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Participant Handbook

Customised courses under PMKVY (210 hours)

Sector
Logistics

Sub sector
Warehousing (Storage & Packaging)

Occupation
Documentation and Reporting

Reference ID: **LSC/Q1124,**
Version 1.0 NSQF Level 3

Inventory Controller

This book is sponsored by

Logistics Sector Skill Council

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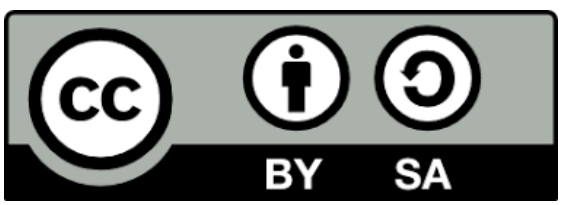

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Shri Narendra Modi
Prime Minister of India

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Certificate

COMPLIANCE TO QUALIFICATION PACK - NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

LOGISTICS SECTOR SKILL COUNCIL

for the

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: **'Inventory Controller'** QP No. **'LSC/Q1124 NSQF Level 3'**

Date of Issuance: 19/01/2023

Valid up to: 19/07/2023

**Valid up to the next review date of the Qualification Pack*
'Valid up to' date mentioned above (whichever is earlier)

Authorised Signatory
(Logistics Sector Skill Council of India)

Acknowledgements

We thank the following organizations for endorsing the contents of this Participant Handbook, thus contributing towards skilling based on the Qualification Pack (QP) and National Occupational Standards (NOSs).

About this book

This Participant Handbook is designed to facilitate training to the Inventory Controller Qualification Pack (QP).It provides learners with the necessary knowledge to major warehousing activities, such as Inventory counting, loading, unloading, receiving, sorting, put away, picking, packing and shipping, getting knowledge on Inventory management, Stock control methods, people management, material handling and ergonomics. Its decision-making orientation provides a real-world approach focusing on large and small warehouse industry. The book elaborates how individuals in this position to manage general physical inventory counting activities, maintain inventory records, count/move materials by hand or using basic material handling equipment, How to take control of warehouse operations in case of emergency situations. This handbook also provides the latest information on the usage of technologies and reporting procedure to supervise warehouse operations. Many modules have been revised to capture the diversity, varied perspectives, and current spirit of warehousing. The handbook is divided into 3 NOSs. NOSs are Occupational Standards which have been endorsed and agreed to by the Industry Leaders for various roles. The NOSs are based on the educational, training and other criteria required to perform the job/role of an Inventory Controller.

Key characteristics of this handbook:

(i) It discusses concept of warehouse management in an easy to learn manner.

(ii) It presents Inventory counting concepts in interactive and professional way.

(iii) It gives opportunity to learners to visualise themselves in a professional warehouse set-up.

Symbols Used

Key Learning Outcomes

The key learning outcomes are listed at the beginning of each module. These outline the focus areas that the learners will cover in every module.

Tips

Wherever possible, tips are included in every module. They provide additional insight to learners on a particular topic being discussed.

Steps

These provide step-by-step instructions for a specific process.

Notes

Notes at the end of each module is a space for learners to list down their key points related to the topic.

Time

This refers to the time specified for the completion of each module. The time in number of hours is mentioned at the beginning of each module.

Unit Objectives

These are listed at the beginning of each unit under every module. They highlight the focus areas that the learners will cover in every unit.

Table of Content

The book on New Employability Skills is available at the following location:
https://eskillindia.org/NewEmployability
Scan the QR code below to access the ebook

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1. Prepare for Inventory Counting

Unit 1.1 - Key Decision to Perform an Inventory Count
Unit 1.2 - Phases in Inventory Counting
Unit 1.3 - Inventory Related Information
Unit 1.4 - Deciding the Frequency and Number of Counting

LSC/N2105
(Part of - LSC/Q1124)

Key Learning Outcomes

At the end of this module , participant will be able to:

1. Explain how to perform Inventory counting
2. Elucidate the importance of counting inventory
3. Explain why are we counting your inventory and what we are going to count
4. Describe the different phases in inventory counting and various information related to inventory counting
5. Get knowledge on how to perform inventory counting
6. Discuss on the list of information and relevant documents on inventory
7. Explain how to create and maintain inventory record
8. Get knowledge on inventory storage locations and on various inventory classification
9. Explain how inventory classification helps in identifying inventory counting frequencies

UNIT 1.1 - Key Decision to Perform an Inventory Count

Unit Objectives

At the end of this unit , participant will be able to:

1. Describe the importance of inventory counting
2. Explain why are we counting your inventory and what we are going to count
3. Get knowledge on how to perform inventory counting

1.1.1 Inventory Controller

Inventory Controller controls every industry one can think of. The need for inventory control is evident across all industries and Inventory Controller are hired primarily to manage inventory so that the rest of the operations of the company can be managed smoothly. Inventory Controller work directly under the supervision of accounting managers and perform ordering, inventory and forecasting of inventories and duties

Fig 1.1.1: Inventory Controller

1.1.2 Key Decision to Perform an Inventory Count

Now let us see the key decision to be taken on performing an inventory count:

Why are you counting your inventory? Inventory counting helps you to keep track of your inventory. The following list of reasons is meant to remind of common reasons for tracking inventory;

- Asset Tracking and Valuation
- Managing Stock Levels
- Anticipating Demand
- Shrinkage, Theft, & Loss Control
- Insurance
- Accounting
- Location Decisions

What are you going to count? Why you're tracking inventory should lead directly to what you're going to count. It may seem overly simplistic or obvious to have to specify what is going to be countedbut if you put a little thought into this, it will help deal with questions that are bound to arise during a count. Also, anyone helping with the count will need to know what to count. Here are a few common categories to help inspire you.

- Saleable Items
- Maintenance Items
- Raw Materials
- Furniture, Fixtures, & Equipment
- Rental and/or Movable Equipment
- Trucks, Vans, Cars, Containers, etc.

Where are you going to count? Some operations have only one or two locations, while others have thousands. But even the smallest operation may benefit from this checklist of locations where items may exist that need to be counted.

- Physical Areas
- Items That Are "In Transit"
- Items Held by Third Parties
- Job Sites, Events, Customer Sites, or Other External Locations

When are you going to count? It's very difficult to perform counts during operating hours, and you hope to get an accurate count, so try to plan your count during off hours if possible. Also, make sure that everyone involved with the count knows when the count will occur, especially those people who are not on site.

Who all will be doing the counting? Come up with an estimate of how long it will take to count your stock. To get a good estimate, perform a practice count of a fraction of your stock and then multiply that time by the remaining areas to be counted. This will give you the total "person hours" required to count all of your stock. Divide this number by the amount of time available, and you'll have the number of people necessary to meet the deadline. Finally, add one person to this number to account for the drag in efficiency of having to manage as well as count.

Team Activity 

1. Try counting inventory with different SKU's and update the inventory record

UNIT 1.2 - Phases in Inventory Counting

Unit Objectives

At the end of this unit , participant will be able to:

1. Explain the different phases in inventory counting
2. Explain why are we counting your inventory and what we are going to count
3. Get knowledge on how to perform inventory counting

1.2.1 Physical Inventory Counting

There are three phases of a Physical Inventory Counting;

1. Planning and preparation
2. Execution
3. Analysis of results

A physical inventory counting may be a time- and resources consuming procedure, which requires proper planning. The planning helps you to make your annual inventory count more effective.

You should have a written policy regarding the inventory count process (inventory plan, inventory instructions). In this policy you determine a date of conducting the physical inventory, assign responsible persons and describe the methods to be used.

You can use different approaches (full inventory count or cycle count) to count different types of inventory; for example, one method for finished goods, and another method for work-in-process (WIP) or for raw materials.

You also should publish the procedures and policies regarding recording the counts, reconciling discrepancies, unknown items, emergency or rush shipments, and auditor's approval requirements.

Establishment and documentation of counting procedures will allow you to control and supervise physical inventory properly.

The first thing is to collect schedules and inventory related information form the supervisor.

Scan the QR code to watch the related videos

Physical Inventory Count

https://www.youtube.com/watch?v=Ue8oCPQjU8o

Fig 1.2.1: Work Schedules

The work schedule may include the followings;

- Truck arrivals for loading/unloading
- Available time and workers in the shifts
- Allocating Material Handling Equipment etc.

Notes

UNIT 1.3 - Inventory Related Information

Unit Objectives

At the end of this unit , participant will be able to:

1. Get knowledge on list of information and relevant documents on inventory
2. Explain how to create and maintain inventory record
3. Get knowledge on inventory storage locations

1.3.1 Inventory Related Information

To get the detail list and relevant documents to start the work, the 'Inventory Controller' needs the warehouse supervisor's assistance for getting the details. An individual who is carrying out the inventory counting process primarily requires the detail list of stored items in the warehouse. This will be in the form of Pre-printed lists of inventory (usually generated by company's software) are used to record on hand counts.

From Date	01-07-15							
To Date	31-08-15							
Stock Code	Stock Description	UOM	Opening Quantity	Opening Cost	Error Code	Quantity on Hand	Purchases Quantity	Usage Quantity
PM2000	Plastic Wrap	Rolls	2.00	20.00	-	8.50	34.00	(26.22)
PM2005	Nut	1000	1.00	350.00	-	-	14.00	(14.06)
PM2015	Bolt	Inits	600.00	1.20	-	18.00	4,400.00	(4,972.64)
RM1000	Iron Coil	Kg	300.00	50.00	-	600.00	3,760.00	(3,240.00)
RM1010	Centre cap	Kg	10.00	5.00	-	1.00	64.00	(72.12)
RM1020	Pin	Kg	10.00	8.00	-	2.00	26.00	(33.52)

Table 1.3.1: Inventory Record

Item Storage Location: Location names tells you know where to put and item and where an item is put. Some of the key consideration while creating inventory location names are;

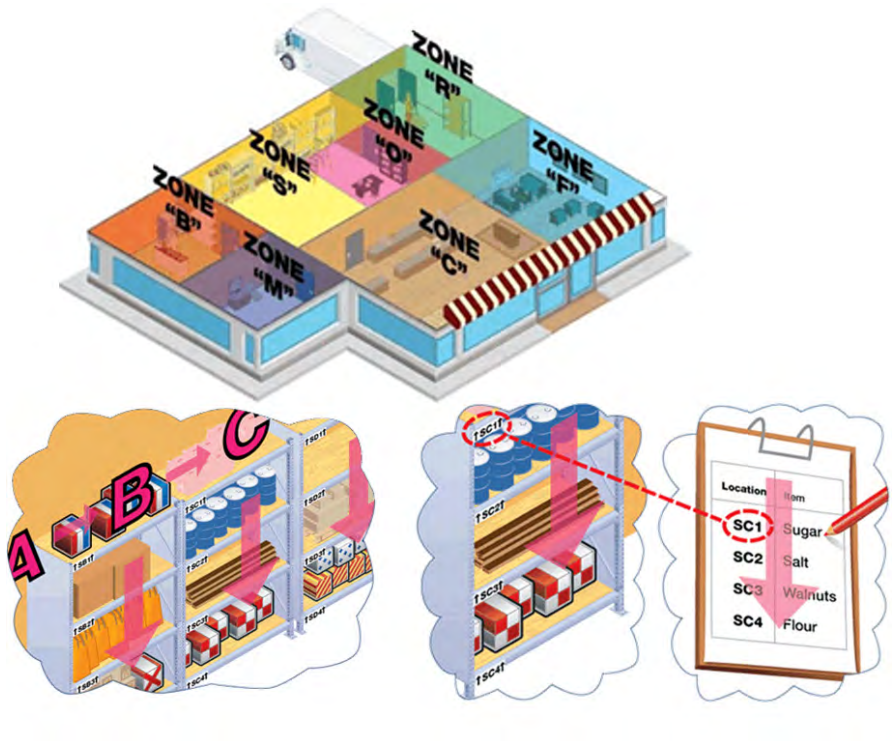

Fig 1.3.2: Item Storage

- Location names should be unique. No two locations should ever have the same name.
- Every physical space in your facility should have a location name, even if you don't currently store anything in that space.
- The location labels should contain the full name of the location and, if possible, have arrows that point to the location.
- Zone/room names should be abbreviated (usually to a single letter) and contained in the full location names.
- Within a zone or room, location names should ascend from top to bottom and from left to right.

