The below pages refer to training on Tuggers & Dolly handling, including pre-inspection requirements and swing path analysis. This program is intended only as a reference guide and is not meant to be the only source of Tugger/Dolly training. The combination of our hands-on exercises, along with the testing and providing operators with a thorough understanding of this material completes this tugger/dolly safety training.
Types of Tuggers

The following are examples of the types of tuggers used throughout GM facilities:

- Sit down
- Stand up
- Combination

Tuggers/dollys **MUST** be operated only by Designated Persons, such as:

- Operators
- Maintenance and test personnel, when it is necessary in the performance of their duties
- Inspectors
- Trainees under the direct supervision of a designated person
  - Designated persons **MUST** be authorized and have an operators permit to operate tuggers.

Authorization and Training Requirements

**Authorization Requirements for First Line Supervisors**

Supervisors of tugger operators must receive training in the Vehicle Safety for Material Handling Program from an instructor that has been certified the Center for Human Resources.

**Authorization Requirements for Tugger Operators**

Prior to an employee being authorized to operate a tugger, the employee is required to:

- Pass a physical examination/evaluation.
- Attend the Vehicle Safety for Material Handling Tugger/Dolly Training Program.
- Fulfill on-the-job training (OJT) requirements. The OJT requirements **MUST** be specific to the types of tuggers and dollies the operators will be authorized to operate.
- Pass a written or oral test.
- Pass a practical operating examination.
- Be issued an operator's permit.
Permit Procedures

You must have a valid operator's permit to operate a tugger. To acquire a permit, you must have a physical examination/evaluation and be trained in the safe operation of a tugger. The operator's permit will identify the type(s) of equipment you are qualified to drive. You must renew the operator's permit every three years by passing a medical examination and recertification program.

Medical Exam

A operator's permit will not be issued until you have been certified physically fit for tugger/dolly operations. The physical examination/evaluation should include the following:

- Vision
- Depth Perception
- Reaction Timing
- Hearing
- Blood Pressure
- Heart — Lungs
- Musculoskeletal

and any other test for which there is a medical indication substantiated by your medical history and/or the results of your physical examination/evaluation. Drug testing cannot be conducted without your written consent or the agreement of your local union. You are entitled to a full explanation of all tests and why the test is being conducted. You are also entitled to a full explanation of the results of each test.

![Industrial Lift Truck Permit](image)

Figure 1-1. Sample operator's permit

Training

The permit program is designed to:

- Provide training on the safe use of tuggers and dollies.
- Develop skills to operate specific equipment.
- Test your skills in tugger/dolly operations.
Determining Load Capacity

Operating Manual

Each tugger is required to have an operator's manual which contains information necessary for the operation and maintenance of that tugger. This manual is provided by the manufacturer. As an operator, you are required to read this manual prior to operating the tugger. If the operator's manual is missing, ask your supervisor for a copy.

Load Capacity

The load capacity is the maximum load the tugger can handle during operation under ideal conditions.

Specification Plate

Every tugger has a specification plate attached to it. The specification plate lists information on the capacities and restrictions of the tugger.

A chart listing the load capacity of the tugger will be found on the specification plate. This includes the maximum load capacity and the load centers.

The location of the specification plate will vary. If you cannot locate the specification plate, notify the appropriate person and obtain the information before operating the tugger.

![Tugger specification plate](image)

Figure 1-2. Tugger specification plate
Stand up tugger is used to transport materials throughout the plant. When choosing a tugger always be aware of its towing capacity. Tugger capacity varies between different sizes and models. Never exceed the manufacturer's recommended towing capacity.

Figure 2-1. Sit down tugger

Figure 2-2. Instrument panel controls for sit down tugger
**PRE-OPERATION INSPECTION FOR TUGGERS**

A pre-operation inspection **MUST** be performed on the tugger by the operator during each shift before being used to determine its condition. The pre-inspection must be documented according to the GM Orion Assembly plant policies. **If the condition of any part of the tugger is questionable, the tugger MUST NOT be operated.** Contact your Supervisor or Lead. On the following page, a copy of the form that you will be using is provided. You **MUST** follow all manufacturers' recommendations when conducting pre-operation inspections. If the manufacturer’s recommendations for inspecting the tugger are not available, contact your Supervisor or Lead.

