Stores & Materials Management

LESSON 1

SCOPE, IMPORTANCE AND ORGANISATION ON INDIAN RAILWAYS

1. INTRODUCTION

Indian Railways is the largest fully owned government organisation with total assets of over Rs. 1,81,951 crores and total investments of over Rs. 1,76,726 crores with staff strength of 13.86 lakhs as at the end of march 2009. Its current annual gross earnings are in the order of Rs 79,837 crores. Its system extending over 64,015 Kms, ranks as the largest Railway System under single management in the world.

The Railways have been traditionally the principal mode of transportation in India. The organisation moved over 836.6 million tonnes of originating goods traffic and 6920 million passengers during 2008-2009 and the demands on the system are expected to increase further in the years to come. To meet this traffic need the system employs about 8592 locomotives of all classes (mainly diesel and electric), 49,110 passenger coaches and about 2,11,763 freight wagons, which move through about 7030 stations.

The Railways need thousands of types of materials, consumables, components, spare parts and other items of stores in order to meet the demands of its gigantic networks involving manufacture, operation and maintenance of its assets like locos, carriages and wagons, track, Over Head electric Equipment (OHE) and buildings including its vast network of Railway stations with their signalling equipment. The Indian Railway has a strong network of 230 stores depots spread across length and breadth of the country, which stock over 1.8 Lakh items. In the year 2008-2009, Railways purchased materials worth over Rs 9,533 crores for operation, repairs and maintenance alone, excluding Rs 6,602 crores spent on purchase of fuel and another Rs.10,189 crores spent on stores for manufacture of rolling stock and purchase of complete units. It means total expenditure on materials purchase, excluding cost of ballast, track related items and materials supplied by contractors for civil construction works, was Rs.27495 crores in 2008-09.

In the context of keeping the entire Railway system in good condition, so that the Railway users can get the best and reliable service, the importance of making the right materials of the right quality available to the users at the right time and place and at the right price need not be over emphasised. At the same time, it has to be kept in mind that several costs associated with the materials supply activity are likely to exceed even Rs 900 crores per annum, if proper control is not exercised on the activity. The Railways can hardly afford costs of this order, which can be minimized only by proper focus on the materials activity, and this leads to the inevitability of a proper Materials Management in the Railways.

The entire task of planning the requirements, organising the procurement and distribution of materials, co-ordinating with various agencies and controlling the inventory so as to keep down the costs is known as the materials management.

2. STORES & MATERIALS MANAGEMENT ON INDIAN RAILWAYS

Stores & Materials Management has been in existence on Railways since late fifties in some form or other with its core functions of purchasing, storekeeping, inventory control and distribution integrated under one department known as the Stores Department even prior to the fifties. However its potential to contribute to the profitability of the Railways had not been exploited by the Railways then. Consequently, prior to the sixties, the Railways used to incur heavy, but avoidable costs on account of inefficient materials management systems, thereby reducing its capability to generate that much surplus funds for useful deployment elsewhere.

Today, however, materials management is regarded as one of the most important areas of management, as it has been realised that application of modern tools and techniques can bring rich dividends in relatively shorter period of time in this area. It has been further realised that greater efficiency in Materials Management is very important as it can release significant funds for deployment

by the Railways in today's situation of rising prices, dwindling budgetary support, reduced annual plan allocations, high interests and high cost of raising funds from external sources such as financial institutions and commercial banks. The materials management department, commonly known as the Stores Department is playing a greater role currently, in optimising the material costs, while laying greater stress on quality of materials and also generating revenues of the order of Rs. 3500 crores per year, at Indian Railways level, by prompt disposal of scrap – (Total scrap sale exceeded Rs.3500 crores during 2009-10).

3. INTEGRATED APPROACH TO MATERIALS MANAGEMENT

The functions of materials management cannot be viewed merely as service functions. They have considerable potential for profit making. Profits of an organisation can be increased either by doing more business, needing pumping in of more money, or by reducing expenditure with little or marginal additional investments, while maintaining the output at the earlier level. For example to earn an additional profit of Rs. 1 crore, a company may have to pump in an investment of anything between Rs 10 to 20 crores, depending on the type of industry, and may have to resort to taking loans from public and banks at high interest rates. The merit of an integrated materials management programme with the involvement of top management is that it can generate the same profit by cutting down the costs of materials and its associated activities without increasing the financial liability of the company. To get the maximum payback in the area, materials constituting bulk of the annual expenditure are to be selected and concentrated upon.

The above is equally applicable to the Railways also. In manufacturing organisations like ICF, DLW, CLW, RCF, RWF & DMW, the materials alone account for about 70% to 80% of the manufacturing costs, whereas on open zonal Railways the same is about 40% of the total annual working expenses. It can thus be appreciated that materials management is an important area in Railways also, where bulk expenditure is incurred on materials.

For example, the Railways bought materials and equipment worth over Rs. 9500 crores during 2008-2009. A reduction of 5% on these costs by way of efficient purchases, control in consumption, applying value analysis techniques etc. will result in enhancement of the annual surplus of the Railways by Rs. 500 crores, which in fact will be a perpetual benefit year after year. In fact by efficient management, the railways have been buying less and less of materials, while at the same time the assets to be serviced have been steadily increasing.

For generating the same level of surplus as above, if investments are thought of as an alternative measure, the Railways would require every year additional funds to the tune of about Rs. 10000 crores, which will not be easy to come by in these days of capital shortage, high interest rates, reduced plan allocation and dwindling budgetary support.

It will thus be seen that various functions related to materials management have considerable potential to enhance the financial viability and profitability of the organisation as a whole. In order to achieve this objective, an integrated approach to the different functions is essential. In the olden days even in the private industries also this was absent and functions of purchasing, storekeeping etc. were attached to the other executives and naturally became subsidiary functions. However, now the concepts have changed and more and more industries are now adopting integrated approach by centralising the various functions under one man, known as the Materials Manager. On Indian Railways, the integrated materials management functions have been entrusted to the Stores Department.

4. ORGANISATIONAL SETUP ON I.R.

The network of Indian Railways is owned and managed by the Central Government. The entire operation is controlled and directed by the Railway Board in the Ministry of Railways. For easy management and control, the entire network of Indian Railways has been divided into 16 Zones like

Central, Eastern, Northern, Southern etc. and each zonal Railway is under the control of a General Manager. Each zonal Railway is further subdivided into Divisions for better control on operations. There are in all 68 Divisions operating on Indian Railways. Besides the 16 Zonal Railways, the Indian Railways own six modern manufacturing units known as Production Units. These are (i) Chittaranjan Locomotive Works, Chittaranjan (ii) Diesel Locomotive Works, Varanasi (iii) Integral Coach Factory, Perambur (Madras) (iv) Diesel Modernisation Works, Patiala (v) Wheel and Axle Plant, Yelhanka, Bangalore (vi) Rail Coach Factory, Kapurthala. Each of these production units is also headed by an independent General Manager. The General Managers of zonal Railways and production units are assisted by heads of different departments, such as Chief Engineer, Chief Operating Manager, Chief Commercial Manager, Financial Adviser and Chief Accounts Officer, Controller of Stores etc., as the case may be.

4.1 ORGANISATION FOR INTEGRATED MATERIALS MANAGEMENT ON INDIAN RAILWAYS

On Indian Railways an integrated approach to the materials management function already exists. The Controller of Stores of each Zonal Railway or Production Unit, under whom the various functions are integrated, is the principal head of the department like any other head of department and he reports directly to the General Manager. All functions relating to Materials Management namely, purchasing, warehousing, distribution and disposal are under the Controller of Stores (COS) who organises the delicate balancing act of what to procure, when and how much to procure and hold as stocks and how to distribute within the constraints of budgetary allocations, but at the same time striving to maintain a high service level. The organisational chart indicating the materials management set up on a zone of Indian Railways is as under.

GENERAL MANAGER

CONTROLLER OF STORES

PURCHASE SETUP	AT HQ	DEPOT	ORGANISATION	INVENTORY & BUDGET	CONTROL
RECEIPT & INSPECTION	WAREHOUSES (WARDS)	DISTRIBUTION (DESPATCH SECTION)	INVENTORY CONTROL	SURPLUS AND SCRAP DISPOSAL	

In addition to the above, the printing and supply of stationery and supply of forms has also been placed under the Controller of Stores.

The operation of Railways is spread over the length and breadth of the country. The problems on Railway are, therefore, more complex than that of a manufacturing unit, as thousands of indentors are spread over a large geographical area. The Railways have to plan locations of various stores depots with care so that the lead remains minimum for the distributin of stores. Normally store depots are located close to the places activities such as Workshops and Loco Sheds and are known as attached or associated depots. In addition, Stores Depots for materials of general nature, which are required by most of the indentors on line, are situated at convenient locations from where supplies can be affected to all indentors. Such stores depots are called General Stores Depots.

Depending on their location, stores depots are also called by other different names. Depots attached to mechanical workshops are called as Mechanical Stores Depots; depots serving exclusively engineering departments are called Engineering Stores Depots, Track Depot etc; Stores attached to the Diesel and Electric Loco Sheds are called Diesel Stores Depots and Electric Loco Stores Depots respectively. There are depots like EMU/DEMU Car Depot and Signalling Depots associated with EMU/DEMU Car Care

Sheds and Signalling Workshops. Depots catering exclusively to the supply of stationery and forms are called Stationary and Forms Depots.

4.2 DEPOT ORGANISATION

Stores depots are generally supervised by Gazetted officers of the Stores Department who are called as Depot Officers. This officer is responsible to the Controller of Stores for prompt service to the indentors in his territory. The Depot Officer is assisted by other officers & staff like Senior/Asstt. Materials Manager (SMM, AMM), Depot Materials Superintendents (DMS's) etc.

The work structure in a typical Railway Stores Depot is as below.

(i) Receipt and Inspection of stores.
(ii) Storage and Issue of stores.
(iii) Distribution of stores to outstation indentors.
(iv) Maintenance of ledgers
(v) Recoupment of stocks
(vi) Disposal of Surplus and Scrap stores
(vii) Local Purchase during emergency
(viii) Inventory Control

A stores depot is further divided into different storage wards for stocking of different types of stores and to deal with work as mentioned above. There are also Divisional Stores Depots functioning under DRM's dealing with supply and distribution of various items to Division.

