Reed College Forklift Safety Program

June 2025

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1.0 Introduction

1.1 Purpose/Objectives

Forklifts are important tools for a variety of handling and moving tasks on campus. However, there are many opportunities for injury or property damage while using a forklift. This program establishes guidelines for Reed College operators, training and record-keeping personnel. The objective of this program is to minimize the risk of injury to operators and bystanders and to avoid damage to college property by:

- Promoting a safe forklift work environment for all employees, guests and other personnel.
- Facilitating the training and certification of operators for safe use of forklifts.
- Ensuring proper care and maintenance of forklifts.

These requirements are established under the OSHA Powered Industrial Trucks, 29 CFR 1910.178.

1.2 Scope

This program applies to the operation of forklifts by Reed College employees.

2.0 Roles and Responsibilities

2.1 Environmental Health and Safety (EHS)

EHS staff are responsible for:

- Overseeing the Forklift Safety program and providing consultation to Reed College employees regarding potential risks and training requirements related to forklift use.
- Ensuring proper training of employees and supervisors.
- Maintaining training documentation.
- Reviewing this plan annually and updating as necessary.

2.1.1 Assistant Director of Facilities Operations

At Reed College the Assistant Director of Facilities Operations is responsible for overseeing the forklift program, and is the go-to point of contact for forklift-related issues and ensuring that forklift safety guidelines are followed.

This program and associated training materials are available through EHS at the physical plant or on the website.

2.2 Supervisors

Supervisors are responsible for:

- Providing employees with training about this plan.
- Ensuring that employees have been trained and evaluated on forklift use.
- Ensuring that employees inspect the forklift at the beginning of each work shift and complete the inspection forms (Appendix A).
- Ensuring that proper maintenance is performed in accordance with manufacturers' recommendations and any hazards are corrected.
- Ensuring that employees are complying with all OSHA regulations while operating the forklift.
- Relaying issues to the proper authority and ensuring problems are resolved before allowing work to continue.

2.3 Employees

Employees are responsible for:

- Completing required training course for forklifts.
- Operating the forklift in a safe manner consistent with training.
- Inspecting forklift at the beginning of each shift and complete inspection forms (Appendix A).
- Reporting all malfunctions and maintenance needs to their supervisor immediately. The forklift must not be operated if there are any issues that prevent the operator from safely using the forklift.
- Complying with all OSHA regulations while operating the forklift.

3.0 Certification Requirements

All employees, without exception, must be forklift-certified before operating a forklift. Forklift certification training is conducted triennially by an external company, and can be ordered on a one-off basis for new employees requiring certification.

3.1 Training

EHS coordinates operator training and evaluation for employees. All employees who operate the forklift must be trained and re-trained every three years. Training will consist of online or classroom safety training and hands-on training. In order to receive forklift training, employees must have a valid state driver's license. All operators are required to demonstrate competent and safe use of the forklift in order to complete the training and be allowed to use the forklift. Employees who refuse forklift training will not be permitted to operate the forklift. All trainings must include the following information:

- Instructions on safe operations.
- Controls for the specific piece of equipment.
- How to complete startup inspections.
- Steering, maneuvering, loading/unloading.
- Fork attachment use and limitations (weight, size, etc.).

- Vehicle capacity and stability.
- How to refuel/recharge the vehicle.
- Hazardous locations.
- Ramps and sloped surfaces.
- Any unique or potential hazards in the work area.

Upon successful completion of the forklift training, employees will be issued a Forklift Operator Certificate, which expires three years from the date of issuance. Only trained and authorized operators are permitted to operate the forklift. Trainings must be completed:

- Before an employee operates the forklift.
- Before new hazards are introduced into the work environment.
- After an incident/accident.
- As deemed necessary by EHS or the Supervisor.

3.1 Refresher Training

Refresher training is required for employees when:

- The employee has been observed/reported operating the forklift in an unsafe manner.
- The employee is involved in an accident/near miss incident.
- Conditions change in the workplace that may affect safe operation of the forklift.
- Three years have elapsed since the employee was last trained.
- Reed College acquires a new forklift.

4.0 Forklift Operation Guidelines

4.1 Difference between Forklifts and other Trucks

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

- Usually have rear wheel steering.
- Drive more easily loaded than empty .
- They are driven in reverse more often than forward.
- Are often steered with one hand.
- 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.

