



Forklift Safety

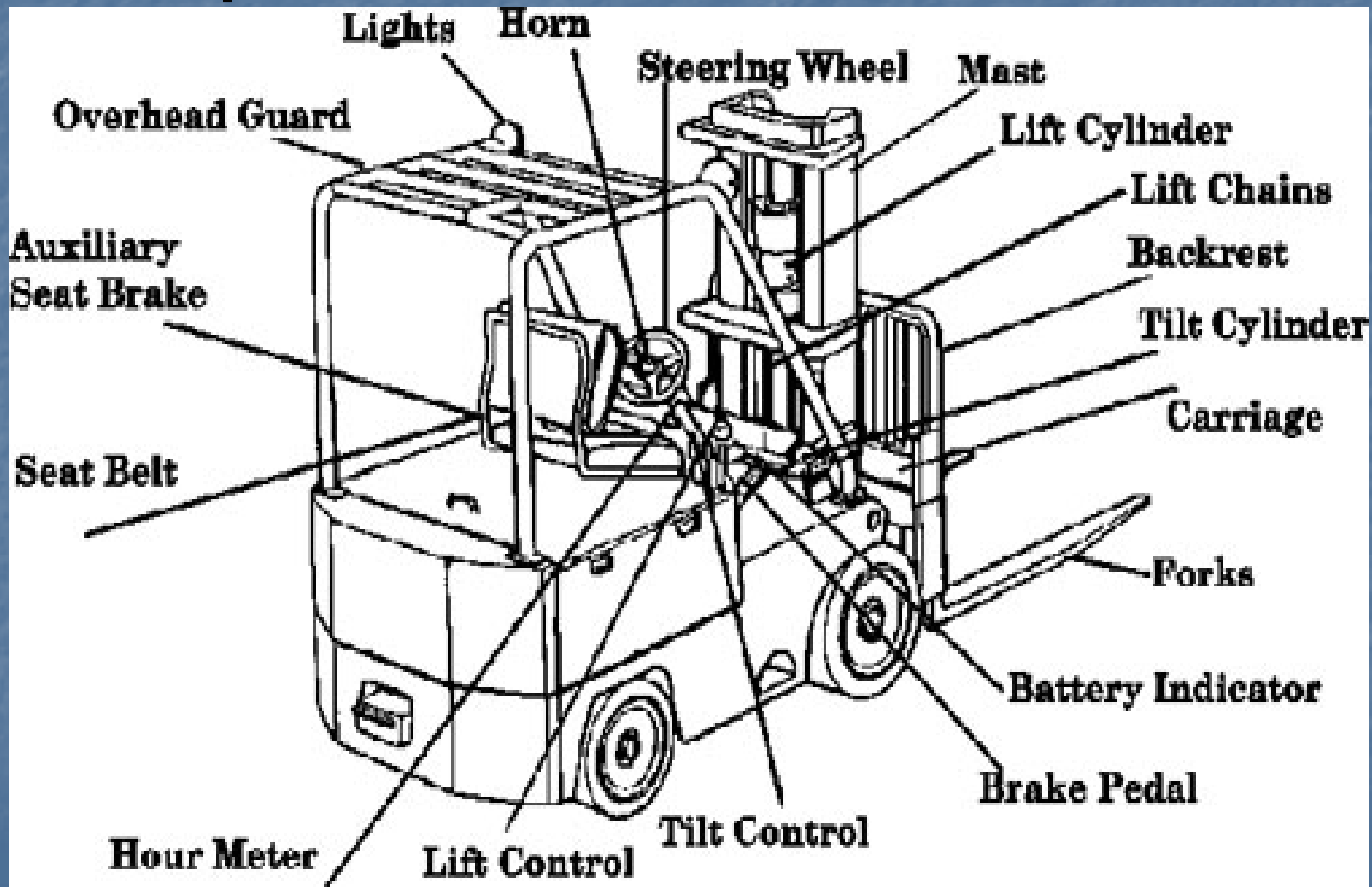
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**Community Insurance
Corporation**

Refresher training required:

- New equipment.
- Change in work place conditions.
- Accident or near miss.
- Observed operating in unsafe manner.
- Note: Performance test must be repeated every 3 years

