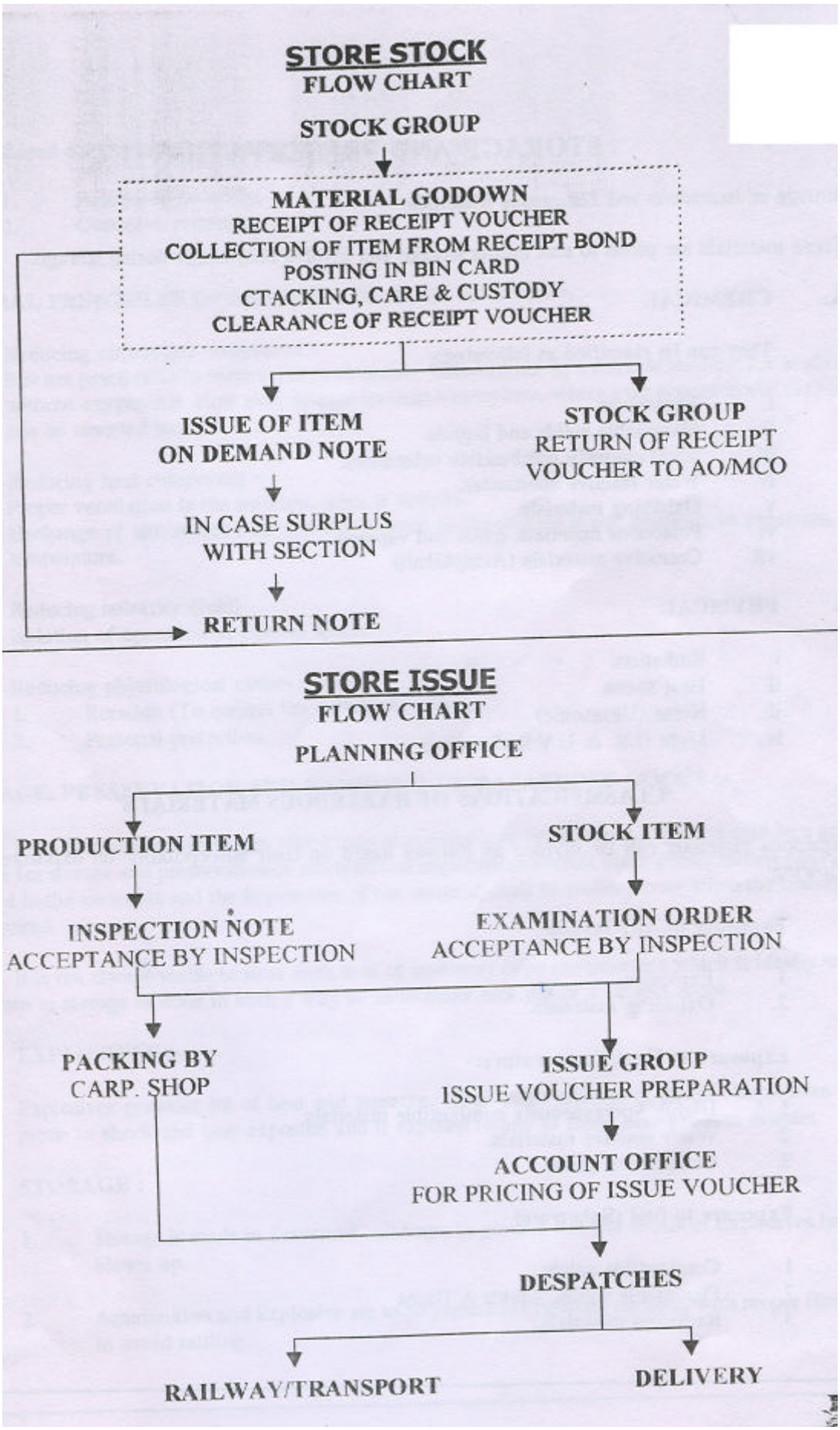
Loading and dispatch of factory products to sister factories, army units etc. through Rail/Road Transport.

Stores Issue also helps in Inventory control by arranging disposal of surplus stores waste products and scraps.

Issuing of rejected stores to concerned parties.

STORE RECEIPT
FLOW CHART




STORE STOCK
FLOW CHART
STOCK GROUP
MATERIAL GODOWN
RECEIPT OF RECEIPT VOUCHER
COLLECTION OF ITEM FROM RECEIPT BOND
POSTING IN BIN CARD
CTACKING, CARE & CUSTODY
CLEARANCE OF RECEIPT VOUCHER
ISSUE OF ITEM
ON DEMAND NOTE
STOCK GROUP
RETURN OF RECEIPT
VOUCHER TO AO/MCO
IN CASE SURPLUS
WITH SECTION
RETURN NOTE
STORE ISSUE
FLOW CHART
PLANNING OFFICE
PRODUCTION ITEM
STOCK ITEM
INSPECTION NOTE
ACCEPTANCE BY INSPECTION
EXAMINATION ORDER
ACCEPTANCE BY INSPECTION
PACKING BY
CARP. SHOP
ISSUE GROUP
ISSUE VOUCHER PREPARATION
ACCOUNT OFFICE
FOR PRICING OF ISSUE VOUCHER
DESPATCHES
RAILWAY/TRANSPORT
DELIVERY

STORAGE AND PRESERVATION

Storage of hazardous and Dangerous materials :-

These materials are prone to risk during storage and involve risk/danger during storage.

