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Facilitator Guide



Sector
Logistics

Sub-Sector
Warehousing (Storage & Packaging)

Occupation
MHE Maintenance Technician

Reference ID: **LSC/Q2315, Version 3.0**
NSQF Level: **4**

**Material Handling
Equipment(MHE)
Maintenance
Technician**



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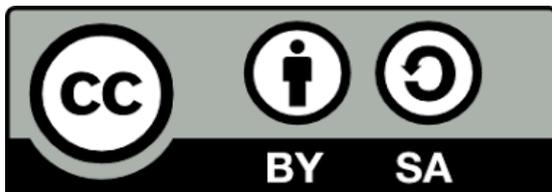
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Shri Narendra Modi
Prime Minister of India

“ Skilling is building a better India.
If we have to move India towards
development then Skill Development
should be our mission. ”

Acknowledgements

We thank the Organization namely, Jasvant B. Shah (Licensed Customs Broker), Star Freight Private Limited (International Freight Forwarder, Multimodal Transport Operator, IATA Agents), JBS Academy Private Limited (Skill Development Centre for Logistics, Maritime and management Studies & Research) who have helped us in content development of this Facilitator Guide, thus contributing towards skilling based on the Qualification Pack (QP) and National Occupational Standards (NOSs).

About this Guide

This Facilitator Guide is designed for the training of the Material Handling Equipment (MHE) Maintenance Technician as per the Qualification Pack (QP). It provides facilitators with the necessary knowledge relating to major topics in Warehousing and Warehousing related Activities. The guide elaborates how facilitators should interact with the participants and train them by understanding their needs and explaining all the key concepts about the job roles. Also, it helps the facilitator to complete teaching all the topics to the participants in a timely manner. This also provides the latest information on current advancements in technology and its impact on the industry. Many modules have been revised to capture the diversity, varied perspectives, and current spirit of Warehousing.

Key Learning Objectives for the specific National Occupational Standards (NOS) marks the beginning of the Unit/s for that NOS.

Symbols Used



Time



Role Play



Activity



Notes



Objectives



Do



Ask



Explain



Elaborate



Field Visit



Practical



Say



Demonstrate



Exercise



Team Activity



Facilitation Notes



Learning Outcomes



Resources

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	https://eskillindia.org/NewEmployability	
	Scan the QR code below to access the ebook	





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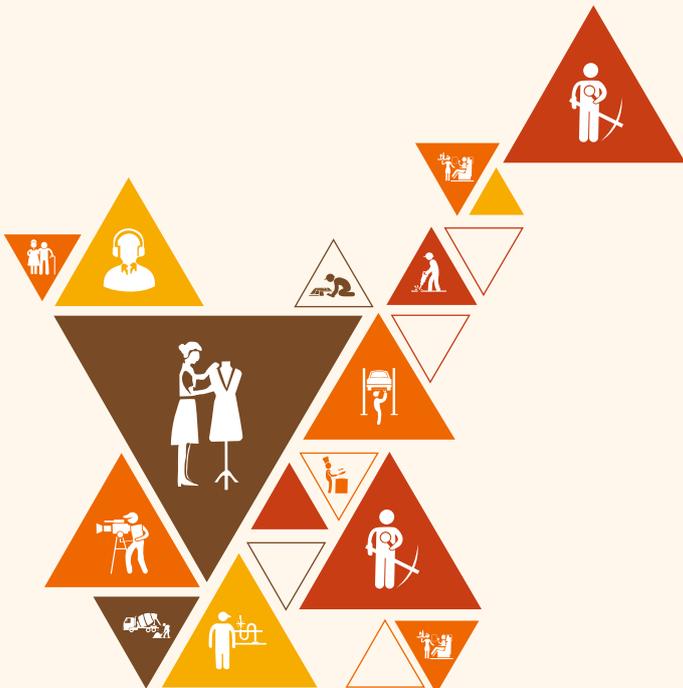
1. Introduction to MHE Maintenance Technician

Unit 1.1 - Supply Chain and Logistics Management

Unit 1.2 - Sub-sectors of Logistics Industry

Unit 1.3 - About Warehousing Industry

Unit 1.4 - Roles of Material Handling Equipment (MHE)
Maintenance Technician



Key Learning Outcomes

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

1. Differentiate Supply Chain and Logistics Management.
2. Recognize the various sub-sectors and the opportunities in them.
3. Interpret warehousing industry and opportunities in it.
4. Interpret your job role as MHE Maintenance Technician and its interface with other job roles.
5. Analyze the employment opportunities in warehousing industry.

UNIT 1.1: Supply Chain and Logistics Management

Unit Objectives

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

1. Interpret Supply Chain and Logistics Management.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the Supply Chain and Logistics Management
- Explain to them the types of flow in supply chain management
- Let them know the Transportation Industry in India

Say

- Logistics management is a subset of supply chain management. Whilst supply chain management focus on the overall integration of business functions and the supplies from suppliers to stores and customers, logistics management focus on how those items and data being transported and disseminated and support the overall supply chain management.
- Good customer service is the lifeblood of a logistics business. It's all about retaining your customers and sending them away happy – happy enough to pass positive feedback about your company to others. The essence of customer service logistics is forming a relationship that customers want to sustain over time.
- Supply chain management can be defined as a systematic flow of materials, goods, and related information among suppliers, companies, retailers, and consumers. There are three different types of flow in supply chain management –
 - o Material flow
 - o Information/Data flow
 - o Money flow.

Say

- Transport modes are the means by which passengers and freight achieve mobility. They are mobile transport assets and fall into one of three basic types; land (road, rail and pipelines), water (shipping), and air.
- The Chartered Institute of Logistics & Transport UK (2019) defines them as: Getting the Right product, in the Right quantity, in the Right condition, at the Right place, at the Right time, to the Right customer, at the Right price.
- The major cause of conflict for logistics and marketing interface is related to 5Ps (product, price, place, promotion and packaging) of marketing. Without the successful link of logistics and marketing, the firm may be unable to provide good customer service, resulting in dissatisfied customer or a lost sale.

Ask

- Ask students to explain the Supply Chain and Logistics Management.
- Ask students to explain the types of flow in supply chain management.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life
- Promote all the students in a much positive note and keep learning.

Elaborate

- **What is Supply Chain Management? :**
<https://www.youtube.com/watch?v=IZPO5RclZEo>
- **What is Logistics Management? Definition & Importance in Supply Chain :**
<https://www.youtube.com/watch?v=4-QU7WiVxh8>

Notes

UNIT 1.2: Sub-sectors of Logistics Industry

Unit Objectives

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

1. Interpret above Sub-sectors of Logistics Industry.
2. Identify various sub-sectors and the opportunities in them.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 3. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 4. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the Sub-sectors of Logistics Industry
- Let them know the sub-sectors and the opportunities in them

Say

- It is one of the biggest employment generating sectors in India contributing to growth of the Indian economy.
- The Warehousing sub sector addresses the needs of management of inbound material, inventory keeping, and the distribution and despatch of outbound material. Tertiary packaging for transportation is an integral part of this sub sector.
- Carriage by land transport is 60% of the modal mix as compared with Rail and Water freight, in India. The transportation subsector deals with consolidation of cargo, transportation and coordination of the transport network.
- Courier and Express Industry handles time critical and many a time high value consignments and in India documents form a sizeable percentage of the segment. This is also a sub sector with high employability as many Companies also provide services to E Commerce.
- With increased regional connectivity time sensitive and high value cargo movement will witness an increase. Most Courier and Express Companies would be leveraging on this regional connectivity to ensure faster and more reliable delivery schedules. This will create the need for more dispersed work locations and consequently more need for local candidates who are skilled to take up the job roles.
- Agricultural Produce and fruits post-harvest need to be kept in a controlled atmosphere to prevent their deterioration. Similarly fish catch and meat need to be adequately stored and transported in refrigerated atmosphere where humidity control becomes very important. Many plants are old and need to be modernized and Operators need to be trained on both the technical details of the plant and its maintenance as well as on the product.

UNIT 1.3: About Warehousing Industry

Unit Objectives

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

1. Memorize about importance of Warehouse and recognize its Types.
2. Identify various activities in warehousing industry.
3. Identify the employment opportunities in warehousing.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the importance of Warehouse and recognize its Types
- Explain various activities in warehousing industry
- Let them know the employment opportunities in warehousing

Say

- Warehouse is a storage structure constructed for the protection of the quality and quantity of the stored produce. The need for a warehouse arises due to the time gap between production and consumption of products. Warehousing or storage refers to the holding and preservation of goods until they are dispatched to the consumers.
- Public warehouses ensure greater security and handling of goods on account of latest mechanical devices used in handling and preserving the goods. Goods can be branded, graded and packed in desired sizes in the warehouses.
- Private warehouses are constructed and owned by the business enterprises in order to store the products produced by them. These are exclusively owned and used by the producers themselves and are not meant for other manufacturing or business units.
- Various transport agencies also maintain warehouses for storing the goods which are to be dispatched and received. Food Corporation of India has built many big warehouses throughout the country for storing agricultural products.
- An entry-level position for a warehouse job typically involves loading vehicles, packing goods, recording stock levels and delivering packages. Warehouses require effective management systems to maintain an organised inventory. Warehouse leads help to improve efficiency in warehouse operations by managing employees, overseeing deliveries and implementing workplace safety policies.

UNIT 1.4: Roles of Material Handling Equipment (MHE) Maintenance Technician

Unit Objectives

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

1. Interpret MHE Maintenance.
2. Memorize about your job role as MHE Maintenance Technician.
3. Interpret its interface with other job roles.

Resources to be Used

1. Lecture, Handouts, Role Play and Field Visit
2. Group Participation & Oral Quiz
3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser
4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment
5. Participant Handbook and PowerPoint Presentations

Do

- Discuss the importance of MHE Maintenance
- Explain job role as MHE Maintenance Technician
- Let them know its interface with other job roles

Say

- MHE maintenance is a method of inspection and repairs to ensure MHE is in working order.



