

Slide 1

The slide features a blue background with the Washington State Department of Labor & Industries logo in the top left corner. The title "Safe Operation of Forklifts" is written in yellow, with the subtitle "and other powered industrial trucks (PITs)" in white below it. A horizontal strip of six small images shows various workers in different settings. The date "May, 2011" is printed in white at the bottom left of the slide.


This course will partially satisfy the L & I – DOSH training requirements for forklift operators. After you have completed this course you will need additional hands-on training on the specific forklift you will be using.

Slide 2

Safe Operation of Forklifts and Other Powered Industrial Trucks

The following topics will be covered:

- Forklift-related fatalities and injuries
- Types of forklifts
- How a forklift operates
- Hazards of forklift operation
- How to use forklifts safely



Wikimedia commons

This training will mainly cover standard forklifts – similar to one in the photo on this slide.

Slide 3

Safe Operation of Forklifts and Other Powered Industrial Trucks

You must be 18 years or older to operate a forklift



First thing – It is against the law for anyone under 18 to operate a forklift. This is both a Washington State and federal law.



Slide 4

Safe Operation of Forklifts and Other Powered Industrial Trucks

The risk of ignoring forklift safety

Forklifts are extremely useful in a variety of workplaces, but there is great risk of property damage, injury or death if you:

- Are not trained on forklift safety
- Are not familiar with the specific forklift vehicle
- Operate the forklift in an unsafe manner
- Operate a forklift with a defect or missing parts



Source: WorkSafeBC

Source: Rethink Drive

Because the cause of so many forklift accidents is lack of proper training, this training is required by L & I regulations for any person who will using a forklift.

Slide 5

Safe Operation of Forklifts and Other Powered Industrial Trucks

Forklift accident statistics

Fatal Accident Type	%
Crushed by vehicle tipping over	42%
Crushed between vehicle and a surface	25%
Crushed between two vehicles	11%
Struck or run over by a forklift	10%
Struck by falling material	8%
Fall from platform on the forks	4%

Approximately 35,000 serious injuries and 62,000 non-serious injuries involving forklifts occur in the United States every year. OSHA estimates 11% of all forklifts are involved in accidents every year.



[View Fatality examples](#)


This slide shows that forklifts can be dangerous. The link to fatalities investigated by federal OSHA are about 10 years old, but similar accidents still occur.

**Safe Operation of Forklifts
and Other Powered Industrial Trucks**

Washington State forklift accidents & citations

The 5 most common citations by L & I safety inspectors involving forklifts in last three years (2007 – 2009) were as follows:

1. Lack of training
2. No seatbelt or not using seatbelt
3. No inspection of the forklift for defects
4. Modification of forklift without manufacturer's approval
5. No nameplate or unreadable nameplate



13 employees were killed in forklift-related accidents from 2000 to 2009

1000+ employees were seriously injured (had to take time off from work to recover) in forklift-related accidents in the years 2006, 2007 & 2008

As you can see from these statistics, forklifts injure or even kill workers in our State and the reason is often due to lack of proper training. DOSH safety inspectors routinely ask if forklift drivers have had training during their workplace inspections and will cite a company if they don't. So, be sure to take this training seriously and get further hands-on training on the specific forklift you will be operating after you have completed this online course.

What is a powered industrial truck (P.I.T.)?

Definition: A powered vehicle used to carry, push, pull, lift, stack or tier materials.

Another way of describing powered industrial trucks is that they include standard forklifts and special use forklifts and industrial vehicles.

They are all regulated by the DOSH P.I.T. regulations – WAC 296 - 863



The Industrial Truck Association list seven classes of PITs:

- | | |
|------------------------|----------------------------------|
| Class 1 Electric Truck | Class 5 Truck |
| Class 2 Electric Truck | Class 6 Industrial Tractor Truck |
| Class 3 Hand Truck | Class 7 Rough Terrain Truck |
| Class 4 Truck | |


Forklifts are sometimes called powered industrial trucks or PITs. The most common type of PIT in use are the forklifts shown in the photos in this slide. Specialized PITs are used in warehouses, waterfront piers, logging and construction. The next few slides will describe the seven types of forklifts.

Types of Forklifts


Class 1 Electric Truck

Has the following:

1. Electric motor
2. A counter-weight in the rear
3. Solid or pneumatic (air filled) tires
4. Operator sits and drives




Counter-weight and battery.



The "mast" is the telescoping track on which the forks and load are raised and lowered.