4.3 PURCHASE ORGANISATION

The purchase function is centralised in the Headquarter office of the Controller of Stores. However, for petty purchases, the powers have been delegated to the Depot Officers and other field officers too. The Controller of Stores is assisted by various officers who hold administrative charge of different purchase sections, which is somewhat as below:

CONTROLLER OF STORES

CHIEF MATERIALS MANAGER		CHIEF MATERIALS MANAGER	
Dy CMM SMM AMM	Dy CMM/HQ Inventory Control	Dy CMM/HQ Purchase Section	DyCMM Scrap Disposal

The purchase sections are generally under the charge of Dy. Chief Materials Managers, Sr. Materials Managers and Asstt. Materials Managers. The function of inventory control at the HQ level for the entire Railway functions is decided locally. This organization evolves suitable policies and monitors the progress on inventory control as a separate cell called PSIC section.

In respect of track materials, the purchases are currently done directly by the Chief Engineer with the assistance of the Chief Engineer (Track Purchases) posted in each Railway.

5. ROLE OF STORES DEPARTMENT IN ACTIVITIES OF RAILWAYS

Railways need over 1.80 lakh items consisting of nearly 1 lakh unique items for their maintenance, operation and manufacture activities and for construction projects. The Stores Department has to ascertain the needs of a Railway in the matter of materials. Besides, Stores Department has to arrange supply of materials or stores in the most efficient, economical and expeditious manner possible. It is responsible for planning, purchase, receipt, inspection and disbursement of various stores required by thousands of indentors spread across length and breadth of the country. Besides, the disposal of inactive, obsolete, surplus and scrap stores is also the responsibility of Stores Department. For the purposes of giving the desired service in making materials available, when required, the stores department decides which items

should be purchased in advance and which items should be kept in stock and which items are to be purchased as and when required by the indentors, known as non-stock items. In addition to providing service to various other departments, the stores department has to follow suitable polices so that it can also contribute to maximising profitability of the Railway organisation as a whole. It is the duty of Stores Department to maintain levels of stock to ensure maximum service level and minimum blockage of capital.

6. ROLE OF INDENTING DEPARTMENTS IN AIDING STORES DEPARTMENTS IN DISCHARGE OF ITS FUNCTIONS:

The role of indenting department is not merely to consume the stores, but they have a positive role in the efficient discharge of materials function by the Stores Department. One of the important functions for which indentors are responsible is the amount of material they need. They have to forecast the requirements of materials for maintenance activities based on past experience in maintenance management. Similarly, the indentors in the field of production prepare material schedules for the production activities as also for the construction projects. It is essential that these forecasts or material schedules are prepared well in advance so that the materials are available at the right time. While sending these requirements to the Stores Department, the probable availability of such stores in the market may also be kept in mind as these factors affect the lead time for the procurement of materials. The indentors should also exercise budgetary control to keep the expenditure within limits as the materials form a major portion of the expenditure. It is, therefore, necessary for them to develop proper procedures to have effective control on materials drawn from the Stores Department.

Some of the functions which are related to materials are handled by the actual users of the Railways. It is, therefore, necessary that they contribute their bit in improving the profitability of the Railways. The indentors are expected to indent only stock items, to the extent of the requirements as forecast earlier, keeping in view the cost, and fill in the material requisitions clearly and in prescribed manner. It is essential that the indentor should clearly mention the specifications on the indent along with the description and it should be such that the quality demanded is just enough for the purpose for which the materials are indented (keeping in view the cost factor) and in right quantity. Similarly, expression of urgency for delivery has to be resorted to with caution as the procurement price for early delivery will be invariably higher. The projection of requirements ultimately affects the expenditure of their departments and hence indentors have to be equally concerned with the materials functions.

7. CATEGORISATION OF STORES

On Indian Railways, Stores Department is required to provide service to various departments by making available over 1.80 lakh items, when required. In order to provide optimum level of service to indentors, these items are kept in stock at various stocking points called Stores Depots for ready drawal. These items are essential for maintenance, manufacture and operation of Railways, whose demand is frequent and non availability of such items can cause huge stockout cost. These items are, therefore, called stock items. For stocks items, it is the responsibility of the Stores Department to make them available readily, whenever demanded by a user (indentor). Besides, there are other items which are essentially of one-time or occasional requirement for which reasonable time will be available for procurement and hence no stock of such items is maintained, such items are known as non stock items. These items, which include equipment like computers, photo copiers, machinery for workshops, hospital equipment, are purchased on as-and-when-required basis to meet the specific demands. Materials of low annual consumption value of less than Rs. 5000 are also arranged as non stock items as the administrative cost of managing these as stock items will be high.

For the Stores Department to assume responsibility for a material as stock item, the user department should first identify the need for stocking an item and then submit a Stocking Proposal on prescribed proforma to the Stores Department, indicating the full description, governing drawing/specification, estimated annual consumption with justification, estimated unit rate and value. This application will be

scrutinised by the Stores Department, first at associated Depot level and later at Stores Headquarters level. If the stocking proposal is justified, the Stores Department will stock the item, intimating the user department about the Depot from where the material may be drawn in future. However, for obvious reasons, no such procedure is necessary for non stock items.

Stock items are further categorised as under:

(i) ORDINARY STORES

Ordinary Stores are those materials which have generally regular turnover due to constant demand for maintenance, manufacture and operational requirements. Bulk of the total stock items come under this category.

Examples: steel raw materials, oils, greases, paints, loco, carriage & wagon components.

(ii) EMERGENCY STORES

The stores which are not required frequently, but still where stocks have to be maintained for ready use are called 'emergency stores'. These comprise items of stores which do not ordinarily wear out or require renewal, but are required instantly due to sudden breakage or unanticipated deterioration. Such items are not readily available in the market and as such would require long time for procurement in case they are not stocked. The stockout cost would be quite high, if such items are not readily available in the stores when required.

Examples: spare parts of machinery and plant, components of rolling stocks and locomotives requiring replacements rarely.

(iii) SPECIAL STORES

The items of stores required for works and other special purposes i.e. other than for operation, ordinary maintenance or repairs are called 'special stores'. Generally such items are supplied to the indentors against direct supply orders without being stocked in the stores depots.

8. CLASSIFICATION OF RAILWAY STORES

On Railways over 2.72 lakh items are stored in various Stores Depots for maintenance, manufacture and operations. In order to handle so many items, it is necessary to have a system whereby their identification is easy and the disbursement is quick. In olden days, Railways had evolved alpha-numeric system of identification of stores. However, due to progressive computerisation of the inventory control, need was felt for numeric system of identification of stores items. This system of codification encompasses the techniques of commodity identification, classification, coding, and recording of codified data. The requirements of such classification and codification system are very briefly mentioned below:-

(a) Unique item identification;
(b) Division and sub division of stores into manageable segments;
(c) Use of standard language or method for description of an item;
(d) A machine sensible coding structure for processing data on computers;
(e) Standardisation;
(f) Classification and sub-classification to help get proper information for better understanding by users.

In view of these various objectives in mind, the earlier classification of stores (alpha-numeric) which was in use for a long time was revised in 1967-68 with the commencement of computerization of inventory control. The items have been classified into different groups as shown in Annexure-A. It would be seen that the groupings are done in such a way that represent broadly the type of Rolling Stock or Group of items. Besides, these main groups have been divided into further sub-groups, which generally represent end use of the item(s). In case of general items, the same have been classified in groups based on commodities.

Under each group, standard nomenclature list is prepared on the Railways. In the nomenclature list, following information is given:-

(i) Item Code No.

(ii) Complete description of the item.
(iii) Specification and/or drawing number and details.
(iv) Unit in which the item is accounted.
(v) Stocking Railways and Stocking Depots.

A code number of an item is a unique number which is a modulus-11 based eight digit numeric code. The first two digits represent the group number, next two digits sub-group number, next three numbers the serial number of the item and the last digit represents check digit. This (e.g., PL No.37130262) can be written as under:-

XX	XX	XXX	X(8 digits)
Group	Sub-group	Item Number	Check Digit
37	13	026	2

A nomenclature list when it includes the Book Average Rate is called Price List and the Code Number is called 'PL Number'.

How to check whether a PL Number is correct and valid, as per Modulus-11?

Example: PL No. 3 7 1 3 0 2 6 2
8 7 6 5 4 3 2

Spare the right most digit (2 in this PL) as a check digit. Now go left multiplying each digit of lower line (from 1 to 7) to the digit right above in the top line i.e., 2 x 6=12; 3 x 2=6; 4 x 0=0; 5 x 3=15; 6 x 1=6; 7 x7 =49; 8 x 3=24. Now add up result of each. 12+6+0+15+6+49+24 = 112.
Now divide 112/11 = 2, and Remainder is 2. If remainder is the same as check digit, the PL being checked using Modulus-11 is correct, otherwise incorrect. In this case, remainder is 2 and check digit is also 2, which means PL is correct.

9. CLASSIFICATION OF RAILWAY STORES

The list of main groups is enclosed as Annexure 'A'. The nomenclature lists are printed by EDP Centres of the Railways and circulated to various indentors for use in preparation of indents. It is, therefore, essential that the indentor consults the nomenclature list to see whether the item is a stock item or not and only then he can take the correct description, specification/drawing reference and unit etc. from the list, while preparing the indent. Besides, he has to indicate the Consignee Code, the head of Accounts Allocation and the Depot Code on which the indent is placed (normally on the nominated depot).