A manufacturing plant or a distribution warehouse is usually divided into different areas such as receiving docks, main storage warehouse, production line side storage location, staging and parking areas. It is not always necessary to count receiving or shipping docks as items move through them at a fast pace and are hardly stored there. Materials stored for a longer time in the storage locations and in line side locations, such locations have a high potential for including inaccuracies and affecting downstream activities such as production, assembly and shipping.

From Date	01-07-15								
To Date	31-08-15								
Stock Code	Stock Description	UOM	Storage Location	Opening Quantity	Opening Cost	Error Code	Quantity on Hand	Purchases Quantity	Usage Quantity
PM2000	Plastic Wrap	Rolls	AC4	2.00	20.00	-	8.50	34.00	(26.22)
PM2005	Nut	1000	DB5	1.00	350.00	-	-	14.00	(14.06)
PM2015	Bolt	Inits	BA2	600.00	1.20	-	18.00	4,400.00	(4,972.64)
RM1000	Iron Coil	Kg	AL8	300.00	50.00	-	600.00	3,760.00	(3,240.00)
RM1010	Centre cap	Kg	EB4	10.00	5.00	-	1.00	64.00	(72.12)
RM1020	Pin	Kg	CD3	10.00	8.00	-	2.00	26.00	(33.52)

Table 1.3.3: Inventory Record

Removing unnecessary locations from the counting scope keeps the counting process manageable and efficient.

Notes

UNIT 1.4 - Deciding the Frequency and Number of Counting

Unit Objectives

At the end of this unit , participant will be able to:

1. Get knowledge on various inventory classification
2. Explain how inventory classification helps in identifying inventory counting frequencies

1.4.1 Inventory Classification

Inventory in any organization can run in thousands of part numbers or classifications and millions of part numbers in quantity. Therefore inventory is required to be classified with some logic to be able to manage the same. Some of the common types of inventory classification are as follows;

- ABC - Classification based on the Annual Consumption
- XYZ - Classification is based on the Inventory investments of the items
- HML - Classification based on unit price
- FSN - Classification based on frequency of issues and uses
- VED - The classification of items based on their criticality
- SDE - Classification is based on the sourcing problems of the material
- RRS - This type of classification is done on the units shipped annually

Classification of the inventory will largely help in deciding on the number and duration of counts. Counting every item, multiple items, is likely to increase the accuracy. However priority has to be given to high cost and fast moving items. To derive the frequency of the counting, typically, a start date and an end date needs to be provided while designing the cycle count process. Based on the duration, the system will tells you the counts for the period. Defining a smaller period will increase the number of count unnecessarily. The recommended practice is to set the duration to one financial year.

Inventory Classification	Frequency of Counting
A Class	Count 4 times a year
B Class	Count 3 Times a Year
C Class	Count 1 time a year

Table 1.3: Inventory Counting Frequencies

Inventory Classification	No. of Items	No. of Counts	Total Counts
A Class (10%)	10,000	40,000	40,000
B Class (20%)	20,000	60,000	100,000
C Class (70%)	70,000	70,000	170,000
Total Items	100,000		

Table 1.4.1: No. of Counting

Notes

Summary

Inventory is an important aspect for any organization and controlling inventory will optimize the supply chain cost. Controlling inventory cannot be ensured without counting the inventory. Some of the key decision to perform an inventory counting with the phases involved in counting is described clearly for better understanding. Related information like inventory zones, storage locations are discussed to add more details in inventory counting. The most important parameter is to decide the frequency and the number of required counting is articulated briefly in this unit.

Exercise

1. What are the key decision to be taken on performing an inventory count?
2. What are the three phases in physical inventory counting?
3. _____ tells you know where to put and item and where an item is put.
4. ABC type inventory classification is based on _____
5. FSN type inventory classification is based on _____
6. RRS type inventory classification is based on _____

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2. Verify Physically Counted Numbers and System Numbers

LSC/N2106
(Part of - LSC/Q1124)

Key Learning Outcomes

At the end of this module , participant will be able to:

1. Explain the importance of recording and reporting after counting
2. Describe the different types of documents used in an inventory counting operations
3. Explain the importance of packaging standards and symbols
4. Distinguish the roles and responsibilities of different colleague on the shop floor
5. Get knowledge on the importance of Labeling system in warehouse
6. Get more insight on various technical specifications of goods stores in the warehouse
7. Describe the roles and responsibility of an Inventory Controller
8. Get knowledge on how and whom to contact for work related challenges
9. Explain various work an Inventory Controller will carry inside a warehouse
10. Describe the significance of Labels in warehouse operations
11. Get knowledge on various label technologies, methods and types
12. Describe how label and coding will help to identify the product specifications
13. Explain different signages and packing standards used inside a warehouse
14. Identify the handling requirements on the product and packages
15. Explore the organization’s safety and security procedures in Inventory counting

UNIT 2.1 - Roles and Responsibilities of Different Colleagues on the Shop Floor

Unit Objectives

At the end of this unit , participant will be able to:

1. Explain the roles and responsibility of an Inventory Controller
2. Get knowledge on how and whom to contact for work related challenges
3. Explain various work an Inventory Controller will carry inside a warehouse

2.1.1 Roles and Responsibilities

Warehouse Manager: A warehouse manager has many responsibilities, all of which consist of maintaining and receiving equipment. A warehouse manager must also supervise the staff of the warehouse, along with working with them to complete tasks. A warehouse manager must also maintain the physical condition of the warehouse by planning and implementing new design layouts, inspecting equipment, and issuing work orders for repair and requisitions. In the organization structure a Warehouse supervisor directly reports to the Warehouse manager.

Fig 2.1.1: Warehouse Manager and Supervisor

Warehouse Supervisor: The main function of a supervisor is to supervise a team of warehouse personnel to ensure the provision of a professional incoming goods, storage and dispatch service to customers, encompassing both speed and accuracy. The picker may directly report to the warehouse supervisor.

Warehouse Picker: The Warehouse Picker is responsible for filling customer orders and delivering them to the delivery platform in a manner that meets company standards for safety, security, and productivity. The Warehouse Picker is responsible for the completeness and correctness of all orders filled.

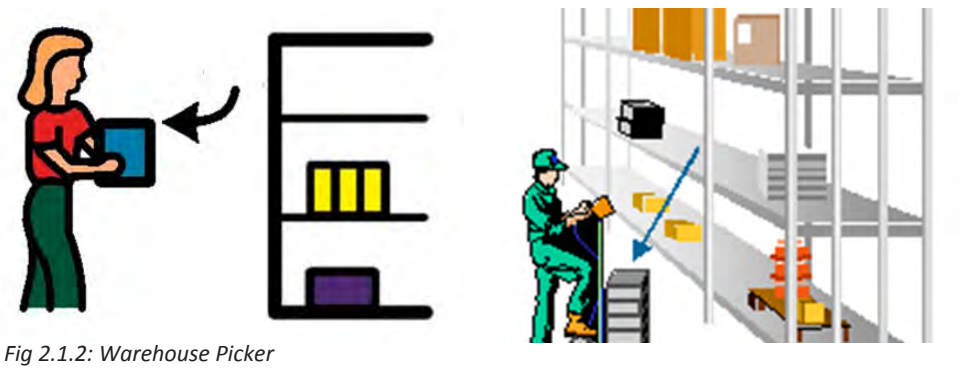


Fig 2.1.2: Warehouse Picker

Put away assistant: The duties and responsibilities of a put away assistant is to accurately place materials on shelves, in racks or other designated storage areas in an orderly manner. Enter quantity received against the purchase order in the computer system and print back order and inventory stock put away list.

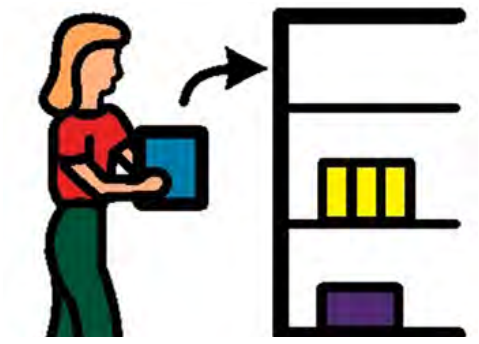


Fig 2.1.3: Put Away Assistant

Packer: Packers work on production lines, putting manufactured goods and products into containers like boxes, trays, bags and crates. A packer may perform jobs like packing goods with protective materials, such as bubble wrap and polystyrene chips sealing containers using glue, staples or shrink-wrap weighing and labelling packaged goods ready for dispatch cleaning work areas reporting any problems during the shift to supervisors.

Fig 2.1.4: Packers

Forklift Operator: The Forklift Operator is responsible for operating a forklift to move, locate, relocate, stack, and count products. Pull and prepare product for shipment, ensuring that the exact number and type ofproduct is loaded and shipped. Perform picking duties in an efficient manner that meets customerservice standards. An Inventory Controller might make use of a forklift operator to pull out heavy stocks stored on to the pallets and stocks stored on the storage racks during counting process.