A. CHEMICAL

They can be classified as following :-

i. Explosives.
ii. Flammable solids and liquids.
iii. Spontaneously combustible substances.
iv. Water reactive substances.
v. Oxidising materials.
vi. Poisonous materials, gases and vapours.
vii. Corrosive materials (Acid/Alkali).

B. PHYSICAL

i. Radiation.
ii. Heat stress.
iii. Noise (Ultrasonic).
iv. Light (I.R. & U.V. Radiations).

"CLASSIFICATION OF HAZARDOUS MATERIALS"

Hazardous materials can be divided as follows based on their susceptibility on exposure to the following :-

A. Exposure to Air/Oxygen

1. Explosive.
2. Oxidising materials.

B. Exposure to Heat/Temperature : -

1. Highly Spontaneously combustible materials.
2. Water reactive materials.
3. Compressed gases.

C. Exposure to fuel (Substrate)

1. Combustible solids.
2. Flammable solids, liquids & Gases.
3. Radiation materials.

D. Based on Physiological hazards to persons.

1. Poisonous materials.
2. Corrosive materials.

GENERAL PRINCIPLES OF MINIMISATION OF HAZARDS.

A. Reducing air/oxygen component :-
It is not practicable to reduce this component. This will not be a suitable medium for working without oxygen/Air. How ever storage an inert atmosphere, where ever economically feasible can be resorted to.

B. Reducing heat component :-
Proper ventilation is the solution, since it permits.
Exchange of atmospheric air and Air present in the storage space resulting n reduction of temperature.

C. Reducing substrate (fuel)
Isolation of operation in cubical space.

D. Reducing physiological causes :-
1. Rotation (To control the extent of exposure).
2. Personal protection.

STRAGE, PRESERVATION AND HANDLING OF HAZARDOUS GOODS : -

In an industrial environment wide range of materials are to be stored. There should be a good practice for storage and preservation of precious and important materials, since public money has been invested in the materials and the importance of the material shall be realized only when the materials are required.

It is not always viable to store each item of inventory in an environment which is ideally safe. Therefore or storage is done in such a way so as to make best use of available space.

1. EXPLOSIVES :-

Explosives generate lot of heat and pressure. Emit large amount of gases. Explosives are prone to shock and heat exposure and if exposed to any of these may produce disaster.

STORAGE :

1. Storage is made in Traversed buildings, to prevent fire and debris of Explosives being blown up.

2. Ammunition and Explosive are to be packed in approved packing, with proper fitment to avoid rattling.

3. At a proper safety distance there should be hydrants, static water tank, “FIRST AID” and fire fighting equipments.

2. OXIDISING AGENTS :-

Those materials which can supply oxygen (serving as an agent to help in burning) to the surrounding atmosphere. These substances are having the capacity to emit oxygen even at room temperature.

Hence it must be ensured that packages of oxidizing agents do not get damaged.

In general, it is unsafe to store oxidizers close to liquids of low flash points. Even slightly Flammable materials should be isolated from oxidizers e.g. Glycerol and Potassium permanganate cannot be stored nearby, since they react to produce a fire.

Oxidisers are recommended to be stored in cool, properly ventilated and fire proof storage area.

Examples of oxidizers :- Chlorates, Perchlorate, Chromates etc.

3. WATER SENSITIVE FIRE AND EXPLOSION HAZARDS :-

There are materials which reach with water, steam, or water solutions to give off heat, flammable gases or explosive gases e.g. Lithium, sodium, potassium, cobalt, Acids and alkalies etc.

Such materials should be stored in well-ventilated, cool and dry areas because many of these materials are flammable. It is essential that no automatic sprinkler system is used in such areas. Building must be waterproof, located on high ground, insulated and separated from other storage spaces.

PARTICULAR ATTENTION MUST BE PAID TO FOLLOWING :

1. Pocketing of light gases under the roof.
2. Periodical Inspection.
3. Automatic detection and alarm system to be installed to know the fire in time, due to dangerous concentration or flammable gases (Explosive mixture).

4. COMPRESSED GASES :-

Cylinders must be kept in up right and chained or Cylinders should be made to rest on substantial support to minimize the chance of falling and avoid damage to Cylinder or Valve. Cylinders are to be stored in cool areas and away from direct sunrays, and/or hot pipes. The area should be well ventilated.

Do not hammer valve cocks and valves are to be kept covered to avoid tempering damage to cylinders by striking against each other or some external source.

5. FLAMMABLE MATERIALS :-

Main difference in the flammable materials is the propagation rate of fire. Fire in solids propagate slowly, while in liquids propagate rapidly and where as in case of gases, vapours and finely divided particles (dust) fire propagates so rapidly that, explosion may occur.

Such materials should be stored in cool places, well-ventilated areas (to avoid that igniting mixture getting formed). These places must be well away from the areas of fire hazards. The materials should be kept away from oxidizing agent or materials react with air or moisture to give off heat. Adequate and suitable fire fighting arrangements must be made. Smoking or striking of matches, bare filament heater or other sources of ignition must be avoided and/or kept away. The building must be equipped with automatic fire detection system.

6. TOXIC HAZARDS :-

Toxic materials are those which produce poisonous or dangerous gases/radiations e.g. carbon tetra chloride. If stored in poor ventilated areas then phosgene gas is formed which is deadly poisonous or other example is of radioactive materials.

Such substances are stored in cool and well – ventilated areas, to be kept away from direct sunrays. Away from areas of high fire hazards. Containers of these materials must be in perfectly sealed condition. Periodical inspection of materials and building is a must. In compatible materials should be isolated from each other.