Before operating a tugger, you must perform a pre-operation inspection. While conducting the inspection you must record the condition of each item on the pre-operation checklist. The following is a list of inspection points:

![Diagram of Tugger with Inspection Points](image)

**Figure 3-1. Inspection points for tugger**
When inspecting the vehicle, look for:

- Broken welds
- Cracked or bent areas
- Missing or worn stops

If your lugger has an overhead guard, inspect it for broken welds, missing bolts, and weak or damaged areas. If the cage is loose, broken, or missing, notify your supervisor. If the cage is loose or missing, **do not operate**.

Inspect the tires and wheels for wear and damage. Look for:

- Large chunks of missing rubber.
- Loose rubber on the rim.
- Missing bolts and lug nuts.

If your job requires you to work in low light conditions or in outdoor operations after dark, your truck should be equipped with lights.

Inspect the lights for cracks and damage to the lenses. They should also be clean.

---

Figure 3-2. *Front hitch example*

Figure 3-3. *Rear hitch example*
Steering Mechanism

To inspect the steering mechanism turn the steering device in both directions. If the play is excessive or if the steering binds, indicate this on the inspection checklist.

Check the horn to make sure it is functioning properly.

Accelerator Pedal

Test the accelerator pedal before turning on the ignition switch. Depress the accelerator, then lift your foot off the pedal. If the pedal returns to the up position, then it is working properly. If the pedal doesn't return, do not operate the vehicle.

Parking Brake

To check this brake, engage the parking brake and put the directional control in drive. If the truck moves, stop and do not operate the tugger. Indicate this on the inspection checklist.

CAUTION! Tuggers with a parking brake engaged can be driven. Continued driving with the brake engaged will damage the parking brake.

Seat and Seat Belt

Check the seat for adjustment and make sure the seat is secure.

If the original equipment comes with seat belts, follow the manufacturer’s guidelines for inspection.

Your seat belt must latch securely. To check the seat belt, pull the belt from the retractor and release it. It must extend and retract smoothly. Check the belt for:

- Cuts
- Frays
- Tears

If the seat belt cannot be pulled from the retractor, it is defective and must be replaced. Indicate this on the inspection checklist.

Fluid Levels

Inspection of the brake fluid level is an important safety procedure. The brake fluid reservoir is usually located under the floor plate of the vehicle. If your tugger has a hydraulic breaking system, refer to the owner’s manual.

Brake Fluid Level Check

1. Locate the reservoir and remove the filler cap. Look into the reservoir.
2. If the fluid level is within 1/4 inch of the top of the reservoir, replace the cap.
3. If the fluid level is low, contact the appropriate person responsible for replacing this fluid.

Additional fluids need to be checked on tugger powered by an internal combustion engine.
Battery Fluid Check

CAUTION! When checking a battery, always wear eye protection and gloves to protect your eyes and hands from exposure to the battery acid. Know the location of the eye wash station and emergency showers.

1. Wear eye protection.
2. Extinguish all smoking materials.
3. Remove the battery caps and check the fluid level of the battery.
4. The fluid level should be just above the slotted opening in the battery cell.
5. If low and you are not authorized to fill, contact the person responsible for adding water.
6. If you are authorized to fill, add distilled water to each cell until filled to the proper level. Only use approved containers that are clean and free of dirt and grease to fill the cells.
7. Replace the cell caps on the battery.

If you get battery acid in your eyes or on your skin remove all contaminated clothing and flush the contaminated area for fifteen minutes. Then seek medical attention.
Basic Safety

Follow the rules of traffic safety.

- Keep to the right side of the road or aisle.
- Stop at all intersections.
- Obey all traffic signs.
- Never allow pedestrians between the truck and other objects.

Use the horn. This alerts pedestrians and other truck operators of your approach.

