

## **PRESENTER'S GUIDE**

# **"FORKLIFT/POWERED INDUSTRIAL TRUCK SAFETY"**

**Training for the  
OSHA POWERED INDUSTRIAL TRUCKS STANDARD**

# **THE "REGULATORY COMPLIANCE KIT"**

## **SERIES**

This education program is part of a comprehensive series of programs on important regulatory topics. Many of these programs have been created to meet employee training requirements of specific OSHA, EPA and DOT regulations. The series includes programs on the following regulations and topics:

- Aerial Lifts in Industrial and Construction Environments.
- The Asbestos Standard.
- The Bloodborne Pathogens Standard.
- The Confined Space Entry Standard.
- DOT Hazardous Materials Regulations (HMR).
- Emergency Planning.
- Forklift Safety: Industrial Counterbalance Lift Trucks.
- Forklift/Powered Industrial Truck Safety.
- Introduction to GHS (The Globally Harmonized System).
- GHS Container Labeling.
- GHS Safety Data Sheets.
- The Hazard Communication Standard.
- The "HAZWOPER" Standard (Hazardous Waste Operations and Emergency Response).
- Hearing Conservation and Safety
- Indoor Air Quality.
- The Laboratory Standard.
- The OSHA Lead Standards.
- Lock-Out/Tag-Out.
- The Personal Protective Equipment Standards.
- The OSHA Recordkeeping Standard.
- The Respiratory Protection Standard.
- Scissor Lifts in Industrial and Construction Environments.
- Supported Scaffolding Safety.
- Suspended Scaffolding Safety.
- The CDC Tuberculosis Prevention Guidelines.

A number of these programs are available in multiple versions that have been created for specific types of companies and operations, including General Industry, Construction, Healthcare, Cleaning/Maintenance and more.

Other products in the "Regulatory Compliance Kit" line include compliance manuals, employee booklets and posters which have been designed specifically to be used with the programs. These products can be used to satisfy OSHA, EPA and DOT compliance requirements for creating written compliance programs, as well as employee training.

## **WARRANTY/DISCLAIMER**

"This program has been created to assist companies that are endeavoring to educate their employees regarding good safety and health practices. The information contained in this program is the information available to the producers of the program at the time of its production. All information in this program should be reviewed for accuracy and appropriateness by companies using the program to assure that it conforms to their situation and recommended procedures, as well as to any state, federal or other laws, standards and regulations governing their operations. There is no warranty, expressed or implied, that the information in this program is accurate or appropriate for any particular company's environment."

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# **INTRODUCTION TO THE PROGRAM**

# **INTRODUCTION TO THE PROGRAM**

## **Structure and Organization**

Information in this program is presented in a definite order so that employees will see the relationships between the various groups of information and can retain them more easily. The sections included in the program are:

- OSHA's powered industrial truck training requirements.
- Types of powered industrial trucks.
- Inspection and maintenance.
- Forklifts' safe operating procedures.
- Operating a forklift under different conditions.
- Lifting a load with a forklift.
- A forklift's stability and handling.
- Driving forklifts safely.

Each of the sections covers important information in one topic area, providing employees with an understanding of the basic concepts of safe operation and maintenance of forklifts and powered industrial trucks.

## **Background**

"Powered industrial trucks" is OSHA's name for a category of machines that can be used to move heavy loads from place to place efficiently and quickly. This class of equipment includes the tractors that pull luggage carts at airports, and even the all-terrain reach-trucks that are used on construction sites, but the type of powered industrial truck that employees are most familiar with is the forklift.

Forklifts and other powered industrial trucks are rugged tools that save effort, time and money. But the same hardworking qualities that make them so helpful... power and strength... can also make them dangerous. When the

workers who use them forget safe operating procedures, or neglect needed maintenance, industrial trucks can inflict significant damage and cause severe injuries.

OSHA established its Powered Industrial Truck Standard to prevent this. The regulation requires that workers receive training in the safe operation and maintenance of this equipment before they may be certified to use it in their workplace.

## **Objectives**

This education and training program reminds employees of the capabilities and limitations of forklifts and other powered industrial trucks, and presents fundamental information on specific safe operating and maintenance procedures they should use. Upon completion of the program, employees should be able to:

- Recognize various types of forklifts and powered industrial trucks.
- Understand the hazards associated with operating them.
- Know specific procedures they should follow to avoid these hazards and operate the equipment safely.
- Understand what affects a forklift's stability.
- Understand the concepts of the "stability triangle" and "line of action".
- Know specific operating procedures that they should follow to maintain the stability of a forklift.

