Forklift Operational Safety

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Presented by

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What is a forklift?

The forklift is a powerful instrument, which helps a person to lift and transfer heavy and large loads accurately with less effort. Using equipment such as forklifts, carts, or hand trucks, lifting and transporting loads instead of carrying loads reduces the risk of back injuries.

Forklift Accident Statistics

- Annual costs: about $135 million in direct and indirect costs
- Accident Rate: About 11% of forklifts are involved in accidents per year
- Number of injuries: 61,800+ non-serious and 34,900 seriously injured per year

The most common accidents:

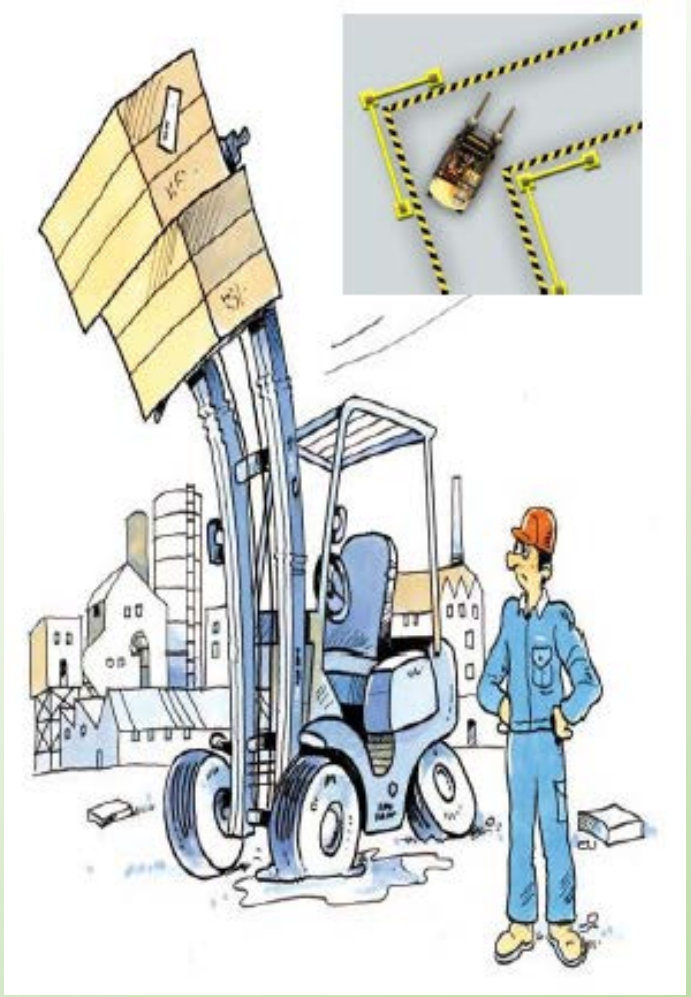
- Forklift overturned – 22%
- Pushing a pedestrian – 20%
- Crushed under the forklift – 16%
- Falling from the forklift – 9%

গাড়ি বনাম ফর্কলিফট: প্রধান পার্থক্য

বৈশিষ্ট্য	গাড়ি (Car)	ফর্কলিফট (Forklift)
ওজন	২,০০০ - ৬,০০০ পাউন্ড	৪,০০০ - ৪০,০০০ পাউন্ড
স্টিয়ারিং ব্যবস্থা	সামনের চাকায় স্টিয়ারিং	পিছনের চাকায় স্টিয়ারিং
ভার কেন্দ্র (Center of Gravity)	নিম্ন (Low Center of Gravity)	উচ্চ (High Center of Gravity)
দৃশ্যমানতা	চমৎকার দৃশ্যমানতা (Excellent Visibility)	কম দৃশ্যমানতা (Low Visibility)

Common Causes of Accidents

- Driving with high forks.
- Rotating or braking sharp angles with loads.
- Carrying unstable loads.
- Collision with overhead structure.



Cars vs Forklifts: Main Differences

Forklift stability triangle

The "stability triangle" is an important concept for balancing the forklift. It is an imaginary triangle formed by two front wheels and rear axle pivot points of the forklift.

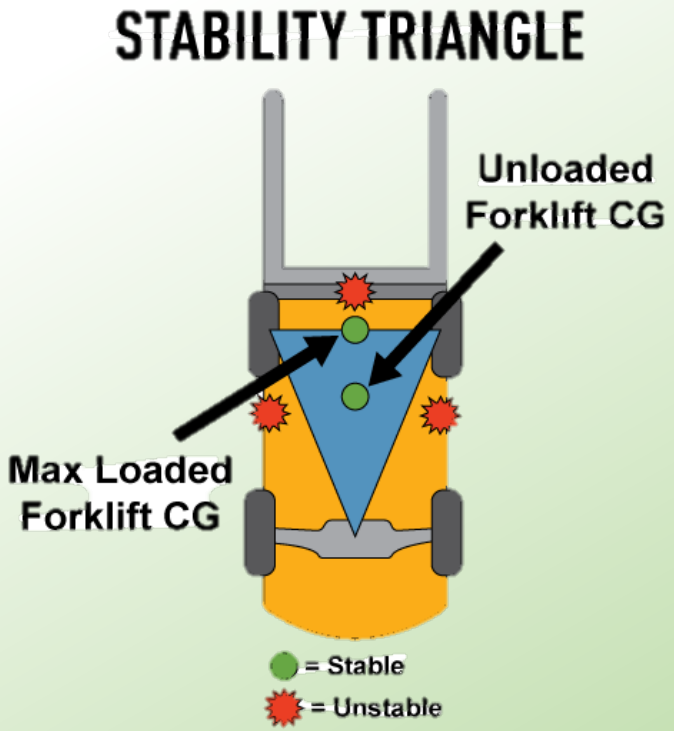
The main concept of the stability triangle:

The three points of the triangle:

- Front two wheels (main point of load bearing)
- Rear Pivot Point (where the steering is controlled)

Balance Keeping:

If the load of the forklift is within the triangle, then the forklift will be stable.
If the load moves out of the triangle, the forklift may overturn.



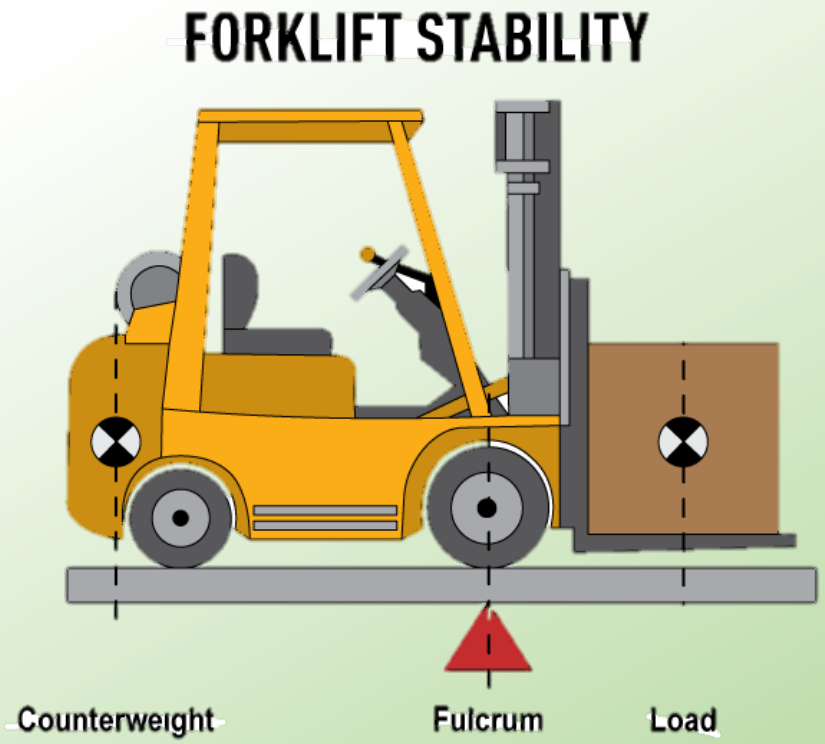
Forklift stability triangle

Risks & Prevention::

- Excessive or unbalanced load may cause the forklift to overturn।
- Making a quick turn or moving on a slope can lead to loss of balance.
- The higher the load, the lower the stability.