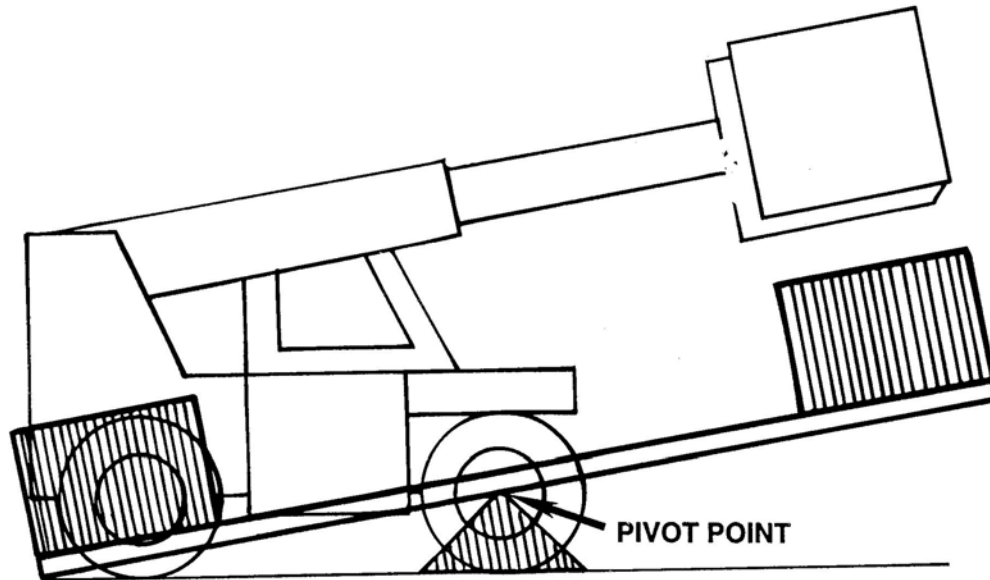
Components of a Forklift Truck



Know Your Equipment

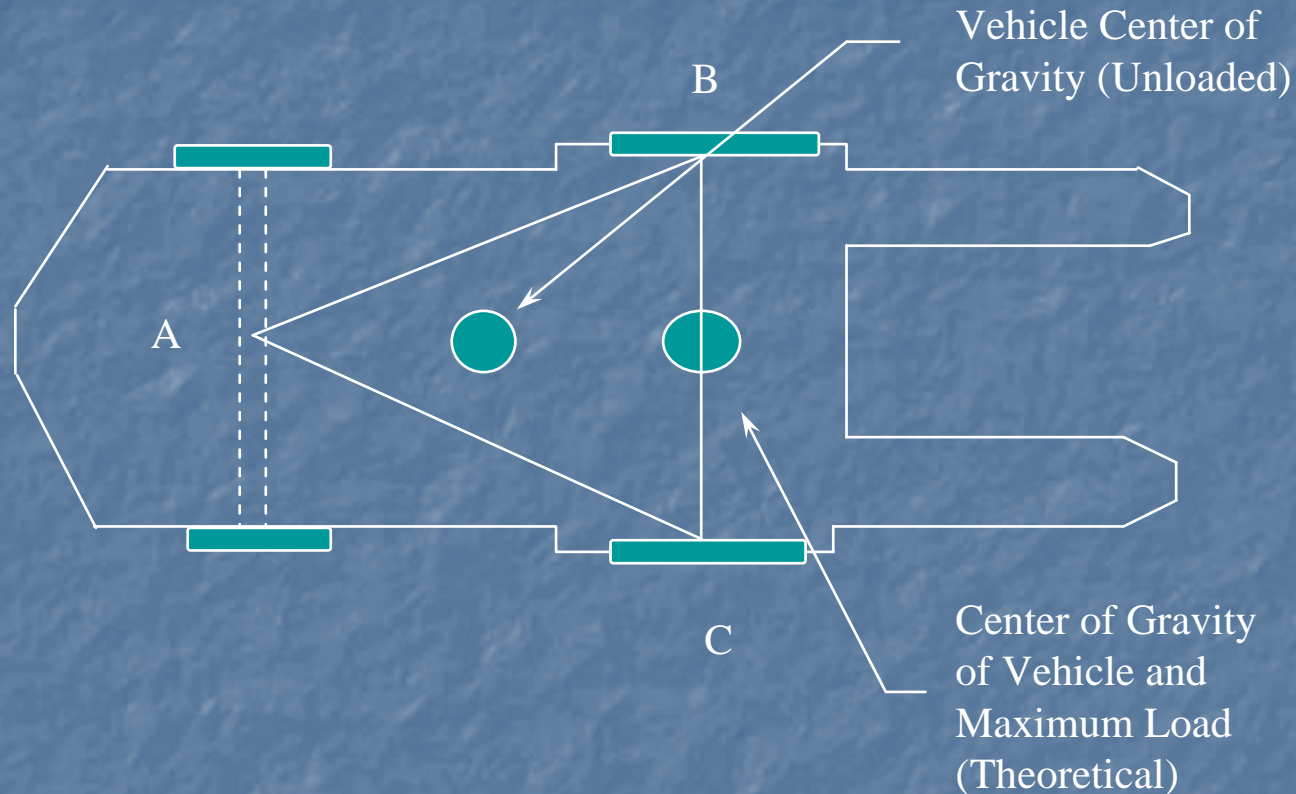
- Controls
- Adjustments
- Load Rating
- Turning radius
- Balance points
- Overhead clearance
- Side Clearance