Fig 2.1.5: Forklift Operator

The Inventory Controller needs to communicate with the colleagues in the shop floor to ensure whether things are in place for smooth warehouse operations. Some of them are as follows;

Dock Supervisor/assistant: The Inventory Controller needs to communicate with the docking assistant/supervisor to ensure that there will be smooth loading and unloading operation will takes place throughout the day. Needs to collect details like truck schedules, truck reporting on time, late deliveries truck, previous day pending truck etc. to prioritize the loading/unloading operations.

Fig 2.1.6: Dock Supervisor

MHE supervisor: The Inventory Controller needs to ensure that whether he/she have sufficient material handling equipment to carry out the day's load (day's work). There might be problems in MHE maintenances, equipment break down, in-sufficient material handling equipment etc. In such cases the warehouse supervisor needs to co-ordinate with the MHE supervisor for proper co-ordination and proper utilization of MHE. The supervisor needs to have a backup plan in case of any challenges.

Fig 2.1.7: MHE supervisor

IT (Information Technology) assistant: The Inventory Controller has to ensure that all the IT equipment and mobile handling devices which rely on network connectivity works faultless. Because any delays caused because of IT will leads to huge error and losses. The supervisor needs to have a backup plan in case of any technology issues.

Fig 2.1.8: IT Assistant

Human Resource Manager: The main responsibility of a warehouse manager is to manage workforce. To actively plan for a day's work an Inventory controller has to communicate with the human resource manager to get the details of the workforce available to carry out days operations. This would help him to quickly change over the job allocation to other useful resource in case of any absenteeism.

Fig 2.1.9: Human Resource Management

Warehouse Security guards: The Inventory Controller needs to co-ordinate with the security guards for security related issues and challenges. If in case any security issues needs attention means, the Inventory Controller needs to fix the issues quickly by communicating with the management.

Based on the information collected, now comes the time management and efficient usage of the available resources, estimate the time required for each task and create a day plan for the entire warehouse operations.

Fig 2.1.10: Warehouse Security Guards

Ask

1. Whom do you request/call to move heavy product within the warehouse?
2. Whom do you request/call for rectifying network errors?

2.1.2 Knowledge and Understanding Organizational Products

As an Inventory Controller the individual needs to have an in-depth knowledge on the products and procedures as dictated by the organization.

Fig 2.1.11: Understanding Organizational Products

UNIT 2.2 - Knowledge and Understanding Organizational Products

Unit Objectives

At the end of this unit , participant will be able to:

1. Describe the significance of Labels in warehouse operations
2. Get knowledge on various label technologies, methods and types

2.2.1 Labels & Signages

Fig 2.2.1: Labels & Signages

Scan the QR code to watch the related videos

Labels & Signages
https://www.youtube.com/watch?v=pSJL03Ho5Mw

2.2.2 Why are Warehouse Labels so Important?

Warehouse labels are essential in inventory management and in the picking process throughout warehouses. The use of warehouse labeling increase picking efficiencyand decrease picking mistakes. Implementing the correct label structured designed to an individual warehouses needs can reduce time spent picking and increase inventory location accuracy. Let us now see some of the commonly usedPicking Label Combinations& Software technologies:

2.2.3 Barcodes

Bar code systems can track material through each step of the work and keep detailed records on each piece or batch.Using barcodes you can track your inventory, where items are located and how many items are in stock. A basic inventory tracking system consists of software and a barcode scanner or mobile computer..

Fig 2.2.2: Barcode

2.2.4 Radio Frequency (RF) scanners

RF scanners are the most commonly used order picking software by most of the warehouses across the globe. Bar code scanners were developed into mobile units, giving warehouse operators the ability to obtain data collection on seconds. Radio Frequency scanners are the most cost effective and flexible picking technology by being able to be used across most warehouse operations. The RF scanner operates by delivering text instructions to an operator, who in turn scans a barcode placed on a pallet, racking, aisle, bin or product. The barcodes allow the scanner to capture product or customer specific data.

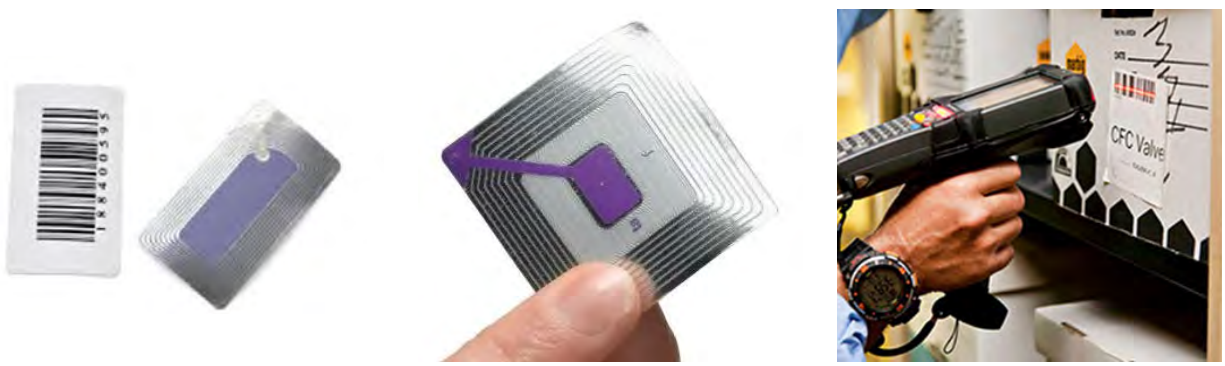


Fig 2.2.3: Radio Frequency (RF) Scanner

2.2.5 Pick to Light method

Similar to the previous picking strategies, a Pick to light method consists of light displays installed per each fixed location on racking or picking lanes. Tasks are uploaded to a system that lights up units as operators pick each order line. The light marks where the product location is and the task that is to be carried out at the pick area. Pick to light systems are better utilized for facilities that to use reverse picking where goods received and transported into locations specific to customers' orders. This method supports high speed picking rates and increased accuracy.

Fig 2.2.4: Pick to Light

In addition, some of the benefits of P-T-L include:

- Paperless order picking. No printed pick lists or pull tickets.
- Eliminates the time and effort wasted on "looking around."
- Workers can pick hands free.
- Allows computer-controlled picking.
- Can be applied to replenishment.
- Improved pick productivity and accuracy.

2.2.6 Voice Picking

The most advanced picking method yet. An operator is delegated picking tasks via a headset and can confirm picks via voice control. The operator is guided to picking location from the computer voice. The ability to use the headset enables operators to be hands free and the ability to pick heavier products. The application has become popular in cold storage facilities that require an operator to wear gloves in order to operate within the cooler or freezer. The labels required for voice picking ranged from simple digits, to barcodes. Voice picking cuts more time by simplifying the picking process.

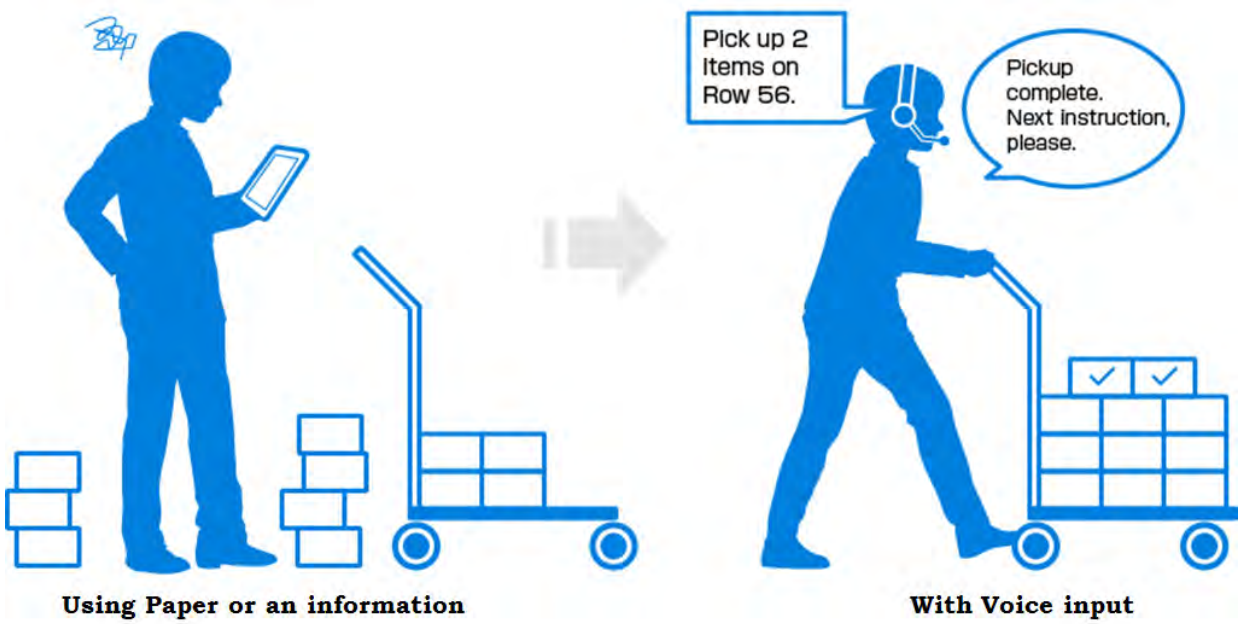


Fig 2.2.5: Voice Picking

Scan the QR code to watch the related videos

Pick to Light Demonstration
https://www.youtube.com/watch?v=KWzctn8EjmA

Notes

UNIT 2.3 - Labels and Coding Systems

Unit Objectives

At the end of this unit , participant will be able to:

1. Describe how label and coding will help to identify the product specifications
2. Explain different signages and packing standards used inside a warehouse

2.3.1 Types of Warehouse Labels

Labels exposed to extreme temperatures require special adhesives that can withstand temperatures as low as -22F, without heating beams or increasing facility temperatures. The labels can be printed for any type of picking strategy from barcodes to voice picking. The labels are printed to be effective with a warehouses' current picking method.

Fig 2.3.6: Rack Labels

Fig 2.3.7: Shelf Labels

Fig 2.3.8: Floor Labels

Fig 2.3.9: Totes Labels

Fig 2.3.10: Shipping Labels

There are many other labels and signage that can be used throughout a warehouse. Three sided aisle signs with long range scanning reflective bar code labels can help when navigating to product within a facility. Dock door labels assist with the proper management of in-bound shipments and proper loading of trucks. Outdoor signage direct trucks to correct docking stations and correct entry/exit points of a building.

When considering a labeling solution, warehouses have to take into account the pick method used, pick path, and the SKU to be picked. If one label is miss printed, placed in the wrong position, or the wrong picking strategy is implemented, it can create major picking inefficiency, by causing the picking operation to become very labor intensive and drive up costs in the long run.