When parking the tugger, make sure:

- The ignition or power switch is shut off,
- The parking brake is set,
- The tugger is not blocking any aisles or doors.
Tugger Battery Charging
Refer to Opportunity Rapid Charge (ORC) Driver Training

Follow your plant's local procedures for changing out batteries.

**Opportunity Rapid Charging**

The Opportunity Rapid Charging Systems recharge batteries in a short period of time. A rapid charge battery can be recharged in as little as two hours. You can increase your battery charge in as little as fifteen minutes. When charging batteries follow your local joint health and safety policy.

**Charging Procedure**
- Park vehicle, and apply the parking brake.
- Disconnect the battery from the vehicle.
- Connect the battery to the charger and press the start button.
- Check the charging display to be sure the charger is in operation.

![Figure 4-7. Battery cable handles](image)

**Disconnecting the Charger**
- Press the stop button on the charger.
- Make sure the charger has shut off.
- Disconnect the battery from the charger.
- Reconnect the battery to the vehicle.

![Figure 4-8. Charger status screen](image)

**Opportunity Rapid Charging**

Once you have charged the tugger and reconnected the battery, following all safety procedures and wearing the proper personal protective equipment, it is ready for use. You MUST follow the previous steps each time you charge the tugger. Some opportune times to do this are during breaks, lunch periods, and at the end of each shift. When you are charging batteries, you MUST follow the safe operating procedures which MUST be posted on all charging equipment.
Inspect for Hazards and Obstructions

As a tugger operator, you have a responsibility to identify and evaluate hazards and obstructions in the work area of the tugger. You MUST learn to recognize situations that are hazardous to yourself and other employees in the area. The purpose for identifying and evaluating hazards is to safeguard yourself and other employees from hazards in the workplace.

Tugger operators MUST visually check for hazards and obstructions:

- In the work area of the tugger.
- Along the route of travel.
- After you reach the job site.

If hazards or obstructions are identified, notify your supervisor immediately.

Visually check for the following:

- Hazards and obstructions
- Overhead and width clearances
- Pedestrian traffic
- Environmental conditions

Hazards and Obstructions

Any hazards and obstructions in the tugger’s route of travel MUST be cleared.

Visually check for the following types of hazards:

- Pinch points (points where the platform/basket can come into contact with other objects).
- Items that you or others can be struck by (lighting fixtures, structural steel or piping systems).
- Things you or others can get caught in (protruding objects, working between machines in storage areas, tight quarters).
- Equipment under pressure (pneumatic or hydraulic systems, air and compressed gas cylinders).
- Exposure to hazardous energy or expected machine motion (live energy systems).
- Bumps and floor obstructions.
- Slippery surfaces.
- Scrap materials, metal, plastic, cardboard, debris, etc.
- Dips or grades along traveling surfaces.
- Drop-offs or holes.
- Missing manhole covers.
Overhead and Width Clearance

Visually check for overhead and width clearances. The tugger and load MUST clear obstructions.

Visually check for the following (measure if necessary):

- Aisles
- Door widths and heights
- Ceiling clearances

Visually locate:

- Electric power lines
- Steam pipes
- Sprinkler lines
- Overhead cranes
- Air lines

Vehicle and Pedestrian Traffic

- Identify where other employees are working, and
- Vehicle and traffic flow around the job site.

Environmental Hazards and Conditions

Check for the following environmental hazards and conditions inside the facility:

- Chemical hazards
- Hot objects
- Hot surfaces
- Slippery surfaces
- Abnormal temperatures
- Dust and mist

Special circumstances such as the potential of fire or explosion may require specially designed and equipped vehicles. Examples of areas that may present this hazard include paint rooms, fueling locations, or chemical storage areas. These locations must be clearly marked and include a warning sign which identifies the specific type of vehicle permitted in the area. If you identify any environmental hazards that may affect your ability to perform your job safely, or you are unsure of any condition, contact your Supervisor immediately.

Structural Capacities

Before using a tugger, it is important to know the weight capacity of all structures involved. This includes floors, ramps, and elevators.

