

FORKLIFT (POWERED INDUSTRIAL TRUCK) OPERATION PROGRAM



THE UNIVERSITY OF PORTLAND

PORTLAND, OREGON

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FORKLIFT (POWERED INDUSTRIAL TRUCK) OPERATION PROGRAM

The University of Portland written *Forklift (Powered Industrial Truck)Operation Program* establishes guidelines for the University of Portland operators, training and record-keeping personnel. The program is recognized as our standard for operating procedures in order to promote the following:

- ✓ Provide a safe forklift work environment for all employees, guests and other personnel.
- ✓ Train, certify and govern the safe operator use of powered industrial forklift trucks
- ✓ Ensure proper care and maintenance of powered industrial forklift trucks.

These guidelines are designed to ensure that forklift safety training, operation, and maintenance practices are clearly communicated, understood, and obeyed.

1.0 ADMINISTRATIVE DUTIES

At the University of Portland, Environmental Health and Safety with oversight by the Facilities Operations Coordinator implements and maintains records for the *Forklift Operation Program*.

Copies of the written program and safety training materials are kept in the Environmental Health and Safety office and electronically, and is available online.

2.0 TRAINING

Forklift training is required every three years to refresh certified operators. Forklift training is scheduled on an as need basis for new employees or employees who need to begin using the forklift. Supervisors may recommend new potential operators for certification to the Environmental Health and Safety during the year, and Environmental Health and Safety will then coordinate their certification.

All new operators receive training regardless of previous experience. Supervisors are responsible for their employees' adherence to powered forklift truck policy. A valid state driver's license is a prerequisite for participation in powered industrial forklift truck training and operation.

Prior to driving a forklift for the first time, employees at the University of Portland must first obtain training and then pass the operating test. The employee will also be given a verbal lesson on the safety features and environment specific to the University of Portland facility. After completing a driving test, the employee will be certified to safely drive a forklift or lift truck on the University of



Portland property.

Initial Training

Initial operator training consists of both classroom and practical training.

Classroom training includes the following methods: trainer presentation, video and/or PowerPoint presentation, trainee feedback through discussion, discussion of the safety rules, and review of the safety content via discussion.

Specifically:

Classroom training covers:

- a) General forklift operation information
- b) Operating instruction, warnings and precautions for the type of truck the operator will be using
- c) Differences between the truck and other automobiles
- d) Truck controls and instrumentations: Where are they located, what they do and how they work
- e) Engine or motor operation, steering and maneuvering, visibility (including restrictions due to loading)
- f) Vehicle capacity and stability
- g) Inspection and maintenance procedures
- h) Refueling and/or charging batteries
- i) Operating limitations
- j) Any operating instructions, warnings or precautions listed in the operator's manual.

Practical training covers:

- a) Surface conditions where the truck will be operated
- b) Composition of loads to be carried and load stability
- c) Load manipulation, stacking and unstacking
- d) Pedestrian traffic patterns and rules



- Review of aisles or restricted places and/or hazardous locations where the vehicle will be operated
- f) Ramps and other sloped surfaces that could affect the vehicles stability
- g) Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust
- h) Other unique or potentially hazardous environmental conditions
- i) OSHA and state specific code requirements where applicable

The University of Portland employees are not permitted to operate a forklift without proper training and authorization by the appropriate supervisors. Authorized forklift operators will be familiar with the operating manual and characteristics of the particular equipment to be operated.

Training Certification

A University of Portland employee who successfully completes classroom training and demonstrates skill mastery may become a University of Portland certified operator. Records of operator training, testing and certification are kept on file in the Environmental Health and Safety Office.



Annual Performance Evaluation

The University of Portland forklift operators are evaluated every three (3) years to verify their safe practice of truck knowledge and skill. A competent individual conducts site-specific evaluation for every operator in the program. Accidents, deficiency in standard operating procedure, or desires for refreshment, are all reasons for retraining. Otherwise, retraining shall occur every three (3) years.