All forklifts must have the following:

- Functioning seat belts installed that must be used during all operations.
- A functioning horn.

- A nameplate listing lift category, load rating, and load center easily visible to the operator.
- A driver cage to protect operators from falling materials.

4.2 Operating Procedures

For safe operation of the forklift, employees must adhere to the following guidelines at all times.

4.2.1 Before using the forklift

- Complete the proper operating check sheet before beginning your shift.
- Review instructions, warning, and precautions for operating the forklift.
- Always wear proper personal protective equipment when potential for head or eye injury exists
- When mounting the forklift, maintain three points of contact with the forklift's frame at all times.
- Before dismounting from the forklift, loads must be lowered, controls must be put into neutral, and the brakes must be set.

4.2.2 While driving

- Wear a seat belt at all times other than when mounting and dismounting.
- There are to be no unauthorized riders.
- Operators are not to extend arms or legs between the uprights of the mast or outside the running lines of the truck.
- Yield to emergency vehicles.
- Observe all traffic regulations.
- Always travel at safe operating and stopping speeds.
- When backing up, the operator must turn and look behind them and sound the horn.
- 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.
- Do not pass another vehicle traveling in the same direction at intersections, blind spots or other dangerous locations.
- Slow down and sound horn at cross aisles and areas of obstructed view.
- Do not drive a forklift truck up to anyone standing in front of a fixed object.
- Maintain a safe distance from the edge of ramps or platforms while on elevated docks, or platforms of freight cars. Do not use the forklift for opening or closing freight doors.

- Cross railroad tracks diagonally when possible.
- Horseplay and unsafe driving are prohibited and will result in immediate revocation of forklift certification.

4.2.3 Situational Awareness

- Do not allow anyone to stand or pass under the elevated fork portion of any loaded or empty truck.
- Check pallets for damage or defects before using.
- Check the flooring for breaks or weakness; do not drive the forklift onto inadequate flooring.
- Make sure there is sufficient headroom under overhead installations, such as lights, pipes, sprinkler systems, etc.
- Be aware of pedestrians as they always have the right-of-way.

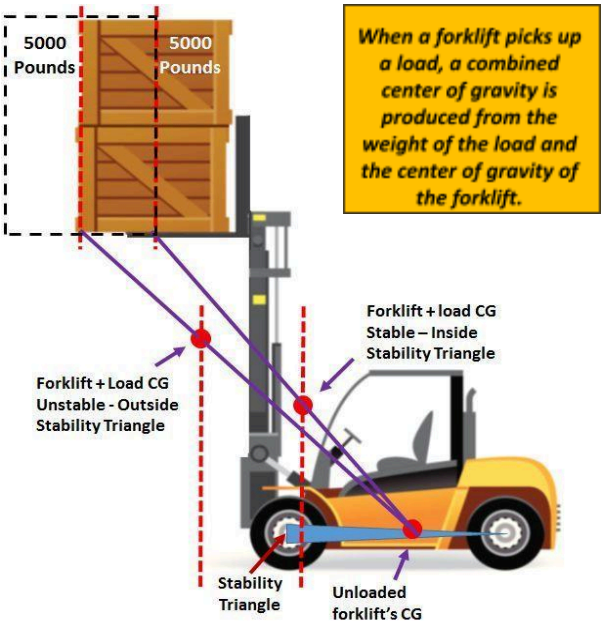
4.2.4 Hazards and Obstructions

- Correct any unsafe condition before placing the truck in service.
- Oil or other fluid spills must be cleaned up immediately. The fuel cap on the forklift must be replaced prior to starting the engine.
- Only attachments approved and listed by the manufacturer may be used.
- Slow down when floors are slick.
- Do not attempt to drive over floor obstructions.

4.2 Load Safety

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.



All forklifts indicate load capacity on each truck's data rating plates. All trained operators must follow standard operating procedures for load lifting and carrying to prevent tipping and load falling hazards.

Never exceed the rated capacity of your truck.

