

Materials Management on Indian Railways

Courtesy: <http://nfr.indianrailways.gov.in>

CHAPTER - 1

INTEGRATED CONCEPT AND OBJECTIVES

OF

MATERIALS MANAGEMENT

TOPICS COVERED IN THIS CHAPTER :

1.1.0 Introduction to integrated concept and objective of material management :

1.2.0 Integrated Concept Of Materials Management :

1.3.0 Objectives Of Materials Management :

1.4.0 Possible Conflicts Between Departmental Objectives :

1.1.0 Introduction to Integrated Concept and Objective of Material Management :

For running any industry or business, we need a number of resources. These resources are popularly known as 5 M's of any Industrial activity i.e.

- Men,
- Machines,
- Materials,
- Money and
- Management.
- All these resources which are basic inputs, are important but their relative importance depends upon the particular type of industry and also other environmental factors. Earlier, when many modern machines were not even known, whole activity was around men.
- But now the importance has shifted from men to machines and in the present environment materials are the life blood of any industry or business and for their proper running, materials should be available at proper time in proper quantity at proper place.

1.1.1 Achieving this task of making materials available may not be difficult if they are available in plenty and there are no constraints as regards to cost at which they are arranged.

- In the earlier days when there was not much of competition, cost at which materials were arranged was not a constraint. Producers were able to pass on all the costs to customers and therefore achieving efficiency in managing materials was not a necessary requirement.
- But due to tough competition for most of the Industrial products and limited financial resources, industries have been compelled to find out ways and means of reducing costs if they want to survive in the competitive market.

1.1.2 Basic goals of any industry are survival and earning profits to make an adequate returns on capital employed (investment). The profitability of any organization can be judged by a ratio known as 'Rate of Return on Investment' which is defined as profits earned for unit investment ;

Rate of Return (ROI) = Profit / Capital Employed (Investment) where ,
 Profit = Total Receipt - Total Expenditure and
 Capital Employed = Fixed Assets + Current Assets

1.1.3 Different strategies for improving profitability (ROI) may be as under:-

(i) *To increase total receipts* : For this either sales have to be increased or the prices of the products sold have to be increased. Both these alternatives are very difficult to achieve in present competitive market.

(ii) *To Reduce Expenditure* : Majority of the expenditure of any industry is either on men or materials. The relative expenditure on men and materials varies from industry to industry but in most of the industries expenditure on materials is 45% to 70% of total expenditure while expenditure on men will be around 45 to 15% (assuming 15% as miscellaneous expenditures).

- Therefore, two broad areas for reducing expenditure are men and materials. However, reducing expenditure on men is a very difficult task in today's environment of tight labor laws and strong trade unions. Therefore the other are to be tackled remains reducing expenditure on materials.
- When we talk of expenditure on materials, it is relevant to point out here that there are two types of costs related to materials
 - - cost of materials and
 - - cost on materials
- i.e. there are always some extra expenditure related to materials which is not actual cost of materials. We can very well tackle these extra costs (cost on materials) without affecting the actual level of consumption and may achieve reduction in expenditure.

(iii) *Reduce Investment in Fixed Assets* : As investment has already been made, there is very little scope for reducing expenditure on fixed assets.

(iv) *Reduce Investment in Current Assets* : Current assets consist of mainly working capital and inventory. As a rough estimate, about 40% of current assets are generally tied up in inventories of raw materials, consumables, materials under different stages of production and finished goods. If we could reduce stocks of these different types of inventories. We can very well reduce investments in current assets and improve profitability.

- It is, thus, clear from the foregoing paragraphs that for both survival and for increasing profitability, managing materials plays a very important role and it has been now realized by most of the industries, public as well as private, that 'materials management' function can

also be a profit centre within the organization because this function has a lot of potential for contributing towards profitability of the organization.

1.2.0 Integrated Concept Of Materials Management :

Traditionally, various activities related to managing materials were looked after by various departments. While purchases were generally arranged by top management with the assistance of a Purchase Agent or Purchase Officer, store keeping and stock control was the responsibility of the production head with the assistance of a store keeper or Stores Officer. Apart from these two main activities, distribution of materials (mostly finished goods) was the responsibility of marketing.

1.2.1 After realizing the profitability potential of Materials Management function, when attempts were made to exploit this potential, it was realized that there were many problems in achieving the objectives due to inherent conflicts amongst various departmental objectives. When a purchasing personnel wants to purchase in bulk to get price discounts, inventory of the stores personnel becomes high. Similarly desire of marketing personnel to have adequate stocks of finished goods in order not to lose any opportunity of sale resorts in high inventory.

- The conclusion is that in the traditional set up one person could not be held responsible for all the functions of materials management to achieve overall economy. Therefore necessity of placing all the functions related to materials management e.g. purchasing, stocking, inventory control and distribution under one department headed by an executive of status at par with other departmental heads, was felt.
 - Thus evolved the concept of integrated materials management which can be defined as the function which is responsible for the coordination of planning, selecting sources, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a pre-decided service to the customer at a minimum cost.
-

1.3.0 Objectives Of Materials Management :

- The objectives of integrated materials management can be classified in two categories ;
 - Primary and
 - Secondary.
- These are discussed below ;

1.3.1 Primary Objectives : Following may be identified as primary objectives which are to be achieved.

(a) To purchase the required materials at minimum possible prices by following the prescribed purchase policies and encouraging healthy competition.

(b) To achieve high inventory turnover i.e. to meet materials requirement of the organization by keeping low average stocks so that the capital locked up in materials is turned over a large no of times.

(c) To incur minimum possible expenditure on administrative and other allied activities related to purchase of materials and also to keep the materials in stock till they are finally delivered to the users.

(d) To ensure that continuity of supply of materials to the users is maintained by avoiding out of stock situation.

(e) To supply materials of consistent quality i.e. of quality which meets user specification and is fit for service.

(f) To keep the wage bill of the department low by ensuring proper distribution of work among staff and not employing surplus staff.

(g) To maintain good relationship with the suppliers of materials and also develop new suppliers for the products for which reliable suppliers do not exist.

(h) To ensure training and development of personnel employed in the department so that good industrial relations are maintained.

(i) To maintain proper and up-to-date records of all stores transactions and purchases.

1.3.2 Secondary Objectives :

(a) To assist technical/design department in developing new materials and products which may be more profitable to the organization.

(b) To make economic 'make or buy' decisions.

(c) To ensure standardization of materials

(d) To contribute in the product improvement.

(e) To contribute in the development of inter departmental harmony.

(f) To follow scientific methods of forecasting prices and future consumption of materials.

1.4.0 Possible Conflicts Between Departmental Objectives :

As already mentioned ,it is difficult to achieve all the objectives fully at a given time .Many times we have to sacrifice one objective to achieve the other in the interest of the organization. Thus our objective is to optimize various objectives.

1.4.1 These conflicts are listed below. It will be seen that to achieve one primary objective other objectives are adversely affected.

(a) When we attempt at purchasing the material at lower prices, many times we may have to purchase larger quantities and this will adversely affect our objective of achieving high inventory turnover. Some times we may have to place orders on new suppliers and therefore the quality may not remain consistent and also favorable relations with the suppliers may be adversely affected. Sometimes depending upon price forecasts we may have to wait for purchasing and this will affect continuity of supply.

(b) If we try to achieve high inventory turnover we have to manage with low stock. For this we may have to buy in small lots more frequently and due to many unforeseen circumstances, we may face more often out of stock situation. Obviously our objectives of buying at minimum prices with minimum administrative expenditure and continuity of supply will be adversely affected.

(c) Attempt to keep administrative and other allied expenditure low, may result in poor record keeping and frequent out of stock situations. If we try to reduce expenditure on Inspection organization, this may affect quality of incoming goods. Low expenditure on chasing organization & review system may result in stockouts and overstocks, which will affect our objectives of continuity of supply and high inventory turnover respectively.

(d) For maintaining continuity of supply we have to provide adequate safety stocks and purchase materials at right time irrespective of prices to be paid. This will affect our objective of achieving high inventory turnover and buying at minimum prices respectively. To ensure timely deliveries of stores we may have to provide for penalty clauses in our contracts and this may affect relations with the suppliers. Sometimes when the stocks are very low we may have to relax Inspection-standards for fresh supplies which will affect consistency of quality. We may also have to provide for a proper review system which may affect our objective of achieving low pay-roll costs.

(e) To achieve consistency of quality, we may have to sacrifice on prices and also relations with the suppliers. Tight Inspection procedures may also affect continuity of supply, low pay-roll cost and low administrative costs.

(f) In an attempt to keep wage bill of 'Materials Management' Department low, we may have to sacrifice on all the primary objectives to some extent.

(g) Maintaining good relations with the suppliers may affect buying at lower prices and sometimes continuity of supply, high inventory turnover and consistency of quality also.

(h) Objective of development of personnel may adversely affect the wage bill of the department.

(i) Keeping good records may also affect the objective of keeping wage bill low.

1.4.2 It will be seen from the above discussions that it is not easy task to manage various activities related to management of materials. In order to decide, which objective is more important in a particular situation, we require managerial skills and decisions have to be taken keeping overall interest of the organization in mind. This is reason why all the functions related to managing materials should be dealt by one department.

CHAPTER - 2

ORGANIZATION OF MATERIALS MANAGEMENT DEPARTMENT

IN

INDIAN RAILWAYS

TOPICS COVERED IN THIS CHAPTER :

2.1.0 Introduction to Organisation of Indian Railways :

2.2.0 Functions of Stores Department :

2.3.0 Some relevant information (year 1995-96) :

2.1.0 Introduction to Organisation of Indian Railways :

- The Indian Railways' net work is owned and managed by the Central Govt. All the operations are controlled and directed by the Railway Board under the overall supervision of the Minister of Railways.
- The net-work of Railways is divided into nine Zonal Railways each under the control of a General Manager.
- Each Railway zone is organized on the divisional pattern of working.
- In addition there are six modern Production Units
 - Chittaranjan Locomotive Works at Chittaranjan,
 - Integral Coach Factory at Parambur at Madras,
 - Diesel Locomotive Works at Varanasi,
 - Wheel & Axle Plant at Bangalore,
 - Diesel Component Works at Patiala and
 - Rail Coach factory at Kapurthala.
- On a Zonal Railway, General manager is assisted by Additional General managers and heads of different departments such as Chief Engineer, Chief Optg. Supdt., Chief Comml. Supdt, Chief Mech. Engineer, Controller of Stores etc.

2.1.1 Materials Management Organization in Railway Board : In Railway Board, Member (Mechanical) looks after the material management function who has one full time Additional Member(Railway Stores) to assist him. Additional Member(Railway Stores) is the head of Railway Stores Directorate.

- There are
 - Executive Directors,
 - Directors
 - Joint Directors and
 - Deputy Directors in this Directorate.
- **The functions of Railway Stores Directorate in Railway Board are summarized below:-**

(a) Providing policy frame work: Framing policies for efficient materials management on Railways and issue of policy directives to all Zonal Railways and production units on stores and purchase matters coordinate various activities of materials management.

(b) Inventory Control :- Railway Board evolve policies for efficient inventory management of Indian Railways. For this integrated materials budget is processed by this Directorate. They also monitor inventory performance of Railways and production units by getting periodic returns from the Railways and issue directives from time to time.

(c) Centralized Purchase :- Railway Stores Directorate is also doing field function of purchases. Some of the items of Railways are centralized for purchase through Railway Board only. Some of these items are listed as under

(i) Complete units of Rolling Stock,

(ii) Importation of Wheel Tyres & Axles (WTA),

(iii) Selected critical items for which capacity is either equal to or less than Railways demands.

- These items are centralized for purchase through Railway Board to ensure equitable distribution as per needs of Railways. Some of these items are train lighting batteries, train lighting lamps, central buffer couplers, some rubber products, special steel items, petrol, lubricants and oils (POL), Textiles items.

(iv) Processing of all cases which are initiated by Zonal Railways but the purchases against the same is beyond the competence of General Managers (For Purchases more than Rs. 8 crores / item as per Rly. Bd. letter dated 03-09-97).

(d) Liaison with other Ministries in case of purchases done through Directorate General of Supplies and Disposals and in cases of imports when clearance from Ministry of Industry & Chief Controller of Imports & Exports is required .

- To maintain good liaison with DGS&D and other Ministries, Railway Stores Directorate have posted one JA/SS Grade officer in DGS&D who is designated as Railway Liaison Officer.

(e) Coordinate for supply of steel from main producers to various Railways and production Units . For this purpose Railway Stores Directorate have one Director at Calcutta who is participating in various meetings of Joint Plant Committee for drawing Rolling program and also reviews supply position of steel to various Railways and Production Units. Director (Iron & Steel), Calcutta is also coordinating for planning and supply of steel to various wagon builders.

2.1.2 Materials Management Organization in Zonal Railways : In Railways an integrated concept of Materials Management is already existing. All Zonal Railways and Production Units have got separate department known as 'Stores Department' for performing all the functions related to materials management. The head of Stores Department is known as Controller of Stores who functions at the same level as other Heads of departments.

- The Zonal Railway organization of stores Department is at three levels ;
 - Headquarters level
 - Divisional level and
 - Extra Divisional or District level in the form of Stores Depots and Printing Presses.

a. Organization at Head-quarter level :- At headquarters level, office of Controller of Stores is responsible for both coordinating various activities of stores depots and divisional controller of stores and also purchases.

- All purchases on Indian Railways are centralized in COS office only except for items of petty value. For discharging these duties COS is assisted by few Chief Materials Managers who are in S.A. Grade, Dy. Controller of Stores who are in Junior Administrative or Selection Grade, Sr. Stores Officer in Sr. Scale and Asst. Controller of Stores in Assistant Grade.
- Some of the officers are looking after functions of Inventory Control and disposal of scrap also in addition to purchase.
- Office of Controller of Stores is organized in various purchase sections. But there are some non purchase sections also such as Tender Section, General Section, Inventory Control Section, Firm's Registration Section, etc.

b. Organization at Divisional level :- Divisions have a Sr. Div. Controller of Stores or Div. Controller of Stores who is to coordinate with Controller of Stores to meet the material requirements of his Division. He has been delegated some purchase powers also to locally Purchase items required for his Division. Divisional Stores Depots are also being planned for many of the Divisions.

c. Organization at Depot level :- The problems on Railways are more complex than those of a manufacturing organizations. There are thousands of indentors spread over a large geographical area. The Railways therefore, have to plan locations of the various stores depots with care.

- Normally Stores Depots are located attached to the major workshops and are known as **attached depots**. In addition, Stores depots for materials of general nature which are required by most of the indentors are situated at one or two convenient locations from where the supplies can be effected. These are called as **General Stores Depots**.
- Stores Depots are generally under the supervision of Gazetted officers of the Stores Department referred to as Depot Officers. A Depot Officer may be in Selection Grade/JA Grade or Senior Scale or even Jr. Scale.
- The Depot Officer is responsible to the Controller of Stores for the efficient maintenance of stocks of stores and for the prompt service to the indentors in his territory. The depot officer is assisted in his work by Asst. Depot Officers and other Senior Staff such as Depot Store Keepers (DSKs).

 **The work in a Stores Depot consists of ;**

(i) Receipt and inspection of stores

(ii) Storage and issue of materials

(iii) Dispatch of materials

(iv) Disposal of surplus stores and scrap materials

- *For facility of work, there should ordinarily be ;*
 - A locomotive depot attached to and serving the main loco workshop
 - C & W stores depot attached to C & W Shops
 - Signal Stores Depot attached to Signal Shops
 - Electrical Stores Depot attached to Elect. Shops
 - Permanent Way Depots for stocking Permanent Way & Bridge material
 - Stationery Depot
 - Scrap Yards
 - General Stores Depot
 - Electric Loco Stores Depot attached to an Electric Loco Shed
 - Diesel Loco Stores Depot attached to a Diesel Loco Shed
 - Printing Stores Depot attached to Rly. Printing press

d. Printing Press : Requirement of forms, books, time-tables, all type of tickets like card tickets, platform tickets, coupons etc., is met by Railway Printing Presses. These process are under the Supervision of Suptd. of Printing and Stationery.

[BACK TO TOPICS](#)

2.2.0 Functions of Stores Department :

Functions of Stores Department can be classified as under ;

(a) Material Planning :- This consists of ascertaining the need of the various departments in the matter of materials and stores and devising such policies that all the materials which have constant demand and also some critical non-wearing materials are constantly available so that they are supplied to the user departments without delay. This includes classification / categorization of items, codification, designing of recoupment policies, taking 'make or buy' decision and also preparation of stores budget.

(b) Procurement of Stores :- This includes purchase of materials of required quality and quantity at reasonable prices. On Indian Railways we purchased materials worth about Rs. 6488 crores in 1995-96.

- This activity also includes development of sources of supply with due emphasis to development of ancillary industries, small scale industries and indigenous sources for imported items (import substitution). This also includes, maintaining constant touch with the market to ensure steady flow of materials.

(c) Receipt & Inspection of Stores :- This includes taking delivery of materials from carrier, checking of quantity and quality and their accountal.

(d) Store Keeping :- This includes stocking of materials in the wards, their handling, issuing on demand by indentors and maintaining proper records.

(e) *Distribution of Stores* :- This includes timely dispatch and distribution of materials to various users by adopting quick and right mode of transportation.

(f) *Collection, accountal and disposal of scrap* :- This activity is main revenue earning activity of Stores Department these days. On Indian Railway, sale of scrap is of the order of Rs.1000 crores.

(g) *Inventory Control* :- This includes maintaining an economic level of investment in inventories coupled with fulfilling user's requirements of materials satisfactorily.

(h) *Cost Reduction* :- As already explained in Chapter 1, Materials. Management Department can contribute a lot on cost reduction. Some of the techniques used for this purpose are ;

1) Variety Reduction

2) Standardization

3) Value Analysis

4) Forecasting.

2.3.0 Some relevant information (year 1996-97) :

- Total Expenditure on Purchase (for manufacturing of Rolling Stock, for Fuel, for Construction, for Operations, Repairs and Maintenance) : Rs. 8526 crores
- Inventory Position (without fuel)
- Inventory Balance : 545 crores
- Total Issues : 4565 crores
- Turn-over-Ratio : 12 %
- Total number of depots : 215
(out of which 105 depots are having issues over Rs.5 crores)
- Total number of Printing Presses :
11 General Printing Presses and
11 for Printing Tickets only
- Disposal of scrap :
Rs. 853 crores (96-97)
Rs.1018 crores (95-96)
- Staff : (96-97)

· Gazetted : (group A & B)	685 nos.
· Group "C"	18,159 nos.
· Group "D"	17,735 nos.

· Total	36,579 nos.

CHAPTER - 3

CLASSIFICATION, CODIFICATION AND NOMENCLATURE

OF STORES ON

INDIAN RAILWAYS

TOPICS COVERED IN THIS CHAPTER:

3.1.0 General Classification Of Stores :

3.2.0 Other Classification Of Stores :

3.3.0 Codification Of Stores :

3.4.0 Nomenclature Lists :

3.1.0 General Classification of Stores:

Stores Department on Indian Railways is required to give a service to various departments by making thousands of items available to their indenters as and when required. To give this service we have to maintain stocks of a large number of items called as "Stock items" whereas for other items which are not frequently required or are of one time requirement, no stocks are maintained. These items are purchased as and when required to meet specific demands and are called as 'Non-stock items'. The stock items are further classified as under:

3.1.1 Ordinary Stores : These are generally such items of stores for which there is a regular turnover caused by a constant demand. These may be further subdivided as

- New,
- Second hand
- Serviceable and
- Second hand repairable.

