

FORKLIFT SAFETY

OCCUPATIONAL SAFETY AND HEALTH MANUAL



Policy Owner:	Risk Management	Effective Date:	March 1, 2021
Category:	600	Reviewed Date:	n/a
Policy Number:	022	Revised Date:	n/a
Scope:	All Employees	Training Needed:	Yes
Associated Form:	Forklift Training Checklist Operator Inspection Checklist Forklift Training Certification	Training Frequency:	At hire and every three years for related positions

FORKLIFT SAFETY

ORAR 437, Division 2, Subdivision N (1910.178 & 437-002-0227)

This Forklift/Industrial Vehicle Safety Policy is designed to help ensure that our employees are protected from unsafe conditions and operations that potentially can occur in the use of industrial vehicles. In addition, this program is to ensure compliance with Oregon OSHA regulations dealing with the use of industrial vehicles.

Only trained and authorized employees are permitted to drive or operate industrial vehicles. All operators are required to follow the procedures in this chapter and manufacturer recommendations on vehicle usage and safety. All industrial vehicles are to be maintained in safe operating conditions.

GENERAL RESPONSIBILITIES

Management: Managers and supervisors are responsible to see that only trained employees are authorized to operate industrial vehicles. Management is required to see that adequate maintenance services are provided and used to ensure safe vehicle operating conditions.

Supervisor: The supervisor is responsible to maintain training records and/or copies of licenses or certifications which demonstrate employee training. Supervisors will provide employee training and audit operations for compliance with this chapter and Oregon OSHA regulations.

Authorized Operators: Employees who are authorized to operate industrial vehicles must follow all safety procedures as outlined in this chapter, by Oregon OSHA rules and manufacturer's recommendations. Employees are required to complete daily operating safety checks and ensure all unsafe equipment is taken out of service and repaired prior to use. All vehicle operators will immediately report any accidents to their supervisor.

SAFETY PROCEDURES

Authorized Operators

Authorized Operators will be trained and approved by their supervisor to operate various types of industrial vehicles. The training will consist of:

1. Instruction in proper inspection and safe operating procedures as outlined in this program.

2. A hands-on demonstration by an authorized driver, supervisor or competent outside trainer.
3. A written examination on the inspection and safe operating procedures.
4. This training will occur upon initial assignment, every three years for recertification, or whenever the supervisor sees a need for reorientation.

Only authorized personnel will operate forklift trucks.

Inspections and Fueling

1. Before the start of each shift, at least daily, a visual inspection must be made to assess the forklift's working condition to ensure safe operations. Inspections should occur after each shift if forklifts are used around-the-clock.

Inspection items include:

- a. Condition of the tires
 - b. If pneumatic tires, check inflation pressure
 - c. Warning and safety devices
 - d. Lights
 - e. Battery
 - f. Controls
 - g. Lift and tilt systems
 - h. Load-engaging means
 - i. Chains and cables
 - j. Limit switches
 - k. Brakes
 - l. Steering mechanism
 - m. Fuel system(s)
 - n. Additional items, attachments, or special equipment as specified by the user and/or manufacturer
2. If at any time the forklift is found to need repair, defective, or in any way unsafe, it will be taken out of service until it has been restored to safe operating condition. Immediately report any defects to your supervisor and/or maintenance for correction. The vehicle will be out of service until proper repairs can be made.
 3. The operator will not operate an unsafe forklift or other industrial vehicles at any time.
 4. Operators will not make any repairs or adjustments on any vehicle unless they are trained and authorized personnel.
 5. For electric powered vehicles, battery charging will be done only in a well-ventilated area. No smoking or open flame are permitted in battery charging areas.
 6. Only authorized personnel will do fueling. Fuel tanks will not be filled when the engine is running. It is important to avoid spillage of fuel. If spillage occurs, ensure fuel is carefully washed away or is evaporated and fuel cap tank replaced before restarting the engine.
 7. Do not operate truck if there is a leak in the fuel system until the leak has been fixed.

Determining Load Capacity

1. Operators will not exceed the safe load capacity of a vehicle at any time. Double-tiered loads will not be handled unless the vehicle is designed to accommodate the load.
2. The load capacity is shown on the "Forklift Nameplate".
3. Only stable or safely arranged loads will be handled. Caution will be exercised when handling off-center loads which cannot be centered.
4. The load center is determined by the center of gravity and is defined as the horizontal distance from the load's edge (or the fork's or other attachment's vertical face) to the line of action through the load's center of gravity. The line of action is an imaginary vertical line through an object's center of gravity.
5. The center of gravity is the point on an object at which all the object's weight is concentrated. For symmetrical loads, the center of gravity is the middle of the load. A lift truck's center of gravity moves because it has moving parts. The center of gravity moves forward and back as the upright is tilted forward and back. The center of gravity moves up and down as the upright moves up and down. Factors in determining the center of gravity include:
 - a. Size of the load
 - b. Weight of the load
 - c. Shape of the load
 - d. Position of the load
 - e. Lift height
 - f. Amount of tilt
 - g. Tire pressure
 - h. Dynamic forces created when the truck is moving (acceleration, braking, turning, and operating on uneven surfaces or incline)
6. Operators will not counterweight a forklift to increase lifting capacity. Instead the load will be broken down or a forklift with a higher rating will be used.