Scan the QR code to watch the related videos

Packaging and Labelling Guidelines

https://www.youtube.com/watch?v=1TC3_VkK0H4

How to Label

https://www.youtube.com/watch?v=gSn3COOJBkY

How to Pack, Seal & Label Shipments

https://www.youtube.com/watch?v=YNgRqt4Q8wk

UNIT 2.4 - Types of Product and Packaging labels

Unit Objectives

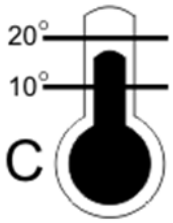
At the end of this unit , participant will be able to:

1. Get knowledge on different product labels
2. Explain the meaning of various symbols used in the packaging
3. Identify the handling requirements on the product and packages

2.4.1 Knowledge of product labels and technical specification of goods in the warehouse

Below are a number of symbols often seen on product packaging. Each has a specific meaning. The symbols are normally very simple and easy to understand.

	This symbol reminds those handling the package to keep out of the rain and not to store it in damp conditions. It is normally found on card based packages which would be damaged if placed in contact with water.
	The broken wine glass suggests that the product inside the packaging could be easily damaged if dropped or handled without care and attention. The contents are fragile!
	The two hands holding or protecting the package is another reminder that the contents should be handled with care.

	The symbol seen opposite tells those handling the package that it must be stored the right way up. The arrows point towards the top of the package.
	The symbol showing the thermometer is found mainly on packages containing food and drink. The symbol clearly shows that the contents should be stored at a temperature between 10 and 20 degrees (centigrade).
	Chemicals that may cause damage to health.
	Chemicals that may catch fire in contact with air, only need brief contact with an ignition source, have a very low flash point or evolve highly flammable gases in contact with water.
	Chemicals that at low levels cause damage to health.

	Chemicals that may cause inflammation to the skin or other mucous membranes.
	Chemicals that may destroy living tissue on contact.

2.4.2 Standard Operating Procedure - SOP

Standard operating procedures (SOPs) are written/pictorial instructions intended to document how to perform a routine activity. Many organization rely on standard operating procedures to help ensure consistency and quality in their operations. Standard operating procedures are also useful tools to communicate important corporate policies, regulations and best practices.

A simple SOP for 'Inventory counting' is given below for better understanding;

Title	Incoming Truck Inspection		
QA Signature		Area Manager Signature	
Date of signature		Date of signature	

Objective: To describe the process for conducting a physical inventory count of all items

Associated Documents:

1. Reports available from warehouse management system.
2. Spreadsheets extracted from warehouse management system.

Procedure:

- Investigate and eliminate any known discrepancies
- Pre-count inventory as time permits
- Consolidate part pallets
- At the discretion of warehouse management, inventory may be temporarily repositioned to facilitate the physical count. In this case, the inventory will be clearly marked with the original bin location
- Arrange order-pickers or fork trucks with baskets, which are CSA approved
- Purchase high visibility labels to affix to counted pallets
- Arrange for flash lights, clip boards, pens and highlighters
- Dispose of or isolate scrap material that is not to be counted
- Post all receipts, shipments and adjustments
- Extract a spreadsheet of inventory prior to the count
- Employee working at height requires Fall Arrest training

As mentioned earlier the Standard Operating Procedures is written document of how a work has to be carried. This document needs continuous monitoring and review in certain frequencies like once in 3months, 6months or 1year.

There might be some operational challenges in the process of carrying the work. As a part of continuous improvements any staff or workers might communicate with his/her reporting head for any modification in Standard Operating Procedures. While doing so the workers or the Inventory Controller has to follow the reporting structure for making any changes in the document.

Modifying the Standard Operating Procedure needs managers approval for the changes. The manager will review the changes and make the final modification as per the requirement with company seal and signature.

Notes

UNIT 2.5 - Personal Protective Equipment

Unit Objectives

At the end of this unit , participant will be able to:

1. Explain the importance of Personal Protective Equipment
2. Identify different types of Personal Protective Equipment and its uses
3. Explain the safety guidelines on using Personal Protective Equipment

2.5.1 Personal Protective Equipment

Personal protective equipment (PPE) is clothing and equipment worn by employees, students, contractors or visitors to protect or shield their bodies from workplace hazards.

Nearly 2 million disabling work related injuries happens each year across the world and more than 5 lakhs will involve head, eye, hands and feet. Using proper Personal Protective Equipment is a tool for safe and efficient inventory counting.

Fig 2.5.1: Personal Protective Equipment

Scan the QR code to watch the related videos

PPE

https://www.youtube.com/watch?v=kcM9u4heDVk

2.5.2 Types of Personal Protective Equipment

Common Dust mask	
Respiratory protection for example, disposable, cartridge, air line, half or full face	
Eye protection for example, spectacles/goggles, shields, visors	
Hearing protection for example, ear muffs and plugs	

Hand protection for example, gloves and barrier creams	
Foot protection for example, shoes/boots	
Head protection for example, helmets, caps, hoods, hats	
Working from heights for example, harness and fall arrest devices	

Tips

Any person (Warehouse Picker, Forklift driver, Warehouse employee, Guest from other industry etc.) whoever is entering into the warehouse operation area (Storage location, Handling machine, equipment etc.) must wear Personal Protective Equipment all the time. Usage of PPE is much important considering the safe workplace.

UNIT 2.6 - Importance of Safety

Unit Objectives

At the end of this unit , participant will be able to:

1. Explain why safety is most important for warehouse operations
2. Describe how to ensure safety inside warehouse
3. Reveal the safety requirements to be followed in warehouse areas

2.6.1 Importance of Safety

Why safety is important and the importance of Personal Protective Equipment for a Warehouse Picker with some examples are depicted below for reference

<table>
<tr><td>  </td><td> 
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</table>

Display of Personal Protective Equipment and other safety guidelines for warehouse safety will

- Ensure Safety equipment is used at all times
- Eliminate any potential safety hazards
- Guide employee with clearly label designated hazardous zones
- Always use safe ergonomics and lifting techniques
- Promote Awareness in your warehouse

Returning PPE to respective storage: According to 5S principle "A place for everything, and everything in its place". PPE should be stored in such a manner that it is protected from factors which might degrade its performance. These factors include sunlight, heat, extreme cold, excessive moisture, chemicals, dust and physical distortion. Once the requirement of the PPE-Personal Protective Equipment is over or once the Inventory Controller has completed his operation, it is necessary to return any PPE -Personal Protective Equipment used to the respective storage racks

Fig 2.6.1 : Return PPE Shelf

Activity

Identify the which PPE equipment will be used for the below operations

1. Mixing chemicals _____
2. Mixing chemical by hand _____
3. Working in heights _____
4. Working in high decibel zones _____
5. Repairing batteries _____

UNIT 2.7 - Material Handling Equipment

Unit Objectives

At the end of this unit , participant will be able to:

1. Get knowledge on different types of Material Handling Equipment used inside the warehouse
2. Explain the importance of Material handling equipment in Inventory counting

2.7.1 Material Handling Equipment

There are different types of MHE-Material Handling Equipment are used for picking/ putaway different materials. An Inventory Controller needs to identify which MHE is required for him to carry out the counting operations. Sometimes he may even require more than one material handling equipment to complete the job. In an organized warehouse there is a dedicated place given to place all the material handling equipment as shown below

Fig 2.7.1: Material Handling Equipment

Let us see some of the MHE's used to pick different type of products in most of the warehousing industry.

2.7.2 HOPT-Hand Operated Pallet Truck

The HOPT is steered by a 'tiller' like lever that also acts as the pump handle for raising the jack. A small handle on the tiller releases the hydraulic fluid, causing the forks to lower. Most of the times pallet jacks are used to move and organize pallets inside a trailer, especially when there is no forklift truck access or availability

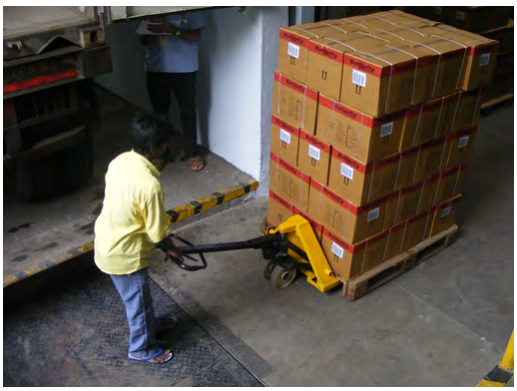


Fig 2.7.2: HOPT - Hand Operated Pallet Truck

2.7.3 BOPT - Battery Operated Pallet Truck

The BOPT offers a huge advantage over hand pallet truck with its quick and effortless loading and transporting features, the compact design with easy move in the most confined space and narrow aisle such as small warehouses and factories..

Fig 2.7.3: BOPT- Battery Operated Pallet Truck

2.7.4 Stackers

These are fairly light weighted truck with pedestrian stand on and ride on versions. These trucks are usually limited to height restrictions but they can operate in 90 degree turning aisles

Fig 2.7.4 : Stackers

2.7.5 Forklifts

A forklift is a powered industrial truck used to lift and move materials short distances. There are two types of forklift available in the market, one is the diesel operated forklifts and battery operated forklifts. An important aspect of forklift operation is that most have rear-wheel steering, which increases maneuverability in tight cornering situations

Fig 2.7.5 : Forklift

Many other Material Handling Equipment like Cranes, Conveyor belts, Industrial robot, ASRS-Automated storage and retrieval system etc. are used across the warehousing industry to some extent.

2.7.6 Inspecting MHE's-Material Handling Equipment

The Inventory Controller needs to ensure that whether he/she have sufficient material handling equipment to carry out the inventory counting operations. There might be problems in MHE maintenances, equipment break down, in-sufficient material handling equipment etc. In such cases the Inventory Controller needs to co-ordinate with the MHE supervisor for proper co-ordination and proper utilization of MHE. The Inventory Controller needs to have a backup plan in case of any challenges.

Fig 2.7.6: Using Reach Truck Cages

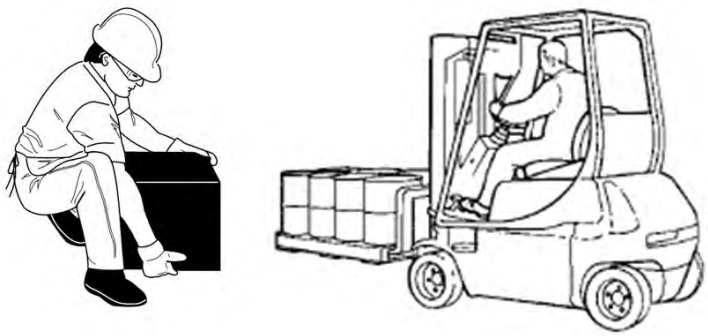


Fig 2.7.7: MHE Operator bring the pallet down which is not full for counting

Once the Inventory Controller has completed his operation and when he feels that there is no further need for MHE-Material Handling Equipment, it is necessary to return any MHE used to the respective storage places.