10. UNIFICATION AND STANDARDISATION OF NOMENCLATURE

As is mentioned above, the classification is primarily meant for identification of items kept in stock which run into lakhs on the Indian Railways. Compilation of a nomenclature list also helps in preparation of proper indents and its compliance. Normally, Railways keep on adding new items to the list of their stock items and update the nomenclature list locally. Thus deletion of old items and addition of new items (expressed or identified in the stores inventory database as PL Numbers) ís an ongoing process in a healthy materials management system. Consequently, there are number of common items which have separate nomenclature and code numbers on different Railways. It is desirable to have only one nomenclature and code number for each item, whether stocked by one Railway or more. When this exercise is extended to rationalise the description and specification drawings etc., the same is called Standardisation. By these two exercises, we reduce the number of items which is called 'variety reduction'. The main advantage of these exercises is that whenever there is necessity for exchange of information between two or more Railways on any item such as for the purposes of the last purchase rate, quantity available as surplus or overstocks, the same is properly understood and identified without any difficulty. Therefore, compilation of Unified Nomenclature list goes a long way in ensuring better inventory management.

Annexure A

PRICE LEDGER MAIN GROUPS

Group Numbers	Details of Groups
00 to 09	Steam Locomotives & Fittings
10 to 19	Diesel Locomotives & Fittings
20 to 29	Electric Loco parts & Fittings
30 to 39	Carriage, Wagon, EMU Rail Car parts & Fittings
40 to 49	Electric Stores
50 to 59	Signal & Telecommunication Stores
60 to 69	Engineering Plant, Machinery & Parts
70 to 99	General Stores

Stores & Materials Management
Lessosn 2
Functions of Stores & Materials Management Department

1. FUNCTIONS

The functions which are related to Stores & Material Management can be broadly grouped as follows: -

(1) PURCHASING OR PROCUREMENT :
(2) WAREHOUSING & STORE-KEEPING :
(3) INVENTORY CONTROL :
(4) TRANSPORTATION :
(5) SCRAP DISPOSAL :

The details of the above functions are as under :

2. PURCHASING OR PROCUREMENT

The Railways are required to procure raw materials such as steel, wood, PVC sheets, non ferrous metals for manufacture of components in Railway workshops and Production units. Some of them are illustrated here below:

Semi finished components such as loco and carriage wheels and axles, axle boxes which are further converted into finished components in the Railway workshops before use.

Fully finished components such as fans, buffers, bulbs, springs, nuts, bolts, pins, bushes, shock absorbers, levers, ball & roller bearings, parts of machines and any number of components and parts required for fitment on new assets and replacement on existing assets during maintenance.

Railway track items such as Rails, points & crossings, sleepers, tie rods, clips, keys and electrified track overhead equipment items like contact wire, catenary wire, transformers etc.

Consumable items such as paints, oils, lubricants, greases, welding electrodes, soap detergent.

Stationery items, which are required for running of offices and also for use on documents, such as Railway Receipts, Parcel Way Bills and passenger tickets.

The basic function under this head is purchasing for manufacturing process in railway work shops or for consumption during maintenance and running of the assets like locos, carriages and wagons. It is a major materials activity.

On Indian Railways, the procurement function for other than track fittings is generally centralised in the Headquarters Office of the Controller of Stores. The recoupment memos or recoupment sheets for stock items submitted by the stores depots and requisitions for the non-stock items routed through the Stores Depots are received in the purchase office of the Controller of Stores for arranging procurement. The Controller of Stores has full authority to scrutinise every demand, to question regarding the quantity of items and modify the quantities demanded etc. The COS also tires to consolidate all the demands for the stock items, adjust the excesses and shortages within the Depots needing the same item and would purchase only the net requirement for the Railway as a whole after such adjustment. Similarly, for non stock items also a consolidated procurement action would be taken for all the outstanding indents at a time for the non stock item concerned. Once the quantity to be procured is finalised and funds for the same provided, COS takes necessary action for its procurement. The mode of purchase and agencies for purchase depend upon the nature of item and its estimated value. For small value purchases, Depot Officers, Divisional Railway Managers and some extra-Divisional Officers have been delegated powers for cash or Local Purchase. In all other cases, the procurement is made through one of the specified agencies as detailed below:-

3. AGENCIES FOR PURCHASE OF RAILWAY STORES

(I) Direct Purchase by the Zonal Railway Administration

(iii) Purchase by the Railway Board.

(iv) Purchase through the agency of Central Purchase Organisation of the Central Government i.e., Directorate General of Supplies and Disposals (DGS&D).

4. DIRECT PURCHASE BY THE RAILWAY ADMINISTRATION

The items other than those which are not procured either through Railway Board or DGS&D are purchased directly by the Zonal Railways through Controller Stores. Track items are, however, purchased directly by the Chief Engineer of each railway. The Controller of Stores and the Chief Engineer purchase all such Decentralised items through tenders which are as below:-

(1) Advertised Tenders which are also known as Open Tenders.

Generally all items, the estimated value of which is more than Rs. 10 lakhs (as of now) are procured through these advertised tenders. However, there are some exceptions to this. The items required for Diesel and Electric Locos, which are to be procured only from approved vendors, are to be purchased through advertised tender in every alternate year, i.e. in one year advertised tender is located and in the second year, through limited tenders. The offers received against the advertised tenders are examined by a Tender Committee of appropriate level critically with reference to the rates received, credentials of the firms who have quoted, criticality of the item, technical requirements, conformance of the offers to the technical and commercial specifications, which makes recommendations to the accepting authority on the quantity to be purchased, the parties to whom contracts are to be awarded, the prices to be accepted, and the commercial terms and conditions to be incorporated in the contracts. Only on acceptance of these recommendations by the accepting authority, purchase orders can be placed.

(2) Limited Tenders or invitation through bulletins to approved and registered suppliers are issued for all items valued below Rs. 10 lakhs.

For this purpose, the stores department maintains an approved list of suppliers, through a process of enlistment (registration) of suppliers, for specific trade groups. Each trade group represents a group of items which can be brought under a common description such as light fabricated items, heavy casting, telecommunication cables, precision screws, electrical bulbs etc. Indian Railways have standardised about 400 such trade groups.

For the purpose of enlistment as an approved supplier, a firm has to submit an Application on a prescribed proforma to the Controller Of Stores furnishing details of the nature of items manufactured by them, equipment available, details of personnel employed, quality assurance measures taken during manufacture, documents to show Sales Tax Registration (TIN), ISO certification, past experience, financial capacity etc.

Since implementation of e-Procurement system on Indian Railways in November 2008, the prospective vendors have to fulfill some other mandatory requirements for registration. They have now to submit a document as evidence of having obtained Digital Signatures from any of the Government recognized certifying agencies. This is a mandatory requirement.

If the details are adequate to establish the legal status and capacity of the applicant, the firm's premises are visited by an officer deputed by the Controller Of Stores for an on-the-spot assessment of the capability-cum-capacity of such applicant firm. Banker's report is also taken on the financial soundness of the applicant. If the results of the scrutiny are satisfactory and credentials of the applicant firm are found in order as per norms, the applicant is granted registration for specific trade groups for which he is considered to have technical competence and financial capacity. A ceiling limit of contract value between Rs 1,00,000 to 40,00,000 and above is also specified and an enlisted supplier is considered dependable for execution of the contract upto this value. Initial registration is valid for three years, subject to renewal after review.

The Limited Tenders appearing in weekly bulletins are made available to all the enlisted suppliers every week, there by generating the maximum competition for items of less than Rs 10 lakhs in value.

(3) Single Tender: Under this system, the tender enquiry is sent only to one vendor, if there is only one known source for supplying the material of required quality and performance or if the value is small and it will be uneconomical due to urgency to call the Limited Tenders.

Besides these, as mentioned earlier, small value non-stock items and in proven urgency for stock items, Depot Officer, Divisional Stores Officer and some other executives can make purchases through their Cash Imprest upto values of Rs. 100,000 for each purchase.

4.1 Selection of Vendors

In purchase of stores, the selection of vendor(s) is of paramount importance as the availability of materials is entirely dependent on the performance of the selected vendor(s). At the time of selection of vendor(s), his capacity and capability, both financial and technical to supply the required materials is of prime importance. Selection of a vendor with inadequate technical and financial standing shall more often lead to failure of the contract and consequently non-availability of materials. Even if supplies are received from such vendors, the same might have to be rejected due to quality deficiencies or if accepted, the same may cost the Railways gain in items of higher incidence of failures while in use. Sometimes, the vendors may not provide the much needed after sales service. The purchasing department has to, therefore, judiciously select the vendor, register them for supply of specific items for a period and keep on monitoring the performance and review the same at regular intervals. The updation of list of registered vendors is a continuous process.

4.2 PLACEMENT OF ORDER

It is incumbent upon the purchase executive to see that the order being placed on the vendor will be executed. Therefore, all aspects of ordering, namely, reasonableness of price, clarity of terms and conditions quoted by the vendor, his performance, the infrastructure available etc. has to be properly

viewed critically before the order is placed. For this purpose, the information regarding orders executed in the past for the same items, the list of machinery and plant (if vendor is a manufacturer), information regarding financial standing, income tax clearance certificate etc. is asked at the time of calling quotations from the prospective vendors. After examination of all these aspects, the order is placed on the vendors considered capable of executing the contract, subject to their offer being competitive and also found technically and commercially acceptable.

4.3 CONTRACT MANAGEMENT

Once the order is placed on a successful vendor, the next stage is that of management of contract. It is duty of the purchaser to see that the contract placed on the vendor is executed timely as per delivery schedule laid down. Therefore, contract management is an essential part of the purchase function. The purchaser keeps on monitoring the contract as per their delivery schedule and remains in contact with the vendor on the progress of manufacture/supply etc. The purchaser has to see that all differences that arise after placement of the control between the administration and the supplier are settled amicably for the effective execution of contracts. Any amendment that may be necessary for the extension of delivery period or in any other aspect of contracting should be issued well in time with the ultimate aim of effective and smooth execution of the contract.

4.4 PURCHASE THROUGH RAILWAY BOARD

Certain items have been centralised at the Railway Board for procurement. Generally rolling stock or the high value critical items for which the developed sources are limited and come under this category. These centralised items are

(1) Complete Rolling Stock viz. locomotives, carriages and wagons.
(2) Wagon components such as Centre Buffer Couplers, Roller Bearings etc.
(3) Wheels, Tyres and Axles which require imports.
(4) Steel items.
(5) Petroleum products such as petrol, diesel oil, kerosene, lubricants, greases etc.
(6) Railway track items such as rails, points & crossings, sleeper, fish plates and track fittings required in bulk.

