Unit 3

Warehouse Management

Unit-3: Warehouse Management				
Location	**Learning Outcomes**	**Knowledge Evaluation**	**Performance Evaluation**	**Teaching Training Method**
Session - 1 : Loading, Unloading and Handling of Goods in Warehouse				
Classroom different type of warehouses.	✡ Demonstrate the loading and unloading procedure.	✡ Fundamental concept of loading and unloading of goods in warehouse.	✡ Explain the methods of loading and unloading.	Lecture case work, exercise, activity, projects, group work.
	Session - 2 : Stacking of Goods			
	✡ Describe the concept of stacking method of goods in warehouse.	✡ Significance of stacking methods of goods in warehouse.	✡ Explain the process of stacking of materials in warehouse. ✡ Differentiate between LIFO and FIFO.	
	Session - 3 : Retrieval of Materials			
	✡ Identify the method of retrieval of material.	✡ Technical methods of retrieval of material.	✡ Define retrieval and advantage of automated retrieval system.	
	Session - 4 : Warehouse Activities Kitting, Binning etc.			
	✡ Identify skills involved in warehouse activities.	✡ Concept of kitting and binning as warehouse activities.	✡ Define kitting and its advantages and what are the activities of warehousing.	

	Session - 5 : Documentation in Warehouse Activities			
	✡ Develop the skill of documentation in warehouse.	✡ Relevance of documentation in warehouse.	✡ Explain mandatory documentation in warehouse.	
	Session - 6 : Importance of Security & Fire Safety at Warehouse			
	✡ Apply the measure of security and fire safety at warehouse.	✡ Steps of security and fire safety at warehouse.	✡ What are the security measures of warehouse.	

Session 1: Loading, Unloading & Handling of Goods in Warehouse

We need different type of goods in our day-to-day life. We may buy some of these items in bulk and store them in our house. Similarly businessman also needs a variety of goods for their use. Some of them may not be available all the time.

Figure 1: Air Cargo Warehouse

But they need those items through out the year without any break. Warehouse is a place where consignments are kept from the time of production or purchases until its need for consumption or sales. The place where goods are kept is called warehouse. The person incharge of warehouse is called warehouse keeper.

Types of Warehouses

Warehouse is the most common type of storage space, although there are other forms also. Some warehouses have large and spacious buildings to enable unloading of goods from truck and loading of goods to the customer at the same time. Different types of warehouses are -

A) Private Warehouse

The type of warehouse is owned and operated by suppliers and resellers to use in their own distribution activities. For example, a large retail network provides a warehouse to store them or wholesaler operates a warehouse where he receives and distributes the product.

B) Public Warehouse

Public warehouse is essentially space that can be leased to address the needs of the distribution in the short term. Retailers who have their own warehouses are sometimes looking for additional storage space if there are not sufficient warehouse capacity or if they make a purchase product in large numbers with certain grounds. For example, retailers may order additional items to maximize sales in the store or when there are price promotions from suppliers if you buy in bulk.

Figure 2: Public Warehouse

C) Automatic Warehouse

With advances in computer technology and robotic many warehouses now have automated capabilities. Stages of automation includes use of conveyor belt for transporting goods that require fewer people to handle the storage activities.

D) Climate Controlled Warehouse

Climate controlled warehouse - warehouse storage to handle various kinds of products with special loading, unloading & handling of goods in warehouse handling conditions such as a freezer to store frozen products and humidity environment.

E) Government Warehouse

The warehouses which are owned managed and controlled by central or state government or public corporation or local authorities. Both government and private enterprises may use these warehouse to store their goods. Central warehousing corporation of India, state ware housing corporation and food corporation of India are example of agencies maintaining government Warehouses.

F) Bonded Warehouse

These warehouses are owned managed and controlled by government as well as private agencies. Private bonded warehouses have to obtain license from the government. Bonded warehouse are used to store imported goods for which import duty is yet to be paid. In case of imported goods the importers are not allowed to take away the goods from the port till such duty is paid. These warehouses are generally owned by dock authorities and found near the ports.

Figure 3: Bonded Warehouse

G) Co-operative Warehouse

These warehouses are owned managed and controlled by co-operative societies. They provide warehousing facilities at the most economical rates to the members of their society.

Introduction

Transport Company requires loading and unloading services from beginning to end. Loading and unloading of the goods will take place under the guidance of skilled labour that will make sure that safety of the goods remains intact during the process. We take full

responsibility for the safe transportation right from the customer's doorsteps to the final designation. Loading and unloading of the goods is of huge importance, proper coordination and sequence should be followed to maintain extra precautions for every household and other valuable items. Carton is especially popular for safety conveying items such as furniture hardware, electronic equipments, etc. Clothing is placed carefully into hanging wardrobes or flat wardrobes. Crates and casings are built specifically for items that require special protection during international transport. The result comes in the form of the best possible output and the utmost satisfaction of the customers.