Fig 2.7.8: Forklift Parking Area

UNIT 2.8 - Maintaining General Safety and Discipline

Unit Objectives

At the end of this unit , participant will be able to:

1. Perform regular inspections inside the warehouse operation areas
2. Explain how to carry out regular warehouse maintenance activity
3. Identify unsafe work practices carried inside the warehouse and report to the management for appropriate actions

2.8.1 Safety and Discipline

Under the direction of the Warehouse manager and with safety, efficiency and customer service apriority, the Inventory Controller needs to adhere to safety standards in the overall counting operation and ensures the safe and effective counting of goods on time and without damage.

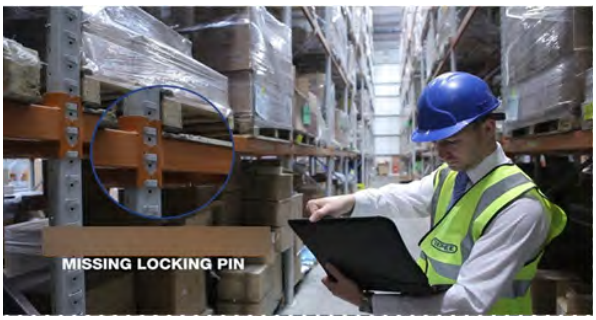
Sometimes the Inventory Controller needs to perform continuous inspection of all areas of the warehouse, identify unsafe working conditions and correct them accordingly for safe operations.

Warehouse Maintenance Management is a huge concept. As a responsible individual you need your warehouse to operate at its best capacity. Sometimes unfortunate things happen that can cause delays. Warehouse maintenance management is critical to maximize fulfillment and minimize downtime. The equipment needed to keep a warehouses running smoothly requires preventive maintenance so unscheduled failures are not incurred. From tracking inventory costs, to automated reordering, to bar-coding integration, Maintenance Connection will ensure that any warehouse operates seamlessly.

An Inventory Controller needs to co-ordinate with the warehouse supervisor to supervise warehouse maintenance by the following ways

- Create a Maintenance Plan
- Preventive maintenance and replacement schedules
- Keep Inventory in Check for MRO – Maintenance, Repair and Operations parts
- Involve Technicians to quickly solve the problems
- Check the conditions of equipment, storage racks and PPE during rounds

Continuous Inspection



Unsafe Work Practices

Fig 2.8.1: Unsafe Work Practices

It is also required to ensure that all the co-workers and other colleagues are using all the required Personal Protective Equipment (PPE) for safe working.

S.No	Attributes	Color	Helmet	Reflector Jacket
1	ERT	RED		
2	Visitor / SME / CE	BLUE		
3	ESH	GREEN		
4	Staff	ORANGE		
5	Worker	YELLOW		

Fig 2.8.2: Personal Protective Equipment

UNIT 2.9 - Safety and Security Procedures

Unit Objectives

At the end of this unit , participant will be able to:

1. Describe the organization's safety and security procedures in Inventory counting
2. Explain the Do's and Don't' s in Inventory counting process

2.9.1 Safety Procedures

The Inventory Controller should ensure Safety by;

- Maintenance of clutter-free environment: walking areas inside the warehouse and its surroundings are free of boxes, materials, electric cords, tools, and equipment against which people may stumble and fall
- Removal of garbage, debris, dirt, and oily materials that are a potential fire hazard. There should be enough trash cans inside and outside the warehouse for easy disposal of such items. Daily emptying of trash cans in covered outside bins
- To the extent possible, the warehouse is kept free of rodents and other pests to protect warehouse workers and stored commodities
- Prohibition of smoking in the warehouse, post no-smoking signs
- A clean washroom available to all staff and workers should be required to wash their hands before handling commodities, particularly if they are engaged in re-bagging activities
- Proper stacking of materials: If commodities are improperly stacked, they may endanger warehouse staff. It is recommended that when removing bags from the stacks workers start from the top row first. When stacking materials, height limitations should be observed as much as possible depending on warehouse size and commodity quantities. It is important to follow the stacking recommendations that are printed on the packaging boxes.

Fig 2.9.1: Safety and Security Procedures

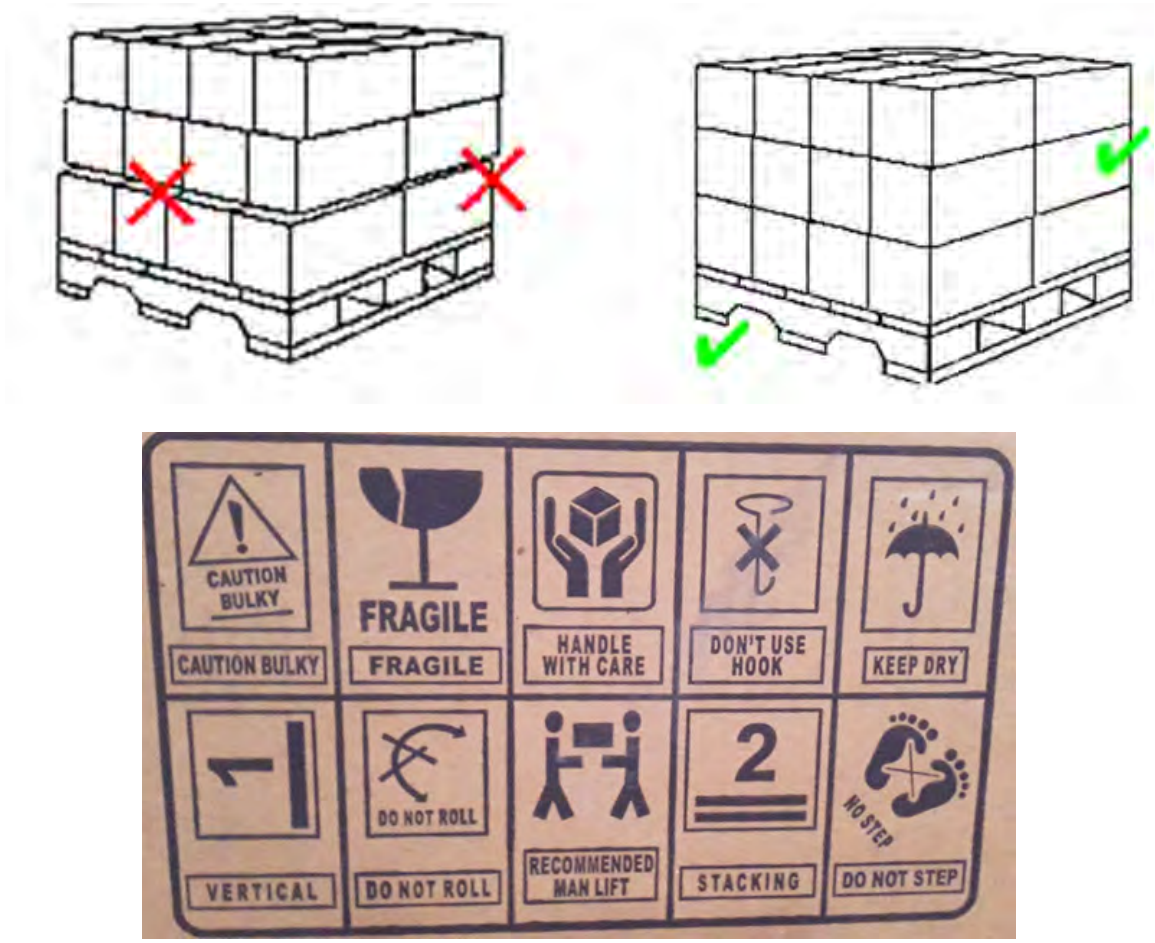


Fig 2.9.2: Signages

Notes

UNIT 2.10 - Types of Common Workplace Hazards

Unit Objectives

At the end of this unit , participant will be able to:

1. Visualize common workplace hazards that one might encounter inside warehouse
2. Explain the nature of the workplace accidents and its route cause
3. Describe the necessary precautionary care to be taken to prevent workplace hazards

2.10.1 Housekeeping

Some of the common risks that are identified by a warehouse supervisors are as follows;

Storage rack beam damage – This may due to poor maintenance or may be due to a forklift arm hitting the beam	
Storage rack beam damage	
Wet floor accidents	

Overhanging boxes and pallets – Improper put away and picking results in such storage and there might be a chance of box falling and cause material and man power damages	
Rope obstructing workforce and causing accidents	
Maintenance material or items dropping on the floor may leads to accidents	
Scrap materials on the floor may also leads to accidents	
Loading/unloading bay damages	

Demonstrate

1. Few common workplace hazard and how to evade workplace hazards

Notes

_____

_____

_____

_____

Summary

The individual in this role as an Inventory Controller Warehouse will need to perform counting process in the shop floor area / warehouse storage area. Considering this element we have discussed the different types of storage systems in warehouse with pictorial examples and how to report, record each and every process and operations. Material handling equipment are the important tool for a warehouse operations, this will ease the work of the efficient operations. Some of the commonly used Material handling equipment and its advantages are clearly depicted in this unit. Different forms of labels and coding used inside the warehouse and various technologies used in the warehouse operations is articulated in this unit. Some of the common workplace hazards that once might encounter inside the warehouse has been discussed in this unit for better understanding.

Exercise

1. _____ is the clothing&equipment worn by employees, students, contractors or visitors to protect or shield their bodies from workplace hazards.
2. Hard hat helmets are used to protect _____
3. In case of working from heights, one should use _____
4. What does this symbol represents  ?
5. What does this symbol represents  ?
6. What is HOPT _____ and BOPT _____
7. For counting items in full pallets stored in storage racks, an Inventory Controller has to make use of _____
8. List any 3 common type of workplace hazards

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Skill Development
Corporation
Transforming the skill landscape

LSC
Logistics Skill Council

3. Post Counting Activities

Unit 3.1 - Dealing with Damages and Losses
Unit 3.2 - Risk and Impact of Deviating Procedure/Work Instructions Unit 3.3 - Skills Essential for an Inventory Controller
Unit 3.4 - Occupational/ Environmental Health and Safety

LSC/N2107
(Part of - LSC/Q1124)

Key Learning Outcomes

At the end of this module , participant will be able to:

1. Explain the importance of housekeeping after completing warehouse operations
2. Realize how to deal with errors and damages
3. Brief about the importance of work instructions
4. Get knowledge on how to react to mock drills and evacuation plain
5. Know on Occupational/ Environmental Health and Safety
6. Distinguish various details on Material handling and ergonomics
7. Identify unsafe work practices carried inside the warehouse and report to the management for appropriate actions
8. Visualize common workplace hazards that one might encounter inside warehouse
9. Explain the importance of Personal Protective Equipment
10. Describe different types of Personal Protective Equipment and its uses
11. Reveal the safety requirements to be followed in warehouse areas
12. Explain the importance of Material handling equipment in Inventory counting
13. Perform regular inspections inside the warehouse operation areas
14. Describe the necessary precautionary care to be taken to prevent workplace hazards
15. Explain the escalation matrix for reporting the damages and losses
16. Identify the skills required for an Inventory Controller and how to react to peak and non-peak situations in order to complete the given tasks

UNIT 3.1 - Dealing with Damages and Losses

Unit Objectives

At the end of this unit , participant will be able to:

1. Know how to deal with damages identified during warehouse operations
2. Get knowledge on procedures to rectify the problems
3. Explain the escalation matrix for reporting the damages and losses

3.1.1 Damages and Losses

During the Inventory counting process the Inventory Controller might come across some damages and losses. This might be due to some discrepancies and damages to the goods while carrying the warehouse operations (Put away, Picking, Packing, Returns etc).The warehouse supervisor is an individual who is responsible for monitoring the entire operations carried by the workers on the shop floor. So it is the responsibility of an Inventory Controller to report to the Warehouse supervisor on these damages and losses.