Besides certain imports, transfer of technology is also done at the Railway Board level.

5. PURCHASE THROUGH DIRECTOR GENERAL OF SUPPLIES AND DISPOSALS

Railways are required to utilise the Rate Contracts entered into by the Directorate General of Supplies and Disposals known commonly as DGS&D for items for which a Rate Contract exists.

For keeping effective liaison between DGS&D and all Indian Railways, an officer of Indian Railways is posted in DGS&D and is known as the Railway Liaison Officer. RLO works under the Railway Board and looks after the interest of the Railways by keeping in touch with DGS&D. He holds periodical meetings between the Railways and DGS&D to sort out any problem that may be faced by either party. RLO's office also disseminates information to the Railways that may be useful to them. He also keeps in touch with DGS&D regarding policy matters as the policy decisions of Department of Supply as the nodal agency (under whom the DGS&D works), are also applicable to the Railways.

6. TYPES OF CONTRACTS

One of the principal tasks of the purchasing department is to buy the right quantity at the right time. Determination of quantity is one of the difficult tasks faced by the purchaser. He can buy the total quantity either once in a year or can buy by splitting the quantity. On Railways, the most followed system is buying each stock item once a year, with the exception of those items which are recouped on the Maximum-minimum system. However suppliers are generally interested in the bulk quantity and usually give discounts for larger quantities. The purchaser has to strike the balance whether to buy larger quantities at one time with discounts and block the capital or to frequently buy smaller quantities at relatively high prices.

In order to suit the situation of different types, the purchasers in Government Departments adopt any one of the following contracts.

(1) CONTRACTS FOR SPECIFIC QUANTITY

This is the most extensively used mode of contract by the Government Departments. In this type of contracts, tenders are floated for a specific quantity and once the contract is finalised, the quantity cannot be varied. Here, the vendor is asked to supply the full quantity within a specified time period. However, to suit the requirements of the purchaser, phased delivery schedule is stipulated and the contractor is supposed to make deliveries accordingly. The contractual obligations between the vendor and the buyer cease the moment the contract is completed.

(2) RATE CONTRACT

In many cases, it is not possible to assess the total requirement at one time and the demands keep on trickling in over a period. For such type of items, the buyer and the seller enter into a contract on the rates payable for supplies made during the currency of the contract. The quantity is not fixed initially, as the buyer is not sure as to how much he will buy precisely. However, some rough indication might be given by the buyer to the supplier, but this will not be a part of the contract. Such a contract is known as the Rate Contract. Here, the contract will only indicate the rate fixed. Whenever there is a requirement of such material, either the buyer or one of the direct demanding officers (who is authorized to place Supply Orders against the particular rate contract) will place a supply order against this agreement or rate contract specifying the quantity and delivery period. The payment is arranged to the supplier at the rate specified in the purchase order. General stores are purchased on this type of contracts.

In Government purchasing, generally, rate contracts are entered into for a period of one year. However, these can also be for a longer period with provision of suitable price escalation clause.

(3) RUNNING CONTRACT

In this case, the price and quantity to be purchased during a certain period, say a year, are fixed. A standing order may be issued, which would specify delivery at stipulated periods. In other cases delivery dates may be open. As and when the need arise, the buyer or direct demanding officer writes to the supplier to make the delivery as per the quantity specified. Such contract is called Running Contract. In general, quantity variation upto $\pm$25% of the quantity specified in the contract is permissible as per terms and conditions of the running contracts. Such a contract saves the buyer from entering into separate contracts for purchase of the quantities he requires every time.

Railway Board, in its centralised purchases, also enters into running contracts for some items with the quantity variation clause of ±30%.

(4) SERVICE CONTRACTS

Such contracts are entered into for specific periods, say one year, and these cover areas like maintenance, servicing of machines e.g. CNC machines, computers, air conditioning plants etc. All terms and conditions along with the annual charges etc. are laid down in the contract before hand to avoid disputes later on. This also obviates the necessity for acquiring services on an individual basis every time such maintenance is required. This also helps in keeping the maintenance contractor tied up and he pays full attention to the machines as and when called upon.

7. GLOSSARY OF IMPORTANT TERMS USED IN PURCHASING

(i) EARNEST MONEY

As name of the term suggests, Earnest Money is the deposit taken from the tenderer(s) in token of his earnestness in tendering. The amount of earnest money to be deposited should be sufficiently large to be a security against loss, in the event of the contractor failing to furnish the required security within the stipulated time, after acceptance of his tender or until such time as the sums due from him form a sufficient guarantee as the case may be. At the same time, the earnest money should not be so large that it becomes a deterrent for the genuine tenderer(s) to quote against the tender.

There earnest money can be in any one of the following forms.

(a) Deposit in cash.

(b) Pay Orders, Demand Drafts and Guarantee Bond from any Nationalised Bank or any Scheduled Bank of the Reserve Bank of India.

(c) Government Securities.

(ii) SECURITY DEPOSIT

The successful bidder is required to furnish Security Deposit to the purchaser within a specified period in token of complying with the contract. On Railways, the successful contractor is required to furnish the security deposit within 14 days of the issue of acceptance of tender in any of the following forms:-

(a) A Deposit in cash.

(b) Government Securities at 5% below the market value.

(c) Pay Orders, Demand Draft or Guarantee Bond of any scheduled commercial bank of the Reserve Bank of India.

(d) A percentage deduction from the periodic payment for work done earlier.

(iii) WARRANTY

In the case of machinery, sophisticated equipment and other materials, where defects come to light only when stores are put to use and not before by a visual or laboratory inspection, a clause is included in the tender whereby the contractor is bound by such clause to rectify the defects or provide replacements of such defective materials, if so required, free of cost within a specified period as agreed upon. This is called the 'Warranty Clause'. In addition, the purchaser retains the right to reject the goods if they are found during the warranty period not conforming to the specification to which they were ordered. By accepting this clause, the seller gives a guarantee that the material supplied by him shall be free from all defects in material, workmanship and manufacture and shall be strictly according to order and consistent with the established and generally accepted standard of materials of the type ordered in full conformity with the specifications, drawings or samples, if any mentioned in the contract.

Generally, the warranty period provided in the contract varies on the nature of goods ordered. However, the period generally is between 12 and 24 months from the date of delivery or from the date of commissioning. Once the warranty period is over, the contractor is not responsible for any defect found thereafter.

(iv) FORCE MAJEURE CLAUSE

This is generally provided in the high value contracts to protect the contractor from not performing the contract due to certain events which are beyond his control. Thus under the conditions specified in the clause, he is exonerated from the penalties for either delayed performance or not performing. The 'Force Majeure' clause is generally as described below.

"In the event of any unforeseen event directly interfering with the supply of goods, arising during the currency of the contract, such as war, insurrection, restraint imposed by the Govt. Act of legislature or other authority, explosion, accident, strike, riot, lockout or other disorganization of labour, acts of public enemy, acts of God such as floods or earthquake, sabotage, the contractor within a week from the commencement thereof, notify the same in writing to the purchaser, with reasonable evidence thereof. If the above force majeure condition remains in force for a period of 90 days or more at any time, the purchaser shall have the option to terminate the contract on expiry of the 90 days of commencement of such Force Majeure, by giving 14 days notice to the contractor in writing. In case of such termination, no damages shall be claimed by either against the other, save and except those which had accrued under any other clause of this agreement prior to such termination."

(v) PRICE PREFERENCE

When the materials are required urgently, higher offers with early delivery period can be accepted in preference to the lowest offers with prolonged delivery period. This is known as placement of order on 'time preference' basis. The firm's specific acceptance for placing the order on time preference basis as mentioned should be obtained by incorporating the special condition at the tender enquiry stage itself.

Purchase orders are placed incorporating the time preference clause mentioning clearly that the offer has been accepted in preference to the lowest acceptable offer and in the event of failure of supply as quoted, the supply will be subject to acceptance at the lowest rate received against the tender.

Besides price preference for early delivery, the Small Scale sector is also entitled to the standing price preference of 15% over other private sector, subject to meeting certain conditions laid down by the Government. Suppliers supplying fully indigenous materials are also entitled to price preference of 25% and even more over offers for fully imported materials.

Public Sector Undertakings earlier used to get benefits of 10% price preference over the Private Sector, thereby encouraging public sector to secure orders based on competitive prices only. However, now in tenders above Rs. 5 crores, 10% price preference is given to PSUs.

(vi) RISK PURCHASE

In the event of the contractor failing to deliver the goods within the validity of the contract or if he intimates his inability to undertake the supply, after a contract has been entered into or according to the terms and conditions mutually agreed upon previously, the purchaser has the right to take risk purchase action for procurement of stores from elsewhere, reserving the right of the Railway to recover the losses, if any, due to higher rates having been paid on subsequent contract due to any other inconvenience, which can be computed in financial terms.

In all risk purchase cases, care should be taken that the firm is clearly advised of its failure. After the cancellation of the contract placed on them and after advising the defaulter vendor about the intention of purchaser to procure the stores from elsewhere at the risk and cost of the defaulting vendor, risk purchase tender should be issued. However, an exception can be made where the stores are required urgently or are not readily available in the market. In such cases, however, standby tenders may be invited simultaneously when the breach of contract has occurred, with a view to mitigating the inconvenience caused due to delay. However, the risk purchase order can be released only after cancellation of the original order. The risk purchase, in the normal course be effected within a reasonable period after the default has been committed by the vendor.

(vii) LIQUIDATED DAMAGES

Liquidated Damages means charges or amount recoverable from the suppliers on belated supplies. The amount so recoverable is predetermined as a percentage in the condition of contract. Under the IRS Conditions of Stores Contracts, it is calculated at 2% of the value of the stores which the contractor has failed to deliver or despatch for each month or part thereof during which the delivery of stores may be in arrears.

For the purpose of levy of liquidated damages, cases of belated supplies can be divided in following three categories.

