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## **FORKLIFT SAFETY**

### **1.0 PURPOSE AND INTRODUCTION**

The purpose of this program is to establish procedures for the safe operation of forklifts and powered industrial trucks by Pitt County Schools employees. It is essential that all forklift operators have the knowledge, skill, and safety awareness necessary to use the equipment without putting themselves or co-workers in danger.

Pitt County Schools complies with 29 CFR 1910.178, the North Carolina OSHA Powered Industrial Trucks Standard, and any future additions or changes to the aforementioned standard.

### **2.0 SCOPE**

All power-propelled trucks used to carry, push, pull, lift, stack, or tier materials. Also commonly known as forklifts, pallet trucks, fork trucks, or tow motors.

### **3.0 RESPONSIBILITIES**

#### **3.1 Site Administrators**

- a) Provide for the proper maintenance of equipment to insure the health and safety of employees.
- b) See that required inspections are performed and appropriate records are maintained.

#### **3.2 Assistant Director of Facility Services**

- a) Responsible for evaluating and revising this procedure annually or as regulations change.
- b) Provide initial and refresher training of employees on the safe operation of forklifts.

#### **3.3 Forklift Operators**

- a) Responsible for abiding by this procedure.
- b) Ensure that all equipment used is functioning properly.



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- c) Conduct daily forklift inspections.
- d) Submit to a drug test if involved in an incident while operating a forklift.
- e) Attend and pass a forklift safety training class at least every three years.
- f) Operate all forklifts in a safe manner.

## **4.0 TRAINING AND CERTIFICATION**

### **4.1 Initial Training and Certification**

- 4.1.1** All employees must be trained and authorized before operating a forklift.
- 4.1.2** The training program will include Pitt County Schools Forklift Safety Policy, the operating conditions at Pitt County Schools, and the specific truck types the trainee will operate. The training program shall be presented to all new operators regardless of previous experience.
- 4.1.3** To obtain initial training and certification, an employee must be designated and approved to do so by their supervisor. After approval, the supervisor must request training through the Assistant Director of Facility Services to attend a forklift training certification class.
  - 4.1.3.1** Supervisors must determine whether employees requesting training and certification meet the following requirements:
    - Must have no adverse vision problems that cannot be corrected by glasses or contacts
    - No adverse hearing loss that cannot be corrected with hearing aids
    - No physical impairments that would impair safe operation forklift
    - No neurological disorders that affect balance or consciousness
    - Not taking any medication that affects perception, vision, or physical abilities
- 4.1.4** Each employee must attend and successfully complete the formal classroom training (lecture, discussion, and written testing), the forklift operations test (demonstrations by the trainer and hands-on exercises), and an evaluation of the operator's performance in the workplace.



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**4.1.5** After completion of training, operators should be evaluated for a two-week period. The evaluation will require the supervision of a properly trained supervisor. This is most important with employees that have limited or no previous experience operating forklifts.

## **4.2 Refresher Training and Evaluation**

**4.2.1** Refresher training will be conducted:

- If the operator has been observed operating the forklift in an unsafe manner,
- If the operator has been involved in an accident or serious near-miss,
- If the operator has received an evaluation that shows the driver not operating the forklift safely,
- If the operator is assigned to a different type of powered industrial truck, or
- If a workplace condition is changed that could affect the safe usage of the forklift.

**4.2.2** All forklift certified and trained employees will receive a three-year evaluation of their driving performance within the workplace. If the evaluation is unsatisfactory, then operators will be required to attend a retraining class and a follow-up evaluation.

## **5.0 PRE-OPERATION INSPECTION**

**5.1** The operator shall use the Forklift Inspection Checklist as a guideline for inspecting a forklift.

**5.2** If problems are found, it is the responsibility of the forklift operator to report the unsafe problem to their supervisor.

**5.3** It is the responsibility of the supervisor to remove unsafe equipment from operation and ensure that each forklift is inspected at the beginning of each shift.

