



Operating powered industrial trucks (forklifts)

This fact sheet highlights important safety considerations for owners and operators of powered industrial trucks.

OSHA 437
Division 2/N
Division 3/O
Division 4/N



A Division of the
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Training and evaluation

Forklift operators must have classroom instruction, hands-on training, and an evaluation to determine their competency. The evaluation must take place in the workplace so the trainer can observe the operator perform typical tasks in the operator's environment. Someone other than the employer can do the training and the evaluation; however, training out of the workplace must be supplemented with on-site training that covers site-specific hazards and tasks the operator will be performing.

The employer must certify that each operator has been trained and evaluated. The certification must include the operator's name, the trainer's name, and the training and evaluation dates.

Operators must be re-evaluated **at least once every three years** and receive refresher training:

- When the operator is observed operating the forklift unsafely
- After a forklift accident or near-miss incident
- When the operator is assigned to operate another type of forklift
- When there is a change in the workplace that could affect the safe operation of the forklift

Agricultural employers must provide refresher training at least annually.

Qualifications for trainers

Trainers must have the knowledge, training, and experience necessary to train and evaluate forklift operators. Their experience should include the practical skills and the judgment they have

shown to operate the equipment safely. Outside certification as a trainer is not required.

Pedestrian safety

Most forklift-related incidents in Oregon involve pedestrians. Establish clear, separate pathways for pedestrians and forklifts. High visibility apparel should be worn when walking outside of designated walkways. Minimize blind spots and highlight intersections and restricted areas. If there is a right-of-way, ensure that everyone is aware of it. Otherwise, require the operator to make eye contact with the pedestrian (and get acknowledgment) before moving the forklift.

Using seatbelts

Seatbelts and other restraint systems should be used when they are provided. Seatbelts keep the operator in the cab during a tip over and prevent the operator from being thrown from the seat. Manufacturers' operating manuals also warn operators to use seatbelts; operators must be trained in the manual's instructions, warnings, and precautions.

Lifting workers with a forklift

Unless prohibited by the forklift manufacturer, workers can be lifted on a platform. The platform must be firmly secured to the lifting carriage or the forks, equipped with guardrails, and have a barrier that prevents bodily contact with the mast. The operator must stay with the forklift when workers are on the platform. The combined weight of the platform and workers should be less than one-half of the forklift's rated capacity.

Operating powered industrial trucks (forklifts) – *continued*

Attachments and fork extensions

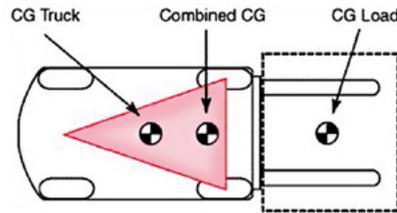
The forklift must be marked to identify the attachment and the capacity of the forklift with the attachment (at maximum elevation and load centered). Each fork extension should be stamped on the side with the individual load rating. Fork extensions should not be longer than 150 percent of the supporting fork's length.

Factors affecting a forklift's stability

The *Stability Triangle* (right) is often used to show where the center of gravity (CG) should be for the forklift to remain stable.

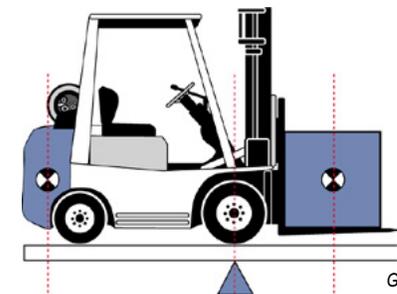
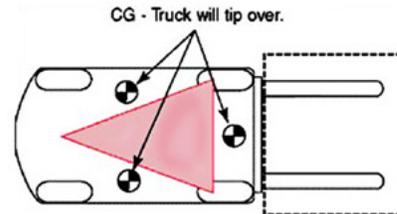
What can cause a forklift to tip sideways?

- Excessive speed – especially while turning
- Moving with an elevated mast
- Sloping surfaces
- Slick surfaces
- Tight turns
- Shifting or off-center loads
- Turning sideways on ramps



What can cause a forklift to tip forward?

- Sloping surfaces
- Excessive speed
- Forks striking an obstruction
- Traveling down ramps with load forward
- Heavy braking
- Overloading
- Forward-tilting elevated mast
- Shifting or off-center loads



Graphic, Ives Training Group

Guidelines for operating a forklift safely

- Look in the direction of travel and look to the rear when backing up. Drive in reverse if the load obstructs the forward view.
- Slow down and honk at cross aisles and other areas where vision is obstructed.
- Operate the forklift at a speed that will allow it to stop safely.
- When making turns, slow down and turn in a smooth, sweeping motion. Ensure that pedestrians or other obstacles are clear of the backswing.
- Keep arms and legs within the periphery of the forklift.
- When traveling with a load, make sure the load is tilted back and raised only as high as necessary to clear the ground. Loads must face upgrade on slopes greater than 10 percent.
- When loading trucks and trailers, make sure they are secured at the loading dock, the brakes are set, and the wheels are chocked. Use jack stands when necessary to prevent trailers from upending. Look for weakness or slippery spots on trailer floors. When used, portable yard ramps must be secured to the truck or trailer.
- Be aware of carbon monoxide poisoning when operating propane-powered forklifts indoors. Provide good ventilation. Headaches, dizziness, and nausea are early symptoms of poisoning.
- Before getting off a forklift, lower the carriage, neutralize the controls, and set the brakes. Use three points of contact when getting on or off a forklift.
- Inspect forklifts daily or after each shift if they are used round-the-clock. Forklifts not in safe operating condition must be removed from service. The data plate must be in place and readable.
- Follow the manufacturer's recommendations when slinging a load under the forks ("free rigging") and using lifting straps.

Applicable rules

Powered industrial trucks, Division 2, Subdivision N, [1910.178, 437-002-0227](#)

Material handling equipment, Division 3, Subdivision O, [1926.602\(c\)](#)

Forklifts and other powered industrial trucks, Division 4, Subdivision N, [437-004-1700](#)

Consensus standard

Safety standard for low lift and high lift trucks, ANSI/ITSDF [B56.1-2012](#)