3.1.2 Emergency Stores : The Stores depots are also required to stock certain items of stores even though they do not have a regular turnover. These are emergency stores and comprise of items which do not ordinarily wear out or require renewal but which are required to be kept in stock to meet emergency due to breakage or unanticipated deterioration.

- These items are not readily available in the market and as such would require a long time for procurement in case they are not stocked. These are generally components of imported machines and Rolling Stock.

3.1.3 Surplus Stores : These are the items of ordinary stock which are not demanded by the users. If any item is not issued for past 24 months or more, it is declared as surplus. Surplus stores are further classified as dead surplus and movable surplus.

a. Dead Surplus Stores : These are the items which have not been issued to any indenter during past 24 months or more and are not likely to be utilized on any Railway within next 2 years

b. Movable Surplus Stores: These are the items which have not been issued to any indenter during past 24 months but their use in near future (within 24 months) is anticipated.

3.1.4 Special Stores : The items of stores arranged and stocked for works and other special purposes i.e. other than for operation or ordinary maintenance and repairs are called "Special Stores". These are kept separate from ordinary stores and issued to the work for which they have been arranged.

3.2.0 Other Classification Of Stores :

 *Apart from above some other classifications as under are also prevalent on Indian Railways.*

3.2.1 Custody Stores : These are stores which have been purchased for special works and charged to such works but due to inadequate stocking facilities available with user/indenter have been kept in the custody of stores department. These are generally non- stock items but in certain situations stock items also may be under this classification.

3.2.2 Imprest Stores : Certain important units like loco sheds, train examining depots etc. require a large number of items for day to day repairs, maintenance and operation of rolling stock. Such items include consumable stores like cotton wastes, oils, greases etc. as well as the spares required for rolling stock.

- The senior supervisor in-charge of the unit like running sheds, Train Examining Depots, Chief Signal Inspector, Electric Foreman etc. are allowed to maintain stocks of nominated items of stores. The limits up to which the stocks are to be kept are also specified while sanctioning such items and are generally fixed as equivalent to two or three months' requirement.
- Imprest stores are standing advance of materials to meet the day to day requirement of repairs maintenance and operation of rolling stock etc. On most Railways the Imprest stores are **charged off** to the final head of Account under revenue working expenses. However, detailed A/c are maintained by these units and monthly Imprest recoupment schedules are sent by the Imprest holders to the nominated stores depots for bringing their stocks to the Imprest level sanctioned.

3.2.3 Standard And Non-Standard Items : Most of the items used on Indian Railways have been standardized i.e. their description, dimensions and specifications have been made standard and also a standard code no. has been allotted for easy identification. However, still there may be few items which have not been standardized and therefore obviously no code no. has been allotted for them. Such items are known as **Non- Standard items**.

- A non-standard item will necessarily be a non-stock item but all standard items are not stock items i.e. an item which has been allotted a code no. may still be a non-stock item.
-

3.3.0 Codification Of Stores :

In order to recognize every item distinctly, all standard items being used on Railways, have been allotted a code number, which is also known as Price List (PL) No. These Nos. enable unique identification of items and as a result of extensive standardization all over the Railways, enable easy exchange of information among nine Railway Zones and six Production Units. While allotting these numbers, an opportunity has been taken to group the items in a meaningful manner so that group-wise analysis of materials is also facilitated.

- We can have three types of codification systems ;
 - Fully significant,
 - Semi-significant and
 - Non-significant.
- In fully significant system, all the digits of the code signify some property of the material while in a non-significant system, digits have no significance and one can not guess anything about material by seeing only code no. Obviously if we have large number of items developing fully significant system will require a large no. of digits which may not be manageable.
- Therefore in Railways we have designed a 8 digit semi-significant coding system in which first 4 digits signify some property of the material while other 4 digits are non-significant. This code No. is known as Price List No. or PL NO.

3.3.1 All the Railway materials have been classified in 76 'Major Groups' or 'Main Groups' or groups. Each Major/main group (or groups) has been further classified into several sub-groups. Great care has been taken to ensure that groups and sub-groups do not overlap and the numbers have been allotted in a meaningful order and also they are unique.

3.3.2 Each PL No. is sub-divided into 4 parts as under ;

90 35 058 3

Part A -- First Two Digits

Part B -- Third and fourth digit

Part C-- Fifth , Sixth and seventh digit

Part D-- Last digit

Part `A` consists of two digits representing the main group of stores to which the item belongs. in the present example main group is `90' which is for steel items.

Part `B` consists of two digits representing sub-group. Each group has been further divided into sub-groups. Here `35' is the sub-group which is for various sizes of Mild Steel Flats.

- The sub-grouping for the most of rolling stock groups is on the basis of major assemblies of which the item is a part.

Part 'C' consists of 3 digits and is the serial number of the item within the sub group. No significance is attached to this number. In the above example serial number is 58.

Part 'D' consists of one digit which has a special significance with reference to computerization. This is the check digit. This digit is unique to a given number and is intended to check the integrity of the code number.

3.3.3 Method of verifying P.L. NO :

Wherever the computer encounters a code No. during processing, it calculates the check digit on the basis of modulus 11 and checks if the calculated digit tallies with the check digit shown on the document and punched. If the two do not tally, the voucher is rejected.

Method :Calculation method is given below.

- CHECK DIGIT : DATA VALIDATION WHILE PROCESSING;

(BASED ON MODULAS 11)

1. WRITE 2 TO 8 BELOW EACH DIGIT OF CODE FROM RIGHT TO LEFT EXCEPT CHECK DIGIT,

2. MULTIPLY THE DIGITS VERTICALLY &

3. ADD PRODUCTS OF MULTIPLICATION HORIZONTALLY,

4. DIVIDE THE SUM OF PRODUCTS BY 11,

5. THE REMAINDER OF DIVISION IS CHECK DIGIT

(RIGHT MOST DIGIT IF YOU GET 2-Digit REMAINDER)

- Sample Check digit calculation :

2 5 1 6 1 0 4 ?

X X X X X X X

8 7 6 5 4 3 2 -

16 + 35 + 6 + 30 + 4 + 0 + 8 = 99

99/11 = 11*9 + 0 , i.e. Remainder = 0

Therefore, Check digit = 0

○ MAIN GROUPS CODES

00-09	STEAM LOCO SPARES
10-19	DIESEL LOCO SPARES
20-29	ELECTRIC LOCO SPARES
30-39	CARRIAGE & WAGON SPARES
40-49	ELECTRICAL STORES
50-59	SIGNAL & TELE- COMMUNICATION STORES
60-69	PERMANENT WAY & ENGG. STORES
70-99	GENERAL STORES
98	SCRAP

3.3.4 Unification of P.L. NO: A Price List number may be either unified or non- unified. If a Price List number for an item is unified, all the Railways and Production unit uses same number as PL code for this item. This facilitates easy exchange of information between the Railways. Disposal of surplus stores and centralized purchase become easier. In case of non-unified Price List numbers, all the Railways do not use same code for the same item. Our attempt is always to have unified Price List numbers.

[BACK TO INDEX](#)

3.4.0 Nomenclature Lists :

3.4.1 It is not easy for the indentors to remember codes for all the items which are likely to be required by them. As a stock item can not be indented without quoting Price List number in the requisition, Major group wise Nomenclature lists (popularly known as PL books) have been printed for all the items classified in a Major group.

- This list contains
 - Code number,
 - Description,
 - Specification,
 - Unit of accountal and
 - Details of Railways and depots where the item is stocked.
- These books have been distributed to all the departments and indentors. The nomenclature list (PL book) of which all the items are unified, is known as unified nomenclature list.

3.4.1.1 Description Of Stores : The basic commodity method has been adopted in describing an item. In this system the mention of the basic commodity precedes the detailed description of the item.

- For example "ordinary toilet soap" would, under the method, be described as "Soap, Toilet, ordinary" because the basic commodity is soap. The word "toilet" specifies the kind of that commodity and "ordinary" further qualifies the toilet variety.

- If the basic commodity method is not used, the different kinds of soaps will find themselves listed in different places. In short the description should be arranged in the following order of precedence :
 1. The mention of the basic commodity
 2. The general variance in kind, use size or shape
 3. The particular kind or size.
 4. The specification / drawing.
- A few instances of how the items would have been described in P.L. books are :

Items description	Nomenclature
Line clear cane hoops level Taper shank twist drill	Brass plated spirit Level, Spirit, brass plated Drill, twist, taper shank.

3.4.2 End Use Of Item : Against some items, the purpose for which the items are used, is incorporated in the nomenclature list. For instance there are numerous grades of lubricating oils stocked and used for various purposes. This information is briefly mentioned in the nomenclature list as a part of the description , say in remarks column, as this will greatly help the consumer.

3.4.3 Mention Of Makers' Name : The commercial brand or the proprietary make of the item will be avoided in the description unless the item is of proprietary nature. The description of the basic commodity only will find a place in nomenclature list.

3.4.4 Specification Or Drawing : Reference to a standard specification or in its absence the Railway's drawing, if any, will be mentioned against each description. Such specification and drawing references are not only useful to suppliers, including Railway manufacturing shops but also assist the stores Department in the purchase as well as inspection of supplies.

3.4.5 The Unit : It is desirable that for a particular item, all references should confirm to one and the same unit, as this will avoid unnecessary references and would also facilitate issues and receipts eliminating arithmetical errors in conversion from one unit to another. The unit code has been indicated in a separate column of the PL Book. Unit Code consists of 2 digits.

CHAPTER - 4

PLANNING OF NON-STOCK ITEMS

AND PROCESSING OF REQUISITION

TOPICS COVERED IN THIS CHAPTER :

4.1.0 Instructions for making requisition of Non-Stock Items :

4.2.0 Processing of Requisitions :

4.3.0 Planning of Non-Stock Items :

4.4.0 Conversion of Non Stock Items in to Stock Items :

DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS:

4.1.0 Instructions for making requisition of Non-Stock Items :

Non-Stock items are generally those items which do not have regular turn over. Planning of such items by Stores Department is difficult and therefore user departments plan for these items on the basis of various estimates for works and their programs for repairs and maintenance. As purchase always takes some time, advance planning even for non-stock items is also called for.

4.1.1 After working out the requirements, user departments submit those requirements to their feeding stores depot on requisition form No.S 1302. This requisition should be prepared on the basis of "one item on one form" in duplicate. One copy will be retained by the Indenting officer as his office copy and the other copy will be submitted to the feeding Stores Depot through the officer competent to sanction the requirements.

- As per present delegation, requirements up to Rs. 2000/- can be signed by Assistant Officers and Sr. Scale Officers.
- The requirements valuing between Rs. 2,000/- to Rs. 1 lakh are sanctioned only by a JA grade officer (On some Railways JA grade officers are delegated these powers up to Rs. 50,000/- only).

- Depending upon extent delegation, requirements between Rs. 1 lakh to Rs.5 lakhs can be sanctioned by ADRM/SA grade officer of the Department .
- All requirements above Rs. 5 lakhs may be sanctioned by either DRM or Principal Head of the Department. However, these delegations may vary from Railway to Railway.

4.1.2 Important points to be kept in mind at the time of preparation and submission of requisitions for non-stock items :

(a) As far as possible attempts should be made to draw standard stock items from Stores Dept. If the standard stock items cannot meet the requirements, then the quantity of non-stock items to be requisitioned should be assessed realistically, keeping Canons of Financial Propriety in mind. Many times there is temptation to over-indent the quantity and ultimately excess quantity may lie in Stores without any use.

(b) Description of items should be clear and detailed. As the user is not going himself to purchase the material from the market, he should examine the description as a manufacturer or Inspecting officer and should visualize whether he will be able to make or inspect the material on the basis of given description as per user requirement. For this, purpose all the dimensions with necessary tolerances should be clearly specified. There should be standard specifications for all the raw materials and components used for manufacturing the product and also process of manufacturing and various types of treatments and finishes should be clearly specified. All these details are generally given in standard specifications.

- **In our country Bureau of Indian Standards have standardized specifications for most of the products. These specifications are known as Indian Standard Specifications (ISS). If the products to these specifications can meet our requirements we shall always prefer goods to these specifications.**
- **If materials to IS specifications are unable to meet our requirement we may think of going for some higher specifications such as**
 - **British Standard (BS),**
 - **American Society of Testing Materials (ASTM) etc.**

- For some of the Railway items, RDSO have made the specifications which are known as Indian Railway Standards (IRS) Specifications.
- If our requirements can not be specified by any of these specifications we should try to make our own specifications.
- For some of the aspects of the materials for which it is difficult to make specifications, samples can be sent along with the requisition to guide the purchases. Giving clear, unambiguous and detailed description in the requisitions is very important and many times purchase is delayed and complicated because description given by the indenter is not complete.
- In many cases user may receive the material matching to the description given by him in the requisition, but he may find the material not to his requirement and this may be due to flaw in the description or specification provided by him. Some times specification itself classify the particular material in various grades and if the grade is not specified in the description, supplier may try to supply the cheapest possible grade which may not serve the purpose of user.
- If the item being indented is not as per Standard Specifications (IRS or IS) and the Indenting Officer has made his own specification or drawing, then he should send sufficient copies (about 10-12) of these specifications or drawings so that the same may be sent to all the likely suppliers at the time of issue of tenders.
- If the P.L.No. has been allotted for the items, it should invariably be mentioned in the requisition.

(c) Head of allocation to which the expenditure is to be charged, should be clearly indicated.

(b) If the same material was received by the indenter in the past, then he should invariably indicate the last purchase particulars. For non-stock items generally, no history is maintained by Stores Dept. and therefore, if last purchase particulars are indicated by the indenter it becomes easy to link the last purchase case in purchase office which may give guidance for finding likely supplier etc. If the purchase is being made for the first time and if indenter knows some of the likely suppliers, he should give list of those suppliers.

(e) As mentioned in para 4.1.1, for procurement of the non-stock requirements, administrative approval of competent authority is required. This approval is based upon the value of purchase which can be assessed only when rate is known. Therefore, assessment of rate for non-stock items is the basic requirement which is to be met by the user. The rate should, however, be assessed realistically and there should not be any deliberate attempt to assess the rate on lower side to either avoid finance concurrence or administrative approval at a particular level, following points should be kept in mind :

i) If the rate is assessed based on the last purchase rate, then due allowance should be provided for inflation. For this inquiries can be made from the market or in absence of any data, inflation at the rate of 6 to 10% per year may be allowed, depending upon the nature of the item and a remark to this effect may be given in the requisition.

ii) In the rate, various taxes such as Excise duty, Sales Tax, Octroi and extras such as packing and forwarding charges and freight should also be taken into account.

iii) If the item is being indented for the first time, attempt should be made to inquire the rate from the market.

iv) In absence of any information, rate can be worked out by doing a cost analysis and details of cost analysis may be enclosed along with the requisition.

f) Availability of the funds should be clearly certified.

g) All requisitions where estimated value of purchase is going to be more than Rs. 40,000/- should be vetted by the associated finance of the indenting officer.

h) All requisitions where estimated value of purchase is going to be more than Rs.2000/- should be signed by a JA grade officer.

i) The date by which the material is required should be clearly indicated. This date should normally be 6/8 months after date of submission of indent to Stores department, If, the item is required urgently, then full justification should be provided and concerned purchase officer should be addressed demi-officially to arrange the material on out of turn priority.

j) Demand for the items which are required to be purchased from a single source only should be accompanied with a certificate known as Proprietary Article Certificate (PAC) or with an adequate justification for purchase on single tender basis. PAC is to be signed by the officers of user departments as under.

Value of Demand	Level of officer
Up to Rs.5000/-	By Indenting officer
Up to Rs.25000/-	JAG/Selection grade officer
Up to Rs.1 lakh	SAG Officer
Above Rs.1 lakh	PHOD

(Ref. Board Letter No.88/RS(G)/779/28 dt:25.03.1992)

[BACK TO TOPICS](#)

4.2.0 Processing of Requisitions :

Normally all requisitions for Non-Stock items are submitted to the feeding Stores Depot who will scrutinize the requisition to find if they could offer some alternative stock item. If not, Depot Officer will forward the requisition to COS office where purchase action will be initiated.

[BACK TO TOPICS](#)

4.3.0 Planning of Non-Stock Items :

The ad-hoc indenting of non-stock items is not an efficient way of procurement and therefore on some of the Railways, Non-stock items are also arranged on a planned manner. In that case, heads of the departments are collecting requisitions for all non-stock items on fixed, nominated dates and after clubbing the requirements, combined requisitions are submitted to COS office as per a pre- decided time-table. By this method user departments are in a better position to monitor the purchase progress and work load of purchase office is also reduced by clubbing the requirement.

[BACK TO TOPICS](#)

4.4.0 Conversion of Non Stock Items in to Stock Items :

If it is found that a non-stock item is regularly required, then attempt should be made by the Consuming department to get the item stocked in nearby Stores Depot.

- **If,**
 - **An item can be issued more than 2 times in a year and**
 - **Annual consumption of the item is likely to be more than Rs. 2000/-**
- **User department should submit stocking application on the prescribed proforma through the Stores Depot where it is desired to stock the item.**
- **Approval for stocking the item will be granted by COS.**

CHAPTER - 5

PLANNING OF STOCK ITEMS & SYSTEMS OF RECOUPMENT

TOPICS COVERED IN THIS CHAPTER :

5.1.0 Stocking Decisions :

5.2.0 Forecasting Of Consumption :

5.3.0 Recoupment Of Emergency Stores :

5.4.0 Recoupment Of Ordinary Stores :

DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

5.1.0 Stocking Decisions :

The Stores Department has to first decide what items they would stock for meeting the demands of the various consumers. For items required for maintenance activities, the demands can be generated well in advance as the forecasting is done based on previous consumption pattern. The Stores Department can either stock those items or purchase as and when required to meet the specific demands. This can be decided upon considering the total cost of purchasing plus inventory carrying costs. Generally, it can be said that if the item is required frequently it is cheaper to stock and meet the demands from stock. But if an item is demanded say once or twice a year, it may be better to buy as and when required. For example, if a particular color of paint is used for maintenance of one or two rakes (like Pink City Express) and the demand is only twice a year, it may be better to buy the paint at the time of POH instead of stocking it all the time.

- There are certain items of spare parts which are not regularly required and it is difficult to know when the item will be demanded. If the item is not available, when required the repercussions may be serious. In other words the stock-out costs may be high. Such items have necessarily to be stocked as emergency items in the stores depot.

- Once a decision has been taken to stock an item, then our objective is to make the item, available to the user whenever he requires it. As in many situations, it is not known when the item will be required, we ensure that stocks of the items are always available so that the item can be issued whenever demanded by the user.

5.1.1 Various Recoument systems have been designed to achieve the objectives mentioned above. All these systems are discussed from para 5.3.0 to 5.4.3.

[BACK TO TOPICS](#)

5.2.0 Forecasting Of Consumption :

5.2.1 In any system of recoument, we are planning the action in advance. This advance planning is based on a consumption forecast and therefore accurate forecasting of future consumption is most essential for the success of any recoument system.

- **In the railways, the demands are mainly for :**
 - (i) **Maintenance activities**
 - (ii) **Production activities in a railway workshops**
 - (iii) **For projects or works**
- The maintenance activity is generally a continuing activity and the demands of materials for the purpose of maintenance can be estimated knowing the previous consumption, trend of consumption and various other information given by user departments about increase or decrease of maintenance activity. Various statistical forecasting methods are available for assessing future demands. In the railways, however, we are using at present only average of past 3 years' consumption modifying it as per the trend of consumption. More sophisticated techniques are likely to be used in future making use of the computer for this purpose.

5.2.2 As regards requirements for production activities once production schedule is finalized, the requirements of materials get automatically fixed and a **Material schedule** is prepared depending upon the final

production schedule showing the demands of all items including components and raw materials required to be procured.