Forks on a forklift. Some trucks have a solid platform and are called "platform trucks".



Solid tires for smooth surfaces.
Pneumatic tires are used for rougher surfaces.


These battery-operated electric forklifts are typically used in warehouses where lack of ventilation makes the use of propane, diesel or gasoline powered forklifts, a carbon monoxide hazard.

Types of Forklifts


Class 2 Electric Truck

Characteristics:


1. Electric motor
2. Narrow construction to fit in aisles
3. Solid tires



Rider Reach Truck




Order Picker



The operator stands on a platform which moves up and down. Sometimes called an "order picker"

On some models, forks reach in and out as well as up, down and tilt. Other models have the forks on the side (called "Side Loaders") or allow the forks to pivot to the side (called "Front/Side Loaders").



Straddle legs add stability for forklifts that don't use a counter-weight

These specialized electric forklifts are used primarily in warehouses with high stacks of stored goods.

Types of Forklifts

Class 3 Hand Truck

Electric Motor Hand or Hand/Rider Trucks

Characteristics:

1. Motorized
2. Walk behind or ride
3. Low or high lift
4. Counter-weight or straddle



This motorized pallet jack has a counter-weight. Straddle legs are provided on more compact or reach models.

The operator can walk behind or stand on the platform and hold onto the grab bar.

These electric vehicles are sometimes called walkie-riders and are typically used in warehouses.


Types of Forklifts

Class 4 Truck

Characteristics:

1. Propane internal combustion engine
2. Solid tires
3. One of the most common types

Propane/liquid petroleum gas (LPG) fuel cylinder. Other forklifts run on diesel or gasoline.

A photograph of a yellow Class 4 forklift, viewed from the side. It has a propane fuel cylinder mounted on the back. A red arrow points from the text 'Propane/liquid petroleum gas (LPG) fuel cylinder' to the fuel tank on the forklift.


This propane-powered forklift is one the most common types of forklifts in use.

Types of Forklifts

Class 5 Truck

Characteristics:

1. Gasoline, diesel or propane engines
2. Pneumatic tires
3. Used outdoors in many cases.



Pneumatic (air filled) tires with tread are used for traction and stability on rough or wet surfaces.

The image shows a green Class 5 forklift truck with a large mast and two long forks. It has a driver's seat and a steering wheel. The truck is shown from a side profile, facing right. A red arrow points from the text 'Pneumatic (air filled) tires with tread are used for traction and stability on rough or wet surfaces.' to the front tire of the forklift.


This is another common type of forklift often used outdoors.

Types of Forklifts


Class 6 Industrial Tractor Truck

Characteristics:


1. Electric or internal combustion engine
2. Solid or pneumatic tires
3. Specialty vehicles
4. Pull or carry loads (no forks)



Industrial Tractor



Yard Tractor



Straddle carrier

These specialty PITs will not be covered in this training.

Types of Forklifts

Class 7 Rough Terrain Truck

Characteristics:

1. Used outdoors in uneven or muddy locations
2. Pneumatic tires
3. Gasoline or diesel-powered



Rough Terrain Reach Forklift



Log Yard Forklift



Rough Terrain Mast Forklift


These heavy duty vehicles will not be covered specifically, but most of the information in this course would apply to them as well.




This training will not cover these specialized PITs in detail. Even though these vehicles are much larger than standard forklifts, their safe operation are governed by the same general principles.

Types of Forklifts

These are not powered industrial trucks (forklifts).



Non-powered pallet jack



Farm vehicles



Self-propelled elevated work platform



Earth-moving vehicle




Bobcat skid steer with forks

All photos - Wikimedia Commons

Sometimes these examples are confused with PITs since they can be used to perform similar tasks.

How is a forklift different from a car or truck?

- Usually steers from the rear, rather than the front, making it swing wide
- Carries heavy loads, often in tight places and rough terrain
- Can have reduced visibility
- Can have a high center of gravity making it susceptible to turnover
- Controls are different and more complicated
- Heavier than most cars and trucks



This..... doesn't operate like these.

While the average automobile weighs around 3,000 pounds, the average forklift weighs around 9,000 pounds. Also, forklifts are heavier in the rear to counter the weight of items being carried in the forks. And, while cars have brakes on all four wheels, most forklifts only have stopping power in their front drive wheels. For that reason, forklifts are harder to stop, so they should be driven slowly.