## **Reviewing the Program**

As with any educational program, the "presenter" should go through the entire program at least once to become familiar with the content and make sure that it is consistent with company policy and directives.



As part of this review process, you should determine how you will conduct your session. The use of materials such as handouts, charts, etc., that may be available to you needs to be well thought out and integrated into the overall program presentation.

# **PREPARING FOR THE PRESENTATION**

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## **Structuring the Presentation**

In conducting this education session, you should proceed with a friendly and helpful attitude. Remember that the "trainees" are looking to your experience and knowledge to help them relate to the situations shown in the program. It is important to let the trainees interact with you and each other during the training session. Stimulating conversation within the group is one of the best things you, as the presenter of the program, can do to help everyone get as much as possible from the session. Be alert for comments that could help in this area in future sessions and make note of them.

As the presenter, you also should:

- Keep the session related to the topic of forklift/powerd industrial truck safety.
- Relate discussions to the potential problems that can be experienced when working with forklifts and other powered industrial trucks, and how employees can avoid them.
- Keep any one person or small group of employees in the session from doing all the talking.
- Get everyone involved. Ask questions of those who don't participate voluntarily.
- Clarify comments by relating them to the key points in the program.

Use the "Outline of Major Program Points" section in the guide, as well as the information included in the quiz, as the basis for answering any questions. If you don't know the answer, say so. Tragic results could occur should you provide incorrect or inaccurate information. Remember, this is a positive program on forklift/powerd industrial truck safety. Make sure your attitude and words reflect this and that the emphasis is always on providing the information needed by the attendees work safely with forklifts and other powered industrial trucks.

# Setting Up the Class and Classroom

Remember, there are a number of things that must be done to "set up" the class as well as the classroom. These fall into several groups of activities, and include:

- **Scheduling and Notification**
  - You can use the scheduling and attendance form to schedule employees into the session (copies can be made using the printed "master" in the back of this binder or from the PDF version on the DVD).
  - Make sure that the session is scheduled so that it fits into your attendees' work day.
  - Send out notification of the session well in advance, to give people enough time to incorporate it into their schedule for that day.
  - If possible, post a notification on bulletin boards in the affected employees' areas.
  
- **The Classroom**
  - Schedule the room well in advance.
  - Make sure the room can accommodate the expected number of attendees.
  - Check it again on the day of the program to make sure there is no conflict.
  - Make sure the room can be darkened, and won't create a glare on the television screen.
  - Locate the light controls and test them.
  - Make sure the power for the DVD player you are using operates separately from the room light.
  - See if you can control the room temperature.
  - Know where the closest restrooms are located.
  - Assure that the room is free from distracting noises.
  - Make sure emergency exits are marked and known to the attendees.
  
- **Seating**
  - Make sure everyone can see the screen from their seat.
  - Make sure everyone can hear the DVD and you (when you speak).

- Check to see that seating is such that writing can be done easily.
- Make sure the seating arrangement allows eye contact between attendees, and between you and attendees.
- **Equipment and Materials**
  - Make sure the DVD player, monitor, and all appropriate cables and extension cords are available.
  - Make sure a stand or table is available and is of appropriate height for all attendees to easily see the monitor.
  - If you plan on using a chart pad, blackboard, or other writing board, make sure it is available, easy to see, and you have the proper writing implements.
  - Make sure you have 6" x 8" index cards or other materials to be used as "name tents" for attendees.
  - Make sure you have made up a sufficient number of copies of the "quiz", as well as any other handouts you are using.
- **"Final Check"**
  - Make sure equipment is in the room prior to the scheduled session.
  - Make sure you have the right program, (look inside the three-ring binder).
  - Check to see that the room is set up properly.
  - Check equipment prior to the presentation to assure that it works.
  - Make sure extension cords, etc. are "taped down", if need be, to avoid tripping.