Fig. 1.4.2. MHE Tools & Supplies

Say



- Material Handling Equipment (MHE) Maintenance Technician in the Logistics industry is also known as MHE Maintenance Associate. Individuals in this role are responsible for the smooth functioning of MHE. Individuals are responsible for picking items according to an inventory list. They are required to carry out preventive and breakdown maintenance to ensure that the MHE are continuously available. Additional responsibilities include maintaining records of maintenance activities carried out and preparing detailed reports.
- Key Duties:
 - o Obtain information and checklists
 - o Collect necessary tools and supplies
 - o Carry out preventive maintenance
 - o Carry out breakdown maintenance
 - o Carry out housekeeping
 - o Reporting and documentation
 - o Maintain health, safety and security measures during all activities

Ask



- Ask students to explain the importance of MHE Maintenance.
- Ask students to explain the various activities to be done by MHE Maintenance Technician.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life
- Promote all the students in a much positive note and keep learning.

Elaborate



- **Types of Material Handling Equipment for Warehouse in INDIA:**
<https://www.youtube.com/watch?v=BBWPiByOefI>
- **Material Handling And Storage Systems:**
<https://www.youtube.com/watch?v=RtQReqBaP00>

Notes



Exercise

Answers to the Exercise

1) Is Logistics the Same as Supply Chain Management?

The basic difference between Logistics and Supply Chain Management is that Logistics management is the process of integration and maintenance (flow and storage) of goods in an organization whereas Supply Chain Management is the coordination and management (movement) of supply chains of an organization.

2) What is the future of warehousing?

The warehouse of the future will take advantage of automated capacity management by leveraging technology for better, data-driven capacity planning. The result is fewer capacity planning errors that can lead to lost revenue and improved space utilization, which translates to a healthier bottom line.

3) What does MHE stand for in a warehouse?

Material handling equipment (MHE) is mechanical equipment used for the movement, storage, control, and protection of materials, goods and products throughout the process of manufacturing, distribution, consumption, and disposal.

4) What are the 7 R's of logistics?

The Chartered Institute of Logistics & Transport UK (2019) defines them as: Getting the Right product, in the Right quantity, in the Right condition, at the Right place, at the Right time, to the Right customer, at the Right price.



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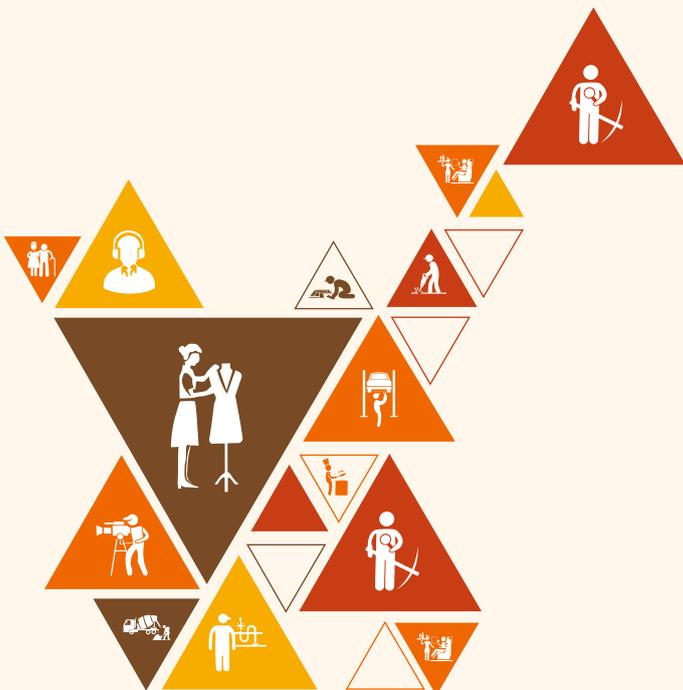
2. Preparation for Maintenance

Unit 2.1 - Material Handling Equipment (MHE)

Unit 2.2 - Documentation & Information collected for Maintenance

Unit 2.3 - Preparation for Maintenance

Unit 2.4 - Process of Planning the Sequence for Maintenance



LSC/N2321

Key Learning Outcomes

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

1. Categorize the various tasks to be performed while preparing for maintenance.
2. Recognize the various documents and information to be collected from supervisor for maintenance.
3. Develop the process of prioritizing the machines or equipments to be checked first.
4. Use the process of planning the sequence for maintenance.

UNIT 2.1: Material Handling Equipment (MHE)

Unit Objectives

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

1. Identify the different types of goods and their classification.
2. Interpret the various tasks to be performed while preparing for maintenance.

Resources to be Used

1. Lecture, Handouts, Role Play and Field Visit
2. Group Participation & Oral Quiz
3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser
4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment
5. Participant Handbook and PowerPoint Presentations

Do

- Discuss the different types of goods and their classification
- Let them know the various tasks to be performed while preparing for maintenance

Say

- Stored goods can include any raw materials, packing materials, spare parts, components, or finished goods associated with agriculture, manufacturing, and production.
- Nowadays there are about 12,000 substances, gases, solids and liquids recognized as dangerous goods. In order to facilitate their classification, they are divided into 9 groups based on one main characteristic:



Fig. 2.1.1. Types of Dangerous Goods

UNIT 2.2: Documentation & Information collected for Maintenance

Unit Objectives

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

1. Interpret Principles of Material Handling.
2. Recognize the various documents and information to be collected from supervisor for maintenance.

Resources to be Used

1. Lecture, Handouts, Role Play and Field Visit
2. Group Participation & Oral Quiz
3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser
4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment
5. Participant Handbook and PowerPoint Presentations

Do

- Discuss the Principles of Material Handling
- Let them know the various documents and information to be collected from supervisor for maintenance

Say

- Material handling is a far-reaching concept in supply chain management. It's a foundational process including several types of equipment and activities that are either: Manual / Semi-automatic / Automatic.



Fig. 2.2.2. Equipments / Machineries - Warehouse

Say 

- Material handling operations are designed based upon principles as discussed above. Material handling equipment consists of cranes, conveyors and industrial trucks.
- Material handling is the movement, protection, storage and control of materials and products throughout manufacturing, warehousing, distribution, consumption and disposal.
- There are many material handling devices used at logistics worksites. These include forklifts, carts, pallets, conveyors, conveyance robots, sorters, picking systems, and automated warehouses.
- Material Handling is an essential component of any successful warehouse. The reason being, a proper materials handling protocol will prevent accidents and improve the efficiency of your facility.
- A checklist is a type of informational job aid used to reduce failure by compensating for potential limits of human memory and attention. It helps to ensure consistency and completeness in carrying out a task. A basic example is the "to do list." A more advanced checklist would be a schedule, which lays out tasks to be done according to time of day or other factors. A primary task in checklist is documentation of the task and auditing against the documentation.

Ask 

- Ask students to explain the Principles of Material Handling.
- Ask students to explain the various documents and information to be collected from supervisor for maintenance.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life
- Promote all the students in a much positive note and keep learning

Elaborate 

- **Sanitation & Maintenance:** <https://www.youtube.com/watch?v=mciW6ZDFqOs>

Notes 

UNIT 2.3: Preparation for Maintenance

Unit Objectives

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

1. Demonstrate the usage of various PPEs.
2. Explain the process of prioritizing the machines or equipment to be checked first.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the usage of various PPEs
- Let them know the process of prioritizing the machines or equipment to be checked first

Say

- Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits.
- Proper maintenance of warehouse equipment is both a productivity and safety issue. Preventative maintenance plans should be in place for lift trucks, conveyor systems, automated material handling equipment, dock equipment, stretch wrapping machines, palletizers, bailers, and compactors. Employees should be trained and encouraged to immediately report any problems with equipment. Contingency plans should be predefined for all key pieces of equipment to ensure you are prepared in the event of a breakdown.
- Routine maintenance is designed to help keep equipment, machines, and buildings operating optimally. If a particular piece of equipment needs lubrication, it may work at a slower rate and reduce the efficiency of an entire line.

UNIT 2.4: Process of Planning the Sequence for Maintenance

Unit Objectives

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

1. Demonstrate the Routine Maintenance Workflow.
2. Explain the process of Daily, Monthly and Annual Maintenance Checks.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the Routine Maintenance Workflow
- Let them know the process of Daily, Monthly and Annual Maintenance Checks

Say

- Routine maintenance are maintenance activities such as regular inspections or machine servicing. Routine maintenance is done on a regular basis, whether that be daily, weekly, monthly, or yearly. Routine maintenance is an important part of keeping systems up to date and functional.
- Routine maintenance prevents larger problems from occurring. Taking good care of equipment, machines, and facilities extends their overall life as well as keep them performing at their best. Routine maintenance gives technicians an opportunity to regularly “lay their eyes on” important components of a production line or specific system as well as a chance to catch any other potential problems that are lurking.
- What should an operator inspect during the operational pre-use check?
 - o Foot brake – pedal holds, unit stops smoothly.
 - o Parking brake – holds against slight acceleration.
 - o Deadman seat brake – holds when operator rises from seat.
 - o Clutch and gearshift – shifts smoothly with no jumping or jerking.
 - o Dash control panel – all lights and gauges are operational.
 - o Horn – working and loud enough to be heard in working environment;
 - o Back-up (reverse) alarm and other warning devices are operational.
 - o Lights – headlights and warning lights are operational.
 - o Steering – moves smoothly.

Say 

- o Lift mechanism – operates smoothly (check by raising forks to maximum height then lowering forks completely).
- o Tilt mechanism – moves smoothly, holds the load (check by tilting mast all the way forward and backward).
- o Cylinders and hoses – not leaking after above checks.
- o Listen for any unusual sounds or noises.