7. CORROSIVE MATERIALS :-

Corrosive materials are acid, acid anhydrides and alkali. These often destroy their containers and mix with the atmospheric air of storage area. Some substances react violently with moisture. Such materials should be kept cool but well above their freezing points.

“IMPORTANCE OF PACKING AND PRESERVATION”

Stores and equipments possessing specific qualities or characteristics, are necessary for proper functioning of terms. With the passage of time the capacity of materials to fulfil the requirement decreases, as a result of which the store or equipment becomes progressively less capable of performing the required function. This reduction in capability is called DETERIORATION.

Deterioration may be caused by different agencies.

Biological agencies like insects and micro-organisms or physio-chemical agencies like light, heat, pressure, corrosive gases etc.

When the basic material reacts with these agencies the store undergoes deterioration. Since the entire aim of procurement policy is to ensure that the stores and equipments are available in 100 % serviceable condition as and when they are required. It becomes necessary that the various stores and equipments which are stocked should be so protected from various deteriorating agencies as to ensure that they do not undergo deterioration or the rate of deterioration is slowed down.

India is located in the tropical zone where the climate conditions are more favourable for the growth of insects and micro-organisms. Across the countrywide range of climate conditions can be observed. Viz. hot-humid, hot-dry, cold-humid and cold-dry. Stores produced in one climate should be serviceable in the other condition. This is the requirement and for this purpose proper and timely preservation plays an important role.

The store produced in one part of the country has to be sent/dispatched shifted to the other part of the country by various modes of transportation. For this purpose packing of material plays an important role such that the stores should not suffer loss/damage from shocks, Air dropping, vibration and compression. The stores and equipments which are packed properly should be able to withstand all the physical hazards as stated above and should reach safely to their destination in a fully serviceable condition.

Proper packaging is therefore very necessary. While over packaging is not economical and it is to be avoided. The under packaging may result in damage to the store and equipment.

Thus preservation and packaging plays a vital role in ensuring the serviceability, proper preservation, and packaging, saves in terms of materials and labour cost from wastage.

TYPES OF HAZARDS

These are broadly classified as follows :-

A. PHYSICAL :-

1. Drop (Shocks).
2. Impact (Bumps).
3. Vibrations.
4. Compression.

B. CLIMATIC :-

1. Very high and low temperatures and humidity at different temperatures.
2. Changes in atmospheric pressure.
3. Moisture, gases and vapours.
4. Dirt and grit etc.
5. Light.

C. BIOLOGICAL i.e. HAZARDS DUE TO LIVING AGENCIES.

1. Rodents (Rates & Mice).
2. Insects.
3. Fungi and bacteria.

1. PHYSICAL HAZARDS :-

1. Drops Shocks :- Any loss due to drop or shock to the materials, this happens during handling.

2. Impacts or Bumps :- Damage to the material due to sudden stop or start of high speed vehicles. This is the case during transportation/transition.

3. Vibrations :- During transportation by any means, damage may occur to the material due to improper packing or fitments.

4. Compression :- Damage to store may be caused due to stacked packages. The lower/lowermost will bear the pressure and may get crushed. Therefore packages must be strong enough.

2. CLIMATIC HAZARDS :-

1. Temperature :- Following effects of very high and very low temperatures can be observed.

A. Quick deterioration – High temperatures.

B. Precipitation of some pharmaceutical and inactiveness – At freezing temperature of some chemicals.

C. Crystallization and breakage of Rubber, Lubricants may thicken and Harden.

D. Expansion of liquid contents and bursting of container due to developed pressure.

E. Condensation of atmospheric moisture on stores, can corrode metallic store and melting of non-metallic stores can cause the attack of bacterial and fungal growth.

2. Pressure :- High altitudes having low atmospheric pressure while lower altitudes are having high atmospheric pressure. If atmospheric pressure decreases, then internal pressure of the containers – increases and pressurize the walls of containers. As a result burst of package may occur.

3. Moisture, gases and vapours :-

Stores and equipments may be wetted due to one or more of the followings.

A. Rain, Snow and Splashes.

B. Flood water.

C. Seepage of water from the ground.

D. Condensation of atmospheric moisture.

Moisture laid corrosion, bacterial or fungal decay due to absorption of water. Some of the chemical becomes useless and sometimes even very dangerous (e.g. calcium carbide) short circuit of electric current may occurs. Loosening of adhering particles (as in emery paper) or glue joints. Gases like CO_2 SO_2 H_2S_2 N O_2 if present in surrounding environment may dissolve in atmospheric moisture, corrosive damage of metals occur. Vapours of acid may cause corrosion, solvent vapours may cause damage of rubber stores and painted parts.

4. Dust and Grit :- Contamination with these renders POL unusable (Plastic, Oil & Lubricant). Machinery may be Clogged, Textiles and Papers may be affected to unusable extent.

5. Light :- Coloured materials may suffer bleaching action, some chemicals may deteriorate rapidly (e.g. photographic chemicals) some solvents generate poisonous gases.

6. Biological Hazards :- Rodents, insects, fungi and Bacteria Spoils many materials. Hot and humid conditions immensely encourage the activities. These organisms cause great damage to the materials.

"PROTECTION AGAINST CLIMATIC HAZARDS".

TEMPERATURE :-

1. By keeping the store under top cover.

2. Considerable protection against high temperatures i.e. spraying the water on outer walls and roof of the building during summer days.