2.1 Types of Forklifts

Make	1.	2.	3.					
Model								
S/N								
Location								
Class/Type								

SPECIFICATIONS OF POWERED INDUSTRIAL TRUCKS (FORKLIFTS) AT THE UNIVERSITY OF PORTLAND





3.0 Inspections

Pre-Operational Forklift Inspection Procedures

The University of Portland Competent Individual manages forklift inspections.

Using the Inspection Checklists located behind the seat of each forklift for driver convenience, the University of Portland requires operators to perform pre-operational inspections before each shift.

The forklift inspection checklist is not required to be completed via written record upon each time an employee drives a forklift, but the employee should run through the checklist verbally before driving the forklift.

If the employee completes the written checklist (see Appendix C), a check mark (V) is used to denote satisfactory, an "X" mark means discrepancy, and "N/A" means non-applicable. Operators are to add comments to describe problems they discover during inspection to aid the troubleshooting efforts of maintenance personnel. More copies of the Inspection Checklists may be obtained from the Faculties Services Pilots UP page.

VISUAL INSPECTION	OPERATIONAL INSPECTION
Overall condition	Seat belt
Frame	Horn
Tires & wheels	Fuel level
Forks	Gauge readings
Front end	Steering
Overhead guard	Foot pedal brake
Battery compartment	Park brake
Hood latch	Oil level
Capacity plate	Battery water level
Warning decals	
Operator compartment	

Pre-operational inspection includes checking:

Periodic Inspection Procedures

Periodic inspections occur in conjunction with maintenance and service schedules, measured in days and hours of operation. Specialized service technicians provide repair beyond recommended service schedules.

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4.0 Operating Procedures

The safe operation of forklifts is the only way to prevent certain hazards from occurring.

Background information concerning driving a forklift:

Driving a forklift is fundamentally different than driving other trucks. Forklifts:

- a) Usually have rear wheel steering
- b) Drive more easily loaded than empty
- c) They are driven in reverse more often than forward
- d) Are often steered with one hand
- e) Have a center of gravity towards the rear shifting to the front as forklifts are raised.

Forklifts have a greater chance of tipping over when turned suddenly. They are designed with a very

short rear wheel swing, which, when driven at high speeds may cause the center of gravity to shift dramatically. Speed coupled with sudden turns may cause the truck to tip, as might speeding over rough areas. Forklifts are heavy and will not stop quickly, especially loaded.

4.1 FORKLIFT OPERATOR RULES:

The following forklift operator rules will be followed at all times. Deviations from these rules may result in disciplinary actions up to and including termination.

- 1. When mounting and dismounting, use the three-point method at all times
- 2. Do not drive forklift truck up to anyone standing in front of a fixed object.
- 3. Do not allow anyone to stand or pass under the elevated portion of any loaded or empty truck.
- 4. There are to be no unauthorized riders.
- 5. Operators are not to extend arms or legs between the uprights of the mast or outside the running lines of the truck.
- 6. When left unattended, fully lower forks, place controls in neutral, turn the power off and set the brake. Wheels should be blocked if on an incline. (Unattended is defined as being more than 25 feet away or at any distance out of view)
- 7. Maintain a safe distance from the edge of ramps or platforms









3 CAUSES

0F ACCIDENTS

ARE

I DIDN'T THINK I DIDN'T SEE

I DIDN'T KNOW

while on elevated docks, or platforms of freight cars. Do not use the forklift for opening or closing freight doors.

- 8. Check the flooring for breaks or weakness; do not drive the forklift onto inadequate flooring.
- 9. Make sure there is sufficient headroom under overhead installations, such as lights, pipes, sprinkler systems, etc.
- 10. Always use the man-lift cage when lifting personnel with the forklift. Pin the cage to the forks to prevent sliding movement. The vehicle should travel at creep speed, or keep forks lower than 4 feet off the ground. Remain in the seat while employees are in the man-lift cage.
- 11. Complete the proper operating check sheet before beginning your shift.
- 12. Be aware of pedestrians, they always have the right-of-way.
- 13. Yield to emergency vehicles
- 14. Observe all traffic regulations.
- 15. Always travel at a safe operating and stopping speeds.
- 16. Do not pass another vehicle traveling in the same direction at intersections, blind spots or other dangerous locations.
- 17. Slow down and sound horn at cross aisles and areas of obstructed view
- 18. Travel only in the direction with the view. If the load is too large to have clear vision when

traveling forward, travel in reverse. The only exception is to travel at creep speed with a spotter or having someone direct travel.

