

**SPC Powered Industrial Trucks (PIT)
Operator Training**



GOALS

- Explain the importance of forklift safety procedures.
- Demonstrate safe forklift operation after presentation

OBJECTIVE

- To demonstrate an understanding of forklift safety procedures by successfully completing written and hands-on forklift safety tests.

Powered Industrial Truck - Definition



- A mobile, power-propelled truck used to carry, push, pull, lift, stack or tier materials. [American Society of Mechanical Engineers (ASME) definition]
- Excluded are vehicles used for earth moving and over-the-road hauling.
- Commonly known as forklifts, pallet trucks, rider trucks, forktrucks, or lifttrucks.
- Can be powered through electric or combustion engines.

Who can operate forklifts at SPC?

⊗ ONLY TRAINED AND AUTHORIZED EMPLOYEES

⊗ TRAINING IS GOOD FOR 3 YEARS



DEFINITIONS (cont'd)

Authorized Employee:

One who has completed St. Petersburg College's required training:

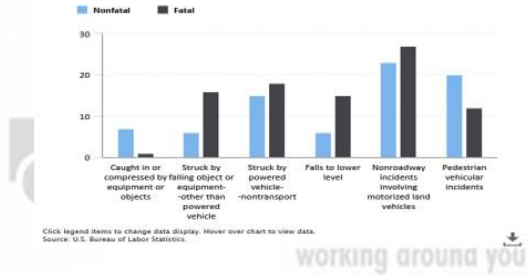
- ⊗ Has been fully trained and evaluated in OSHA's required training topics.
- ⊗ Knows the general design and function of the vehicle.
- ⊗ Follows safety inspection and safe driving rules.

[Issued a certification card upon completion of training]

DRIVE SAFELY and...

Reasons for the Standard

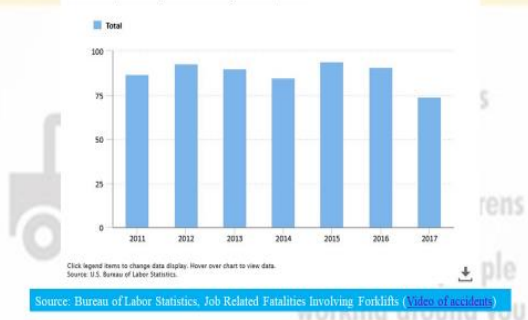
Percentage of fatal injuries and nonfatal injuries and illnesses involving forklifts by selected events, 2017



DRIVE SAFELY and...

Forklift Fatalities, 2011 - 2017

Fatal occupational injuries involving forklifts, 2011-17



Source: Bureau of Labor Statistics, Job Related Fatalities Involving Forklifts ([Video of accidents](#))

DRIVE SAFELY and...

Final Rule

- OSHA published the final rule for Powered Industrial Truck Operator Training on December 1, 1998.
- The effective date is March 1, 1999. Start-up dates are included in paragraph (I)(7).
- It applies to all industries except agricultural operations.
- OSHA estimates that the new rule will prevent 11 deaths and 9,422 injuries per year.

Effective Powered Industrial Truck Operator Training Program

➤ Four major areas of concern must be addressed:

- ✓ The general hazards that apply to the operation of all or most powered industrial trucks;
- ✓ The hazards associated with the operation of particular types of trucks;
- ✓ The hazards of workplaces generally; and,
- ✓ The hazards of the particular workplace where the vehicle operates.

Unique Characteristics of Powered Industrial Trucks

- ✓ Each type of powered industrial truck has its own unique characteristics and some inherent hazards.
- ✓ To be effective, training must address the unique characteristics of the type of vehicle the employee is being trained to operate.

Operator Training

• Safe operations:

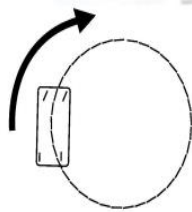
- ✓ The employer shall ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by successful completion of the training and evaluation specified in the OSHA standard.
- ✓ Prior to permitting an employee to operate a powered industrial truck (except for training purposes), the employer shall ensure that each operator has successfully completed the required training (or previously received appropriate training).