## **CONDUCTING THE SESSION**

# CONDUCTING THE SESSION

## The Initial Steps

In conducting the session remember the positive nature of this presentation. Everyone is attending in order to learn more about operating and maintaining forklifts and other industrial trucks safely. Initially, you need to:

- Introduce yourself as the session leader.
- State the title of the program, "Forklift/Powered Industrial Truck Safety" and the purpose of the session (to learn how to use this equipment safely).
- Inform the attendees when there will be breaks (if you plan them) the location of exits and restrooms and if water, coffee, or other refreshments will be available.
- Make sure all of the attendees have "signed in" on your scheduling and attendance form. Remember, it is very important to document peoples' attendance at the session.

Once this housekeeping is done, it is time to move to the "meat" of the session. First, the attendees need to be informed about the objectives of the session (this is where you can use a flip chart or board to list the objectives, which should be done prior to the class starting). This listing should be preceded with some introductory remarks. Your own words are always best, but the remarks should follow along the lines of the following:

"Today we are going to talk about forklift/powered industrial truck safety. In our operations, powered industrial trucks like forklifts are indispensable. With them we can move heavy loads quickly from place to place. They also allow us to store and retrieve materials from varying heights throughout our facility. And they enable us to load and unload trucks and other vehicles quickly and efficiently."

"However, as with much of our equipment, once we get used to operating our industrial trucks we can have a tendency to lose respect for the power that they have. We think we are so good at running them that nothing can go wrong... that we will never have an accident."

"That's when we get into trouble. The same hardworking qualities that make industrial trucks so helpful... power and strength... can also make them dangerous. When we forget safe operating procedures, or neglect needed maintenance, industrial trucks can inflict significant damage and cause severe injuries. And because they are so powerful, and so heavy, there is rarely a 'minor' mishap where they are concerned. The average industrial truck accident causes thousands of dollars' worth of damage and frequently results in major injuries to the operator."

"The program we are going to watch today will give us good information on operating and maintaining forklifts and other industrial trucks safely. To make this the most productive session possible, we need to look at what we want to accomplish here today (verbally reference the 'Objectives' list from the first section, or point to the blackboard or chart where you have written them down)."

Once the objectives have been provided, you are ready to show the program. However, you do need to let the attendees know that they will be taking a quiz at the end of the session (if you are using it). It needs to be emphasized that they are not being "graded", but that the quiz is being used to see if the session is effectively transmitting information to them in a way they will remember.

## **Showing the Program**

At this point, you need to introduce the title of the program once again, "Forklift/Powered Industrial Truck Safety", darken the lights if necessary, and begin the showing of the program.

You have several options as to how you can move through the program and what employees see.

The DVD menu has three "selection bars":

- "Play".
- "Scene Index".
- "Contact Info".

To just play the program from beginning to end, select "Play".



To view (or review) a specific section of the program, select "Scene Index". You will be presented with a group of buttons, each of which corresponds to a section of the program. You can then select the specific section that you want to view.

If you would like information on other programs and products that are available from MARCOM you can select "Contact Info" for information about how to contact us.

All of our DVDs, both English and Spanish, are subtitled (similar to closed captioning). If there are hearing impaired employees participating in your training session, or you want people to be able to read the program narration as well as hear it, push the "subtitle" button on your DVD player's remote control or the player's control panel. A print version of the narration will then appear on the screen as the program plays.

## **Conducting the Discussion**

After the program has been shown, it is time for the group discussion on the information contained in the session. Care must be taken to make sure that the discussion is kept to the general topic of forklift/powered industrial truck safety. There are several ways to conduct this discussion. These include:

- Calling for questions from the attendees and using these questions as the basis for the discussion.
- "Leading" the discussion through the points covered in the program using statements such as:
  - "One of the sections that we saw in the program was about how we should inspect our industrial trucks before operating them. Who can tell us the specific items we should always include in our inspection?"
  - We saw some good information on safe practices that help prevent accidents when we are driving industrial trucks in a busy workplace. Who can tell us what some of these practices are?"

You should use the discussion format that you are most comfortable with. The "Outline of Major Program Points" section in this guide, and the questions and answers in the master copies of the quiz should be used as a basis for this discussion, as well as the supplemental information that you have presented in this session.

Remember, you have allocated a limited amount of time in which this discussion can take place. It is important to blend the attendees' questions and areas of obvious interest with the objective of trying to touch on each major area within the session in the discussion. By touching on each area, the attendees are much more likely to retain the information presented in the session.