1.1 Loading of the Goods

In warehouse loading process of goods is done for outward movement, it is done as per the instructions of customers or requirement for the onward transport process.

Precautions: Certain precautions are absolutely necessary before, during and after loading the vehicle.

A) Before Loading the Vehicle

Before the loading is commenced, care should be taken to select a suitable vehicle for loading of the consignment.

- The vehicle should not be in damage conditions.
- If commodities are likely to be damage by rain water, then when they are to be loaded, it should be seen that the vehicle (truck) is water proof.
- In case of open vehicle or truck it should be ensured that the drainage holes are kept open and free from dirt to allow water to drain off.
- The vehicle or truck floor should be thoroughly cleaned and dried before loading is commenced, because truck floors contaminated by oil or other Bitumen can damage the goods.

B) During the Loading Process

- Loading of the goods in a truck should be done in such a way that the truck space is fully utilized. Every effort should be made to load the truck as near to the authorized carrying capacity as possible.
- The loading should be done in a scientific manner which means that the bags and other contents in the truck should be so stacked and the layers there of so arranged that maximum load can be loaded and the contents are not likely to shift in transit.

- Crates or baskets of glass ware, perishable and other fragile goods must not be loaded under heavy packages, any negligence in this regard can result in preferment of claims arising out of damage to the consignment.
- Wet or offensive goods should not be loaded with consignment that would get damaged.

C) After Loading the Truck

- A tally of the consignment loaded into a truck is maintained in the loading register which is an important record to be consulted in case of deficiency message being received from the destination station.
- A summary of the packages loaded in a truck along with the transit invoice or challan are placed inside the truck or handed over to the truck driver.

1.2 Unloading

As soon as inward loaded trucks are received they should be placed in positions for unloading after making necessary entries in the inward consignment register.

Process of Unloading

A) Entries in the unloading tally book: Tally book is maintained to enter the details of the number of packages and consignments unloaded from each truck. The tally is to be made by actual count of packages as unload or where practicable or by counting of the packages in a truck before unload.

B) Examination of consignment: The unloading staff must carefully examine each and every package unloads from a truck to ensure that the packages are in sound condition and there are no signs of any damage, deficiency or pilferage. Unloading staff must ensure that the total number of packages unload should be same as shown in unloading register or as per the challan.

C) Excess or unconnected packages or short: In case some excess, unconnected or short packages according to the challan or loading tally book are unloaded from the truck, all particulars marks etc shown on the packages should be noted and the loading station and forwarding station notified by mobile, sms or e-mail immediately. On receipt of instructions of the last loading station or forwarding station the excess or unconnected packages should be disposed of accordingly.

D) Entries in the damage and deficiency register: Any damages or deficiency found in a consignment or truck should be notified to the loading station. The following information must be furnished in the damage and deficiency register.

(i) Position of the package in the truck as found at the time of unloading.

(ii) Invoice weight.

(iii) Weight found on reweighting.

(iv) In case of damage by water it should be clearly mentioned whether truck was found to be watertight by visual test or not from where the water entered the truck.

(v) In case of leakage of oil consignment it should be mentioned whether at the time of unloading the truck was showing leakage signs, whether tins in the truck were disturbed and whether proper tonnage was used or not.

1.3 Handling of Goods in Warehouse

It can be stated that handling of goods in warehouse is branch of engineering that deals with the movement of goods between two or more different points that is physical transfer of product / work in progress / finished goods or any material from one place to another place point.

Tompkins and White (1984) defined material handling as a system which uses the right method to provide the right amount of the material at the right place at the right time in the right sequence in a right position, in the right condition and at the right cost.

Objectives

- To protect goods from deterioration, pilferage, breakage, damages during movement.
- To provide a method for loading of goods.
- To provide easy, speed cost reduction method in comparison to manual handling.
- To provide improved logistics services to the customer.

A) Principles of Materials Handling

If material handling is designed properly, it provides an important support to the production process. Following is the list of principles which can be used as guide for designing material handling system.

- Planning: A plan is a prescribed course of action that is defined in advance of implementation. In its simplest form, a material handling plan define the material and the moves (when and where) together.
- Standardization: Material handling method, equipment controls and software should be standardized within the limit of achieving overall performance objectives and without sacrificing the needed flexibility and modularity. Standardization means less variety and customization in the method and equipment employed.
- Simplification principles: Simplify handling by reducing eliminating or combing unnecessary movement and / or equipment.