General Operating Safety Rules

1. The operator must be in control of the forklift steering at all times.
2. No person will ride as a passenger on a forklift or forks or on the load being carried.
3. A forklift will not be used to elevate a platform or pallet with persons on it, except work platforms specifically designed for this purpose. Work platforms must have standard guardrails, and must be securely fastened to the forks. In addition:
 - a. The hydraulic system will be so designed that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system.
 - b. An operator will stay in attendance at the forklift while workers are on the platform.
 - c. The operator will be in the normal operating position while raising or lowering the platform.
 - d. The vehicle will not travel from point to point with the work platform elevated at a height greater than 4 feet while workers are on the platform. When necessary at heights greater than 4 feet, inching may be permitted provided it is done at a very slow speed.
 - e. The area between workers on the platform and the mast will be guarded to prevent contact with chains or other shear points.

4. Operators will not put their fingers, arms, or legs between the uprights of the mast, or beyond the contour of the forklift.
5. Operators will look in the direction of travel.
6. Operators must avoid making jerky starts, quick turns, or sudden stops. Travel slowly when turning. Lift trucks can tip over even at very slow speeds. The combination of speed and sharpness of a turn can cause a tip over.
7. A lift truck is less stable when the forks are elevated, with or without a load. In fact, the lift truck will actually tip over more easily when empty than when loaded with the load lowered.
8. If the lift truck tips over:
 - a. Do not jump off!
 - b. Hold firmly to the steering wheel; brace your feet and lean forward and away from the point of impact.
9. The operator will not use reverse as a brake.

Traveling

1. Forklifts will be driven on the right side of the aisle way/roadway.
2. Operators will cross railroad tracks diagonally whenever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.
3. All vehicles will be operated at a safe speed with due regard for traffic and conditions. Maximum allowed speeds:
 - a. Inside buildings: 5 mph
 - b. Outside buildings and not in work areas: 7 mph
 - c. On roads outside: 10 mph
4. Operators will slow down on wet and slippery surfaces.
5. Operators will slow down at cross walks and locations where vision is obstructed.
6. Operators entering a building or nearing a blind corner will make their approach at a reduced speed, sound horn, and proceed carefully. (Exception: blind corners equipped with mirrors providing a full view in all directions.)
7. Operators will give pedestrians the right-of-way always. The right of way will be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
8. Operators will not drive toward any person who is in front of a fixed object or wall.
9. Operators will not overtake and pass another forklift traveling in the same direction at intersections, blind spots, or hazardous locations.
10. No person will stand or walk under elevated forks or any load.
11. Grades will be ascended or descended slowly.
 - a. When ascending or descending grades in excess of 10 percent, loaded trucks will be driven with the load upgrade.
 - b. On all grades, the load and load engaging means will be tilted back if applicable, and raised only as far as necessary to clear the road surface.
12. When a forklift is not carrying a load, the operator will travel with the forks low.
13. The load will be carried as low as possible (consistent with safe operations, 2 to 6 inches above the surface).
14. Forks will be placed under the load as far as possible.
15. Generally, do not lift a load with one fork.