This photo show the parts of a standard forklift. Other types will vary. All use hydraulic fluid to operate the forks. Most have a large counterweight in the rear to help balance a load on the front. Most have an overhead guard to protect the operator from falling objects. The main lifting work of the forklift is done with the forks and the mast, powered by the motor. Sometimes, older forklifts will develop a leak of hydraulic fluid. Without sufficient hydraulic fluid the forks will not operate properly, especially with a load. And a puddle of hydraulic fluid on a cement floor is a slipping hazard.

Forklift Nameplate

The nameplate will list the type of forklift and the capacity



This forklift is a propane (LP) powered forklift, weighing 8680 lbs. with a lifting capacity of up to 4500 lbs.

The nameplate gives important information about the capacity of the forklift. These must be readable at all times so any one who operates the forklift will know it's capacity and to not overload it.

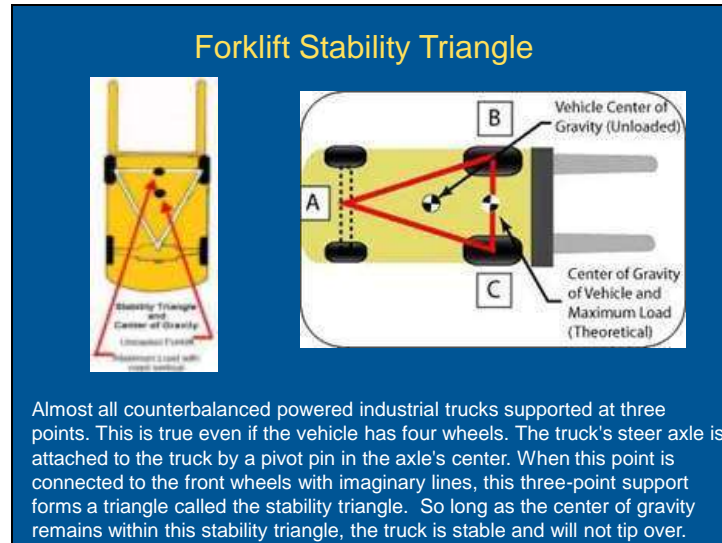
Forklift Operating Manual

Since there are numerous makes, models and types of forklifts, it is important to check for warnings in the specific forklift operator's manual.

The manual should be kept on the forklift at all times.

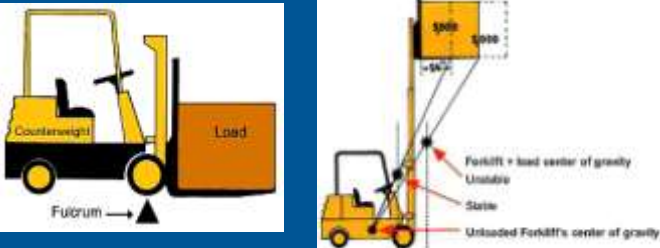


If several people will be using the same forklift, or there is frequent changes in forklift operators over time, keeping the operation manual on the forklift is really important.



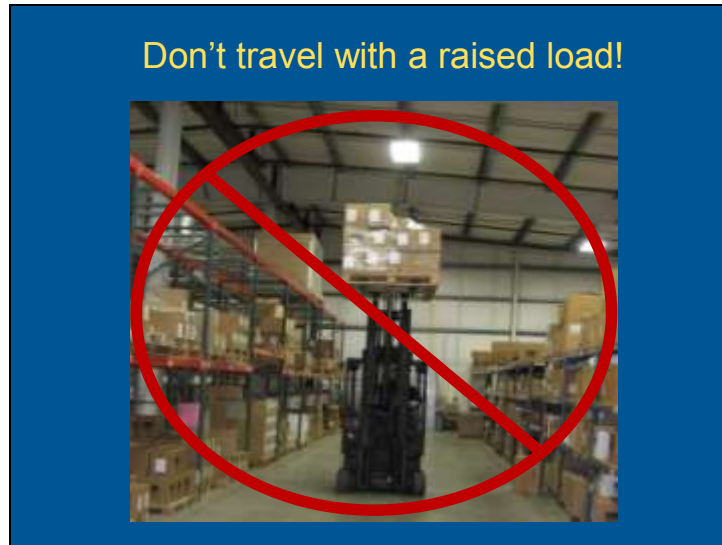
The stability of a forklift is important when you are handling heavy loads. The stability triangle is a way of describing how to keep the forklift stable and prevent it from tipping over with a heavy load. The next slide illustrates this idea further.