Safe handling tips:

- Always keep the load at a low height।
- Take a slow and step-by-step turn.
- Avoid overloading and balance the load.

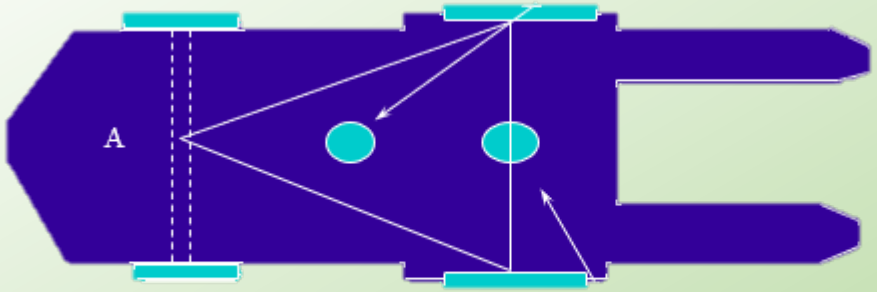


Forklift stability triangle

If the forklift is loaded:

• The combined load center (CG) moves forward, as the load is in front of the forklift.

• However, in reality, the load center should never reach the front wheel, as this will make the forklift very unsafe and increase the risk of overturning in the front.



Effects of extra counterweights:

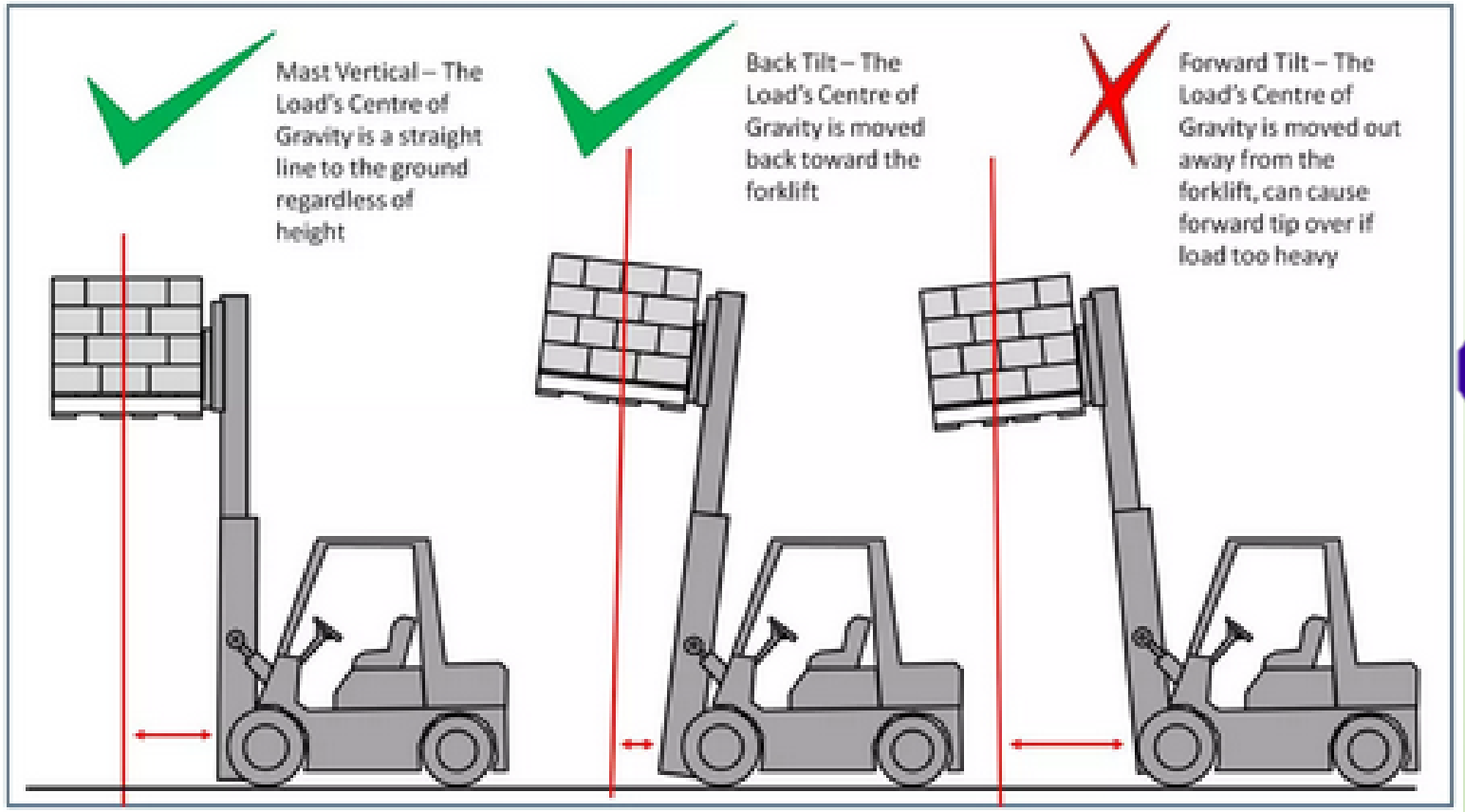
• Adding additional counterweight to the forklift, its center of charge will move towards point A (behind the stability triangle).

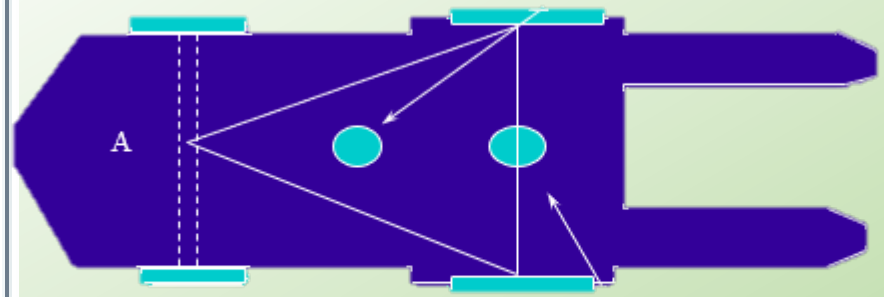
•This can improve the forward balance, but also reduce the side-to-side balance.

•If the load center of the forklift moves too backwards, it increases the likelihood of overturning laterally (sideways), especially when making sharp turns.