## **6.0 SAFE FORKLIFT OPERATION**

### **6.1 General Requirements**

**6.1.1** Forklifts shall be kept clean at all times.



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- 6.1.2 A load backrest is required on all forklifts.
- 6.1.3 Overhead guards are to be installed on all high lift trucks where overhead lifting is performed.
- 6.1.4 No modifications may be made on a forklift without the manufacturer's approval.
- 6.1.5 All nameplates, caution signs, and instruction markings must be in place and legible.
- 6.1.6 The lifting capacity of the forklift must be indicated on the nameplate or should be marked on the mast.
- 6.1.7 Any forklift not in a safe operating condition shall be removed from service.
- 6.1.8 Forklifts shall not be used to move trailers, vehicles, or other similar objects.
- 6.1.9 All forklift truck accidents and near misses must be reported to a supervisor.

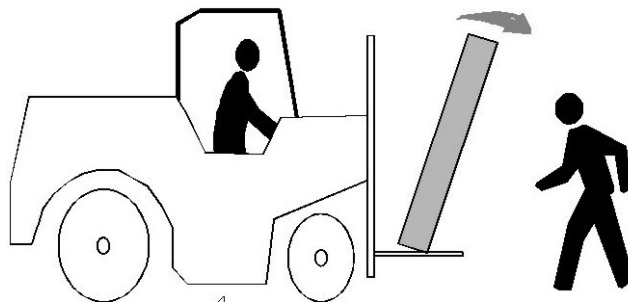
## 6.2 Before Operating

- 6.2.1 A preoperational inspection shall be performed at least daily and documented on the Forklift Inspection Checklist.
- 6.2.2 All repairs to a forklift must be complete before it is placed back into service.
- 6.2.3 Prior to starting a forklift, make sure the forklift is in the neutral position.
- 6.2.4 Check the path of travel for substances and/or objects that could present a hazard.

## 6.3 Forklift Operation and Travel

- 6.3.1 No passengers are allowed to ride at any time.
- 6.3.2 The operator's body must be kept in the forklift cab at all times.
- 6.3.3 Seat belts must be worn if the forklift is in motion.

- 6.3.4** Forklifts shall be operated at a safe speed at all times. **Drivers must have the forklift under control at all times.** Excessive speed is dependent upon location.
- 6.3.5** Stunt driving and horseplay are prohibited on forklifts and during their operation.
- 6.3.6** Parking brakes shall be set, the equipment taken out of gear, and the forks lowered whenever the driver is required to leave the forklift. A forklift is considered unattended when the operator is 25 feet or more away or when the forklift is not in view.
- 6.3.7** Forklifts shall not be left unattended with the ignition engaged or the forks raised.
- 6.3.8** Forklift keys should be removed from the forklift when they are not in use.
- 6.3.9** No person shall be permitted to walk under raised forks, whether loaded or empty.
- 6.3.10** Forklifts shall not be driven up to anyone standing in front of a fixed object.



- 6.3.11** Never use the forklift as a battering ram. Use it only for its intended purpose.
- 6.3.12** When a forklift is lifting an employee, an approved safety platform will be used that is firmly secured to the lifting carriage and forks. An operator will remain at the controls of the truck while the employee is being lifted.

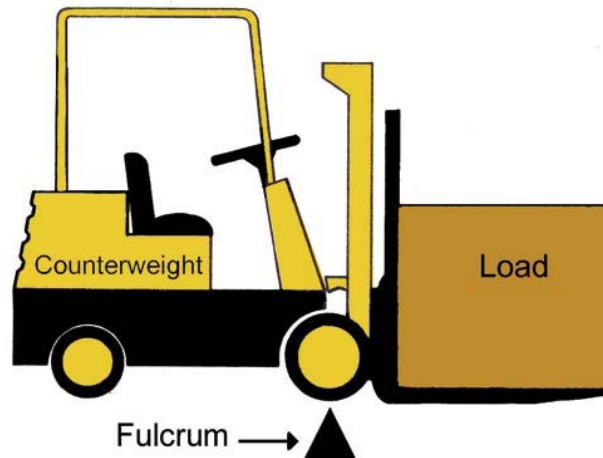


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- 6.3.13** The operator will slow down and sound the horn at corners and areas where vision may be obstructed.
- 6.3.14** When the load blocks the employee's vision driving forward, the forklift shall be driven in reverse.
- 6.3.15** Travel with the forks raised less than 1 foot.
- 6.3.16** Should a tip-over (forklift turnover) occur, do not jump from the forklift. Brace yourself, hold on tight, and lean away from the fall direction.
- 6.3.17** Trucks and trailers must have the brakes set and wheels blocked to prevent movement while loading or unloading takes place.
- 6.3.18** Know the work area. Look for potholes, nails, boards, or loose materials.
- 6.3.19** Make sure that all personnel are clear of the path to be taken.
- 6.3.20** Always look behind you before backing up.

