Training Solutions, Delivered!

FORKLIFT OPERATOR CERTIFICATION SERIES

Leader's Guide, Fact Sheets & Quizzes

Item Number: 4972

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

a) Review the contents of the Fact Sheets that in this Leader's Guide to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheets also include a list of Program Objectives that detail the information that participants should learn from watching the program.

b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.

c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.

d) Make copies of the Review Quizzes included at the end of each of the four sections of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the pages containing the answers to the quizzes come *before* the quizzes themselves.

CONDUCTING THE PRESENTATION

a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.

b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheets.

c) Play each module without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.

d) Hand out copies of the review quizzes to all of the participants and make sure each one completes them before concluding the training session.

FORKLIFT OPERATOR CERTIFICATION SERIES

Lesson I: Operator Training & Pre-Operational Inspection

FACT SHEET

LENGTH: 10 MINUTES

PROGRAM SYNOPSIS:

Forklifts, officially known as powered industrial trucks, are indispensable pieces of equipment in facilities where materials are handled and transported, but they can also be quite dangerous. In addition to millions of dollars of property damage, dozens of workers are killed and thousands more seriously injured in forklift incidents each year. Unfortunately, the majority of these mishaps are the direct result of a mistake made by the lift truck's operator, which is why safety must be his or her number one priority. This program focuses on two aspects of safe forklift operation that are required before any worker begins using one of these powerful vehicles: operator training and the pre-operational inspection.

Topics include how forklifts handle differently than cars, basic forklift characteristics, load characteristics, work environments, inspection of the outside components of a forklift, checking the fluids and fuel system, inspecting cables and belts and operator compartment checks.

PROGRAM OBJECTIVES:

After watching the program, the participant should be able to explain the following:

- How forklifts handle differently than cars;
- What information is required to be learned during operator training;
- What components to inspect outside of the forklift during a pre-operational inspection;
- What to look for when checking a forklift's fluids and fuel system;
- What controls, systems and gauges to check after entering the operator's compartment.

PROGRAM OUTLINE:

OPERATOR TRAINING

Forklifts Handle Differently Than Cars

- Just as with any piece of heavy equipment, certification begins with training. You will receive formal training and practical training before becoming a certified operator.
- Perhaps the first point to understand about forklifts is that they maneuver drastically different than a car. A lift truck is much heavier and it steers from the rear instead of the front.
- While this allows them to fit into constricted spaces, it also causes the rear end to make wide swings. As you can see, when turning left, the rear end will swing wide right.
- Also, because they are much heavier than a car, forklifts are more difficult to stop and require more braking distance.

Basic Forklift Characteristics

- During your training, you will learn what information can be found in the operator's manual, such as safe operating techniques and routine maintenance procedures. The operator's manual will also include any special operating requirements and other precautions for that specific vehicle.
- Knowing how each control works will also be included in your training. While each forklift is different, they all have an instrument and control area.
- You will learn what each control does, including how the accelerator and brake works, how the mast controls function, how to put the truck in forward and reverse and how to use the horn and the lights.
- You will also be shown where the vehicle's data plate is located and what information it contains, such as the unit's weight and lifting capacity.
- As part of your training, you will learn the limitations of the truck's forks and any compatible attachments.
- You will also learn how your line of sight is affected by the mast and the load and how to drive the vehicle facing in reverse if required.

• Stability is a major concern for forklift operators. You must be aware that a truck's stability will change depending on the load being carried and the height to which the load is raised. A powered industrial truck's stability is also impacted by inclines and uneven surfaces.

Load Characteristics

• In addition to receiving instruction on the characteristics of the vehicle, you will also learn about the various types of loads to be lifted and transported in your workplace.
• You will be shown how to safely balance and arrange loads so the truck will be stable when the load is lifted.
• You will also learn how to determine the weight of a load and how to make sure it does not exceed the rated lifting capacity of the forklift.

Work Environments

• Another important area of training is learning about the work environment in which you will be operating a powered industrial truck.
• You should become familiar with the travel routes of other vehicles and pedestrians in areas where you will be operating.
• You should also learn the types of traveling surfaces you will be operating on as well as the locations of uneven flooring, inclines and other obstacles.
• In addition, you will be shown places where operation can be difficult, such as narrow aisles and tight spaces.

Other Training

• Of course, you will also be instructed in safe driving techniques, including rules for traveling near co-workers and other vehicles, the meaning of traffic signs in the workplace, safe traveling speeds and proper clearance distances.
• Be aware that you will receive additional training when you are assigned to operate a different vehicle or when conditions in your work area change that could affect the safe operation of your lift truck.
• You will also be retrained if you are observed driving in an unsafe manner or are involved in an accident or near miss.
• To maintain your certification to operate a powered industrial truck, your operating performance must be evaluated every three years.