How loads affect forklifts



A forklift balances a load with a counterweight at the back. The front wheels act as a fulcrum or balance point. The center of gravity moves upward when the forks are raised.

As the load is raised up and away, the center of gravity also shifts up and away from middle of the forklift. If it moves outside the triangle formed by the front wheels and the center of the rear axle, the forklift will tip forward or fall to the side.



A forklift with a raised load tends to be very unstable, especially with a load near the forklift's lifting capacity. So as soon as the load is picked off the upper shelf in this photo, the load should be lowered before traveling or moving forward or backward.


Forklift Load Capacity

While carrying a load near the maximum allowable capacity, be aware of the following:

- Danger of tip over
- Danger of losing load
- Danger of being struck by falling load

As you can see from these illustrations, the center of gravity of the load should be as close to the forklift wheels and mast as possible.

Moving the load



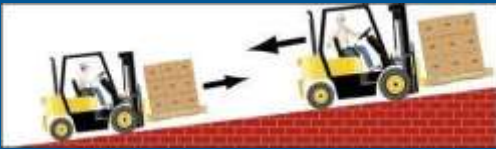
Use extra caution when handling loads that approach the truck's maximum rated capacity:

- Tilt the mast & forks back and position the heaviest part of the load against the carriage.
- Travel with the mast tilted back to keep the load stable. Never travel with the load tilted forward. Tilting the load forward increases the load distance and makes the load less stable.


In addition to the points on this slide, you should not pick up a load with just the tip or front part of the forks. Place the forks all the way under the load and then tip it back slightly. You may need to tilt the forks forward slightly to get under the load and later to deposit the load. But at all other times the forks need to be tilted back.

Driving on an incline

Always drive with the load on the uphill side - go backwards driving down the incline and frontwards going up the incline to prevent tipping or losing control of the forklift.



If no load on the forklifts, do the opposite with forks pointing down the ramp.



When you drive on an incline with a load, always have the load on the uphill side. L & I rules requires these procedures be followed if the incline is 10% or more. In addition, its especially important to tilt the load backward and keep it low. Raise the forks just enough to clear the surface.

More reasons why forklifts tip over

- Driving too fast around a corner
- Driving off edge of platform, ramp, road or other surface
- Driving an indoor forklift outdoors on rough, uneven ground outdoors
- Operating on an incline or hill



Source: RiteHite Doors



Forklifts can turn over for all the reasons shown on this slide.

What do in case of a forklift tip-over



The poster features a central graphic with several icons and text. At the top left is a warning triangle with an exclamation mark and the word 'WARNING'. Below it is a small text box: 'TIPOVER CAN OCCUR AT ANY TIME. ALWAYS WEAR YOUR SEAT BELT.' To the right are three icons: 'FASTEN SEAT BELT' (hands buckling a seat belt), 'DON'T JUMP' (a person jumping from a forklift), 'HOLD ON TO STEERING WHEEL' (hands on a steering wheel), 'BRACE FEET' (feet on pedals), 'LEAVE ARMS AND LEGS INSIDE' (arms and legs tucked in), and 'LEAN FORWARD' (a person leaning forward). At the bottom is a banner that reads 'IN CASE OF TIPOVER'.

If the forklift tips, keep your arms and legs inside and hold on to the steering wheel. Don't attempt to jump out – you can't move faster than the forklift can tip over. Most people who attempt to jump are killed by the impact of the overhead guard.

Tipover procedures for other types of forklifts may vary. For example operators of stand-up forklifts with rear-entry access should step backwards off the forklift if a tipover occurs.

In the case of a tipover, whatever you do – don't jump. Hold on and lean away from the direction of the fall. You may be shook up and banged up a bit, but you will survive.

Forklifts and Seatbelts

Seatbelts are required on all forklifts manufactured since 1992 and can be retrofitted on all older models.

You are required to use it when it is supplied with the forklift. It will save your life.

Click it - before you drive!!



A common cause of forklift fatalities is from the operator not having or using a seatbelt.

Forklift fatalities have occurred when the operator was either thrown out of the forklift or they tried to jump out when the forklift overturned. Seat belts prevent that.

Forklift video clips from Worksafe B.C.

1. [STAY IN THE CAB, STAY ALIVE](#)
2. [FIELDS OF VISION: PEDESTRIAN SAFETY AROUND FORKLIFTS](#)



The links to video clips is from Worksafe B.C. – the safety and health agency in British Columbia, Canada. The first covers the consequences of jumping from a forklift that is tipping over. The second one covers the real danger to pedestrians working in the same area as forklifts.