#### **6.4 Handling Loads**

- 6.4.1** Drivers shall abide by safe loading procedures.
- 6.4.2** Only stable loads shall be handled.
- 6.4.3** The operator shall not surpass the rated capacity of the forklift. If you are unsure of the weight, lift the load a few inches and determine if the wheels are still in firm contact with the floor. If the steering feels normal and the forklift is stable, proceed carefully.



### 6.5 To Lift a Load:

1. To pick up a load, approach it straight in with forks lowered. Stop about one foot from load.
2. Level the forks and SLOWLY drive forward until the load touches the backrest.
3. Lift the load high enough to clear it.
4. Blow your horn.
5. Look behind you to ensure that the area is clear and back out about one foot.
6. Tilt the mast back to stabilize the load.

### 6.6 To Put a Load Down:

1. Drive SLOWLY AND SAFELY to the location.
2. Square up and stop about one foot from the load area.
3. Level the forks and drive in.
4. Lower the load.
5. Tilt the forks slightly forward.
6. Look behind you to ensure area is clear and back straight out.



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## 7.0 CHANGING PROPANE CYLINDERS

1. Park the truck in a safe well-ventilated area and away from other workers.
2. Stop the engine.
3. Wear safety glasses and work gloves.
4. Close the cylinder valve and remove the disconnect coupling.
5. Remove the empty cylinder from the cradle holding device and store in a safe area.
6. Select a filled cylinder and inspect it for damage or leaks.
7. Position the cylinder in the cradle on the truck carefully and ensure that it is positioned properly.
8. Fasten the cylinder hold-down clamp so that the cylinder is locked into position.
9. Reconnect the fuel line to the cylinder liquid service valve and open the valve slowly.
10. Check for leaks. If a leak is found, close the valve **immediately** and notify the supervisor.
11. If no leaks are found, start the engine and proceed with the assigned work.

## 8.0 CHANGING BATTERIES

1. Properly position the truck and apply the brake.
2. Wear safety glasses and work gloves.
3. Remove the battery carefully using proper lifting techniques or a mechanical hoist.
4. Keep all tools or metallic objects away from the top of the battery.
5. Position the battery properly and secure.
6. Personal protective equipment such as acid resistant gloves, aprons, and full-face shields shall be provided and stored at all battery charging units. This





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equipment must be worn whenever employees are performing maintenance on batteries. Safety glasses must be worn when connecting and disconnecting charging units.

7. When needed acid shall be poured into water

## 9.0 DEFINITIONS

Back Rest – A vertical support above the forks that when a load is tipped back, prevents the load from falling rearward toward the driver.

Center of Gravity – The point on an object at which all of the object's weight is concentrated. For symmetrical loads, the center of gravity is at the middle of the load. The stability of the forklift is determined by the location of its center of gravity, or if the forklift is loaded, the combined center of gravity. Because the forklift has moving parts, the center of gravity moves. The center of gravity moves forward and back as the mast is tilted forward and back. The center of gravity moves up and down as the mast moves up and down. The size, weight, shape, and position of the load will affect the center of gravity, and therefore stability, of the loaded forklift. The height of the load, the amount of forward/backward tilt of the load, tire pressure, as well as speed, braking, turning, and operating on uneven surfaces or ramps will also affect the stability of a moving forklift. These factors must be considered when traveling with an unloaded forklift as well because an unloaded forklift will tip over to the side easier than a loaded forklift with its load in the lowered position.

Counterweight – The weight that is built into the forklift's basic structure and is used to offset the load's weight and to maximize the vehicle's resistance to tipping over.

Fulcrum – The pivot point of a forklift. This should usually be the front wheels of a forklift.

Overhead guard – A framework fitted to a truck over the head of a riding operator to guard against falling debris.