- Space utilization principle: Make optimum use of the available space or building.
- Safety principle provides suitable methods and equipments for safe handling during course of action.
- Performance principle determines handling performance effectiveness in terms of expense per unit handled.

B) Types of Material Handling Devices (MHDs)

There are number of different types of material handling devices (MHDs) most of which move material via material handling path on the shop floor. The choice of specific MHDs depends on a number of factors including cost, weight, size and volume of the loads, space availability of work stations and requirements. Material handling equipment can be categorized under the following heads.

1. **Mechanized Handling Systems:** There are number of mechanized handling systems which are used by different industrial sectors in warehouses & some of the major systems are as follows:

   - **Fork lift trucks**

     The fork lift trucks are one of the most commons mechanized handling systems at the advent of the pallets and containers designed to accommodate fork lines that could lift them. Fork lift trucks comes in various configurations, such as high flow lifting low / medium high load capacity, fast / slow movement.

   - **Conveyors**

     Conveyors are fixed path MHDs in other words conveyors should be considered only when the volume of parts of material to be transported is large and when transported material is relatively uniform in size and shape, depending on the application there are many types of convey or accumulation conveyor, belt conveyor, bucket conveyor, etc.

Figure 4: Conveyors

   - **Palletizes**

     Palletizes are high-speed automated equipment used to palletize containers coming off production or assembly line. With an operator friendly touch screen controls they palletize at the rate of hundred cases per minute. It is commonly used in loading, unloading and shifting of containers in warehouse.

Figure 5: Palletizes

Hoist Cranes & Jibs: These MHDs are preferred when the parts to be moved are bulky and there is abundant room to transport bulky material. The movement of material in the overhead space does not affect production process and worker in factory. The main disadvantages of these MHDs are that they are expensive and time consuming to install.

Figure 6: Hoist Crane

Walker Rider Pallet Trucks: These trucks provide low cost effective methods of general material handling utility. Application of walker rider are loading and unloading of goods. Shuttling loads over longer transportation distance throughout the warehouse.

Towlines: Towlines consist of either in floor or overhead mounted cable or drag devices. They are utilized to provide continuous power to four wheel trailers. The application of towlines is for order selection, order selectors place, merchandise on four wheel trailers.

Carousels: Rather than requiring the order selector to go to the goods storage location in the warehouse the carousel moves inventory to the order selector. A carousel consists of a series of a bins mounted on an oval track or rack. There may be multiple track levels allowing for very high density carousel storage. The most common use of the carousels is selection of packages in pack, repack and service parts.

2. **Semi Automated Handling System:** There are number of semi-automated handling systems that are used in warehouse, depending on their need and requirements. Some of the major ones are as follows:

   - **Automated Guided Vehicle Systems (AGVS):** Automated guided vehicle systems provide the same type of handling functions as a mechanized tow tractor with trailer or rider pallet truck. The main difference is that AGVS does not require any operator. It is automatically routed and positioned at the destination without operator intervention. Application of AGVS is loading, unloading and transfer of goods from one point to another.

   - **Robotic Arm:** Robots are programmable devices that resemble the human arm. They are also capable of moving like the human arm and can perform

functions such as weld, pick and places, load and unload. Main advantage of using these MHDS is they can perform complex repetitive takes automatically and they can work in hazardous and uncomfortable environment that a human operator cannot work. The disadvantages of robots are that these are relatively expensive.

Figure 7: Robotic Arm

Review Questions

1. Define warehousing.
2. Explain the importance of warehousing in supply chain management.
3. Write short notes on:
   a) Bonded warehouse
   b) Government warehouse
   c) Public warehouse
4. Explain in brief unloading procedure.
5. Explain in brief loading procedure.
6. What are the principles of material handling system?
7. Write short notes on
   a) Conveyors
   b) Palletizes

Activity Questions

1. Visit the IFC (Indian Food Corporation) warehouse and collect information on different type of material handling equipment that are used in process.
2. Visit the railway work shop warehouse and make layout of warehouse.

Checklist for Assessment Activity

Use the following checklist to see if you have met all the requirement for assessment activity.

Part-A

1. Differentiate between private and bonded warehouse.
2. Why bonded wares come in to existence?
3. What are the applications of warehousing?
4. Differentiate between mechanized and semi automated handling systems.

Part-B

Discuss in the class room:

1. What are the different types of MHD's?
2. Why tally book is maintained during unloading process?
3. What are the contents of deficiency register?
4. Discuss the application of MHD's in different warehousing process.

Part-C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Able to identify and perform different activities of a warehouse.		
Able to apply loading & unloading procedure.		
Able to identify different MHD's.		
Able to draw deficiency register.		