## **Concluding the Presentation**

Once discussion has concluded (whether naturally or you have had to bring the discussion to a close in order to complete the session within the time allowed) it is time to give the quiz if you are using it. Copies of the quiz can be made using the printed "master" in the back of this binder or from the PDF version on the DVD. Again, remind the attendees that the quiz is only meant to help determine how effective the presentation of the information is, and that they will not be graded. Let them know that they have approximately five minutes to complete the quiz.

At the end of the five minute period, remind the attendees to date and sign their quizzes, and then collect them. The attendees should be thanked for attending the session and reminded of any other sessions in the educational program that they may be attending. They can then be dismissed to return to their normal activities.

\*(An alternative to this approach is to give the quiz immediately after showing the program, then use a review of the quiz as a basis for your group discussion.)

## **"Wrapping Up" the Paperwork**

Before much time has passed, and the subject matter is fresh in your mind, several areas of "paperwork" must be completed. First, check to make sure that all attendees signed the scheduling and attendance form. Next, make sure that you have a quiz from every attendee, dated and signed.

Also, depending upon what you have decided to do, a copy of the attendance form and the quiz for each attendee should be either filed in your files, or turned over to the attendee's department manager (or the personnel office) so that this paperwork can be included in their personnel file. The attendees' training logs should also be updated, and each attendee should be given a filled out and signed training certificate, signifying that they have successfully completed the course. Copies of the employee training log and the training

certificate can be made using the printed "master" in the back of this binder or from the PDF version on the DVD.

Remember it is always a good idea to document information about an employee's attendance at these sessions, as well as the fact that the employee has come away from the session with an increased knowledge of forklift/powerd industrial truck safety.

# **OUTLINE OF MAJOR PROGRAM POINTS**

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The following outline summarizes the major points of information presented in the program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

- **"Powered industrial trucks" are rugged tools that are used to push, pull, carry, lift and stack materials.**
  - This category of machines includes the tractors that pull luggage carts at airports, the all-terrain reach-trucks on construction sites and, of course, forklifts.
- **All of these vehicles save us effort, time and money.**
  - But if they aren't used correctly or maintained properly they can be dangerous.
- **To help us use these machines safely, OSHA created the "Powered Industrial Truck" Standard.**
  - One of the most significant parts of this regulation deals with training.
- **Before you can use any type of powered industrial truck, OSHA requires that you be fully trained, evaluated and certified by a competent instructor.**
- **Your certification process will include:**
  - Instruction on safety procedures.
  - Training on how to operate the industrial trucks that you'll be using.
  - Supervised driving practice.
- **Your knowledge and ability will be re-evaluated at least once every three years.**
  - At this time you will also receive any retraining that may be necessary.
- **Additionally, OSHA requires retraining any time you:**
  - Are observed being unsafe.
  - Have a close call.
  - Are involved in an accident.

- **Retraining is also required whenever there is a change in your workplace that may affect your ability to operate your truck safely.**
- **To help you choose the industrial truck that is right for your job, OSHA has separated them into seven classes.**
- **Classes 1 through 5 are forklifts and other "lift trucks".**
  - These machines often have massive counterbalance weights that allow them to lift very heavy loads.
- **"Class 1" trucks are counterbalanced forklifts that are powered by electric motors.**
  - Since these machines don't produce exhaust gas, they are a good choice for use inside warehouses and other buildings.
- **"Class 2" trucks are "narrow aisle lift trucks" and order pickers.**
  - Some of these machines actually raise their operators to where they can easily reach the materials they're after, so fall protection must be worn by workers who are using this equipment.
- **"Class 3" vehicles are electric-powered hand trucks, such as "pallet jacks" that operators either walk behind or lead.**
  - Even though you don't drive these machines, you must still be properly trained before you use them.
- **"Classes 4 and 5" are counterbalanced forklifts that are powered by gasoline, diesel or propane.**
- **"Class 4" forklifts are outfitted with solid rubber tires.**
  - As a result, they can only be used on paved surfaces.
- **"Class 5" forklifts on the other hand have pneumatic tires, which allows them to drive on unpaved surfaces as well.**
- **In addition to these classes of "general" industry lift trucks, OSHA classifies two more types of vehicles as powered industrial trucks.**

- **"Class 6" trucks are "tractor-like" machines, such as the vehicles that pull luggage carts at airports.**
  - Since these don't lift loads they are not counterbalanced.
  - This makes them lighter, and somewhat easier to drive.
  