- 19. Do not engage in horseplay
- 20. Cross railroad tracks diagonally when possible
- 21. When ascending or descending grades in excess of 10%, drive loaded trucks with load upgrade
- 22. Tilt loads back if applicable and raise forks only as far as necessary to clear road surface
- 23. Only handle loads that are within the rated capacity
- 24. Slow down when floors are slick
- 25. Do not attempt to drive over floor obstructions

PROFESSIONAL FORKLIFT OPERATORS:

- 1. Are responsible
- 2. Alert and on-time
- 3. Do not use alcohol or drugs
- 4. Know rules, follow policies
- 5. Wear required clothing and protective gear
- 6. Use safety equipment
- 7. Are skilled and try to improve

· Always wear safety equipment, if required

• Keeps hands and feet away from moving parts

Operates from designated position only

No loose clothing, jewelry

Is aware of all obstacles

Reports all hazards

Eliminates unsafe conditions

Takes it slow

• Takes it smooth

• Uses the horn Checks mirrors

8. Keep the forklift under control at all times



RULES OF THE ROAD:

A forklift professional knows and practices all of them









- 26. Correct any unsafe condition before placing the truck in service
- 27. Turn the engine off when fueling gas or LP fuel tanks
- 28. Carefully clean up fuel or oil spills and replace the fuel cap prior to starting the engine
- 29. Always wear proper personal protective equipment when potential for head or eye injury exists
- 30. Wear a seat belt at all times other than when mounting and dismounting

Basic Guidelines

Use a restraint device (seatbelt)

Operate the forklift from the operator's compartment only

Keep all body parts in the forklift

Use the forklift in designated areas only

Stay in approved aisles

Use horn at intersections, blind corners, pedestrians, other vehicles

Check overhead clearance

Slow down on wet, slippery or uneven surfaces

Keep a safe distance from docks and ramps

Use extreme caution if handling hazardous materials

Roll-up doors must be all the way up when driving the forklift through doorways

Pedestrian Traffic

Always give pedestrians the right of way

When passing, sound horn and establish eye contact

Follow normal traffic patterns

Check mirrors

Wave pedestrians on only when it is safe for them to pass

Watch out for rear-end swing of the forklift when working in tight corners

Absolutely no riders





4.1 FORKLIFT OPERATOR RULES: (CONTINUED)

PARKING THE FORKLIFT					
ATTENDED Engine running w/in 25 feet, full view	UNATTENDED Engine off, beyond 25 feet, out of view				
Put in neutral	Put in neutral				
Lower forks to the ground	Lower forks to the ground				
Set parking brake	Set parking brake				
	Power off				
	Chock wheels if on incline				
	Disconnect battery on electric forklifts in not use for long extended periods				

Information concerning load lifting and carrying

All forklifts at the University of Portland indicate load capacity on each truck's data rating plates. Almost all counterbalanced powered industrial trucks are supported at three points. This is true even if the forklift has four wheels. The truck's steer axle is attached to the truck by a pivot pin in the axle's center. When this point is connected to the front wheels then imaginary lines in the shape of a triangle can be envisioned. **This three-point support forms a triangle called the stability triangle.** As long as the center of gravity remains within this stability triangle then the truck remains stable and will not tip over. In other words, the truck's center of gravity must lie within this triangle ...or it will tip! The load and its position on the forklifts, as well as traveling speed and surface slope, all affect center of gravity.





Operators are trained in standard operating procedures for load lifting and carrying to prevent tipping and load falling hazards.

- a) Never exceed the rated capacity of your truck.
- b) Check for overhead obstructions.
- c) Space forklifts properly.
- Raise the forklifts to the proper height before driving into a pallet or underneath a stack.
- e) Drive into the load as far as possible.
- f) Tilt the load back slightly and then lift it.
- g) Watch for overhead objects or obstructions to the sides.
- h) Sound horn, back up to get clearance.
- i) Lower the load to 2 4 inches from the floor before traveling.
- j) Be certain the forklifts clear the pallet before turning or changing height.