PRE-OPERATIONAL INSPECTION

Inspecting Outside Components Of The Forklift

• A key element of your training will address how to perform a pre-operational inspection on your vehicle. This inspection should be conducted before each shift according to your organization's and/or the vehicle manufacturer's guidelines.
• Many organizations provide their operators with inspection checklists. If you have such a list, check off each item after it has been inspected.
• A good rule of thumb is to begin your inspection by checking out the overall condition of the truck, looking for broken or damaged parts on all sides and on any guards.
• Make sure the data plate and any other decals are in place and legible.
• If the tires are inflated, make sure they have the proper air pressure. Check tires for damage such as cuts, embedded objects or excessive wear.
• Make sure the seatbelt and any other required safety devices are present and in good condition.

Checking The Unit's Fluids & Fuel System

• Check the unit's fluids to make sure they are at the appropriate levels. This includes brake fluid, transmission fluid, hydraulic fluid, and power steering fluid as well as battery acid, oil and radiator coolant if applicable.
• You should learn to visually verify various types of fluids by their color or smell so you can identify what type of fluid is leaking if you discover puddles on the floor. For example, coolant usually has a greenish-yellow color and smells like maple syrup.
• If the forklift is powered by a liquid fuel such as gasoline or diesel, or a compressed or LP gas, make sure it has enough fuel to complete your shift.
• Inspect the fuel system, hoses and fittings for cracks and loose connections.
• Be aware that frost on LPG hoses, valves or fittings indicates there is a leak.

Inspecting Cables, Belts & Other Items

- The cables should be checked for rust and corrosion. Make sure they are tight and well-lubricated.
- Check for frayed, worn or loose belts. If you discover any damage, have them replaced or adjusted if they are loose.
- Verify that the ends of the forks are even, then make sure the forks are in good condition with no cracks or warps. Also ensure the pins are secure.
- Check the chains, rollers and pulleys on the mast assembly. The anchor pins on the chains should not be bent, worn or loose.

Operator Compartment Checks

- After entering the operator's compartment, there are several items that must be checked to complete your inspection and begin your work.
- Make sure all the controls are functioning properly including the clutch and gear shift if the vehicle is equipped with them. Also, watch for any levers that get stuck in one position.
- Ensure that all the warning systems are working, including the horn, warning lights and the reverse alarm.
- After starting the vehicle, check all the gauges to make sure the temperature, oil pressure and other readings are at the appropriate level for operation.
- Test the brake pedal to make sure it doesn't go too far to the floor or stays depressed. Also, test the emergency brake by attempting to drive the vehicle with it engaged.
- Make sure there isn't too much play in the steering system and that it turns smoothly.
- Finally, test the lift controls. Raise and lower the forks and check the forward and back tilt.
- If you discover anything in your inspection that would cause your vehicle to be unsafe to operate, do not continue with your work. Follow your organization's policies for having the problem rectified.

FORKLIFT OPERATOR CERTIFICATION SERIES

Lesson I: Operator Training & Pre-Operational Inspection

ANSWERS TO THE REVIEW QUIZ

1. a

2. b

3. e

4. a

5. c

6. a

7. c

8. b

9. c

10. a

11. b

12. b

FORKLIFT OPERATOR CERTIFICATION SERIES

Lesson I: Operator Training & Pre-Operational Inspection

REVIEW QUIZ

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

Name_____Date_____

1. A forklift is much _____ than a car.

a. Heavier
b. Lighter

2. Some forklifts do not have an instrument and control area.

a. True
b. False

3. Which of the following will be included in your operator training?

a. How the accelerator and brakes work
b. How to use the horns and lights
c. What information is contained on the data plate
d. How your line of sight is affected by the mast
e. All of the above

4. You will learn how to determine the weight of a load and how to make sure it doesn't exceed the rated lifting capacity of the forklift.

a. True
b. False

5. You will be retrained if you are _____.

a. Observed driving in an unsafe manner
b. Involved in an accident or near miss
c. Both of the above answers

6. To maintain your certification to operate a powered industrial truck, your operating performance must be evaluated every _____ years.

a. 3
b. 5
c. 10

7. A good rule of thumb in beginning your pre-operational inspection is to _____.

a. Check the forklift's fluids and fuel system
b. Check items in the operator's compartment
c. Check out the overall condition of the truck

8. Radiator coolant usually has a _____ color.

a. Greenish-blue
b. Greenish-yellow
c. Brownish-yellow

9. _____ on LPG hoses, valves or fittings indicates there is a leak.

a. Corrosion
b. Grease
c. Frost

10. If you discover any frayed, worn or loose belts, you should have them replaced or adjusted.

a. True
b. False

11. Your inspection should be completed before entering the operator's compartment and beginning work.

a. True
b. False

12. If you discover anything in your inspection that would cause your vehicle to be unsafe to operate, continue with your work until the end of your shift and then report it to your supervisor.

a. True
b. False

FORKLIFT OPERATOR CERTIFICATION SERIES
Lesson II: Stability
FACT SHEET

LENGTH: 10 MINUTES

PROGRAM SYNOPSIS:
Forklifts, officially known as powered industrial trucks, are indispensable pieces of equipment in facilities where materials are handled and transported, but they can also be quite dangerous. In addition to millions of dollars of property damage, dozens of workers are killed and thousands more seriously injured in forklift incidents each year. Unfortunately, the majority of these mishaps are the direct result of a mistake made during the loading or operation of the vehicle by the operator. This program discusses the safe work practices that must be followed when loading, unloading and operating a powered industrial truck.