Forklift inspection and maintenance

All forklifts be examined at least daily before being used. Forklifts used on a round-the-clock basis must be examined after each shift. Check the following:

- ✓ Fluid levels -- oil, water, and hydraulic fluid.
- ✓ Leaks, cracks or other visible defect in hydraulic hoses and mast chains.
- ✓ Tire pressure and tire cuts or gouges.
- ✓ Condition of the forks, including the top clip retaining pin.
- ✓ Safety decals and nameplates in place and legible.
- ✓ All safety devices working properly including the seat belt.

A vehicle that is damaged, defective or otherwise unsafe must be removed from service. Report the problem to your supervisor immediately.



U.S. Army



MSHA

If your company has no assigned person to do forklift inspection and maintenance, the responsibility is yours. You should double check even if the company has maintenance personnel. If you operate a propane powered forklift indoors, check for noticeable propane or exhaust odors which mean an engine tuneup is required to keep carbon monoxide levels low. More about that in the slides following.

Refueling a propane powered forklift

Liquid propane is extremely cold when released to the atmosphere. If your skin is exposed to propane while refueling, you can get frostbite.

Shut off the engine before refueling.

Don't leave propane-powered forklifts near high heat sources. When parking propane-powered forklifts for a long period of time, turn the tank valve off.

Any propane leak must be taken seriously. Propane vapor is heavier than air and will tend to sink to the lowest lying area. If not adequately dissipated, it will ignite when exposed to a spark or flame.




Propane is safe to use as long as it is contained. However, as this slide indicates, a large leak is a major hazard that could result in a fireball with severe burns to you or nearby workers. Some companies may have a propane cylinder exchange system where a propane vendor supplies full cylinders in exchange for empty ones. If you switch out empty cylinders with full ones, just remember to make sure all valves on the cylinders are closed.

Charging or changing batteries on electric forklifts

The battery changing/charging area should have the following:

- No smoking signs.
- Adequate fire protection.
- Plenty of water for flushing and neutralizing spilled battery acid.
- An eyewash that provides at least 15 minutes of flowing water enough ventilation to remove hydrogen gas during battery charging.



If you have to add water to batteries or handle battery acid, be sure to wear personal protective equipment.

If you have to change or charge batteries on your electric forklift, you could be exposed to the hazards of burns from battery acid or fire from hydrogen gas. Because of their weight, batteries are typically lifted with a hydraulic hoist. If you are the one that has to do that, be sure you know how to operate the hoist correctly.


Forklift Attachments

Forklifts can have a variety of attachments which affect their performance and use.


The load capacity of the forklift is reduced by the weight of the attachment.

The attachment must be approved by the forklift manufacturer.


Be sure you know how to use the specific attachment on the forklift you will be operating or get training if you don't.



Crane Attachment




Drum Grabber Attachment




Carpet Lifting Attachment

Using an unapproved attachment can alter the forklift's lifting and balance characteristics and lead to the forklift overturning. The forklift must be marked in some way to show the weight of the attachment. This is usually found on the nameplate, unless it has been altered by a user without consulting the manufacturer. Doing so is actually a violation of forklift safety regulations.


Stacking loads on pallets




BLOCK
The most common. The upper level may be unstable if not encircled with wire or strapping.



BRICK
Containers are interlocked by turning each level 90 degrees.




PINWHEEL
Used where brick pattern is unstable.



IRREGULAR STACKING PATTERNS
Wood strips, plywood or heavy cardboard between layers can help stabilize castings, bags, and other irregular shapes.

Loose loads are subject to falling. Off center loads can also be subject to falling or cause the forklift to tip over. The illustrations above show the correct way to load pallets.



Avoid using damaged pallets.

Pallet loads are often shrink-wrapped or otherwise secured with strapping or other devices, especially in warehouses. But sometimes one-time or short-term jobs or other work conditions make that impossible. In those cases, proper stacking on a pallet is important. In addition, damaged pallets are subject to collapsing suddenly and the load being dumped or dropped.

Forklift Work Platforms

Never lift other workers on forks unless you use an approved work platform with railings as shown.