- Good warehouse maintenance would also mean you adopt best practices:
 - o Plan procedures for picking up products to maximize efficiency
 - o Minimize touch points
 - o Zero reliance on manual input
 - o Products required more often placed accordingly
 - o Keep evaluating your strategy
 - o One SKU for each item
 - o Prioritize safety of the warehouse
 - o Vendor operations to be standardized
 - o Contingency Planning/ Reactive maintenance plan
 - o Information sharing/ Transparency
 - o Track KPIs
 - o Practice 360-degree feedback

Ask 

- Ask students to explain the Routine Maintenance Workflow.
- Ask students to explain the process of Daily, Monthly and Annual Maintenance Checks.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Elaborate 

- **Planned Forklift Maintenance:** <https://www.youtube.com/watch?v=EZoDfGsSWwQ>
- **Lifting operations:** <https://www.youtube.com/watch?v=1A0iUdULBNo>

Notes 

Exercise

Answers to the Exercise

1) What are the roles of logistics?

The roles of logistics feature transportation/delivery, storage, packaging, cargo handling, distribution processing, and information processing, and many systems have been put in place to deliver products from the production location or factory to the consumer quickly and on time.

2) Enlist various tasks to be performed while preparing for maintenance.

Lubricating, cleaning, or adjusting machinery. Inspecting equipment to ensure proper operation and safety. Replacing parts that show deterioration. Checking, testing, and maintaining safety equipment, such as safety barriers, fire extinguishers, or alarm systems.

3) What do you understand by prioritizing the machines or equipments for checking first?

A prioritization matrix is a tool used for determining the most important issues or solutions. This tool can be used for any prioritization activity.

Each factory should determine its own machines' priorities, depending on their effect on the factory's overall production (volume and quality) and factors such as how much damage the machines would sustain if they broke down.

4) Explain the usage and need of PPEs in Warehouse?

The purpose of personal protective equipment is to reduce employee exposure to hazards when engineering controls and administrative controls are not feasible or effective to reduce these risks to acceptable levels. PPE is needed when there are hazards present.

5) Mention Roles & Responsibilities of a MHE Maintenance Technician.

Material Handling Equipment (MHE) Maintenance deals with repair, service and maintenance, for forklifts, reach trucks, conveyors, dock levelers, and more.

Maintenance Technician roles will typically be looking for the skills previously outlined:

- Attention to detail.
- Excellent verbal communication skills.
- Written communication skills.
- Proactive.
- Problem-solving skills.
- IT skills.
- Team working.
- Time management.

Key Learning Outcomes

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

1. Apply the various maintenance operations.
2. Interpret the steps involved in preventive maintenance.
3. Recognize the steps to be followed during breakdown maintenance.
4. Memorize the testing process of MHE as per SOP.

UNIT 3.1: Maintenance Operations

Unit Objectives

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

1. Perform various maintenance operations as per SOP.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the SOP as Process
- Let them know the various maintenance operations as per SOP

Say

- Material handling is an integral part of every industry. It is an essential component of any successful warehouse. Material handling can improve customer service by making products easy to find, move, and ship out, cut costs by reducing the amount of time spent moving the products and reduce product damages by properly transporting your products. It also ensures increased safety from permanent and temporary disabilities.
- Maintenance is defined as a process in which working condition of plant or machinery is maintained at the optimum level as to give maximum output. Maintenance is done through repair, partial replacement and total replacement. Following is the significance of the maintenance policy:
 - o Maintenance policy ensures that equipments are always in ready and reliable condition. This ensures company is able respond to any sudden change in demand.
 - o Maintenance policy ensures that equipments are always calibrated to provide good-quality products and competitive advantage. This ensures that there are no sudden and frequent breakdowns and reduce production of defective products.
 - o Maintenance policy ensures that there are no major breakdowns. This ensures there is no lose of inventory or market share for companies following JIT philosophy.
 - o Maintenance policy ensures that costs are always controlled.
 - o Maintenance policy is particularly important in capital-intensive industries.

Say

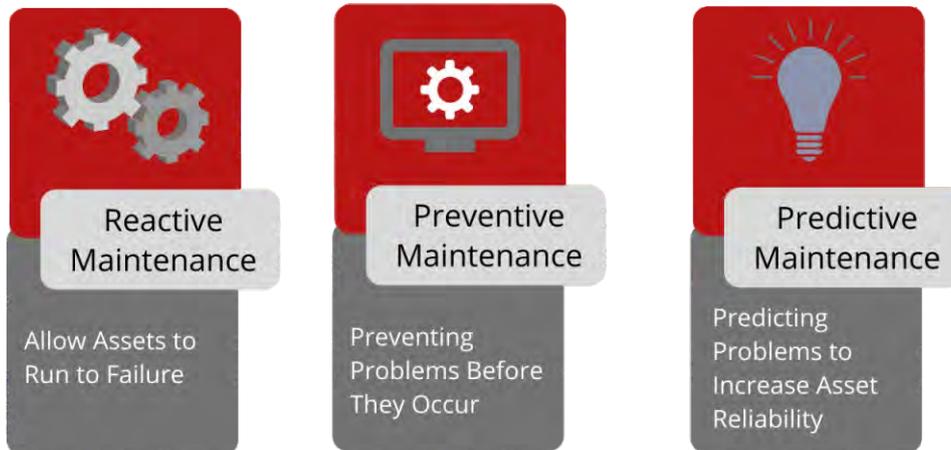


Fig. 3.1.7. Planning and Scheduling Process

- Here's a quick checklist of forklift maintenance requirements:
 - o Change the oil the forklift. Much like a car's oil, a forklift's oil should be changed every few months. This will prevent combustion problems and it will improve the performance of the forklift. New oil also increases the fuel efficiency for the forklift, which saves money in the long run.
 - o Check fluid levels. Most forklifts use hydraulics to lift heavy objects. Hydraulics rely fluid. The hydraulic fluid may need to be topped off over time, just like the fuel. Forklifts also use antifreeze to prevent them from overheating. Top this off or replace it as needed.
 - o If one of the fluid levels is unexpectedly low, look for leaks. Check the reservoir and the floor underneath the forklift to see if there are any fluids lying around. If so, identify the source of the leak and repair it accordingly.
 - o Lubricate moving parts. If the forklift has started grinding or squeaking, it may be because some element needs new oil or grease. Some simple lube will fix those issues.
 - o Check the tire pressure regularly. Forklifts go throughout a warehouse, so their tires go through heavy wear. Nails, screws, shards of plastic, or other debris the floor can puncture and damage the tires. Of course, the floors should be cleaned regularly to prevent this issue, but some issues cannot be avoided. Check the tire pressure at least once a week to repair or replace tires if they're damaged.

Ask



- Ask students to explain the SOP Importance.
- Ask students to explain the various maintenance operations as per SOP.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Elaborate



- **Forklift Preventive Maintenance:** <https://www.youtube.com/watch?v=-XIBwl-xPMY>
- **Forklift Safety Training DVD: Safe Operation & Accident Prevention - Safetycare Lift Trucks:** <https://www.youtube.com/watch?v=NOhTdl-kXkk>

UNIT 3.2: Preventive and Breakdown Maintenance

Unit Objectives

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

1. Memorize the steps involved in preventive maintenance.
2. Interpret the steps to be followed during breakdown maintenance.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the steps involved in preventive maintenance
- Let them know the steps to be followed during breakdown maintenance

Say

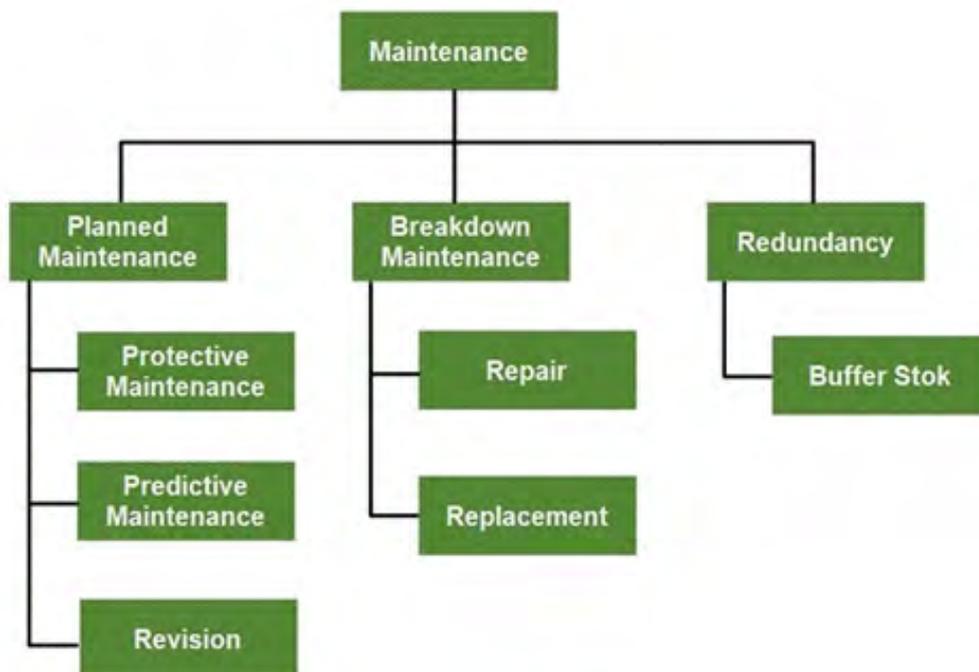


Fig. 3.2.1. Maintenance Chart

Say

- Preventive maintenance identifies any issues before equipment failure or downtime, through routinely scheduled maintenance. Breakdown maintenance works by running equipment until it breaks down, in which case repairs and maintenance are performed.
- Breakdown maintenance is somewhat specific because it's not applicable to many pieces of equipment. For example, it is not a suitable maintenance strategy for anything involved in human safety and health, nor is it a good strategy for critical or central pieces of equipment.
- All equipment including a hand pallet truck, pallet stacker, scissor lifts and more should be regularly inspected before use.
- Apart from clean floors, housekeeping can better organize storage and inventory systems which will improve warehouse management.
- Lubricate all moving parts following the MHE supplier's suggestions.
- Over time, even the least used equipment can have defective parts. So, before the whole MHE experiences total failure, replace or repair faulty parts.
- By conducting MHE preventive maintenance, the performance of equipment and workers will improve significantly.
- Repair Cycle: A typical repair cycle may be as follows:
 - o New Equipment
 - o Inspection-1
 - o Inspection-2
 - o Inspection-3
 - o Repair-1
 - o Inspection-4
 - o Inspection-5
 - o Inspection-6
 - o Repair-2
 - o Inspection-7
 - o Inspection-8
 - o Inspection-9
 - o Repair-3
 - o Inspection-10
 - o Inspection-11
 - o Inspection-12
 - o Repair-4
 - o Inspection-13
 - o Inspection-14
 - o Inspection-15
 - o Overhaul-1

This cycle involves 15 inspections, 4 repairs and 1 overhaul. The time duration between two stages say (c) or (d) and (e) may range from 1 month to 6 months or even more, depending upon the type of material handling equipment and the time for which it has been used.