Structural capacities may be posted on building columns. If not, contact your Supervisor for assistance in obtaining this information.
Hazardous Materials

Always know the material you are transporting. Materials that are hazardous require special handling and storage. Read the labels, look for the contents of the containers you are transporting. Look for labels such as caution, flammable, or contents under pressure. For additional information to help determine if the material you are transporting is hazardous, refer to a Material Safety Data Sheet, Safe Use Instruction sheet, the plant Safety Department, or your Local Joint Health and Safety Committee to learn how to handle this material.

![Material Safety Data Sheet](image)

Figure 5-1. Material Safety Data Sheet
**SAFE USE INSTRUCTIONS**

**SEEN SPECIFIC MSDS FOR ADDITIONAL INFORMATION**

1) **SOLVENTS - Flash Point:** 100°F

2) **Material Identity:** Amosol Naphtha 395 HF

3) **ROUTES OF EXPOSURE:**
   - Harmful by Inhalation
   - Irritant, Eye, & Skin
   - Harmful by Ingestion
   - May be harmful by Skin Absorption

4) **EFFECTS OF OVEREXPOSURE:**
   - CNS Effects - Headache, Dizziness, Nausea, Unconsciousness, Death
   - Dry or Cracked Skin, Rash, Redness and/or Burning Itching
   - Gastrointestinal Disturbances
   - Possible Liver, Kidney Effects

5) **EMERGENCY FIRST AID:**
   - Remove to Fresh Air. Contact Medical.
   - Immediately Flush with Water. Contact Medical.
   - Contact Medical.

*Individual materials may contain additional chemical ingredients which have toxic properties and are listed in the NIOSH Registry of Toxic Effects of Chemical Substances.*

6) **USE INSTRUCTIONS:**
   - Do not use in confined areas without first consulting Confined Space Procedure.
   - Breathing vapors may be hazardous. Ventilation may be required, where feasible, to maintain concentrations below applicable limits (OSHA, GM Employee Exposure Guidelines).
   - Avoid contact with skin.
   - Keep container tightly closed when not in use or empty.
   - Wash hands after use and before eating, drinking, smoking, or applying cosmetics.

7) **PERSONAL PROTECTIVE EQUIPMENT:**
   - Safety glasses or goggles if potential for splashing exists.
   - Impervious gloves for prolonged use.
   - Respirator: Yes No X

8) **FIRE FIGHTING INSTRUCTIONS:**
   - Use Class B or C fire extinguishing agent.
   - Water is cool exposed containers.
   - Water spray or steam can be used.

9) **SPILL AND LEAK INSTRUCTIONS:**
   - Contain spill and prevent entering sewer if possible. Contact supervisor.
   - Evacuation of area may be necessary. Notify Plant Security.
   - Do not smoke.

10) **STORAGE INSTRUCTIONS:**
    - Store away from heat and direct sunlight.
    - Store in approved combustible materials storage area.
    - Store away from strong oxidizing agents and flammable materials.

11) **DISPOSAL INSTRUCTIONS:**
    - Check local policy.

12) **OTHER COMMENTS:**

13) **SPECIFIC CHEMICALS — ADDITIONAL HEALTH HAZARDS**
   - VM & NAPHTHA May be absorbed through skin.

---

**Figure 5-2. Safe Use Instructions**
Ramps and Inclines

Traveling on a ramp or incline changes the stability of your tugger and dolly. Following the safety guidelines listed below will assist in the safe operation of a fork truck on a ramp or an incline.

- Proceed slowly when traveling on a ramp.
- Have a clear line of vision.

- Use the horn to signal pedestrians of your approach.
- Use a signal person if a clear line of vision is impossible.
- Never turn on a ramp; turning on a ramp reduces tugger stability.

Figure 6-1. Have a clear line of vision
Elevators

Elevators are used for transporting stock from one floor to another. Before entering an elevator there are several steps that must be performed to ensure safety on the job.