3. Putting the khus screen on doors and windows. Special condition is maintained for rubber and rubberized items, drugs, vaccines, silk and parachutes and perishable food stuffs e.g. milk, meat fish, fruit and vegetable, A.C. has to be provided.

Pressure :- Strong containers to be used which can withstand the fluctuations of atmospheric pressure .

Light :- Light sensitive items to be kept in opaque containers or wrap it from outside, green, blue or amber coloured bottles cut off harmful rays.

Dust and grit :- Stores and equipments are kept enclosed in cases/containers.

MOISTURE, GASES AND VAPOURS :-

Gases :- Gases are affecting the store very badly therefore stores and equipments to be kept in well protected containers and that too duly sealed. This way stores and equipments can be protected not only against gases but protected against moisture and vapours also.

Vapours :- Vapours of various solvents are very harmful, therefore these should be kept in a closed vessel. If feasible then it is stored in an air tight vessel. Cover of the vessel should be closed by putting gasket in between cover/LID and vessel. Temperature in the nearby area to be kept low for preventing escape of vapours. Godowns should be well ventilated so that there won't be any accumulation of vapours and on the other hand avoiding the possibility of formation of explosive mixture with air. Items which are likely to be affected very severely by vapours should be stored in separate godowns.

Moisture :- Stores and equipments to be kept under roof or top cover to save stored materials from rains. Spacing in stack. Dunnages to be provided for saving the material from ground moisture. Due to well ventilated area there won't be accumulated of damp air.

PERIODICAL TURNOVER AND EXAMINATION

Periodical Turnover and examination should be carried out for susceptible stores. During each turnover some stores e.g. Textiles & Timbers to be exposed to sun, textiles and timbers should be turned over at least twice in a year. In case of timber periodical turn over should be carried out before the onset of summer and soon after the Summer Monsoons.

DESPATCH AND RECEIPT :-

While dispatching, no wet store should be go out. Especially Textiles, Woollen, Paper and similar stores should be properly packed before dispatch.

"TYPES OF DETERIORATION"

Deterioration of stores and equipment based on agencies involved, is as follows :-

A. Biological Deterioration:- damage caused by living beings as insects, Fungi, Bacteria, Rates Mice is referred as Biological Deterioration.

B. Damage caused by non-living agencies viz. Moisture, heat, light, chemicals and gases, is referred as Non Biological Deterioration.

Both biological and non biological agencies can show their separate or combined effect on stores and equipments.

MICROBIOLOGICAL DAMAGE IN GENERAL STORES, TEXTILE AND WOOLEN

Susceptibility to damage by micro organisms depends upon the nature or materials.

Starch is a favourable substrate for mildews growth in Textile fibre, woolen fabrics are generally attacked & damaged by bacteria, rather than fungi. By these damages patches on the fibreas can the seen.

TIMBER:- micro organisms break down. The cellulose, lignin and other materials in to simpler compounds, which acts as feed stuff for Micro organisms.

TYPES OF DECAY :-

1. BROWN ROT:-

The wood becomes dark brown and ultimately breaks up into small brick shaped Pieces. Therefore Brown rot some times referred as cubical rot also. This type of damage is caused by Micro organisms by attack on cellulose but lignin remains unaffected wood becomes lighter and by applying slight pressure it breaks up. This type of damage occurs when supply of moisture is restricted under cover or in shelter. It is also called dry rot.

2. WHITE ROT:-

In this case wood darkens first, later becomes much lighter in colour than the normal wood. On application of pressure the wood does not crumble. In this case call the constituents of wood including lignin are attacked. This type of damage occurs when copious water supply is available. This is also called wt Rot.

LATHER :-

Generally Mildew growth attacks on lather during the monsoon season and consumes greasy matter between the fabric and makes lather brittle and weak. Fungus also grows on stitched thread used in manufacture of shoes and other lather items.

RUBBER :-

Due to fungal growth there is no damage as such but if these infected rubberized items are used then a person can be affected by fungal injections (e.g. hand gloves, Masks, Respirators etc.).

PAPER :-

Paper products like card board boxes cartons, stationary items, paper liners, books records are suffered by fungal growth under unfavourable conditions of temperature and humidity. The symptoms are musty smell, decolonization and loss in strength.

PAINTS AND ALLIED PRODUCTS :-

Paints, varnishes and lacquers are suffered from fungal attack resulting in the loss of their functions and properties during storage under unfavourable conditions.

"CONTROL OF MICROBIOLOGICAL DAMAGE"

If following factors are controlled, then damage by microorganisms can also controlled.

A. Oxygen/Air supply :- Hermetically sealed packs can control Oxygen, Air & Moisture trapping. This method is very costly hence used for valuable items.

B. Temperature:- Keeping the temperature $4^{O}C$ prevents all microbiological activity, but this method is costly. This method is applicable in case of food, milk, fruits, meat, eggs, fish vegetables, drugs, vaccines etc.

In some cases temperature can be maintained upto $60^{O}C$ - $70^{O}C$ by blowing hot air. At this temperature growth of micro – organisms can be inhibited, but this process is not applicable to all types of stores.

FOOD SUPPLY :-

Most of the stores/components are made up of materials on which micro organism can feed. If the materials are treated some chemicals is automatically attack of micro – organisms can be inhibited, such materials are known as ROT – PROOFED.

ROT Proofing materials are fungicides or antiseptics. They must have following requirements:-

a. Should be used in small dozes.
b. Non poisonous to human being/animals.
c. Free from objectionable odour.
d. Water soluble/cheaper solvent soluble.
e. Good penetrating properties.
f. Safe to handle.
g. Should not harm material.
h. Cheap and easily available.
i. Should not make store more flammable.