- In this material schedule, the time by which the material is required can also be shown depending upon the production schedule. If the material schedule can be prepared one lead time in advance, it may be possible for the Stores department to purchase and supply material of the specific quantities required for this production schedule.
- If, however, it is not prepared sufficiently in advance, the requirement have paraphrased to be assessed on the basis of previous consumption and kept in stock. It may be added here that forecasting in a production situation is involved only for knowing the requirement of the finished products and the requirement of the individual components and raw materials can then be worked out exactly.
- Requirements of materials for projects and works are also worked out on the similar lines as that of production schedule. Once an estimate of a project is approved and a network is prepared, the exact requirements of the various materials and the time when they are required gets automatically worked out.
- The railways have a system of preparing material schedule for project requirements, but they are not indicating, at present, the time by which materials are required. The net work helps in fixing this time and this time factor should be incorporated while preparing material schedule.
- If this material schedule can be prepared sufficiently in advance, the Stores department can supply the items by purchasing for specific demands. The Railways, however, have a system of working out the requirements of items having long lead times, sufficiently in advance, so that the work does not suffer.

5.2.3 Concept Of Dues :For purchase of material, we have to pass through a number of formalities and therefore, some of the materials are expected either against previous recoument advises or against purchase orders placed on firms but materials not yet supplied. All these outstanding quantities are known as dues.

5.2.4 Covered & Uncovered Dues :*Dues may be of two types:*

(a) Covered Dues : Dues are known as Covered Dues, when our previous recoument sheets/Estimate sheets have been covered by purchase

orders but the materials have not yet been supplied by the firm. Hence, Covered Dues are the outstanding quantities against all live purchase orders.

(b) Uncovered Dues : If a previous recoupment sheet has not been covered by Purchase Order or is only partly covered, quantities outstanding for coverage against previous Recoupment sheets are known as Uncovered Dues.

5.2.5 Forecasting Anticipated Annual Consumption & Monthly Usage Factor (Muf) :As already explained above, we forecast future consumption on the basis of :

(a) Past 3 years' consumption after giving due considerations for Stock out periods,

(b) Trend of past consumption and

(c) Information available about increase/decrease of the activities, condemnation of a particular type of rolling stock, phasing out of old rolling stock and machinery & plant, and acquisition of new stock etc.

As regards (a), we may take simple average of true issues which took place during past 3 years or we may take weighted average by giving more weightage to most recent consumption. *Some of the Railways give weightage of*

- 3 to the consumption of last year (YR-1),
 - 2 to the year before last year (YR-2) and
 - 1 to the consumption during further previous year (Yr-3).
- While working out weighted average consumption, we may also take into account current consumption by giving it a weightage of 3. Thus weighted average can be worked out as under:

[(Cons.in Yr-3x1)+(Cons.in Yr-2x2)+(Cons. in Yr-1x3)+(Consumption from 1st April of current year to the current month)x3]

WEIGHTED AVERAGE consumption = -----

72+no. of months from April to current month X 3

- **By this method, we get forecast of monthly consumption. This can be suitably modified in view of factors mentioned at (b) & (c) above**

to get a reasonably accurate figure known as Monthly Usage Factor (MUF)

5.2.6 Lead Time : Lead Time is the time elapsed from the date of realization of need of recoument (i.e. date of recoument) to the physical receipt of material at the stocking place. Knowledge of Lead Time is very important for effective design of any Recoument system. Lead Time often is not constant and therefore variations in Lead Time also play very important role.

5.2.7 Safety Stock Or Buffer Stock : In any recoument system, we work out the quantities to be recouped on some forecasts of annual consumption and lead time. However, the actual figures may deviate from the forecast figure and this will lead to a situation of either stock out or overstock at some point of time. To avoid stock outs, we often provide safety stocks which are also known as buffer stock.

[BACK TO TOPICS](#)

5.3.0 Recoument Of Emergency Stores :

5.3.1 Emergency Stores by their nature, are slow moving items and therefore are issued occasionally. Their future demand pattern is totally uncertain. However, at the time of sanctioning an item for stocking as emergency store, a stocking limit known as base stock is also sanctioned. This base stock is based on some data of past consumption and a guess for future consumption.

5.3.2 The method of recoument for these stores is known as base stock method. As per this system, as and when an item is issued, an equivalent quantity is immediately recouped. Therefore, theoretically, no . of recouments may be equal to no. of issues.

5.3.3 *As per base stock method, total physical stock and dues added together should be equal to 'base stock' at all times.*

[BACK TO TOPICS](#)

5.4.0 Recoument Of Ordinary Stores :

Ordinary stores are the items which have regular turn over caused by constant demand. Therefore, we should recoup them in such a manner that fresh supplies are received before existing stocks are fully consumed.

- For these items, we have two basic systems of recoups described in paragraph 5.4.1 & 5.4.2 below.
- Third system described in paragraph 5.4.3 is combination of these two systems.

5.4.1 Continuous Review System (or Reorder Level System or Q System or Maxima-Minima System) :In this system, we predecide reorder level (or recoupment point) and when, as a result of issues of the item, Stock + dues come down to this level, immediately a recoupment sheet for a quantity equal to pre-decided order quantity is placed on the purchase office for placing the order on the suppliers. In Railways, this system is known as Maximum-Minimum System. The meaning of maximum-minimum is explained below:

(a) Maximum : This is the quantity which is most economical to order at a time. If we order large quantities at a time, large amount of money will be blocked and inventory carrying cost will be higher. As against this, if we order too small a quantity at a time, we will have to order more frequently and ordering costs will go up. 'Maximum', therefore, aims at a quantity which tends to minimize the total costs. For high value item, this quantity has been fixed as 3/6 months' requirements while for low value item, it has been fixed as 12 months' requirements. This optimum quantity can also be theoretically worked out if we know our cost of ordering and cost of carrying inventory. In that case this is known by the name Economic Order Quantity (EOQ).

(b) Minimum : Minimum is the quantity (Physical Stock + dues) which should be sufficient for the consumption during the lead time, i.e. time taken for procurement of the item. As Lead time is rarely constant and future demand may also vary, we decide the minimum quantity after taking into account reasonable safety factor so that material do not become out of stock before receipt of fresh supplies.

- In this system, stock and dues have to be reviewed perpetually to see whether they have reached re-order level. It may happen sometimes that this review may not take place due to human factors and we may not place the recoupment sheet although stock and dues would have come down to Minima. In this case, when we prepare the recoupment sheet,

- *Quantity for recouplement (Q) is worked out by the following formula.*

$$Q = \text{Maximum} + \text{Minimum} + \text{Pending Demand} - (\text{Stock} + \text{Dues})$$

- Here pending demand are the requisitions received from user departments which have not been complied due to low stock or Nil stock.

5.4.1.1 Disadvantages of this system are that :

(i) There are chances of missing the reorder point as explained above and in that case if the recouplements are abnormally delayed, we may have to face frequent stock outs, and,

(ii) If an item is stocked at more than one place (Depot), reorder level may not reach simultaneously and this will lead to multiplicity of purchases which will increase workload on purchase office and also we may not get advantage of bulking.

- In Railways, earlier, we were using this system for majority of the items but now only few railways are using this system for some items. However, all the shop manufactured items are still recouped on this method only. Recouplement sheets generated under this system are known as SR (Stock Replacement) or SRM (Stock Recouplement Memo).

5.4.2 Periodic Review System (or P System or Annual Estimate System) : In this system of recouplement, recouplement is done periodically on fixed review dates. In Railways, this system is known as Annual Estimate System.

- In this system, the date on which the recouplement sheet for the item is to be prepared is fixed as per pre-decided time table to be followed for recouplement of the items as against the maximum-minimum system where items are recouped as and when they touch the minimum level.
- The period for which items are recouped is fixed and is called "**Contract Period**". This contract period is generally 12 months.
- The interval between the dates fixed for preparing the recouplement and the beginning of the contract period is known as the **Interim period**.

- This period is equivalent to lead time for that particular item. For the purpose of convenience, different contract periods are fixed for different groups of items so that some groups are recouped in January, some in February and so on.
- This system is advantageous as
 - It is possible to combine the demands of different depots and make the purchase for all depots together.
 - It is also possible to combine demands of similar items into one purchase.
 - This reduces not only the ordering cost but gives a better bargaining power due to bulking of quantities.
 - Inventory carrying cost can be kept low if order is placed with required no. of phased deliveries.

5.4.2.1 Fixation of Net Interim Period requirement and contract period requirements : In this system, we separately work out Net Interim Period requirement and contract period requirements as per following procedure :-

(a) First of all we work out total **Gross Requirement for the Interim period (GRIP)** by adding adequate safety factor known as Buffer. Normally, we provide Buffer Stock equivalent to 2-3 months' consumption. Thus

$$GRIP = \text{Interim period (in months)} \times \text{Anticipated monthly consumption (MUF)} + \text{Buffer stock} + \text{Pending Demand (if any)}.$$

(b) Then we work out **Net Requirement for Interim Period (NRIP)** by subtracting total stock and dues available on date of review. Ideally, if our earlier estimate sheet was prepared correctly and there were no fluctuations in demand, the net I.P. requirement should be Nil. However, in a practical situation, we may either require some quantity or some quantity may be excess to Gross requirement for IP (GRIP) . Thus

$$NRIP = GRIP - (\text{Stock} + \text{dues})$$

(c) Then we work out **Net Contract Period Requirement** as under :

$$\text{Net Contract period requirement (NRCP)} = \text{Contract Period in months} \times \text{MUF} - \text{NRIP}$$

- Estimate sheet prepared on this system are also known by name 'Balance Return' or 'Provision Statement' on some of the Railways.

- All estimate sheets for an item received from different depots are compiled in Purchase Office. Normally, if practicable, excess requirement of IP of one depot are adjusted with shortages of the other depot and Net Combined I.P. requirement and C.P. requirements for the Railway as a whole are worked out.
- If net I.P. requirement is positive and substantial (say more than 1-2 months' requirement) separate purchase for I.P. is also to be arranged and delivery is to be arranged quick enough, so that there is no possibility of stock out.
- In this system, normally, recoupmnt is done on the fixed dates only. But if due to either heavy issues of the item or change in the activity, it is felt that total stock and dues are not sufficient to last up to the contract period for which arrangement was made last, we may submit a supplementary estimate sheet. This estimate sheet, on many of the Railways, is known as Recoupmnt Sheet.

5.4.2.2 In this system, we have the following advantages:-

(i) Because the recoupmnts are made as per fixed time table, the possibility of lapse on the part of the ledger section is minimized and therefore timely replacement can be better monitored;

(ii) In this system, it is also possible to properly distribute the workload of recoupmnt in the depots and purchase work in the purchase office;

(iii) If a time table is laid down with adequate planning, we can get advantage of buying seasonal item at lower prices.

(iv) The demands from more than one depots for the same items can be combined in purchase office. This is possible because demands will be received in the purchase office at the same time as per the time table laid down.

(v) It is also possible to combine the demands of similar items into one purchase so long as the source of supply of the items is common. This will help in reducing the ordering costs substantially.

(vi) Due to adequate buffer, chances of stockout may also be minimized.

- However, this system is not most suitable for the purpose of inventory control because we cannot take advantage of optimum

economical order quantities and therefore, is not suitable for items with high consumption value. However, this disadvantage can be overcome by taking delivery into various installments.

5.4.3. Some of the Railways are following a [Hybrid system](#) in which although stock recoument sheets are prepared on fixed dates as per fixed time table, but advantage of economic order quantities are also taken.

- In this system, interim period, contract period or buffer stock are not fixed. Instead, minimum and maximum quantities are fixed based upon average lead time with adequate safety and economic order quantity respectively. Quantity to be recouped on the review date is worked out on the Maximum-Minimum formula explained in para 5.4.1 above. This system has all the advantages of periodic review system and may take care of inventory control problems also.

CHAPTER - 6

PURCHASE POLICY



TOPICS COVERED IN THIS CHAPTER :

6.1.0 Features of Purchase Policy :

6.2.0 Types Of Stores Contracts :

6.3.0 Purchase Agencies :

6.4.0 Methods Of Purchases :



DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

6.1.0 Features of Purchase Policy :

Purchase of materials, which was earlier regarded as routine activity has now become a professional function (which requires special skills and expertise) due to rapid changes in technologies and business environment.

A professional purchaser has to purchase materials

- of Right Quality (Just adequate quality)
- in Right quantities (Neither too much nor too little)
- at Right prices (Competitive but not unworkable)
- with Right delivery (With right mode of transportation at desired place on required time)
- from Right sources (Reliable sources having adequate potential, know-how, facilities and Financial capability and record of good performance).

*These 5 Rights are popularly known as **5 R's of purchases**.*

6.1.1 In Railways' purchases, we are spending public money and therefore, every purchaser is expected to follow Canons of financial propriety. It is also to be seen that purchase policy is so framed that it is within the framework of Constitution of India and the provisions of

various Public acts are not infringed. Therefore, all the purchases made by us are within the framework of

- Contracts Act-1872,
- Sale of Goods Act-1930,
- Arbitration Act, Limitation Acts etc.

6.1.2 In addition to the above broad guidelines, our purchase policy has to be in line with the overall purchase policy of Government of India.

• **Some of the salient features of our purchase policy are briefed below:**

(a) Indigenous development : In our purchases, we always give first preference to goods manufactured in India out of Indian raw materials, provided quality of the materials and delivery terms are suitable. Thus, order of preference will be as under--

- Articles produced in India out of indigenous raw material.
- Articles produced in India out of imported raw material.
- Articles imported but held in stock in India
- Imports

(b) Development of Small Scale Industries / Khadi & Village Industries Corporation (KVIC) / Women's Development Corporation etc.:

- Our purchase policy is so regulated that fruits of industrialization reach the grass-root level. Therefore, lot of emphasis is given to development of above industries. To meet this purpose the items of stores other than textiles items reserved for purchase from Handloom Sector have been categorized under 2 broad heads,
 - Those reserved for exclusive purchase from Small Scales Sector Units / women's development corporations;
 - Unreserved.
- All items of hand spun and hand woven khadi are reserved for exclusive purchase from KVIC. All items of handloom textiles are reserved for exclusive purchase from KVIC and to the extent KVIC can not supply these would be purchased through ACASH (Association of Corporations and Apex Societies of Handloom).
- In respect of unreserved item price preference to the extent of 15% over the lowest acceptable offer from the large scale industry may

be given to KVIC / Women Development Corporation / Small Scale Units.

- In railways for price preference up to 15% only those SSI Units are considered who are registered with NSIC (National Small Industries Corporation).
 - *Ref. Railway Board's letter No.89/RS(G)/363/5 dt:18.04.90 and dt.16.11.89.*

(C) Encouragement to Public Sector : Purchase preference is given to public enterprises. If the quoted price of the public sector enterprise is within 10% of the lowest valid price bid, other things being equal purchase preference may be granted to the public enterprise concerned at the lowest valid price bid

- *Ref. Board letter No.92/RS(G)/363/1/PES dt:06.03.92.*

[BACK TO TOPICS](#)

6.2.0 Types Of Stores Contracts :

- Stores Contracts can be classified as -
 - (a) Rate Contracts**
 - (b) Running Contracts**
 - (c) Fixed delivery Contracts**

6.2.1 Rate Contracts: These are generalized contracts entered into with suppliers for a specified period of time (normally 1 or 2 years) for specific items identifying all terms & conditions including the price, but quantity and consignee are not identified.

- The contracts authorize supply orders being placed by nominated officers for specific quantities to be supplied to specific consignees on the rate contract terms and conditions and price without the need to go through the whole procurement procedure.
- Thus, the rate contracts save lot of time in routine purchase work. As specific quantities to be drawn are not advised in the contract (only to meet legal obligation, a meager quantity valuing about Rs.2000 to Rs.10000 may however be specified), supplier has to take a definite amount of risk because if he gets orders for lesser

quantities than anticipated by him, he cannot claim any damages. However the purchaser has to obtain an acceptance of his supply order, by the supplier.

6.2.2 Running Contract : In rate contracts, suppliers are not sure of order quantities and therefore they do not want to take risk by making investments in Machinery & Plant and Raw materials required for manufacture of goods. They, therefore, insist that some estimate of quantity to be purchased should be provided in the contract. Therefore, if in a contract entered for a specific period of time, like Rate Contract, if we give an indication of minimum quantities to be purchased, the Contract is known as running contract. Generally running contracts have liberal quantity tolerance clauses according to which quantities can be increased or decreased by 25 to 30% For running contracts also separate supply orders for actual drawal of the materials are required.

6.2.3 Fixed Quantity Contracts : In these contracts all the terms and conditions including quantity in definite terms, consignee and delivery period/date are specified at the contract stage itself. The contract is generally not spanning over a long period like Rate/Running Contract and no subsequent supply order is required to be placed. These contracts lack the flexibility of Rate & Running Contract but contract administration is easy. In Railways, most of our contracts fall in this category only.

[BACK TO TOPICS](#)

6.3.0 Purchase Agencies :

All the items on Railways are not purchased by Zonal Railways only. To get advantage of purchasing in bulk quantity, the items which are used by all Government departments are generally purchased through Directorate General of Supplies & Disposals (DGS&D) which is a purchasing agency of Government of India.

6.3.1 Directorate General Of Supplies & Disposals :For many general items, DGS&D is in a position of clubbing the requirements of all Government departments and therefore, purchase the items at much economical prices. For many common user items, such as ceiling fans, cables, torch cells, refrigerators, air-conditioners, industrial gases, cleaning items, calculators, vehicles, etc., DGS & D enter into rate contracts. These contracts provide a list of officers who can place further

supply orders against these contracts. These officers are known as Direct Demanding Officers (DDOs). All the Controllers of Stores of Railways are DDOs for most of the rate contracts. DGS&D also enter into running contracts for many items such as timber, paper etc. All fixed quantity contracts entered into by DGS&D are known as Acceptance of Tender (AT).

For DGS&D items the requirements are consolidated in the COS's office and the indents are placed on DGS&D duly certifying for funds as per the laid down time table given in the [Program - cum - vocabulary book](#).

6.3.2 Railway Board : Many items of imports involving large sums of foreign exchanges and some critical items are arranged through Railway Board. Items arranged through Railway Board are generally critical items for which adequate manufacturing capacities in the country do not exist. Some of those items are like WTA, Steel, Rolling Stock, TL Items, Oils, lubricants, Textiles etc.

6.3.3 Other Railways/Production Units : Some of the items are centrally procured by some Railways or production units to meet the requirement of all Indian Railways. For example, many components of diesel locomotives & ICF coaches are procured through DLW and ICF Madras respectively.

6.3.4 Other Agencies : The other agencies of purchases include Sleeper Pool Committee for purchasing sleepers, Government Medical Store, Central Organization for Modernization of Workshops (COFMOW) for M & P items required for workshops modernization.

[BACK TO TOPICS](#)

6.4.0 Methods Of Purchases :

🔴 There may be three methods of purchasing the materials:

(a) [Through tender systems](#)

(b) [Ab-initio negotiations](#)

(c) [Repeat Orders](#)

6.4.1 Tender System : For purchasing materials, we have to enter into contracts with suppliers. Two essential elements of a contract are offer and acceptance of offer. By way of tenders, suppliers submit (tender) their offers for supplying materials to purchaser. To purchase the material at competitive prices, we have 3 tender systems in vogue:

(a) Advertised Tender or Open Tender system : As the name implies, in this system, we publish our tender notices in public newspapers or periodicals so that anybody who is in a position of supplying that material can purchase the tender documents from COS's office and can submit his tender. As wide publicity is given to the requirement, we generally get most competitive offers. But due to various reasons, in this system, time taken in purchasing the material is large.