Session 2: Stacking of Goods

After the inward consignments have been unloaded and reweighted these are stored and stacked in the goods shed separately, station or place wise and according to the convenience for delivery. Each consignment should either be marked or a label should be attached to one of the upper most packages indicating the date of unloading number of truck from which unloaded as far as possible all in ward goods should be placed under roof but if on account of shortage of roofed accommodation, it is not possible to do so the packages stacked on open platforms, should be covered with tarpaulin.

2.1 Stacking Methods

A variety of stacking methods of goods are being used by different industrial sectors for warehousing; depending on their needs and requirements. Most commonly used stacking equipments are as under:

Figure 8: Frame Stacking

A) **Frame Stacking Pallet:** Pallet stacking frames consist of decks and posts that can be established and removed if

necessary. Frame allows stacking several pallets to be stored high and very useful when pallets to be stored are not stackable. Many companies will use frames to accumulate in the warehouse when they need a temporary squeeze during busy periods.

B) Drive in Rack: Drive in rack is commonly used by warehousing operator. The application of drive in racks is access for the forklift to place and remove the stock. LIFO principle is used for making pallet.

C) Block Stacking: Block stacking refers to the units loads stacked on top of each other and store in the warehouse floor in patch or block series pallets stacked up to the floor in path or series pallets stacked up to the certain heights based on several criteria such as condition of pallets height weight and the application of the warehouse forklift. Palette will be based on LIFO method; it means palette will be taken from the last block.

D) Rack Single Deep Pallet: Single deep pallet racked provides access to each pallet stored in the rack. This gets around the issues of honey combing stacking frames and stacking blocks. When a pallet is removed the space is immediately available for a new palette to be placed in that space. This type of squeezing can be configured in several ways with various heights. The main drawback is that the rack requires significant floor space suitable for the alley.

Review questions

1. Explain the process of stacking of material in warehouse.
2. What is LIFO & FIFO?
3. Differentiate between LIFO & FIFO.
4. Write short notes on:
   a) Frame Stacking Pallet.
   b) Drive in rack.
5. What is block stacking and what are its advantages?
6. What are the advantages of push back rack in warehouse and logistics?

Checklist for Assessment Activity

Use the following checklist to see if you have met all the requirement for assessment activity.

Part-A

1. What is the difference between LIFO and FIFO method?
2. Differentiate between Block Stacking and Rack Single Deep pallet.
3. What are the uses of stacking method?
4. What is logistics?

Part-B

Discuss in the class room:

1. What are the conditions in which LIFO and FIFO methods are used.
2. What are the applications of stacking of goods?
3. Discuss different stacking method used by different warehouse keeper.
4. Discuss requirements of the idle warehouse.

Part-C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Able to identify the different stacking methods.		
Able to identify the applications of LIFO and FIFO method.		
Able to do process of stacking method.		
Able to identify the functions of logistics.		

Session 3: Retrieval of Materials

Automated vehicle storage and retrieval system represent a relatively new technology for automated unit load storage system. On this system the autonomous vehicles functions as storage / retrieval devices within the storage act the key distinction of AV/RS system relative to traditional crane based. An automated storage retrieval system can be defined as storage system under which a defined degree of automation is to be implemented to ensure precision accuracy and speed in performing storage and retrieval operations. These automated storage and mechanized system eliminate human intervention in performing basic sets of operations.

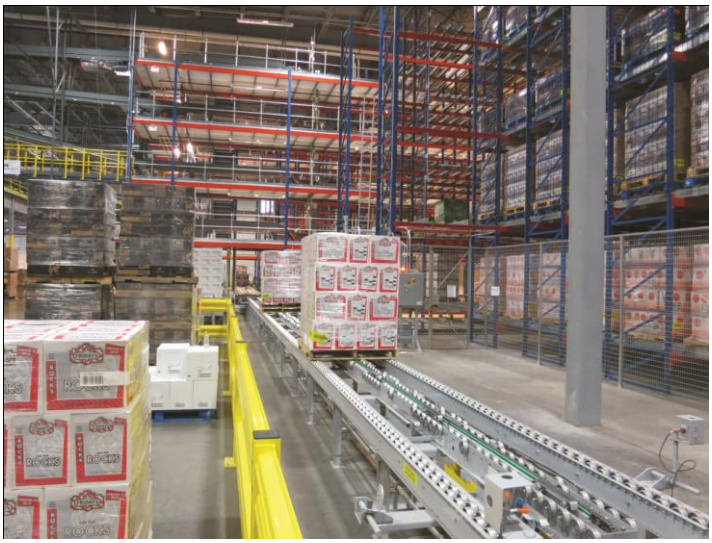

Figure 9: Automatic Retrieval of Material

3.1 Objectives for Installing Automated Storage System

- Increasing the stock rotation.
- Customer service can be improved.
- Recovering the space for manufacturing facilities.
- Utilization of maximum floor space.
- Increasing the storage capacity.
- Inventory control system can be improved.
- Reducing the labour cost.
- Increasing the labour productivity.

