# Purchasing and Inventory Control

## Inventory Control

- **Inventory** is the stock of any item or resource used in an organization and can include: raw materials, finished products, component parts, supplies, and work-in-process.
- An **inventory system** is the set of policies and controls that monitor levels of inventory and determines what levels should be maintained, when stock should be replenished, and how large orders should be.
- Firms invest 25-35 percent of assets in inventory but many do not manage inventories well.

## Inventory Control - Spares

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
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<tbody>
<tr>
<td>To minimize the capital blocked up in inventory or in other words maintain optimum level of inventory.</td>
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<tr>
<td>To strike a balance between production costs and operating and maintenance costs.</td>
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<td>To avoid wastages, losses and optimum utilization.</td>
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## Inventory Control - Spares

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<th>FUNCTIONS</th>
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<tr>
<td>Identify the spares required for maintaining the equipments.</td>
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<tr>
<td>Assess annual requirements.</td>
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<tr>
<td>Determine how much to procure and when.</td>
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<td>Standardization of spares.</td>
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<tr>
<td>Identify slow moving, obsolete, defective or damaged items and life of spares wherever it is applicable.</td>
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<tr>
<td>Preparation of policies and procedures to suit to the organization.</td>
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<tr>
<td>Prepare spare parts specifications.</td>
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<td>Auditing of Inventories regularly.</td>
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## Inventory Analysis

- For inventory control, a selective approach for each item according to its importance is to be chosen.
- Most important analysis are:
  1. A B C Analysis - Annual consumption
  2. V E D Analysis - Vital, Essential, Desirable
  3. F S N Analysis - Fast moving, Slow moving, Non moving
Design of Inventory

- Order Quantity
  - Economic Order Quantity (EOQ)
- Order Timing
  - Reorder Point
- EOQ minimizes the sum of holding and setup costs
- \( Q = \frac{2DC_o}{C_h} \)
  - \( D \) = annual demand
  - \( C_o \) = ordering/setup costs
  - \( C_h \) = cost of holding one unit of inventory

Order Quantity

To determine the quantity of spares to be ordered for each of the item, the following are kept in mind.
(1) Order cost – Cost due to processing of purchase order.
(2) Inventory carrying cost – Interest on capital, storage cost insurance, maintenance cost.
(3) Economic order quantity is the one which considers the cost of ordering and inventory carrying cost.

Spare Parts Development

Development of alternate source of supply of spares for station to build up a competitive atmosphere among the vendors. The objectives are
- To optimize the spares cost.
- Reduction in lead time.
- Quality.

Identification Process

1) High value critical spares of imported origins.
2) Spares whose manufacturing has been discontinued or spares for which poor response from the manufacturers.
3) Spares of Indigenous proprietary origin.

Inventory Control – Central Pool

- Objective is to keep high cost, high lead time, spares of interchangeable type with similar stations at one centrally located place.
- When need arises any member station can draw from central pool and replenish immediately

Spare Parts and Procurement action depends upon.

- Identification of spares of common in nature for the equipments and allocation of material Codification number accordingly.
- Consumption History
- Fast moving spares
- Slow moving spares
- Procurement practices
- Lead time
- Price discounts and bulk purchases.
Purchasing Objectives

- Purchasing’s responsibility is to buy materials of the right quality, in the right quantity, at the right time, at the right price, from the right source, with delivery at the right place.
- Furthermore, this objective must be achieved with a minimum investment in inventories.
- Achieving this objective of security with a minimum investment demands a fine balancing of various factors:
  - risk of shutdown, the cost inherent in forward buying, and the economies of quantity purchases.
- Weighing these factors calls for experience and a high order of professional judgment.

- A further objective of purchasing is to avoid duplication, waste, and obsolescence of the various items purchased.
- The purchasing department can do much to eliminate these risks by considering each purchase in relation to:
  - long-range operating plans
  - short-range considerations of the immediate purchase.

In Purchasing…

- Procurement cycle:
  - Review selection
  - Determine needed quantities
  - Reconcile needs & funds
  - Choose procurement method
  - Select suppliers
  - Specify contract terms
  - Monitor order status
  - Receipt & inspection

- Purchasing Strategy & Forecasting
  - How to make a make-or-buy decision.
  - How many suppliers do you need?
  - Which suppliers should be selected?

  - Purchasing Procedures and Techniques
  - Supplier Selection & Evaluation
  - International Purchasing

  - How do we forecast the quantity to be purchased?
  - What kind of forecasting methods should be used?
  - Time of forecasting
Purchasing Procedures

• What are the basic steps of purchasing
  - Capital Purchases
  - Requisition
  - Preparation of Purchase Order
  - Placing Order
  - Receiving

• Purchasing documentation and forms.
  - Requisition
  - Purchase Order
  - Invoice

Purchasing Procedures and Techniques...

• Some recent trends in procurement:
  – Electronic Ordering
  – Stockless Purchasing
  – Standardization
  – Just in Time Purchasing.

Supplier Selection & Evaluation

• How do we find the suppliers and types
  – Brokers, Wholesalers, Producers, etc
• Supplier selection standards
  Price, Quality, Service, Reliability, Evaluate Performance
• Advantages of buying direct and buying from distributor.

International Purchasing

• Have to locate the best sources in internationally
• Differences in currency, language and culture.
• Legal issues
• Types of agreements
• Protection in international purchasing

THANKYOU