CAL / OSHA: FORKLIFT OPERATOR TRAINING
FACT SHEET

LENGTH: 14 MINUTES

PROGRAM SYNOPSIS:
Our workplace is full of hazards, hazards that can hurt us or kill us. Controlling these hazards and preventing injuries is the purpose of our safety and health program. One hazard in many industrial workplaces is the unsafe operation of powered industrial trucks, commonly called forklifts or lift trucks. Ensuring that drivers operate forklifts in a safe manner can prevent injuries and save lives. Forklift operators must be properly trained and if an employee is not trained, they should not be behind the wheel of a forklift.

PROGRAM OBJECTIVES:
After watching the program, the participant will be able to explain the following:
- The training requirements needed to operate a forklift;
- How to perform a pre-operational inspection;
- How to safely carry a load;
- How to safely drive around pedestrians and obstacles;
- How to safely enter and exit trailers.

INSTRUCTIONAL CONTENT:

BACKGROUND
- Our workplace is full of hazards, hazards that can hurt us or kill us.
- One hazard in many industrial workplaces is the unsafe operation of powered industrial trucks, commonly called forklifts or lift trucks.
- Ensuring that drivers operate forklifts in a safe manner can prevent injuries and save lives.
- This is why the California Division of Occupational Safety and Health, or Cal/OSHA, requires that employers implement a forklift operator training and certification program.
- An operator of a powered industrial truck must be trained on the specific type of truck they will be certified to operate.
- In order to be certified, an operator must demonstrate that they fully understand the instruments and controls of the vehicle and that they are able to operate the truck proficiently and in a safe manner.

FORKLIFT OPERATOR TRANING
- Prior to permitting an employee to operate a forklift, the employer shall ensure that each operator has successfully completed the training requirements outlined in Cal/OSHA's powered industrial trucks regulation.
- Forklift training in the State of California must consist of a combination of formal instruction, practical training, and evaluation of the operator's performance in the workplace.
- At a minimum, this training must include the following "Truck Related Topics":
- Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate; Differences between the truck and the automobile; Truck controls and instrumentation: where they are located, what they do, and how they work; Engine or motor operation; Steering and maneuvering; Visibility (including restrictions due to loading); Fork and attachment adaptation, operation, and use limitations; Vehicle capacity; Vehicle stability; Any vehicle inspection and maintenance that the operator will be required to perform; Refueling and/or charging and recharging of batteries; Operating limitations; And any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.
- In addition, the operator training must also include the following "Work Related Topics":
- Surface conditions where the vehicle will be operated; Composition of loads to be carried and load stability; Load manipulation, stacking, and unstacking; Pedestrian traffic in areas where the vehicle will be operated; Narrow aisles and other restricted places where the vehicle will be operated; Hazardous locations where the vehicle will be operated; Ramps and other sloped surfaces that could affect the vehicle's stability; Closed environments and other areas where

insufficient ventilation or poor vehicle maintenance could cause a build-up of carbon monoxide or diesel exhaust; Other unique or potentially hazardous conditions in the workplace that could affect safe operation.

MANUVERABILITY

- Let's dive a little deeper into some of these topics.
- The first point that an operator must understand about forklifts is that they maneuver much differently than an automobile.
- An automobile steers by turning the two front wheels, while a forklift steers by turning the rear wheels.
- This rear wheel steering creates a tight turning radius, allowing a forklift to maneuver in tight places. This configuration also causes the rear end to swing wide and in the opposite direction of a turn.
- Also, a lift truck weighs more than a typical car. Because of its weight and ability to carry heavy loads, a lift truck will take longer to stop than a car.
- In order for a powered industrial truck to be operated safely, it must be in good working order. That's why pre-operational inspections are required.