- **"Class 7" trucks are counterbalanced, rough-terrain lift trucks.**
  - Unlike other lift-trucks, Class 7 machines have booms that allow them to pick up and place materials in locations that are difficult to reach.
  - Additional training is required to operate these trucks safely.
  
- **While each type of powered industrial truck has its own characteristics, there are some general rules to follow when using any of them.**
  
- **Let's start with an essential safety rule that's really just common sense.**
  - When maintaining or operating any type of powered equipment, keep track of where you're putting your "body parts".
  - Never place your feet, hands or fingers where they could be crushed or amputated.
  
- **The next thing to remember is that you should inspect your truck every day.**
  - Begin your shift by giving it a good "once-over".
  
- **If you're operating a truck that's used "around the clock", don't assume the next driver will catch problems with the truck that developed while you were using it.**
  - Inspect it at the end of your shift, as well.
  - That way you won't leave any dangerous surprises for your coworkers.
  
- **If you find something wrong, take the key out of the ignition and put a sign on the vehicle that identifies it as "out of service."**
  - Then inform your supervisor of the problem.

- **Create a checklist for your inspection.**
  - Start with the exterior.
  - Make sure moving parts operate correctly, and safety guards are not bent or broken.
  
- **The air pressure in pneumatic tires must be kept up to specifications.**
  - Solid tires should not have any gashes or embedded debris.
  
- **Verify that the steering is not too tight or too loose, and that warning lights, back-up alarms and horns are all working.**
  - Make sure that the brakes feel firm, and stop the truck effectively.
  - Check the hydraulics and the oil level.
  
- **Examine batteries on all powered industrial trucks for leaks and corrosion**
  - Make sure that their cable connections are tight.
  
- **On electrically-powered trucks, test the battery's electrolyte level.**
  - Remember to wear personal protective equipment as you do it.
  - Eye protection, face shields and rubber gloves are mandatory whenever you work with battery acid.
  
- **Industrial trucks with internal combustion ("I.C.") engines run on propane, gasoline or diesel fuels.**
  - These models require yearly emission tests, similar to the ones that are performed on automobiles.
  - You should verify that I.C. powered vehicles have passed this test before you use them.
  
- **I.C. powered industrial trucks also require other checks that are similar to those that you perform on your car.**
  - These include transmission fluid, motor oil and coolant levels.
  - Look at these every time you refuel your truck.



- **Only recharge and refuel your truck in designated "no smoking" areas, away from potential "ignitors", such as flames, sparks and electric arcs.**
  - This holds true for even electrically-powered trucks, because their batteries can give off highly flammable hydrogen gas.
  
- **Before recharging an electrically powered truck be sure to raise the hood.**
  - Leave it open until the battery is finished charging.
  - This will reduce the chances of an explosion, by allowing any hydrogen gas that is generated during the charging process to disperse.
  - Leave the charger off until you have connected it to the battery, so that you don't generate any sparks.
  
- **Take the charger's plug, and connect it to the battery plug that you disconnected from the truck itself.**
  
- **Remember, you have to connect the charger to the battery for recharging to occur.**
  - While it's possible to plug the charger directly into the truck, where the battery plug usually goes, don't do it!
  - It's an expensive mistake that can blow the truck's circuits.
  
- **When the cables are properly connected, you can turn the charger on.**
  - Once the battery is charged, turn the charger off before you disconnect the cables.
  - Then, make sure that the hood is securely repositioned and locked.
  - This will keep the battery from coming out of its compartment if the truck ever tips over.
  
- **When refueling a propane-powered industrial truck, first shut off the valve to the fuel tank.**
  - Let the engine run until it stalls, then turn it off.
  - This uses up any unburnt propane in the system.
  - Next, unscrew the gas line from the tank and roll the tank off the truck.

- **Position the new tank by aligning it with the "tank locating pin".**
  - This puts the fuel pick-up tube inside the tank at the best angle to withdraw the propane.
  - Secure the tank in place, hand tighten the fuel line, and open the valve.
  
- **Whenever you're operating a powered industrial truck, you need to follow safe operating procedures.**
  
- **Begin by entering the vehicle properly.**
  - To avoid slipping and falling, always use a "three-point mount".
  - Make sure that you have at least two hands and one foot, or two feet and one hand, in contact with the truck at all times.
  
- **Before you drive off, buckle up and adjust your seatbelt.**
  - While you're moving, keep your hands inside the vehicle.
  - Watch where you're going.
  - Stay alert for hazards.
  