Ask

- Ask students to explain the steps involved in preventive maintenance.
- Ask students to explain the steps to be followed during breakdown maintenance.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

UNIT 3.3: Testing process of MHE as per SOP

Unit Objectives

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

1. Explain the testing process of MHE as per SOP.
2. Interpret the Process of Report deviations as per escalation matrix.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the testing process of MHE as per SOP
- Let them know the Process of Report deviations as per escalation matrix

Say

- A Standard Operating Procedure is a set of written instructions that describes the step-by-step process that must be taken to properly perform a routine activity. SOPs should be followed the exact same way every time to guarantee that the organization remains consistent and in compliance with industry regulations and business standards.



Fig. 3.3.1. SOP Specification

- Electric pallet trucks are designed by their very nature to be simpler, more reliable, and easier to maintain than traditional manual pallet trucks. The primary reason is because they use electric motors to do the heavy lifting, rather than relying on a potentially complex system of hydraulics. There are several common problems you'll find with hydraulic manual pallet trucks, such as needing to monitor and top up the hydraulic fluid, leaks, and air bubbles throughout the system. These aren't issues you'll have to contend with when you invest in an electric pallet truck.
- There are several things you can do as a part of a general ongoing maintenance programme on your electric pallet truck to keep it working reliably. Your electric pallet truck is a simple device, in as much as there are few moving parts – so these are very quick and easy things to do, but they can have a big impact.
 - o Regular lubrication – the pallet truck will need greasing around its wheels and axles around once a month, in order to keep it moving efficiently
 - o Protect the wheels – make sure the truck is used on smooth surfaces and that the path is always clear of debris. This prevents the wheels chipping or buckling.

Say



- o Proper storage – when not in use, the pallet truck needs to be kept in a secure, safe environment, away from the elements
- o Regular cleaning – dust, dirt, and grime can cause damage to the truck over time, so it should be cleaned as thoroughly and as regularly as possible
- o The daily check should comprise of:
 - o All-round visual check to look for damage to the forks, wheels, control panels
 - o Electrics check, to ensure the pallet truck powers up properly and holds charge
 - o Moving the truck forward and back, and side to side, to check for noises/malfunctions
 - o Battery condition check to ensure that the battery going in is not damaged in any way
 - o Check the battery that is coming out of the truck and going into the charging dock for same
 - o Make a thorough report, ideally with pictures, of any damage found and notify immediately
- o A technician is only as accurate as the measurement equipment they are using. If the equipment is used incorrectly or is faulty, then the measurements will be inaccurate. If the measurements are inaccurate, then the technician will draw the wrong conclusions. To avoid getting inaccurate readings, you need to handle, use, and store meters properly. When you are done using a multimeter, it should always be turned off to extend battery life.
- o Incident escalation is what happens when an employee can't resolve an incident themselves and needs to hand off the task to a more experienced or specialized employee.
- o An escalation matrix is a document or system that defines when escalation should happen and who should handle incidents at each escalation level.

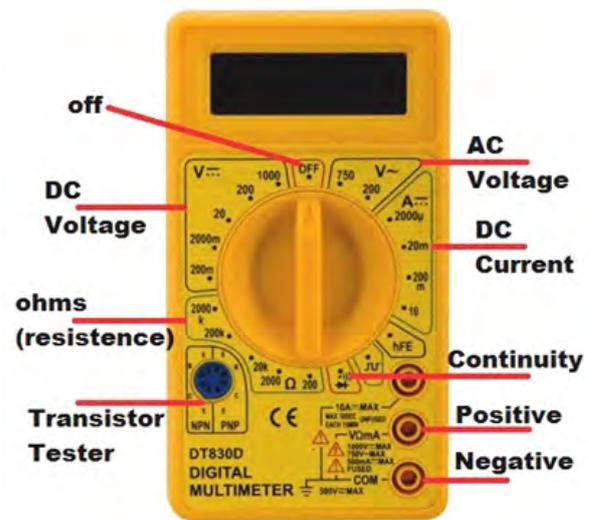


Fig. 3.3.7. Digital Multimeter

Ask



- Ask students to explain the testing process of MHE as per SOP.
- Ask students to explain the Process of Report deviations as per escalation matrix.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Elaborate



- **How to Use a Multimeter:** <https://www.youtube.com/watch?v=ts0EVc9vXcs>
- **Forklift Battery Voltage Testing For 12 Separate Cells 1/1/2022:** <https://www.youtube.com/watch?v=LioEVOvPTBk>
- **Forklift Battery Repair - Reconditioning:** <https://www.youtube.com/watch?v=TJKj0JvBnKM>

Exercise

Answers to the Exercise

3) Mention 10 Names of Equipments and Machines used by a Warehouse.

The following equipment increases warehouse productivity and efficiency: Storage System- Pallet racks, shelving, specialty racks. Material Handling- Forklifts, pallet jacks, hand trucks. Packaging- Industrial scales, stretch wrap machines, packing tables.

Storage equipment is any equipment used for holding or buffering materials over a period of time (and may include transport) typically they help preserve valuable work floor space. Having enough space to work plays a significant role in product protection, worker safety and lean manufacturing.

4) What do you understand by SOP? Explain in terms of testing process of MHE.

A step-by-step list of the procedures. Includes explanations of the task's goal, roles and responsibilities, regulatory requirements, terminology, descriptions of what needs to be done to complete each step and a discussion of decisions that must be made.

SOPs can be defined succinctly as "detailed, written instructions to achieve uniformity of the performance of a specific function".

5) What are the steps involved in breakdown maintenance.

Breakdown maintenance is maintenance performed on a piece of equipment that has broken down, faulted, or otherwise cannot be operated. The goal of breakdown-maintenance is to fix something that has malfunctioned. To the contrary, preventive maintenance is performed in order to keep something running.



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Transforming the skill landscape

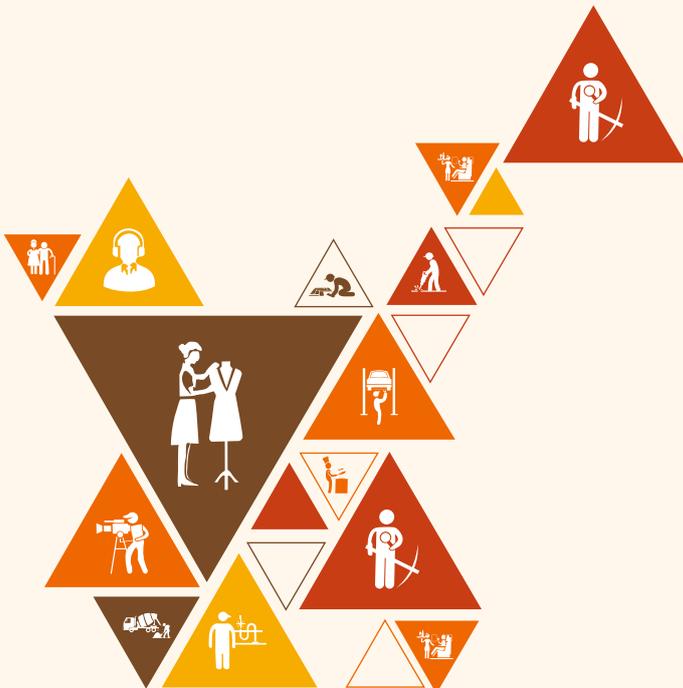


4. Post Maintenance Activities

Unit 4.1 - Inspection Process of the Work Area

Unit 4.2 - Importance of Housekeeping

Unit 4.3 - Documentation requirements in Post Maintenance



LSC/N2323

Key Learning Outcomes

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

1. Summarize the various activities to be performed after maintenance activities.
2. Identify the inspection process of the work area.
3. Interpret the importance of housekeeping.
4. Recognize the documentation requirements in post maintenance activities.
5. Interpret how to prepare daily reports regarding damage, condition of equipment etc.

UNIT 4.1: Inspection Process of the Work Area

Unit Objectives

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

1. Perform the various activities after maintenance
2. Perform disposal of components as per company policy
3. Inspect the work area for proper maintenance

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the various activities after maintenance
- Let them know the Process of disposal of components as per company policy
- Explain the process of Inspecting the work area for proper maintenance

Say

- Here are some tips for ensuring a safe work area during forklift maintenance and inspections:
 - o Ensure the area is well lit.
 - o Remove any nearby obstructions or debris.
 - o Provide enough space to perform work safely.
 - o Clean up spilled fluids immediately when topping off.
 - o Put away any tools or products after use.
 - o Properly dispose of fluid containers or other trash.
- **While performing the daily inspection of your forklift, make sure of the following. We'll start with things to check while the engine is off:**
 - o Are the tires inflated and free of excessive wear or damage?
 - o Are the lug nuts tight?
 - o Are the axles and other moving components clear?
 - o Are the mast and forks not cracked, worn, bent or excessively rusty?
 - o Are the mast lift chains and rollers in good condition?
 - o Are the hydraulic lines free of damage? Are the fluid levels good?
 - o Is the operator's manual on board?
 - o Are all visible cables and hoses free of damage?
 - o Is the data plate legible and up to date?
 - o If the forklift has a seat belt, does it work?