PRE-OPERATIONAL INSPECTION

- Drivers shall check the vehicle at the beginning of each shift, and if it is found to be unsafe, the matter shall be reported immediately to a foreman or mechanic, and the vehicle shall not be put in service again until it has been made safe.
- During an inspection, attention shall be given to the proper functioning of tires, horn, lights, battery, controller, brakes, steering mechanism, cooling system, and the lift system for forklifts which includes forks, chains, cables, and limit switches.
- Start by making a complete circle around the vehicle looking for fluid leaks and checking the tires for damage.
- Then make sure the forks and their pins are in good condition.
- Also, check the hydraulic hoses, mast chains and cables for damage, kinks or excessive wear.
- If the vehicle is equipped with guarding or a seatbelt, it should be in place and in good condition.
- Next, safely mount the truck using three-points of contact and test the function and proper operation of the controls.
- If you discover any problems you can't remedy yourself during the inspection, you should tag the unit out of service and report the problem. Do not use a defective lift truck.

LIFTING & CARRYING A LOAD

- Another important requirement is that forklift operators must be able to determine the lifting capacity of the forklift they operate.
- The distance from the mast to the center of gravity of the load is called the "load center." This load center distance greatly impacts the lifting capacity of any powered industrial truck.
- Every lift truck has a load capacity printed on its data plate. This is the maximum weight that the truck can lift safely for a given "load center."
- Make sure you understand your truck's lifting capacity and the load center of the load you intend to lift.
- A forklift's base of support can be represented by a triangle, which is often called the "stability triangle."
- The combination of the center of gravity of the load and the center of gravity of the forklift will create a combined center of gravity.
- The location of this combined center of gravity, relative to the forklift's base of support plays a large factor in a forklift's stability.
- When the combined center of gravity of the lift truck and the load is within the stability triangle, the lift truck will be stable.
- When the combined center of gravity shifts outside of the stability triangle, the forklift will be unstable and may tip over.
- In order to keep a powered industrial truck stable and avoid tip overs, operators must understand how to operate the truck in a manner that keeps the center of gravity inside the stability triangle.
- When traveling, the momentum created by turning, and stopping will move the center of gravity closer to the outer edges of the stability triangle.
- This is why operators should travel with the load low to the ground and keep their speed slow and controlled to maximize stability.

- In addition, the forces created by raising a load will move the center of gravity closer to the leading edge of the stability triangle. This is why operators must always come to a complete stop before raising a load.
- And of course, you should never turn at a high rate of speed or with a raised load. Turning at a high rate of speed or moving with a raised load can cause the center of gravity to move beyond the base of support, making the lift truck unstable and more likely to tip over.
- Inclined surfaces are also particularly dangerous and great caution must be taken to avoid turning over.
- When traveling on a slope or incline always travel straight up or down, do not travel at an angle and avoid turning until the truck is completely off the incline.
- Also, when the truck is loaded, keep the load facing uphill. This means you should back down a ramp when carrying a load.

LIFTING & PLACING LOADS

- Operators must lift and place loads properly to prevent injuries and property damage.
- First, make sure that the load is secure and does not exceed the lifting capacity of the lift truck.
- Then position the truck and forks so the forks can enter the pallet opening. Drive forward until the pallet is seated against the mast and then lift the load a few inches off the floor. Once lifted, tilt the load back slightly.
- Seating the load against the mast and tilting the load back increases stability.
- After placing a load, before backing up, make sure you have safe clearance behind and around the truck and that no pedestrians are behind you. If it is safe to move, back up until the forks are clear of the pallet.
- When placing a load onto a rack, remember to come to a complete stop before raising the load to the appropriate height. Then drive forward very slowly and come to a complete stop when the pallet is in position. Then lower the pallet into position.
- Look around and behind you before backing out.
- Come to a complete stop as soon as the forks are clear of the pallet and rack, then lower the forks to a safe travel level before proceeding.
- When removing a load from a rack, be sure to come to a complete stop as soon as the load is clear of the rack. Then lower the load to a safe travel level before proceeding.
- When finished with the forklift, park it in an approved area.