- **When you're driving your forklift, keep the forks low... four to six inches from the floor.**
  - Raised forks can damage equipment and injure coworkers.
  
- **Maintain safe speeds to avoid accidents.**
  - Don't stop abruptly when you're carrying a load.
  - The sudden jolt could cause it to fall, or slide off the forks.
  
- **Drive to the right of oncoming traffic and pedestrians, just as you would in a car.**
  - Don't tailgate.
  - Stay at least three truck-lengths behind other vehicles.
  
- **Stop and sound your horn at corners and doorways, to let other drivers or anyone on foot know that you're there.**
  - Look both ways before you pull out.

- **Make sure to maintain a clear view of where you're going.**
  - If you're moving a load that blocks your forward vision, drive in reverse.
  - Use a spotter to help you, if necessary.
- **Drive carefully, and never fool around while operating an industrial truck.**
  - The driver's seat is no place for a joker or a showoff.
  - Never allow riders on an industrial truck, unless it is specifically designed for transporting passengers.
- **There are basic procedures that you should follow in specific operating environments as well.**
- **If you're working indoors with a truck that has an internal combustion engine, make sure that there is plenty of ventilation to remove exhaust fumes.**
  - You can improve air flow by turning on fans and opening doors and windows.
  - In areas where the atmosphere can't be made safe, use an electrically-powered truck instead.
- **Because industrial trucks can generate heat and sparks, they can be dangerous to use around flammable and explosive materials.**
  - To combat this, some trucks have safety features added to the exhaust, fuel and electrical systems that prevent them from igniting these substances.
- **To help you determine which trucks are safe to use around various types of hazardous materials, OSHA has separated powered industrial trucks into 11 different categories.**
  - These designations are marked on the nameplates of each truck, along with information such as classification, weight and lifting capacity.
  - By referencing Table N-1 in OSHA's Powered Industrial Truck Regulation (CFR 1910.178), you can see which trucks OSHA has approved for use around different types of materials.
  - Talk to your supervisor if you have any questions.

- **As you operate your industrial truck, you should also check the work area itself for potential hazards, such as:**
  - Limited aisle clearance.
  - The distance to overhead pipes and ductwork.
  - You don't want to get stuck, or cause damage.
  
- **If you have to temporarily leave your vehicle, put the engine in neutral, and set the parking brake.**
  - If you are on a forklift, lower the forks to the ground.
  - This will help to keep it from moving.
  
- **Whenever you will be more than 25 feet away, or your vehicle will be out of your sight, shut the power off and take the key with you.**
  
- **When parking, make sure that you don't block stairwells, exits or fire hydrants.**
  - They may be needed in an emergency.
  
- **Be sure to chock your wheels when you're on a slope.**
  - Runaway industrial trucks are dangerous!
  
- **If someone needs to talk to you when you're operating an industrial truck, don't let them come too close to the vehicle.**
  - Ask them to stand off at least three feet.
  - Explain to them that the extra distance will keep them safe if something unexpected happens with the truck.
  
- **Although all industrial trucks have similarities in how they're operated, forklifts have special handling requirements.**
  - One reason for this is the counter-balance weight in the back.
  - By preventing the forklift from tipping forward when it raises a load, this weight enables the machine to do some very heavy lifting.
  
- **A loaded forklift is like a see-saw.**
  - The front wheels are the fulcrum upon which the machine is balanced.
  - If a load is too heavy, or too far from the wheels, the forklift is likely to tip forward.

- **You should always check your forklift's nameplate to see what its lifting capacity is.**
  - Be sure to use a machine that is rated to handle the load that you want to move.
- **If you're picking up a loaded pallet, space the forks widely apart to better balance the load.**
  - Keep the forks level and a few inches off the ground.
  - Then move forward slowly until the pallet is seated all the way back on the forks.
- **Once the forks are fully inserted, slowly lift the pallet about 6 inches.**
  - Then tilt the mast back to secure the load for transport.
- **If you're lifting a pallet from an overhead rack, make sure that you lower the mast before traveling with the load.**
  - A forklift with a raised load is extremely unstable.
  - If you try to drive with the load in this position you're likely to tip over.
- **Some loads may be naturally off-center.**
  - Be sure they're stabilized before moving them.
  - Find the load's center of gravity, and position your truck's forks accordingly.
- **Special attachments can be installed on the masts of forklifts to move barrels, carpet and other hard-to-grasp objects.**
  - Since these attachments can radically change the lifting capacity of a forklift, a new nameplate with revised specifications will have been installed on the vehicle.
  - Be sure you read the information on the plate before picking anything up.