Topics include safe loading techniques, removing a load from a rack or shelf, landing a load, preparing for operation, driving safely, inclines and other hazards, keeping co-workers safe and entering trailers and railcars.

PROGRAM OBJECTIVES:
After watching the program, the participant should be able to explain the following:
- How to safely lift and land a load;
- How to remove a load from a rack or shelf properly;
- How to prepare to operate a forklift;
- What hazards to consider while driving a lift truck;
- What precautions to take when entering trailers and railcars.

PROGRAM OUTLINE:

SAFE LOADING
- Before attempting to pick up any load, make sure you know how much it weighs and where its load center is. Keep in mind that the weight of any attachments must be considered as part of the load.
- Consult the vehicle's data plate for its load capacity at the load center distance for the load you intend to lift.
- Also, make sure the load is stable before picking it up. If possible, arrange the load so that it can be centered between the forks.
- Loads that are too tall, too long or too heavy to lift safely should be adjusted before lifting.
- Don't attempt to lift improperly packaged loads or loads that appear unsteady.
- When you are certain the load is balanced and secured, approach the load or pallet at a 90-degree angle.
- The forks should be centered beneath the load so its weight will be distributed evenly.
- The forks should be inserted far enough that the load is positioned against the backrest to attain the most stability. Cradle the load against the backrest by tilting the mast.
- Prepare for travel by raising the load about four to six inches or just enough to clear obstructions.
- Before proceeding to your destination, make sure to scan your intended path of travel. Check for any other vehicles, pedestrians or other obstructions that could impede your route. Make adjustments if necessary.

REMOVING A LOAD FROM A RACK
- Of course, not all loads to be lifted and transported are on the ground or the floor. There are many instances where you will have to remove a load from a rack or a shelf.
- To remove a load from a rack, move straight toward it. Stop, then elevate the forks to the proper position in front of the load.
- Slowly move forward until the back of the forks makes contact with the load.
- Raise the load just enough to clear the rack and tilt it slightly backward to stabilize it.
- Look behind you for obstructions or pedestrians that could impede your path and sound your horn to alert others that you will be backing out.
- Back out slowly and smoothly. Be careful to avoid contact with the rack or other loads.

- When the truck has backed up far enough to safely clear the rack, stop. If you have not yet done so, tilt the load backwards to stabilize it, then lower the load to traveling height, four to six inches above the floor.
- Then scan the area for obstacles and pedestrians.
- Make sure you are facing the direction of travel, then sound your horn and proceed to your destination.

LANDING A LOAD

- Once you have reached your destination, there are some basic precautions you must follow to land the load safely.
- Before landing a load, make sure that the landing area can support its weight.
- Also, make sure the load will not block an aisle, passageway or exit or obstruct emergency equipment such as fire extinguishers, alarms and sprinkler systems.
- The truck should be maneuvered so that it approaches the rack or landing area straight on, not at an angle.
- Come to a complete stop and then inch forward to the landing area. Stop again before lowering the load.
- Make certain the load will not strike other stacks or pallets. Also, make sure the load can clear the top of a rack or shelf or other overhead obstructions.
- Be aware that there must be at least an 18-inch clearance from sprinkler heads and a 36-inch clearance if the load contains flammable or combustible liquids.
- Slowly tilt the load forward into the horizontal position and then lower the load.
- After landing the load, sound the horn and look for pedestrians and other traffic. If all is clear, back up slowly.
- Make sure the forks are clear of the pallet or rack before making a turn.
- Before driving to your next destination, lower the forks to the traveling height and sound your horn.

SAFE OPERATION

Prepare To Operate

- Operating a forklift safely is a huge responsibility. There are many safe work practices you must follow in order to avoid injuring yourself, your co-workers or causing costly property damage.
- Part of your responsibility is making a commitment to safe operation at all times. Speeding, horseplay and stunt driving are strictly prohibited.
- Always mount and dismount your vehicle using three-points of contact. This means having two hands and one foot or two feet and one hand in contact with the vehicle at all times during mounting and dismounting. Of course, never jump on or off the truck.
- If the vehicle is equipped with a seatbelt, you must wear it at all times during operation. Also, keep all body parts within the running lines of the truck. This includes while backing up. Do not hold onto the safety cage while backing.
- Make sure the area in which you intend to operate has adequate lighting so you can see hazards and work safely.
- Never place your arm or other body parts through the frame of the mast.

Driving Safely

- Always obey traffic signs and speed limits.
- Pedestrian traffic is a frequent hazard that operators encounter. Follow your organization's regulations regarding pedestrians. Many organizations have specific right of way rules that govern crossing and passing situations.
- In general, sound your horn frequently near pedestrians or at crosswalks and intersections, even if you don't see any pedestrians.
- Reduce your speed when approaching intersections, aisles or other areas where your line of sight may be hindered.
- When following another forklift, keep at least three truck lengths between you and the vehicle in front of you.
- Don't pass other vehicles traveling in the same direction if you are approaching an intersection or other hazardous location.
- Always look in the direction of travel. If a load obstructs your forward view, drive in reverse with the load behind you.