- *In Railways, we adopt this system only when estimated purchase value of the item is more than Rs.3 lakhs.*

(b) Limited Tender System : Purchase through advertised tender is time consuming process and therefore, when the purchase value is less than Rs.3 lakhs or if the item is urgently required, we invite tenders from a limited number of firms. These firms are normally our approved suppliers, but in certain cases, limited tenders can be invited from unregistered firms also with the approval of the competent authority. Different forms of limited tender are :

(i) Ordinary limited tenders -- when separate tender inquiries are sent for each item;

(ii) Weekly Stores Bulletin -- All COSs publish a weekly bulletin containing purchase requirements of all purchase sections. This bulletin, containing details of about 200 to 300 items is posted to all registered suppliers who are subscribers for the bulletin.

(iii) Special Limited Tenders -- These are limited tenders issued for the item whose estimated value is more than Rs. 3 lakhs. We resort to this system in case of all safety items, items urgently required and items having only limited sources of supply.

(c) Single Tender : In this system, tender inquiry is sent to only one firm. This is resorted to in the following situations:

(i) There is only single supplier of the item i.e. the item is of proprietary nature

(ii) Item is extremely urgently required and there is no time to go for limited tender inquiry.

(iii) Items of petty value where it may not be economical to go for competitive offers.

6.4.2 Ab-Initio Negotiations : In some cases, there may be a tendency on the part of the suppliers to quote higher rates in tender to meet many unforeseen situations. But if a face to face dialogue is held in the beginning itself, it may be possible to settle at a much better price that we would get through tenders. Therefore, instead of inviting tenders, we may call the likely suppliers and negotiate for the terms and conditions. For implementing this system, purchaser should have technical and commercial knowledge about the item being purchased and also good negotiating skills. In Railways, we do not follow this system, but Railway Reforms Committee has recommended to follow this system for some of the items.

6.4.3 Repeat Orders : If we already have an outstanding order, our additional requirement may be covered by increasing the quantity against this order. This concept may be further extended to place repeat order against the old complied orders. This system is very useful and efficient as no. of purchase formalities can be avoided. However, we have to ensure that earlier orders were placed on competitive basis at most economical prices. We may also provide for a price variation formula in the contract, to take care of the inflation.

CHAPTER - 7

PURCHASE PROCEDURE ON ZONAL RAILWAYS



TOPICS COVERED IN THIS CHAPTER :

7.0.0 Introduction to purchase procedure :

7.1.0 Receipt and Registration of Demands :

7.2.0 Preparation of purchase proposal :

7.3.0 Decision on Method of Purchase and Mode of Tendering :

7.4.0 Tender Invitation :

7.5.0 Opening of Tenders :

7.6.0 Decision of Tenders :

7.7.0 Placement of Purchase Order :

7.8.0 Contract Administration :

7.9.0 Supply of materials :



DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

7.0.0 Introduction to purchase procedure :

We are purchasing out of public exchequer and therefore we have to take precautions that public money is most efficiently used and we get best value of the Rupee. To meet this objective and also comply with purchase policies of Government of India, we have designed the purchase procedures in such a manner that we are able to meet these basic objectives and at the same time, are able to follow various policy guidelines of Government of India on purchase matters. The procedure should also ensure that purchase action is initiated against all the demands sent to purchase office and all avoidable delays in purchases are

eliminated. Purchase procedures followed on most of the Railways is described in the following paragraphs.

[BACK TO TOPICS](#)

7.1.0 Receipt and Registration of Demands :

- All the requests for purchase of materials are known by the name '**Demand**'.
- A demand may be either
 - A stock recoupment sheet or
 - Estimate sheet submitted by the Stores Depot for recouping a stock item or
 - It may be a requisition received directly from the user department which, mostly, is for a non-stock item (but in some exceptional cases, there may be direct requisition even for a stock item).
- All these demands are received in COS's Office in a separate section known as 'Central Registration Section'. On some of the Railways, there may be separate sections to receive estimate sheets/recoupment sheets submitted by the depots because, they have to be compiled in one purchase case before initiating purchase.
- On receipt in Central Registration Section, all the demands are scrutinized to see that they are duly signed by the competent authorities and required information such as Description, Quantity, Consignee Allocation, funds' certification are clearly indicated and also vetting of associate finance, wherever required has been obtained.
- All these demands are then entered in a register which is maintained purchase section-wise. All the demands which, prima-facie, appear incomplete, are returned to the indentors for furnishing complete information and the remaining are forwarded to respective purchase sections.

7.1.1 The Demand Registration No. : It is given by central registration section is of eight digits.

- First two digits indicate code of purchase section in which the purchase will be dealt,
- Next two digits indicate year of registration and

- Last four digits indicate serial number of registration under that purchase section. \
- To distinguish direct demands from estimate sheets/recoupment sheet received from depots, all estimate sheets / recoupment sheets submitted by the depot for stock items are registered from Serial Number 0001 to 4999 and the demands registered for SL. No. 5000 onward are for the requisitions submitted by the indentors.

7.1.2 Allotment of Registration no: This demand registration no. is advised by the central registration section to respective stores depot or indentor, as the case may be, with the advice that this number should invariably be referred in all future correspondences.

[BACK TO TOPICS](#)

7.2.0 Preparation of purchase proposal :

7.2.1 When the demand has been received in the purchase section, action to arrange the material is initiated. First of all, it is checked up whether the demand can be met with inactive / surplus / overstocks available on other Railways/production units. If so, a requisition or final purchase order is placed on the concerned Railway / Production unit. It may also be possible that demand of one depot may be met with overstock in other depot and in that case, a depot transfer order may be issued.

7.2.2 If the item is DGS & D or Railway Board item or it is to be arranged through some other centralized purchase agency, then an indent is sent to that agency. On some Railways, there is separate Indent section for preparation and follow up of indents.

7.2.3 If the item is available on DGS & D rate contract or rate contract finalized by any other centralized agency, which can be operated by COS, supply order is placed against the rate contract. If the parallel rate contracts exist in favor of many firms, the particular firm on whom the order is to be placed is selected on the basis of its performance and comparative rate.

7.2.4 If the material cannot be arranged by any of the above methods, then direct purchase is initiated. First of all, a purchase proposal is prepared which contains basic details of demand (requisition or estimate

sheet). At this stage, it is also seen whether any other demand for the same item is pending for initiating purchase action. If so, that demand is also clubbed with correct case to get advantage of buying in bulk quantity. In a purchase proposal, details of last successful purchase are invariably furnished because estimated value of purchase is worked out on the basis of last purchase rate after taking other factors also into consideration.

7.2.5 This purchase proposal is then put up by the purchase section to the respective purchase officer, depending upon purchase powers and estimated value of purchase of that particular item. As per present delegation, COS is empowered to authorize and sanction purchases up to Rs.1 Crore, CMM up to Rs.50 lakhs, Dy. COS up to Rs.5 lakhs, Senior Stores Officer up to Rs.75,000 and an ACOS up to Rs.25,000. However, these delegations may vary from Railway to Railway.

[BACK TO TOPICS](#)

7.3.0 Decision on Method of Purchase and Mode of Tendering :

7.3.1 When the case is put up to purchase officer, he has to decide about the method of purchase. Our normal method of purchase is through tender system and therefore, purchase officer will pass orders in the file for mode of tendering out of three modes of tender systems. If the orders are being passed for inviting limited tenders, then the purchase officer will also specify whether the item is to be included in weekly stores bulletin or separate tender inquiries are to be issued. If separate tender inquiries are suggested, then panel of firms to whom tender inquiries are to be sent is also to be approved. Similarly, in case of single tender, name of firm to whom single tender is to be issued is also to be approved.

[BACK TO TOPICS](#)

7.4.0 Tender Invitation :

7.4.1 After obtaining orders from purchase officer, tender documents are prepared. If open tenders are to be issued, then a tender notice is prepared and sent to Chief Public Relations Officer for publication in the newspapers. Tender documents are then forwarded to the centralized

tender section for sale to firms on payment. If the item is to be included in the Weekly Stores Bulletin, then information on the prescribed proforma, is prepared and sent to bulletin section for further compilation. Ordinary or special limited tender inquiries are directly dispatched to suppliers by Registered AD or under postal certificate (UPC).

7.4.2 All the tenders, irrespective of their type, bear due date and time by which offers should be submitted.

7.4.3 After this, purchase case is transferred to tender section for further dealing.

[BACK TO TOPICS](#)

7.5.0 Opening of Tenders :

7.5.1 On the due date and time, tenders are opened. There is an elaborate system for tender opening to ensure that all the tenders submitted by the firms are properly linked in the respective cases and any additions or alterations after opening of the tenders are not possible.

7.5.2 All advertised tenders and special limited tenders (tenders in which estimated value of purchase is more than Rs. 3 lakhs) are opened in public and firms' representatives who want to be present during opening are allowed to be present.

- **Such tenders, should be opened by a Gazetted Officer from Stores Department and at least a Section Officer from Accounts Department.**
- **All limited tenders are opened by a Chief Clerk/Head Clerk from Stores Department and a Senior Clerk from Accounts Department. At the time of opening of these tenders, firm's representatives are not allowed to be present.**

7.5.3 After opening these are signed by the tender opening officials on each page and all financial aspects are encircled, overwriting etc. are also attested. Then the tenders are sorted tender case-wise (please note that at this stage, Demand No. is generally referred as Tender No. on some Railways)

7.5.4 After sorting, tenders are linked in the respective tender cases and then they are transferred to respective purchase officers. However, in all the cases in which lowest tender is valuing more than Rs.2 lakhs, detailed abstract of all tenders (also known as tabulation statement) is prepared and also got vetted from Accounts department.

7.5.5 After this, the tender case is passed on to respective purchase officer on the basis of value of lowest tender.

[BACK TO TOPICS](#)

7.6.0 Decision of Tenders :

7.6.1 The tenders are now to be decided to either accept the suitable offer out of all the tenders received or reject or file them. All the tenders in which acceptable offer is less than or equal to Rs. 3 lakhs can be decided by the respective purchase officer as per the purchase powers delegated to him but, if the acceptable offer is valuing more than Rs. 3 lakhs, then the tenders have to be discussed by a tender committee consisting of 3 officers, one from Stores Department one from consuming department and one from Accounts Department. From Stores and consuming department, officers below the rank of senior scale cannot be the members of a tender committee and Accounts member is generally one grade lower e.g., tenders valuing from Rs. 3 to 8 lakhs are discussed by senior scale officers from Stores and consuming department and an Asst./Junior scale officer from Accounts Department. Tender Committee is always a recommending body and its recommendations have to be accepted by a competent accepting officer.

7.6.2 Some of the points to be kept in mind for deciding tenders are as under:

(a) The offer should be technically suitable i.e. the material offered by the firm should be exactly as per our specifications given in the tender inquiry. Offers of substandard materials are normally ignored;

(b) Out of all technically suitable offers, lowest offer is examined for reasonableness of rates.

(c) If the rate of lowest technically suitable offer is considered reasonable, then it is to be seen whether delivery offered by the firm will meet our requirement with respect to delivery period and place of delivery.

(d) After satisfying about (a), (b) & (c) above, we see that the firm is reliable and has satisfactory record of past performance.

(e) Finally before accepting the offer, we see that all terms and conditions offered by the firm are acceptable. We normally, place all our purchase orders as per 'Indian Railways Standard (IRS) Conditions of Contracts.' As per these conditions, we have right to reject the substandard materials, levy liquidated damages for delayed supplies, make risk purchases, etc.

[BACK TO TOPICS](#)

7.7.0 Placement of Purchase Order :

7.7.1 When the tenders have been decided, purchase officer records acceptance on the tender accepted by him and then the purchase case is passed on to the respective purchase section for preparation of purchase order.

7.7.2 After the purchase order has been signed by the purchase officer, it is sent to Accounts Department for pre-check if the value is more than Rs.40,000/-.

7.7.3 All purchase orders issued against demands submitted by Stores Depots for stock items, availability of funds out of purchase grant is to be ascertained from Accounts Department. For this purpose, Accounts Department is maintaining an up-to-date liability register. At the time of issue of purchase order, value of purchase order is posted in liability register and a funds certificate is recorded on the purchase order.

7.7.4 Finally, the purchase order is numbered. Purchase Order Number consists of 16 digits out of which first 8 digits are same as Demand No. or Tender No., 9th digit indicates mode of purchase, 10 th to 14th digits are serial number which are allotted paying authority-wise, 15th & 16th digit indicates serial No. of the item, consignee, delivery date if there are more

than one item, consignee, delivery dates respectively in the purchase order.

7.7.5 After numbering, the purchase order is dispatched to suppliers by registered post with Acknowledge Due.

[BACK TO TOPICS](#)

7.8.0 Contract Administration :

7.8.1 The purchase activity is not over only on placement of purchase order. For getting the material in time, contract has to be properly administered. Immediately on placement of orders or after some time, we may get request from supplier for amending some of the clauses of the purchase order. All these requests have to be examined in proper perspective and amendments (or modification advises) against the purchase orders are issued. For all the amendments which may result into financial repercussions, we may have to take finance concurrence.

7.8.2 If the supplier is not able to supply the materials within the stipulated delivery period, then as per law of contract, contract expires. Further extension has to be with mutual consent. Normally suppliers request for extension of delivery date and this is examined keeping all relevant factors in mind. As per IRS conditions of contract, we have right to recover liquidated damages for any loss or inconvenience suffered by us due to delays in supply of material.

7.8.3 Sometimes, firms fail to supply the materials. As per IRS conditions of contract, if the firm fails to supply the material, we can purchase the material from the alternative sources at the risk and cost of the supplier i.e. if we pay any higher prices to the alternative source, the difference can be recovered from the defaulter. These purchases from alternative sources are known as Risk Purchase. In order to ensure that risk purchase is legally tenable, we have to follow certain procedures by which reasonable opportunity to make good the loss is given to the supplier and the risk purchase has to be arranged within a reasonable time (which is normally 6 months) from the date of breach of contract.

7.8.4 Arbitration : Sometimes disputes may arise in the execution of the contracts. If the dispute can not be mutually settled, then as per IRS conditions of contract, it is to be referred to a sole arbitrator appointed

by the General Manager and decision of the arbitrator will be final in such a case.

7.9.0 Supply of materials :

Materials against purchase orders placed by Controller of Stores are supplied to the consignees mentioned in the purchase order. Material received can be pre-inspected by inspecting agencies like RITES, RDSO, DOI or can be got inspected on receipt. Decision for acceptance or rejection of the material is conveyed to the supplier, COS Office, Bill passing agency etc., through issue of vouchers like Receipt Notes, passing of bills, Rejection advice etc.

CHAPTER - 8

TENDER EVALUATION AND MISCELLANEOUS POLICY ISSUES IN PURCHASES



TOPICS COVERED IN THIS CHAPTER :

[8.1.0 Consideration Of Tenders :](#)

[8.2.0 Guidelines For Tender Committees :](#)

[8.3.0 Proceedings Of Tender Committee :](#)

[8.4.0 Other Policy Issues In Purchases :](#)

[8.5.0 Local Purchase :](#)



DETAILS OF TOPICS ARE AS FOLLOWS :

8.1.0 Consideration Of Tenders :

🌟 **Some of the important points to be kept in mind while tenders are under finalisation are discussed below:**

(a) Attempt should always be made to finalize the tenders within the validity of the offer. All tenderers prescribe a definite date

(known as validity date of offer) by which if decision is not taken by us, validity of the offer will lapse. As per law of contract, the acceptance of the offer should be out from our office by validity date though it is not necessary that the acceptance of offer should physically reach the supplier before that date.

(b) If the tender is not accepted by the validity date, we have to request the firm for extension of validity date. This delays the purchase and if in the meantime, prices of materials increase, the firm may not even extend the validity on the originally quoted price and we may have to purchase the material at higher prices. Many times, firms quote conditions which are not acceptable to us. For getting such conditions withdrawn or to get additional information, we have to seek commercial clarifications from the suppliers. We should not seek these clarifications in piecemeal and whatever clarifications are required, should be sought in the first instance itself.

(c) Terms and conditions of the contract to be finalized should be clear and definite and nothing should be left vague. All attempts should be made that the contract is placed as per Indian Railway Standard Conditions of Contract, but if the firm does not agree to accept some of the clauses of IRS conditions, repercussion of this should be examined and should be accepted with the approval of competent authority only, in the unavoidable cases. In some of the cases, we may have to obtain concurrence from Associated Finance or Law Officer.

(d) Tender cases should be kept under safe custody and when the tenders are under finalisation, no unauthorized persons should be allowed to make queries or call for the tender papers.

[BACK TO TOPIC LIST](#)

8.2.0 Guidelines For Tender Committees :

8.2.1 Some of the points which should be kept in mind by tender committee members are enumerated below.

(a) The tender committee should be duly constituted. The level of tender committee which will discuss the tenders of a particular

value are given in the schedule of powers. Although the authority to constitute as tender committee vests in the officer competent to accept the tender, members from consuming department and Accounts Department should ensure that they have been adequately authorized by their heads of department for sitting in the tender committees.

(b) Tender Committee : The criteria for constitution of tender committees, is the value of lowest tender. However, if lower offers within their powers, are not considered suitable by lower level committee, they may recommend so and on acceptance of these recommendations, the case will pass on to next higher level tender committee.

(c) No. of offers issued or received is not the criteria and tender committee has to be constituted even in case of single tenders/offers. Therefore, tender committee has to discuss the offers received even from the proprietary firms.

(d) Even if it is felt by some of the members that purchase against a particular case is required to be dropped, this also is to be recommended by the tender committee.

(e) All tender committee cases are kept and processed by Stores member. After getting signatures of all the members on the minutes, Stores member directly puts up the case to the competent authority.

(f) An officer who is member in a tender committee, cannot act as accepting authority also for the same case even though acceptance may be within his competence.

(g) If all the tender committee members do not agree on all the recommendations, then disagreeing member gives the dissenting note. In such cases, although accepting authority is competent to take a decision, there is a practice on some of the Railways that accepting authority has to put up the case to his next higher authority with his recommendation and final orders are given by the next higher authority only. Similarly, there is also a practice on some of the Railways that if the accepting authority disagrees with the recommendations of the tender committee, he has to put up the case to next higher authority with his views.

(h) The recommendations made by the tender committee are joint recommendations. However, reasonableness of quantity is certified by Stores member only in case of stock item. For nonstock items, reasonableness of quantity under purchase is certified by the member from consuming department.

[BACK TO TOPIC LIST](#)

8.3.0 Proceedings Of Tender Committee :

8.3.1 After discussing the offers, proceedings of tender committee are prepared. These should be signed by all the 3 members on all the pages. Any corrections/overwriting should be initialed by all the 3 officers. Tender Committee proceedings should not be changed and if changes are considered necessary, supplementary proceedings should be prepared and signed by all the members.