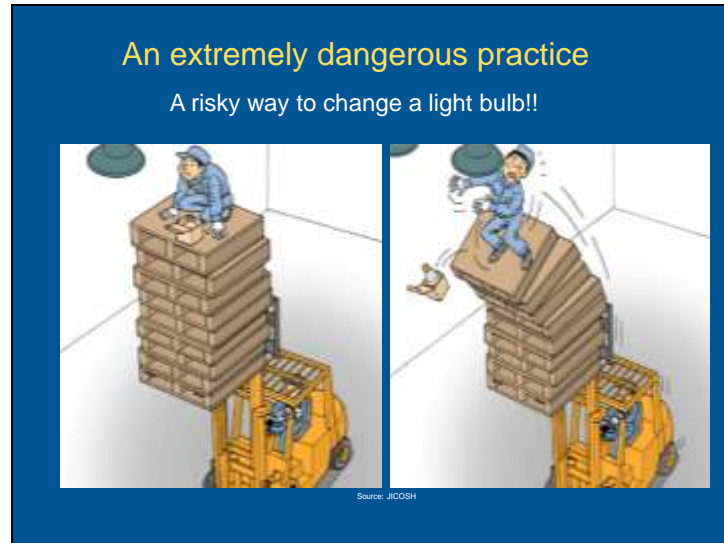
Dangerous!!

Safe

U.S. Army

Source: Petrol Co.

Lifting someone on the forks of forklift is an extremely risky operation and often done “just for a minute” to accomplish some quick task. Don't allow yourself to be talked into it or think you can get away with it. When a work platform is used, the forklift operator must always be in attendance – no further than 25 feet away, with the brake set. If the platform needs to be moved more than a few inches, the worker on the platform must get off first. No driving along with workers in the platform.



Sometimes people will try to use a forklift with a stack of pallets on the forks to gain access to something out of reach. Don't be a part of this practice, since the worker on the pallet can easily fall off.

Order Picker Fall Protection

In warehouses “order picker” forklifts, the vehicle must have either:

- Standard guardrails on all open sides
- **or**
- A safety harness and lanyard



The slide contains two photographs. The left photograph shows a worker from behind, wearing a yellow and black safety harness with a lanyard attached. The worker is standing on the platform of an order picker forklift. A red arrow points from the text 'A safety harness and lanyard' to the worker's harness. The right photograph shows a side view of an order picker forklift with a worker standing on the platform. The forklift has black metal guardrails on all open sides. A small vertical text 'OSHA' is visible on the left side of the left photo, and 'OSHA' is visible on the right side of the right photo.

Order picker forklifts used in warehouses where the worker stands on the platform that raises and lowers presents a fall hazard. Workers who use this type of equipment must be protected by either a guard rail or the appropriate fall protection harness as shown. Waist-only harnesses, also called “body belts”, are not acceptable unless they completely prevent the operator from falling off the order-picker.

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Why a safety harness is needed on an order picker forklift

While working in a warehouse using an order picking forklift, a worker tried to stand on a shelf to adjust the position of the load on the pallet. His foot slipped from the rack and he fell from the fourth tier to the floor.



A safety harness would have stopped his fall.

This is an example of what can happen if a safety harness is not available or used.

Forklifts have reduced visibility

Both the forklift mast and a large load on the forks reduce forward visibility.



The image contains three visual elements: on the left, a photograph of an older forklift mast with a single central cylinder; in the middle, a photograph of a newer forklift mast with two side cylinders and a central gap; on the right, a green safety poster titled 'LOAD BLOCKING YOUR VIEW?' which shows a forklift with a tall load and a worker, with text indicating that a spotter or guide is needed.

Older mast design Newer mast design

In warehouses or other indoor workplaces, aisles of material, walls, doors and other building configurations can create blind corners.

OSHA - all photos

Mast configuration can affect the operator's visibility. Newer mast designs use two side cylinders with a gap in the middle which provide much improved visibility compared to older mast designs that have a single central cylinder. But with a tall load, your forward view will be blocked, making it necessary to travel in reverse or use a spotter.

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When moving forward, the mast will block part of your view, even when the load is lowered.

Forklifts and Pedestrians

- Slow down and sound horn at intersections, corners, and wherever your vision is obstructed.
- When provided, use flashing warning light or backup alarms when traveling in reverse.
- Always look in the direction of travel.
- Signal to pedestrians to stand clear.
- Do not allow anyone to stand or walk under upraised forks.
- When possible, make eye contact with pedestrians or other forklift operators before moving in their path.