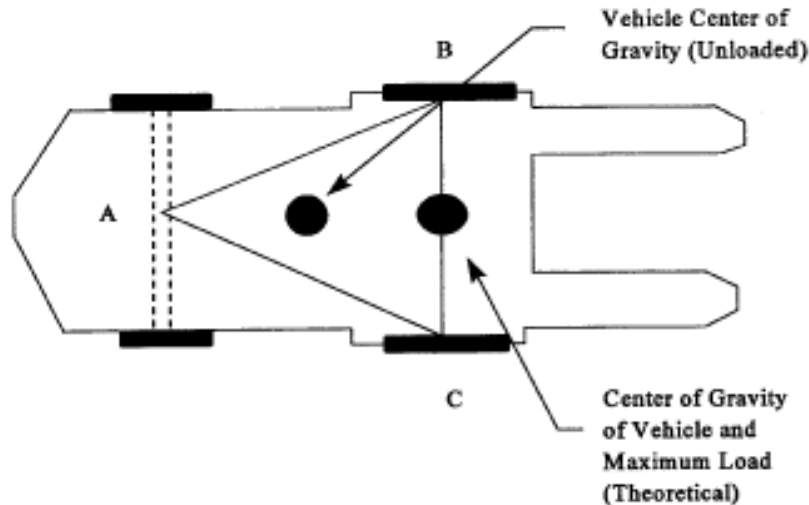
OSHA – Occupational Safety and Health Administration. A federal agency under the Department of Labor that publishes and enforces safety and health regulations.

Rated Capacity – The maximum weight that the forklift is designed to lift, as determined by the manufacturer.

Stability Triangle – The forklift is supported at each of the front wheels and at the center of the rear axle. Connecting these 3 points creates the "stability triangle". As long as the center of gravity of the combined weight of the truck and load is within the stability triangle, the lift truck will not tip over. However, changes in speed

and directions act to shift the load center of weight outside the stability triangle. This may cause the lift truck to become unstable, which could lead to a tip over.

**Figure 1.**



**Notes:**

1. When the vehicle is loaded, the combined center of gravity (CG) shifts toward line B-C. Theoretically the maximum load will result in the CG at the line B-C. In actual practice, the combined CG should never be at line B-C.
2. The addition of additional counterweight will cause the truck CG to shift toward point A and result in a truck that is less stable laterally.

## 10.0 REFERENCE DOCUMENTS

National Fire Protection Association. **NFPA 505 Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations 2006 Edition.**

North Carolina Occupational Safety and Health Administration. **Occupational Safety and Health Standards for General Industry: 1910.178, Powered Industrial Trucks.** Raleigh, NC: N.C. Department of Labor.

## APPENDIX

1. Forklift Inspection Checklist
2. Forklift Operator Evaluation





## PITT COUNTY SCHOOLS FORKLIFT OPERATOR EVALUATION

**OPERATOR:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**EXAMINER:** \_\_\_\_\_

<u><b>OBSERVATIONS</b></u>	<u><b>ACCEPTABLE</b></u>	<u><b>DEFICIENT</b></u>
<b>1. Pre-start checks</b>		
• Performs maintenance checks	_____	_____
• Performs safety checks	_____	_____
<b>2. Traveling (Loaded and/or Unloaded)</b>		
• Forks/load not over 1 foot above ground/floor	_____	_____
• Observant of overhead obstructions	_____	_____
• Truck travel is at a speed that ensures complete control	_____	_____
• Truck slowed at intersections	_____	_____
• Horn sounded properly at pedestrians, corners, and intersections	_____	_____
• Truck travel is with a clear view at all times	_____	_____
<b>3. Handling a Load</b>		
• Approaches load straight (wheels aligned)	_____	_____
• Observant of pedestrians and overhead obstructions	_____	_____
• Elevate forks and “inch in/out” (completely)	_____	_____
• Elevate and lowers load safely	_____	_____
• Mast tilted properly to seat and balance load	_____	_____
• Looks over both shoulders	_____	_____
• Sounds horn, backs in and out slowly. Observes load stability	_____	_____
<b>4. Refueling</b>		
• Change or charged in designated areas	_____	_____
• Uses prescribed personal safety equipment	_____	_____
<b>5. Parking</b>		
• Forks/clamps on floor (no tripping hazard)	_____	_____
• Ignition switch off, key removed	_____	_____
• Parking brake on	_____	_____