How does a forklift work?



LEVER AND FORKLIFT PRINCIPLE

Stability Triangle - 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.

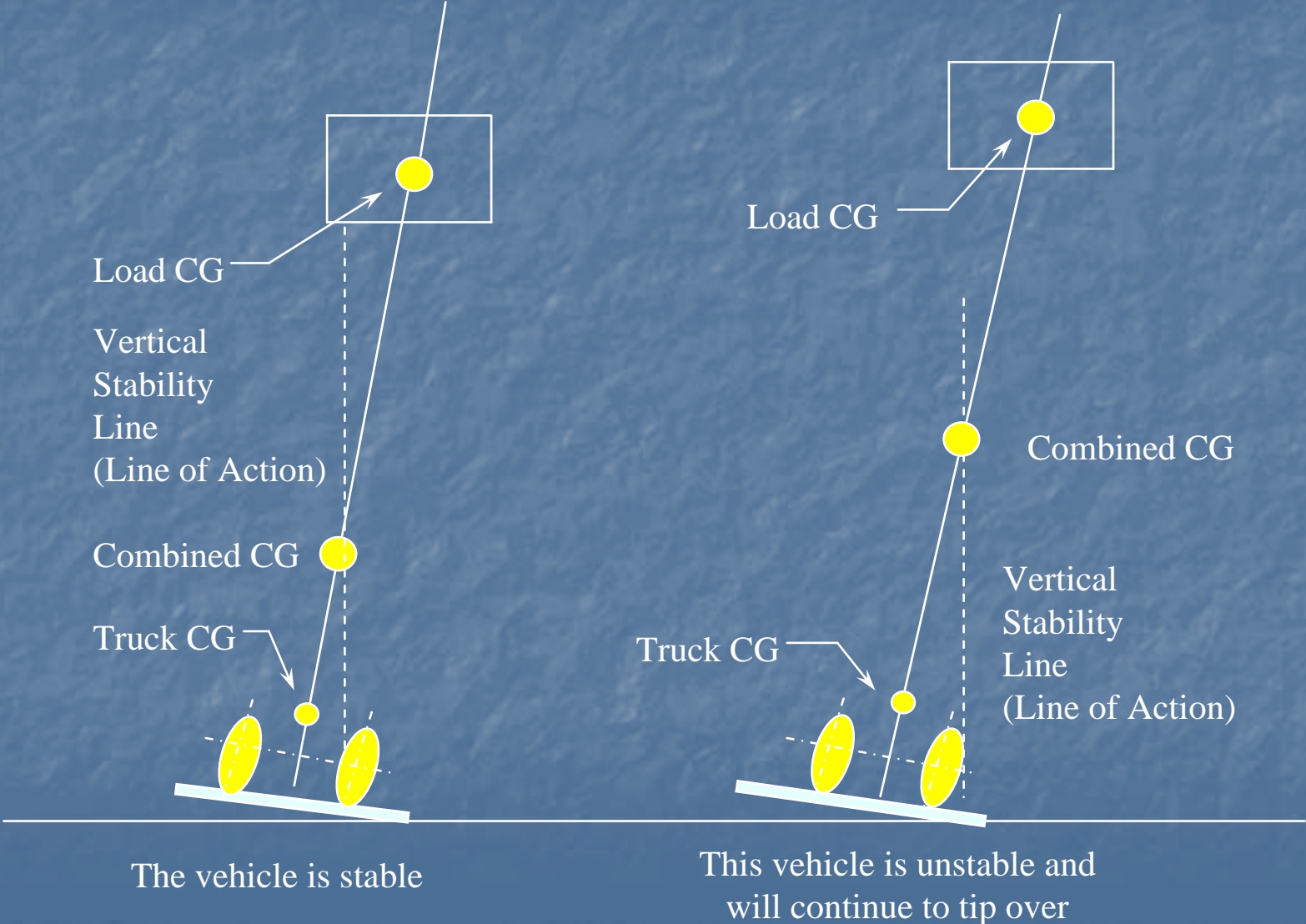
Side Stability

- Ability of forklift to resist tipping sideways
- Affected by:
 - How high the load is lifted
 - Levelness of the surface
 - Amount of backward tilt of the forks
 - Wheelbase (distance between sets of wheels)

Side Stability

- Long and narrow forklifts
 - Operate in tight spaces
 - Difficult to tip forward
 - Can easily tip sideways
- Short and wide forklifts
 - Can turn sharper
 - Support load sideways
 - Can easily tip forward if load is lifted and tilted forward

Stability Triangle - Figure 2



Forklift Baskets:



No working
from
Pallets!

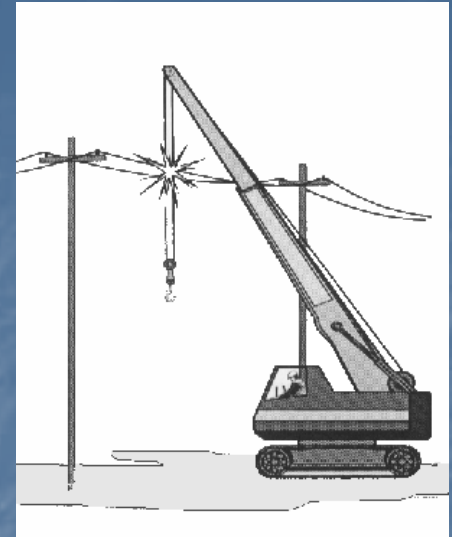
Maintain Safe Working Clearance

- Minimum 10 feet clearance
 - 50 kV or less
- Add .5 inches for every kV over 50 kV
 - 100 kV – 15 feet
 - 350 kV – 20 feet
 - 500 kV – 25 feet



If contact occurs:

- Stay on the machine if possible.
 - Do not touch metal
- Warn all others to stay away.
 - Assume "hot" you could get a reset.
- Notify power company immediately.
- Attempt to move away but assure line is not "connected".



Bail out procedures

- Do NOT face ladder
- Jump with your feet together
- Do not touch the machine
- Hop or shuffle out of the area

Difficult to do!

Rated Capacity

- All forklifts have a rated capacity
 - Amount of weight they can lift
 - Determined by the manufacturer
 - Load must be as close as possible to drive wheels

Load Center

- Distance from the heels of the forks to load's center.
- Capacity is usually rated on load center of 24 inches.
- If >24 inches the rated capacity is reduced.
- Rated capacity found on identification plate or Owner's Manual

**Where a load sits is as important as
how much it weighs!**

How do I test a load's weight?

- Lift the load 1 to 2 inches.
- Make sure load feels stable and rear wheels are in firm contact with the floor.
- If everything is operating properly and the steering seems normal, it is safe to move the load.

It is your responsibility to know how much the load weighs!