(i) Where the buyer has incurred loss due to delay in the supplies and where such loss is assessable;
(ii) Where the buyer has suffered loss or inconvenience due to delay in supplies and the loss cannot be assessed;
(iii) Where there has been no loss or inconvenience due to delay in supplies;

Each category has to be dealt with separately. In case of (i) full liquidated damages equal to the value of the loss suffered or 2% of the value of the stores in arrears per month or part thereof, whichever is more, can be levied. In case of (ii) liquidated damages at 2% per month or part thereof may be levied. In case of (iii) token liquidated damages @ 10% of 2% per month or part thereof may still be levied, unless the supplier is able to prove that the delay is beyond his control and was not for willful reasons.

There may be instances where supplier is unable to make supply within the Delivery period stipulated in the contract or Purchase Order. In such situations, the supplier, who intends to supply materials against the contract even after expiry of Delivery Period, may submit a request to the Purchase Officer for extension of delivery period. As per extant procedure, delivery is normally extended against

request of all private sector suppliers and PSUs, Reserving Railway Rights, with Liquidated Damages. DP may, however, be extended without LD only in case of contracts on a Railway or Government supplier.

(VIII) RESOLVING DISPUTES & SETTLEMENT OF CLAIMS

Many disputes and claims arise during execution of contracts. The Railway as the purchaser might have incurred additional expenditure due to cancellation of a contract and effecting risk purchase for the cancelled quantity. This is by far the major cause for claims from the Railways. However, supplier may raise disputes on account of the Risk Purchase claim of the purchaser not acceptable to him, reasons for rejections not acceptable to him, levy of unreasonable liquidated damages. Force majeure conditions not honoured while taking risk purchase action, frustration of contract due to sudden and abnormal increase of price of raw materials etc. In order to resolve these disputes and also consider financial claims arising out of such claims, the Indian Railway Standard Conditions of Contract provide for referring all disputes arising out of the contracts to an Arbitrator to be appointed for all claims or disputes on a contract, by the General Manager of the Railways. The arbitrator is a judicial authority, who after hearing the arguments from both sides, decides whether a claim is justified or not, and also directs as to who should pay what amount to the other party. This is known as Arbitrator's award which is binding on both the parties. The award can, however, be challenged in a Court of Law only under limited grounds.

8. STORES DEPOT & DISTRIBUTION FUNCTIONS

In order to make materials available when required and to avoid stoppage of work, it becomes necessary to maintain stock of a large number of items, so that they are available for drawal readily when required. It involves a considerable amount of planning on how much stocks are to be maintained, the facilities like warehouses, bins, material handling equipment etc., to be provided, the procedures for receipt, inspection, issue and accountal of materials and so on. Proper methods of stocking and material preservation techniques have to be thought of. The art and science of storing the materials and regulation of their physical movement in and out of stores can be termed as "warehousing". The objective of the good warehousing and store-keeping is to store the materials well protected from deterioration and loss, incurring least cost, optimising on space and manpower and adoption of efficient procedures for receipt, issue and verification of stocks, resulting in all round effective service to the vendors, indentors and all other users of the warehouses.

The following will constitute the stores depot functions.

(i) Recoupment of Stores
(ii) Receipt and Inspection of Stores.
(iii) Stocking
(iv) Issue of materials from stores depots
(v) Distribution of Store to indentors on line.

8.1 RECOUPMENT OF STORES

It is the responsibility of the Stores Department on the Railways to maintain stocks of all stock items so that they are available for the purpose of issue whenever a demand is received from the indentor(s). Obviously, from time to time, replenishment of such stores, recoupment of such items has to be arranged to ensure their continued availability. The stocks of only ordinary and emergency stores are required to be recouped by the stores organisation. For this purpose, various methods are adopted which are dependent on the nature of the item. In Indian Railways, three basic methods are adopted which are described in the following paras.

METHODS OF RECOUPMENT

The three basic methods adopted are

(i) Maximum-Minimum System, also known as Fixed Order Quantity system.
(ii) Annual Estimate System, also known as Fixed Interval Review system.
(iii) Fixed Level System and recouping the stocks to this level after every issue.

The details of each method are as described here below:-

(i) Maximum & Minimum System

Maximum : It is the quantity, which when ordered at a time, results in the least total annual cost to the organisation. If we order larger quantities at a time, large amount of capital will be blocked and simultaneously inventory carrying cost will go up, though ordering cost would be low. As against this, if we order small quantities at a time, the frequency of ordering will go up, thereby increasing the ordering cost. Therefore, when a balance between ordering cost and inventory carrying cost is struck, quantity arrived at is called Economic Order Quantity (EOQ), in other words, the maximum quantity that should be ordered at a time.

The text book formula for arriving at EOQ is as follows :

EOQ =

Where
D – Estimated value of annual consumption
Co – Ordering cost
C1 – Price of the item

i – Inventory Carrying Cost per item per annum.

As EOQ formula involves complex mathematical calculations, and is very much dependent on ordering and inventory carrying costs for which precise data is not leviable, for the sake of convenience, the Railways have fixed the following values for maximum discussed above, in respect of materials procured from the trade.

Items of high annual consumption – 3 months requirements

Value (A Category items)

Items of medium annual consumption – 6 months requirements value (B category items)

Items of low annual consumption-12 months requirements value (C category items)

Minimum: Every item needs certain time for its procurement. The time spent from the moment recoupment is initiated till the moment the material is received, inspected and accepted by the consignee is known as the 'lead time'. It will be appreciated that at the time of recoupment, some stocks are available (i.e., the physical stocks taken together with the quantities on order). These should be sufficient to meet the requirements in the intervening periods till fresh stocks are received. This quantity is called the 'minimum'. This is also known as the 'Re-Order Level' or 'Re-Order Point'. In other words, re order level or minimum is fixed taking into consideration the lead time and additional safety stocks or buffer stock that we may decide to keep.

In case of Maximum-Minimum system, perpetual records have to be kept. As soon as the stocks+dues level touches minimum, a recoupment is initiated for the quantity equivalent of one maximum. In Railway, all shop manufactured and some general items are recouped in this system.

(ii) ANNUAL ESTIMATE SYSTEM

In Annual Estimate System, a fixed time table or schedule is followed for recoupment of items. The period for which items are recouped is fixed and is called 'Contract Period' and is generally 12 months. The interval between, the date fixed for sending the recoupment and the beginning of the contract period, is known as the 'Interim Period'. For the purpose of convenience and for uniformly spreading the purchase work over the year, different groups of items are recouped in different specified months. The system is advantageous in that it is possible to combine the demands of different depots and make one purchase for all the depots together. It is also possible to combine demands of similar items together into one purchase. This reduces not only the ordering costs, but also gives a better bargaining power. Under this system, Inventory Carrying Cost can also be kept low, if order is placed with required number of phased deliveries.

(iii) FIXED LEVEL SYSTEM

This system is essentially used for recoupment of emergency stores, in whose case the demand is not regular. In this, an upper limit of stock holding is to be fixed, preferably, with the use of statistical methods. Every time there is an issue, the item is recouped so as to bring the stock back to the fixed level.

TYPES OF ITEMS BASED ON SOURCE OF SUPPLY

There are two types of Railway stores depending on the sources of supply. The first type is the 'purchased stores' which represent the stores purchased from the trade as finished components or raw materials. The second type is the 'manufactured stores' which as the name suggests are manufactured within Railway's own workshops.

For purchased items recoupment memos or estimate sheets are prepared by the depots and sent to the Controller of Stores at the HQ office for arranging procurement of these items. The detailed system of purchase has been discussed in foregoing sections.

Manufactured stores are generally recouped on maximum-minimum basis. The level of maximum and minimum is fixed in consultation with the workshop in charge, which manufacture and supply the items. The work orders for supply of items are prepared by the Stores Depot attached to the workshop, which also ensures availability of raw materials for such manufacture.

8.2 RECEIPT AND INSPECTION STORES

Receipt and inspection of stores is one of the very important functions of the Stores Depot because the quality of the incoming stores depends very much on the effectiveness of this function. Therefore the depots have a separate 'receipt' and 'inspection' section.

In case of non-receipt of material: On receipt of Purchase Order, consignments may be despatched by suppliers by Road, Rail or any other mode stipulated in the Purchase Order. In case of Despatch by Rail, RR – Railway Receipt or PWB – Parcel Way Bill is received by the Consignee well before the consignment can arrive at the destination. In case of non receipt of material within 30 days from the date of RR/PWB, the Consignee must send a Missing Goods Report to Commercial Branch, informing the supplier as well. However, in case of non receipt of consignment even after 30 days, Claim must be lodged promptly with the CCM(Claims), in any case within 180 days from the date of RR or PWB. After 180 days, claim becomes untenable being time-barred, and Railway has to suffer the loss.

In case of receipt of material: The stores ordered by the Railway or by the central purchase organisation are delivered to a stores depot either for the purpose of inspection or stocking in that depot or for onward dispatch/direct delivery to the user. In some of the purchase contracts, the materials are inspected by the nominated inspection agency like the inspection directorate of the DGS&D called DQA - Director of Quality Assurance, RDSO, RITES etc, before despatch of these materials. In these cases, generally Advance Payment of 90%, 95% or 98% is released on submission of proof of despatch and Inspection Note or Inspection Certificate. The balance payment in such cases is released only after receipt by the consignee and inspection, to whom the materials are consigned by the supplier.

However, in cases where such clause for advance payment is not provided in the contract, full payment is made only after the materials are received and inspected and accepted by the consignee and the bill is certified or 'Receipt Order' is granted.

It is an important duty of the consignee to inspect the material properly within a reasonable time and certify the bills regardless of the materials having been pre-inspected or not.

Proper facilities for inspection of various materials are normally developed in the Receipt and Inspection Section of a Stores Depot. Suitable measuring instruments and testing equipment are installed for ensuring proper quality control of the incoming materials. In addition to this, the services of the Chemist and Metallurgist of the nearest Workshop/Shed are also availed for conducting chemical and metallurgical tests on the materials. Sometimes, the materials are also sent to the workshops for practical fitment tests by the inspecting officer for certain stores where he considers the same to be necessary.

The materials which pass inspection are granted 'Receipt Order' and are handed over for either storage in the issue ward of the depot or onward despatch to the ultimate consignee, from where the items are to be drawn by the users.