TRAVELING ON RAMPS – ALWAYS BACK DOWN THE RAMP WITH OR WITHOUT A LOAD



4.2 INFORMATION CONCERNING ENERGY CELL CHANGES

The University of Portland forklifts may be electric powered. If so, changing energy cells (batteries) requires careful, focused attention to detail and proper procedures. See section 8.0 for complete details and instructions.

4.3 GUIDELINES FOR FUELING WITH GASOLINE OR DIESEL:

- a) No smoking or open flame.
- b) Shut off the engine.
- c) Use the proper fuel.
- d) Avoid overfilling the tank.
- e) Replace the fuel cap.
- f) Clean up any spills following proper safety procedures for fuel spills.
- g) Use your sense of smell to troubleshoot for leaks.

4.4 GUIDELINES FOR FUELING WITH PROPANE:

- a) No smoking or open flame.
- b) Shut off engine.
- c) Shut valve off to use propane in the line before changing tanks.
- d) Check all valves and seals before connecting the new tank.
- e) Handle tanks carefully. Propane can cause a "freeze burn" to skin.
- f) Use your sense of smell to troubleshoot for leaks
- g) Store tanks in storage area, NOT where leaking gas might accumulate.

5.0 CARBON MONOXIDE AWARENESS

Forklifts with internal combustion engines produce carbon monoxide (CO), an odorless and deadly gas produced by the incomplete burning of any carbon containing material. Gasoline, natural gas, propane, coal, and wood are examples of carbon containing material.

The most common source of CO is the internal combustion engine. Trucks, cars, **DANGER!** forklifts, floor polishers, pressure washers, and other fossil-fueled powered **CARBON MONOXIDE**

machines generate carbon monoxide. When inhaled, CO restricts the ability of your blood system to carry oxygen to the body.

Overexposure results in carbon monoxide poisoning. Mild poisoning may cause headaches, chest tightness, dizziness, drowsiness, inattention, fatigue, flushed face, and/or nausea. Continued exposure causes lack of coordination, confusion, weakness, and/or loss of consciousness.

Smoking tobacco, using drugs and/or alcohol, pregnancy, and some heart conditions may aggravate CO poisoning. Physical activity will increase exposure, as oxygen uptake increases.

Carbon monoxide has the potential to cause death within minutes, sometimes with no warning symptoms in cases of severe poisoning. The more CO there is in the air and the longer the exposure, the greater the danger.

Standard operating procedures reduce CO levels and prevent CO overexposure and illness.







6.0 PEDESTRIANS

Forklift operators should always be aware of conditions in their workplace, including pedestrian traffic. Forklift traffic should be separated from other workers and pedestrians where possible.

Potential Hazards:

- > Danger of striking pedestrians and objects
- Requirements and Recommended Practices:
- Yield right of way to pedestrians.

When a person or group of people walks across your planned route:

- Stop.
- Wait until the pedestrians pass by.
- Proceed cautiously through any congested area.
- If an area is cluttered, walk the route first to spot problems.
- Check for situations that require a spotter and use one when traveling.
- Warn pedestrians, by asking them to move, if there is not sufficient safe clearance.
- Sound the horn at blind corners, doorways and aisles.
- Sound the horn or other alarm when you back up.

Reminders for the Pedestrians:

- Be aware that lift trucks cannot stop suddenly. They are designed to stop slowly to minimize load damage and maintain stability.
- > Stand clear of lift trucks in operation.
- > Avoid a run-in. The driver's visibility may be limited due to blind spots.
- Be aware of the wide rear swing radius.
- Use pedestrian walkways or stay to one side of the equipment aisle.
- Never ride on a forklift, unless authorized and the forklift is designed for riders.
- Never pass under an elevated load.

7.0 MAINTENANCE

Upon delivery of a new truck, the maintenance department completes the receiving inspection. The forklift is matched with its specifications, tested for performance, and either approved or red-flagged until satisfactory.