In order to safely lift a load:

- Check for overhead obstructions.
- Space forklifts properly; adjust forks as wide as possible when carrying wide loads.
- Raise the forklifts to the proper height before driving into a pallet or underneath a stack.
- Drive into the load as far as possible. Loads must be placed against the backrest with the largest or heaviest part closest to the backrest.
- Use clamps to keep unstable objects, such as pipes, from rolling, and use shrink wrap or tape to secure items on stacked pallets, if necessary.
- Tilt the load back slightly and then lift it.
- Watch for overhead objects or obstructions to the sides.
- Sound horn, back up to get clearance.

- Never have a person walk in front of the forklift to stabilize the load while moving.
- Lower the load to two-to-four inches from the floor before traveling.
- While traveling:
    - Be certain the forklifts clear the pallet before turning or changing height.
    - Upgrade the load when driving on inclines greater than 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 four feet off the ground. Remain in the seat while employees are in the man-lift cage.

4.3 Ramps

When traveling on ramps, **always descend the ramp backwards regardless of whether or not you are carrying a load**, as shown in the figure below:

4.4 Parking

Instructions for parking the forklift if:

Attended (Engine running, within 25 ft., **and** full view):

1. Put in neutral
2. Lower forks to ground
3. Set parking brake

Unattended (Engine off, beyond 25 ft., **or** out of view):
Follow all above steps, plus:

4. Power off
5. Chock wheels if on incline

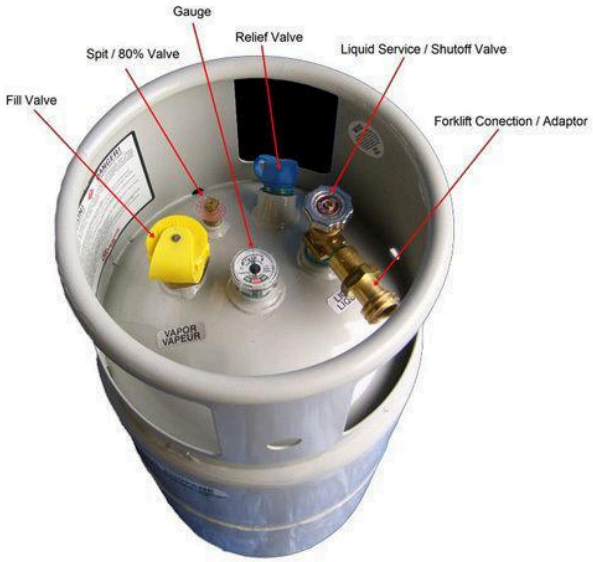
4.5 Refueling and Propane Safety

The Reed College forklift is powered by a propane tank. Propane tanks are unstable, and pose a significant health risk and fire hazard if improperly handled. While forklifts are often refueled by an external operator, the following guidelines must be followed if refueling or changing a propane tank in-house:

4.5.1 Refueling Safety Precautions

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

4.5.2 Instructions for Changing a Propane Tank



1. Wear eye protection and insulated, loose fitting gloves such as leather (dry) or insulated neoprene.
2. Close the valve on the cylinder.
3. Run the engine until it stops. This ensures that the connection hose is empty.
4. Shut off the engine.
5. Open the connecting nut and inspect valves for leaking. Do NOT use metal tools.
6. Disconnect the hose.
7. Disconnect the holding straps.
8. Remove the empty cylinder.
9. Inspect the replacement cylinder for damage.
10. Replace with a full cylinder in the proper position.
11. Connect the holding straps.
12. Tighten the connecting nut (wiggle hose).
13. Open the valve on the cylinder slowly and check for leaks. Use solution of soap and water. Smell – listen – look.
14. If the valve leaks:
    - 1st time - Tighten the nut and continue.

    - 2nd time - Change the cylinder.
    - 3rd time - Change the hose.
15. Open the valve fully (slowly).
16. Check that the hose is turned inward.
17. Secure the hose downward.
18. Secure the cylinder.
19. Start the engine and resume operation.

4.5.3 Precautions for Changing Propane Tanks

- Do not use metal tools when changing a cylinder.
- Do not use excessive force when opening valve.
- Do not let the cylinder get too hot.
- Do not drag, drop, roll or slide cylinder or allow it to bang against other objects.
- Do not use matches or a flame to check for leaks. Use soap or a leak detector.
- Do not smoke when handling the cylinder or in the storage area.
- Do not mount more than two LPG cylinders on any forklift truck.

4.6 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, forklifts, floor polishers, pressure washers, and other fossil-fueled powered 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.