All elevators have a weight limit. Before entering an elevator with the tugger/dolly, check the elevator’s weight capacity. Inside the elevator is a capacity plate listing its rated weight capacity. Never exceed the weight capacity of the elevator.

When preparing to enter the elevator, make sure that the elevator floor and plant floor are even. Drive into the elevator with the load first. Set the brake, and turn off the tugger.

CAUTION! Once you have entered, do not move the tugger/dolly when the elevator is operating.

When exiting the elevator, make sure the elevator and plant floor are even. Use the horn to alert bystanders and back out.

Figure 6-2. Elevator capacity plate
CAUTION! A semi-trailer can become a hazardous environment. Spills and odors are indications of a possible hazard. If you suspect a hazard, contact your supervisor or the safety department.

- Never inspect a dolly train in a dark place.
- Pull the train off the trailer and then inspect the dollies for damage.
- Make sure to do a walk around the entire train.
- If a dolly is damaged, DO NOT use. Tag the dolly for repair and contact your supervisor.

Figure 6-7. Loading/unloading a semi-trailer
Minimum Aisle Width

Note: It is recommended that the aisle width indicated on the chart be rounded up to the next greater aisle width. Example: For a tugger pulling 2 4'x4' dollies the chart shows a 9' aisle width, round up to a 10' aisle width.

Note: If cutting/clipping corners is done. The charts on the following pages can be adjusted using the formula on page 7-9.

Minimum Aisle Width
Based on the Tugger / Dolly Train Swing Path

![Diagram showing minimum aisle width](Image)

- 4'x4' Dolly Size
- 4'x6' Dolly Size
- 4'x8' Dolly Size

Figure 7-1. Minimum aisle width
Train Swing Path Analysis

**Tugger with One 4’ x 4’ Dolly**

The illustration shows that the tugger and one dolly train needs at least a 9’ aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

**Tugger with Two 4’ x 4’ Dollies**

The illustration shows that the tugger and two dolly train needs at least a 10’ aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

---

**Figure 7-2.** Swing path of a tugger pulling one 4’ x 4’ dolly

**Figure 7-3.** Swing path of a tugger pulling two 4’ x 4’ dolly
Train Swing Path Analysis

**Tugger with Three 4’ x 4’ Dollies**

The illustration shows that the tugger and three dolly train needs at least a 10’ aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

---

**Tugger with Four 4’ x 4’ Dollies**

The illustration shows that the tugger and four dolly train needs at least a 10’ aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

---

*Figure 7-4.* Swing path of a tugger pulling three 4’ x 4’ dollies

*Figure 7-5.* Swing path of a tugger pulling four 4’ x 4’ dollies
Train Swing Path Analysis

**Tugger with Five 4' x 4' Dollies**

The illustration shows that the tugger and five dolly train needs at least an 11' aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

**Tugger with One 4' x 6' Dolly**

The illustration shows that the tugger and one dolly train needs at least a 10' aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

---

Figure 7-6. Swing path of a tugger pulling five 4' x 4' dollies

Figure 7-7. Swing path of a tugger pulling one 4' x 6' dolly
Train Swing Path Analysis

**Tugger with Two 4’ × 6’ Dollies**

The illustration shows that the tugger and two dolly train needs at least a 10’ aisle to negotiate a ninety degree turn.

**Note:** The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

**Note:** If the aisle corner is clipped see page 7-9.

---

**Tugger with Four 4’ × 6’ Dollies**

The illustration shows that the tugger and four dolly train needs at least a 12’ aisle to negotiate a ninety degree turn.

**Note:** The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

**Note:** If the aisle corner is clipped see page 7-9.

---

*Figure 7-8.* Swing path of a tugger pulling two 4’ x 6’ dollies

*Figure 7-9.* Swing path of a tugger pulling four 4’ x 6’ dollies
Train Swing Path Analysis

**Tugger with Five 4' x 6' Dollies**

The illustration shows that the tugger and five dolly train needs at least a 13' aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 1).

*Note:* If the aisle corner is clipped see page 7-9.