Say 

- A neat workplace increases employees' morale and transforms the office into a cleaner, safer, healthier, happier work environment. It also makes you feel good when everything is sorted and straightened.
- Maintenance waste means materials collected while maintaining and operating the facility, including, but not limited to, soot, machinery deposits, scraped paint, deck sweepings, wiping wastes, and rags.



Fig. 4.1.1. Waste Material Collection

- Common recyclable materials include:
 - o Cardboard.
 - o Plastic.
 - o Cloth.
 - o Metal.
 - o Glass.



Fig. 4.1.2. Recyclable Material Collection

- Waste-reduction efforts can be a great step toward a more environmentally friendly facility, lower garbage and recyclable disposal costs and a cleaner workplace. But these initiatives work only when all equipment needed to carry out your waste-reducing plans operate correctly.

UNIT 4.2: Importance of Housekeeping

Unit Objectives

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

1. Interpret the importance of housekeeping.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the importance of housekeeping

Say

- Housekeeping and cleanliness at the workplace are closely linked to the industrial safety. The degree, to which these activities are effectively managed, is an indicator of the safety culture of the organization.
- A clean, well-ordered, attractive work environment sets the tone in which the work is enjoyed by the employees. It encourages tidy work habits in employees. It helps reduce their fatigue. It promotes good relations between employees and management. It gives a lift to morale, which is reflected in the quality of production and overall efficiency.
- Since good housekeeping and cleanliness also leave a good impression on the organizational visitors, hence these activities promote the image of the organization. Customers and the other stakeholders of the organization have more confidence in the organization since they notice that the work is being carried out efficiently in clean, pleasant, and well-ordered surroundings.
- The responsibility of housekeeping and cleanliness lies both with the management and the employees. Periodic and panic cleanups are costly and ineffective and do not improve work environment where the employees can give efficient performance.
- Poor housekeeping and cleanliness, on the contrary, creates workplace hazards which lead to various accident such as:
 - o slips, trips and falls,
 - o caught in-between objects,
 - o struck by falling objects,

Say



- o struck by moving objects,
 - o cut/stabbed by objects, and
 - o struck against objects.
- Through healthy housekeeping and cleanliness practices, the organization not only keep the workplace neat and clean, but also save on a whole lot of resources which in turn helps in improvement of the profitability of the organization.

Ask



- Ask students to explain the importance of housekeeping.
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Elaborate



- **Good Housekeeping For Industry:** <https://www.youtube.com/watch?v=emxsB3gVWLM>
- **What is '5S' Methodology? (Hindi):** <https://www.youtube.com/watch?v=dW8faNOX91M>
- **What is KAIZEN CONCEPT of LEAN:** <https://www.youtube.com/watch?v=l48EkJNW7TU>

Notes



UNIT 4.3: Documentation requirements in Post Maintenance

Unit Objectives

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

1. Interpret about documentation requirements in post maintenance activities.
2. Memorize how to prepare daily reports regarding damage, condition of equipment etc.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the about documentation requirements in post maintenance activities
- Explain that how to prepare daily reports regarding damage, condition of equipment etc.

Say

- Maintenance documentation is any record containing information that you might need to complete maintenance tasks and inspections. It tells you what you have, shows you how to maintain it, and has records of all your past work.
- Maintenance checklists and logbooks are tools used by technicians to document equipment maintenance inspections. Equipment maintenance involves the continuous process of checking, repairing, and servicing operating equipment to ensure businesses can operate without interruption.
- Quarantine is used to separate and restrict the movement of persons; it is a 'state of enforced isolation'. Only authorized persons are allowed to enter this area in the warehouse. Supervisor needs to make sure the goods are properly segregated in this area. If any item is wrongly marked as quarantined item, it needs to be kept aside for further check. Accordingly the binners (persons who would relocate items in this area) should place them at the right place. Finally he needs to ensure disposal of quarantined items as per the company policy through housekeeping staff.
- How to Write a Damage Report
 - o Date, time, location of the incident.
 - o The extent of the damage done.
 - o Names and designations of the people involved.
 - o Names and claims of witnesses.
 - o Series of events leading up to the incident.
 - o Environmental conditions during the time.
 - o Specific injuries sustained by people.



Equipment Damage / Loss / Theft Report Form

(Company Name) employees are required to report any damage, loss or theft of (Company Name) owned and operated equipment as soon as possible and submit a completed copy of this form within (XXXX) hours of the incident.

Please note that where an injury occurs as a result of any damage, loss or theft of (Company Name) owned and operated equipment, employees are required to report the incident immediately, and submit a completed Incident Report and Investigation Form.

Damage / Loss / Theft - Reported By	
Employee Name:	Employee Number:
Position/Title:	Department:
Company Phone:	Company Email:

Incident Information	
Incident Date (dd/mm/yy): ___/___/___	Time of Incident (24 hour clock):
Reported on: ___/___/___	Time Reported (24 hour clock):
Supervisor:	Building/Area: Specific Location:

Equipment Information	
List of Equipment Damaged / Lost / Stolen (Please Specify)	
Equipment Identification Number(s)	
Equipment Location at Time of Damage / Loss	

- Routine maintenance prevents larger problems from occurring. Taking good care of equipment, machines, and facilities extends their overall life as well as keep them performing at their best.

EQUIPMENT IN USE/IDLE

EQUIPMENT TYPE	EQUIPMENT NO.	EQUIPMENT STATUS	# HOURS
		[In Use/Idle/Out of Order]	

Exercise

Answers to the Exercise

1) Write various activities comes after Maintenance/ Servicing activity?

Cleaning, visual inspection, functional tests, lubrication, measurement of operating quantities and oil tests are some of the examples of routine maintenance activities.

The purpose of maintenance is to ensure the maximum efficiency and availability of production equipment, utilities and related facilities at optimal cost and under satisfactory conditions of quality, safety and protection for the environment.

2) What is the importance of Documentation in regards of Maintenance?

Documentation about an employee's performance will allow you to discipline, terminate, or fairly promote, reward, and recognize employees. Without documentation, making a case for any of these actions is difficult, and potentially risky for the employer.

3) What do you understand by daily reports and damage reports?

A daily report is a document that contains information relevant to a particular insurance policy. It may include, for example, the premium amounts, the date of issue, and the insured's name. Daily reports are commonly dispersed to insurance agents, the insurer, and other parties who are relevant to the contract.

A damage report is provided by a repairer to help us understand the background to a claim. Generally, it will: Provide details of the item (make, model, serial number, age, colour) Confirm how it was damaged (water damage, damage from impact, etc) Detail how bad the damage is.

4) Explain the advantages of Housekeeping & Cleanliness in Warehouse.

Advantages of Good Housekeeping:

- o Fewer accidents.
- o Increased life of building, machinery, tools, etc.
- o Improved employee morale.
- o Increased production. ...
- o Better product quality.
- o Continuous cleaning reduces housekeeping costs because intermittent cleanup is more expensive.
- o Little or no time is lost in searching for tools etc.

5) What is the importance of Inspection in Work Area?

A workplace inspection is the process of critically examining the workplace for the identification and mitigation of workplace hazards and to ensure that all standards are met and the workplace is in fact safe and free from any risks.



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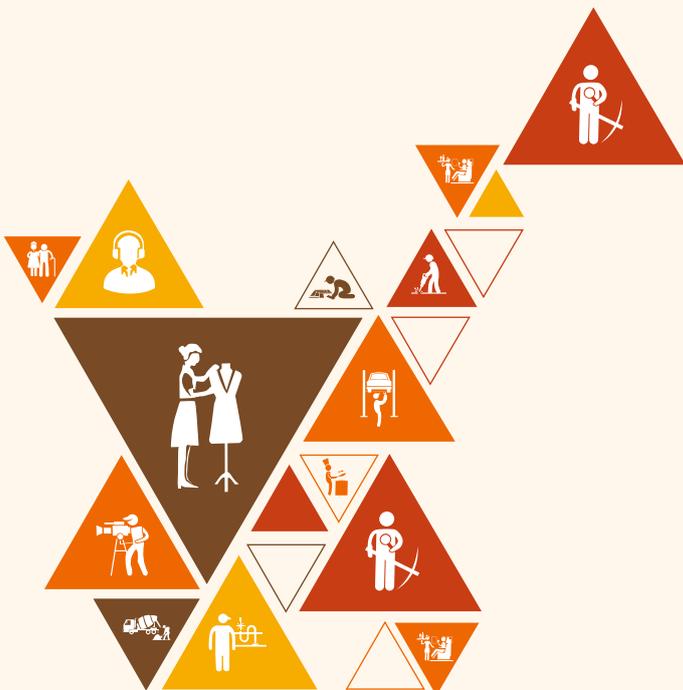


5. Compliance to Health, Safety and Security Measures

Unit 5.1 - Safety Instructions to be followed in Workplace

Unit 5.2 - Importance of PPE

Unit 5.3 - Inspection Procedure for Activity Area



LSC/N2330

Key Learning Outcomes

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

1. Analyze health, safety and security procedures while carrying out maintenance activities.
2. Interpret the importance of safety equipment including protective gear, helmets etc.
3. Apply the inspection procedure for activity area and equipment.

UNIT 5.1: Safety Instructions to be followed in Workplace

Unit Objectives

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

1. Demonstrate health and safety procedures while carrying out maintenance activities.
2. Identify the reasons for occurrence of accident.
3. Follow organization procedures with respect to documentation.