Inclines & Other Hazards

- When traveling up and down a ramp or other inclined surface, drive slowly and avoid turning to avoid a tip-over. A general rule of thumb is to always keep the load uphill whether traveling up or down a grade.
- Watch out for sudden drop offs at the edges of an incline as well as potholes and dips in the road surface.

- Scan your path regularly for obstructions so you can avoid them. You may be able to remove obstructions yourself; otherwise, report them to the proper authority and wait for them to be corrected before proceeding.
- Make turns at a slow, safe rate of speed, turning the steering wheel smoothly.
- Because a forklift turns with the rear wheels, move to the inside of a tight corner before making your turn.
- Be sure to slow down before entering an area with wet or slippery travel surfaces.
- Before driving over bridge plates and dock boards, first check that they are rated to support the weight of your truck and load. Then make sure they are secured properly and proceed cautiously.
- When operating in hazardous areas, only use lift trucks that are approved by your organization.

Keeping Co-Workers Safe

- Never allow pedestrians to stand or pass under elevated forks, even if the truck is unloaded.
- Also, always walk around the forks instead of walking over them. Forks present an extreme tripping hazard.
- Avoid driving toward anyone standing in front of a stationary object such as walls, posts and machinery.
- Keep in mind that passengers are not allowed to ride on any powered industrial truck unless it is equipped with seats designated for riders.
- Also, never attempt to raise co-workers on the forks to perform elevated work. Any raised worker must be elevated in an approved maintenance work platform that is securely attached to the vehicle.
- All guard rails must be in place and all workers on the platform should don the required PPE before the forks are elevated.

Trailers & Railcars

- Anytime our work requires us to enter a trailer or railcar, there are some crucial areas that must be inspected to ensure our safety.
- Before entering any trailer or railcar, it must be properly secured. This can be achieved by either a dock-locking system, by chocking the wheels or both.
- Inspect the floor system of any trailer or railcar before driving into it. Often these vehicles are not maintained by your organization and there is no way to predict which ones are in poor condition without an inspection.
- If the flooring looks rotten or feels spongy or unstable with just your body weight, or has missing or broken planks, it may not support the weight of your heavy forklift. Do not enter trailers or railcars with suspect flooring.
- Never enter a trailer or railcar that is occupied by personnel.
- No matter what type of operations you are performing with your forklift, if you discover any unsafe conditions, stop the vehicle immediately. Follow your organization's policies to correct any unsafe situations before re-starting work.

FORKLIFT OPERATOR CERTIFICATION SERIES
Lesson II: Stability

ANSWERS TO THE REVIEW QUIZ

1. b

2. a

3. a

4. b

5. b

6. a

7. a

8. d

9. b

10. a

FORKLIFT OPERATOR CERTIFICATION SERIES

Lesson II: Stability

REVIEW QUIZ

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

Name_____Date_____

1. Only forklifts with three wheels have three points of suspension where the stability triangle is formed.

a. True
b. False

2. The combined center of gravity of the forklift and the load is always shifted forward in the direction of the load.

a. True
b. False

3. To maintain stability, the weight of the load must be less than the weight of the counterbalance and the center of gravity of the forklift must be farther away from the front wheels than the center of gravity of the load.

a. True
b. False

4. If a person on one side of a see-saw is five feet away from the pivot and he weighs 200 pounds, his moment would be _____ foot-pounds.

a. 500
b. 1,000
c. 2,000

5. If you lift a five-pound box and extend your arms away from your body, it has the effect of lifting a 10-pound box on your body.

a. True
b. False

6. You can consult a lift truck's data plate to see the weight of a load that can be safely lifted for a given load center distance.

a. True
b. False

7. The weight of any attachments connected to the forks becomes part of the load and causes the load's center of gravity to shift forward.

a. True
b. False

8. Which of the following can create lateral instability for a forklift?

a. Inclines
b. Wet conditions
c. Unbalanced loads
d. All of the above

9. You should only travel with an elevated load when the ground or floor is level.

a. True
b. False

10. Elevated loads should never be tilted forward unless the load is ready to be placed on a rack or other landing position.

a. True
b. False

FORKLIFT OPERATOR CERTIFICATION SERIES
Lesson III: Loading & Operation
FACT SHEET

LENGTH: 12 MINUTES

PROGRAM SYNOPSIS:
Forklifts, officially known as powered industrial trucks, are indispensable pieces of equipment in facilities where materials are handled and transported, but they can also be quite dangerous. In addition to millions of dollars of property damage, dozens of workers are killed and thousands more seriously injured in forklift incidents each year. Unfortunately, the majority of these mishaps are the direct result of a mistake made during the loading or operation of the vehicle by the operator. This program discusses the safe work practices that must be followed when loading, unloading and operating a powered industrial truck.

Topics include safe loading techniques, removing a load from a rack or shelf, landing a load, preparing for operation, driving safely, inclines and other hazards, keeping co-workers safe and entering trailers and railcars.