Maintenance department personnel perform maintenance, adhering at minimum, to the manufacturer's recommendations for maintenance and lubrication schedules, daily inspection, and record keeping for the life of the truck.

Time and effort invested in proper upkeep of the University of Portland forklifts increase their longevity and enhance resale. More importantly, operators are secure with safe, reliable equipment.











8.0 ELECTRIC FORKLIFT BATTERY SAFETY AND MAINTENANCE

Forklift Battery Safety

Electric forklifts are powered by large industrial batteries. These batteries require frequent charging and maintenance. Water levels must be checked and proper procedures followed when connecting the battery to the charger.

- **PPE Personal Protective Equipment:** Any time you are working with a forklift battery, you must wear eye protection (full protection safety glasses, goggles or a full face shield), proper hand protection (thick rubber gloves offer the best protection from spilled battery acid), and an approved apron which will offer protection from spilled acid or other residue.
- Emergency Eyewash Station: The charging area must contain an emergency eyewash station which the employee can reach within 10 seconds at a normal walking speed. The path to the station must be free of obstructions which would hinder easy access by an injured worker.
- **Charger Safety:** The charger should be turned off while the battery is plugged in and the employee must make certain the charger is the same amperage as the battery.
- **Open Flames:** Never use or allow open flames near a battery or battery charging area. Do not use items such as a match or cigarette lighter to check the fluid levels in a battery.
- **Ventilation:** The battery charging area should be located in a well-ventilated area. The fumes emitted when charged are toxic and highly explosive.

Instructions for How to Charge a Forklift Battery

When trying to turn on and operate an electric forklift with a battery meter that reads "low" the forklift won't operate properly; the forklift battery needs charging.

Forklifts have a large, high-voltage battery that operates the machine. You must properly charge the battery to maintain the life of the battery. You shouldn't plug the battery in to the charger when you are not using it; rather, charge the battery only when it needs it.

- **1.** Park the forklift next to the industrial battery charging station. Shut off and remove the key from the forklift ignition.
- **2.** Open the battery panel on the forklift to expose the battery. Pull the plug on the cord from the forklift electric motor, plugging into the battery.
- **3.** Turn on the industrial battery charging station.
- **4.** Read the battery voltage on the forklift battery data plate. Set the industrial battery charging station to that voltage. Plug the industrial battery charging station cord into the battery.
- 5. Set the charger to auto shutoff for when the battery is fully charged. If the charger doesn't have an auto shutoff, then check the battery meter occasionally until it is full. It usually takes eight hours to charge a dead forklift battery.
- 6. Pull the charger's plug when the battery meter is full. Shut off the industrial battery charging station.
- 7. Plug the forklift motor cord back into the battery. Shut the battery panel tight.

Forklift Battery Maintenance

The batteries used in electric forklifts are very reliable and also very expensive. Proper maintenance is required to extend the lifespan of the batteries and provide reliable power for the forklifts.

• **Charging:** Forklift batteries are designed for long life. The lifespan can be lengthened or shortened by which charger options you select. The battery should not be charged daily. This can harm the battery and prevent it from receiving a full charge. Only place the battery on the charger when it is at 20 percent





power or below. Approximately every five to 10 charge cycles, you should select the equalize or weekend charge option. This will maintain the battery at top performance. Do not use this option too often, or damage may occur.

- Water Levels: It is imperative that a proper water level is maintained in the battery cells. Check the water level every five to 10 charge cycles, depending on the age of the battery. Check a few random pilot cells using a flashlight. *NEVER* use a match, lighter or any other open flame near the battery. The gases emitted from the battery are extremely flammable. You should also wear protective gloves as well as eye protection when working with batteries. If the water is low, add enough water to cover the element protector. There will be some expansion during charging, so do not overfill the cells.
- **Discharge:** While you should not charge a battery when it is over a 20 percent power level, you should also not allow the battery to completely discharge either. Allowing the battery to completely discharge, or deep discharge, can result in damage not only to the battery but also to the electronics on the forklift. A deep discharge can also make it impossible for your charger to completely charge the battery during a normal cycle. This will shorten the time between charges, and over time it will affect the performance of the battery.