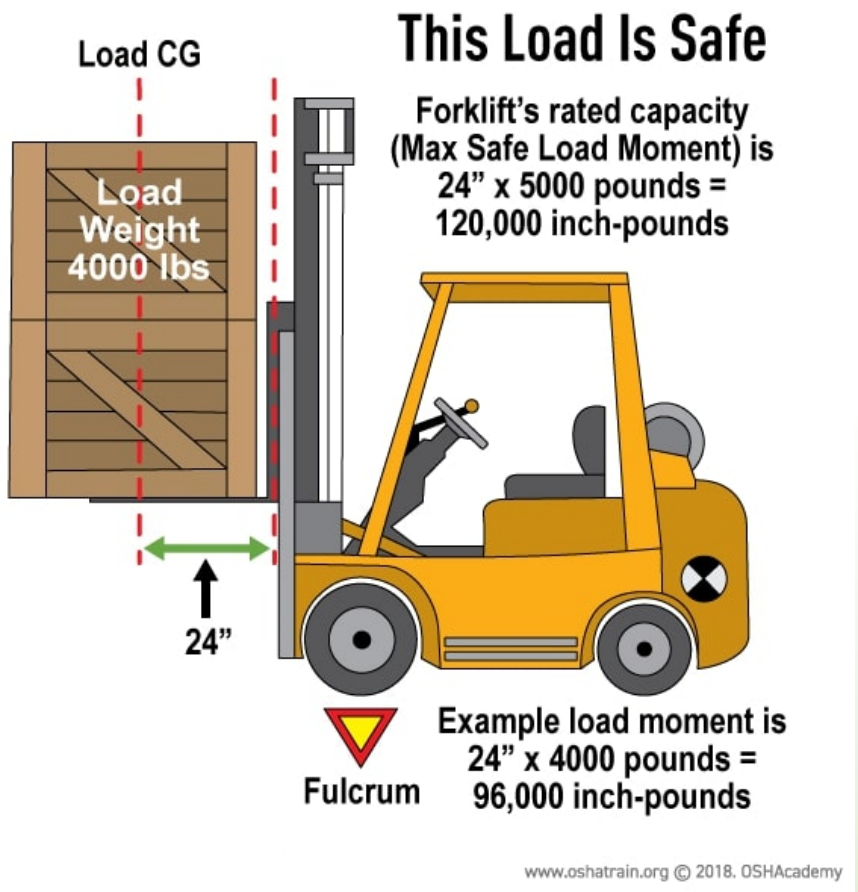
Load Center

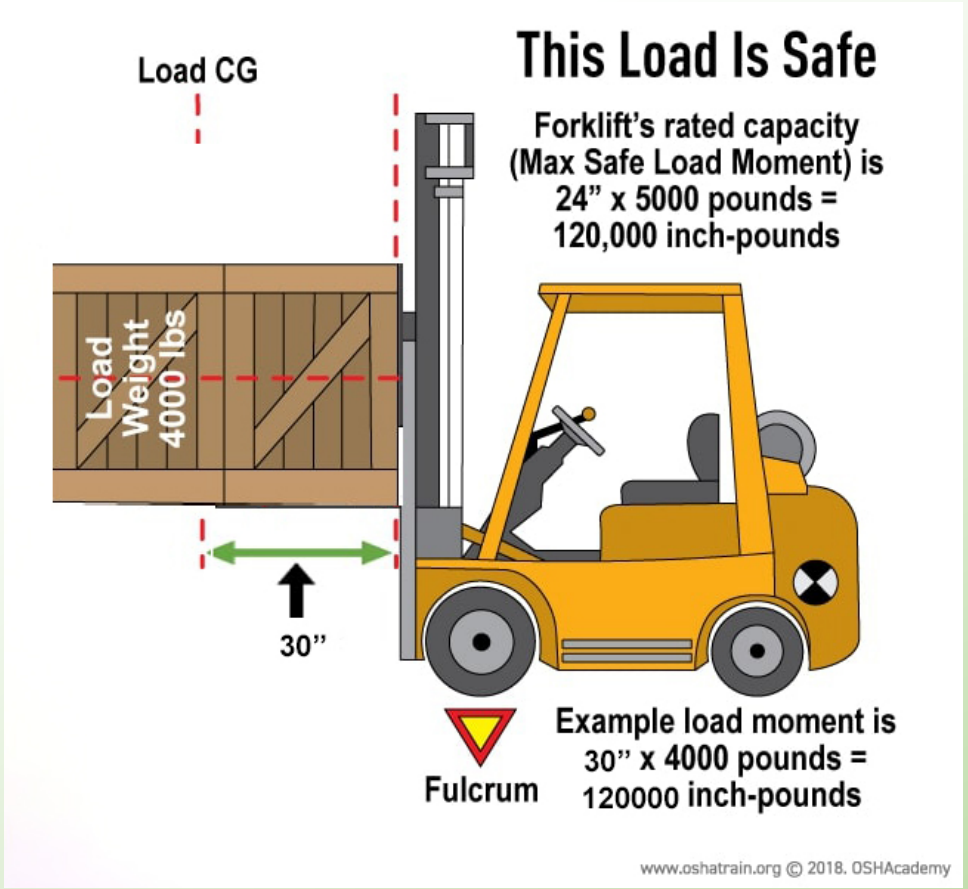
The load center is the distance from the starting point of the forklift to the center of the load, which is usually measured in inches or millimeters.





Safe load limits





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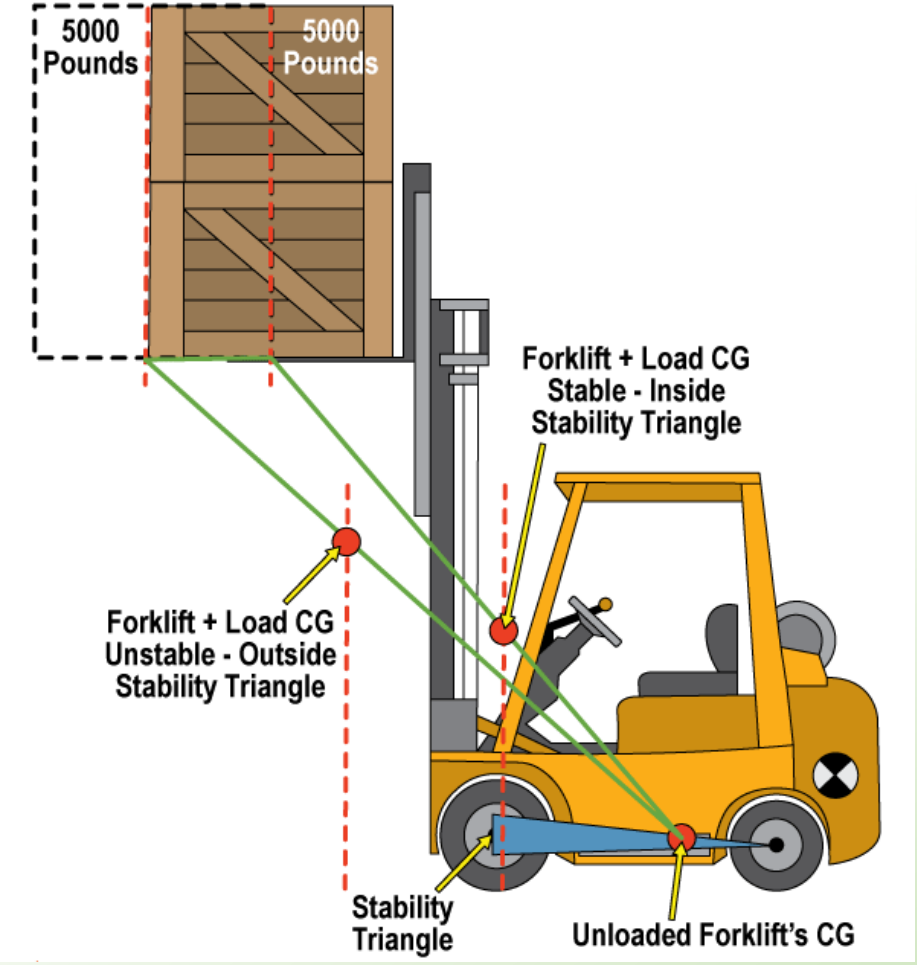