**Tugger with One 4' x 8' Dolly**

The illustration shows that the tugger and one dolly train needs at least an 11' aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see Page 7-9.

---

Figure 7-6. Swing path of a tugger pulling five 4' x 6' dollies

Figure 7-7. Swing path of a tugger pulling one 4' x 8' dolly
Train Swing Path Analysis

**Tugger with Two 4' x 8' Dollies**

The illustration shows that the tugger and two dolly train needs at least a 12' aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

**Tugger with Three 4' x 8' Dollies**

The illustration shows that the tugger and three dolly train needs at least a 13' aisle to negotiate a ninety degree turn.

*Note:* The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

*Note:* If the aisle corner is clipped see page 7-9.

---

**Figure 7-8.** Swing path of a tugger pulling two 4' x 8' dollies

**Figure 7-9.** Swing path of a tugger pulling three 4' x 8' dollies
Train Swing Path Analysis

Tugger with Four 4' x 8' Dollies

The illustration shows that the tugger and four dolly train needs at least a 14' aisle to negotiate a ninety degree turn.

Note: The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

Note: If the aisle corner is clipped see page 7-9.

Tugger with Five 4' x 8' Dollies

The illustration shows that the tugger and five dolly train needs at least a 15' aisle to negotiate a ninety degree turn.

Note: The above aisle width recommendation is rounded up the aisle width indicated on the Minimum Aisle Width Chart (page 7-1).

Note: If the aisle corner is clipped see Page 7-9.

Figure 7-10. Swing path of a tugger pulling four 4' x 8' dollies

Figure 7-11. Swing path of a tugger pulling five 4' x 8' dollies
Train Swing Path Analysis

**Cutting/Clipping Corners**

If the aisle is clipped the aisle width may be adjusted by the following factors:

<table>
<thead>
<tr>
<th>Clipped Length</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 3'</td>
<td>1' 6&quot;</td>
</tr>
<tr>
<td>2. 4'</td>
<td>2'</td>
</tr>
<tr>
<td>3. 5'</td>
<td>2' 6&quot;</td>
</tr>
<tr>
<td>4. 6'</td>
<td>3'</td>
</tr>
</tbody>
</table>

Find the appropriate aisle width from page 7-1 and **subtract** the applicable factor.

(Example: The aisle needs to be sized for a tugger pulling three dollies. The graph on page 1 shows that a 10' aisle is needed if the aisle is not clipped. If the aisle will be clipped 4' then subtract 2' from the 10' aisle and you will only need an 8' aisle.)

**Note:** If cutting/clipping corners is done, the charts shown previously can be adjusted by using this formula.

Figure 7-12. Adjustments for cutting/clipping corners
WARNING

BEWARE OF THE...

“ORANGE CRUSH” ZONES

PEDESTRIANS AND UNAUTHORIZED VEHICLES ARE NOT PERMITTED IN BANKS AND ON DOCKS.

THIS INCLUDES ALL AREAS MARKED WITH ORANGE LINES.

“ORANGE CRUSH” ZONES
When walking through the plant or when a pedestrian approaches your tugger:

![Diagram showing the recommended distance between a pedestrian and a tugger]

Always stop 5 feet from a pedestrian and make sure he/she is 2 feet away from your tugger:

![Diagram showing the recommended distance between a pedestrian and a tugger]
Written Test

(Circle correct response)

1. When meeting another driver on mobile equipment in the aisles:
   a. Always evaluate the amount of space required versus the amount of space available (clearance) prior to attempting any passing maneuver.
   b. Ensure that your alignment is straight and that the widest part of your train will clear all obstacles sufficiently.
   c. Do not attempt to pass pedestrians or other drivers while making a turn with a train.
   d. All of the above

2. If a pedestrian approaches you and indicates that they would like to speak with you, to ensure their safety you should stop at a minimum how many feet from them and allow them to approach you?
   a. 2 feet
   b. 3 feet
   c. 5 feet
   d. 10 feet

3. If two drivers are approaching each other in opposite directions, what is the correct procedure to follow?
   a. Both drivers should stop and then proceed carefully.
   b. Both drivers should stop and then only one should start moving while the other remains stationary.
   c. The driver with a load should proceed while the other stays stationary.
   d. Neither driver should stop, they should just proceed with caution.