However after inspection, if the item is not found acceptable, a rejection memo (FRM – Final Rejection Memo) is issued indicating the reasons for the rejection. The supplier is required to remove the rejected materials and arrange for replacement with good materials within a reasonable time. However, in case the supplier or inspectorate contests the rejection, the Consignee has to request the Inspectorate (RITES/RDSO/DQA-DGS&D) for holding Joint Inspection. Samples are drawn and sealed jointly during Joint Inspection and sent to a Private or Government Independent Laboratory. Results of the action taken jointly during the Joint Inspection happen to be binding on all parties.

8.3 Warehousing or Stocking

The place where the materials after inspection and acceptance are kept is called warehouse or stocking ward(s). These are organised in such a way in the Railways that same groups of items are kept as far as possible in a single ward subject to a manageable level of 300 to 500 items depending on the volume and frequency of their demand. The Depot Material Superintendent is responsible for orderly stacking, preservation and issue of materials as and when demands are received. He is also responsible for the safe custody of all the materials kept under his charge and for their correct accountal. He is required to explain any discrepancies revealed after stock of the items under his charge. He is required to follow the general principles of stocking, such as

(i) Issue of materials on First In First Out (FIFO) basis.
(ii) Uniform stocking, through unit-piling wherever possible, as well keeping note of bin location
(iv) Putting in identification numbers on Tags at each individual stocking point in the godown.
(v) Preservation of materials by keeping at suitable location and in suitable temperature.

Each ward should have a demarcated receipt, issue and storage area and the materials should be kept at each of these places, depending on their status. The ward in-charge is responsible for arranging the stock verification for correctness of stocks. Procedure of Stock Verification is described as follows:

STOCK VERIFICATION

The objective of stock verification is to ensure that :

(a) The materials in stock are of the description and shown in the numerical ledgers;
(b) Actual balance of such stocks agrees with the balance appearing in the books; and
(c) Excesses/deficiency, if any noticed during stock verifications, are properly investigated and accounted for.

In order to ensure correctness of materials and their physicals custody, railways have a system of stock verification. The stock verification involves physical measurement or weighment of stocks of a particular item and its tally with the quantities as per the Railway Book (ledger). Stock verification is carried out by the Accounts Department as per Schedule laid down in the Stores Code. As per provisions of Stores Code para S-1339, Departmental Stock verification is another way of effective back check of inventory. The verification can be carried out in the routine periodic manner or as surprise verification on specific order of the Stores/Accounts Officers. The results of verification also bring out for the information of the administration, the level of efficiency with which the stores are kept and accounted for. The results of stock verification are entered in a statement called "Stock Sheet". The stock sheets are put up to competent authority with the explanation of the stock holder for discrepancies, if any, for the acceptance or taking appropriate action against the stock holder (custodian) of the stores, if the explanation is not acceptable.

Frequency of Stock Verification

Every stock item is to be verified periodically, unless specifically exempted by the General Manager with the concurrence of Financial Adviser and Chief Accounts Officer. The stock in the stores depot are verified at the following intervals ;

'A Category Items – Once in 6 months
'B' Category Items – Once in a year
'C' Category Items – Once in two years.
All items that have no issue for 12 months or over – Once in year.

8.4 Issue of Materials from Stores Depot

The indentors are required to send their demands in the prescribed forms called Requisition-cum-Issue Note to the nominated feeding stores depot(s). The form used is S-1313 or S-1830. The requisition should clearly show the following information.

(1) PL number
(2) Description
(3) Quantity
(4) Unit of Accountal
(5) Allocation No.
(6) Name and Consignee Code
(7) Name of the Indenting Officer

The requisition is required to be signed by the nominated authority before it is submitted to the stores depot.

The requisitions when received in the depot are scrutinised and those for non-stock items are forwarded to the HQ purchase office for arranging purchases. However, for urgent requirements of non-stock items, cash purchase is arranged by the Depot. The requisitions against which materials are to be issued from the stock are forwarded to the respective wards for the purpose of issue. The wards prepare the issue notes on which the materials are issued.

Stock items are issued against two main types of requisition, namely specific requisition (on S-1313) and imprest requisition (on S-1830).

Specific Requisition

And indentor submits this requisition for such item for which he is not authorised to maintain his own stocks. Most of the requisitions emanating from the workshops are of this type.

Imprest Stores

Certain important units such as loco sheds, train examination centres, railway stations etc., on the division(s) require a large number of items for day-to-day running, repairs, maintenance and operation of trains. Such items include consumable stores like cotton waste, lubricating oil, greases kerosene, spare for locos, carriages and wagons etc. The senior supervisors in charge of such running sheds, train examination centres of Railway stations are allowed to maintain stocks of nominated items of stores for such purposes. These stores are called the 'Imprest Stores'. The limit upto which the stocks for such items can be maintained is specified while sanctioning such items and generally this limit is fixed as 2 to 3 months requirements. Imprest Stores is like a standing advance of materials to meet the day-to-day requirements of repairs, maintenance and operation of trains/rolling stock

So far, on most of the railways, the imprest stores are charged off immediately after issue from the stores depot to the first head of account under the revenue working expenses. Nevertheless, detailed accounts and ledgers are re maintained for these items by the imprest holders and the recoupment of such items is arranged through monthly imprest schedules. The imprest schedules are sent by the imprest holders to the nominated stores depots for replenishing the stocks to the sanctioned imprest levels. This

system of imprest stores is very essential to avoid failure for items which are very important and regularly required, for day-to-day use in repairs, maintenance and operation of the Railways. The materials are distributed door-to-door by the feeding Depots through Road Transport since discontinuation of the Stores Delivery Van system.

For items issued to the indentors either against a specific requisition or imprest schedule, a monthly debit summary of value of stores issued is prepared and sent to the respective Divisional Officer in charge for acceptance and accountal.

8.5 TRANSPORTATION AND DISTRIBUTION OF STORES TO THE INDENTOR

Transportation and distribution of raw materials, spares, consumables as well as finished products to the consuming points from the stores depots is an important activity, as it involves substantial expenditure and logistic problems. The efficiency of the distribution system, covering every consumption point in the Railway like workshops, loco sheds, carriage & wagon depots or Railway Station etc., will largely affect the service level or the quality of service that the materials management system can provide to the various consumers.

On a zonal Railway, there are thousands of indentors spread all along the railway lines, hundred of kilometers away from the stocking and supplying point(s) i.e., depots. The Stores Department, therefore, adopts more than one method to ensure that the materials required by these indentors are received by them regularly to avoid any dislocation of work. The methods followed are an under:-

1. Collection of materials by representatives of indentors. This is followed by the workshops, where stores depots are attached to the workshops. This is also employed generally for issue of small items or items urgently required by the indentors.
2. Delivery of stores by road through departmental motor lorries for indentors situated nearby.
3. Despatch by rails as smalls for consignments not forming a full wagon load.
4. Despatch of full wagon loads. This is generally resorted to when the demands for quantities which will constitute a full wagon load for one consignee.
5. Distribution through Stores Delivery Van system. In view of various inherent problems and deficiencies, SDV system was discontinued way back in 1998. Since then, Distribution of stores by Road Transport has been put in place so that every station on the entire Railway systems receives the supply of materials required by them. Materials are loaded in the contractors' trucks/tankers and these truck/tankers run from station to station as per scheduled programme. The staff, who accompany the trucks/tankers, deliver the materials required at the point of delivery.

The Important advantages of the Stores Distribution through Road transport are:-

(a) Speedier service;
(b) Less breakage/leakage/damages in the transit, as material is escorted by depot staff;
(c) Elimination of the need for packaging; and
(d) Elimination of losses due to risks in transit, as Insurance of vehicle is Transporter's Responsibility – thus vehicle's safety in a way also results in material's safety.

It was due to high operational costs involved in SDV system and other benefits of Distribution by Road to the Railways that the Railway has switched over to distribution by road being relatively cost-effective and far more efficient.

9. INVENTORY CONTROL

In the management parlance, inventory is defined as an idle resource having economic value. All materials which are kept in stock to meet the day-to-day needs of offices, maintenance establishments, rolling stocks, workshop, machinery and plant will be covered by the definition of inventory. The inventory uncouples the supply and consumption activities of the materials. For any material, it is highly unlikely that the consumption needs would be identical to the supply timing and rate. Because of these differences, the consumption point is likely to suffer for want of flow of material at adequate rate, if an inventory is not available as a cushion.

Thus there is a need for maintaining inventory of materials, even though this resource would remain temporarily idle. An idle resource always costs something to the organisation. For example, to build up inventory, materials have to be ordered either in piecemeal or in bulk periodically, and this will involve ordering costs. This ordering cost can be anything between Rs 100 for cash purchase to about Rs 5000 in the case of purchases by floating advertised tenders. After ordering the materials, on receipt, the same has to be inspected, stored, preserved and issued/distributed to the consumers, apart from blocking up capital to the extent of the value of the materials so built up as inventory. The process of storage and blocking capital would cost anything between 25% to 30% annually. This cost is known as the inventory carrying cost. The above two costs are of prime interest and concern to the management as a whole. For the user, he will be concerned when the material is not available. The non-availability of materials when requisitioned is likely to render costly equipment or assets idle till the material is made available. The cost of waiting time in terms of loss of earning potential or the extra expenditure incurred to procure the material under emergencies for commissioning of the assets will be known as the 'stockout cost'.

It should be appreciated that the various costs are opposing in nature. As the quantity per order is increased, we would need to release less number of orders over a year resulting in reduced annual ordering cost. However, such a step would necessitate bearing a higher inventory carrying cost. Similarly, though a high stock level would ensure a very good service level resulting in minimum stockout costs, the same would cause the organisation to incur a high level of inventory carrying cost. The inventory carrying cost for ensuring availability of all materials on even 99 out of every 100 occasions would be truly astronomically high, even though then the stockout cost may be insignificant. It would be appreciated that the ideal situation of no stock outs cannot be reached, even if the entire revenue of the organisation is diverted to holding stock of materials only. Hence, it is the duty of the management to balance the various opposing costs and fix various norms for availability, quantity to be ordered at a time, number of orders to be issued, safety stock to be maintained etc. The terms inventory control would encompass all these activities which are designed to provide service of materials at the least total cost to the business.