PROGRAM OBJECTIVES:
After watching the program, the participant should be able to explain the following:
- How to safely lift and land a load;
- How to remove a load from a rack or shelf properly;
- How to prepare to operate a forklift;
- What hazards to consider while driving a lift truck;
- What precautions to take when entering trailers and railcars.

PROGRAM OUTLINE:

SAFE LOADING
- Before attempting to pick up any load, make sure you know how much it weighs and where its load center is. Keep in mind that the weight of any attachments must be considered as part of the load.
- Consult the vehicle's data plate for its load capacity at the load center distance for the load you intend to lift.
- Also, make sure the load is stable before picking it up. If possible, arrange the load so that it can be centered between the forks.
- Loads that are too tall, too long or too heavy to lift safely should be adjusted before lifting.
- Don't attempt to lift improperly packaged loads or loads that appear unsteady.
- When you are certain the load is balanced and secured, approach the load or pallet at a 90-degree angle.
- The forks should be centered beneath the load so its weight will be distributed evenly.
- The forks should be inserted far enough that the load is positioned against the backrest to attain the most stability. Cradle the load against the backrest by tilting the mast.
- Prepare for travel by raising the load about four to six inches or just enough to clear obstructions.
- Before proceeding to your destination, make sure to scan your intended path of travel. Check for any other vehicles, pedestrians or other obstructions that could impede your route. Make adjustments if necessary.

REMOVING A LOAD FROM A RACK
- Of course, not all loads to be lifted and transported are on the ground or the floor. There are many instances where you will have to remove a load from a rack or a shelf.
- To remove a load from a rack, move straight toward it. Stop, then elevate the forks to the proper position in front of the load.
- Slowly move forward until the back of the forks makes contact with the load.
- Raise the load just enough to clear the rack and tilt it slightly backward to stabilize it.
- Look behind you for obstructions or pedestrians that could impede your path and sound your horn to alert others that you will be backing out.
- Back out slowly and smoothly. Be careful to avoid contact with the rack or other loads.

- When the truck has backed up far enough to safely clear the rack, stop. If you have not yet done so, tilt the load backwards to stabilize it, then lower the load to traveling height, four to six inches above the floor.
- Then scan the area for obstacles and pedestrians.
- Make sure you are facing the direction of travel, then sound your horn and proceed to your destination.

LANDING A LOAD

- Once you have reached your destination, there are some basic precautions you must follow to land the load safely.
- Before landing a load, make sure that the landing area can support its weight.
- Also, make sure the load will not block an aisle, passageway or exit or obstruct emergency equipment such as fire extinguishers, alarms and sprinkler systems.
- The truck should be maneuvered so that it approaches the rack or landing area straight on, not at an angle.
- Come to a complete stop and then inch forward to the landing area. Stop again before lowering the load.
- Make certain the load will not strike other stacks or pallets. Also, make sure the load can clear the top of a rack or shelf or other overhead obstructions.
- Be aware that there must be at least an 18-inch clearance from sprinkler heads and a 36-inch clearance if the load contains flammable or combustible liquids.
- Slowly tilt the load forward into the horizontal position and then lower the load.
- After landing the load, sound the horn and look for pedestrians and other traffic. If all is clear, back up slowly.
- Make sure the forks are clear of the pallet or rack before making a turn.
- Before driving to your next destination, lower the forks to the traveling height and sound your horn.

SAFE OPERATION

Prepare To Operate

- Operating a forklift safely is a huge responsibility. There are many safe work practices you must follow in order to avoid injuring yourself, your co-workers or causing costly property damage.
- Part of your responsibility is making a commitment to safe operation at all times. Speeding, horseplay and stunt driving are strictly prohibited.
- Always mount and dismount your vehicle using three-points of contact. This means having two hands and one foot or two feet and one hand in contact with the vehicle at all times during mounting and dismounting. Of course, never jump on or off the truck.
- If the vehicle is equipped with a seatbelt, you must wear it at all times during operation. Also, keep all body parts within the running lines of the truck. This includes while backing up. Do not hold onto the safety cage while backing.
- Make sure the area in which you intend to operate has adequate lighting so you can see hazards and work safely.
- Never place your arm or other body parts through the frame of the mast.

Driving Safely

- Always obey traffic signs and speed limits.
- Pedestrian traffic is a frequent hazard that operators encounter. Follow your organization's regulations regarding pedestrians. Many organizations have specific right of way rules that govern crossing and passing situations.
- In general, sound your horn frequently near pedestrians or at crosswalks and intersections, even if you don't see any pedestrians.
- Reduce your speed when approaching intersections, aisles or other areas where your line of sight may be hindered.
- When following another forklift, keep at least three truck lengths between you and the vehicle in front of you.
- Don't pass other vehicles traveling in the same direction if you are approaching an intersection or other hazardous location.
- Always look in the direction of travel. If a load obstructs your forward view, drive in reverse with the load behind you.

Inclines & Other Hazards

- When traveling up and down a ramp or other inclined surface, drive slowly and avoid turning to avoid a tip-over. A general rule of thumb is to always keep the load uphill whether traveling up or down a grade.
- Watch out for sudden drop offs at the edges of an incline as well as potholes and dips in the road surface.