8.3.2 Some of the points which should be included in the tender committee proceedings are listed below ;

- (a) Demand Ref. No. & date**
- (b) Description with specifications & Quantities demanded**
- (c) Authority for issue of the Tender and No. of tenders issued**
- (d) Tender opening date & no. of offers received**
- (e) Details of technical comments**
- (f) Details of any fresh review of quantity and reasonableness of quantity**
- (g) Last Purchase Rate and Details of Last Purchase Order**
- (h) Any special development since last order**
- (i) Discussion of offers under zone of consideration**
- (j) Reasonableness of rates**

(k) Specific recommendations with justification where recommended for splitting at different rates

(l) Performance of the firm being recommended

(m) In case of negotiations, names of firms & justification

(n) Summary

(o) Terms & Conditions recommended

- **It is important to clearly specify the terms and conditions on which offer is being recommended. These are as under:**

(i) Earnest Money / Security Deposit

(ii) Income Tax Clearance Certificate (ITCC)

(iii) Terms of delivery

(iv) Delivery schedule

(v) Payment Terms

(vi) Inspection Clause

(vii) Warranty Clause

(viii) Sales Tax extra or inclusive

(ix) Excise duty extra or inclusive

(x) Packing charges, if any, extra or inclusive

(xi) Details of any other extra charges discount (conditional or otherwise)

(xii) Sales Tax, Excise Duty variation clauses, if any

(xiii) Price variation clause (if acceptable) along with price variation formula and base prices

(xiv) Any special condition relevant to tender case

8.3.3 The accepting authority should record his acceptance on the body of the tender committee recommendations and not on the noting side of the file.

[BACK TO TOPIC LIST](#)

8.4.0 Other Policy Issues In Purchases :

8.4.1 Splitting of the order quantity on two or more suppliers is permitted in the following situations :

- (a) The item is vital/critical in nature and having alternative sources
 - (b) The lowest supplier has not offered full quantity
 - (c) The lowest offer does not meet our delivery requirement fully
 - (d) Capacity of firms are not certain
 - (e) Performance of the lowest tenderer is not certain.
- In these cases, Time Preference Clause will not be attracted. But, Finance's concurrence is required before going for splitting.

8.4.2 Late / Delayed Tenders : Consideration of such tenders is not permitted. Only in rare exceptional cases public sector offers may however be recommended for acceptance at Railway Board level.

8.4.3 Offers Received From Unregistered / Untried Firms : Against open tenders, many time we receive offers from new firms, performance of which has not been tried on the Railway. Although past performance of the firm has to be seen, we should not give undue importance to past performance, otherwise, our doors to new suppliers/manufacturers will always remain closed and this will lead to monopolies. Therefore, if we are otherwise satisfied about credentials of the new supplier and their offer is otherwise suitable, we may consider their offer for part quantity. We may also place order normally for a quantity up to 20% after collecting necessary security deposit. However, in case of certain exceptionally sound firms, we can even consider for more quantity.

8.4.4 Unsolicited Offers : The offers received against limited tenders from the firms to whom tender inquiry was not sent, are known as unsolicited

offers. Even if a registered firm submits tender against weekly stores bulletin, for an item for which they are not registered, such tender will also be classified as unsolicited.

- Unsolicited offers should normally be ignored. But in certain exceptional cases, as mentioned below, they may be accepted.

(a) There is inadequate competition

(b) Quotations received from unregistered suppliers or from firms to whom inquiries were sent are not suitable.

- But we should consider them only when demand is urgent and capacity/capability of the firm offering to supply the relevant item is known.
- The sanction of acceptance of the unsolicited offer is to be obtained from next higher authority which in no case should be below the rank of Dy. COS.

8.4.5 Variation Clauses : We generally prefer a firm price contract but for high value contracts we may accept price variation clauses. In such cases base price at which present price is worked out should be clarified, formula to govern variation in prices should be realistic and clear and the authority of the prices on which price variation will be based should also be very clear.

- In case of variable price contracts, prices should vary on both sides i.e. in case of reduction of prices in the market we should pay at the reduced rates worked out as per formula.

8.4.6 Negotiations : In tenders negotiations are normally not allowed because it is against the sanctity of the tender system . However in certain exceptional cases where prices quoted by all the suppliers are unreasonably high and retendering is either not considered advantageous or there is no time for retendering due to urgency of demand, we may go for negotiations with the suppliers.

8.4.7 Total value of tender shall be the criterion for deciding the "Competent authority" for acceptance of a tender irrespective of whether the tender is decided in parts or as a whole. (Ref. 341 AS)

[BACK TO TOPIC LIST](#)

8.5.0 Local Purchase :

8.5.1 It is seen that for purchasing materials, a set procedure is to be followed and all this adds to costs of purchasing. Therefore, it is not economical at all to purchase items of petty value through centralized purchase office and hence all the field officers have been delegated powers to purchase the materials without following the detailed procedure. Officers are allowed to have cash imprest and recoup the amount on regular basis. For cash imprest of Rs.10,000/ or more Bank Account can be opened and payment made through cheques.

8.5.2. However, even for local purchases, it is to be seen that canons of financial propriety are followed and materials are purchased at reasonable prices.

- Powers for local purchases depends upon delegation. Normally, officers have been delegated these powers depending on charge held by them. On most of the Divisions, the purchase power are exercised through Divisional Controller of Stores up to Rs.20000/-..
- Stores Officers holding independent charge and Senior Scale or above have local purchase powers of Rs.10000 per item in the Depots.

8.5.3 Some of the important points to be kept in mind by all the officers making local purchase are as under:

(a) There should be a proper system, of entering all the local purchase cases in a register. This register should indicate details of item to be purchased and rate and firm etc., from which purchase has been made.

(b) The purchases should be made at competitive rates after trying no. of firms/shops.

(c) Purchases should be made from standard firm i.e. the firm should be either a reputed dealer/authorized stockiest/manufacture or a good shopkeeper. Purchases from persons who do not own any shop etc. and operate business from their residence and act only as middlemen, should be avoided.

(d) The quotations should be collected only from existing firms. If a firm is doing business in different names from the same premises, only one quotation should be taken from such firms. The practice of collecting more than one quotations from a single shop should not be resorted to.

(e) For collecting quotations per bearer from the local market, officer incharge of local purchase shall nominate the Railway employee by name. The nominated employee shall be required to sign each cover of the quotations and subsequently on opening by the officer in-charge, each quotation also in token of his having collected personally.

(f) The names of firms from whom quotations are to be obtained are to be suggested by the officer in-charge of local purchase. The employee, however, may suggest names of new firms coming to his notice, to the purchase officer who could consider including them for subsequent purchases.

(g) If the local purchases are regularly made, a panel of firms should be maintained which should be updated from time to time.

(h) A tender box should also be kept for dropping the tender.

(i) All inquiries should mention time and date by which offers should be received. Any offer received after this should not be considered.

(j) Non-stock items for which standard pattern exists should not be purchased if it can be manufactured by the Railway.

(k) Local purchase of items for which valid rate/running contracts exists, should not be made.

(l) Local purchases from cooperative stores and Khaki Handers should be encouraged. Purchase up to Rs.5000 from a cooperative stores can be made even on single quotation, while for others single quotation is permissible only up to Rs 2000/-.

(m) No attempt should be made to split the requirement to bring it within the power of purchase.

(n) Cash Imprest amount should be fixed on the basis of 50 percent of the average monthly expenditure on local purchases (Ref. S711B)

CHAPTER - 9

RECEIPT AND INSPECTION OF STORES



TOPICS COVERED IN THIS CHAPTER :

9.1.0 Responsibility for Receipt and Inspection of Stores :

9.2.0 Procedure for Receipt and Inspection of Stores:

9.3.0 Effecting Delivery Of Consignments :

9.4.0 Quantity Checking :

9.5.0 Inspection & Testing :

9.6.0 Accountal Of Materials :

9.7.0 Disposal Of Rejected Consignments :



DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

9.1.0 Responsibility for Receipt and Inspection of Stores :

Receipt and Inspection of Stores is one of the very important activities because quality of incoming stores depends upon the effective inspection. Therefore, all the Stores depots have separate 'Receipt' and 'Inspection' section. This Receipt section is generally under the charge of a DSK-1 who is assisted by other DSKs and also some ministerial staff.

Some of the Depots are having separate sections under 'Receipt and Inspection' ('R') Section as under :

- (a) Progress Section manned by ministerial staff under control of an OS/Chief Clerk.
- (b) Unloading section manned by DSK and assisted by few clerks/labor.
- (c) Inspection section manned by DSKs

9.1.1 Non-Stock items are generally consigned directly to the Indenting officers and therefore responsibility of proper receipt and inspection of such items lies/with the Indenting officer or their representatives.

[BACK TO TOPICS](#)

9.2.0 Procedure for Receipt and Inspection of Stores:

Various procedures laid down for the receipt and inspection of the Stores are mainly to achieve following objectives.

- (a) Proper chasing/progressing is done against all the purchase orders against which supplies are to be received by the depot for stock items, or by the indenting officers for non-stock items.**
- (b) Correct delivery of the materials is taken without loss of time. It is to be ensured that the material is received in correct quantity and of correct quality.**
- (c) Inspection of the stores is not abnormally delayed.**
- (d) All the materials received by the depot or direct consignees are properly accounted into Railway Books.**
- (e) Rejected stores are disposed of early.**

9.2.0 Progressing Of Purchase Orders :

9.2.1 For items to be received in a Stores Depot , Progressing is done by the Progress Section of receipt Section . Procedures are so designed that all the purchase orders are properly entered on their receipt and there is regular follow up with the supplier before expiry of delivery period. Progressing of the orders against which materials are directly to be dispatched to users, is done by the user departments.

9.2.2 Generally all chasing with the supplier should be done within the currency of the contract i.e. . till the delivery period has not expired. On expiry of delivery period, contract is no more live and therefore such contracts can be made live only with the mutual consent of Purchaser and supplier.

9.2.3 Extension in delivery period is granted by the COS office on firms request consignee/depot officer/inspecting officer has also been delegated power to accept delayed material as under :

(a) for orders valuing up to Rs. 50,000 consignees can accept delayed supplies for a period up to 6 months from the expiry of original delivery date

(b) for contracts valuing more than Rs. 50,000 but less than Rs. 1 lakh these powers are for a period up to 21 days only provided original delivery period in the purchase order was not of a period more than 6 months.

(c) In all other cases extensions are to be granted by the Purchase Officers only.

[BACK TO TOPICS](#)

9.3.0 Effecting Delivery Of Consignments :

9.3.1 Procedure of effecting of consignments In A Stores Depot : Rly. Receipts / P.W.Bills for the materials dispatched by the suppliers in fulfillment of agreements/contract made by them, are first received in Progress section of Receipt Section which are connected with the relevant supply orders etc. and registered in a manuscript register called *R.R. Register* . All such RRs and PW Bills are then handed over to unloading section along with the history sheet indicating

- PO case No.,
 - Number of packages,
 - Booking station and
 - Station of destination where delivery will be effected by the consignee.
- Unloading section may be manned by one DSK/II one DSK III and / or Sr. Clerks (depending upon workload). DSK/II being incharge of the section is responsible to DSK /I of R Section.
 - Most of these Stores depots are provided with a Railway Siding manned by a goods clerk of Commercial Dept. These staff take delivery of materials consigned to Stores Depot siding directly from the goods clerk posted in the siding.

- Delivery of all the smalls not booked to siding and materials booked by parcel (P.W.Bill) is taken from Railway station. Unloading staff has to sign in the delivery book of Commercial department in token of having received the material.
- If the consignment received is short and this shortage is not disputed by goods clerk remark may be given in the delivery book and a shortage certificate should be obtained from the goods supervisor for supporting claim on Commercial department.
- If the packages are found damaged, tampered or in disturbed condition, the consignments are weighed before taking delivery in presence of RPF and Commercial staff and qualifying delivery remarks are recorded in the goods delivery book. D.D. (Damage & Deficiency) message is got issued by Goods Clerk in all such cases of discrepancies etc.
- After passing qualifying remarks in the Traffic delivery book for the discrepancies noticed at the time of unloading, R.R. is surrendered and open delivery / assessment requested through a memo within 48 hours of unloading.
- The damaged packages are opened in presence of Comm. staff, Stores Dept. staff and RPF staff. The contents booked are checked with the challan to know the exact loss etc. An open delivery report signed jointly by Commercial staff, Stores staff, and RPF staff is obtained to support claim on carriers.
- The present powers for granting open delivery/ assessment are as under

(1) CGC of siding : up to a value of Rs. 1000/-

(2) CGS of siding : up to a value of Rs. 2000/-

(3) ACS / DCS : All other cases where value of discrepancy is assessed to be more than Rs. 2000/- rest with ACS : DCS.

9.3.2 Procedure For Non-Stock Items :

- For non-stock items consigned to Stores Depot procedure is same as above.
- For non-stock items dispatched directly to various consignees, delivery of materials from Commercial Dept. is taken by the consignees. Practice followed is same as described above and it should be ensured that in case of shortage / damage procedure for open delivery as referred above is followed.

9.3.3 Claims : Consignments, against RR/PW Bills if not delivered within a reasonable time by the carriers, are required to be claimed within six months from the date of booking / date of R.R. As the claims on carrier are to be preferred within six months, timely action is required to be taken so that the claims do not become time- barred. Therefore the RRs / PW Bill Registers are periodically reviewed by the Depot Officer. *If during this review it is seen that a consignment has not been received within a reasonable time (45 to 90 days) a missing report is sent to all concerned with a copy to CCS.* For such cases a manuscript register (**Claims Register**) with following details, may be maintained :-

RR No. & Date	Nature of Consignment (Wagon No. or no. of packages)	Missing report submitted on	Claim due on	Consignment received on	Claim preferred on	Remarks
---------------	--	-----------------------------	--------------	-------------------------	--------------------	---------

- A standard proforma for the missing report may be prepared and should be used.

[BACK TO TOPICS](#)

9.4.0 Quantity Checking :

9.4.1 Immediately on receipt of the material packages should be opened and contents should be thoroughly checked. If there is any shortage/damage/breakage, supplier should be immediately advised about this. In case of valuable consignments, it is always better that a 'panchanama' is prepared for the shortages.

9.4.2 There may be a tendency on the part of some of the consignees for not opening the packages immediately on receipt. This practice is undesirable because packages are not generally water tight and if moisture has entered and damage the material, supplier cannot be held responsible for this. Suppliers may also not accept any shortages if they are advised after unduly long period.

9.4.3 Quantity checking is generally 100%. Fragile items should be checked carefully.

[BACK TO TOPICS](#)

9.5.0 Inspection & Testing :

9.5.1 Pre-Inspected Stores : These are materials which have been inspected by either Rail India Technical & Economic Service or RDSO or Director of Inspection. These authorities/issue Inspection Certificates in token of having inspected and passed the material. It should be checked up that Inspection Certificate has been received. If the same has not been received a reference to Firm / Inspecting Agency has to be made.

- Inspection certificate bears a facsimile of inspection seal put either on the material or packages / bags containing the material and first of all it should be checked up that all material or packages, as the case may be, bear proper inspection seal as shown in the Inspection Certificate.
- If the materials do not bear proper inspection seal they should be provisionally rejected on the ground that the material is not the same as inspected by Inspecting Agency.
- If it is ascertained from the inspection seal that the material is the same as inspected by inspecting Agency, the Stores should be visually examined and if during visual inspection, prima facie, they appear not to our specification, we should go for detailed inspection & testing.
- If the facilities for detailed testing and inspection do not exist, the material may be sent to Chemist & Metallurgist of the Railway for testing. In some cases material may be sent to other recognized laboratories also.
- If during detailed testing, materials are found not conforming to specification, they should be provisionally rejected and a rejection advice should be issued to the firm with a copy to Inspecting Agency for arranging joint inspection.
- If the firm accepts the rejection, stores should be disposed off as described below, but if the firm do not accept our rejection, we should pursue with the Inspecting Agency to arrange the joint inspection early.
- Date of joint inspection is fixed by the Inspecting Agency. Firm is also advised about the date of joint inspection, but the same may be carried out if firms representative remains absent.
- At the time of joint inspection, a joint report will be prepared and decision as agreed will be final. If the stores are found not to

specification even during joint inspection, rejection advise will be issued.

9.5.2 Un-Inspected Materials: These materials have not been previously inspected and purchase order specifies inspection by consignee. For these items consignee has to ensure that the materials supplied are as per specification provided in the purchase order. If he does not have adequate testing facilities the materials may be got tested from Chemist and Metallurgist or other laboratories. In any case material should be accepted only after satisfying about their quality.

[BACK TO TOPICS](#)

9.6.0 Accountal Of Materials :

9.6.1 Stock items received in the Depots For these items if they are found as per specification, Depot grants Receipt Note. This is prepared in 5 copies in case of Railway contracts and 4 copies in case of DGS &D contracts. (In this case supplier copy is not required). However, if Inspecting Depot and receiving depots are different, then R Note may be prepared in 6 copies.

 **Distribution of R Note copies is as under :-**

- **Copy No. 1 .. Depot record copy**
 - **Copy No. 2 .. Stores Accounts copy (EDP posting is done through this copy)**
 - **Copy No. 3 .. Supplier copy.**
 - **Copy No. 4 .. Accounts (Bill Paying Officer) copy**
 - **Copy No. 5 .. Authority placing the order (COS) copy.**
 - **Copy No. 6 .. To be returned to inspecting depot duly acknowledged.**
- **After the R/Note has been signed by the Depot officer (ACOS), this is sent to Stocking Ward along with the material. The Stocking Ward enters the receipt particulars in his receipt register after acknowledging the material to Receipt Section. S.No. of this receipt register which is known as Receipt Order No. (R.O.N.) is recorded on the R/Note. After this various copies of R/Note are released. Accounts copies may be sent by ward itself directly and remaining copies may be distributed by Receipt section.**

- Payment of all such items is centralized through Stores Section of FA & CAO's office.

9.6.2 Accountal of Non-stock items : Non-stock items are dispatched directly to consignees . These items are entered into tally book and after quoting reference of tally book No. and page No. Bill submitted by the supplier is verified and sent to associated Accounts for payment.

[BACK TO TOPICS](#)

9.7.0 Disposal Of Rejected Consignments :

9.7.1 All materials which are not as per order specification are rejected and a Rejection Advice is issued to the firm for removing the materials from our premises. If any advance payment has already been made for the stores, Accounts department should be immediately advised to recover the advance payment. Firm is also to be pursued for refund of advance payment.

9.7.2 *Supplier is given free time of 14 days from date of receipt of Rejection Advice, in case of DGS&D Contracts and 21 days from date of issue rejection advice in case of Rly. contracts for removing the material.* If he does not remove the material within this period, then rejected supply may be returned to firm after recovering the necessary dues. If the supplier does not remove the material from our premises after paying necessary dues, he is liable to pay ground rent at the prescribed rates. Those rates are generally advised in the Rejection Advice.

9.7.3 Following dues are to be recovered from the supplier for the rejected stores.

(a) Inward freight If we have paid any Inward freight for the goods booked on freight to pay basis, amount of freight paid is to be recovered.

(b) Incidental charges for handling the materials:, without any gain to Railways, are to be recovered. They are generally charged at the rate of 2% of value of goods.

(c) Testing charges: If the goods are accepted testing charges are to be borne by the purchaser but for the rejected goods charges are to be borne by the supplier and to be recovered from the supplier.

(d) Demurrage / Wharfage: If we have paid any demurrage or wharfage on account of delay in sending the documents by the supplier, then this amount is also to be recovered. (Demurrage is charged for detention of wagon and wharfage is charged for late removal from the station.)

(e) Advance Payment: :If Advance payment has been made for the goods then either the firm should refund the same or they should supply fresh acceptable materials, only then rejected materials are to be returned to them. In some cases, if either advance payment has been recovered or some Bank guarantee has been taken, purchaser may authorize delivery of rejected goods. In such cases rejected material may be returned on the authority issued by the purchaser.