Based on consistency or medium on which they are applied can be classified as follows :-

A. Oil type:- Coal tar creosote, wood tar creosote, coal tar.

B. Water soluble type :- They may be

1. Leachable type :- Borox and pentachlorophenate.
2. Fixed type :- ASCU – A, ASCU – B.

C. Applied through Volatile solvents :-
Compounds of copper, zinc, mercury and phenolic compound.

a. Satisfactory Top cover.

b. Adequate dunnage to prevent moisture of seepage from the ground i.e. sufficient ground clearance for ventilation. Dunnage also prevent accumulation of damp air beneath the stack.

c. Spacing in stacking for good ventilation, to keep the store dry, moisture limit, below which Micro-organisms do not normally grow in following stores.

Textiles	---	12 %
Timber	---	18 %
Food grains	---	8 %

USE OF VOLATILE FUNGAL INHIBITOR (VFI)

37 Tablts of VFI 2g. each can be used to protect one cubic meter area to prevent fungal growth FI treated papers can be used for wrapping optical instrurments. VFI impregnated card board strips when inserted in boots and shoes, prevent fungal damage in humid area.

CLASSIFICATION OF INSECTICIDES

USED AS GAS (FUMIGANTS)	USED AS LIQUID	USED AS POWER	USED AS SMOKE
a. Methyl bromide b. Ethylene dibromide c. Ethylene diohloride and carbon tetra chloride 3:1 Mixture d. Carbon tetra chloride e. Phosphine f. DDVP or Vapon	a. Creosote oil b. Copper Naphthenate c. Copper, chrome, arsenic d. Copper, chrome, boric e. Acid cupric chromate f. Martius yellow g. Borax h. Boric acid i. D.D.T. j. Gamma BHC k. Pentachloro phenol l. Sodium pentachloro phenate m. Malathion n. Aldrin o. Chlodane	DDT Gamma BHC Pyrethrum	Gamma BHC Also used as fungicides.

Insecticides can be used for disinfecting the following materials.

INSECTICIDES	MATERIALS
Carbon tetrachloride	Woolly bears and cloth moths.
DDVP and Ethylene dibromide	Vacant rooms and godowns,
Other Fumigants	Food grains and milled food stuff.

While applying fumigants, enter to the building godown only after wearing gas masks. Inhalation for longer time is not advisable. Before applying areas should be closed after some time make proper ventilation or start exhaust fan for Clarence of Building/godown.

TERMITE CONTROL

GENERAL

The termites come to feed on the stores and go back to their colonies i.e., they do not infest the stores but only attack them. Therefore, the question of disinfection does not arise in case of inside timber items which are normally attacked by termite. The disinfestations in case of dry-wood termites is also not practicable since it is usually the structure if timer which is attacked. This necessitates the need for preservative treatments and to measures which prevent the termites from reaching and attacking the stores. The various preservatives and disincentive treatments used to control of bamboo and timber borers, are equally effective against termites. Creosote oil is particularly effective and is the treatment of choice.

CONTROL OF DRY WOOD TERMITES

Since these insects work and live inside the timber, the outer surface of the affected item remains almost undamaged till the final stage, and forms a cover under which termite activity continues undetected unobserved to deal with this type of termites, it is, therefore necessary to treat the structural timber and other susceptible stores fully before putting the stores into construction/use.

CONTROL OF GROUND DWELLING TERMITES

Selection of site : Preliminary inspection of the site should be carried out to ascertain the danger from termites.

GROUND TREATMENTS

An effective ground treatment is a dressing with 50:50 Creosote and Used engine oil spray liberally into the top 8-9 cm of the layer ground. Waste mineral oils such as burnt engine oil etc., may also be used by themselves (i.e. without creosote with 5% DDT or gamma BHC in an emergency). Additionally stores may be stacked on a layer of dry coarse sand about 10 cm thick.

ANTITERMITE DUNNAGE

The single most satisfactory method of protecting stores from the ravages of subterranean termites is to place stores on an “anti-termite dunnage” and to ensure that termites do not gain access to the stacks through hanging grungy or threads. The requisites of a typical anti-termite dunnage are,

a) Provision of a vertical clearance of 30 cm between the ground and the bottom of the stack.

b) At least a 15 cm clearance from either of the walls should be maintained of the stacked stores.

c) A metal shield should be fitted at or near the top of dunnage pillar. The edges of the shield should project about 8 cm beyond the sides of the pillar and should be away by 6-8 cm from the layer surface of the stack.

TERMITE PROOFING OF BUILDINGS

There should be a continuous layer of a material impervious to termites between the ground and the untreated timber in a building. In respect of buildings (temporary as well as permanent) puca cement floors provide an effective barrier for termites. Cracks and crevices which may be formed in the pucca floors or the joints between the slabs should be filled with coal tar pitch.

Provision of anti-termite metal shields to foundations (preferably pillar type) on which suspended cement or wooden floors are laid, is also an effective termite proofing measure.

Destruction of nests. In case of compact nest (mound building) type, the nests may be dug

Protective treatments of timber and bamboo in respect of ghoons also afford effective protection against termites.

CONTROL OF TIMBER BORES

Treatment of handles/helves : Treatment of large handles/helves in stock is carried out with 20-30 (by volume) mixture of creosote and raw linseed oil by one of the following methods in order of preference.

a)	Hot and cold treatment	:	This treatment is to be given once every year, just before the onset of summer.
b)	Cold soak	:	Once every year, just before the onset of summer.
c)	Swabbing	:	This treatment to be given at half yearly intervals one of the treatments every year being just before the onset of summer.