From the foregoing, it can be seen that the elements which constitute the various inventory costs are as under.

(i) Ordering Cost

When a demand is received in the purchase office, it is required to be scrutinised, technical specification checked, drawing prepared or made available, tender enquiries floated and received and evaluated, orders placed and followed up for expediting the supplies, materials inspected and payments made. All these activities cost the organisation on account of manual labour, supervision, stationery & postage and using telephone, telex & fax facilities apart from investment to be made on office space, facilities and testing equipment. These costs when grouped are known as 'Ordering Cost'. It would be seen that the ordering cost is not much dependent on the value of the purchase, but it will go up, if the frequency of the purchase is increased.

(ii) Inventory Carrying Cost

When materials are kept in stock, the money equivalent of the value of such materials gets blocked and is not available for the business of the organisation. On the contrary, this blockage of capital means additional expenditure in the form of interest/annual dividend liability on such capital. Besides, there are other costs like cost of storage, cost of obsolescence, losses due to breakage, leakage and pilferage etc. All these costs are grouped as 'Inventory Carrying Costs'. In a reasonable assessment, inventory carrying cost on the Railways is in the range of 25% to 30% per year of the inventory holding expressed in value. In other words, the Inventory Carrying Cost is dependent on the stock holding.

(iii) Stockout Cost

If an item is not available when required, an equipment or asset may remain idle or a service may be affected till it is made available. This will lead to certain losses to the organisation which, evaluated financially, will represent the 'Stockout Cost'. The stockout cost may be simply the direct loss of the earning potential of the equipment such as a rolling stock or the cost of idling of the operator. Sometimes the cost can be very high, if the consequential effects of non availability of a critical part are considered. The additional expenditure to be incurred on procuring the material or its equivalent at a very short notice will also be a part of the stockout costs. Though evalution of the stockout cost can be difficult in each individual case, still from the past experience, it can be ascertained that the same could be very high for certain items, which for certain other items it could be low. Knowing the same would help in formulation of appropriate policies that can be followed in practice.

The objective of inventory management in Railways is to ensure that the stock items are made available to the consumers with least interruption, while at the same time too much stock of any particular category is not carried at any point of time, as the same would result in inventory carrying cost.

The prime objective of inventory control is, therefore, to keep down the investment on the inventory along with its associated costs and obsolescence that may occur due to introduction of sophisticated modern equipments or with the passage of time. Inventory control helps in the maintenance of inventories at the optimum levels incurring the least total cost and at the same time ensure predetermined level of service as 90%, 95%, 98% to the users.

(iv) Inventory Control Techniques

(1) Care in stocking of new items
(2) Proper care in forecasting of annual demands
(3) Adoption of appropriate recoupment policies
(4) Selective Management
(5) Management by Exception
(6) Standardisation
(7) Variety reduction
(8) Value Analysis
(9) Disposal of Overstocks
(10) Surplus Review
(11) Scrap disposal

The application of the techniques would be briefly as under :

(1) Care in stocking of new items: For reasons of incurring heavy administrative costs such as ordering costs and inventory carrying costs, decision for stocking new items should be taken only when the materials will have regular demand or are required to be stocked as emergency stores. Stocking of items not falling in above category or items of small value would result in store department's attention being diverted to minor or unimportant items resulting in loss of control.

(2) Proper care in forecasting of annual demands: In the recoupment methods discussed in lesson 2, it was seen that the net quantity for procurement is calculated based on the anticipated consumption over the lead-time in the case of maximum/minimum method and till the end of Contract Period in the case of annual review methods. In both the cases, the net quantity to be procured is very much dependent on the consumption forecast for the relevant period. If quantity forecast is higher than the actual consumption, we will end up having excess inventory during that cycle, resulting in avoidable inventory carrying cost. On the contrary, if it is on the lower side, there would be stockouts leading to stoppage of work and consequent stockout costs. The forecast has to be close to the actual consumption. Though it is difficult to predict the future consumption accurately, statistical techniques, however, are available for forecasting with a fair level of accuracy. In Railways, we use the three year moving average method for this purpose.

(3) Adoption of appropriate recoupment policies: The recoupment policies adopted in Railways have been discussed earlier. The objective of all recoupment policies is to ensure availability of materials in accordance with the demand pattern conforming to the desired service level fixed for the specific item.

(4) Selective Management: All Techniques which use the Pareto Principle of management will fall under this category. According to this principle, in a group of items, only a few are significant. This can also be stated otherwise as the concept of 'Vital Few' and 'Trivial Many'. The important techniques, which have paid handsome dividends in the area of inventory control are as discussed here below:

(i) ABC Analysis: In this, the stock items are classified into three categories in the order of their annual consumption value.

(a) '**A**' category- items which added together form 70% of the annual consumption value of all stock items put together, but in terms of number of items, these may form only 10% or less of the total number of stock items.

(b) '**B**' category – denotes items whose annual consumption value forms 20% of all items. In terms of numbers also they may form only 20% of the total number of items.

(c) '**C**' category- All balance stock items, though being in large number, will form only 10% of the total value.

For achieving good results in inventory control, the management can make a lot of efforts by tightly controlling only A & B category items on matters of forecasting, provisioning and procuring, leaving the 'C' items to the operating level. The application of this technique has already been discussed under the headings of maximum-minimum methods of recoupment and stock verification earlier.

(ii) **VED analysis:** In this, the item are classified as V-Vital, E-Essential, and D-Desirable. 'Vital' are those which will stop the operation, if not available. 'Essential' are those which have a potential to stop operation in the near future and the rest are classified as 'Desirable. This analysis has direct bearing on the concept of service levels. The categorisation takes into account the degree of stockout cost that will occur due to non availability of the item. This classification enables management to concentrate attention on just a few items where the maintenance of high service level would be necessary.

(iii) **FSN analysis:** This is known as Fast (F), Slow (S), Non-moving (N) items analysis conforming to the Pareto pattern. While making recoupment, the nature of item is kept in view so that unnecessary money is not blocked in slow and non-moving items. This analysis, in conjunction with other techniques, helps in effecting optimisation.

(5) **Management by Exception:** This is an important technique, application of which has been made easy by computerisation. In this, the management tries to review only those items which display certain properties at a particular point of time, such as items having more than 3 months stock, items of nil stock, items below dangerous level etc. All items, irrespective of their earlier classification such as ABC or VED, if they satisfy the condition of exception chosen, would get reflected in the statement, thereby restricting the need and efforts to take corrective action only where due or required.

(6) **Standardisation:** It is common experience that materials covered by Indian/International Specifications are readily available in the market, at prices much cheaper than the one tailor-made to a customer's specification/drawing. The process of adopting uniform and widely used Indian/International specifications for stock items may be termed as standardisation. Procurement of items to standard specifications is, therefore, expected to result in lower prices, causing corresponding reduction on the inventory carrying cost, which is dependent on the price of items.

(7) **Variety Reduction:** Due to factors like developments of new products, the need for something special every time and the individuality of technical men, there is a tendency for proliferation of a variety of materials in stock for the same or similar end use. Holding stock of the same material under different sizes, shapes, grades and finishes creates disadvantages such as uneconomical purchases, infructuous processing time, additional stock verification and creation of stockouts and surpluses among the items. More variety also increases the average inventory and the associated inventory carrying cost. It is, therefore, necessary to eliminate varieties and have only one item of a given size, shape, specification and

finish for a given end use and the exercise which is done to achieve the same is known as 'variety reduction'.

(8) **Value Analysis:** This technique also known as 'Value Engineering' aims to get the best value for the money spent on a material with the use of creative ideas to achieve the same functions of the chosen material at a lower cost and in the process resulting in new designs, specifications etc. It has been found that an average material has 20% extra cost built into it due to inclusion of many features, which though forming part of the cost, contribute hardly to any useful function. Value analysis aims to achieve elimination of this unnecessary cost, and there by lower the cost of the material without sacrificing quality or its functions.

(9) **Disposal of Overstocks:** As there is a cost associated with possession of materials known as the inventory carrying cost, it becomes necessary to control the stock levels; and it is necessary to treat stock in excess of immediate foreseeable requirements as Overstock and devise policies to deal with such excess stocks. This, apart from releasing funds, will also result in minimisation of loss of materials due to obsolescence, pilferage, breakage etc. In Railways, the limits for over stocks have been prescribed as under-

A	category items	stock exceeding 6 months
B	category items	stock exceeding 12 months
C	category items	stock exceeding 24 months

While fixing these limits, care should be taken in respect of those items which have a limited shelf life. For those items, the stock should not be more than the life limit, as otherwise there is a danger of the material becoming out of date and subsequently becoming useless.

Overstocks generally result from a fall in consumption of materials procured based on inflated demands. This leads to the importance of making the estimates or forecasts of the material requirement as accurate as possible.

(10) **Surplus Review:** In Railway terminology, an item not demanded by the consumers for a period of 24 months or more at a time is categorised as 'Surplus Stores. Surplus stores are divided into two sub-categories, as under:

(a) Movable surplus: Items not demanded for 2 years, but likely to be used in next 2 more years.

(b) Dead surplus: Items not demanded for 2 years, nor expected to be used in next 2 years in future.

It is not wise to keep the surplus stores in stock for long. If a surplus stock is kept for 4 years in stock, the inventory carrying cost @ 25% per annum is likely to exceed the cost of the material itself during that period. In Railways, surplus stores are constantly monitored to see whether such materials can be put to alternate use, or if not, they are scrapped then and there and disposed of thereafter. A constant watch is also kept on those items which are not demanded for a period of 12 months or more at a time so as to identify items which are likely to become surplus. This helps in finding alternate use for the material and also in preventing further procurement. This is known as 'inactive items' analysis.