How to Determine the Sulfuric Acid Amount in a Forklift Battery

You can test forklift batteries with a hydrometer. A forklift battery is a lead acid battery that is constructed much like automotive and truck batteries. It uses sulfuric acid to activate the cells of the battery and provide

electrical current. The sulfuric acid can be tested using a standard battery acid tester which is also known as a "hydrometer."

This test will give you the specific gravity of the acid inside of the battery, which will allow you to calculate how much voltage you have left. Since there are many variations and voltages of forklift batteries, hydrometer readings may vary.

- 1. Open the battery storage compartment on the forklift. Remove a cap from one of the battery cells.
- Insert the acid testing hydrometer into the cell and push in the bulb at the top. Slowly release pressure on the bulb: battery acid will be drawn



pressure on the bulb; battery acid will be drawn into the hydrometer.

3. Pull the battery acid tester out of the cell and read the specific gravity. Markings will be located on the side of the hydrometer. A common specific gravity reading will be 1.265 for a fully charged cell, and 1.13 or less for a completely discharged cell. These figures may vary from battery to battery, but they are a good base line to work with.

How to Remove the Battery in a Forklift

Removing the battery from a forklift is a challenging task. The batteries used on forklifts are very different to those used in cars. Forklift batteries are lead-acid batteries, which mean you must wear protective gear when handling them or you may get severe and permanent chemical burns.

The batteries are also very heavy, so you'll need a second forklift or a hoist to remove them. Removing the battery can be challenging and dangerous, but it is necessary for maintaining a forklift.

PPE and Other Things Required:

a) Coveralls

- b) Chemical Resistant Gloves
- c) Goggles
- d) Steel-toed boots
- e) Forklift or hoist with 'C' hooks
- f) Empty wooden pallet
- g) Spanner

Steps to Remove the Battery in a Forklift:

- 1. Park the forklift in an appropriate space where the hoist can be used or the second forklift can be easily maneuvered.
- 2. Engage the parking brake so the forklift does not move while the battery is being removed.
- **3.** Put on coveralls, gloves, goggles and boots. Due to the chemical reaction, the battery may spark, catch fire, or release sulfur.
- **4.** Remove the terminals and the brackets holding the battery in place with the spanner. Consult the battery manufacturer's guidelines on how to do this.
- 5. Insert "C" hooks through the lifting points on top of the battery. Alternatively, lift one end of the battery slightly and run the forks of the lift under it, placing the battery completely on the forks before attempting to lift.
- **6.** Lift out the battery.
- 7. Place the old battery on an empty wooden pallet so it can be removed easily.
- 8. Dispose of the old battery safely.

How to Extinguish an Exploding or Burning Forklift Battery

Electric forklifts are powered by a very large and very heavy industrial battery that emits fumes that are extremely hazardous and very flammable. For this reason there should never be any smoking or open flames allowed near the forklifts.

In the event of a fire or explosion involving a forklift battery, it is vital to remain calm, evaluate the situation and concentrate on what needs to happen to prevent further danger. Industrial Finishes employees are NOT PERMITTED to deal with a battery explosion or fire unless they have been trained and certified.

PPE and Other Items Required:

- a) Fire extinguisher
- b) Phone
- c) Goggles

Steps to Remove Burning Battery from a Forklift:

1. Step away from the area of the fire and evaluate the situation and what resources you have available to you. Exit the area if you fighting the fire will compromise your ability to exit the area safely. Immediately phone for help, or instruct someone to dial 9-1-1 to summon the fire department. Retrieve the nearest fire extinguisher without moving into the smoke from the fire. Do not put water on the fire; this could cause the acid in the battery to spread further, resulting in a larger fire to contain. Keep the fire









extinguisher in front of you as you approach the fire, but remain low to avoid inhaling any of the smoke or fumes from the fire.

2. Pull the pin on the fire extinguisher to free up the handle. Aim at the base of the flames. Squeeze the handle to activate the extinguisher. Sweep the extinguisher from side to side in short movements as you attempt to push the fire back and contain it.

Remember the acronym P.A.S.S.:

Pull the pin, Aim the extinguisher, Squeeze the handle, Sweep side to side.