Pre-Check

- Conduct a safety check at the start of each day or the first time you use the equipment for the day.



Completion of the Checklist ensures YOUR safety



Safety Rules

- Operate fork trucks only in designated areas with adequate ventilation.
- Do not exceed the floor load rating.
- Secure (tie down) unstable loads before starting the vehicle.
- Keep arms and legs inside the fork truck structure, except when signaling for turns or stops.

Safety Rules

- Do not jump from a moving fork truck.
- Make sure that there is adequate clearance before passing under or between structures.
- Maintain indoor speed under 5 mph and outdoor speed under 15 mph.
- Yield to pedestrians.
- Do not carry passengers.



Safety Rules

- Tilt the mast back before traveling
- Stay at least three vehicle lengths back when following another fork truck.
- Maintain forks about 4 to 6 in. (10 to 15 cm) off the driving surface when traveling.
- Do not attach slings, cables, or chains to the forks to lift materials or objects from underneath them.

Safety Rules



- When forward vision is obscured, drive in reverse
- Do not leave a fork truck parked with an elevated load.
- Do not park a fork truck without turning off the power, placing all the controls in the neutral position, and setting the brake.

Safety Rules



- Observe all traffic signals.
- Do not use a fork truck to tow or push other fork trucks, another vehicle, or other equipment.
- Use pneumatic-wheel fork trucks for irregular terrain and when traveling on streets.
- Use hard-wheel fork trucks indoors only.

Safety Rules



- Place tines as wide as possible for the load and lock them in place to prevent sideways movement.
- Never add a counterweight. Know the weight of the load.
- Do not exceed the fork truck's rated capacity.
- Do not lift material or equipment you are unfamiliar with.

Use your seatbelt at all times!



- **Why It Matters...**

Minimizes injuries and saves lives

The safest place for a forklift operator to be in the event of a rollover is strapped into his/her seat & protected by the ROP.

Investigators of forklift fatalities almost always list, "Ensure that all workers wear seat belts on forklifts" as a recommendation for preventing future accidents.

Restricted View

- Your view is restricted by the cage and the mast
- Dive slowly and watch for:
 - Pedestrians
 - Equipment
 - Drop-offs



Ramps - Loaded

- Always ensure load is against the back rest
- Drive UP the ramp with the load uphill
- Back DOWN ramps



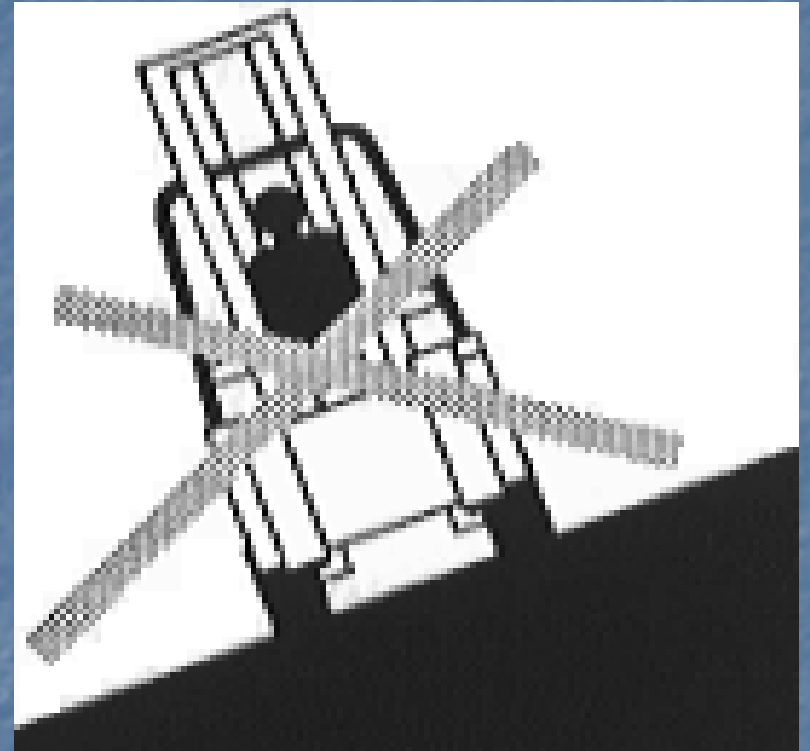
Ramps – Unloaded

- When Unloaded
 - Drive forward down ramps.
 - Drive backwards up the ramp for better view of dock area. Also, pedestrians in the dock area will hear your backup alarm