(11) **Scrap Disposal:** On the Railways, materials which are no longer required for the purpose for which they are procured are termed as 'Scrap'. This will include all obsolete materials and all types of wastes generated during the course of production, operation and maintenance of the Railway assets, and also unwanted packing materials including empty containers etc. Classic examples of scrap are the turnings and borings generated in workshops, condemned rails, rusty, worn-out and damaged components released from carriage & wagon workshops, condemned machinery and plant and rolling stock. Unsold scrap is a source of unnecessary liability of inventory carrying cost and, therefore, Railways have taken up disposal of scrap as a major activity over the last 10 years. Currently the total value of scrap sold annually by a Zonal Railway ranges from Rs. 100 crores to Rs. 350 crores. The total value of scrap sold by Indian Railways as a whole during 2009-10 exceeded a whopping Rs. 3500 crores.

10. EFICIENCY INDICATORS OF WORKING OF STORES DEPOT

There are a number of parameters which can be monitored for judging the relative efficiency of working of a Stores Department. Amongst these, two important indicators are described below.

10.1 Service Level

Various functions of forecasting, purchasing, warehousing and distribution are meant to render service to the Railway indentors by providing them with the required materials in adequate quantities at the appropriate time. The efficiency of the system, therefore, can be judged by the service level achieved in the supply of materials, keeping in view, however, the levels of inventories. Normally, a standard system is followed for measuring statistically the service levels in the form of demands complied with as a percentage of the demand received and their age wise analysis.

Service levels cannot be viewed in isolation of the inventory levels held in the Railway system because of the cost implications as already discussed. In a reasonably well managed atmosphere, it is possible to achieve an overall higher service level and consequently higher satisfaction of the users without carrying correspondingly higher inventory, by application of modern techniques of materials management such as selective management and management by exception.

11. INVENTORY TURN-OVER RATIO (TOR)

Inventory Turn Over Ratio is the ratio of the total value of materials held in stock, including the value of advance payments made with physical receipts of ordered materials being awaited, as at the end of the financial year, to the cumulative annual consumption value during the corresponding year.

Expressed mathematically, the Inventory Turn Over Ratio =

$$\frac{\text{Value of materials in stock + Value of mtl. paid in advance, but physical Receipts awaited as on 31st March}}{\text{Value of materials physically issued from stores depot during the year}}$$

This parameter gives an indication of the number of months of stock holding with the requirements of the consumers managed during the year and is considered today as one of the important indices for measuring the annual performance of not only stores depots, but also that of the entire Railway. Hence the intention is to achieve the maximum issues with minimum inventory balances every year. However, reduction in inventory levels will have its effect on the service level, which is the other parameter which the management is equally concerned with. Therefore, a balance has to be struck between these factors. The Railways are currently achieving Turn Over Ratio in the range of 10%-12%, at the same time maintaining satisfactory service levels. Importance of this parameter can be adjudged from the fact that the TOR is fixed and monitored at Railway board level, the apex level management of the Indian Railways. TOR Target for 2010-11 has been pegged by the Board at 16% (With Fuel) & 10% (Without Fuel).

The low Turn Over Ratio being achieved now-a-days is a vast improvement over the Railway's performance in the sixties when the Turn Over Ratio was ruling in the devastating range of 70% to 75%, with the service levels also not being satisfactory then. However, the application of modern inventory control techniques since then, aided by computerisation, have helped the Indian Railways reach this far.

12. SALE OF SCRAP

Considering the enormous benefits accruing to the Railway exchequer by prompt disposal of scrap, it is very important for the consumers to return the scrap promptly to the nominated stores depots. In addition to scrap, the consumers may also return to the nominated stores depots, items which may be new, second hand or repairable for which the depots give credit at predetermined rates for such items after acceptance. The consumer, while returning the materials, should prepare Advice Note for the returned stores in standard form S-1539 (popularly known as DS-8). The returning officer has to show the rate at which he expects credit for these materials. Generally, credit at half the rate of new items is given for second-hand or repairable stores. For scrap, however, credit at 'scrap rate' only will be given. The Depot

Officer decides how much credit can be given considering the possibility of the material being used again within a reasonable period of time. If there is no likelihood for such a use, the credit can be given only at scrap rate, even though the material might have been returned as new or second hand.

Items returned as 'new' or 'second hand' are kept in stock by the depot; and, if they cannot be used to meet the demands of any other consumer, they will be ultimately categorised as surplus and put up to standing 'Survey Committee' of stores and technical officers appointed by the General Manager on Zonal Railways who will examine critically the following type of items put up to them for such an examination.

(1) Items that have deteriorated in value for any reasons
(2) Items broken or damaged in transit or while in stock
(3) Surplus stores lying in the custody of the stores depots for a long time and considered as having become unserviceable owing to obsolescence or other causes.
(4) Stores received as scrap from the line.

The Survey Committee will determine after inspection

(1) Whether the items put up should be treated as 'dead surplus' or 'scrap' or should be classified as 'second hand'
(2) At what rates or values such stock should be held in the accounts books
(3) How such stores should be disposed of i.e., by sale or by issue to particular users etc.

The survey committee normally consists of 3 senior officers, two belonging to the consuming departments and the third being the Stores Officer of the concerned depot. The Survey Committee will meet periodically and make the recommendations as above on items put up for survey. The recommendations of Survey Committee are given in a survey committee report normally called as 'Survey Sheet'. The recommendations on the survey sheets require the approval of the General Manager for values beyond Rs. 5Lakhs and that of the Controller of Stores for lower values, before their implementation.

Some materials are, however, exempted from the need to be got surveyed by the survey committee before disposal. These include condemned rolling stock such as locomotives, carriages, wagons, condemned rails and known items of scrap such as ferrous turnings and borings, saw dust, empty drums etc. For Rolling Stock, the certificate of condemnation issued by the Chief Mechanical Engineer is adequate. Likewise, for condemned rails, the certificate of condemnation issued by the authorised officer of the Civil Engineering Department is adequate.

When the scrap is received in a nominated Scrap Disposal Depot, the wagons are weighed, unloaded and the scrap segregated in the appropriate categories, if not already sent in segregated condition by the returning official(s). Non Ferrous scrap such as scrap copper cables, brass scrap, condemned aluminium parts etc., when received, will be weighed, in the presence of DMS – Depot Material Superintendent, Accounts Stock Verifier and the RPF staff, on beam scale. The segregated scrap is then formed into Lots of appropriate categories and description so as to represent a reasonable quantity. The Lots are then put up to the Survey Committee as discussed earlier for recommendations and acceptance by the competent authority. The main purpose of examination of scrap by the Survey Committee is to ensure that materials usable internally are not disposed of as scrap.

That is why a Junior Engineer official with a team of workers nominated by associated workshops maintains a 'Reclamation Section' in the Scrap Yard of the nominated scrap disposal depot for identifying from the unsurveyed lots 'still usable items' and taking them back to workshop for use after the same are taken onto ledger by the DMS and issued as Secondhand stores.

Thereafter, scrap is disposed of by one of the following methods.

(1) By Auction
(2) By inviting tenders
(3) By Direct Sale

Each of the above methods is described below.

(1) By Auction

Of all the methods for disposal of scrap, auction is the most extensively used method. While some Railways use the services of a professional Auctioneer for conducting the auctions, others conduct the same departmentally.

Before conduct of an auction, advertisements are issued in newspapers regarding the items to be put up in the auction. A catalogue of the details of the date, time and venue of the auction, terms and conditions and the items included in the auction is also prepared and sent to the prospective bidder well in advance of the auction. Thereafter, the auction will be held at the appointed day and time. The auction conditions are explained to all the prospective bidders before start of the auction and bids are taken lot by lot. Sale of a lot is made to the highest bidder, provided the auction supervising officer is satisfied that a reasonable price has been obtained. For this purpose, the auction supervising officer decides before hand a 'Reserve Price', which is generally based on the quality of scrap, the previous auction rates and the prevalent market trends. The successful bidder has to pay on the spot a certain amount as 'Earnest Money' as per prescribed scale. The balance payment is to be paid generally between 10 to 20 days, depending on the sale value of the lot, type of scrap etc. When full value of the lot is paid, the Delivery Order is issued to the buyer. He is required to take delivery within the prescribed Free Time. If he fails to take deliver within this time, he is liable to pay ground rent as per the auction conditions, for the number of days delayed. The earnest money collected is liable to be forfeited, if the buyer fails to pay the balance sale value and take delivery of the sold material within the prescribed time.

(2) Sale by Inviting Tenders

Scrap materials can be sold also by inviting tenders for the lots made of scrap materials. The procedure is, however, time consuming, but is resorted to occasionally when suitable bids are not forthcoming in auctions or items to be sold are of complicated technical nature. On finalisation of the tender, a formal agreement is entered into between the buyer and the Railways, and the sale is effected as per the terms of the agreement.

Sometimes a Running Contract is entered into for removal of scrap generated continuously, such as turnings and borings, saw dust, waste paper, used tickets etc, without forming specific lots. This method ensures removal of scrap materials then and there without the possibility of their accumulation and causing fire or safety hazards in the process.

(3) Direct Sale

In case of direct sale, the rate at which the material is to be sold is stipulated by the Railways. Such sale is generally restricted to other Zonal Railways or other Government departments and petty sale to employees or private parties.

There are certain items such as oil barrels, empty acid jars, scrap timber etc., which are usually required by the employees. To avoid delay and to reduce procedural work involved, the stock holders are authorised to sell these items by way of direct sale to employees at predetermined rates which are revised from time to time.

(4) Delivery of Sold Scrap

The delivery of scrap materials sold is supervised by an official of the stock holder, an Accounts Stock Verifier and the RPF personnel. The delivery team ensures that the quantity delivered is in accordance with the terms of sale, by weight, volume or count, as the case may be, by use of measuring devices such as beam scale, weigh bridges, measuring tapes etc., where necessary. The loading of the materials into the purchaser's vehicle is generally done by the Railway labour. A proper supervision of delivery of the materials is necessary to void the possibility of any other scrap or good materials being delivered or pick-and-choose being resorted to by the buyer. For certain category of items such as

condemned locos, carriages and wagons, there are a few parts termed as ‘Excluded Components’ which are required to be returned by the purchasers to the administration. For this purpose, before wagons, carriages or locomotives are handed over to the purchasers for the purpose of cutting and removing, they are always examined by a representative of the purchaser, a stock verifier so that the exact quantities of material to be returned are listed down. This helps in preventing the possibility of disputes which arise later on.

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