3.2 Retrieval of Material & Automated Storage System Component

A) Space: It has three dimensional spaces in the storage racks used to store a single load unit of material.

B) Bubal: It is the height of the storage rack from floor to the ceiling.

C) Row: It is a series of bays placed side by side.

D) Storage structure: It is the rack frame work made of fabricated steel that supports the loads contained in the automated storage system and is used to store inventory.

E) Storage / retrieval machine: It is used to move items in and out of inventory. An S/R machine is capable of both horizontal and vertical movement.

F) Pick-up and deposit: Pick-up and delivery stations are where inventory are transferred into and out of the automated storage system. They are generally located at the end of the aisles to facilitate easy access by the storage machines from the external material handling system. The location and number of P/D stations depends upon the origination point of incoming loads and the destination of put loads.

Review Questions

1. Define Retrieval.
2. What is the objective of automated retrieval system?
3. What are the components of automated retrieval system?
4. Write short notes on:
   a) Unit load
   b) Mini load
5. What are the advantages of automated retrieval system?

Checklist for Assessment Activity

Use the following checklist to see if you have met all the requirement for assessment activity.

Part-A

1. What are the uses of automated retrieval system?
2. What is the difference between Unit load and Mini load?
3. What is the process of retrieval of material?
4. What is stock rotation?

Part-B

Discuss in the class room:

1. Components of automated retrieval system.
2. Discuss the inventory control system.
3. Discuss the value of customer services.
4. How retrieval of material reduce the labour cost?

Part-C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Able to identify the retrieval of materials.		
Able to identify the customer services.		
Able to know the objectives of automated retrieval system.		
Able to know how utilization of maximum floor space.		

Session 4: Warehouse Activities Kitting, Binning etc.

Warehouse happens to be a key function and destination in the overall supply chain planning and execution. It has its purpose not only in receiving and distribution of the material/goods but for many companies it has a strategic function too. In general a typical warehouse can be seen to be performing the following activities.

Warehouse Activities

A) Receiving the goods

Following procedure is adopted for receiving the goods:

- Accept goods from outside transportation or attached factory

- Check the goods V/S order/bill
- Check the quantities
- Check for damage
- Damage report
- Inspect goods; if required

B) **Shipping**: This means order verification and transport arrangement. Verification may be carton count or piece by piece check for proper brand, size and in some cases serial number to ensure accuracy.

C) **Storage**: It refers to the storing of material and products inside the warehouse and considers the following method for storing.

- **Product weight:** Heavy weight items should be kept low on the ground to minimize the lifting.
- **Product volume:** High volume products should be placed near the doors, primary aisles and at lower levels in storage racks to reduce frequent lifting and material handling and also to minimize distance.

D) **Material handling**: It refers to the smooth internal movements of the material within the warehouse with the help mechanized handling systems, semi-automated and automated handling systems.

E) **Warehouse management systems:** Warehouse management system refers to the standardized procedure of complete functioning, so that all employee understand them.

F) **Delivery:** Warehouse will deliver the consignment to the homes directly according to the customer requirements and instructions. Warehouse operator generally send products to the market by trucks.

G) **Safety and preventive maintenance of warehouse and equipments**: A preventative measure program is necessary for material handling equipments. Unlike production machines, material handling equipments are not stationery. A preventative maintenance program periodically checks all the material handling equipments and other equipments / gadgets like CCTV, generator etc should applied in every warehouse.

H) **Dispatching the shipment:** As per the instruction of customer, consignments are packaged, shipping documents are prepared and goods are loaded to the vehicle.

4.1 Kitting

Introduction: Kitting is the first step in printed circuit board assembly. It is initiated well in advance of the actual production start to be able to prepare and deliver the kit on time. Kitting involves gathering of all the parts needed for a particular assembly from the stockroom and issuing the kit to the manufacturing line at the right time and in the right quantity. This paper discusses kitting, describes ways to eliminate waste in different phases of kitting, and illustrates lean kitting using a case study conducted in a major contract manufacturer site.