There will be a procedure framed by the organization for dealing with loss or damages to goods. The individual as an Inventory Controller has to be well aware of these reporting procedure for safe and structured operations. The warehouse supervisor in turn needs to address the problems to the warehouse manager for corrective measures.

Fig 3.1.1: Calculating Damages and Losses

Cycle counting is the process of verifying the on-hand quantity of a specific number of stock products every day. It is the responsibility of the Inventory Controller to compare the actually counted numbers with the numbers in the stored items list to identify discrepancies if any and take appropriate actions accordingly.

Stock Code	Stock Description	UOM	Storage location	Stock level	Counted Qty	Difference	Need to Investigate ?
PM2000	Plastic Wrap	Rolls	AC4	100.00	91.00	-9.00	Yes
PM2005	Nut	Each	DB5	500.00	421.00	79.00	Yes
PM2015	Bolt	Units	BA2	200.00	200.00	0	No
RM1000	Iron Coil	Kg	AL8	50.00	50.00	0	No
RM1010	Centre cap	Kg	EB4	10.00	8.00	2.00	Yes
RM1020	Pin	Kg	CD3	10.00	7.00	3.00	Yes

Table 3.1.2: Inventory Counting Record

Investigating cycle count discrepancies can uncover procedural mistakes made during the warehouse operations, which includes:

- Wrong quantity taken to fill an order.
- Wrong product taken to fill an order.
- Products filled from the wrong stocking location.
- Stock put away in the wrong bin location.
- Units of measure confused or misrepresented.
- Data entry errors.
- Damaged material mixed with good stock.
- Material movement not properly recorded.

The Inventory Controller needs to discuss the findings of inventory cycle count with the DEO-Data Entry Operator (hereafter called as a Customer Service Representative) and update information on the system.

Fig 3.1.3: Updating the Damages and Losses

The Inventory Controller needs to update the missing item list, noting down the items which were reconciled and report to the management for further actions.

Unit 3.2 - Risk and Impact of Deviating Procedure/Work Instructions

Unit Objectives

At the end of this unit , participant will be able to:

1. Demonstrate the importance of Work Instructions
2. Cause and effect of deviating the Work Instructions

3.2.1 Risk and Impact of Deviating Procedure

Work Instructions are the most basic tool used in every business or organization to help an employee follow a sequence of steps. Poor Work Instructions could result in returned product, loss of materials, customer complaints, or liability issues.

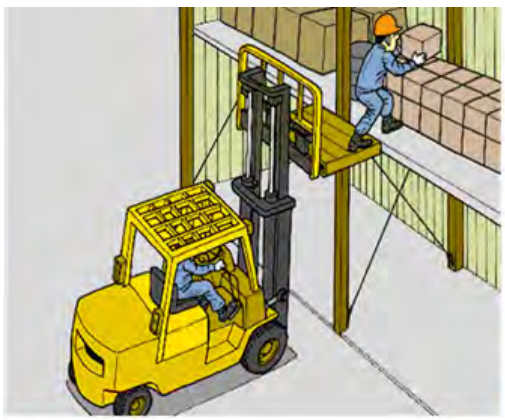
Here are some samples of Work Instructions

- Process step instruction
- Service steps
- Evacuation plan directions
- Process Checklists
- Safe assembly instruction
- Work standards
- Health instruction
- Safety instruction
- Work checklist
- Inspection instruction
- Labels
- Equipment maintenance
- Testing instructions
- Product specifications

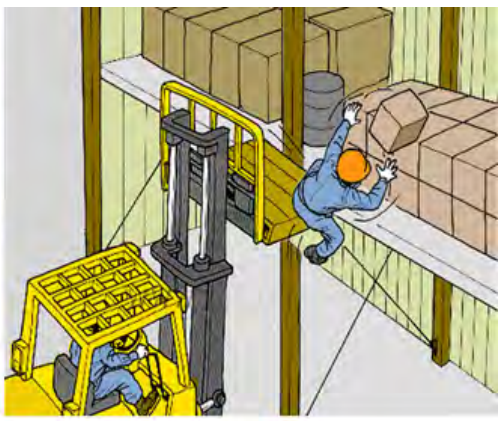
3.2.2 Samples of Ineffective Work Instructions

- An ineffective Work Instruction can result in non-conformances, losses of product and lost customers and revenue.
- An ineffective Work Instruction is confusing.
- It can have too much or too little information.
- A Work Instruction that gives an opportunity for many interpretations or multiple meanings will be implemented incorrectly.

Remember, once the training is completed, Work Instructions and procedures are what most employees depend on. There are many accidents recorded for not following defined procedures or work instructions in the workplace, some of them are as follows



Do not use Forklift for stacking materials



Workers should not be used for storage

Fig 3.2.1: Ineffective Work Instructions

Never allow stranger to travel in a forklift

Never carry a operation without your PPE Personal Protective Equipment

Fig 3.2.2: Ineffective Work Instructions

Demonstrate

1. Dos and Donts, in following Work Instructions

UNIT 3.3 - Skills Essential for an Inventory Controller

Unit Objectives

At the end of this unit , participant will be able to:

1. Describe the skills required for an Inventory Controller
2. Explain how to react to peak and non-peak situations in order to complete the given tasks
3. Identify the areas of waste inside the warehouse operation

3.3.1 Inventory Controller

Language should not be a barrier in communication. Most of the times we would be working along with contract workers, labors who doesn't have much English knowledge. Thus the individual who will be working as an Inventory Controller needs to know and understand how to communicate in both English and in local language.

Most of the times the individual needs to provide advice and guidance to peer group and juniors on any updates and delays in schedules, on technology part etc.

Fig 3.3.1: Inventory Controller

3.3.2 Areas of Waste in Warehouse environment

A good warehouse operation run efficiently only by managing time. The less time and effort that's wasted getting a task done, the more healthy the bottom line will eventually look. As a warehouse supervisor the individual on this job needs to know and understand how to manage time and prioritize the tasks within the scheduled time limits

Areas of waste often identified in a warehouse environment:

Transportation/Conveyance: Unnecessary internal transport that results in added cost and lower productivity such as storing fast moving inventory in the back of the warehouse.

Inventory: Any activity that results in excess - or lack - of inventory or placed in a different location where required. Poor visibility or inaccurate information over the existing inventory in the warehouse management systems will impact the preparation of orders and ultimately result in stock being unavailable for sales or shipping, thus increasing the frozen assets in the company.

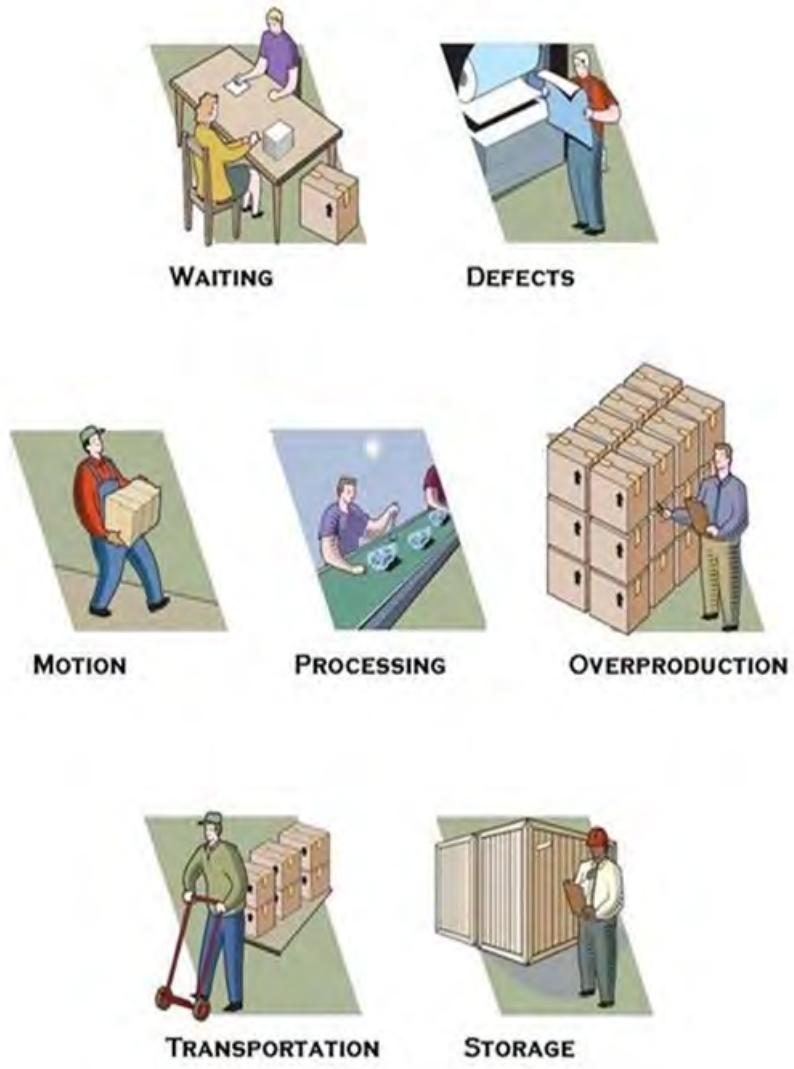


Fig 3.3..2: Types of Waste

Movement: Unnecessary movement of people, such as walking, reaching or stretching, due to inefficient layouts, lack of ergonomic workstations, manual picking that involves more than just one 'touch' per item to prepare the order and make it ready to be shipped or picking trails not optimized.

Waiting: People, systems and material delays due to wasteful processes. Waiting for picking lanes replenishment, material or shipping approvals, waiting for data or waiting for correct materials and services to arrive due to poor replenishment planning.

Defects: Activities that cause rework, returns or adjustments, such as customer guidelines which require too many manual operations, or delayed customer instructions which are received after the order was prepared, billing mistakes, inventory discrepancies, or materials missing, damaged, defective, wrong or mislabeled.