- Scan your path regularly for obstructions so you can avoid them. You may be able to remove obstructions yourself; otherwise, report them to the proper authority and wait for them to be corrected before proceeding.
- Make turns at a slow, safe rate of speed, turning the steering wheel smoothly.
- Because a forklift turns with the rear wheels, move to the inside of a tight corner before making your turn.
- Be sure to slow down before entering an area with wet or slippery travel surfaces.
- Before driving over bridge plates and dock boards, first check that they are rated to support the weight of your truck and load. Then make sure they are secured properly and proceed cautiously.
- When operating in hazardous areas, only use lift trucks that are approved by your organization.

Keeping Co-Workers Safe

- Never allow pedestrians to stand or pass under elevated forks, even if the truck is unloaded.
- Also, always walk around the forks instead of walking over them. Forks present an extreme tripping hazard.
- Avoid driving toward anyone standing in front of a stationary object such as walls, posts and machinery.
- Keep in mind that passengers are not allowed to ride on any powered industrial truck unless it is equipped with seats designated for riders.
- Also, never attempt to raise co-workers on the forks to perform elevated work. Any raised worker must be elevated in an approved maintenance work platform that is securely attached to the vehicle.
- All guard rails must be in place and all workers on the platform should don the required PPE before the forks are elevated.

Trailers & Railcars

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- Before entering any trailer or railcar, it must be properly secured. This can be achieved by either a dock-locking system, by chocking the wheels or both.
- Inspect the floor system of any trailer or railcar before driving into it. Often these vehicles are not maintained by your organization and there is no way to predict which ones are in poor condition without an inspection.
- If the flooring looks rotten or feels spongy or unstable with just your body weight, or has missing or broken planks, it may not support the weight of your heavy forklift. Do not enter trailers or railcars with suspect flooring.
- Never enter a trailer or railcar that is occupied by personnel.
- No matter what type of operations you are performing with your forklift, if you discover any unsafe conditions, stop the vehicle immediately. Follow your organization's policies to correct any unsafe situations before re-starting work.

FORKLIFT OPERATOR CERTIFICATION SERIES
Lesson III: Loading & Operation

ANSWERS TO THE REVIEW QUIZ

1. a

2. c

3. a

4. b

5. b

6. c

7. a

8. b

9. a

10. c

11. a

12. b

13. a

14. b

15. a

16. a

17. b

FORKLIFT OPERATOR CERTIFICATION SERIES

Lesson III: Loading & Operation

REVIEW QUIZ

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

Name_____Date_____

1. When determining the weight of a load, the weight of any attachments must also be considered.

a. True
b. False

2. When preparing to lift a load and you are certain it is balanced and secured, approach the load or pallet at a _____ angle.

a. 45-degree
b. 60-degree
c. 90-degree

3. When raising a load from a rack, raise it just enough to clear the rack and if there is room to do so, tilt it slightly backward to stabilize it.

a. True
b. False

4. When landing a load, maneuver your forklift so that it approaches the rack or landing area at a 45-dgree angle

a. True
b. False

5. If a load to be landed contains flammable or combustible liquids, there must be at least a _____ clearance from sprinkler heads.

a. 24-inch
b. 36-inch
c. 48-inch

6. What should you do before driving to your next destination after landing a load?

a. Lower the forks to the traveling height
b. Sound your horn
c. Both of the above answers

7. Speeding, horseplay and stunt driving are strictly prohibited when operating a forklift.

a. True
b. False

8. You should always mount or dismount a forklift using two points of contact.

a. True
b. False

9. You should sound your horn frequently near pedestrians or at crosswalks and intersections, even if you don't see any pedestrians.

a. True
b. False

10. When following another forklift, keep at least _____ truck lengths between you and the vehicle in front of you.

a. 1
b. 2
c. 3

11. If a load obstructs your forward view while driving, you should drive in reverse with the load behind you.

a. True
b. False

12. You should always keep a load downhill whether traveling up or down a grade.

a. True
b. False

13. You should move to the _____ of a tight corner before making a turn.

a. Inside
b. Outside

14. You should only allow pedestrians to stand or pass under elevated forks if the truck is unloaded.

a. True
b. False

15. You should never attempt to raise co-workers on the forks to perform elevated work.

a. True
b. False

16. You should never enter a trailer or railcar that is occupied by personnel.

a. True
b. False

17. If you discover any unsafe conditions while operating your vehicle, you should complete your job task and then follow your organization's policies for having the problem corrected.

a. True
b. False

FORKLIFT OPERATOR CERTIFICATION SERIES
Lesson IV: Classification & Refueling/Recharging
FACT SHEET

LENGTH: 13 MINUTES

PROGRAM SYNOPSIS:
Forklifts, officially known as powered industrial trucks, are indispensable pieces of equipment in facilities where materials are handled and transported, but they can also be quite dangerous. In addition to millions of dollars of property damage, dozens of workers are killed and thousands more seriously injured in forklift incidents each year. Unfortunately, the majority of these mishaps are the direct result of a mistake made by the operator. Many of these incidents occur when the wrong type of forklift for the job is used or during the recharging or refueling of the vehicle's power supply. This program discusses the various classifications of powered industrial trucks as well as the proper procedures for recharging or refueling them.