- **Forklifts can even be used to elevate workers, but only on proper safety platforms that are securely fastened to the forklift's mast.**
  - Never drive a forklift when someone is on the platform.
  - Moving it even a few inches is dangerous, because workers could fall or be crushed.
  
- **When you're driving a forklift you need to remember that it's not as stable as a car.**
  
- **Most forklifts are supported only at three points.**
  - On three-wheeled machines the first point is at the rear wheel.
  - On four-wheeled forklifts the first point is at the center of the rear axle.
  - The second and third points are the front wheels.
  
- **These three points form what is called the "stability triangle".**
  - Because a forklift is designed to handle loads, when it's not carrying anything its center of gravity falls towards the back of the stability triangle, close to the first point of support at the rear.
  
- **Since this is near two of the triangle's edges, it doesn't take much to make the forklift unstable.**
  - In fact, just running over a two-by-four can push the center of gravity outside the stability triangle, causing the forklift to tip.
  
- **When you're lifting and carrying a load, a forklift's center of gravity will shift towards the front and the second and third points of support... the front wheels.**
  - Since the center of gravity is now well away from the sides of the stability triangle, the forklift is generally more stable.

- **But even a loaded forklift can have stability problems.**
  - A load that is too heavy can shift the center of gravity out of the stability triangle.
  - This can make the forklift hard to control and cause it to tip forward.
  - In a worst-case scenario, you may lose the load or damage the forklift.
  
- **Another aspect of the stability triangle involves a forklift's vertical stability, or "line of action".**
  - This is an imaginary vertical line that runs through the forklift's center of gravity.
  - As long as the "line of action" falls within the stability triangle, the forklift will be stable.
  
- **There are factors, however, that can shift the line of action outside of the stability triangle, causing the forklift to tip.**
  
- **Placing a load near the end of the forks can shift the center of gravity further forward than is safe.**
  - So you need to check your truck's nameplate for the proper "load centers" you should use to keep it stable.
  
- **Raising a load too high when the forklift is stopped on an angled or uneven floor can shift the combined center of gravity out of the stability triangle on the "downhill" side.**
  
- **The same thing can happen when you drive with a raised load onto a surface that is angled, like a ramp, or one that is uneven and might cause the truck to shift its stance suddenly.**
  
- **Remember, any load will change a forklift's center of gravity.**
  - To stabilize a forklift when you're driving with a load, the best approach is to tilt the mast back and keep the forks low.
  
- **If your forklift does begin to tip, don't jump out.**
  - You could be crushed beneath the machine.

- **Instead, brace your feet, grab onto the steering wheel and pull yourself tight up against it.**
  - Lean in the opposite direction from the way the vehicle is tipping.
  - Don't try to get out of the forklift until it has come to a complete stop.
  
- **There are several important things you need to remember about driving a powered industrial truck.**
  
- **Most forklifts and some other powered industrial trucks have rear-wheel steering.**
  - So you need to be careful going around corners, because the forks and the rear of the vehicle will both swing wide.
  - Be especially cautious when you're turning on a loading dock, so you don't go over the edge.
  
- **Cross curbs and railroad tracks slowly, and at an angle.**
  - This will keep at least two wheels in contact with the ground at all times, and help to prevent the forklift from tipping over.
  
- **You also need to pay special attention to slopes and ramps.**
  
- **When you're transporting a load, always keep the forks (and the load) uphill.**
  - This means you should back down a slope.
  - Otherwise, you could lose the load.
  
- **If you aren't carrying a load, the opposite is true.**
  - Always keep the forks pointed downhill, to maintain the forklift's balance.
  - This also gives you better control of the vehicle, since it puts more of the weight on the front drive wheels, where the brakes are located.



- **Before driving on a ramp, clear away any obstacles that are in your path.**
  - Litter and liquid spills can cause a forklift to tip or skid.
  - Check outdoor ramps for puddles and ice or snow.
  - Be especially careful on steep inclines.
  
- **Always watch your speed.**
  - Don't let the forklift accelerate if you're going down an incline.
  
- **Never cross a slope at an angle, with or without a load.**
  - Driving across even a slight grade can cause a forklift to tip.
  