TREATMENT OF PLYWOOD

The bonding material is not being impregnated with fungicide like sodium pentachlorophenate which acts also as a mile insecticide. Solid stacking, without stickers, should be adopted. All the sides of the stack should be thoroughly coated with creosote and oil mixture or copper naphthanate solution. Individual pieces of plywood may be given a preservative treatment or copper caphthanate in white spirit. If plywood is infected it should be disinfected by hot air at 60^0 to 70^0 for 30-45 minutes.

WOODEN COMPONENTS OF BRIDGING EQUIPMENT

These should be given two coats of 10% copper naphthente solution in white spirit (the second being applied after the first has dried) and painted over with paint.

CONTROL OF WOOLLY BEARS AND CLOTHES MOTHS

DISINFESTATIVE TREATMENT

A) CARBON TETRACHLO RIDE FUMIGATION

The fumigant is used @ 1 cc per litre if space in the air tight chamber in which fumigation is carried out. The fumigant is placed in shallow dishes on the infested material in the chamber which is kept closed for 72 hours.

B) HOT AIR DISINFESTATION

Stores can be disinfected by exposing them to hot air at a temperature of 60^0 – 80^0 for 45 to 60 minutes.

C) STEAM STERLISATION

Disinfestations can be carried out in laundry machines or steam sterilizes. The process is likely to cause shrinkage of garments. The steam sterilized stores should be thoroughly dried.

D) DIPPING IN BOILING WATER

Brush ware may be disinfected by dipping the bristles in water 60^0 – 70^0 C for 3 to 5 minutes and drying them. A little soap laundry may be added, with advantage to the water.

E) DRY CLEANING

The infestation may also be killed be dry cleaning of the infested materials. During this process all stages of insects get automatically killed.

2. PROTECTIVE TREATMENTS

a) Martius yellow treatment :- Woollen and felt padding or components of harness and saddlery can be treated with a solution of Martius yellow (40 gms of the substance dissolved in 100 litres of water at room temperature) and dried. It has no adverse effect of the animals. The treatment is also applicable to felt used as lining in boxes. It cannot be used in stores where it is likely to come into direct contact with human skin. It is also inapplicable in cases where bright yellow colour is undesirable and where the store is likely to suffer from wetting.

b) Treatment with 0.5 % DDT o gamma BHC solution in white spirit, petrol or superior kerosene oil. This treatment is specially suitable for brushware made of animal bristles hair (except those used for cleaning small arms and artillery equipment).

Gamma BHC may be used as smoke in enclosed (not necessarily air tight) space e.g. rooms. “Gammaxene Smoke Generator” or “Insecticides Smoke Forming” is used for the purpose.

Malathion is available as an emulsifiable concentrate (50 %). It is diluted with 100 volumes of water before being sprayed. “Premium Grade” of Malathionis normally preferred as it has less objectionable smell than the ordinary grade. This is sprayed on all the 6 surfaces of stacks and a mild rat repellent.

ALDRIN & CHLODANE

a) These are largely used for treating the foundation trenches and ground between them in order to render the building termite proof. Aldrex is made into 0.5% emulsions by addition of 59 volumes of water to 1 volume of Aldrex. Chlordabe us used as solution in fuel oil 1 % or emulsion in water.

b) Pyrethrum may be used as a dust or as a solution in kerosene. It is non-toxic to human being. Once exposed to air its effects is very short lived, but during that period of about 2-4 hours it has a very good “knock down” effect on insects.

c) In special cases, e.g. preservation of carpets and skins. DDT or Gamma BHC may be applied in the form of a dust (5 parts of DDT or Gamma BHC and 95 parts of French Chalk or soap stone ground), at the rate of 25 gm/sq.m.

d) Packing with naphthalene : Where none of the above treatments is applicable, airtight packing with naphthalene, camphor or paradocholoro benzene (PDB) at 1 gm/It. of space is the only alternative. (For long term storage of woolen or felt 5 gm of naphthalene per litre of space are used and replenished annually), Naphthalene and such other materials act as fumigants/repellent. Since these are volatile substances, care should be taken to render the package reasonably airtight. Fresh naphthalene and such other preservatives should be added periodically to maintain the concentration of their vapour at an adequate level. Naphthalene, Camphor/PDB should not be used to preserve pitch set brushers since their vapours soften the pitch used in the setting medium, nor should they be used for preserving garments with gold/silver embroidery as they may be furnished unless protected by a coating of varnish made of clear shellac, DBP and methylated spirit.

After preservation with naphthalene woolen and worsted store should be packed in following manner.

i)	Inner wrap	-	Paper wrapping, waxed
ii)	Outer wrap	-	Cloth ‘C’ Heavy

Alternatively the woolen stores preserved waxed may be substituted by a layer of Film Polythene 0.04 mm thick properly sealed.

e) Mothproofing treatment by dieldrin : Mothproofing of woolen by Deildrin is being gradually adopted in the service. In this process, the woolen clothes

are proofed at the manufacturing sage. A permanent moth proofing is obtained even at so low concentrating as 0.05 % of Dieldrin by the weight of the fabric.