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the health and safety procedures while carrying out maintenance activities
- Explain the reasons for occurrence of accident
- Enlist organization procedures with respect to documentation

Say

- A warehouse is a commercial building used by manufacturers, importers/exporters, retailers/wholesalers, transport companies and other businesses for storage of goods, raw materials and other commodities.
- Common hazards:
 - o slippery surfaces (e.g., oily or greasy)
 - o seasonal trip hazards (snow and ice)
 - o spills of wet or dry substances
 - o changes in walkway levels and slopes
 - o unsecured mats
 - o poor lighting
 - o debris and items stored in pedestrian walkways
 - o trailing cables in pedestrian walkways
 - o smoke, steam or dust obscuring view
- Sprains and strains, also known as musculoskeletal injuries (MSIs), are the most common type of work-related injury. These can arise from repetitive movement or overexertion, such as working in an awkward position or performing the same movements repeatedly (for example, scanning items at a checkout).

Say



- Recognizing Medical Emergencies: Getting medical help right away for someone who is having a medical emergency can save their life. This article describes the warning signs of a medical emergency and how to be prepared.
- Accidents or illness can happen to anyone at any time, whether at home, at work or at school. First aid covers the steps taken to help an injured or sick person in the first minutes after the event. Often this first aid can help someone feel better, recover more quickly, and can even save lives. First aid can be useful in many different situations, from sprains to electric shocks to heart attacks.



Fig. 5.1.1. Site Safety Labels

- In order to properly extinguish a fire, you must be familiar with the three MOST common classes of fires, which are based on fuel type:
 - o Class A - Ordinary combustibles including wood, cloth, paper, rubber, and many plastics
 - o Class B - Flammable liquids (burn at room temperature) and combustible liquids (need heat to ignite) including gasoline, kerosene, and oil
 - o Class C - electrical fires

Ask



- Ask students to explain the health and safety procedures while carrying out maintenance activities.
- Ask students to explain reasons for occurrence of accident
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Elaborate



- **An Introduction - Personal Protective Equipment (PPE)**
<https://www.youtube.com/watch?v=loQ9Dbsy2ag>
- **How to Operate Fire Extinguisher - Fire Safety Training :**
<https://www.youtube.com/watch?v=w4jHpHoYZhk>
- **FIRST AID IN HINDI :** <https://www.youtube.com/watch?v=X9AaTk8YIVM&t=24s>
- **FIRST AID - CPR :** <https://www.youtube.com/watch?v=xkqlvM7SEYw>

UNIT 5.2: Importance of PPE

Unit Objectives

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

1. Interpret importance of safety equipment including protective gear, helmets etc.
2. Memorize the usage of safety equipment including protective gear, helmets etc. when checking inbound/outbound consignments

Resources to be Used

1. Lecture, Handouts, Role Play and Field Visit
2. Group Participation & Oral Quiz
3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser
4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment
5. Participant Handbook and PowerPoint Presentations

Do

- Discuss the importance of safety equipment including protective gear, helmets etc.
- Explain the usage of safety equipment including protective gear, helmets etc. when checking inbound/outbound consignments.

Say

- PPE stands for personal protective equipment. It consists of any clothing or device designed to be worn by the employee in order to protect him/her from one or more risks that could jeopardize his/her health in the workplace.
- In any warehouse, the risk of accidents is high. For one thing, operators who drive some type of vehicle could collide with other handling equipment or objects, become crushed, or have products fall on them. At the same time, workers who travel on foot are prone to getting hurt, tripping, and falling.
- To avoid these potential accidents, in addition to using PPE, it's crucial to apply all the necessary safety measures. This includes operator training, warehouse signage, the selection of the right type of racking, and the implementation of a technical inspection of the storage systems.



Fig. 5.2.1. Safety Equipments

Say



- If you need to lift something from the ground, bend your legs to lower yourself down, but don't go down on one knee unless absolutely necessary. Next, grasp the object, tighten the muscles of your stomach, back and hips, and lift. If needed, rest the object on one knee and take a moment to adjust your grip.



Fig. 5.2.1. Lifting Movements

Ask



- Ask students to explain the importance of safety equipment including protective gear, helmets etc.
- Ask usage of safety equipment including protective gear, helmets etc. when checking inbound/outbound consignments
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Elaborate



- **Lifting Objects at Work:** <https://www.youtube.com/watch?v=qP5nyfTDbfE>
- **What Is PPE? | Warehouse Safety Tips:** <https://www.youtube.com/watch?v=Vw34RfrCOpQ>
- **Newcomers and the Workplace: Personal Protective Equipment at Work:** <https://www.youtube.com/watch?v=DmBrRNV9Hrk>

Notes



UNIT 5.3: Inspection Procedure for Activity Area

Unit Objectives

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

1. Interpret inspection procedure for activity area and equipment

Resources to be Used

- | | |
|---|---|
| 1. Lecture, Handouts, Role Play and Field Visit | 4. Teaching board, Computer, Projector, Video player or TV, Topic related Raw Material, Tools and Equipment |
| 2. Group Participation & Oral Quiz | |
| 3. Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Board eraser | 5. Participant Handbook and PowerPoint Presentations |

Do

- Discuss the inspection procedure for activity area and equipment.

Say

- The Receiving Department has the following functions to perform:
 - o To receive, unload and unpack the materials.
 - o To check whether the packages and their contents are intact or not.
 - o To verify and check the quality, quantity and other specifications regarding materials in accordance with the purchase order.
 - o To segregate defective materials from the lot by comparing delivery note sent by the supplier with the copy of the purchase order. Any shortage or breakage of material is intimated along with the acknowledgment sent to the supplier for the receipt of material.
 - o To pass on the materials from the receiving clerk to the inspector for his thorough inspection of the materials received.
 - o To prepare the 'Goods Received Note' showing the particulars of the materials received.
- Here are some examples of weighing equipment technology currently used in supply chain management:
- Conveyor/Belt Scales – A conveyor scale also known as belt scales measure items while they're in motion, which reduces the need for lifting and lowering loads. This makes conveyor scales the perfect choice for facilities where weighing speed is important. Conveyor scales are also highly accurate, easy to clean, and can include additional features for sorting and labeling.
- Bench & Shipping Scales – Bench scales and checkweighing scales are the ideal choice for accurately weighing smaller loads and items. These scales are available in various sizes and capacities, but are usually designed to fit into small areas and maximize workspace.

Say

- They are capable of counting or checkweighing applications. Checkweighing is usually done at the end of the production process and is designed to “check” that the weight of the package of the product falls within the determined weight perimeters.
- Floor Scales – Also known as pallet scales, are used to weigh heavy loads during incoming or outgoing transportation, inventory sorting and other operations requiring the weighing of heavy goods. Floor scales are highly accurate and are available with a wide variety of capabilities. Floor scales can come with many mobility options and wash down capabilities as well as accessories that can be tailored to your weighing requirements. Floor scales can be installed in a pit which sets the scale flush with the surrounding surface allowing loads to be wheeled or pushed onto the scales without lifting. The other option would be to install the floor scale on a level surface near the point of weighing. The goods being weighed would be lifted onto the floor scale that sits a few inches off the level surface.
- Forklift Scales – These compact weighing scales are ideal for high-volume operations since they allow forklift operators to lift and weigh loads on the vehicle. Forklift truck scales automatically record details of origin, storage, and weight during transport as well, which saves time since items can be taken straight to storage after delivery.
- Vehicle Scales – Axle scales, truck scales and other vehicle weighing systems help ensure that cargo and freight are weighed accurately when they are loaded on vehicles. This reduces the risk of fines from overloading, vehicle wear, and tear caused by loads that are too heavy, as well as safety hazards for vehicle operators and warehouse staff. Many businesses have vehicle scales to weigh products for selling and receiving purposes.

Name	Purpose
Ammeter (Ampermeter)	Measures current
Capacitance meter	Measures the capacitance of a component
Current clamp	Measures current without physical connection
Curve tracer	Applies swept signals to a device and allows display of the response
Cos Phi Meter	Measures the power factor
Distortionmeter	Measures the distortion added to a circuit
Electricity meter	Measures the amount of energy dissipated
ESR meter	Measures the equivalent series resistance of capacitors
Frequency counter	Measures the frequency of the current
Leakage tester	Measures leakage across the plates of a capacitor
LCR meter	Measures the inductance, capacitance and resistance of a component
Megger tester	Measures Resistance Of An Winding Of Motor Or Generator And

Say



	Measures Earthing's Resistance
Microwave power meter	Measures power at microwave frequencies
Multimeter	General purpose instrument measures voltage, current and resistance (and sometimes other quantities as well)
Network analyzer	Measures network parameters
Ohmmeter	Measures the resistance of a component
Oscilloscope	Displays waveform of a signal, allows measurement of frequency, timing, peak excursion, offset, ...
Psophometer	Measures AF signal level and noise
Q meter	Measures Q factor of the RF circuits
Tachometer	Measures speed of motors
Signal analyzer	Measures both the amplitude and the modulation of a RF signal
Signal generator	Generates signals for testing purposes
Spectrum analyser	Displays frequency spectrum
Sweep generator	Creates constant-amplitude variable frequency sine waves to test frequency response
Transistor tester	Tests transistors
Tube tester	Tests vacuum tubes (triode, tetrode etc.)
Wattmeter	Measures the power
Vectorscope	Displays the phase of the colors in color TV
Video signal generator	Generates video signal for testing purposes
Voltmeter	Measures the potential difference between two points in a circuit. (Includes: DVM and VTVM)
VU meter	Measures the level of AF signals in Volume units
CRO(Cathode Ray Ocylocop)	Check transistor



Fig. 5.3.1. Warehouse Safety Rules

Ask



- Ask students to explain the inspection procedure for activity area and equipment
- Encourage shy students to speak up in class, Motivate students by stating that they are going to achieve something big in their life.
- Promote all the students in a much positive note and keep learning.

Exercise

Answers to the Exercise

1) What are the safety procedures in a warehouse?