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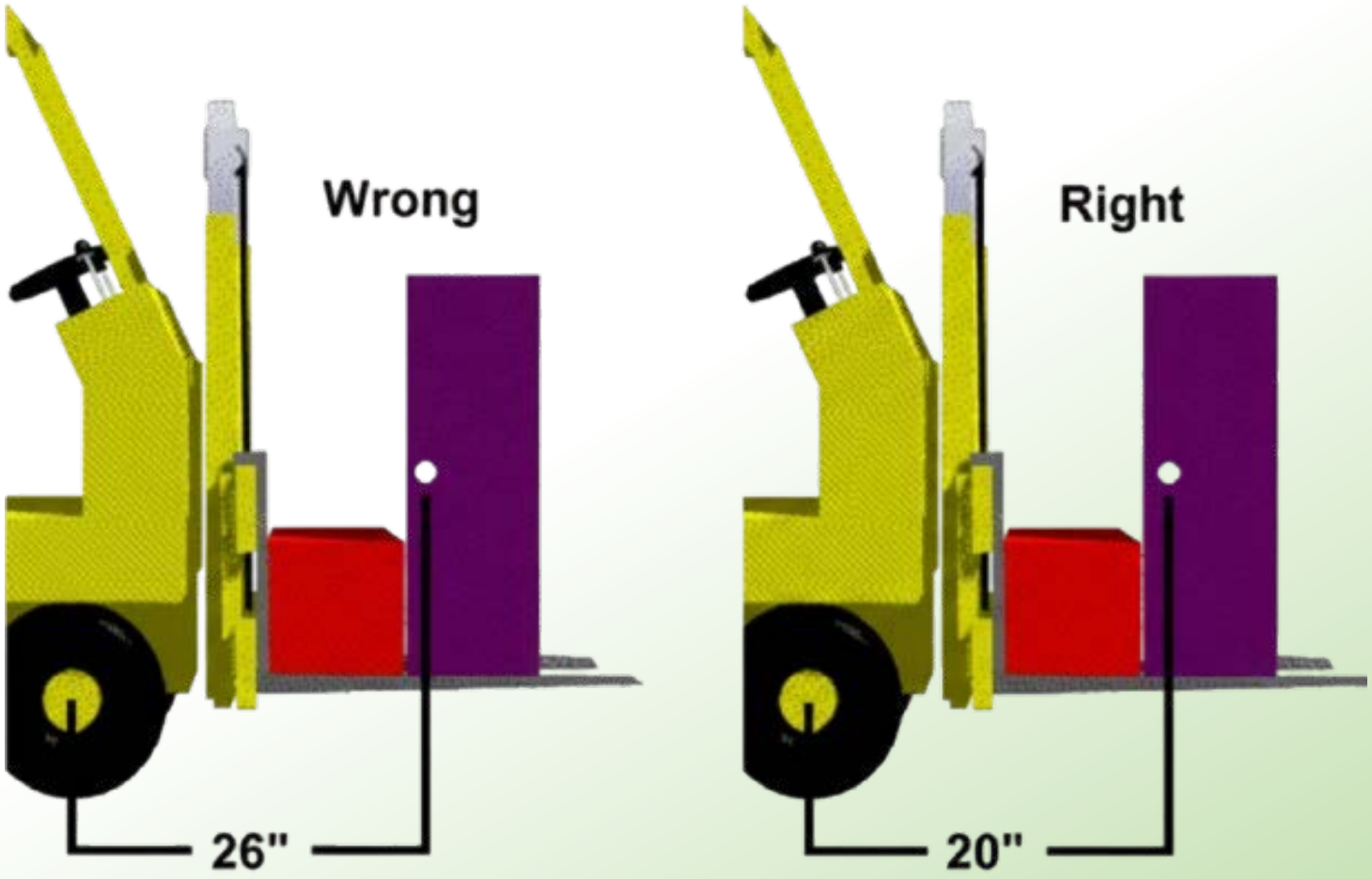
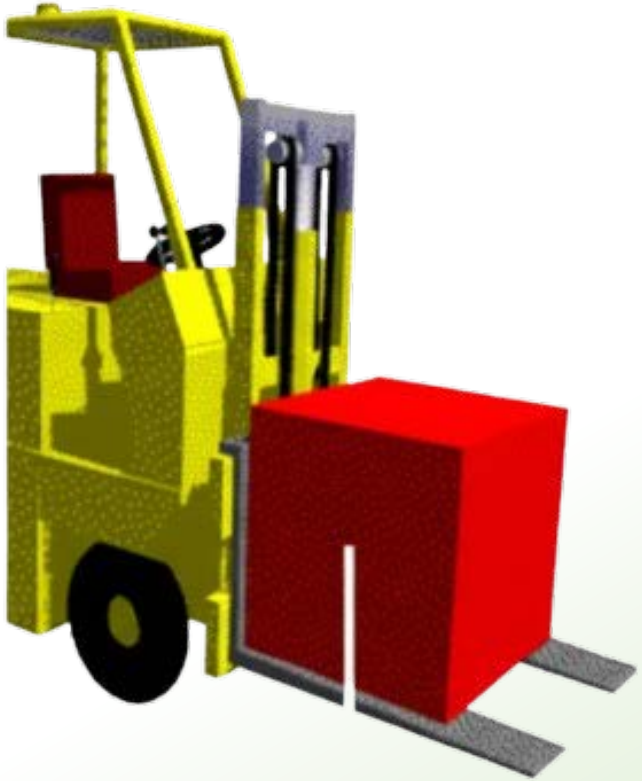


Safe load limits



24 inch

22 inch

Unsafe forklift handling

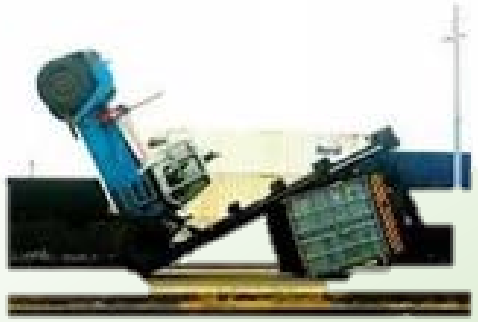
The combined weight center stability of the forklift and load can go beyond the stability triangle if: :

- The load is lifted to the tip of the fork,
- The load leans more forward,
- লোডটি উচ্চতায় তোলার সময় অতিরিক্ত পেছনের দিকে হেলে যায়,
- The load is extra wide,
- The movement of the forklift causes the load center to shift.