CHAPTER - 10

ISSUE AND DISTRIBUTION OF STORES

TOPICS COVERED IN THIS CHAPTER :

10.1.0 Introduction to Issue and Distribution of stores :

10.2.0 Issue Procedure10.3.0 Issue of material and Granting of Issue note nos. :

10.3.0 Issue of material and Granting of Issue note nos. :

10.4.0 Distribution Of Different Copies Of Issue Note :

10.5.0 Distribution Of Stores To The Indentors :

DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

10.1.0 Introduction to Issue and Distribution of stores :

Stores Depot receives, inspects and stores various materials for the basic purpose of issuing them to various consumers of the Railways. These consumers may be various subordinates/officers of the divisions or other units such as workshop etc. and they may require the materials either for maintenance and operation or for new works. Therefore, the depot has to ensure a good system of issue of the materials to cater to all types of issues to all types of indentors. The system has to ensure following basic things.

(a) Materials should be issued on proper authority i.e. there should be a proper requisition from the indentor.

(b) There should be a proper system of keeping records of all requisitions submitted by the indentors so that various queries of the indentors about compliance of their requisitions may be adequately dealt with. This system should also be capable of providing managerial information required to monitor the productivity of the system and also to improve the same.

(c) There should be a system of detecting a demand which is placed by the indenter for the quantity which is more than the quantity sanctioned for him by the competent authority. (In Railways this system exists for imprest stores, few Consumables and stationary items.)

(d) Issues should be made without any delay.

(e) There should be a proper system of keeping account of the issues and raising timely debits to the units to whom the materials have been issued. For this all concerned officers/officials should be informed in time about the issue of the material.

(f) Materials once issued, should not form a part of the physical inventory of the stocking ward.

(g) There should be minimum possible wastage due to retail issues etc.

(h) Materials issued should be correctly measured.

[BACK TO TOPICS](#)

10.2.0 Issue Procedure

🌟 System of issues being followed in most of stores Depots on Indian Railways is described as under:

10.2.1 Different types of forms have been designed to deal with different types of requests for issue of materials. These forms are -

- i. Requisition for stores (S-1313) or S.1302
- ii. Combined requisition & Issue Note (S 1313 / S-1319).
- iii. Imprest recoupment schedule (S 18 30)
- iv. Issue tickets (for workshop items).
- v. Depot transfer orders, Depot transfer requests.

10.2.2 All these requisitions are received in a centralized section in the Depot. This section may be either a part of General section or this job may be entrusted to the Ledger section. All the requisitions on receipt, are entered in a **Requisition Register**, in a chronological order.

- Requisition registers may be maintained Division-wise.
- In some of the Depots, Division-wise requisition registers are maintained `date of requisition wise` and all the requisitions of a particular date are entered on the page allotted for that date. This system is convenient to locate the requisition details when needed but it is difficult to get details of daily receipt of requisitions.
- After introduction of computers in the Depots this works of maintaining Requisition Register is being taken on the computer. For this different types of formats have been provided for different types of requisition and data is directly entered through a menu driven program.
- As per para 1307 of Store Code, Requisition Register should have following details : . .

1.Receipt serial number	2.Date of requisition	3.Requisition number	4.Indent or	5.P L No .	6.Description of material	7.Quantity	8.Movement of requisition with date	9.Action taken (issue note reference or details of other action)
-------------------------	-----------------------	----------------------	-------------	------------	---------------------------	------------	-------------------------------------	--

10.2.3 Scrutiny of Requisitions : After entering details in the Requisition Register, requisitions are scrutinized to see that the requisitions have been properly prepared and allocation i.e. Head of Account to which expenditure is to be charged is correctly given. There should also be no ambiguity in PL No. and description of the material demanded.

- Scrutiny of requisitions is done by Ledger section, if there is a centralized ledger section, otherwise this work is done by the ward.
- In some of the Depots quantity to be issued is also authorized by the Ledger section and this role of Ledger section becomes important when the item is running in short supply. If the material is out of stock, then the requisition is kept pending. As per para

1336 of Stores Code, Pending demand sheets should be maintained by the Ledger section separately for each PL No.

- In case of raw materials, it is to be checked whether the stocks have not already been reserved against work orders placed on shops.

10.2.4 For imprest items or consumable stores for which indentors are sanctioned specific quantities (for a specific period) by their controlling officers, separate registers are required to be maintained to ensure that materials in excess to sanctioned quantity are not issued, otherwise it may result in short supply of the material to other indentors.

10.2.5 As per para 1307-S all requisitions should be forwarded to stocking wards within 24 hours of their receipt in the Depot office.

[BACK TO TOPICS](#)

10.3.0 Issue of material and Granting of Issue note nos. :

All the requisitions, imprest recoupment schedules, Depot transfer etc. are finally received in the stocking ward for the purpose of issue of the material. The DSK Stocking Ward will take the quantity out from the stocking bin and will either deliver to dispatch section or keep it separate in a corner, If the materials are not immediately handed over to dispatch section, they should be kept separately but safely. As far as possible original packing should not be removed. At the same time ward will prepare the Issue Notes and when the materials have either been handed over to dispatch section or are kept separate for handing over to dispatch section details will be entered in the Issue Register.

10.3.1 After this, Issue Note will be numbered. **Issue Note No. is of eight digits.**

- **First two digits of Issue Note' number represent Depot Code,**
- **Next two digit ward code**
- **Last four digits represent serial number of issue note register.**
 - This serial number should be maintained in a continuous manner because continuity of this is watched by Stores Accounts Branch.

[BACK TO TOPICS](#)

10.4.0 Distribution Of Different Copies Of Issue Note :

10.4.1 Combined Requisition & Issue Note (S-1313 / S-1319) :

- This is prepared by the indenter in **6 copies** out of which **he will submit five copies to Stores Depot** which are ultimately sent to stocking ward. DSK (Stocking Ward) fills in issue particulars in all the 5 copies. After entering Issue Note number,
- DSK keeps **one copy** with him as his **record copy**.
- He forwards **two copies to Ledger Section** and **remaining two copies are given to dispatch section** along with the material.
- Ledger section after noting the details on their card forwards both the copies to Depot Stores Accounts Branch who sends one copy to EDP Center as per program fixed by the EDP Center for posting of vouchers.
- After posting the details in EDP center, this copy is received by Depot Stores Account where it is filed. The debit for the stores is to be sent by Depot Store Accounts to the consuming department.
- For this Depot Stores Accounts officer gets list of debit summaries from the computer center and on the basis of this 'Advice of Transfer Debit' are prepared.
- This Advice of Transfer Debit is sent to controlling officer of the indenter in Division Office along with one copy of the Issue Note (Note that Depots Store Account officer receives two copies of Issue Note out of which one is kept for record and the other copy forwarded to the controlling officer of the indenter).
- Dispatch Section sends two copies of Issue Note, given to it, to the indenter along-with the material. When the material is handed over to the indenter, his acknowledgment is taken on one copy and the other copy is given to the indenter.
- The acknowledgment copy taken back by the Dispatch staff and is handed over to DSK of issuing ward who will paste this along with first copy (depot record copy).
- This process of pasting acknowledgment copy with record copy is known as **pairing of Issue Notes**. This ensures that the material has been correctly received by the indenter.
- The one copy given to the indenter is utilized for the purpose of verification of debit summary. As per codal provisions indenter, will note down the issue details in his copy (one copy already retained by him) at the time of sending 5 copies to Stores Depot)

and forward this copy to his Divisional controlling Officer, who will pair it with the copy received by him along-with debit summary. But practically in most of the divisions, indentors are deputing their representative in the divisions for verifying the debit summaries and this copy is brought back by indentor's representative and is filed by the indentor.

- This distribution of various copies of issue note can be represented as under :

Copy No.	Distribution.
1	Retained by the indentor.
2	Retained by the ward as record copy.
3	Ward => Ledger Section => Depot Stores A/c=>EDP
4	Divisional Controlling Depot Officer with debit Summary
5	Ward =>Dispatch Section =>Indentor =>Acknowledged & returned for pairing with copy No.2
6	Ward =>Dispatch Section =>Indentor

10.4.2 Imprest Recoupment Schedule (Form S-1830) : This is the form used for recoupment of items sanctioned as imprest stores to various subordinates for their day to day maintenance requirements. As per para 1830-S the recoupment schedule may be submitted by the imprest holder directly without getting counter signature of their controlling officer. About 8 to 10 items can be recouped in one form.

- This form is prepared in 5 copies of which all are to be submitted to Stores Depot (S.1830) .
- One copy will be retained as office copy .
- On issue of the material 2 copies will be sent to the indentor along with the material. The indentor will record acknowledgment on both the copies and will return one copy to Depot and one copy to his divisional controlling officer.
- Two copies are sent to Depot Stores Accounts office who get the priced ledger posted in computer on the basis of one copy and one copy is for raising the debits.

10.4.3 Issues To Workshops : For issuing materials to the attached Workshops slightly different procedure is followed. Materials to the Workshops may be issued either directly from the Ward or the Depot may have a Sub-Ward which will temporarily stock the materials regularly required by the Workshops and will deliver them to the respective Shop Superintendent on 'Issue Ticket' (paras S1504 to S 1522) .

- For all the materials taken on Issue Ticket, the respective Shop Superintendent will submit **Workshop Issue Note** to the **Sub-Ward in five copies**. In case the material is taken directly from the parent Ward, the Issue Note will be submitted to the Ward.
- The **Sub-Ward/Ward** will retain **three copies** of this issue Note and **return the 4th and 5th copies** to the indenting Shop Supdt **after giving Issue Note Number**.
- The **DSK-Sub ward (DSK parent Ward in the case of issue from parent Ward)** will retain **one copy for his record** and **send 2 copies** along with necessary **forwarding memo** to the **Ledger Section** of the Depot for posting of numerical Ledger.
- The Ledger Section will then **pass** on these copies to **Stores Accounts Office**, who will get them posted in computer like other Issue Notes.
- **Stores A/Cs Office** will keep **one copy** for their record and **forward other copy to Workshop Accounts Office** along with debit summary.
- The Sub-Ward will deposit his copy of Issue Notes to the parent ward at the time of recouping materials for his Sub-Ward. **The Shop Supdt. will daily submit a copy of Issue Note received by him to his Works Manager who will scrutinize and after accepting will forward it to Workshop Accounts Officer daily.**
- **The Other copy will be retained by shop superintendent.**
- **Workshop Accounts Officer will pair the copy sent by W.M. with the copy received from Stores Accounts Office** along with the debit summary and will take up any discrepancies with the Stores Dept.

10.4.4 Other Items :

(a) Uniform : For these items, demands are to be submitted on requisition form indicating the PL Nos., size etc. Demands are to be submitted & complied as under :

<u>Season</u>	<u>To be distributed to staff for use by depot</u>	<u>Demands to be received by the</u>
Summer	1 st April	1st April of previous year
Winter	1st October	1st October of previous year
Monsoon	1st July	1st Nov. of previous year

- *Demands not complied with / not canceled and remain out standing till complied.*

(b) Book & forms & stationary items : Demands for these items are to be submitted in prescribed printed forms (combined requisition cum issue note.) Quantity demanded be as per the Quantity sanctioned. Normally 3/6 months requirement is issued at a time. Demands not complied are to be taken as canceled for future requirement.

(c) Tickets : Demands for tickets are submitted by each station on special indent forms sent to Ticket printing press through Traffic Account Office. Stations are required to submit demands during the months nominated for submission (2 or 3 months in a year.) Quantity demanded is based on the stock, consumption. Buffer stock limit etc., Emergent indents are to be complied by the press on priority basis.

[BACK TO TOPICS](#)

10.5.0 Distribution Of Stores To The Indentors :

On a Zonal Railway there are thousands of indentors situated all along the Railway line, hundreds of kilometers away from the supply point. It is very essential that materials required by these indentors are received by them regularly to avoid any dislocation in their work.

10.5.1 The Railway's Stores depots arrange distribution of these materials by one of the following methods :

(a)Collection of materials by the duly authorized representatives of the indentors-this is generally followed by the Workshops where the stores depots are attached to workshops In this method it is to be ensured by Store staff that the person is duly authorized and clear acknowledgment of materials is obtained from him.

(b) Delivery of stores by road - through departmental motor lorries for indents situated nearby.

(c) Dispatch by Rail as smalls - for consignments which do not form a full wagon load.

(d) Dispatch of full wagon loads - This is generally resorted to when the demands are for quantities which will constitute a full wagon load for a consignee.

(e) Dispatch through stores delivery van system - Stores delivery van system is an important service run by the stores department so that every station on the entire Railway system receives the supply of materials required by it. Materials are loaded station wise in the stores delivery vans and these delivery vans move from station to station as per a scheduled program which is finalized in advance in consultation with operating department. The staff who accompany the delivery vans deliver the materials required at the station and also collect certain items which are to be returned by the stations to the stores depots.

- **The important advantages of the stores van service** are the
 - speedier service,
 - less breakage and damage in transit,
 - avoiding loss or pilferage in transit,
 - reduction in cost of packaging and collection of returned stores.
 - Settlement of dispute at site - personal contact.

CHAPTER - 11

RETURNED STORES



TOPICS COVERED IN THIS CHAPTER :

[11.1.0 Introduction to Returned Stores :](#)

[11.2.0 Valuation Of Returned Stores :](#)

[11.3.0 Freight On Stores Returned To Stores Depots :](#)

[11.4.0 Engineering Plant Reserve :](#)



DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

11.1.0 Introduction to Returned Stores :

As per para 1601 of Indian Railways Code for Stores Department all stores which have been previously issued for the services of the Railway and are no longer required on a work should normally be returned to the nominated Stores Depot. As debits are raised to user departments for the materials issued to them by Stores Department, they get credits for the returned stores. It is very important that timely credits are given to returning departments for proper quantity at proper rates. Therefore the accountal system for returned stores is designed in such a manner that proper monitoring is done by returning department, Accounts department as well as Stores department, to ensure that Returned stores are timely and properly accounted in the books of Stores department. The system of documentation described below is to achieve this objective only.

11.1.1 All the returned stores are to be returned by various subordinates on Advice Note for returned stores (form S-1539) which is called "D S-8" on many Railways.

11.1.2 First of all returning subordinate will obtain approval of his controlling officer for returning the stores and then he will prepare Advice Note(D.S.-8) in 6 copies. He will get these advice notes signed by his controlling officer. If he is sending a material declaring it as

unserviceable, he should obtain approval of competent authority. The material to be returned will either be booked by Rail to the nominated stores depot or through stores van system.

11.1.3 Returning Of Stores By Subordinates Other Than Workshops :

(a) As mentioned above the **Advice Note for Returned Stores** is to be prepared in 6 copies.

- The returning subordinate will retain one copy (1st copy) with him for his record.
- Out of remaining 5, he will send 3 copies (2nd, 3rd & 4th) to the nominated Stores Depot either along with the material or along with R.R./P.W. Bill, if the material has been dispatched by Rail.
- At the same time he will send one copy (5th) to the Stores Account office of the depot and last copy (6th) to his controlling officer.
- The purpose of these 5th & 6th copies is to give advance information to Stores Accounts Officer and his controlling officer so that they can monitor for getting timely and proper credits for their returned materials. This procedure is explained in subparagraph (b) below.

(b) The controlling officers are required to maintain a **Departmental Register of Advice Notes (S-1605)** for keeping watch on the account of returned stores. As soon as 6th copy of the Advice Note is received from the subordinate, it is entered in this Register (For convenience separate pages in the register may be allotted for each subordinate)

- At this stage, Advice Note is also scrutinized to see that it has been correctly prepared. If some information is found incomplete, further details are added in the Advice Note and then this is forwarded to the Stores Depot for getting credit particulars. Similarly Stores Account Office is also required to maintain an Accounts Register of Advice Notes (S-1622) to see that all the materials returned by various field subordinates are taken into books promptly and properly.

(c) As mentioned in (a) above 3 copies of Advice Note are sent by the returning subordinate to the Stores Depot along with the dispatch details. On receipt of these copies necessary particulars

are entered in a register known as Depot Register of Advice Notes (S-1609). This register is also to keep watch on timely receipt of materials and their accountal. If a material is not received within a reasonable time, claim is lodged on the carrier. On receipt of the wagon/material it is weighed and details are entered in a Wagon Weighment Register. Some of the stores depots also maintain field books, in which they enter the details of all the materials, quantity wise, received from a particular wagon. After receipt of the material, they are segregated classification wise and are taken into books by granting a Receipt Order(R.O.) Number.

(d) After granting R.O. Number on all the 4 copies (3 received direct from the returning subordinate and one through his controlling officer) concerned ward of Stores Depot will retain one copy (2nd foil) for his record and will forward 2 copies(3rd & 4 th foil) to his Stores Account Officer and one copy (6th foil) back to controlling officer of the returning subordinate.

- Stores Accounts Officer, on receipt of 3rd and 4th foil will pair them with 5th foil, received by him direct from the returning subordinate, and will enter receipt particular as furnished by Stores Depot in 5th copy also. Stores Accounts Office will get the priced ledger posted by sending 4th foil to Electronic Data Processing Center, as per laid down time table. After posting of priced ledger ,4th foil will be brought back and filed in Store Accounts Office.
- When the priced ledgers are completely posted for the month, computer will generate Credit summary along with many other Reports. This credit summary is also collected by the staff of Stores Accounts Office and is forwarded to the controlling officer of the returning subordinate along with the 3rd foil of the Advice Note, for accepting the credits. At this time 5th foil of the Advice Note will also be returned to the controlling officer.

(e) Controlling officer on receipt of 6th foil of Advice Note will examine whether the Stores Depot has granted Credit for correct quantity under correct classification & nomenclature. In case of any discrepancy, he should take up the matter with the Depot Officer and the returning subordinate if the reasons given on the Advice Note are not satisfactory. He should arrange for getting proper credits by way of adjustments. After checking, Credit summary is

accepted and discrepancies are adjusted by debiting "Transfer Stores" and crediting the head of account concerned. The controlling officer will file 6th foil in his office and 3rd foil will be filed in the office of his associated account office. The 5th foil will be forwarded to Returning Subordinate for his record.

11.1.4 Returning Of Materials By Workshops : For returning material by workshops subordinates, the procedure is slightly different. Here the advice Note is prepared in 5 copies, out of which one (1st foil) is retained by the subordinate and four copies (2nd to 5th) are sent to Stores Depot along with the material.

- After receipt and account of the material the concerned ward of Stores Depot will retain one copy (2nd foil) and forward 2 copies (4th & 5th) to Stores Account office and one copy (3rd foil) to returning subordinate.
- The Stores Accounts Office will get priced ledger posted from 5th foil and file this in their office.
- 4th foil will be sent to Workshop Accounts Officer along with the credit summary. Returning subordinate on the receipt of 3rd foil will post the details in his record foil (1st copy) and will submit it to his Works Manager who will accept the credit details given by Stores Depot and then forward it to Workshop Accounts Officer for pairing and accepting the credit summary.

[BACK TO TOPICS](#)

11.2.0 Valuation Of Returned Stores :

11.2.1 Valuation Of Non Stock Items : The rate at which credit for returned stores is to be given depends upon whether the material is a Stock Item or a Non-Stock Item and also on their condition. For Non Stock items it is not certain whether they will be required for Railway use or not. Also, no separate book rate is maintained for them. Therefore credit for all Non Stock items, whether new, second hand or serviceable, is granted at approximate scrap rate.

- **As per para 1617 of Stores Code, Non Stock items should not be reclaimed or repaired until a requisition is received for the material.**

11.2.2 Valuation Of Stock Items : For New and Second hand Serviceable items following procedures are adopted ;

(a) Credits for stock items are granted depending upon their stock position in the Depot and their condition. If the item is not overstock, then credit for a new Stock item is granted at full Book Average Rate and at half of this for second hand serviceable materials. However if the depot stock of an item has already been declared as Dead surplus, then credits at scrap rates are given even for new or serviceable Stock items. In case the item being overstock in the Stores Depot, rate of credit to be given may be decided by C.O.S..(On Central Railway, if the stock of an item is more than 18 months' requirement, they give credit at 25% of book average rate for ferrous items and 50% of this rate for non ferrous items, for both new and second hand serviceable materials.