Topics include engine type and fundamental characteristics, designated locations, refueling/recharging preparations, gasoline/diesel refueling, LPG refueling and charging and replacing batteries.

PROGRAM OBJECTIVES: After watching the program, the participant should be able to explain the following:
- What the seven classes of forklifts are;
- What the 11 different OSHA powered industrial truck designations are according to the environment in which they are designed to be safely operated;
- How to prepare for refueling or recharging a forklift;
- How to safely refuel a gasoline, diesel or LPG-powered lift truck;
- How to recharge and replace forklift batteries safely.

PROGRAM OUTLINE:

CLASSIFICATION

Engine Type & Fundamental Characteristics
- Forklifts are classified by several different methods: engine design, power source, operational design and degree of shielding from combustible or flammable atmospheres.
- The Occupational Safety and Health Administration, OSHA, classifies powered industrial trucks according to their engine type and their fundamental characteristics.
- Class I forklifts are battery-powered Electric Motor Rider Trucks, such as the standard three-wheel sit-down type. These versatile trucks are ideal for situations in which air quality is an issue.
- Class II vehicles are Electric Motor Narrow Aisle Trucks, such as an order picker or a reach truck. They are designed to minimize the space they occupy in order to maximize storage space.
- Class III vehicles are Electric Motor Hand Trucks and Hand/Rider trucks such as walkie stackers. This type of powered industrial truck is hand controlled with the operator controlling the vehicle through a steering tiller.
- Class IV vehicles are Internal Combustion Trucks with Solid or Cushion tires. Primarily used in applications that require low clearance, these vehicles are powered by LPG, gasoline, diesel or compressed natural gas.
- Class V vehicles are Internal Combustion Trucks with Pneumatic tires. These vehicles also use fossil fuels for power and are often found in warehouses due to their ability to handle a wide variety of loads from small pallets to 40-foot loaded containers.
- Class VI vehicles are Electric and Internal Combustion Engine Tractors such as the sit-down rider. These adaptable machines can be battery powered for indoor use and fossil fuel powered for outdoor use.
- Class VII vehicles are Rough Terrain Industrial Forklift Trucks. These vehicles come in three basic types: the vertical mast type, the variable reach type and the truck or trailer mounted type. Primarily used outdoors for challenging travel surfaces, they are ideal for construction and lumberyard applications.

Designated Locations
- Powered industrial trucks also have 11 different OSHA designations according to the environment in which they are

designed to be safely operated. It is critical that you operate the correct designation of forklift for each specific location due to the unique hazards that may be present in these areas.

- For example, some areas are at a higher risk of fire or explosion due to the materials present, combustible dust or other atmospheric hazards.
- Type D vehicles are diesel powered units with minimal acceptable safeguards against inherent fire hazards.
- Type DS vehicles are diesel powered units that have additional safeguards to the exhaust, fuel and electrical systems.
- Type DY vehicles are forklifts that have all the safeguards of DS units, but do not have any electrical equipment, including the ignition.
- Type E vehicles are electrically powered with minimal acceptable safeguards against inherent fire hazards.
- Type ES vehicles are also electrically powered and have additional safeguards to the electrical system to prevent emission of hazardous sparks and to limit surface temperatures.
- Type EE vehicles are electrically powered trucks that have all the safeguards of Types E and ES trucks, but also have the electric motor and all other electrical equipment completely enclosed.
- Type EX vehicles are trucks that have electrical fittings and equipment designed, constructed and assembled so that the units can be used in certain atmospheres containing flammable dusts or vapors.
- Type G vehicles are gas powered units with minimal acceptable safeguards against inherent fire hazards.
- Type GS vehicles are gas powered units with additional safeguards to the exhaust, fuel and electrical systems.
- Type LP vehicles are powered by liquefied petroleum gas and have minimal acceptable safeguards against inherent fire hazards.
- Type LPS vehicles are powered by liquefied petroleum gas and have additional safeguards to the exhaust, fuel and electrical systems.
- Be aware that there are also various hybrid models of forklifts, such as the type GS/LPS, that can be powered by both gasoline and liquefied petroleum gas.
- If you have any questions about the location designation of your vehicle, refer to its data plate.

REFUELING & RECHARGING

Refueling/Recharging Preparations

- Powered industrial trucks use five different sources of energy: diesel fuel, an electric battery, gasoline, liquid petroleum gas or compressed natural gas. To become a certified forklift operator, you must fully understand how to safely and effectively refuel or recharge all of the vehicles you intend to operate.
- While refueling and recharging a forklift may seem to be a simple and straightforward task, there are some hazards to consider, such as flammable vapors and corrosive acids. It is imperative that you follow the proper safety precautions when refueling or recharging your vehicle.
- When refueling or recharging, always park in your organization's designated refueling or recharging station. Set the parking brake, shift into neutral and turn off the ignition.
- Make sure there are no open flames or sparks in the area and do not smoke while in the station.
- Become familiar with the locations of emergency equipment near the area, such as fire extinguishers, eyewashes and safety showers so you can respond appropriately should an emergency occur.
- Because of the possibility of sparks generated by its battery, cell phones are not to be used in forklift recharging or refueling stations.