4. While unloading at line side, is it permissible for pedestrians to step between the dollies if you are not on the tugger?
   a. Yes
   b. No

5. When driving in a large aisle, should you drive in the:
   a. Center of the aisle
   b. Left of center of the aisle
   c. Right of center of the aisle
   d. Anywhere but in designated pedestrian aisles.

6. When attempting to pass a pedestrian in an aisle way, you should:
   a. Just slow down and pass them.
   b. Slow down and get their attention by calling out or using horn and signal them that you need to pass them. Wait for a positive response before safely passing.
   c. After using horn, just slowly pass them giving them clearance
   d. Never pass a pedestrian

7. Always yield to:
   a. Pedestrians
   b. Vehicles approaching an intersection from the right
   c. Emergency vehicles
   d. All of the above
Written Test

8. As an operator who moves dollies, failure to follow the correct Safe Operating Procedures will most commonly result in what type of injury?
   a. Lacerations
   b. Fractures
   c. Strains and Sprains
   d. All of the above

9. Name four (4) conditions that should cause you as a driver to slow down.
   a. __________________________
   b. __________________________
   c. __________________________
   d. __________________________

10. When should the daily operator checklist be completed.
    a. Any time prior to end of shift.
    b. Before using ANY vehicle on your shift
    c. At the end of the shift
    d. None of the above

Bonus Question: (Worth extra 10 points)
Who is responsible for your own safety?
   a. Plant Manager
   b. Shop Chairman
   c. Safety Department
   d. You are responsible for your own safety
Hands-On Exercise

Part 1
Directions: Locate and read the operator’s manual.

Part 2
Directions: Locate the specification plate on the tugger. List the information on the lines provided below, identifying the specifications on the tugger.

Warning!
Read operating manual.
Failure to follow operating, inspection, and maintenance instructions can cause serious injury.

Vehicle Model: ___________________________
Serial No: ______________________________
Attachment: _____________________________
Tire Size: _______________________________
  Pressure: _______________________________
Battery Type: ___________________________
  Battery Voltage: _______________________
  Battery Weight Min.: ___________________
  Battery Weight Max.: ___________________
Vehicle Weight: _________________________
  with Max. Battery: _____________________
  without Battery: _______________________
Back Tilt: ______________________________
Drive Tread Width: _______________________

Instructor’s Sign-off: ___________________
# Hands-On Exercise

## Hazard Analysis Checklist

**Hazard + Exposure = Accident Potential**

**Directions:** Given a job and a hazard analysis checklist, inspect the work area for Hazards and Obstructions.

Inspect the work area and visually check for:

<table>
<thead>
<tr>
<th>Hazards and Obstructions</th>
<th>Comment Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Pinch points</td>
<td></td>
</tr>
<tr>
<td>□ Items that you or others can be struck by</td>
<td></td>
</tr>
<tr>
<td>□ Things you or others can get caught in</td>
<td></td>
</tr>
<tr>
<td>□ Equipment under pressure</td>
<td></td>
</tr>
<tr>
<td>□ Exposure to hazardous energy or expected machine motion</td>
<td></td>
</tr>
<tr>
<td>□ Bumps and floor obstructions</td>
<td></td>
</tr>
<tr>
<td>□ Slippery surfaces</td>
<td></td>
</tr>
<tr>
<td>□ Movable objects</td>
<td></td>
</tr>
<tr>
<td>□ Scrap materials, metal, plastic, cardboard, etc.</td>
<td></td>
</tr>
<tr>
<td>□ Dips or grades along traveling surfaces</td>
<td></td>
</tr>
<tr>
<td>□ Drop-offs or holes</td>
<td></td>
</tr>
<tr>
<td>□ Manhole covers (missing)</td>
<td></td>
</tr>
<tr>
<td>□ Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overhead and width clearances</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Aisles</td>
<td></td>
</tr>
<tr>
<td>□ Door widths and heights</td>
<td></td>
</tr>
<tr>
<td>□ Ceiling clearances</td>
<td></td>
</tr>
<tr>
<td>□ Electric power lines</td>
<td></td>
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<tr>
<td>□ Steam pipes</td>
<td></td>
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<tr>
<td>□ Sprinkler lines</td>
<td></td>
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<tr>
<td>□ Overhead conveyors</td>
<td></td>
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<tr>
<td>□ Overhead cranes</td>
<td></td>
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<tr>
<td>□ Air lines</td>
<td></td>
</tr>
<tr>
<td>□ Other</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Vehicle and pedestrian traffic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Identify where other employees are working</td>
<td></td>
</tr>
<tr>
<td>□ Identify vehicle and pedestrian traffic flow in the area</td>
<td></td>
</tr>
<tr>
<td>□ Other</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental hazards and conditions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Chemical hazards</td>
<td></td>
</tr>
<tr>
<td>□ Hot objects</td>
<td></td>
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<tr>
<td>□ Hot surfaces</td>
<td></td>
</tr>
<tr>
<td>□ Slippery surfaces</td>
<td></td>
</tr>
<tr>
<td>□ Abnormal temperatures</td>
<td></td>
</tr>
<tr>
<td>□ Dust and mist</td>
<td></td>
</tr>
<tr>
<td>□ Other</td>
<td></td>
</tr>
<tr>
<td>Structural capacities</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>---</td>
</tr>
<tr>
<td>☐ Weight capacity of floors, ramps, etc.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Special requirements</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>☐ Power to run electrical or pneumatic power tools</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety equipment</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>☐ Head protection</td>
<td></td>
</tr>
<tr>
<td>☐ Hearing protection</td>
<td></td>
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<tr>
<td>☐ Eye protection</td>
<td></td>
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<tr>
<td>☐ Gloves</td>
<td></td>
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<tr>
<td>☐ Self-retracting or shock absorbing lanyard</td>
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<tr>
<td>☐ Other</td>
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<table>
<thead>
<tr>
<th>Select the correct equipment</th>
<th></th>
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<tbody>
<tr>
<td>☐ Is the job inside?</td>
<td></td>
</tr>
<tr>
<td>☐ Is the job outside?</td>
<td></td>
</tr>
<tr>
<td>☐ What special requirements do you need?</td>
<td></td>
</tr>
<tr>
<td>☐ What safety equipment is needed?</td>
<td></td>
</tr>
<tr>
<td>☐ Is there enough floor space for equipment?</td>
<td></td>
</tr>
<tr>
<td>☐ Can equipment be operated in the work area?</td>
<td></td>
</tr>
<tr>
<td>☐ Is the floor or ramp able to support the equipment?</td>
<td></td>
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<tr>
<td>☐ Other</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Secure (barricade) the area with methods such as:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>☐ Pylons</td>
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<tr>
<td>☐ Rope</td>
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<tr>
<td>☐ Warning tape</td>
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<tr>
<td>☐ Warning lights</td>
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<table>
<thead>
<tr>
<th>Additional Comments:</th>
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Instructor’s Sign-off: _______
Key Safety Practices

- Properly completed pre-operational checklist
- Valid LSI Orion Tugger/Dolly driver’s permit
- Proper PPE
- Adhere to the “2 Foot Rule” and make eye contact with pedestrians
- Complete stop at all STOP signs
- Drive at safe speed for conditions
- Pay extra attention at intersections
- Drive in center of aisle way unless passing a vehicle
- Do not cut corners
- Sound horn as an early warning
- Always look over both shoulders before reversing
- Adherence to ORANGE crush zone requirements, wear high visibility orange vest while in Orange crush zone
- Adhere to material stacking and storing guidelines
- Tractor trailer tire chocking while at docks
- Use of personal communication devices (cell phone / radio headset) while operating any type of mobile equipment is strictly prohibited
- Always follow Truck – Dock Safety procedures