PEDESTRIANS & FORKLIFTS

- When leaving the forklift unattended, lower the forks to the floor, set the parking brake and remove the key.
- When powered industrial trucks strike pedestrians or collide with fixed objects or other vehicles, serious injury or property damage will occur.
- This is why operators of powered industrial trucks must always practice safe driving techniques.
- As you travel along your route, look forward and along your travel path.
- Keep your load low to the ground so it will not block your view.
- If you must travel with a load that obstructs your line of sight, turn around and drive in reverse so you can travel with an unobstructed view.
- When driving in reverse, be sure to keep your hand and arm inside the protected area of the safety cage.
- When following other vehicles, maintain a three-truck distance between you and the one in front of you.
- Be very cautious when turning, especially in tight quarters.
- Remember that the rear end of the truck will swing wide and in the opposite direction of the turn. Many incidents occur when the rear end strikes something or someone while turning.
- Make a complete stop at all intersections, sound your horn and look both ways for vehicle traffic or pedestrians.
- Keep in mind that pedestrians always have the right of way. Operators should make eye contact with nearby pedestrians and signal them when it is safe to cross your path.
- Never drive your vehicle directly towards a person standing in front of a fixed object and never allow anyone to be under a raised load.
- Also, do not allow anyone to ride on the forklift and never use the forklift to raise personnel on the forks unless it is on a properly secured, approved maintenance work platform.

LOADING DOCKS & TRAILERS

- You must use extreme caution when operating your vehicle near loading docks or in trailers.

- Before loading or unloading a vehicle, make sure its wheels are chocked. If the trailer isn't attached to a truck, make sure jack stands are in place to keep it stable.
- If a dock locking system is used, make sure it is engaged and secured properly.
- Before entering a trailer with a forklift, inspect the flooring to make sure it is in good condition and can support the weight of the lift truck and load.
- Proceed slowly when moving in and out of trailers; your eyes may need to adjust to changing light conditions.
- Always keep the lift truck a safe distance from the edge of the loading dock and keep a sharp look out for other forklifts, pedestrians and obstacles.
- Loading docks can be very busy and safe operation requires the operator's undivided attention.

OPERATING RULES

- Every employer in the state of California using industrial trucks or industrial tow tractors shall post and enforce a set of operating rules.
- These rules are meant to remind employees of the safe operating instructions regarding powered industrial truck use.
- After the formal instruction portion of operator training is completed, refresher training must be provided to the operator when:
- The operator has been observed to operate the vehicle in an unsafe manner;
- The operator has been involved in an accident or near-miss incident;
- The operator has received an evaluation that reveals that the operator is not operating the truck safely;
- The operator is assigned to drive a different type of truck; or
- A condition in the workplace changes in a manner that could affect safe operation of the truck.
- In the state of California, an evaluation of each powered industrial truck operator's performance shall be conducted at least once every three years.
- As an operator of a powered industrial truck, keeping you and your co-workers safe while avoiding collisions and property damage must be your number one priority.
- Always follow your training and operate your lift truck in a safe and professional manner.

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ANSWERS TO THE REVIEW QUIZ

1. a
2. d
3. a
4. b
5. e
6. b
7. a
8. a
9. b

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REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name_____Date_____

1. Powered industrial trucks are also commonly called forklifts or lift trucks.

a. True
b. False

2. In the state of California training must consist of a combination of _____.

a. Formal instruction
b. Practical training
c. Evaluation of the operator's performance in the workplace
d. All of the above

3. Hazardous locations where the vehicle will be operated is a work-related topic.

a. True
b. False

4. A forklift operates the same as an automobile.

a. True
b. False

5. During the pre-operational inspection, one needs to check the _____.

a. Tires
b. Battery
c. Steering mechanism
d. Lift system
e. All of the above

6. If you discover any problems with a forklift, use it for your shift then report the findings to your manager at the end of your shift.

a. True
b. False

7. The distance from the mast to the center of gravity of the load is called the "load center."

a. True
b. False

8 Pedestrians always have the right of way.

a. True
b. False

9. You do not need to inspect a trailer before entering it with your forklift.

a. True
b. False