(b) Credit for second hand Rail released from line which could be supplied to new projects or to other Administrations, is worked out by the formula given below:

$$\text{Price per Ton} = R - (N/L) * (R - S),$$

where,

R = The present price of the new Rails of the section in question(excluding freight charges)

N = Age of the Rail.

L = The estimated life of the Rail (normally 45 yr.)

D = Scrap value of the Rail (may be taken as 0.3R)

(c) In case of Serviceable plant, stationary boilers and pumps

$$\text{Credit to be given is} = R - N(R-S)/L,$$

where R, N, L and S have same meaning as explained in (b) above.

- In case of boiler tubes removed from engine boilers they are credited at scrap rate. But when the tubes have been

rumbled the serviceable tubes should be held as second hand stock at half the value of new stores. The difference between the book value of unrumbled tubes, plus the cost of unrumbling and the second hand value of the tubes when taken into stock after rumbling should be credited to Stock Adjustment Account.

11.2.3 Valuation Of Repairable Stock Items :

(a) For items which could be rendered serviceable and made useful for another term of life after another term of life after reconditioning or repairs ,credit is afforded at 1/3 of book rate of new materials for wholly or partly ferrous items and at 1/2 of book rate of new for non-ferrous items.

(b) The repaired items are taken into books at the book rate of repaired item plus the actual cost of repairs or average cost of repairs ,as convenient No distinction should be made between new and repairable article in the matter of storage and the issue price of these materials should be the same. However the difference (Book average rate for new - (Book rate for repairable + cost of repairs)) should be credited or debited to the appropriate Revenue Head of Account for overcharges and undercharges - manufacture & repairs (B 2129 to C 2138 or C 2327).

[BACK TO TOPICS](#)

11.3.0 Freight On Stores Returned To Stores Depots :

11.3.1 The freight is to be debited to head " Carriage of Revenue Stores " under the various revenue abstracts of the returning departments for the material returned from revenue/maintenance. In case of materials returned from special works the freight should be debited to the estimate of work concerned i.e. Capital, DRF, Revenue as the case may be. If the stores are returned on account of incorrect issue by Stores Department, the freight should be charged to head G 3101.

[BACK TO TOPICS](#)

11.4.0 Engineering Plant Reserve :

11.4.1 An Engineering Plant Reserve may be created on each Railway with the previous sanction of Railway Board, for Storing serviceable and useful plants leftover from special works which are likely to be required for future works. These may be items of construction plant such as Air compressors, Boilers, Concrete Mixers, Cranes, Draggers(crab),Drilling Machines, Engine hammers, Jacks, Lorries, Mortar Mills, Pumps, Stone Crushers, Winches etc. Separate stocks of these items will not be held by Stores Department. For custody Stores Department will be responsible for all material in the Engineering Plant Reserve and should maintain record of their receipts, issues and balances. As regards place, the plants should be stocked at some place close to where it can be overhauled, and therefore it is not necessary that all the materials should be stocked at one place.

- However separate records should be kept for all such items and the materials themselves should be clearly marked and stocked separately so that they do not get mixed up with ordinary stocks.
- **Each Machine or piece of Plant should be given a separate number in the following way:**

E R XXXXXXXX YYYY ,

where,

E R stands for Engineering plant Reserve.

XXXXXXXX stands for Price List No of the plant.

YYYY If there is more than one machine or piece of plant of the same category, this will indicate Machine number. This number may also be individual number given by the manufacturer.

11.4.2 For keeping watch on receipt and issue of each plant, the Depot officer will maintain a "**Reserve Plant Register**". Plants and Machines for the Reserve will also be returned on Advice Note for Returned Stores (S-1539).

11.4.3 Valuation Of Plant :

The valuation of the plant sent to the plant will be fixed by the Controller of Stores in consultation with Chief Engineer. However the formula mentioned in para 11.2.2 (c) above may be used as a guide. If present day price of plant is not readily available, R may be estimated taking the original price as a basis.

CHAPTER - 12

SCRAP DISPOSAL



TOPICS COVERED IN THIS CHAPTER :

12.1.0 Definition Of Scrap :

12.2.0 Receipt Of Scrap :

12.3.0 Formation Of Lots :

12.4.0 Valuation Of Scrap :

12.5.0 Survey Of Scrap And Other Materials :

12.6.0 Sale Of Scrap Materials :

12.7.0 Auction Sales :



DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

12.1.0 Definition Of Scrap :

Scrap can be defined as the material, which is no longer useful to the Railways for the purpose for which it was originally purchased or obtained. Scrap also consist of arisings of waste material from manufacturing and repairing processes such as turnings and borings, sweepings, foundry dross, off cuts of metals, waste paper, weeded out records, used tickets, wooden pieces and saw dust etc.

12.1.1 Types of Scrap : Scrap is a class by itself, and should be distinguished from surplus stores, and can be divided in two categories viz. :

(a) Ordinary scrap : These are the items, which have regular demands as raw material in the Railway Workshops such as cast iron, non-ferrous materials which are used for manufacturing various components of Rolling stock.

(b) Surplus Scrap : These are items which are not required by the Railways for their own use and are invariably disposed off by auction sale or other means. Even new or second hand material that is usable, may come in this category of scrap, if it is useless for the Railways. All surplus scrap is almost always "dead surplus".

12.1.2 Reasons For Arisings Of Scrap : The various reasons for arising of scrap are :

(a) By use, various components are worn out to such a condition that they can't be reconditioned economically or are beyond repair.

(b) In a manufacturing process some wastages are unavoidable and therefore some quantity of scrap material is generally generated

12.1.3 Sources Of Scrap : As explained above Scrap is a normal natural arising in any manufacturing or maintenance activity. The annual arisings of ferrous scrap on the Indian Railways and Production Units come to around 6/7 lacks tonnes.

○ ***The major sources of arisings are :***

(a) Railway workshops under Mechanical Engineering, Civil Engineering Electrical Engineering, Signal & Telecommunication Engineering Department, Printing Presses etc.

(b) Condemned Rolling stock such as wagons, coaches, locomotives, boilers, etc. These are kept at nominated central locations or kept with different Chief/Head train examiners Carriage Foremen, Loco Foremen in the Divisions.

(c) Scrap permanent way materials such as released condemned Rails, Tie bars, M.S.& C.I. Sleepers, track fittings, Points & Crossings, etc.

(d) Scrap building material such as off-cuts of bars and rounds, structures, pipe and pipe fittings which arise with the Inspector of Works of various divisions, administrative offices and Railway colonies.

(e) Inactive/surplus items being declared as scrap by Survey Committees.

12.1.4 Scrap Schedule : All Railways maintain a detailed and unified schedule of scrap items under Group 98 and PL Nos. have been allotted to each item of scrap. The schedule has been prepared keeping in view the ultimate use of material in the market.

- Some of the important sub-groups of group 98 in which scrap items have been classified are :

Group no.	Description
01	Industrial scrap
03	Re-Rollable scrap
05	Melting scrap
08	Cast iron
11	Condemned Rolling stock
20	Bronze scrap
21	Copper scrap
23	Other non-ferrous scrap
32	Scrap machinery

[BACK TO TOPICS](#)

12.2.0 Receipt Of Scrap :

12.2.1 Location And Layout Of Scrap Yard : The location of scrap yards is determined largely on consideration of freight charges, space availability and proximity to the market for disposal. Arrangements should be made to see that double handling is avoided, as far as possible.

- For facilitating expeditious disposal of scrap, system of twin yards should be followed where the receipt and delivery of scrap lots is regulated from different work areas and the chance of sold lots getting mixed up with fresh receipts is also eliminated to large extent. An extension of this may be 'Three yards' in which one yards is used for receiving scrap (say first four months), second yard for making lots and third yard for disposal of surveyed lots, as per classification in Scrap schedule.

12.2.2 The lay out of a scrap Yard may provide the following :

- i) **Central Sorting Yard :** For receipt of mixed scrap and sorting them to make separate lots for ultimate disposal.

ii) Reclamation Section : Reclamation Section should be set up for salvaging such items of scrap that may be modified into other useful items. This section will pay huge dividends if it is properly worked.

iii) Yards (twin yard) : For Storage and Disposals, Bins in each of the twin yards for `Lot' formation and storage of each particular item of scrap.

iv) Godowns : For Valuable scrap Materials, with bins & proper security arrangements for storage of non-ferrous metals, alloy sheet etc.

v) Facilities : Office, parking place for trucks, roads, adequate yard lighting, basic security (like boundary wall etc.), weigh bridge, beam scale.

12.2.3 Before sending materials other than waste materials, they have to be first declared unserviceable by the competent authority. For most of the materials Branch officers of the technical departments are competent to classify the materials as unserviceable.

- All scrap/unserviceable materials are sent by different workshops and various subordinates in the field along with Advice Note for returned stores (form S-1539).
- Scrap materials are directly received in the scrap yard where they are weighed / measured / counted and then segregated / sorted. If twin yard system is being followed, then, all fresh receipts are received in the yard from which deliveries of sold materials are not being given at present.
- In any case it is to be ensured that there is no possibility of mix-up of fresh arisings with the materials already sold.

[BACK TO TOPICS](#)

12.3.0 Formation Of Lots :

12.3.1 Scrap of a particular description (PL NO as classified in the Scrap schedule) received from different sources (in case of mixed scrap, after sorting) are placed in a particular lot. The idea of lot formation is to accumulate economic quantity. of a particular item of scrap to be

attractive to participants in auction (too many lots also require more space). Therefore a lot should not be too small. This should also not be too large as this will restrict auction virtually to a few rich parties only, on account of high value and will promote "Cartel" or "Ring formation". Secondly, large lots take longer time for delivery and clearance is delayed. Lot Registers have to be maintained as per Code para 2410-S.

12.3.2 As per extent orders size of the lot should not normally exceed the limit of 1000 tonnes. The depot officer may, however, form a bigger size lot (initial lot) where considered expeditious with the prior permission of Controller of Stores and F A & C A O and subject to overall delivery period not exceeding 120 days.

12.3.3 Receipt of scrap in Railway scrap yards is in such mixed consignments that with the existing facilities each input in a particular lot cannot be weighed with accuracy. Incoming scrap in wagons loaded with mixed scrap is accounted for on the basis of actual gross weight of full wagon as recorded on the weigh-bridge After deducting the tare weight of the wagon, the net weight of scrap is assessed. This quantity is distributed on approximate estimate to the different "Lots" according to categories of scrap which are found in the wagon.

- Sometimes, however, there are extraneous materials in the wagons, e.g. dirt or refuse material lying on the floor of the wagon. No credit is afforded for these valueless substances. Therefore, owing to the dependence on the visual estimates, the quantity in a lot is bound to be approximate and discrepancies are likely to be found when making deliveries by actual weight / number. If some residual material is left, after the delivery is completed, this residual material is added in the fresh lot for similar items being surveyed and put up for auction.
- In case of shortage, the purchaser has to be given refund of the undelivered quantity after the shortage is verified by the concerned staff.

12.3.4 Necessary caution has to be exercised while giving deliveries because some purchasers have a tendency to pick and choose and leave behind the items which may not be lucrative to them and thus resulting in shortages and resultant refunds. This practice should be discouraged and constant vigil should be maintained by the depot supervisory staff when the deliveries are being effected. To minimize misappropriation on this account the purchasers should be compelled to remove the material

from one end of the lot so that the entire range of items are lifted from that end onwards.

12.3.5 Lot Register : As per para 2410 of Stores code, Once the lots have been formed for the purpose of auction sale the details should be entered into Lot Register which should have columns for

- Lot No.,
- Description,
- Book Rate,
- Approximate Quantity for sale,
- Rate secured at previous auctions,
- Name of the Purchaser,
- Rate at which auctioned,
- Total value of stores and
- Remarks.

12.3.6 Sometimes it is expedient to sell mixed lots (though not desirable). These should be sold with the stipulation regarding excluded items which have to be returned back by the purchaser while taking deliveries. List of excluded items should be prepared with caution and this should include only those item which are likely to fetch higher rates.

[BACK TO TOPICS](#)

12.4.0 Valuation Of Scrap :

12.4.1 Like other categories of stock items, numerical ledgers as well as price ledgers for all items of scrap are maintained on the computer under group 98. Individual receipts are priced according to the book rates of the particular PL No. and credit is afforded to returning departments for all items of Scrap. These book rates are required to be revised every six months on the basis of prices obtained during successive auctions.

- It, however, be kept in mind that the rates at which scrap materials are ultimately disposed off, by the scrap Yard Depots are usually very much higher than the book rate of scrap at which credit is initially afforded to the returning departments against relevant Advice Notes for Returned Stores. The Price difference between the disposal rate and the book rate is accounted under the Stock Adjustment Account and the net amount of debit or credit as

remaining in the Stock Adjustments Account No. is distributed among various departments on prorata basis.

[BACK TO TOPICS](#)

12.5.0 Survey Of Scrap And Other Materials :

12.5.1 Survey Committees : Survey committee comprises officers of various departments including stores department Stores Depot Officer acts as a convener member and one senior Officer as Secretary, This committee is a standing committee appointed by General Manager for the purpose of inspecting critically the condition of all Stores :

- (a) That have deteriorated in value, for any reason,
- (b) Broken or damaged in transit, or while in stock,
- (c) Lying in the custody of the Stores Department for a long time and considered by Controller of Stores as having become unserviceable owing to obsolescence or other causes and received as scrap from the line.

12.5.3 After critical and careful examination of lots, survey committee submits its recommendations on the above line to COS office.

- Recommendations can be accepted by CMM/COS if the value of the lot is up to Rs. 25,000/- and
- Above this value by GM (AGM on behalf of GM) on acceptance of recommendations by competent authority (COS/CMM/AGM) sanction is communicated to the respective Depot Officer and also to associated Accounts Officer.

12.5.4 Survey Sheets are prepared on the prescribed proforma given below. Recommendations against each item are recorded by the Secretary of the Committee or the member of the concerned department ;

- Sr. No.
- Lot No.
- Price List No.
- Description of stores

- Qty.(No. or weight in tonnes)
- Book rate per MT in Rs.
- Value per MT in Rs.
- Total Scrap Value (Rs.)
- Remarks by the Committee
- Initials of the Secretary
- Remarks by the COS for GM's orders
- General Remarks 1 2 3 4 5 6 7 8 9 10 11 12

12.5.5 Items exempted from Survey : Some items are exempted from survey. These items are turnings and borings, waste paper, fire wood, saw dust etc. Survey is not required for condemned Rolling Stock and Rails and sleepers on line for which condemnation certificates given by Chief Work shop Manager and Chief Track Engineer respectively are considered adequate. Lots of small value (Rs 1000 at present) are also not required to be surveyed for which depot officers have been given powers to decide.

12.5.6 As mentioned in para 12.5.1 above, survey committee is not only for surveying scrap materials. They also survey the surplus stores lying in the depot to classify them dead surplus or scrap. Item declared as surplus if are not disposed off by sale, transfer or issue within twelve months of recommendations of Survey Committee, should be classified as scrap and book value adjusted in accordance with the rules (2229-S).

- *Survey committee normally meets once in a month at a place, time & on date fixed by depot officer.*

12.5.7 Following are the modes of disposal based on the recommendations of Survey Committee.

- (a) Issue to particular Department of the Railway either for direct use or using in lieu of some other item.
- (b) Sale / Transfer - The item may be transferred / sold to other Railway or to some other Govt. Department.
- (c) Retaining the item as Emergency Stores.
- (d) Sale to public
- (e) Sale to staff.

[BACK TO TOPICS](#)

12.6.0 Sale Of Scrap Materials :

12.6.1 Methods Of Sale : There are four methods of sale as described below :

(a) Sale through Public Auction By conducting public auctions at regular intervals and putting the materials in those auctions.

(b) Sale through Tenders: By inviting tenders for the materials to be sold either through advertised tenders or giving tender inquiries to likely purchasers.

(c) Direct Sale Some materials may be sold directly at pre-determined rates to Railway employees and other government organizations. The rates are generally based on last auction rates/book rates.

(d) Quoting for Sale For some of the items we may submit quotations/tenders to other organizations if they have floated tenders for purchase of scrap.

12.6.2 Disposal Of Special Items : The best disposal is through auction sale, since it is best suited for speedy disposal of scrap. Tender sales are adopted only for items for which long term contracts can be entered into, say for turning & borings, waste paper, timber off cuts etc. Since these items have regular arisings and also occupy much space. Realistic estimation of the quantity for such contracts is essential to avoid delays in deliveries or refunds etc. Tender sales are also resorted to for breaking the ring formation, and to get better prices.

12.6.3 Scrap Rails : These are sold on 'as is where is' basis by proxy without bringing the rails the Scrap Yard and the deliveries are arranged by PWI. However proper lot formation at the places approachable by road is important These may be sold on running meter basis or on weight basis. Weight at site can be found out by measuring the length.

12.6.4 Condemned Rolling Stock : Locos, Boilers, Coaches, Wagons etc. are condemned by the Mechanical Department and are auctioned from the nominated cutting Yards. The excluded fittings like non-ferrous items,

Wheels, Brake Blocks etc., are required to be removed before auction or handed over back by the purchaser to the Railway after cutting up of the Rolling stock and before the deliveries are effected. These items are put up in auction only after receipt of condemnation and reclamation (C&R) certificate signed by competent authority is received.

12.6.5. Waste Paper & Tickets : There are two hazards to be guarded against :

(a) Fire hazard

(b) Misuse

- Money value books in usable stage should not be offered for deliveries. Normally scrap tickets which are used tickets collected from the stations and misprinted tickets in the printing press, if disposed off, should be shredded before disposal to avoid any malpractice. In case the shredding machine is out of commission there should be no hesitation in burning the accumulated scrap tickets.

12.6.6 Machinery & Plants Items : These items are normally sold on number basis. Proper estimate of material contents (ferrous / non-ferrous). Other details like make, purchase price, depreciation value, with or without motor, motor details if with motor etc., must be furnished by the returnee official along with Advice Note for returned stores.

[BACK TO TOPICS](#)

12.7.0 Auction Sales :

12.7.1 Auction may be conducted either through an auctioneer or departmentally. Auctioneer is appointed on commission basis and the contract is normally for 3 years. Before the auction is conducted, time, date, venue and the items to be included in the auction are put in a catalogue for circulation to the prospective bidders by the auctioneer.

- On the nominated date and time auction is started. In order to restrict entries of undesirable elements, a system of entry fee has been introduced. The entry fee is Rs. 2000/-. This entry fee is

refundable but can be forfeited if the person depositing it has not maintained proper discipline during the auction proceedings.

12.7.2 The auction normally is conducted by the Depot Officer who is in the rank of senior scale or above. The presence of a representative of Accounts Department is also required. As per Codal provisions, presence of an Inspector of Stores Accounts is adequate but in some cases Stores Accounts Officer of the depot concerned or an officer from the Head quarter office may attend auction. In addition to above a representative of Security department may also be present to maintain proper discipline during the auction. Although in case of auction through the auctioneer earnest money is collected by the auctioneer and then deposited to the Cash Office, it may, however, be desirable that a representative of Chief Cashier is also present.

12.7.3 On the pre-decided date and time, auction is started, first of all conditions of sale are read and advised to all the bidders present at the time of auction. It is better that the auction is conducted on the lot itself and the auction conducting officer, auctioneer and the bidders may keep on moving from lot to lot.

12.7.4 Reserve Price : The decision to sell or not to sell a particular lot during the auction is taken by the Depot Officer. For taking this decision, he fixes a Reserve Price of each lot in advance. This reserve price is fixed keeping in mind last sale rates, market trend and also condition of the lot.