Unsafe forklift handling








Handling and Moving Loads

Pick-up a Load

- Approach the load slowly and straight on (Load centered)
- Stop when the tips of the forks are about a foot away.
- Level forks and adjust fork height
- Move forward slowly until load is fully against backrest
- Lift the load high enough to clear floor obstructions
- Back the load out slightly from the storage location
- Carefully tilt mast back to stabilize the load
- Ensure rear is clear; move backwards

Handling and Moving Loads

Put down a Load

- Approach the unloading point straight on
- Stop when the tips of the forks or side of the load are about a foot away
- Lower load, carefully level forks
- Move forward slowly until load is in desired location
- Lower the load to floor or storage location
- Ensure forks are clear of pallet
- Ensure rear is clear; move backwards

Secure forklift operation

What is the right method when climbing up with a load?

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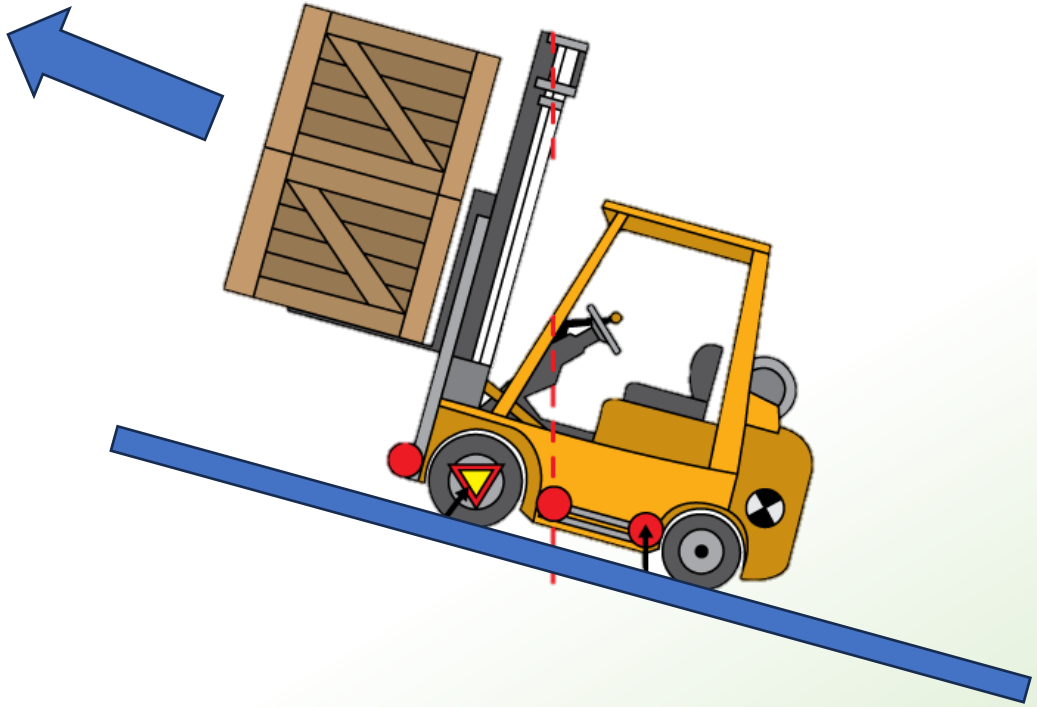

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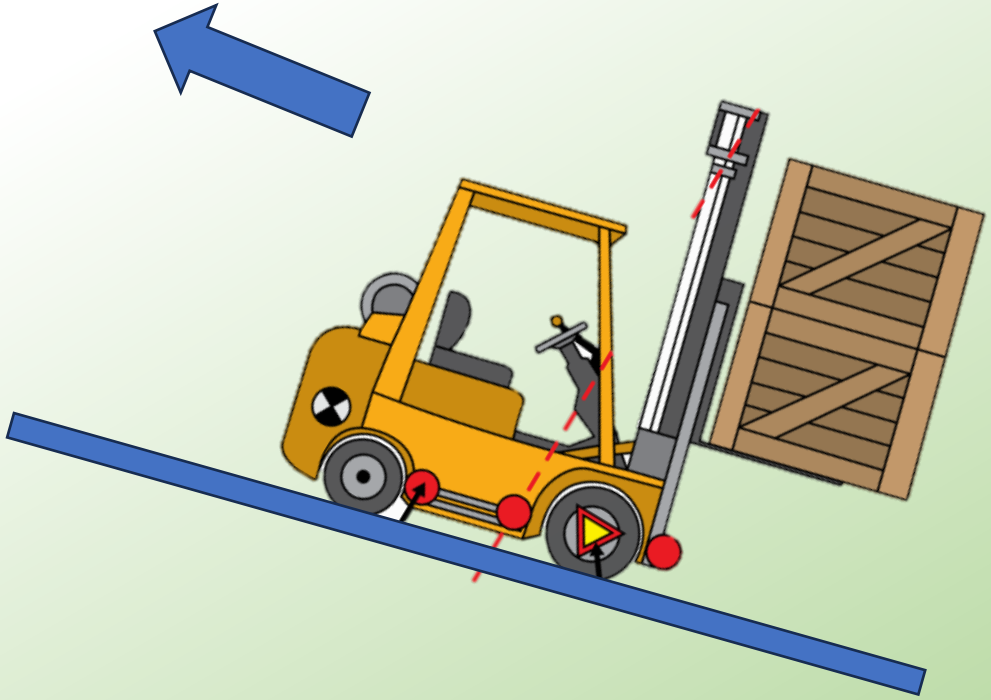