Space: The use of space that is less than optimal, such as low or excessive fill-up rates of trailers, containers or cartons, inefficient use of warehouse space, racking systems not aligned to the kind of product and expected flow.

Notify the manager regarding any concerns faced during the day for appropriate actions. Complete any forms as required by management.

Fig.3.3.3: Inventory Controller Reporting to Manager on Challenges

As mentioned earlier Inventory counting is the most critical operation since it completely deals with cost of the goods, an Inventory Controller needs to gear himself for achieving the targets and goals set by an organization. He needs to adjust according to volume, capacity and manpower during peak and non-peak hours. Below mentioned sports example depicts the way how an individual playing a role of an Inventory Controller should react/work during peak and non-peak hours

Inventory Counting during Peak hour

Inventory Counting during Normal hour

Inventory Counting during Non-Peak hour

Fig.3.3.4: Inventory Controller Flexibility According to Work

Notes

UNIT 3.4 - Occupational/ Environmental Health and Safety

Unit Objectives

At the end of this unit , participant will be able to:

1. Get awareness on general safety procedures
2. Explain the details on evacuation plan and safe assembly point
3. Get awareness on various safety mock drills and how to react during emergency situations

3.4.1 Health and Safety

Warehouse operations can present a wide variety of potential hazards forthe people working in the warehouse. There are several health and safety issues to be concerned with if you are working in a warehouse and each staff member should be well aware of all the safety and evacuation procedure in case of any accidents or disasters

Evacuation plan and fire extinguishers: Emergency evacuation is the immediate and urgent movement of people away from the threat or actual occurrence of a hazard. Examples range from the small scale evacuation of a building due to a storm or fire to the large scale evacuation because of a flood, threat because of terror attach or approaching weather system..

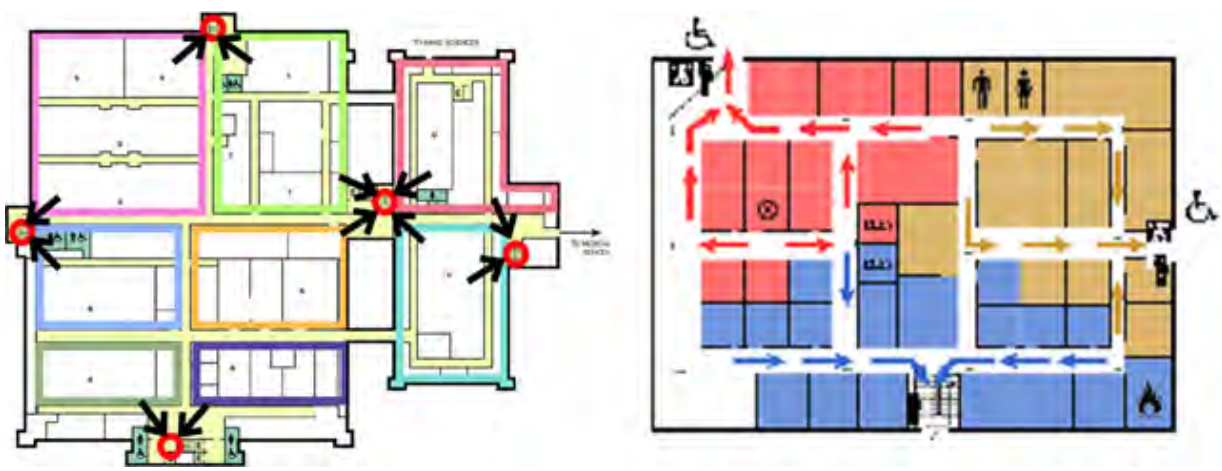


Fig 3.4.1: Evacuation Plan and Fire Extinguishers

The staffs/workers in the warehouse have to be familiar with the warehouse section of Safety and Security plan. The supervisor needs to ensure that warehouse personnel have read the warehouse evacuation plan and are trained in fire safety.

Safe Assembly point: An Assembly Point is a predetermined safe location outside the building. It is at this location that all occupants of the building must report to upon evacuating the building in case of an alarm of fire or any other emergency.All occupants should evacuate the building by the nearest exit to the outside of the building and then proceed to the Assembly Point.

Fig 3.4.2: Emergency Assembly Point

First aid mock drills: Caring for injured or ill persons in the work place until they can receive professional medical careis an important skill for every person. With some knowledge of first aid, a person can provide immediate care and assistance to someone who is hurt or who becomes ill. First aid drills can help prevent infection and serious loss of blood. It could even save a limb or a life.

Fig 3.4.3: First aid mock drills

Scan the QR code to watch the related videos

Warehouse health & safety hazards

https://www.youtube.com/watch?v=sTMDBAV8FU0

Safety hazards

https://www.youtube.com/watch?v=12o1cjci7fI

Notes

Summary

The main objective of this unit deals with skills required for the Inventory Controller and the necessary record updation. The unit clearly explain the reporting structure and procedures for damages and losses incurred during warehouse operations. Various documents that might be necessary during the warehouse operations is explained in detail for better understanding. Importance of work instructions and sample dos and donts in following work instructions are given with pictures for clear understanding. Important aspects of environmental health and safety is explained clearly with pictorial examples for better understanding.

Exercise

1. To whom an Inventory Controller needs to report on damages and losses?
2. _____ is the process of verifying the on-hand quantity of a specific number of stock products every day.
3. For updating counted inventory to whom does the Inventory Controller communicate to?
4. List any 5 samples of work instructions
5. What are the Inefficiencies of Work Instructions?
6. What is a safe assembly point

Scan the QR code to watch the related videos

How to create simple inventory system in excel

https://www.youtube .com/watc h?v=Hlj4iENANnQ

Types of Inventory

https://www.youtu be.com/watc h?v=5zAMnBSXyDo

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4. Employability Skills

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Click the below units for content

Unit 4.1 - Employability Skills 120 hours(part-1)
Unit 4.2 - Employability Skills 120 hours (part-2)

ES 120 hours(part1)

ES 120 hours(part2)

DGT/VSQ/N0104

Glossary

Advance Shipping Notice (ASN)	A document sent by a supplier to a customer to indicate when an order will be shipped. ASNs are usually transmitted electronically.
Advanced Planning and Scheduling System (APS)	A type of software that uses mathematical models and related techniques to find optimal solutions to complex production and supply problems.
Airway Bill	A document that accompanies goods shipped by an international courier to provide detailed information about the shipment and allow it to be tracked. The air waybill has multiple copies so that each party involved in the shipment can document it.
Available to Promise (ATP)	The inventory status of a product that is currently on hand and available for immediate shipment.
Backhaul	A shipment that moves in the opposite direction along a route just taken by a vehicle in making a delivery, allowing it to make use of its hauling capacity on the return trip.
Bill of Lading	A document listing all the goods contained within a shipment and stating the terms governing its transportation. A bill of lading is a legal document between the shipper of a particular good and the carrier detailing the type, quantity and destination of the good being carried. The bill of lading also serves as a receipt of shipment when the good is delivered to the predetermined destination.
Bill of Materials (BOM)	A listing of the parts and materials that become part of a finished product, organized in a hierarchical structure that reflects their components, subassemblies or intermediate forms.

Bullwhip Effect	An alternative name for demand amplification
Carrier	A company that specializes in transporting goods.
Carrying Cost	The cost of holding goods in stock. Expressed usually as a percentage of the inventory value and includes cost of capital, warehousing, depreciation, insurance, taxation, obsolescence, and shrinkage. Also called inventory cost or holding cost.
Cartons	Cartons are not standardized unit but may generally refer to a rectangular box that weighs around 2kgs to 22kgs. It is palletizable, conveyable and generally can be handled by one person.
Classification of Warehouses Based on Customer Groups	Retail Distribution center: This warehouse supplies product to the retail stores. A typical order may comprise hundreds of items and the warehouse might serve hundreds of stores as the flow of product is huge
	Service parts distribution center: It is the most challenging one among all the other facilities to manage. They hold spare parts for expensive capital equipment like automobiles, aerospace, medical equipment etc.
	3PL (Third Party Logistics) warehouse: A company may outsource its warehousing operations to a third party or such warehouses that may help them in saving a percentage of warehousing cost, which likely to occur if it is done on their own.

Classification of Warehouses Based on The Ownership and Usage	Private warehouses: Such warehouses are owned and managed by the firm for storing the items that they produce. Generally companies would concentrate more on such storage facilities and so it would be a highly secured environment.
	Public warehouse: These warehouses are owned and managed by private parties (individual or a partnership firm). To start such warehouses, a license from government is required. It would be relatively an economical option to store goods.
	Government warehouse: These warehouses are owned and managed by Government of a state or country. In India we have CWC (Central Warehousing Corporation), SWC (State Warehousing Corporation), FCI (Food Corporation of India) etc. Both Government and private firms can use this warehouses for storing their goods
	Bonded warehouses: These warehouses are owned, managed and controlled by government as well as private agencies. Bonded warehouses are used to store imported goods for which import duty is yet to be pain. In case of imported goods the importers are not allowed to take away the goods from the place till such duty is paid. These warehouses are generally owned by dock authorities and found near the ports.
Consignment Inventory	An inventory control practice in which a supplier maintains ownership of inventory on a customer's site until the inventory is sold, monitoring its level and replenishing it as needed.

Consumer	The individual or organization who acquires a product in order to use it for its intended purpose rather than reselling it to someone else. A consumer becomes ultimate customer.
Cross Docking	Products are moved directly from receiving docks to shipping docks, with no intermediate storage. Two steps could be skipped in cross docking: Put away and Picking. Also called as “X docking”
Customer	The individual or organization that purchases a product or service in a supply chain transaction.
Cycle Count	A cycle count is an inventory auditing procedure, which falls under inventory management, where a small subset of inventory, in a specific location, is counted on a specified day at specific frequencies.
Cycle Stock	The amount of inventory required to support the operations of a facility, with no reserve to cover unforeseen events. Refer: safety stock.
Cycle Time	This term is used to denote the interval between successive repetitions of a cyclical process, as in the cycle time of a machine or assembly line.
Dependent Demand	Demand for item (called lower level or child item) that does not occur until there is a demand for another item (called higher level or parent item). Also, where demand for the higher level or parent item can be satisfied only if the lower level or child items are available.