- Generally for ferrous items, reserve price is fixed by the Auction Supervising Officer but in certain cases such as non-ferrous items valuing more than certain amount (Rs. 25,000), condemned locomotives and some exceptionally large lots, reserve price may be fixed by Headquarters Office in consultation with Finance Department.
- Depot Officer has also discretion to accept below the reserve price by certain amount (normally 5%) if the bids to the reserve price are not coming and there are reasons for accepting the bids at lower rates.

12.7.5 Realization Of Sale Value : At the time of auction, once highest bid of a bidder has been accepted by the Auction Conducting Officer, the purchaser is required to immediately deposit the earnest money.

- This earnest money is

- Full sale value, if the total value of a lot is less than Rs. 2000/-,
- 25% of value of sold lot subject to a minimum of Rs. 2000/- if the value of the sold lot is between Rs. 2000/- and 10,000/- and
- 10% of value of sold lots subject to a minimum of Rs. 2500/- for the lots valuing more than Rs. 10,000.
- The purchaser is required to deposit balance sale value within a period of
 - 10 days from the date of auction if the value of sold lot is less than Rs.1 lakh and
 - Within a period of 20 days if it is more than Rs.1 lakh. For high value lots valuing over Rs.2 lakhs,
 - Facility of paying in installments may also be granted with the approval of COS. Usually more than 2-3 installments are not allowed.
- In case of default, the earnest money may be forfeited or, at the discretion of Railway Administration, the purchaser may be granted extension which are always subject to payment of full interest normally at the rate of 2% higher than the bank lending rate.

12.7.6 Bid Sheet : At the time of auction when the lot has been sold, a Bid Sheet is prepared which contains

- Details of lot No.
- Brief description of the lot,
- Quantity sold,
- The rate at which sold,
- The earnest money realized and
- The total value payable and
- Special conditions, if any.
- Bid sheet is signed by the representative of auctioneer, Auction Conducting Officer, Accounts Representative, Custodian DSK of scrap yard and the purchaser.

12.7.7 Issue Of Delivery Order : When the balance sale value has been paid by the purchaser in full and he has fulfilled all the other conditions of sale, a Delivery order is issued to him by the Depot Officer in case of departmental auction or by the Auctioneer if the auction is conducted through auctioneer. Delivery order is an authority for the purchaser to take delivery from the Scrap Yard. It specifies the date by which the

delivery is to be taken. In case facility of installment has been allowed to the purchaser, delivery orders are also issued in installments for the quantity for which payment has been received. In such cases, we have to ensure that earnest money deposited is adjusted only at the end.

12.7.8 Free Delivery Time :As per conditions of sale, a purchaser is allowed a free time during which he has to lift the material from Railway premises. This period is generally

- 25 calendar days for the lots sold on number basis and
- 40 calendar days for the lots sold on weight basis.
- Sometimes more delivery time will be allowed on the merit of the case but normally time more than 90 days is not allowed.
- If the purchaser is not able to lift the material within the free delivery period, he required extension. Such extensions are generally granted after levying ground rent but in some genuine cases, levy of ground rent may be waived.

12.7.9 Delivery Of Sold Material To The Purchaser :The purchaser approaches DSK incharge of scrap Yard/stock holder like PWI etc., with delivery order for taking delivery. Delivery is given by the nominated DSK / Stock Holder which is **witnessed by**

- A representative from Accounts (normally a Stock Verifier) and
- A representative from Security Department (normally an Asst. Sub Inspector).

 **At the time of delivery it is to be ensured that ;**

(a) The delivery is given from the lot actually purchased by the purchaser ;

(b) Delivery is given from one side and no picking and choosing is allowed.

(c) Fresh arisings of similar material are neither dumped on the sold lot nor delivery of these is given at the time of delivery.

(d) The purchaser does not have access to other lots.

(e) Proper record of weighment is maintained.

(f) Normally delivery of ferrous items is given by weighment on a lorry weigh-bridge but delivery of a non-ferrous items is given by weighing on beam scale.

- **After the delivery is completed a Sale Issue Note is prepared, and the details of progress of delivery are also maintained on the back of the Sale Issue Note. When the Sale Issue note is signed by officer, a Gate Pass is issued and it is the duty of the Delivery Witnessing Officials to escort the lorry up to the gate so that there is no possibility of mixing any other material within the depot.**

CHAPTER - 13

INVENTORY MANAGEMENT

TOPICS COVERED IN THIS CHAPTER :

13.1.0 Definition Of Inventory :

13.2.0 Various Costs Related To Inventory Management :

13.3.0 Inventory Management - Constrains & Problems :

13.4.0 Economic Order Quantity :

13.5.0 Measuring Efficiency Of Inventory Management :

13.6.0 Inventory Control :

DETAILS OF TOPICS COVERED IN THIS CHAPTER ARE AS FOLLOWS :

13.1.0 Definition Of Inventory :

The Dictionary meaning of Inventory is 'a list of goods'. In a wider sense, inventory can be defined as an idle resource which has an economic value. It is however, commonly used to indicate various items of stores kept in stock in order to meet future demands.

- In any organization, there may be following **four types of inventory**:
 - (a) Raw materials & parts**-- These may include all raw materials, components and assemblies used in the manufacture of a product;
 - (b) Consumables & Spares** -- These may include materials required for maintenance and day-to-day operation;
 - (c) Work in progress** -- These are items under various stages of production not yet converted as finished goods;
 - (d) Finished Products** -- Finished goods not yet sold or put into use.

13.1.1 Need For Inventory : Many of the items we need for our day-to-day maintenance and operation are required to be specially manufactured for the Railways. The time to procure these materials, therefore, is longer due to various reasons and it is not possible to procure these materials when instantaneously required. It is, therefore, necessary to keep stocks of such items.

- Even for those items which are readily available in the market, it may not be economical to buy these items every time as buying in piecemeal involves additional costs to the administration. Therefore, we may find it cheaper to buy in bulk and to stock some of these items and supply our indentors through such stocks.
- There are always some fluctuations in demand as well as fluctuations in the time within which material can be procured. It is therefore, not possible to forecast our requirements exactly and time the purchases in such a way so that the materials will arrive just when they are physically required. It, therefore, becomes necessary to maintain stocks of these items.

13.1.2 Basic Problems of Inventory Management : From the above discussions, it will be seen that on the one hand inventories are idle and valuable resource i.e. capital remains locked up in the inventories which can be used for other productive purposes but on the other hand, they are desirable to satisfy manufacturing, maintenance or operation requirement of the organization. Hence basic problem of inventory management is to optimize the stock levels of different materials so that their stocks are maintained at optimum levels without affecting the production or day-to-day maintenance . *Three basic problems associated with this optimization of stocks are ;*

(a) When to initiate purchase of the materials

(b) How much quantities are to be purchased at a time and

(c) What should be the stock levels of different items.

- For getting answers to these questions, we have to investigate various types of costs related to inventory management.

[BACK TO TOPICS](#)

13.2.0 Various Costs Related To Inventory Management :

13.2.1 Costs Of Ordering Or Costs Of Acquisition : For a large organization, it becomes necessary to have a separate purchase office to purchase thousands of items. The demands received are technically scrutinized and for purchasing them, inquiries are issued, tenders are received and evaluated, orders are progressed, materials are received and inspected and lastly, the payments are arranged. All these mean additional costs to the organization. All these costs together constitute what is called *cost of ordering or cost of acquisition*.

- In the Railways, we do not have a system of working out these costs. But it is necessary that for a given stores organization, total number of purchases are ascertained and average cost per purchase order worked out. When we work out the costs, we may find that some costs are fixed while some are variable. We should be interested in knowing the variable costs.
- As we are using 3 major systems of purchasing viz., advertised tender, limited tender and cash purchase systems, it is advisable to work out the ordering costs for these three different procedures of purchasing.
- Based on some of the studies made ordering costs may be as follows:
 - Cash Purchase Rs.50 to Rs.100 per purchase
 - Limited Tender Purchase Rs.300 to Rs.600 "
 - Advertised Tender Purchase Rs.1000 to Rs.2000 "
- These are just approximate and may vary considerably depending upon various factors. It is repeated that every Railway should establish these costs from time to time so that they can be used in designing proper inventory models.

13.2.2 Inventory Carrying Costs : The very fact that the items are required to be kept in stock means additional expenditure to the organization. The different elements of costs involved in holding inventory are as follows:

(a) Interest on capital / cost of capital / opportunity costs : When materials are kept in stock money representing the value of materials is blocked. In a developing economy, capital is extremely scarce and as such, the real value of capital is much higher than the nominal rate of interest which the organization like Railways may be paying. The ,money which is blocked up is not available to the

organization to do more business or to use it for alternative productive investment. This opportunity to earn more profits which we loose can be expressed as *opportunity cost*.

- While working out the inventory carrying cost in an organization, the higher of the three factors viz., interest, cost of capital or opportunity cost should, be taken into consideration. This may be roughly 20% per annum.

(b) Obsolescence and depreciation : The costs because of obsolescence and depreciation, are very important even though they are very difficult to assess. This factor is relatively higher for spare parts inventory as against raw material inventory. Larger the stock we keep more the risk of obsolescence and as such, the costs are expressed as the percentage costs to the average inventory holding and can be between 2 to 5%.

(c) The cost of storage, handling and stock verification : There are additional costs because of the clerical work involved in handling of materials in the ward, in stock verification, in preservation of materials as well as the costs because of various equipments and facilities created for the purpose of materials. A part of this cost is of a fixed nature. The major portion of the cost including the cost of staff, however, can be treated as variable costs at least in the long run. This cost can be roughly 3 to 5% of the inventory holding.

(d) Insurance Costs : Materials in stocks are either insured against theft, fire etc., or we may have to employ watch & ward organization and also fire fighting organizations. Cost of this may also be 1 to 2%. The average inventory carrying costs can, therefore, be as follows:

Interest/costs of capital/opportunity cost	15 to 25%
Obsolescence and depreciation cost	2 to 5%
Storage, handling etc.	3 to 5%
Insurance costs	1 to 2%
Total	21 to 37%

- In the Indian Railways, the reasonable assessment of inventory carrying costs shall be about 20 to 25% per year of the average inventory holding. It is again clarified here that these costs are not normally reflected in our accounting system and as such are required to be established by individual Railway.

13.2.3 Shortage Or Stock Out Costs : Whenever an item is out of stock and as such cannot be supplied, it means that some work or the other is delayed and this, in turn, leads to financial loss associated with such stoppage or delay of work.

- For example, if a locomotive remains idle for want of spare parts, the earning capacity of the locomotive is lost for the duration of this period. On the other hand, the spare parts required will have to be purchased on emergency basis or have to be specially manufactured resulting in additional costs.
- Stock out costs can vary from item to item and from situation to situation depending upon the emergency action possible. No attempt therefore, is normally made to evaluate a stock out cost of an item. Nevertheless, it is important to understand the concept of stock out costs, even though the actual quantification is not possible. We should have a rough grading of the items depending upon the possible stock out costs.

13.2.4 Systems Costs : These are the costs which are associated with the nature of the control systems selected. If a very sophisticated model of the relationship between stockout costs, inventory holding cost and cost of ordering is used and operated with the help of a computer, it may give the theoretical minimum of the other costs but the cost of such control system may be sufficiently high to offset the advantages achieved.

- In most of the situations, however, there is no substantial increase in costs because of the proposed control system and in such cases, these costs can be overlooked.

[BACK TO TOPICS](#)

13.3.0 Inventory Management - Constrains & Problems :

Problems of inventory management vary from organization to organization depending upon various variables, some of them are as under:

- (a) Whether the demand for the goods is one time (static) or of repetitive nature (dynamic). In Railways, all the non-stock items are treated of static nature and stock items of dynamic nature.

(b) In case of demands of dynamic (repetitive) items, whether future requirements can be assessed with certainty or uncertainty or under risk (probability). Also, whether the demand is fixed over a time or is variable.

(c) Whether the material is manufactured in house or is to be purchased through outside suppliers.

(d) Whether the lead time during which material can be arranged is fixed or is variable.

[BACK TO TOPICS](#)

13.4.0 Economic Order Quantity :

Depending upon various variables, different inventory models have been developed. Different models take different costs into account. One of the popular model developed for items of repetitive nature (dynamic), future demands for which can be projected with certainty is Economic Order Quantity (EOQ) model.

- In addition to factors mentioned above, this model assumes that price of the material remains constant with time and also does not vary with order quantity. This model can be developed mathematically by differentiating total cost of inventory (ordering cost + inventory carrying cost) with respect to Quantity. The formula so derived is given below :

$$\text{Economic Order Quantity (EOQ)} = \text{Sq. Rt. } \left\{ \frac{2 \times A \times C_o}{C_u \times C_i} \right\}$$

Where,

**A = Annual Consumption
Quantity**

**C_o = Cost of placing one
order**

**C_i = Annual inventory
carrying cost represented as
fraction**

Cu = Unit Cost (Rate/Unit) of the material

13.4.1 EOQ model and various other models and systems of recouplements as explained in Chapter 5 are the answers of two basic questions of inventory management

--When to purchase ?

--How much to purchase?

BACK TO TOPICS

13.5.0 Measuring Efficiency Of Inventory Management :

13.5.1 Efficiency of an inventory management system is generally measured by two measures ;

(a) Service level : This is the percentage of compliance of demands of user. This level is set by the top management who knows that cost of providing 100% service level (i.e. meeting with all demands for materials at all times) is prohibitively high.

- **Therefore, it is attempted to attain a service level between 90 to 98% depending upon criticality of the items. In Railways, we try to comply demands of vital and safety items up to 97 to 98%, recoup imprest items and supply all ferrous and non-ferrous raw materials up to 95% and give compliance of all other items between 90 to 95%.**

(b) Inventory turnover ratio : This is a measure of average stocks held in stock at a time. This is measured in percentage by the following formula :

$$\text{T/O ratio} = \frac{\text{Average value of stock of all materials held in stock}}{\text{Total value of issues made during the year}}$$

- **In Railways, Stores Balances are reflecting in various capital suspense head e.g., Purchase Suspense (7110, 7120, 7130), Sale Suspense (7140), Stock Suspense (7150, 7160).**

- As per accounting system for working out inventory turnover ratio, we divide debit balances outstanding in all above suspense heads on 31st March of the year by total issues made from 1st April to 31st March. This ratio is multiplied by 100 to get percentage. *In Railways, we try to achieve turnover ratio of about 27%.*

(c) As overstock and inactive items are not contributing towards inventory turnover, we should control their balances. In Railways, *total balances of inactive stores (items not moved for past 12 months or more) and overstocks should not be more than 5% of total Stores Balances.*

[BACK TO TOPICS](#)

13.6.0 Inventory Control :

Inventory Control is the art and science of maintaining the stock level of a given group of items, incurring the least total cost, consistent with other relevant targets and objectives set by the management. Generally, this is measured in terms of service level which is measured in terms of percentage of compliance of demands (requisitions for materials) of user departments and Inventory Turnover ratio as explained above.

13.6.1 Inventory Control Techniques : Various techniques employed for controlling stock levels are ;

(a) Selective Management :- In this technique, various items of stores are classified in various classifications depending upon their consumption, value, unit price, criticality for the organization, source of supply, purchasing problems, rate of drawal from stores, seasonality and stores balances on a particular date. Different approaches of control are being followed for different types of items. Two such classifications ABC & VED are described in paragraphs 13.6.2 & 13.6.3.

(b) Management by exception-- In this technique, items with certain exceptions are tackled on different points of time. For example, overstock items, surplus items and inactive items may require more attention.

(c) Designing of recoupments policies -- Recoupments policies are designed in such a manner that average stocks of materials are optimum.

(d) Rationalization :- Techniques of standardization and variety reduction are used to minimize lead time of the material, and reduce unnecessary inventory carrying costs.

(e) Value Analysis :- Functions performed by the materials are analyzed and alternative designs/raw materials are suggested to achieve the same function at minimum cost.

(f) Computerization :- Computer Outputs can be used for scientific forecast of demand to solve many inventory models, providing optimum safety stocks and for controlling funds.

13.6.2 A-B-C Analysis :This analysis is based upon *Pareto Principle* according to which in many situations, majority of the activity (70 to 80%) is governed by very few (10 to 20) attributes.

- Hence if all the stock items are analyzed in terms of their annual consumption value, major part of total consumption value on a Railway (about 70-80%) is of only few high consumption value items (say 10 to 20%). These items may be classified as *A category*.
- 15 to 20% of total consumption is represented by another 15 to 20% items which may be classified as *B category*.
- Remaining 5 to 10% consumption is represented by a large no. of small consumption value items which may be classified as *C category*.
- Actual ABC classification depends upon management decision. In Railways, we have decided that
 - All high consumption value items which represent 70% of total issues, will be classified as A category,
 - Items which represent 20% of total issue will be classified as B category .
 - All remaining items will be C category.
- **This analysis is done on the computer as explained below:**

(a) First of all annual issue values of all the items which were issued from all the depots are added together to find total issues (in rupees) of the Railway;

(b) Then all the items are sorted in descending sequence of their issue value on the entire Railway (i.e. after adding issues of individual depots);

(c) Then we go on counting the items adding issue value of the item to a 'cumulative issue value' counter. When the value in this counter represents 70% of total issue- value worked out in step (a), after reading a particular item, all the items from top to this item are classified as 'A' category items;

(d) The reading of items is further continued when after reading a particular item and adding its issue value to 'cumulative issue value' counter, value in the counter is equal to 90% of total issues, we mark all items from item next to last A category item to this item as B category item;

(e) All remaining items are classified as C category items.

- For the purpose of Inventory Control, A category items are most important. Therefore, they are closely monitored at highest level at very frequent intervals.
- In Railways, their stock levels, consumption forecast etc. are monitored at the level of COS/CMM every month. B category items are monitored at the level of CMM/Dy. COS every quarter or every six month.
- Stock verification
 - of A category items is carried out every six months;
 - for B category items every year and
 - once in two years for C category items.
- To achieve better inventory turn over ratio, we intend to keep average stocks of 3 months, 6 months and 12 months of A, B and C category items respectively.

13.6.3 V-E-D Classification : A-B-C Classification is on the basis of consumption value of an item and does not give any importance to the criticality of the item and therefore, only A-B-C Classification is not adequate. *Classification done on the basis of criticality of the item is known as V-E-D*, where the items are classified as Vital, Essential and Desirable.

- **Vital items** are those items which are very critical for the operations and do not permit any corrective time i.e. they cannot be procured off the shelf if they are not available.

- **Essential items** are comparatively less vital and work without them cannot be managed for few days.
- All remaining items are known as **Desirable items**.

13.6.4 A-B-C / V-E-D Matrix : Tackling the items on the basis of their consumption value and also criticality improves the service to the customer as well as we are able to control the inventory.

- We can design the stock levels in such a manner that
 - Maximum service is provided for C category vital items
 - While for A category Desirable items service can be minimum desirable .
 - For remaining items, service levels can be in between these two levels and average stock holdings can be designed accordingly.
 - Tackling the items on the basis of their consumption value and also criticality improves the service to the customer as well as we are able to control the inventory.

Classification	A	B	C
Vital	4	2	1
Essential	7	5	3
Desirable	9	8	6

Numbers indicate the focus priority for best results both in terms of service as well as resources required We can design the stock levels in such a manner that maximum service is provided for C category vital items which provide high satisfaction levels at very little cost, while for A category Desirable items service can be minimum desirable as the require largeresources and provide very low satisfaction. For remaining items, service levels can be in between these two levels and average stock holdings can be designed accordingly.