Traditionally, kitting is initiated by the production control department based on the shop floor order as generated by the plants ERP/MRP system. Production control will first verify that adequate quantity is available for each part number. If there are parts shortages, parts are ordered. In general, the kit is not released to the stockroom until parts arrive, but in some special cases a shop order with a part shortage can be processed. Production control then releases the kit to the stockroom for picking. The kit is typically sent to the off line set-up area within 48 hours. The time it takes to pick all parts depends on kit size and number and skill of employees. When executed properly, benefits of kitting include:

- Maximize value added time of operators.
- Easier operator training results in reduced training cost.
- Maximized machine utilization and no line stoppage due to part shortages or searching for parts.
- Reduced load time.
- Reduced part damage due to excess handling.

Figure 10: Binning

4.2 Binning

It is a stacking method of consignment. In this consignment are stacked on the floor as per the requirement of the product. With the help of binning we can create own customized stacking method i.e. as per the requirement of the customer.

Review Questions

1. What are the activities of warehousing?
2. Define Kitting.
3. What are the advantages of Kitting?
4. What is Binning?

Checklist for Assessment Activity

Use the following checklist to see if you have met all the requirement for assessment activity.

Part-A

1. Differentiate between kitting and binning.
2. What are uses of kitting & binning?
3. What is ERP / MRP system.
4. How are ERP and MRP helpful in production control?

Part-B

Discuss in the class room:

1. How kitting reduces load time?
2. What is customized binning method?
3. Applications of kitting and binning.
4. Discuss kitting and binning is not a expenditure for organization but it is a investment.

Part-C

Performance Standards

The performance standards may include, but not limited to:

Performance Standards	Yes	No
Identify the kitting and binning procedure.		
Able to apply kitting and binning procedure.		
Able to know the role of kitting and binning in stacking method.		
Identify the functions of production control department.		

Session 5: Documentation in Warehouse Activities

Documentation plays a vital role in the process of warehouse from the time of pick-up of the consignment until it reaches in the hands of the customer.

Importance of Documentation

	
A) Efficiency made easy	B) Eliminate paper process
	
C) Evidence proof	D) Easy for delivery

5.1 Documentation

Mandatory Documents: It includes four types of documents:

a. Warehouse keeper receipt: It is simply an acknowledgment of receipt of goods issued by a warehouse keeper to the owner of goods. It is not a documents of title to goods and therefore cannot be transferred at all.

CWB

Bill of Lading/Settlement Form

The Canadian Wheat Board, 423 Main Street, Box 816 Stn. Main, Winnipeg MB R3C 2P5
Tel 1-800-275-4292 - Fax (204) 987-4160

Complete one form for each rail car – See reverse for instructions and information

The CWB can electronically submit this form to the railway for you for a fee of $25 per rail car. The CWB requires notice two business days before the rail car needs to be released.

☐ Check here for CWB to submit this form to CN Check here for CWB to submit this form to CP

1. PRODUCER INFORMATION Please print

Producer name		Telephone no.	
Address		Cell phone no.	
Town/Province		Fax no.	
Postal code		Contact person	

2. RAIL CAR INFORMATION

Train run		Station origin		Railway order no.		(CWB USE ONLY)
Destination port				CGC authorization no.		
Destination terminal				Shipper (CWB c/o Producer) - indicate name		
Car initials & number				Consigned to	CWB	
Date car released		Shipping week		Freight paid by CWB ☐	Producer ☐	
Custom broker name (if shipping to U.S.)				Rail carrier		
CWB Export Permit No. (if shipping to U.S)						

3. LOADING INFORMATION **UNLOAD RESULTS**

Grain		(CWB USE ONLY)	Unload date	(CWB USE ONLY)	Gross (MT)	(CWB USE ONLY)
Grade/Protein			Grain		Dockage (%)	
Gross weight (MT)			Grade		Net (MT)	
Bulkhead unload Y/N *			Protein		Moisture (%)	

* Cars that require a separate CGC grade for individual hopper compartments. If Y (Yes), CWB approval required prior to loading. Complete a Bulkhead Unload form.

Comments:

4. SETTLEMENT INFORMATION (This information is used by the CWB to issue payment to producers)

Producer name (maximum of 5)	CWB 10-digit ID number	Splits by percentage	CWB advance deduction amount (if above normal rate)	Delivery contract number	Payment indicator e.g. F = FPC	Deferred cheque date

Fumigation - The railways strictly prohibit the use of all fumigants such as Phostoxin, in all rail cars loaded in Western Canada. If your rail car contains a fumigant, you may be subject to substantial financial penalties.