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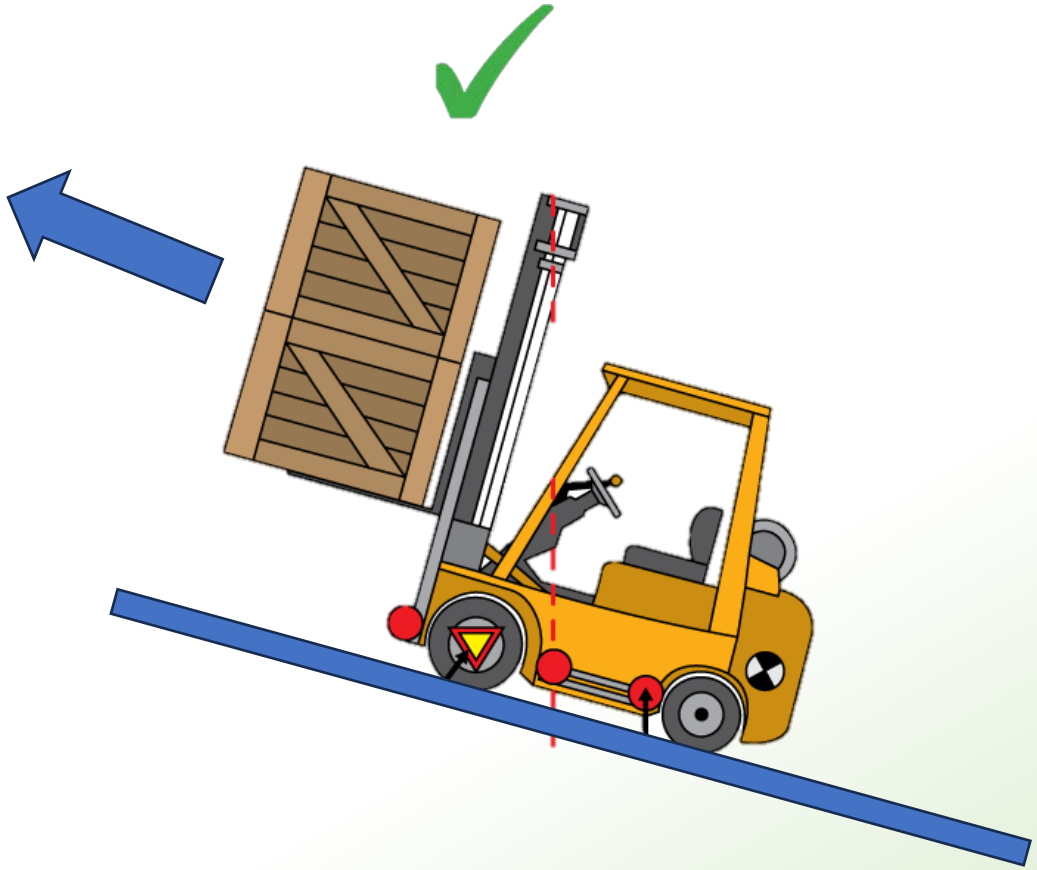
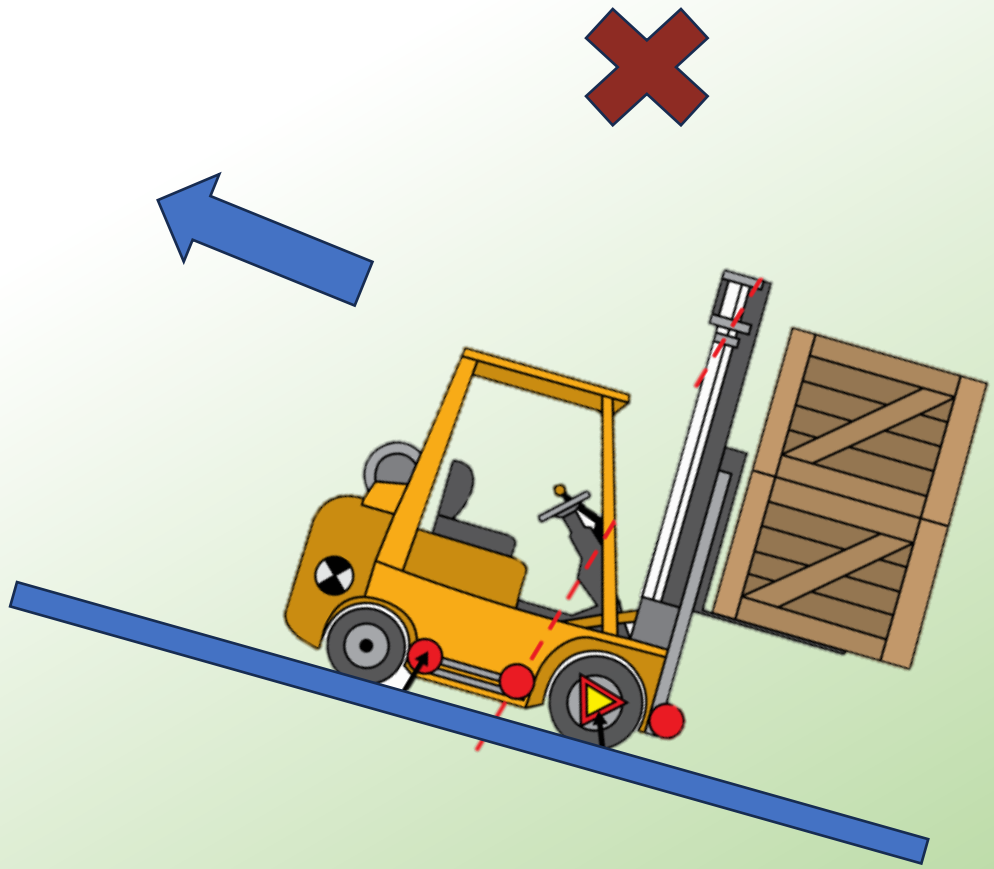
The correct method when climbing up with the load





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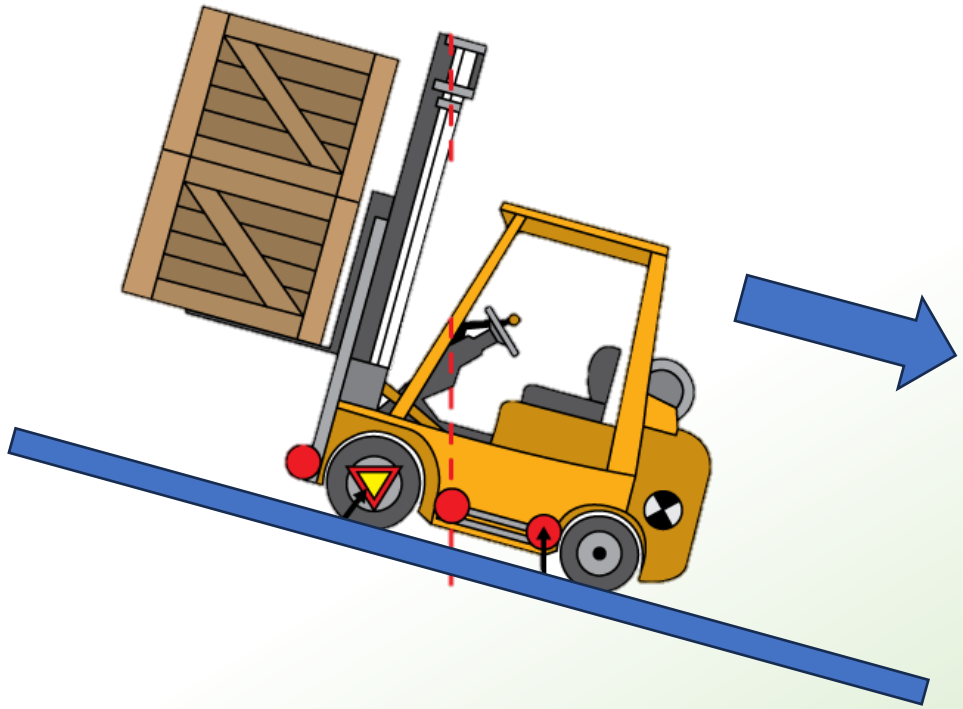
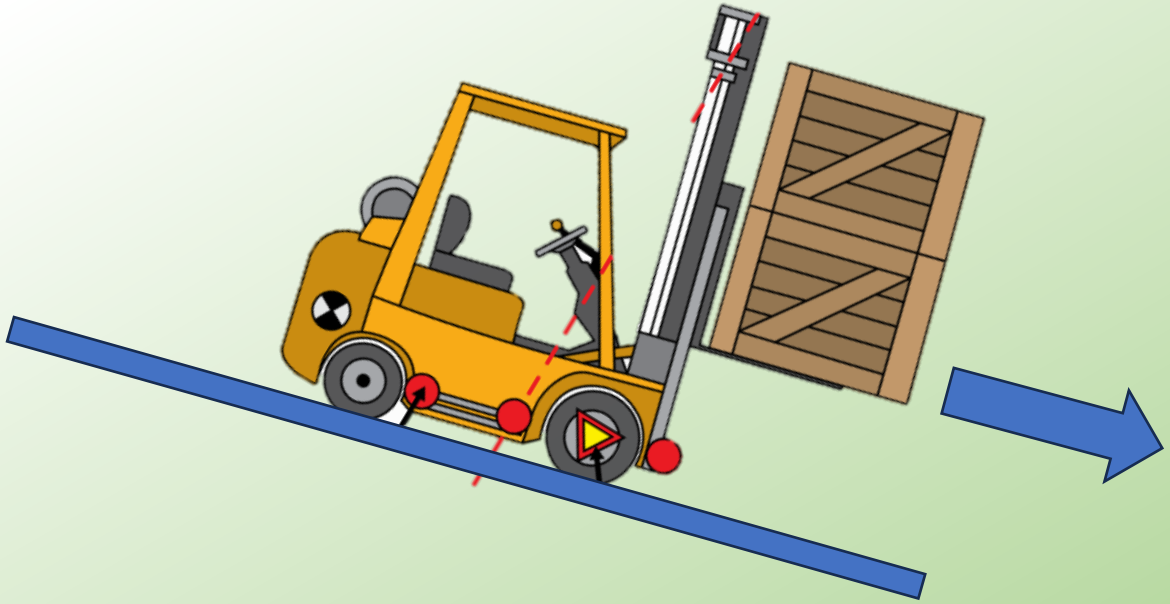
What is the correct method when going down with a load?