Depending on the size of the fire extinguisher you will have a very limited supply of chemical to fight the fire. Attempt to contain the fire into a small area, and then extinguish it.

- **3.** Stay clear of the smoke, and if the situation becomes more hazardous evacuate the area. If it is a large fire it may be necessary to use multiple extinguishers to contain it. Fighting the fire will also be far more difficult if the battery is mounted in a forklift as opposed to sitting beside a charger. While there will be less oxygen reaching the fire, it will be harder for you to get the chemical on the flames. Direct others who may be assisting you and coordinate the fight, spraying the fire from all sides at once.
- 4. Continue to spray the area even when there are no longer visible flames. If the fire extinguisher is exhausted, retrieve another and stand watch until the fire department arrives. Immediately attack any area that flares up or appears as if it could. Better to err on the side of caution rather than allow the fire to regain momentum. Keep all other people clear of the area and if possible out of the building to prevent any possible problem from inhaling the smoke or fumes. If at any time you feel you are being overcome by the smoke, evacuate to fresh air and do not re-enter the structure.



9.0 SAFE PALLET LOADING AND STACKING

Wooden pallets are used in almost all industrial and warehouse environments. Although sometimes people tend to forget about the hazards associated with pallets, each year many people suffer injuries from mishandling and misusing them.

PALLET INSPECTION

- Before using a pallet, make sure it can be safely stored in a rack with a heavy load. It should be constructed of hardwood and be in good condition.
- Top and bottom boards should be in place and should not be cracked or have pieces missing.
- Stringers should be in good repair. If damaged, they should be properly repaired.
- There must be no protruding nails or slivers of wood.
- When a pallet is unsafe then take it out of service until it is repaired.





PALLET LOADING

- Pallets come in different sizes and are constructed in various ways.
- Each size and construction has different weight and load ranges and must be used according to your company's specifications.
- The size and loading of a pallet can affect the forklift or other material handling equipment.
- As the load center of a pallet increases, the lifting capacity of the forklift decreases.

HANDLING AND USING PALLETS

- Always wear leather protective gloves when handling wooden pallets.
- Pallets are heavy and awkward to carry; move a pallet by standing on its edge and sliding it.
- Don't throw pallets you could injure yourself and damage the pallet.
- Don't store pallets on their edges or ends. Pallets stored on edges tend to fall and cause injuries.
- Walk around pallets and not on them; many falls occur while attempting to walk on a pallet.
- Separate pallets into stacks of usable pallets and those that need service. Don't mix unsafe pallets with those ready for use.
- Don't manually stack pallets more than 7 or 8 high; use forklifts to make stacks higher.
- To properly stack pallets, slide the pallet to one side of the stack. Using proper lifting motion, slide the pallet up the side of the stack and onto the top.
- Do not leave pallets or trays on the sales floor. If you have overstock, check with the store Operations Manager for proper storage.

PALLET TRIPPING HAZARDS

- If you see a trip hazard, pick it up!!! What items can cause a slip, trip and fall?
 - * Shrink wrapping * Pallet strapping * Waste paper * Cardboard * Wooden pallet chunks
- It is everyone's job to pick up and discard waste trip hazards so set the example!

OPERATING RULES FOR PALLET JACKS

SAFETY WHEN YOU WORK. BE A CAREFUL OPERATOR. YOU CAN PREVENT ACCIDENTS.

- The following operating rules listed below are not in order of importance, but are all to be learned and used in your area. Make sure that your pallet jack has correct equipment according to these rules and procedures.
- <u>THE BATTERY</u>: Proper care and servicing of the battery is vital to assure satisfactory operation and lift of your pallet jack. Battery acid is, of course, extremely corrosive and should be kept off or washed off the matching as any spillage occurs. The battery should always be kept in a charged state. An overly discharged battery will cause a number of operational difficulties in any electric piece of equipment. The battery charge should be checked first if any electrical difficulties occur.
- <u>TRAFFIC</u>: Observe all traffic regulations. Under normal traffic conditions, keep to the right of aisles. Maintain a safe distance, based on speed of travel from the jack ahead and keep the truck under control at all times.