OSHA

Your employer may have restricted lanes for other workers – pedestrians – but people don't always pay attention. You are often moving faster than a pedestrian and forklifts can't stop suddenly, especially with a load. 10% of all fatalities involving forklifts are from workers being struck or run-over by a forklift. Don't let it be your fault.



In this example of a real accident, the pedestrian walked behind the forklift without catching the attention of forklift operator even though the back-up alarm was sounding. The forklift operator failed to look backwards, so the forklift hit the pedestrian, knocked him down and badly injuring his leg.

Loading truck trailers and railroad cars

Make sure:

- Truck trailer wheels are chocked
- Dock board is secure and can handle weight
- You use horn or warning lights when exiting trailer or railcar.



The slide contains three images: a forklift operator inside a truck trailer, a close-up of a truck trailer wheel with a yellow chock, and a close-up of a yellow warning light. The OSHA logo is visible in the bottom right corner of the forklift and wheel images.

Driving in and out of a trailer or railcar can cause either the ramp or the trailer itself to move. Securing truck trailer wheels prevents trailer movement and keeps dockboard secure. Dockboards or bridgeplates have various methods or attachments to keep them secure.

Wide or irregular size loads



Source - New York Dept. of Health

OSHA

Distribute the weight evenly when carrying irregular sized loads. Keep the center of gravity of the load as near as possible to the center going horizontally across the forks.

Keep the center of gravity of the load as near to the front wheels as possible.

Wide loads are susceptible to shifting or sliding off the forks and of course make it difficult to maneuver in tight places. Irregular size loads can shift the center of gravity in unexpected ways. Caution in handling these types of loads is necessary. It is often safer to move a wide heavy load with a crane rather than a forklift.

Loading/unloading High Storage Racks

When removing a load from a high rack:

- Slowly back out with the load
- Stop when it clears the rack
- Lower the load to the floor
- Don't lower the load while moving!



In warehouses with high storage racks, the lightest loads should be placed on the top racks, and the heavier loads on the bottom racks. Remember a forklift is less stable with a load raised high, especially while moving.

Forklift Do's and Don'ts

No one else on the forklift except the operator, unless the forklift has a seat for a rider.

Always drive with the forks lowered and lower forks to floor when parking the forklift.



Watch overhead clearances – especially entering or exiting buildings or when you are raising a load on the forks.



[Click here for Yale forklift company safety poster](#)

Source: JACOBI

Source: JACOBI

The link to the Yale forklift company poster at the bottom of the slide is a good list of forklift safety practices. It can be simply viewed or printed out.

The risk to a rider on a forklift




A seasoned forklift operator sat next to the operator's seat while showing a new operator how to operate the forklift.



The new operator accidentally performed the wrong maneuver, causing the forklift to run into one of the pillars at the site. The worker who had been training him was crushed between the support pillar and the forklift.


This example shows one reason why riders on a forklift is dangerous. The other reason would be that the rider could easily slip off the forklift since he has no seatbelt and is not sitting in a seat.

Stay out of the mast of a forklift !!



While using a forklift to transport 15 cardboard boxes at once, some of the boxes started to slip. The operator climbed into the mast to adjust the falling boxes.

When the worker stepped between the operator's seat and the mast (without turning off the engine first) he accidentally hit one of the control levers, causing the mast to move. He was crushed between it and the overhead guard.



Source: JICOSH

This is another example of an actual accident. The safer way this operator should have handled this situation was to slowly lower the load to the ground, set the brake and then dismounted the forklift and re-adjusted the boxes.

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It goes without saying – just like any other moving vehicle, watch your speed. It's especially dangerous in a workplace with nearby workers and walls, doors, racks or stored material that block your view. As mentioned before, it's harder to stop a heavy forklift with a load than a car, even at low speeds.

Don't leave your forklift unattended

A forklift is considered "unattended" When the operator is 25 ft. or more away from the vehicle even if it remains in his view, or whenever the operator leaves the vehicle and it is not in his view.

When a forklift is left unattended, forks must be fully lowered, controls neutralized, power shut off, and brakes set. Wheels must be blocked if the truck is parked on an incline.



Wisconsin Dept. of Health Services


Where's the operator??

When the operator of a forklift is within 25 ft. of the truck still in his view, the load engaging means must be fully lowered, controls neutralized, and the brakes set to prevent movement, but the power does not need to be shut off.

Not leaving an operating forklift unattended is another requirement of the L & I safety regulations on forklifts.

Propane-powered forklifts and carbon monoxide

Propane powered forklifts produce carbon monoxide. The amount depends on how well they are tuned, but should be 1% or less at the tailpipe.