<p>Training Program Implementation</p> <ul style="list-style-type: none">• Training shall consist of a combination of:<ul style="list-style-type: none">✓ Formal instruction (e.g., lecture, discussion, interactive computer learning, written material),✓ Practical training (demonstrations and exercises performed by the trainee), and✓ Evaluation of the operator's performance in the workplace	<hr/> <hr/> <hr/> <hr/>
<p>Refresher Training and Evaluation</p> <ul style="list-style-type: none">• Refresher training, including an evaluation of the effectiveness of that training, shall be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.• Refresher training required when:<ul style="list-style-type: none">✓ Unsafe operation✓ Accident or near-miss✓ Evaluation indicates need✓ Different type of equipment introduced✓ Workplace condition changes	<hr/> <hr/> <hr/> <hr/>
<p>Refresher Training and Evaluation (continued)</p> <ul style="list-style-type: none">• An evaluation of each powered industrial truck operator's performance must be conducted:<ul style="list-style-type: none">✓ After initial training,✓ After refresher training, and✓ At least once every three years	<hr/> <hr/> <hr/> <hr/>

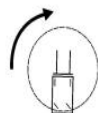
Certification

- The employer shall certify that each operator has been trained and evaluated as required by the standard.
- Certification shall include:
 - ✓ Name of operator
 - ✓ Date of training
 - ✓ Date of evaluation
 - ✓ Identity of person(s) performing the training or evaluation

Stability of Powered Industrial Trucks



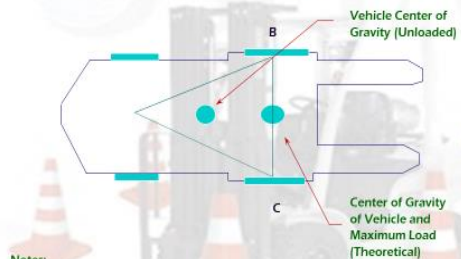
AUTOMOBILE



FORKLIFT

Industrial trucks have rear wheel steering which: makes the back end of the truck swing wide during a turn.

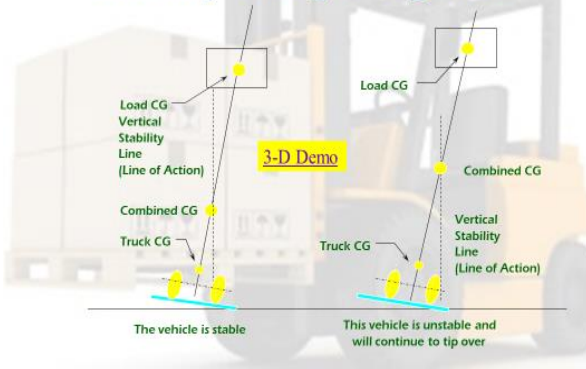
Stability Triangle - Figure 1



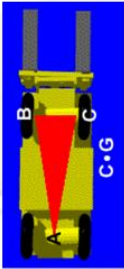
Notes:

Center of Gravity must remain inside the Triangle.

Stability Triangle - Figure 2



Stability Triangle



⊞ If the center of gravity shifts outside the stability triangle, the lift truck will tip over. The center of gravity within a lift truck can be moved by:

- ⊞ Traveling with an elevated load;
 - Trying to carry too heavy a load;
 - Trying to turn the lift truck while it is moving too fast;
 - Operating the lift truck on a hill or incline;

TIPPING OVER

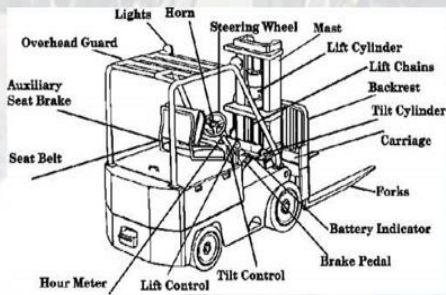
- Do not jump
- Hold onto the steering wheel
- Brace your feet
- Lean away from the fall

⊞ Data indicates that the largest cause of fatal or serious forklift accidents is:

Vehicle tip-overs.

Examples for why we train:

Components of a Forklift Truck



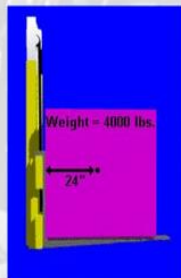
*One of the most common types of powered industrial trucks

Load Capacity

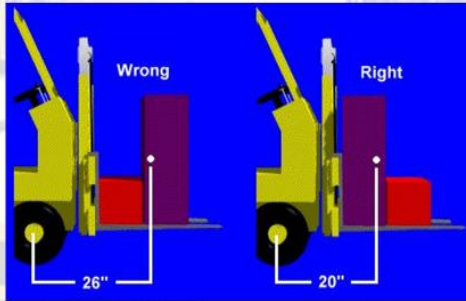
- The front wheels of a lift truck serve as the **Fulcrum Point** between the weight of the truck and the weight of the load being carried. If the weight of the load is equal to the weight of the truck, with equal distances between the centers of gravity, it is possible to "seesaw" a lift truck on its front wheels

Load Capacity

For example, a truck might have a capacity of 4000 pounds at a 24 inch load center (LC). This means that the truck can lift 4000 pounds, if the center of gravity of the load is 24 inches from the face of the forks.



Load Center



PRE-OPERATION

What type of forklifts are used at SPC?