DISINFESTIVE MEASURES

SEGREGATION OF INFESTED MATERIALS

It is imperative that infested/suspected stacks/consignments are promptly segregated and kept way as far as possible from susceptible sound commodities, in separate shed set apart for this purpose. Immediate action should be taken to disinfest the same. If should be borne in mind that this treatment with Malathion will act as a temporary barrier to spread of infestation to other sound stocks. It does not kill infestation within the stack. If a separate shed is not available the infested stack/stacks can be segregated by a DDT barrier. 5% DDT dust (5 parts of DDT mixed with 95 parts of soap stone powder, talc or French chalk) should be spread all round the infested stack about a foot away from the base of the dunnage. The DDT barrier to be 10 cm wide and 5 cm high.

SUNNING OF INFESTED COMMODITIES

Infested products are sunned and rebagged in uninfected bags. Obviously sunning can only be done on clam and clear sunny days. It is desirable to have cement plastered plinths or platform with 1 cm high edges for sunning. Cleanliness of the platform is very essential. The material should be spread out in a layer required to give an effective exposure of the entire quantity to the sun.

HOUSEHOLD INSECTS AND THEIR CONTROL

Some of the common household insects and their control is given below.

COCKROACHES

Cockroaches commonly occur in kitchens, pantries and dark and damp places. They are also met in unused drawers and book cases. A peculiar characteristics smell is associated with the presence of an appreciable population of cockroaches.

Their presence in hospitals and places where there are patients of cholers and tuberculosis is not out of danger as they been observed to feed on sputum and other rejected matter and experiments have shown that several bacteria can pass out through their intestines without being destroyed.

CONTROL MEASUERS

Practice scrupulous cleanliness. Do not leave crumbs, scraps and other food materials where cockroaches may have access to them. Place kitchen wastes and other garbage's in tightly covered containers preferably stored outdoors. Reduces hiding places to minimum by eliminating cracks and crevices in new and old construction. Guard against bringing in cockroaches with merchandise from infested premises. Floor drains should be covered with small mesh screens.

5% DDT may be used to kill these insects (while spraying concentrates on cracks, and crevices in woodwork, space beneath and behind refrigerators,

cupboards, radiators, sinks, surface close to hot water, shelves and bathrooms). Avoid contaminating food and cooking and eating utensils with insecticides.

On residual films of insides that insects have been found to be most susceptible of Telodrin followed by Diazinon and Lindane. One percent solution of Telodrin or Diazinin or lindane in kerosene may be used is a spray for the control of cockroaches.

Insecticides (solid insecticides like DDT, Lindane, Aldrin etc. And liquid insecticides like Diazinon, Malathin etc.) have been found to be effective.

The house cricket is a sturdy grayish – brown insect about 2-5 cm long with a pair of very long antennae.

Control measures are the same as for cockroaches.

SILVERFISH

These insects are also known as “Bristle tails” since they possess three tails like processes at the end of the abdomen. They are wingless and rather elongated insects about 2 cm long and tapering from the font to the rear. Most species are covered with silvery scales.

Silverfish is most commonly found in cracks and crevices in warm dark situations where debris containing starch or glue bran flour, starched clothing, paper books, stamps and photographs are the main commodities damaged by silverfish and if these are left undistributed for sometime, serious damage is likely to occur.

CONTROL MEASUES

The infested stores/rooms should be thoroughly cleaned. 5% DDT spray may be used on the shelves, drawers etc where the stores have been affected by these insects. Normal precautions should be observed to avoid contamination of food stuffs with insecticides.

BOOKLICE

They are tiny soft-bodied insects 1 to 1.5 mm in length dirty grey or straw yellow in colour. They have biting and chewing mouth parts.

CONTROL MEASURES

Remove the source of infestation. The residual sprays are useful. Apply 5 % DDT to infested surfaces.

ANTS

Ants live a social life. They build nests and live in colonies consisting of the queen. The queen may live upto 15 years. They are found of every kind of human food and sometimes become pests by carrying away cereals and storing them.

CONTROL MEASURES

Discourage ants from entering buildings by keeping shelves, tables and floors clean the free of crumbs and other food fragments. Cooking and eating utensils should be promptly cleaned after use.

A mixture of 60 gm of Paris green and 1 kg of sugar may be scattered over the area at the rate of 1 kg of mixture per 2,000 sq.m. The best method would be to locate the nest and kill the queen by fumigation.

BED BUGS

Bedbugs are bloodsuckers and prefer the blood of man causes swelling and inflammation.

CONTROL MEASUES

Fill cracks in the wall plaster which may be hiding bed bugs. Thoroughly clean the premises and get rid of useless articles that may serve to harbour the bugs, persistent care and cleanliness in house keeping are valuable aids in eliminating and preventing bed bug infestations.

Use 5 % DDT solution/dispersion taking care that all surfaces/cracks which are likely to harbour the insects are thoroughly treated.

LICE

10 % DDT powder has been widely and effectively used for this purpose.

RODENTS AND THEIR CONTROL

Four species of rats and one species of mice are known to cause much damage to stores. In this precy the term ‘rats’ includes mice. They cause damage to stores by directly feeding on or nibbling, 8 to 10 times more wastage occurs due to the spoilage caused in bagged supplies and the contamination of the foodstuffs by the excrement avoided by them. It also act as disease carriers.

A rat consumes about 30 gms of grains/day. Thus a year 100 rats by themselves i.e. without taking into consideration their progeny consume about one metric tonne of grain. The figure rises to 500 metric tonne when the progeny of the 100 rats during the year is also taken into account.

Timber and textile stores, paper, pith office records, stationery and similar materials on which they do not feed are damaged by them either to secure

cushioning material for the nests or their young ones, or in an attempt to get at their own food kept in containers made of these materials.