- **Some lift trucks should be used only on flat surfaces.**
  - Consult your operator's manual or talk to your supervisor if you're not sure whether your truck is suited for the environment you're working in.
  
- **Many of the ramps you'll encounter are made of concrete, which will be inherently stable.**
  - But if you are using a temporary ramp, like a metal bridgeplate, make sure that it's securely positioned and can handle the weight of both the forklift and the load you're carrying.
  
- **Before you drive onto a railcar, truck or trailer, set its brakes and block its wheels, so that it won't shift under the added weight of the forklift.**
  - Check the strength of the floors, as well.
  - Don't forget to look for indentations and holes that could cause your forklift to tip.
  
- **You need to know the proper procedures for unloading your forklift once you have reached your destination, as well.**

- **If you're dropping your load on the floor, drive straight ahead until the load is a few inches short of the drop-off point.**
  - Then tilt the mast forward, so the forks are parallel to the floor and the load is directly over where you want it to land.
  - Gradually lower the forks until the load is in place and the forks move freely.
  - When you back away, do it slowly.
  - Don't drag the forks across the floor.
  
- **Pallets are also often placed in racks, or stacked, to save space.**
  - Ask your supervisor how high you can safely stack the loads you'll be handling.
  
- **And whenever you are loading, unloading or stacking, make sure that other workers and pedestrians are a safe distance away.**
  - You never know when a load might slip.

**\* \* \* SUMMARY \* \* \***

- **Powered industrial trucks are valuable tools that give us the strength to handle heavy loads.**
  
- **Read the operator's manual before using a forklift or other powered industrial truck.**
  - If you still have questions, refer to OSHA's Powered Industrial Truck Standard (29 CFR 1910.178) for proper operating procedures.
  
- **Examine your work environment, and choose the type of truck that's right for the jobs you'll be doing.**
  
- **Inspect your truck thoroughly before you use it.**
  
- **Pay attention to your lift truck's weight capacity, and its "stability triangle".**

- **Stay alert, drive safely, and always make sure that other workers are a safe distance away whenever you are operating your truck.**
- **Forklifts and other powered industrial trucks are all formidable machines that can be dangerous.**
  - By using common sense, and following the correct operating procedures, you can harness their strength and get them to work for you... safely!

# **ACCOMPANYING MATERIALS**

# **ACCOMPANYING MATERIALS**

In order to assist you in conducting your session on forklift/powered industrial truck safety, we have provided a number of specific materials that can be used with this program. These materials have been furnished in PDF format on the DVD as well as printed "masters" in the back pocket of this binder. This will enable you to make as many copies of these forms as you need. If you have colored paper available to you, it is often useful to put each form on a different color. This enables you to easily differentiate between the materials. The materials enclosed with this guide include:

## **Scheduling and Attendance Form**

This form is provided so you can easily schedule your attendees into each session of the program. It is important that you have each attendee "sign-in" on the appropriate form, documenting their attendance at the session. Typically, a copy of this attendance/"sign-in" form is filed in the employee's personnel file.

## **Quiz**

The quiz is normally given after viewing the program. However, if you want an indication of the "increase" in the attendees' knowledge of forklift/powered industrial truck safety, you can give the quiz both before and after the program is shown. You can also use the quiz as the basis for class discussion. If you have decided to give the quiz both before and after the attendees view the program, it is often interesting to have the attendees compare their "before" and "after" answers as part of the session. Typically, the quiz is filed in the employee's personnel file.

## **Training Certificate**

This form allows you to give each employee their own "certificate of completion" showing that they have attended the course and taken the quiz. Space is provided to insert the employee's name, the course instructor and the date of completion.

## **Employee Training Log**

This log helps you to keep track of when each employee has taken the course, as well as associated courses/training. Space is provided to list pertinent data about the employee, as well as information such as the date the course was taken, and the instructor conducting the course. A copy of this form should be kept in each employee's training or personnel file.

## **Booklet\***

A sample copy of the employee booklet that has been designed for use with this program has also been included. Using both text and illustrations to review important points, the booklet is designed to reinforce the message employees receive in the training session. The material is presented in the same order as seen in the program and is organized into concise sections, making it easy to understand and remember.

*\*Additional booklets, as well as copies of the poster that has been created to get employees thinking about forklift/powered industrial truck safety, are available from your distributor.*