Gasoline/Diesel Refueling

- Always don the appropriate personal protection before you begin your work.
- Also, remember to turn the power off before refueling.
- Don't refuel near open flames or heat sources and don't smoke in the fueling station.
- Make sure to fill the tank with the correct type of fuel if there is more than one type available.
- Also, be careful not to overfill the tank.
- Put the fuel cap back on and clean up any spills before starting the engine.
- Check for leaks in the fuel system before starting the engine.

LPG Refueling

- Before refueling an LPG-powered unit, you should also make sure you have on the appropriate protective equipment and clothing required by your organization.

- After parking your forklift in the tank exchange station, turn off the ignition and close the fuel line. Then restart the engine to use up the remaining propane in the fuel line. When the engine cuts off, turn off the ignition.
- When changing out the tank, avoid making contact with the valve.
- Inspect the valves and seals of the new tank before hooking it up to verify they aren't damaged or leaking.
- Always start the attachment of the connectors by hand to make sure they aren't stripped or crossed.
- After attaching the connectors, open the valve slowly until the hissing sound subsides, indicating the pressure in the line has been equalized.
- Next, fully open the valve and then dial it back a quarter of a turn.
- If you can smell the odor of propane or frost has accumulated around the valves and fittings, you likely have a leak.
- If you suspect a leak, remove and tag the tank, then take it to the area designated by your organization for storage of leaking or damaged tanks.
- This area, as well as areas for propane tanks that aren't leaking or damaged, should not be located near any ignition sources and should be open so propane gas can't accumulate.
- Any forklift that has a propane leak must be removed from service immediately and not returned to service until the cause of the leak has been identified and repaired.

Charging/Replacing Batteries

- Park your forklift in the charging station, set the parking brake, place the controls in neutral and turn off the engine.
- Just like you would when refueling gas and propane-powered vehicles, make sure to put on the appropriate protective equipment before entering the charging station.
- Open the battery compartment to prevent the accumulation of hydrogen gas and heat when charging a battery.
- The electrolyte level of unsealed batteries should be checked before charging. There should be just enough electrolyte to cover cell plates or covers.
- If the level is too low, add enough electrolyte or distilled water to cover the cell plates. Make sure not to overfill since electrolyte will expand during charging.
- Any spills of electrolyte should be neutralized as soon as possible.
- Make sure to turn off the battery charger before connecting and disconnecting it from the battery plug.
- To prevent sparking, don't allow contact between the charger and any other part of the battery.
- You should also prevent tools and other metal objects from touching the terminals.
- Finally, make sure all vent caps are in place and functioning. Make sure they are free of clogs as well.
- If you encounter any problems with your forklift during recharging or refueling, follow your organization's policies for having the vehicle removed from service and repaired.

FORKLIFT OPERATOR CERTIFICATION SERIES
Lesson IV: Classification & Refueling/Recharging

ANSWERS TO THE REVIEW QUIZ

1. b

2. a

3. c

4. b

5. c

6. a

7. b

8. a

9. a

10. b

11. a

12. a

FORKLIFT OPERATOR CERTIFICATION SERIES

Lesson IV: Classification & Refueling/Recharging

REVIEW QUIZ

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

Name_____Date_____

1. Order pickers and reach trucks are _____ Electric Motor Narrow Aisle Trucks.

a. Class I
b. Class II
c. Class III

2. Class IV Internal Combustion Trucks with Solid or Cushion tires are primarily used in applications that require low clearance.

a. True
b. False

3. A sit down rider is an example of a _____ Electric and Internal Combustion Engine Tractor.

a. Class IV
b. Class V
c. Class VI

4. DY vehicles are forklifts that have all the safeguards of DS units, but do not have any _____.

a. Exhaust system
b. Electrical system
c. Fuel system

5. _____ vehicles are trucks that have electrical fittings and equipment designed, constructed and assembled so that the units can be used in certain atmospheres containing flammable dusts or vapors.

a. Type ES
b. Type EE
c. Type EX

6. There are various hybrid models of forklifts that can be powered by both gasoline and liquefied petroleum gas.

a. True
b. False

7. You should leave the engine running when refueling a gasoline or diesel-powered forklift.

a. True
b. False

8 When changing out an LPG tank, you should always start the attachment of the connectors by hand to make sure they aren't stripped or crossed.

a. True
b. False

9. Any forklift that has a propane leak must be removed from service immediately and not returned to service until the cause of the leak has been identified and repaired.

a. True
b. False

10. You should leave the battery compartment closed when charging a forklift battery.

a. True
b. False

11. You should make sure to turn off the battery charger before connecting and disconnecting it from the battery plug.

a. True
b. False

12. If you encounter any problems with your forklift during recharging or refueling, you should follow your organization's policies for having the vehicle removed from service and repaired.

a. True
b. False