Distribution Center (DC)	A storage facility in which goods may be staged, sorted, assembled, packaged, and/or stored temporarily as they pass through a particular segment of a supply chain. Distribution centers differ from warehouses primarily in the focus on facilitating distribution rather than holding inventory.
Distribution Network	The set of facilities and lanes that transports finished goods from a production facility to the downstream customers of that facility.
Electronic Data Interchange (EDI)	A set of protocols for transferring information regarding demand and supply over private electronic networks.
Enterprise Resource Planning System (ERP)	A suite of software that combines tactical-level applications for production and distribution planning with execution systems for order management, inventory control, accounting, Finance, HR and related operations
Fast Pick Area	The fast-pick area of a warehouse is used to fill orders for the most popular items in a facility. A forward pick area increases the pick density by concentrating a large number of SKU's within a small physical space.
FIFO	First In First Out : A type of inventory classification directs picking from the oldest inventory first
Finished Goods (FG) Inventory	The store of completed products on the output side of a production facility.
Full Pallet	A pallet of goods that contains only a single kind of product.

Full Truckload Shipment (FTL)	A shipment of goods that consumes the capacity of a truck, requiring the truck to be dedicated to the shipment.
Handling Marks	These are instructions given on the boxed for handling purposes at different stages during transportation starting from warehousing till delivery to the importer's destination.
Independent Demand	The demand for a product on the part of its end consumers. So named because it is the ultimate source of demand, and doesn't depend on a source of demand further down in the supply chain.
Information Marks	These convey additional information such as buyer's code number, quantity, dimensions and information for storage of the boxes. This information need not be given on the transport documents.
Inter-Modal Transportation	The practice of using more than one medium of transportation, such as rail and ship, within a single shipment.
In-Transit Inventory	Inventory that is currently in a transportation lane between two facilities.
Inventory	Inventory is the raw materials, work-in-process goods and completely finished goods that are considered to be the portion of a business's assets that contain economic value that are ready or will be ready for sale
Inventory Turnover Ratio (ITO)	A measure of how quickly inventory is used once it arrives at a facility, calculated as the annual sales of a product divided by its average inventory level. It can also be calculated as Cost of Goods Sold (COGS) divided by Aggregated average Inventory.

Item Fill Rate	The percentage of line items, calculated across all orders, for which the full quantity of the requested product is available for immediate shipment. Percentage of customer or consumption orders satisfied from stock at hand. It is a measure of an inventory's ability to meet demand. Also called as demand satisfaction rate.
Just-In-Time Manufacturing (JIT)	The practice of reducing inventory levels by scheduling materials to arrive just as they are needed in the production process.
Less-Than-Truckload Shipment (LTL)	A shipment of goods that consumes only a fraction of the capacity of a truck, requiring that the truck be shared with other shipments.
LIFO	Last In First Out: Opposite to FIFO
LSP	LSP – Logistics Service Providers: Is a company that provides management over the flow of goods and materials between points of origin to end-use destination. The provider will often handle shipping, inventory, warehousing, packaging and security functions for shipments.
Merge in Transit	A technique in which separate shipments are combined en route and delivered as a single unit
MHE	Material Handling Equipment can be defined as the set of all pieces of equipment that make possible the physical movement within the warehouse. Example: Forklifts, Stackers, HOPT-Hand Operated Pallet Trucks, BOPT-Battery Operated Pallet Trucks etc.

Mixed Pallet	A pallet of goods that contains two or more kinds of products.
Mode of Transportation	The medium by which a vehicle moves products from one facility to another. The primary modes are truck, rail, boat, barge, airplane, and pipeline
On-Time Delivery (OTD)	A measure of fulfillment effectiveness, calculated as the percentage of orders that arrive at the customer site within the agreed-upon time.
Order Cost	The fixed cost of placing an order, follow up, regardless of the quantities involved.
Packing Slip	A document enclosed with a shipment that lists the goods included in that shipment together with information about the origin, destination, and means of transport
Pallet	A pallet is the structural foundation of a unit load which allows handling and storage efficiencies. A Pallet is the common unit of material stored in the warehouse as they are standardized to handled as a single unit. Generally in a warehouse there are large sizes of packaging called pallets which is a wooden or plastic base are generally used.
Perfect Order	A measure of fulfillment effectiveness, calculated as the percentage of orders that ship complete, arrive on time, contain the correct goods, are free of damage, and have accurate paperwork.
Periodic Review	An inventory replenishment policy in which inventory is counted at fixed intervals and orders are placed whenever the current count falls below a set threshold.

PO – Purchase Order	A purchase order (PO) is a commercial document issued by a buyer to a seller, indicating types, quantities agreed prices for products or services. This also includes the desired date on which the product or services is needed.
Primary Packaging	The level of packaging that immediately encloses a product, such as a bottle, box, can, or blister pack.
Raw Materials Inventory	The inventory of incoming materials maintained at a production facility for use in the production process.
Reorder Point (ROP)	The level or count at which the inventory for a particular product is replenished.
Replenishment Lead Time	The interval between the time a company places an order for raw materials and the time it receives those materials.
RFID	Radio-Frequency Identification is the use of radio waves to read and capture information stored on a tag attached to an object. A tag can be read from up to several feet away and does not need to be within direct line-of-sight of the reader to be tracked
RFID Scanner	A radio frequency identification reader (RFID reader) is a device used to gather information from an RFID tag, which is used to track individual objects. Radio waves are used to transfer data from the tag to a reader
Safety Stock	The amount of inventory that must be maintained in order to handle fluctuations in supply and demand.

Secondary Packaging	The level of packaging that groups a standard number of primary packages together for convenience in handling, storage, and sales. The most common form of secondary packaging is the carton.
Shipping Marks	Theses contains all information that are required to do proper delivery at the right destination. These marking are as same as in the transport documents.
Shrinkage	The reduction in inventory that occurs through pilferage, misplacement, loss of moisture and related forms of attrition.
SKU	A SKU-Stock Keeping Unit is the simplest form and smallest physical unit of a product handled by an organization
Space Utilization	Space utilization tells us how well we use the existing storage capacity, measuring the impact of our choices of material handling equipment, labor, methods, procedures and systems support.
Stock-Out	The situation in which there is not enough inventory on hand to fill a received order.
Storage Facility	A facility that exists primarily to hold goods in anticipation of future demand. Some storage facilities may also perform final assembly and packaging in order to move these operations closer to the end consumer as Value addition.
Supplier	The organization that provides a product or service in a supply chain transaction.
Supply Chain	A network of facilities and transportation that transforms raw materials into finished products and delivers those products to consumers.

Supply Chain Management (SCM)	The set of activities involved in designing, planning, and executing the flow of demand, supply, and cash across a supply chain.
Trans-Shipment	A technique in which goods are shipped laterally within the same echelon of a distribution system, such as between warehouses or between retail stores.
Types of Warehouses	Raw Materials warehouses: This type of warehouse is used for storing the raw materials that are stored for used in the production process.
	Semi-finished or WIP-Work In Progress warehouses: The materials that have undergone some processes of production and will be processed further before reaching market are stored in these warehouses.
	Finished goods warehouses: This is an ultimate warehouse that is used for serving the market demand. These warehouses are located strategically considering the market reachability and access to different modes of transportation.
	Order fulfillment centers: This is actually one of the major roles of a warehouse, acting as a fulfillment center that is intended to meet the demand from its various customers.
Unit of Measure or Quantity	Unit of Measure is the criterion based on which you measure the quantity of the material. Unit of measure is a value for a physical size. Example 'Each', 'Centimeter', 'gram' etc

Value Added Services (VAS)	Value Added Services (VAS) is a common terminology used in Warehouse context which can be any service that a Warehouse provides to the clients in addition to performing traditional functions of a warehouse. VAS includes labelling, kitting, sorting, low level assemblies etc.
Vendor-Managed Inventory (VMI)	An inventory control practice in which a supplier monitors and replenishes inventory on a customer's site.
Warehouse	A storage facility that holds controlled quantities of goods in a particular location within a supply chain.
WMS	WMS-Warehouse Management System is a software application that supports the day-to-day operations in a warehouse.
Work-In-Process Inventory (WIP)	Inventory currently being used in a production process or held for use within the production area. Includes all materials that have been removed from raw materials inventory but not yet deposited in finished goods inventory.

Notes

Annexure – QR Codes

S. No	Chapter No.	Unit No.	Topic Name	URL	Page No.	QR Code (s)
1	CHAPTER 1 - Prepare for Inventory Counting	UNIT 1.2 - Phases in Inventory Counting	1.2.1 Physical Inventory Counting	https://www.youtube.com/watch?v=Ue8oCPQjU8o	5	Physical Inventory Count
2	CHAPTER 2 - Verify Physically Counted Numbers and System Numbers	UNIT 2.2 - Knowledge and Understanding Organizational Products	2.2.1 Labels & Signages	https://www.youtube.com/wat	20	Labels & Signages
3	CHAPTER 2 - Verify Physically Counted Numbers and System Numbers	UNIT 2.2 - Knowledge and Understanding Organizational Products	2.2.6 Voice Picking	https://www.youtube.com/watch?v=KWzctn8EjmA	23	Pick to Light Demonstration
4	CHAPTER 2 - Verify Physically Counted Numbers and System Numbers	UNIT 2.3 - Labels and Coding Systems	2.3.1 Types of Warehouse Labels	https://www.youtube.com/watch?v=1TC3_VkK0H4	25	Packaging and Labelling Guidelines
5	CHAPTER 2 - Verify Physically Counted Numbers and System Numbers	UNIT 2.3 - Labels and Coding Systems	2.3.1 Types of Warehouse Labels	https://www.youtube.com/watch?v=gSn3COOJBkY	25	How to Label

6	CHAPTER 2 - Verify Physically Counted Numbers and System Numbers	UNIT 2.3 - Labels and Coding Systems	2.3.1 Types of Warehouse Labels	https://www.youtube.com/watch?v=YNgRqt4Q8wk	25	How to Pack, Seal & Label Shipments
7	CHAPTER 2 - Verify Physically Counted Numbers and System Numbers	UNIT 2.5 - Personal Protective Equipment	2.5.1 Personal Protective Equipment	https://www.youtube.com/watch?v=kcM9u4heDVk	48	PPE
8	CHAPTER 3 - Post Counting Activities	UNIT 3.4 - Occupational/ Environmental Health and Safety	3.4.1 Health and Safety	https://www.youtube.com/watch?v=sTMDBAV8FU0	57	Warehouse health & safety hazards
9	CHAPTER 3 - Post Counting Activities	UNIT 3.4 - Occupational/ Environment al Health and Safety	3.4.1 Health and Safety	https://www.youtube.com/watch?v=12o1cjci7fI	57	Health & safety hazards
10	CHAPTER 3 -Post Counting Activities	UNIT 3.4 - Occupational/ Environment al Health and Safety	3.4.1 Health and Safety	https://www.youtube .com/watch?v=Hlj4iENANnQ	59	How to create simple inventory system in excel
11	CHAPTER 3 - Post Counting Activities	UNIT 3.4 - Occupational/ Environment al Health and Safety	3.4.1 Health and Safety	https://www.youtu be.com/watch?v=5zAMnBSXyDo	59	Types of Inventory

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