- Important Warehouse Safety Tips
 - Keep areas clean and organized.
 - Only certified personnel should operate equipment.
 - Define forklift paths.
 - Supply and wear PPE.
 - Inspect equipment regularly.
 - Hold regular safety training.
 - Optimize warehouse layout.
 - Have a plan, do practice drills.

2) Why is safety important in a warehouse?

Workplace accidents hurt the people involved, but they also affect families and coworkers. A safe, productive work environment ensures all staff consider the full range of consequences associated with an incident. At the end of the day, everyone wants to return home healthy and safe.

3) What are 5 fire safety rules?

- 1) Install Fire Alarms. Smoke alarms are the best early fire warning system.
- 2) Plan a Fire Escape Route. In the event of a fire, always have an escape plan in advance.
- 3) Keep Flames and Other Heating Equipment in Check.
- 4) Have a Fire Extinguisher.
- 5) Utilize the Cliché Stop, Drop and Roll.

4) What PPE is needed in a warehouse?

PPE stands for personal protective equipment. It consists of any clothing or device designed to be worn by the employee in order to protect him/her from one or more risks that could jeopardize his/her health in the workplace.

5) What are the four most common safety issues in warehouses?

- Warehouse Safety Hazards
 - Falls.
 - Heavy Equipment.
 - Moving Parts.
 - Heavy Materials.
 - Overexertion.
 - Slips and Trips.
 - Harmful Substances.
 - Fires.



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National
Skill Development
Corporation

Transforming the skill landscape

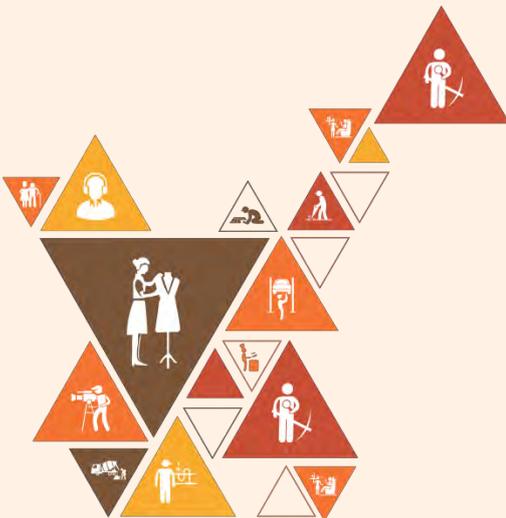


6. Annexures

Annexure I: Training Delivery Plan

Annexure II: Assessment Criteria

Annexure III: QR Codes



Annexure I

Training Delivery Plan

Training Delivery Plan			
Program Name:	Material Handling Equipment (MHE) Maintenance Technician		
Qualification Pack Name & Ref. ID	LSC/Q2315, V3.0		
Version No.	3.0	Version Update Date	27/01/2025
Pre-requisites to Training (if any)	11th grade pass or Completed 1st year of 3-year diploma (after 10th) and pursuing regular diploma or 10th grade pass plus 1-year NTC/ NAC or 8th grade pass plus 2-year NTC + 1 Year NAC or 8th pass plus 1-year NTC + 1-Year NAC plus CITS or 10th grade pass and pursuing continuous schooling or 10th Grade Pass + 2 year relevant experience or Previous relevant Qualification of NSQF Level 3.0 with minimum education as 5th Grade pass + 2 year relevant experience or Previous relevant Qualification of NSQF Level 3.5 + 1 year relevant experience		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Describe the basic structure and function of supply chain • Detail the various tasks to be performed while preparing for maintenance • Perform maintenance operations as per standard operating procedure • Perform the necessary tasks post maintenance • Demonstrate health, safety and security measures while carrying out maintenance activities 		

Sl. No	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration (Hours)
1	Introduction to MHE Maintenance Technician	Supply Chain and Logistics Management	<ul style="list-style-type: none"> • Explain Supply Chain and Logistics Management 		Lecture	Teaching board, computer, projector, video player or TV	8
		Importance of Logistics	<ul style="list-style-type: none"> • Discuss importance of Logistics 		Lecture		8
		Sub-Sectors of Logistics Industry	<ul style="list-style-type: none"> • List out the sub-sectors of Logistics Industry 		Lecture		4
		Types of Warehouses	<ul style="list-style-type: none"> • Discuss the types of Warehouses 		Practical		5
		Roles of Material Handling Equipment (MHE) Maintenance Technician	<ul style="list-style-type: none"> • Explain the roles of Material Handling Equipment (MHE) Maintenance Technician 		Practical		5

2	Preparation for Maintenance	Goods and its Classification	<ul style="list-style-type: none"> Identify the different types of goods and their classification 	LSC/N2321	Practical	Teaching board, computer, projector, video player or TV	8
		Types of dangerous goods	<ul style="list-style-type: none"> Identify the types of dangerous goods 		Practical		8
		Elements of Warehousing in India	<ul style="list-style-type: none"> List out the Elements of Warehousing in India 		Lecture		8
		Principles of Material Handling	<ul style="list-style-type: none"> Perform various steps in Material Handling 		Practical		8
		Equipment/Machineries used in Warehouse	<ul style="list-style-type: none"> Identify the Equipment/Machineries used in Warehouse 		Practical		8
		Documents and Information for MHE Maintenance	<ul style="list-style-type: none"> Explain the various documents and information to be collected from supervisor for maintenance 		Lecture		8
		PPEs Role in Warehouse	<ul style="list-style-type: none"> Demonstrate the usage of various PPEs 		Practical		8
		Prioritizing checking of Machines or Equipment	<ul style="list-style-type: none"> Identify the Levels of Maintenance Tasks Priorities 		Practical		8
		Routine Maintenance Workflow	<ul style="list-style-type: none"> Demonstrate the Routine Maintenance Workflow 		Practical		8
		Routine Maintenance Workflow	<ul style="list-style-type: none"> Explain the process of Daily, Monthly and Annual Maintenance Checks 		Lecture		4
		Benefits of routine maintenance	<ul style="list-style-type: none"> List out the benefits of routine maintenance 		OJT Practical		2 4
		Routine Maintenance Workflow	<ul style="list-style-type: none"> Enlist various tasks to be performed while preparing for maintenance 		OJT		8

3.	Maintenance Operations	Material Handling Equipment	<ul style="list-style-type: none"> • Perform various maintenance operations 	LSC/N2322	Practical	Teaching board, computer, projector, video player or TV	8
		Importance of Material handling equipment	<ul style="list-style-type: none"> • Explain the Importance of Material handling equipment 		Lecture		8
		Forklift Maintenance Checklist	<ul style="list-style-type: none"> • Prepare a checklist of forklift maintenance requirements 		Practical		8
		Maintenance Management	<ul style="list-style-type: none"> • Identify the objectives of the maintenance management 		Practical		8
		Planning and Scheduling	<ul style="list-style-type: none"> • Identify the key points to plan maintenance 		Practical		8
		Preventive versus Breakdown Maintenance	<ul style="list-style-type: none"> • Demonstrate the steps involved in preventive maintenance 		Practical		8
		Preventive versus Breakdown Maintenance	<ul style="list-style-type: none"> • List out the steps to be followed during breakdown maintenance 		Practical		8
		Preventive versus Breakdown Maintenance	<ul style="list-style-type: none"> • Explain the differences between preventive and breakdown maintenance 		Lecture		8
		Preventive versus Breakdown Maintenance	<ul style="list-style-type: none"> • Explain the advantages of preventive MHE Maintenance 		OJT Lecture		4 4
		Testing Process of MHE as per SOP	<ul style="list-style-type: none"> • Demonstrate the testing process of MHE as per SOP 		Practical		8
		Electric Pallet Truck Maintenance	<ul style="list-style-type: none"> • Demonstrate the guide for ongoing electric pallet truck maintenance 		Practical		8
		Multimeter Parts and Components	<ul style="list-style-type: none"> • Follow the precautions apply equally to digital and analog multimeters 		Practical		8

4.	Post Maintenance Activities	Activities under Maintenance	<ul style="list-style-type: none"> Perform the various activities after maintenance 	LSC/N2323	Practical	Teaching board, computer, projector, video player or TV	8
		Activities under Maintenance	<ul style="list-style-type: none"> Perform disposal of components as per company policy 		Practical		8
		Activities under Maintenance	<ul style="list-style-type: none"> Inspect the work area for proper maintenance 		Practical		8
		Activities under Maintenance	<ul style="list-style-type: none"> List out some tips for ensuring a safe work area during forklift maintenance and inspections 		Practical		8
		Importance of Housekeeping and Cleanliness at Workplace	<ul style="list-style-type: none"> Explain the importance of housekeeping 		Lecture		8
		Importance of Housekeeping and Cleanliness at Workplace	<ul style="list-style-type: none"> List out some of the activities which provide a big boost to the image of the organization 		Practical		8
		Importance of Housekeeping and Cleanliness at Workplace	<ul style="list-style-type: none"> Explain some several signs which reflect poor housekeeping and cleanliness at the workplace in the organization 		Lecture		8
		Importance of Housekeeping and Cleanliness at Workplace	<ul style="list-style-type: none"> Identify the major elements which are normally included in the housekeeping and cleanliness practices at the workplace 		Practical		8
		Importance of Documentation	<ul style="list-style-type: none"> Identify the documentation requirements in post maintenance activities 		Practical		8
		Forklift Accident/Incident Form	<ul style="list-style-type: none"> Prepare forklift Accident/Incident Form and detail it 		OJT Practical		2 4
		Quarantine Area in a Warehouse	<ul style="list-style-type: none"> Explain quarantine Area in a Warehouse 		Lecture		4
		Pallet Truck Log Form	<ul style="list-style-type: none"> Show Pallet Truck Log Form 		OJT		8