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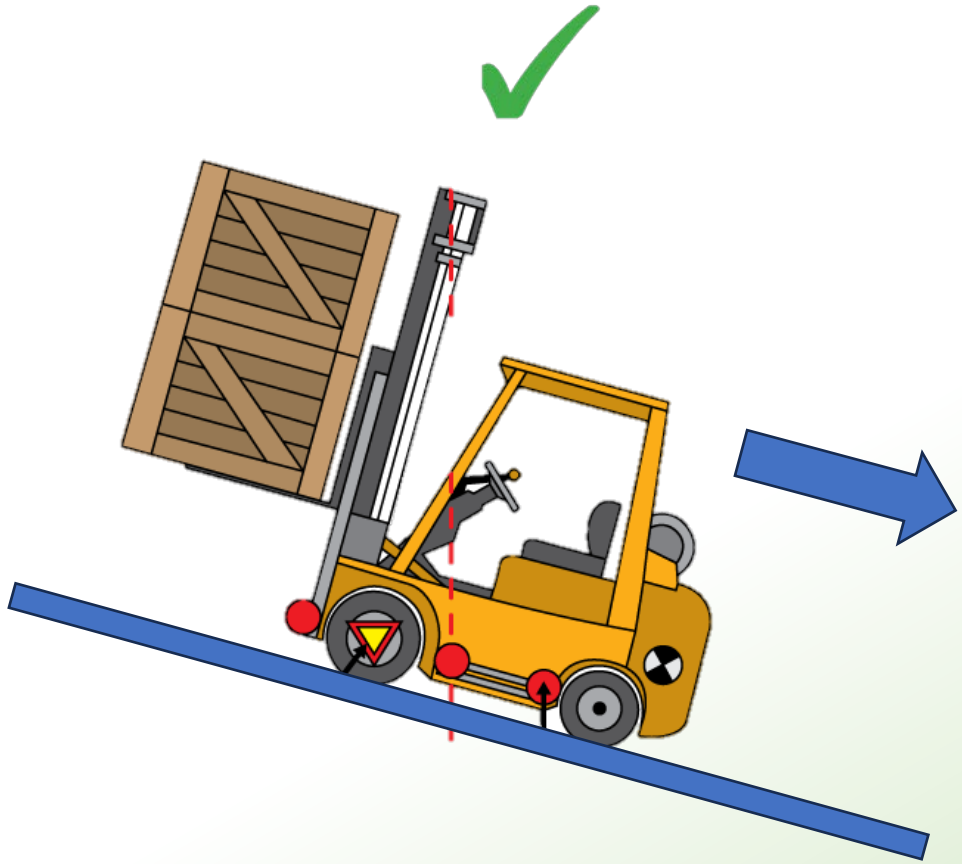
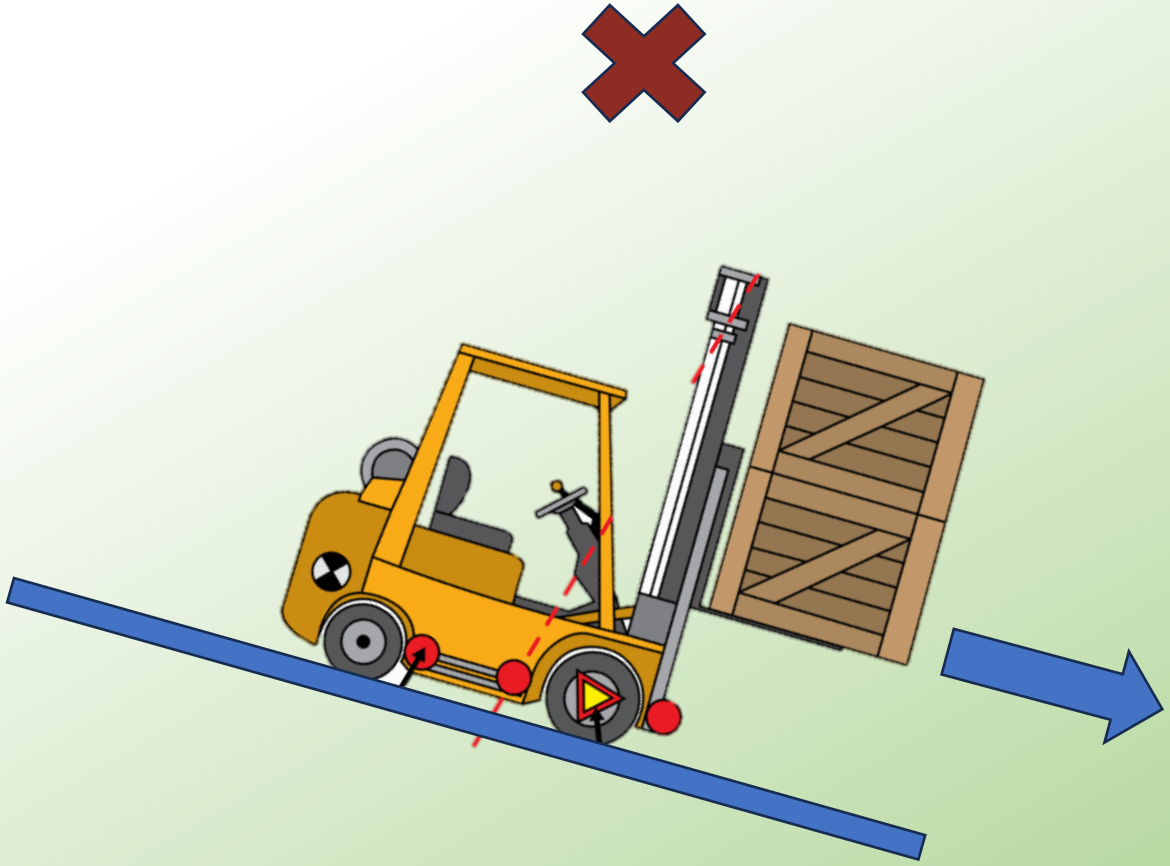
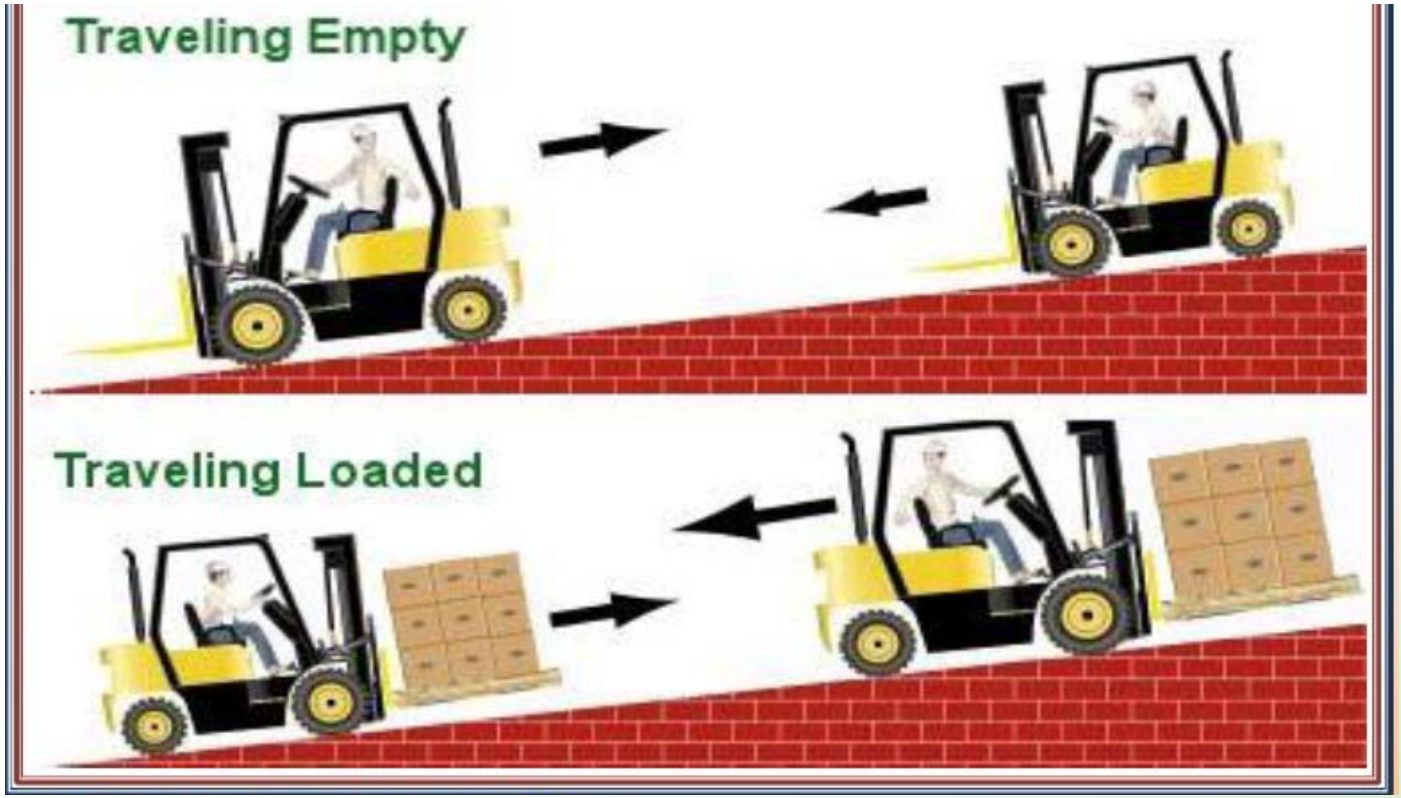
The correct method when descending with the load