Figure 11: Bill of Lading

CENTRAL WAREHOUSING CORPORATION

केन्द्रीय भण्डारण निगम

Warehouse Receipt - Negotiable/Non-Negotiable

वेअरहाउस रसीद - परक्राम्य/अपरक्राम्य

Serial No. of Receipt रसीद की क्रम सं. } CW2000116612

Name of Warehouse वेअरहाउस का नाम } Central Warehouse - Ernakulam

Warehouse Licence No. वेअरहाउस लाइसेंस सं. } 3178 Valid upto तक वैध } 31.12.2003

Received from (Name & address of the depositor) जिनसे प्राप्त किया (जमाकर्ता का नाम और पता) } M/s Edacheril Brothers- Angamally Ernakulam District

Goods of the following description (माल का विवरण) :-

Name of Commodity वस्तु का नाम	Class or standard quality or grade श्रेणी अथवा मानक क्वालिटी अथवा ग्रेड	No of packages/ units / bags or lots पैकेजों / यूनिटों / बोरों अथवा लॉटस की सं.	Net quantity in MT/Qtls. by weight or in square metres by measure मी. टन / क्विंटलों में अथवा नाप द्वारा वर्ग मीटरों में शुद्ध मात्रा	Name and/or license No. of the weigher/classifier/sampler तोलकर्ता / श्रेणी कर्ता / नमूनाकर्ता का नाम/ और लाइसेंस सं.
Black Pepper		20 Bags	1000 kgs	5/78

Condition of goods - (i) Good (ii) Fair (iii) Average माल की स्थिति (i) उत्तम (ii) अच्छी (iii) साधारण } As Per MMCEIL Specifications

Private marks of depositor on the packages, if any पैकेजों पर जमाकर्ता के निजी चिन्ह, यदि कोई हो } Deposit No. 414 / Godoon No. II-A

Rate of storage and other charges भंडारण एवं अन्य प्रभारों की दर } RS.4.30/Bag 1month + Insurance Charges

Indemnified for Fire/Flood/Theft/Misappropriation/Riots/Strikes/Terrorism with आग/बाढ़/चोरी/गबन/दंगों/हड़तालों/आतंकवाद के विरुद्ध क्षतिपूर्ति के लिए बीमा: Under Self indemnification scheme

{ (Name of Insurance Company) (बीमा कंपनी का नाम)

For the amount of Rs. बीमा राशि } 79,100/- (Rupees Seventy Nine Thousand one Hundred only)

Goods are accepted for storage from भंडारण के लिए माल स्वीकार किया गया } 22.07.2003 to से 19.10.2003 तक

Market rate at the time of deposit जमा के समय बाजार दर } RS.79/- per kg.

Valuation मूल्य } RS.79,000/- (Rupees Seventy Nine Thousand only)

Date दिनांक } 22.07.2003

Warehouse Manager
Central Warehouse
Gandhi Nagar P.O.
Ernakulam
Cochin-682 020

Signature of the Warehouse Manager/Authorised person वेअरहाउस प्रबंधक अथवा प्राधिकृत व्यक्ति के हस्ताक्षर

The goods mentioned below are hereby released from the receipt for delivery from Warehouse. Any unreleased balance of goods is subject to a lien for unpaid charges and Advances on the released portion. निम्नलिखित माल वेअरहाउस से निकालने के लिए एतद्द्वारा इस रसीद से हटाया जाता है। शेष माल भुगतान न किए प्रभारों तथा जारी किए गए भाग पर दिए गए अग्रिम की शर्त के अधीन होगा।

Date तारीख	Quantity Released निकाले गए माल की मात्रा		Quantity in Balance शेष मात्रा		Signature हस्ताक्षर
	Bags/Packages बोरे/पैकेज	Weight भार	Bags/Packages बोरे/पैकेज	Weight भार	

b. Delivery order

It is an order issued by the owner of goods to the warehouse authorities when delivery in small lots is required from the warehouse. Such orders should accompany the warehouse warrant in which the authorities will enter the details of the goods. Delivery order is document of title to goods hence can be transferred.

c. Dock warrant or Warehouse warrant

It is a document of title to goods issued by dock authorities certifying that the goods are held by them. To take delivery of the goods the certificate has to be given back to the authorities. It is a transferable instrument and if properly assigned even a third party can take delivery of the articles from the warehouse or dock.

d. Auxiliary document

(i) Pick and pack list

(ii) Order discrepancy resolution

(iii) Digital bills of lading

(iv) Purchase order & invoice

Review Questions

1. What is the importance of documentation in warehousing?
2. Explain mandatory documents of warehouse.
3. What is bill of lading?
4. What are the contents of delivery order?

Checklist for Assessment Activity

Use the following checklist to see if you have met all the requirement for assessment activity.

Part-A

1. Differentiate between bills of lading and consignment note.
2. Differentiate between delivery order and warehouse keeper receipt.
3. How documents easy for delivery.
4. Why warehouse documents are evidence of proof.