Class 4 – Internal combustion engine truck (solid/cushion tires)

Type LP – Propane gas powered

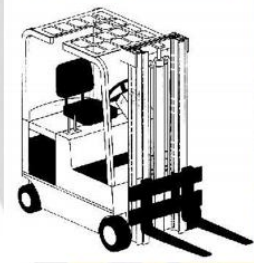
⊕ The forklift needs a safety inspection:
Before use each day, and after each shift
if it is used round-the-clock.

Classes of Commonly-Used Powered Industrial Trucks

- The Industrial Truck Association has placed powered industrial trucks into 7 classes.
- Class I - Electric motor rider trucks
- Class II - Electric motor narrow aisle trucks
- Class III - Electric motor hand trucks or hand/rider trucks
- Class IV - Internal combustion engine trucks (solid/cushion tires)
- Class V - Internal combustion engine trucks (pneumatic tires)
- Class VI - Electric and internal combustion engine tractors
- Class VII - Rough terrain forklift trucks

* Note that this classification refers to commonly-used vehicles and does not include all powered industrial trucks covered by the OSHA standard.

Class I - Electric Motor Rider Trucks



Sit Down Rider - Electric

Class I - Electric Motor Rider Trucks

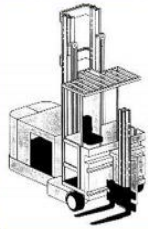


- Counterbalanced Rider Type, Stand-Up

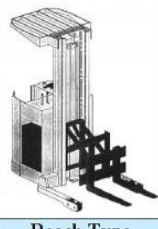
Class II - Electric Motor Narrow Aisle Trucks



Order Picker



Turret Truck



Reach Type Outrigger

Class III - Electric Motor Hand or Hand/Rider Trucks



Low Lift Platform

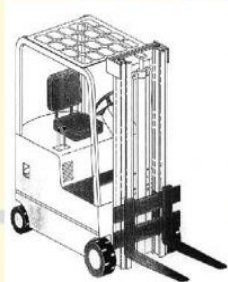


Low Lift Walkie Pallet



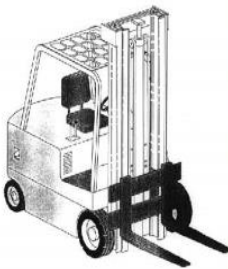
High Lift Counterbalanced

Class IV - Internal Combustion Engine Trucks - Cushion (Solid) Tires



Fork, counterbalanced (cushion tires)

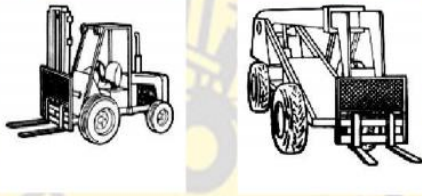
Class V - Internal Combustion Engine Trucks - Pneumatic Tires



Fork, counterbalanced (pneumatic tires)

Class VII - Rough Terrain Forklift Trucks

- > Straight-mast forklift
- > Extended-reach forklift



All rough terrain forklift trucks

Pre-Operational Inspection

East Tennessee State University
Forklift Operator's Daily Checklist
(Complete at the Start of Each Day the Forklift is Used)

Date	Forklift #	Hr. meter Start	Hr. Meter End

Operator's Signature: _____

Check Any Defective Item With an X and give details below

Accelerator	Lights	★
Battery Connection	Warning Lights	
Parking Brake	Oil Leaks	
Service Brake	Overhead Guard	
Engine Oil Level	Radiator Fluid Level	
Steering	Gauges	
Tires	Horn	
Hour Meter	Unusual Noises	
Hydraulics Controls	Other:	
Details:		

This form should remain on the forklift during hours of operation. At the completion of the shift, this form should be filed in location designated by the supervisor.

OPERATION

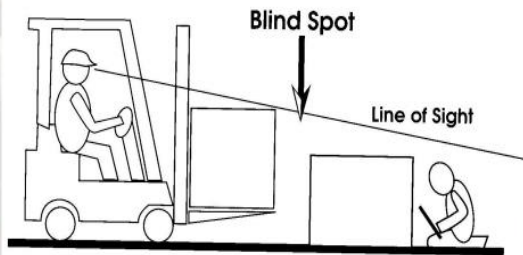
- > Mount/dismount maintaining 3-points of contact
- > Wear the seat belt.
- > Familiarize yourself with the controls.
- > ALWAYS start the forklift from the operator's position.
- > Slow down at cross aisles, when turning and on wet/oily surfaces. ♻️

OPERATION

- ⊗ NEVER give anyone a ride.
 - ⊗ This includes lifting anyone off the ground using the forks,
 - ⊗ Only manufacturer approved safety platforms can be used to lift people.
- ✓ Pedestrians always have right-of-way.
 - ⊗ Ensure no one is standing or otherwise under the load
- ✓ Intersections
- ✓ Stopping distance
- ✓ Changes in ground surface
- ✓ Ramps and inclines
- ✓ Limited line of sight