16. No load will be moved unless it is safe and secure. To maintain balance, the load should be centered and the forks properly spaced near the outside edges. Before traveling, the load will be tilted back until it rests securely. A load backrest will be used to prevent spilling of the load.
17. Position each fork the same distance from the center of the carriage. Set forks as far apart as possible for maximum support of the load. Center the weight of the load between the forks. Otherwise, the load may fall off the forks when you turn a corner or hit a bump.
18. The operator's view should not be obstructed by the load. In the event of a high and/or wide load, the forklift will be driven backward in low gear.
19. Operators need to watch overhead clearance. All vehicles operated in areas where overhead hazards exist will be equipped with an approved overhead guard.
20. Bridge plates will be properly in place and secured. Wheels of trucks and railroad cars will be blocked to prevent movement during loading.
21. Forklift drivers will come to a complete stop before reversing direction of travel.
22. Unstable loads will be restacked or banded. Use extra care when handling long lengths of pipe, or other materials.
23. Avoid sharp or fast end-swing. Lift trucks are designed to work in relatively small space. Because of this, they can turn sharper than some other vehicles. When the truck is steered by the rear wheels, the rear of the truck moves to the side during a turn. This movement is called "tail swing". An operator must be aware of the tail swing and always check to make sure the tail swing area is clear before turning. Failure to observe the tail swing area when making a turn can cause injury or kill someone.
24. Hazardous materials will not be moved unless they are in approved containers.
25. Compressed gas cylinders will be moved only in special pallets designed for this purpose.
26. When unloading trucks or trailers, the brakes on the vehicle will be set (locked) and the wheels chocked.
27. The flooring of trucks, trailers, and railroad cars will be checked for breaks and weakness. Powered industrial trucks will not be driven onto flooring that is found to be of inadequate strength.
28. Operators will never attempt to turn sideways on an incline. Do not run on an incline to reduce the possibility of a tip over; a lift truck must not be driven across an incline.
29. All vehicles will be equipped with audible warning signals, and where practical, will have spark arrestors.
30. All vehicles operated at night in dark buildings or in poorly lit areas will be equipped with head and tail lights.
31. Vehicle flywheels, gears, sprockets, chains, shear points and other exposed parts constituting a hazard to the operator or other employees will be guarded.
32. Vehicles powered by internal combustion engines will not operate in buildings unless the buildings are adequately ventilated.
33. Vehicles must be safely parked when not in use. The controls will be neutralized, power shut off, brakes set, and the forks left in a down position flat on the surface not obstructing walkways or aisles. These procedures must be used whenever the operator leaves the forklift unattended (i.e. when the driver is 25 feet or more away or the vehicle is out of the operator's view).
34. A forklift will not be left on an incline unless it is safely parked and the wheels chocked or blocked.
35. Forklifts will not be parked or left unattended in aisles, by exits or doors.
36. Stunt driving and horseplay will not be permitted.
37. Elevators will be approached slowly and then entered squarely after the elevator car is properly leveled. Once on the elevator, the controls will be neutralized, power shut off, and the brakes set.
38. Running over loose objects on the roadway surface will be avoided.
39. While negotiating turns, speed will be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel will be turned at a moderate, even rate.

LPG TANK FILLING PROCEDURE

1. Industrial trucks (including lift trucks) equipped with permanently mounted fuel containers will be charged outdoors.
2. The dispensing of LP gas into the fuel container of a vehicle will be performed by a competent attendant who will remain at the LP gas dispenser during the entire transfer operation.
3. Engines on vehicles will be turned off while fueling if the fueling operation involves venting to the atmosphere.
4. There will be no smoking on the driveway of the (fueling area), in the dispensing areas or transport truck unloading areas.
5. Signs prohibiting smoking will be posted within sight of the person refueling. Letters on such signs will be not less than 4 inches high. The motors of all vehicles being fueled will be shut off during the fueling operations.

Basic rules for Industrial Truck Use of Liquefied Petroleum Gas (LPG)

1. When filling forklift tanks, the employee must wear eye, face and hand protection.
2. No more than two LPG containers will be used on an industrial truck for motor fuel purposes.
3. Industrial trucks will not be parked and left unattended in areas of possible excessive heat or sources of ignition.
4. All sources of ignition should be eliminated to the extent possible. Conspicuous signs must be posted in the storage area forbidding smoking.
5. Filling of fuel containers for industrial trucks or motor vehicles from industrial bulk storage containers will be performed not less than 10 feet from the nearest important masonry-walled building or not less than 25 feet from the nearest important building or other construction and, in any event, not less than 25 feet from any building opening.

Container valves and container accessories

1. Valves, fittings, and accessories connected directly to the container (including primary shutoff valves), will have rated working pressure of at least 250 p.s.i.g. and will be of material and design suitable for LP Gas service. Cast iron will not be used.
2. Shutoff valves will be located as close to the container as practicable.

CHANGING VEHICLE TIRE PROCEDURES

1. All vehicle tire changes must meet the Federal OSHA standard 29 CFR 1910.177 "Servicing Multi-piece and Single Piece Rim Wheels".
2. Additional tire changing procedures apply to all heavy equipment which include:
 - a. The tire will be deflated to 7 pounds pressure or less (both tires, if they are dual wheels) before any other procedure is started to remove the tire and wheel from a piece of heavy equipment.
 - b. An air hose extension will be provided so that this hose can be attached to the valve to inflate the tire and extend out from the tire so the person inflating a tire can be off to one side of the tire and not directly over or in front of the tire and wheel as it is inflated.