Secure forklift operation



Rules for Operating Forklifts on Sloping Roads/Ramps

Always keep the heavy side of the forklift on the high side.

If the forklift is loaded (front side is heavy)

If you want to go up the ramp, you have to drive forward.

When coming down the ramp, drive backwards, that is, the load will always be on the higher side.

If the forklift is not loaded (the rear side is heavy)

If you want to go down the ramp, you have to drive forward.

To get up the ramp, you have to drive backwards.

Safety Rules

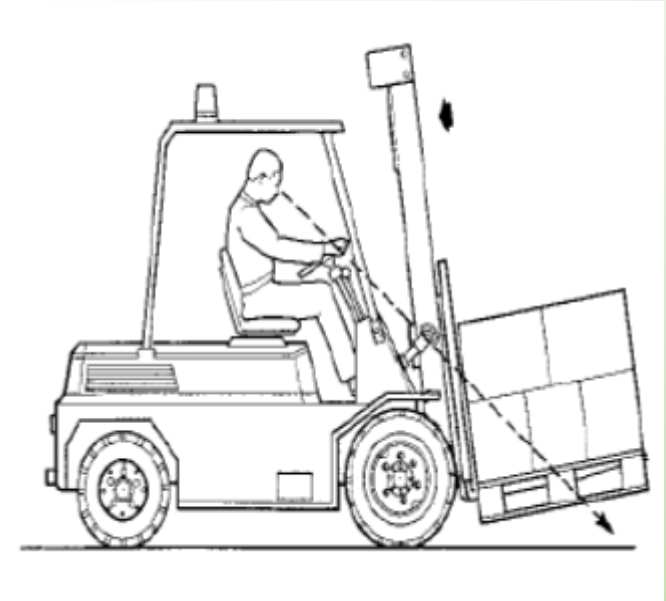
- Always wear a seatbelt.
- Never jump off a moving forklift.
- Do not carry passengers in any way.
- Be alert for pedestrians, signal and give way.
- Keep the fork 4-6 inches (10-15 cm) above the ground when running.
- Do not lift any object by tying ropes, cables or chains under the fork.
- Set the fork as wide as possible to carry the load and lock it properly.
- Do not add any extra weight even for a short period of time. Be sure of the weight of the load.

Safety Rules

- Drive the load slightly backwards for stability
- If the load is not visible over the front, run in reverse
- Drive the load about 6 inches above the ground
- Pedestrians always have priority (right of way)
- Remember, the driving wheel is your pivot point
- Comply with traffic rules and local regulations
- Always slow down when making turns

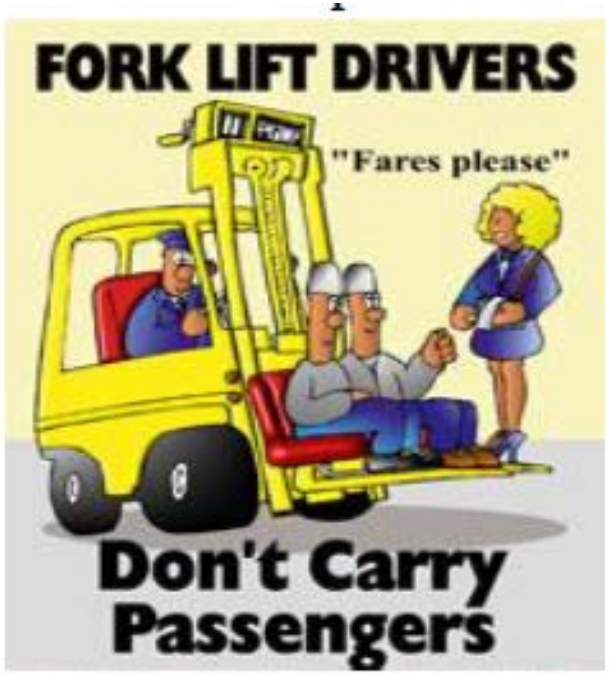
Safety Rules

- Tilt the mast slightly backwards before travelling.
- Do not carry loads more than the forklift's designated capacity, not even for a few pounds.
- Do not lift unstable or unbalanced loads.
- Never lift a person without a secure platform.



At normal speeds, the forklift will have a maximum speed of 8 mph (12.8 km/h), but a maximum speed of 3 mph (4.83 km/h) in high-speed areas.

Safety Rules



Thank you for your attention
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support