DOCKS

- Inspect the dock plate
- Check the trailer floor condition
 - ✓ No SPC employee will operate a forklift of any kind on a delivery truck.
- Trailer wheels are chocked or dock lock
- Nose of the trailer is supported by the tractor or a fixed jack



RESTRICTED VISIBILITY

[Accident video due to restricted visibility](#)

Picking Up A Load



1. ⚠ Make sure the load does not exceed the capacity of the forklift.
2. Center the forks to evenly distribute the weight of the load.
3. ⚠ Make sure the load is stable balanced and secure.
4. Check for overhead obstructions.
5. Drop the forks to the floor.

Picking Up A Load



6. ⚠ Drive into the load as far as possible.
7. ⚠ Tilt the load back slightly and then lift it. (Quick Example)
8. Back out slowly to clear racks or other obstacles.
9. Lower the load to the safe traveling height before moving (usually two to four inches above the floor).
10. The forklift should be completely stopped before the load is raised or lowered.

Traveling With A Load



1. Pedestrians always have the right-of-way.
2. ⚠ Keep the load tilted back slightly.
3. Keep the forks low, two to four inches above the floor if possible.
4. A forklift operator's visibility is always restricted, even without a load. Before moving always check behind and around the unit for pedestrians and other traffic.
5. ⚠ If the load is large and blocks the operator's view, travel in reverse.
6. Drive at a safe speed, slowing down when going around corners. ⚠ If driving behind a slower forklift, stay 3 truck lengths behind it.

Traveling With A Load



7. Sound the horn when approaching aisles and corners.
8. Never allow any riders.
9. On ramps and inclines always drive a loaded forklift the load "uphill"; driving up the ramp or incline and backing down it.
10. On ramps and inclines always drive an unloaded forklift with the forks "downhill"; backing up the ramp or incline and driving down it.
11. Avoid sudden braking.
12. Lift or lower the load only when completely stopped, never when traveling.

Placing A Load



1. Stop the forklift in front of the desired location.
2. Slowly raise the load to the required height.
3. Move forward slowly with the load raised.
4. Never walk or stand under the raised load.
5. Position the load for placement, ⚙ tilt the load forward to level it.
6. Place the load square and straight.

Placing A Load



7. Once the load has settled, back up slowly.
8. Make sure the forks clear the pallet before turning or changing the fork height.
7. Before backing, check behind and on both sides for pedestrians or other traffic.

PARKING

- ⌚ Lower the forks
- ⌚ Set gear to neutral
- ⌚ Set the parking brake
- ⌚ Turn off the key
- ⌚ The forklift is considered unattended when you are beyond 25 feet or can not see the forklift.
- ⌚ When parking a forklift, do not block fire aisles, stairways and/or fire equipment

Hazards Associated With Liquefied Petroleum Gas

- Flammable gas - Fire and Explosion.
- Cryogenic liquid – Very cold – possible freezer burns/frostbite to skin.
- ⌚ If forklift has dangerously overheated parts or sparking from the exhaust, it should be removed from service immediately.



PROPANE



1. Operators (DON PPE FIRST) must always wear the proper personal protective (leather gloves & safety glasses) equipment when changing tanks.
2. Never change tanks near an open flame or heat source (No smoking allowed).
3. Close the fuel line valve, but keep the engine running. This will prevent any propane from being left in the fuel line.
4. Shut off the ignition after the engine stops.
5. Handle tanks carefully. Propane can cause "freeze" burn if it comes in contact with the operator's skin.
6. Check the condition of all valves and seals before
7. connecting the new tank.

PROPANE



7. If there is a leak, the operator should be able to smell it, hear it hissing, or see frost on the fittings.
8. Propane is heavier than air and it will settle to the floor if there is a leak.
9. ⚠ If a leak is detected, remove the forklift from service until the leak is repaired.
10. Propane tanks should be stored in an open area to prevent leaking propane from accumulating.

PROPANE

This tank is on one of SPC's Forklifts.

Can you spot the issue with it's setup?



PROPANE

This tank is on one of SPC's Forklifts.

Can you spot the issue with it's setup?



RE-TRAINING

- DRIVING UNSAFELY
 - ACCIDENT OR NEAR-MISS
 - DOES NOT PASS EVALUATION
 - CONDITIONS CHANGE IN WORKPLACE
- ♻️ If you have previous forklift training, it is important that your employer:
Makes sure that you get site-specific training at your current facility.

CERTIFICATION

- ✓ EMPLOYER MUST CERTIFY THAT EACH EQUIPMENT OPERATOR HAS BEEN PROPERLY TRAINED AND EVALUATED



QUESTIONS

Open Discussion