4.7 Accident and Incident Reporting

All accidents and incidents must **immediately** be reported to a supervisor, and the supervisor or EHS must report them to hr@reed.edu within 24 hours. Accidents can be defined as events that result in a serious injury that goes beyond basic first aid and serious damage to equipment or property. Incidents are events that only result in minor injuries (cuts and scrapes) and cosmetic damage. Near misses of accidents or incidents should also be reported as an incident.

Accident/Incidents should be reported within 24 hours by emailing risk@reed.edu and either emailing hr@reed.edu. Accidents/Incidents dealing with property or equipment damage should be reported to risk@reed.edu and accidents/incidents dealing with injury reported to hr@reed.edu.

In addition, HR requires an Accident/Incident Report form within three days of the accident/incident which can be found here: https://www.reed.edu/ehs/assets/downloads/safety-information-forms/Accident-Report-Form.pdf

5.0 Inspection and Maintenance Guidelines

5.1 Inspection

To ensure forklifts are in proper working order and safe to use, they must be inspected before each shift. A checklist for forklift inspection is available in Appendix A. Daily inspection records must be kept with the supervisor for 30 days as proof of inspections occurring. If repairs or corrective actions are required for safe operation of the forklift, it must be tagged with an “Out of Service” tag and not used until repairs/actions are completed. After any repairs are completed, the forklift must be inspected to ensure that repairs have been completed and the forklift is safe to operate. The supervisor will also keep and maintain a maintenance log to keep track of repairs and corrective actions.

5.2 Annual Preventative Maintenance

Once a year, EHS coordinates annual preventative maintenance for Reed College’s forklift and other lifting equipment through a third-party vendor. Records of maintenance are kept by EHS. Should a lift be found to have issues rendering it unsafe to use, it must be tagged with an “Out of Service” tag and not used until repairs/actions are completed.

5.3 New Lifts

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 Reed College forklifts increase their longevity and enhance resale. More importantly, operators are secure with safe, reliable equipment.

Appendix A: Forklift Inspection Form

S □ = Satisfactory D □ = Deficient (enter notes below)

	Item to be Checked	Satisfactory?	Initials	Notes
1.	Visually inspect: ● Overall Condition ● Frame ● Front End ● Battery Compartment ● Hood Latch ● Capacity Plate ● Warning decals ● Operator Compartment	 S □ D □ S □ D □ S □ D □ S □ D □ S □ D □ S □ D □ S □ D □ S □ D □		
2.	Overhead guard in place and secure	S □ D □		
3.	Mast and forks working properly	S □ D □		
4.	Steering is responsive	S □ D □		
5.	Parking brake works	S □ D □		
6.	Foot pedal brake works	S □ D □		
7.	Tires not damaged or excessively worn	S □ D □		
8.	Control lever is responsive	S □ D □		
9.	Hydraulic cylinders not leaking	S □ D □		
10.	Lift chains and rollers don't get hung up	S □ D □		
11.	Gauges work accurately	S □ D □		
12.	Seat belt works properly	S □ D □		
13.	Fluid levels (fuel, oil, battery water) adequate	S □ D □		
14.	Fuel leaks – none	S □ D □		
15.	Electrical – no shorts and switches work	S □ D □		
16.	Exhaust system – no holes or leaks	S □ D □		
17.	Horn – works	S □ D □		
18.	Backup alarm – works properly	S □ D □		
19.	Fire extinguisher – secure and gauge is in the "green" zone	S □ D □		

Appendix B: Training Sign in Sheet

Operators or Personnel

Date: _____

Instructor: _____

Training Materials Used:

_____

_____

_____

_____

	Printed Name	REED ID	Signature
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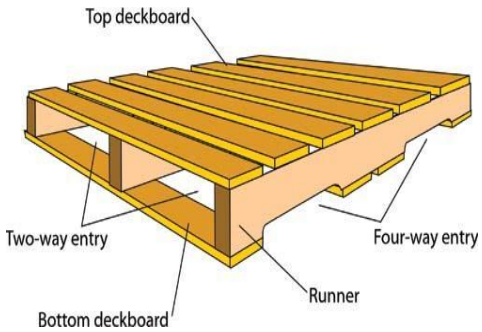
Appendix C: Safe Pallet Loading and Stacking

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 seven or eight 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!