Part-B

Discuss in the class room:

1. Discuss contents of bills of lading.
2. How warehouse documents eliminate paper process?

3. How auxiliary documents are helpful for warehousing process?
4. Discuss filling procedure of warehouse documents.

Part-C

Performance Standards

Performance standards may include, but not limited to:

Performance Standards	Yes	No
Able to identify different documents of warehouse.		
Able to fill up different documents of warehouse.		
Able to draw bill of lading.		
Able to understand applicability of warehouse documents.		

Session 6: Importance of Security & Fire Safety at Warehouse

Since a warehouse stores a large number of materials and products, great care for security has to be ensured for their protection.

6.1 Preventive Measure for Security in Warehouse

- All doors, trap doors, windows, sky light and other openings should be adequately secured.
- Collapsible gates with locks should be provided where considered necessary.
- It advisable to keep a light on in the warehouse through out the night.
- Cash and valuables should be kept in burglar resistant steel safe or in burglar proof steel cash boxes.
- Adequate watch and ward/security arrangements should be provided at warehouse for 24 hours.

Figure 12: Fire Extinguisher

Fire Extinguisher Chart

Extinguisher		Type of Fire				
Colour	Type	Solids (wood, paper, cloth, etc)	Flammable Liquids	Flammable Gasses	Electrical Equipment	Cooking Oils & Fats
	Water	✓ Yes	✗ No	✗ No	✗ No	✗ No
	Foam	✓ Yes	✓ Yes	✗ No	✗ No	✓ Yes
	Dry Powder	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✗ No
	Carbon Dioxide (CO2)	✗ No	✓ Yes	✗ No	✓ Yes	✓ Yes

Figure 13: Fire Extinguisher Chart

6.2 Importance of Security & Fire Safety at Warehouse

- Security measure helpful for protection of consignment from theft, hijacking etc.
- Protecting the interest of the farmers, producers against the security.
- Safety measure helpful for protection of goods from fire.
- Security and fire safety measure are also required for giving protection of material handling equipment and other assets of the business against fire, theft etc.

6.3 Fire Safety Measure at Warehouse

- There should not be any loose / open electrical wiring. All electrical wiring should be carried through metal pipes.
- No naked fries or lights should be permitted within the precincts of warehouse.
- Smoking should not be permitted in our warehouse and appropriate no smoking signs should be exhibited at the entrance at all prominent places within the warehouse.
- Always maintain good housekeeping i.e. the orderly storage of goods in the warehouse and removal of all waste material mainly oily waste from the warehouse.
- Always maintain adequate number of hand fire fighting appliances/ extinguishers in the warehouse.

Summary

In India, logistics was initially referred to as transport system management function only; in fact it was not regarded as a high profile job and mainly involved coordinating with transport operations, transporters. Today organization look at logistics for integration, material handling, warehouse management, retrieval of material, location analysis, packaging etc. In fact warehousing is being regarded as key resources to gain competitive advantage in business as it directly affects the services level costs and therefore the profits of the organization. Thus, an organization can have a lethal competitive advantages through effective warehouse management by linking the procurement activity, manufacturing process, distribution process and the market place seamlessly and in such a way that customers are serviced at higher levels and yet at lower cost, in other words achieving the productivity advantages as well as the value advantages.

Review Questions

1. What is robotic arm and what are its uses?
2. What is deep double rack? Mention its uses.
3. What are the components of the automated retrieval system?
4. What are the advantages of binning?
5. What are the contents of bills of lading?
6. Which factors are considered for designing a warehouse?
7. What are the security measures for warehouse from fire?
8. What are the advantages of safety and security in warehouse?

Practical Questions

1. Make physical model of different types of warehouse with all possible feature of an ideal warehouse.
2. Visit any MNC (Multinational Company) of your choice in your city and make a project on material handling system.
3. Visit a railway parcel office and make project on warehousing activities.
4. Visit nearest bonded warehouse of your city and prepare write up on its working.

Checklist for Assessment Activity

Use the following checklist to see if you have met all the requirement for assessment activity.

Part-A

1. What are preventive measure for security in warehouse?

2. What are the advantages of preventive measure in warehouse?
3. How fire safety measure are helpful for protection of goods in warehouse?
4. How security measure are helpful for protection of consignment from theft?

Part-B

Discuss in the class room:

1. Process of different preventive measure.
2. Process of fire safety measure.
3. Method of house keeping.
4. How fire safety measure are helpful for protection of material handling equipment and assets.

Part-C

Performance Standards

Performance standards may include, but not limited to:

Performance Standards	Yes	No
Able to operate hand fire fighting appliances.		
Able to draw fire extinguisher chart.		
Able to identify fire safety measure.		
Able to identify security measure.		