There are two ways of preventing damage by rats and mice. The first is to destroy all of them over a wide area. This is not generally practicable. The second method is to ensure that the containers and the store houses are rat proofed, i.e. they are so constructed that rats cannot get it.

RATPROOFING

a) The floor should be of concrete, brick or stone. A wooden floor over soil should be avoided at all costs. If a bare soil floor must be used, the walls of the building should be stone, brick or concrete, with foundation (including that below door space) going to depth of 1 mt. With a soil floor and walls of wood or corrugated iron, rat proofing is usually impossible. But such walls can be used if the floor is impervious and above ground level, so that the junction of wall and floor can be sealed with cement.

b) Doors must fit well, no gaps should be wider than 5 mm. If doors are of wood, rats can gnaw through at the corners, but by fitting tin sheet along the bottom 15 mm of the doors, this can be prevented. The lower end of the tin sheet should pass below the door and be secured to the inside. Wooden doorsteps also should be treated similarly.

c) Window opening should not be less than 1 mt from ground level and the wall below them should have a smooth surface. If there are no window shutters, 10-12 mm wire netting or some other rat-proof guard should be provided to the windows. Nothing should be kept outside unguarded windows, which may enable rats and mice to climb into the store.

d) Drain pipes from the roof should be out away about 1 m above ground level or protected with 10-12 mm wire netting or expanded metal. Drainage holes leading from inside the premises through door steps or walls should also be protected with such wire netting or expanded metal.

e) Any rat holes already in the building with pucca floor should be sealed with cement mortar containing pieces of broken glass.

f) Rat proofing should be carried out before grain is introduced, as rats and mice may take shelter amongst the stacked bags. This may not be very important if no water is available inside, as rats can live only for a few days in complete absence of water, but even a drop from a tap or access to rain water in roof gutters or in sewers is sufficient to keep rats alive.

DESTRUCTION OF RATS

This includes trapping, poison baiting, fumigation and encouragement of cats in the store houses.

TRAPPING

A) Cage type

B) Box type

C) Break – back type

The traps should be kept clean, the springs of the trap should be oiled lightly at suitable intervals.

BAITS

Almost any edible commodity e.g. lean meat, offal, bread, banana, guava, can be used as bait. For controlling field rats grain mixed with gur syrup (2 kg gur has been found suitable). The bait should be prepared fresh every day and placed in the traps before the latter are laid in store rooms. The baits should be securely attached to the trigger of wire cage type of trap and to the platform of the break –back type. Residual baits of the previous day should be collected every morning and disposed of.

DISPOSAL OF CATCH

If break-back type of traps are used the rats are killed in the traps. If cage or box type traps are employed the trapped rats should NOT be released alive but should be killed by dipping the traps along with the catch in water. The corpses should be buried without delay.

POISON BAITING

This method is suitable for the control of rats indoor as well as in outside areas. The campaign is carried out in three stages, preliminary survey, prebaiting and baiting.

NOTES

i) All personnel in the vicinity should be warned when poison baiting is in progress and 'WARNING' notice should be put up. This is particularly important when the baiting is carried out indoors.

ii) Poison baiting must NOT be carried out in store rooms containing bagged foodstuffs.

iii) Zinc phosphide must be used near ammunition or explosives.

iv) Poison baiting should be carried out when bubonic plague is noticed in the locality.

PREBAITING

A suitable bait (e.g. boiled rice of kneaded atta or flour preferably flavoured with a little edible oil, cheese etc) should be made ito small pollets say about 1 cm in diameter, and the following procedure adopted.

FIRST DAY

Baits should be laid at closing hour along the rats runs. The number of baits laid should be noted.

SECOND DAY

At opening the number of baits taken by rats should be counted, uneaten baits collected and disposed off. No baits should laid n the second day.

THIRD DAY **-** As on first day

FOURTH DAY - As on second day

BAITING

On the fifth day a poison is added to the baits, and they laid in the same manner as on the first and third day. The poisons generally used white arsenic, zinc phosphide and barium carbonate. Containers of these poisons must be prominently labelled 'RAT POISONS'. The proportion by weight in which are mixed with the bait are given below:

I Part of Poison	Parts of bait	Amount of Poison required to kill
Barium carbonate	4-5	25-30 gms
White arsenic	10	25-30 gms
Zinc phosphide	15-20	12-15 gms

Strychnine hydrochloride (Kuchla) 24 gms is mixed with 20 Kg of grain beore sweetening for control of field rats.

FUMIGATION OF RAT HOLES

This is specially suited for outdoor areas where ground dwelling rats live. Fumigation should be carried out by experts only. Local Public Health Authorities, Station Hygiene Organization or Department of Agriculture should be contacted to carry out the fumigation.

Cymag/Cyanogas powder gives out hydrogen cyanide (a deadly gas) on exposure to damp air. All rat holes except one are closed with web earth. The poisonous powder is either poured deep not the open rat hole by means of spoon or ladle with a long handle, or preferably pumped in by a 'Cyanogas foot pump'. Then this hole also is promptly closed like others Cyano gassing of the burrows should be avoided during rains and in water logged areas as the water concerned will absorb much poison.

ALUMINIUM PHOSPHITE TABLETS

Among the recent fumigants, use of Alminium phosphide is quite common. Phosphine gas is released by the action of moisture or water vapour on Aiminium phosphide which is sold in the exposure to atmosphere. The tablet should be introduced into the at burrow and closed with wet earth. This is convenient to use and no special equipment is required. This should be used only for outdoor purpose and by trained personnel.