5	Compliance to Health, Safety and Security Measures	Health and Safety Procedures	<ul style="list-style-type: none"> List out the health, safety and security procedures while carrying out maintenance activities 	LSC/N9908	Practical	Teaching board, computer, projector, video player or TV	8
		Health and Safety Procedures	<ul style="list-style-type: none"> Identify some of the hazard's workers could be exposed 		Practical		8
		Health and Safety Procedures	<ul style="list-style-type: none"> Identify the common hazard's in the warehouse 		Practical		8
		Health and Safety Procedures	<ul style="list-style-type: none"> List out warning signs of a medical emergency 		Practical		8
		First Aid	<ul style="list-style-type: none"> Explain First Aid 		Lecture		8
		Fire and Types of Extinguishers	<ul style="list-style-type: none"> Demonstrate the types of Extinguishers 		Practical		8
		PPE Importance in Warehouse	<ul style="list-style-type: none"> Explain importance of safety equipment including protective gear, helmets etc. 		Lecture		8
		PPE Importance in Warehouse	<ul style="list-style-type: none"> Demonstrate some good Lifting Techniques 		Practical		8
		Inspection Procedure for Activity Area and Equipment	<ul style="list-style-type: none"> Detail inspection procedure for activity area and equipment 		Lecture		4
		Testing Equipment for Warehouses	<ul style="list-style-type: none"> Identify some instruments for measuring electricity 		Practical		2

Annexure II Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Assessment Criteria for MHE Maintenance Technician	
Job Role	MHE Maintenance Technician
Qualification Pack	LSC/Q2315
Sector Skill Council	Logistic Sector Skill Council of India

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3	Individual assessment agencies will create unique question papers for theory and skill practical part for each candidate at each examination/training center.
4.	To pass the Qualification Pack, every trainee should score a minimum of 70% for NSQF level 4 & above job roles & 50% for NSQF level 1 to 3 job roles.
5.	In case of unsuccessful completion, the trainee may seek re-assessment on the Qualification Pack

				MARKS ALLOCATION	
ASSESSMENT OUTCOME (NOS CODE AND DESCRIPTION)	ASSESSMENT CRITERIA (PC)	Total Marks	Out Of	Theory	Skills Practical
1. LSC/N2321: Prepare for maintenance	PC1. collect the daily maintenance checklist from the supervisor	100	8	2	6
	PC2. find out from the supervisor if there is any breakdown or problems in any of the Material Handling Equipment (MHE) and collect the special maintenance checklist.		12	2	10
	PC3. in case of special maintenance, understand which particular machine(s) are to be checked and where they are located.		14	4	10
	PC4. understand which is the critical MHE and attend to it first so as to minimize losses to the company		6	2	4
	PC5. find and read up on maintenance history from previous reports of the specific equipment if required.		8	6	2
	PC6. plan the sequence in which the maintenance would be carried out so as to optimize time and travel distance		12	4	8

	PC7. collect and wear all the necessary Personal Protective Equipment (PPE).		9	2	7
	PC8. assess the tooling requirement and collect the necessary tools from the tool crib/storage racks		11	3	8
	PC9. collect any grease, lubricants, fluids or replacement parts that would be used from the store area.		10	2	8
	PC10. fill out any forms required by the store after receiving the supplies.		10	3	7
		Total	100	30	70
2.LSC/N2322: Perform Maintenance Operations	PC1. observe the overall functioning of the MHE to identify problems if any.	100	5	2	3
	PC2. make any minor adjustments in settings or parameters if required to ensure smooth functioning		5	1	4
	PC3. in case of a machine overhaul, plan well in advance and perform it during holidays or non peak hours.		5	2	3
	PC4. check for damage in tyres, parking break, main horn, reverse horn, warning lamp, etc		4	1	3
	PC5. check fluid levels of engine, transmission, differential, hydraulic, radiator coolant and brake oil and top up any fluids as required.		5	1	4
	PC6. apply grease and lubricants where required		4	1	3
	PC7. replace any parts that have worn out at the times specified by the manufacturer.		4	1	3
	PC8. complete and check off all the line items in the preventive maintenance checklist		5	1	4
	PC9. test the MHE to ensure that it is fully functional and safe for use.		5	2	3
	PC10. assess the MHE and escalate to supervisor if there is a likelihood of future problems or replacement is required		3	1	2
	PC11. conduct regular awareness on battery charging and safety methods to all operators		5	1	4
	PC12. regularly maintain spare batteries and ensure they are fully charged		2	1	1
	PC13. prepare health card for every MHE.		3	2	1
	PC14. examine the MHE to determine the source of the problem.		4		

				1	3
	PC15. determine if the problem could be resolved using existing skills or if it requires the attention of a specialized technician from the manufacturing company		4	1	3
	PC16. if the problem could be resolved, determine whether the part could be repaired or if replacement is necessary		2	1	1
	PC17. if the part could be repaired, carry out repairs using available machine shop equipment		4	2	2
	PC18. if part cannot be repaired or if replacement is required, obtain the required parts from the store (if available) or inform inventory clerk to place orders.		5	1	4
	PC19. receive required parts and change the parts as per manufacturer's guidelines		5	2	3
	PC20. check fluid levels of engine, transmission, differential, hydraulic, radiator coolant and brake oil and top up any fluids as required		5	1	4
	PC21. apply grease and lubricants where required		4	1	3
	PC22. complete and check off all the line items in the breakdown maintenance checklist		4	1	3
	PC23. test the MHE to ensure that it is fully functional and safe for use.		4	1	3
	PC24. escalate to supervisor in case of delays or if a specialized technician from the manufacturing company is required to solve the problem.		4	1	3
		Total	100	30	70
3.LSC/N2323: Perform Post Maintenance Activities	PC1. dispose any damaged/worn out components and used up fluids appropriately as per company policy.	100	10	1	9
	PC2. return any unused fluids or components back to the store		7	1	6
	PC3. carry out a basic visual safety inspection of the work area where maintenance activities were carried out.		8	2	6
	PC4. remove any sharp objects and clean up any spills in the work area		6	1	5
	PC5. return any tools used to the tool crib/storage racks.		9	2	7
	PC6. return any PPE used to their respective storage racks			2	6

			8		
	PC7. escalate to supervisor if parts have not been received or any other reasons which would increase the downtime		10	3	7
	PC8. notify supervisor regarding any concerns faced during the day.		8	2	6
	PC9. provide daily report to manager regarding condition of equipment, damage if any, etc.		7	2	5
	PC10. complete any forms as required by the store and by management		6	2	4
	PC11. log any maintenance activity undertaken		6	2	4
	PC12. update MHE condition in the appropriate health card and the next review dates in the maintenance schedules		7	3	4
	PC13. prepare a detailed report explaining the cause for the problem, solution, expected lifespan and suggested replacement dates		8	2	6
		Total	100	25	75
4.LSC/N2330: Maintain Health, Safety and Security measures for carrying out maintenance activities on MHE	PC1. comply with safety regulations and procedures in case of fire hazards, biohazards, etc.	100	10	3	7
	PC2. wear all safety equipment including protective gear, helmets etc. when checking inbound/outbound consignments.		10	3	7
	PC3. follow organization procedures with respect to documentation		10	3	7
	PC4. recognize and report unsafe conditions and practices		10	3	7
	PC5. in case of signs of any emergency situation or accident or breach of safety immediately follow organizational protocol to deploy action		10	3	7
	PC6. identify reasons for occurrence of incident		10	3	7
	PC7. capture reasons and response/action taken into incident report/note to manager		10	3	7
	PC8. report any deviations from standard protocol along with reasons (if any)		10	3	7
	PC9. visually inspect the activity area and equipment for appropriate and safe condition.		10	3	7
	PC10. ensure appropriate protocol is followed in case of any incident by all relevant staff				

			10	3	7
		Total	100	20	80

Annexure III– QR Codes

S. No	Chapter No.	Unit No.	Topic Name	URL	Page No.	QR Code (s)
1	1. Introduction to MHE Maintenance Technician	Unit 1.1 - Supply Chain and Logistics Management	1.1.1 What is Logistics?	https://youtu.be/kT_toh5NbxE	3	 What is logistics?
2		Unit 1.2 - Sub-sectors of Logistics Industry	1.2.1 Sub-Sectors of Logistics Industry	https://youtu.be/NuLzlZuQoLA	7	 Sub-sector of Logistics
3		Unit 1.3 - About Warehousing Industry	1.3.1 Understanding Warehousing Industry	https://youtu.be/tp4TQOBsNgk	14	 Types of warehouses
4	2.Preparation for Maintenance	Unit 2.1 - Material Handling Equipment (MHE)	2.1.1 Goods and its Classification	https://youtu.be/7zFSs4QGNE	32	 Classification of Goods
5		Unit 2.2 - Documentation & Information collected for Maintenance	2.2.1 Principles of Material Handling	https://youtu.be/bq9mgk5zLPE	39	 Material Handling

6	3.Maintenance Operations	Unit 3.1 - Process of Planning the Sequence for Maintenance	3.1.1 Material Handling Equipments	https://youtu.be/BBWPIByOEfl	68	 <p>Material handling equipment in warehouse</p>
7		Unit 3.3 - Testing process of MHE as per SOP	3.3.1 Testing Process of MHE as per SOP	https://youtu.be/2-hNYfX8rcU	79	 <p>Digital Multimeter Parts And Function</p>
8	4. Post Maintenance Activities	Unit 4.2 - Importance of Housekeeping	4.2.1 Importance of Housekeeping and Cleanliness at Workplace	https://youtu.be/mOUvhstJcRk	108	 <p>House keeping in work place</p>
9	5.Compliance to Health, Safety and Security Measures	Unit 5.1 - Safety Instructions to be followed in Workplace	5.1.1 Health and Safety Procedures	https://youtu.be/-8Nxd9ILKoQ	120	 <p>5 Common Warehouse Safety Hazards</p>
10		Unit 5.2 - Importance of PPE	5.2.1 PPEs Role in Warehouse	https://youtu.be/loQ9DbSy2ag	131	 <p>PPE in warehouse</p>



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