Ramp Hazards

- Never turn sideways on a ramp or inclined area



Parking

- Forks fully lowered
- Engine Off
- Parking Brake Set
- Park on level area
- Don't Block Exits
- Take the keys



Entering

- When Entering a doorway:
 - Watch overhead & side clearance
 - Use horn to warn others
 - GO SLOW!



Entering Trucks

- **Before** entering a truck
 - Check dock boards.
 - Check interior of truck.
 - Ensure trailer wheels are chocked.
 - Check tractor not attached or keys are controlled.

Refueling

- Fuel gasoline, diesel, and propane fork trucks outdoors only.
- Wear appropriate personal protective equipment (PPE).
- Close the valve for the propane bottle while the engine is running to consume all gas in the line.

Recharging

- Recharge electric fork truck batteries only in designated, posted, and well-ventilated areas
- Do not conduct smoking or spark-producing operations while batteries are being charged
- Wear the appropriate PPE if battery maintenance is being performed.

Non-Hazardous Areas

- Specific types of forklifts are for use only in non-hazardous locations. These forklifts are not suitable for use in hazardous areas because they have minimum acceptable safeguards against fire hazards.

Non-Hazardous Area Types

- Type D Forklifts are diesel-powered units that have minimum acceptable safeguards against inherent fire hazards.
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- Type E Forklifts are electrically powered units that have minimum acceptable safeguards against inherent fire and electrical shock hazards.
- Type G Forklifts are gasoline-powered units that have minimum acceptable safeguards against inherent fire hazards.

Non Hazardous Types

- Type G/LP Forklifts operate on either gasoline or liquefied petroleum gas and have minimum acceptable safeguards against inherent fire hazards.
- Type LP Forklifts are liquefied petroleum gas-powered units that have minimum acceptable safeguards against inherent fire hazards.

Hazardous Areas

- Specific types of forklifts are for use in hazardous locations.
- Potentially hazardous locations are those where metal dusts, organic dusts, flammable vapors, and gases may be present in the atmosphere. Indoor use of internal combustion-powered fork trucks requires verification that safe limits of carbon monoxide emissions are not exceeded.

Hazardous Area Types

- Type DS Forklifts - diesel-powered with additional safeguards for exhaust, fuel, and electrical systems. These forklifts also meet all the requirements for Type D units.
- Type DY Forklifts - diesel-powered units with all the safeguards of the Type DS unit. No electrical equipment--including ignition. Equipped with temperature limitation features.
- Type ES Forklifts - electrically powered – have additional safeguards for electrical system to prevent sparks and limit surface temperatures. ES Type meet requirements for Type E units.

Hazardous Area Types

- Type EE Forklifts - electrically powered units - all electrical equipment completely enclosed. These forklifts also meet all the requirements for Types E and ES units.
- Type EX Forklifts - electrically powered - units may be used in atmospheres containing specifically named flammable vapors, dusts, and, under certain condition, fibers.

Hazardous Area Types

- Type GS Forklifts - gasoline-powered - additional safeguards for the exhaust, fuel, and electrical systems. These forklifts also meet the requirement for Type G units.
- Type GS/LPS Forklifts - gasoline or liquefied petroleum gas - safeguards for the exhaust, fuel, and electrical systems.
- Type LPS Forklifts - liquefied petroleum gas - safeguards for exhaust, fuel, and electrical systems. These forklifts may be used in some locations where the use of an LP unit may not be suitable.

Ensuring a Safe Ride

- Only YOU the Operator can ensure the forklift is operated safely.
- Conduct a Pre-Check.
- Know your route of travel.
- Don't use un-safe equipment.

Final Note

- Safe Operation depends on YOU!
 - **Know** your equipment
 - **Follow** the safety rules
 - **Know** your load