- <u>HORN</u>: Press horn button to check functionality. If horn does not respond, report the failure and have the unit repaired before it is put into service. Slow down and sound horn at all cross-aisles and other areas of obstructed view. If the load being carried obstructs view, the operator shall travel with forks trailing.
- <u>BRAKE CONTROL</u>: The brakes are applied when steering control handle is in the fully raised or sully lowered position. Moving the steering control handle to the middle of its travel releases the brake and closes a switch in the control circuit that allows the operation of the pallet jack. The brake should always be checked prior to any operation of equipment.
- REPAIR: If the pallet jack is found to need repair, or in any way be considered unsafe, the situation shall be reported immediately to the designated person. Only specifically authorized and qualified personnel may make repairs and adjustments to the equipment.





APPENDIX A

FORKLIFT PERFORMANCE CHECKLIST

Use this performance checklist to evaluate each operator.

Operator Name: _____ Date _____

Evaluator Name: ______Signature _____

SKILL COMPLETED	Pass (P) / Fail (F) or Not Applicable (N/A)			
1. Shows familiarity with truck controls.				
2. Fastened seat belt.				
2. Gave proper signals when turning.				
3. Slowed down and sounded horn at intersections.				
4. Sounded horn at intersections				
5. Obeyed signs.				
6. Looked and kept a clear view of direction of travel (forward and reverse).				
7. Turned corners correctly - was aware of rear-end swing.				
8. Yielded to pedestrians.				
9. Drove under control and within proper traffic aisles.				
10. Approached and lifted load properly.				
12. Maneuvered properly.				
13. Traveled with load at proper height.				
14. Lowered load smoothly/slowly and stopped smoothly/completely.				
16. Load balanced properly.				
17. Forks under load all the way and load carried against fork face.				
18. Carried parts/stock in approved containers.				
15. Competent is using chains to lift material.				
19. Checked bridgeplates/ramps.				
20. Placed loads within marked area.				
21. Stacked loads evenly and neatly.				
22. Drove backward when required.				
23. Checked load weights.				
24. Placed forklifts on the floor when parked, controls neutralized, brake on set, power off.				
25. Followed proper instructions for maintenance - checked at beginning and end.				

Total Rating

Type of Forklift Truck:

APPENDIX B



University of Portland					
CERTIFICATION OF FORKLIFT TRAINING AND EVALUATION					
I,acknowledge receiving training in the general safety requirements relating to, design, maintenance and use of forklift trucks. Specifically, I have been instructed in forklift operation; lifting and transporting loads; lift driving and handling; refueling; and safety procedures to be followed around loading docks and trailers.					
Training was conducted on, 20					
Signature of Employee Date					
Based on my knowledge, training and experience the above named employee successfully demonstrated competence in powered industrial forklift operation.					
Signature of the University of Portland:					
Supervisor Date					
THORE IN THE REAL PROPERTY INTO THE					

APPENDIX C

PRE-OPERATIONAL CHECKLIST Use this checklist to make sure a forklift is fit for use before each shift.

Forklift # Inspected by						Week of	/	/20	-	
S □ = Satisfactory D □ = Deficient (enter notes below)										
	Item to be Checked		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Initials
1.	Overhead guard in place and secure		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
2.	. Mast and forks working properly		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
3.	S. Steering is responsive		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
4.	A. Parking brake works		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
5.	. Tires not damaged or excessively worn		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
6.	5. Control lever is responsive		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
7.	7. Hydraulic cylinders not leaking		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
8.	. Lift chains & rollers don't get hung up		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
9.	9. Gauges work accurately		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
10.	10. Seat belt works properly		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
11.	1. Fluid levels adequate		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
12.	2. Fuel leaks – none		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
13.	B. Electrical – no shorts & switches work		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
14.	4. Exhaust system – no holes or leaks		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
15.	5. Horn – works		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
16.	.6. Backup alarm – works properly		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	
17.	17. Fire extinguisher – secure and gauge is in the "green" zone		S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	S□ D□	S 🗆 D 🗆	S 🗆 D 🗆	S 🗆 D 🗆	

Notes about any Deficient Check: _____