Carbon monoxide poisoning can occur when propane forklifts are used in cold rooms, controlled atmosphere rooms, truck trailers or shipping containers, or in warehouses or other enclosed areas that do not have enough fresh air ventilation. If propane powered forklifts are used indoors, they should be tuned up regularly and tested for carbon monoxide emissions periodically.

[Click here for more information on carbon monoxide and forklifts](#)

You may have heard or been told that propane powered forklifts “burn clean” or don’t emit carbon monoxide. Although the amount is much less than a gasoline engine, they still do produce carbon monoxide and the levels can be quite high on poorly tuned forklifts. In fact carbon monoxide poisoning from indoor forklift operations is a common occurrence in Washington state, especially in the fall or winter when warehouse doors are closed up or ventilation is turned off or malfunctions. Symptoms of carbon monoxide poisoning are typically a severe headache, nausea or even collapse in worst cases.

As you might expect, carbon monoxide poisoning is an even greater hazard with gasoline powered forklifts and diesel powered forklifts as well, in confined or unventilated areas.

**Safe Operation of Forklifts
and Other Powered Industrial Trucks**

You must also have hands-on training on the specific truck
you will operating

... truck controls and handling are different



[Click here to see L & I forklift operator training requirements](#)

Your training is not complete with this online course. This is just the beginning to give you some general information on forklifts, how they work and the hazard associated with operating them. You also need supervised hands-on training with the specific forklift you will be using. This is required by L & I regulations as well as making common sense.

An 8 question quiz follows this slide. To show that you have completed this course, you must answer all the questions in the quiz, and print out the quiz results with your name. Click the submit button after you select your answer to each question. You get two tries on each question and a passing score is 75% or 6 or more correct answers. The printed results of the quiz will be your document that you have taken this course. You do not need a special printed certificate to operate a forklift, just the appropriate training.

Slide 54

Safe Operation of Forklifts
and Other Powered Industrial Trucks

Forklift Safety Quiz Questions

Quiz

1. Because a forklift weighs more, it is easier to stop it with the brakes than a car.

- a) True
- b) False

Correct answer is "false".

Quiz

2. When driving down an incline with a loaded forklift, you should:
 - a) Go down the incline backwards.
 - b) Raise the load before going down the incline.
 - c) Go down the incline frontwards.
 - d) Honk the horn.

Correct answer is "go down the incline backwards"

Quiz

3. If you are driving a forklift and it hits a hole and starts to turnover, you should:
- a) Jump out away from the direction it's falling.
 - b) Quickly turn off the engine.
 - c) Pull your arms in and hold on.
 - d) Crank the wheels the opposite way it's falling.

The correct answer is “pull your arms in and hold on”

Quiz

4. If you see a large puddle of hydraulic fluid under the forklift, the first thing you should do is:
 - a) Use it to finish your task and then take it to maintenance.
 - b) Clean up the puddle before someone slips on it.
 - c) Inform maintenance or your supervisor and not operate the forklift.
 - d) Find out where the leak is coming from.

The correct answer is “inform maintenance or your supervisor and not operate the forklift.”

Quiz

5. Before you first enter a truck trailer with a forklift you should:
- a) Check to make sure the trailer has been secured with wheel chocks
 - b) See if there is a spotter inside the trailer.
 - c) Get your supervisor's approval to enter.
 - d) Jump up and down on the dock board.

The correct answer is “check to make sure the trailer has been secured with wheel chocks.”

Quiz

6. Special attachments to a forklift can be used when:
- a) The production manager approves it.
 - b) The forklift manufacturer approves it.
 - c) You have checked that it doesn't change the forklift operation.
 - d) None of these.

The correct answer is “the forklift manufacturer approves it”.

Quiz

7. The best way to handle a large load that reduces visibility is to:
- a) Honk the horn continuously so other workers know you are moving.
 - b) Drive in reverse or use a spotter.
 - c) Raise the load so you can see under it.
 - d) Walk the route first so you know where to go.

The correct answer is “drive in reverse or use a spotter”.

Quiz

8. A propane powered forklifts doesn't cause a carbon monoxide hazard if:
- a) It is well-tuned and there is plenty of ventilation.
 - b) It is driven slowly.
 - c) It is used in place of a gasoline-powered forklift.
 - d) It is a brand-new model.

The correct answer is "it is well tuned and there is plenty of ventilation".