Learner Guide

Forklift Licence Course

TLILIC0003 Licence to Operate a Forklift Truck

Learner Guide

National Courses PTY LTD

1.1 Introduction

This training course is based on the National High Risk Licence Unit of Competence **TLILIC0003 Licence to Operate a Forklift Truck**.

You will learn about:

- Planning out your work.
- Carrying out routine checks on the forklift before you use it.
- Shifting loads safely with a forklift.
- Shutting down the forklift when you have finished.

1.1.1 What is a Forklift?

A forklift is a powered industrial truck equipped with a mast and an elevating load carriage with a pair of fork arms or another load handling attachment.

This can also include trucks where the operator is raised with the attachment for order picking.

1.1.2 Parts of a Forklift

1.1.3 High Risk Work Licence Requirements

Any licensed worker must take reasonable steps to make sure the way they work does not impact on the safety of themselves or any other worker. This is their legal duty of care.

Your duty of care requires the following:

- To take reasonable care of your own safety and the safety of others.
- To cooperate with your employer in any way that ensures the health and safety of the workplace.
- To avoid taking unnecessary risks, acting dangerously or using workplace equipment in unsafe ways, or ways it is not designed to be used.

Failing to work safely can result in the health and safety regulator:

- Suspending or cancelling your licence.
- Refusing to renew your licence.
- Ordering that you are reassessed to ensure you are competent.
- Taking legal action to prosecute you.

1.2 Plan Work in Accordance with Safety Information

It is important that you understand all of the health and safety rules relevant to your job.

As a forklift operator you are responsible for planning and carrying out high risk work. This work must be done in accordance with a range of safety requirements including:

- Work Health and Safety requirements.
- Duty of care.

1.2.1 Work Health & Safety Requirements

Work Health & Safety (WHS) laws and guidelines help keep your workplace safe.
These can be broken down into four main types:

Acts	Laws to protect the health, safety and welfare of people at work.
Regulations	Gives more details or information on particular parts of the Act.
Codes of Practice	Are practical instructions on how to meet the terms of the Law.
Australian Standards	Give you the minimum levels of performance or quality for a hazard, work process or product.

1.2.2 Duty of Care

Everybody in the workplace has a responsibility to keep themselves and others as safe as possible while they are at work. This is called a 'Duty of Care'.

Any licence holder needs to make sure they take care of their own health and safety and make sure that they don't put others in any danger.

The following people have a duty of care in the workplace:

- Employers and self-employed persons.
- Any person in control of the workplace.
- Supervisors.
- Designers.
- Manufacturers.
- Suppliers.
- Workers.
- Inspectors.

Your employer must take steps to ensure that the workplace is as safe as possible for you and other workers. In order to do this they can:

- Provide a safe workplace with minimal risks.
- Provide and maintain safe plant, equipment and structures.
- Provide and maintain safe systems/procedures for work.
- Provide facilities that are adequate for the personnel on site.
- Provide instruction, training, supervision and information for any work to be undertaken safely, **including any time you are required to use an unfamiliar or new forklift**.
- Take action to ensure all equipment, plant & substances used on site is handled and stored in a safe way.

1.2.3 Work Instructions and Procedures

All work needs to follow worksite and company safety procedures.

Procedures help to make sure that all work is done in a safe way, without damaging equipment or putting people in unsafe situations. They also help to make sure that work is done in the correct order and doesn't interrupt or get in the way of other work that is happening on the site.

Your work instructions will tell you the safest way to do the job, and the equipment that you will need to use. It is a good idea to check your work instructions with your boss or supervisor to make sure you know exactly what you need to do.

Forklift instructions can include:

- Manufacturer's guidelines (instructions, specifications, checklists).
- Industry operating procedures.
- Workplace procedures (work instructions, operating procedures, management plans, safety policies, checklists).

If you don't know where to get your instructions or you can't understand them, you can ask your boss or supervisor. They will tell you where to find your work instructions and explain what they mean.

You can also speak with your WHS workplace representative for more information about workplace safety.

Please complete section 1 review questions 1 and 2.

1.3 Manage Hazards and Risks

Before starting any work it is important to manage any hazards or risks in the area, or related to the work.

A **Hazard** is a thing or situation with the potential to cause harm or damage.

A **Risk** is the chance of a hazard causing harm or damage.

By lowering or removing risks we can make hazards less dangerous.

1.3.1 Consulting with Other Workers about Hazards and Risks

Controlling a hazard can be a team effort and it's important that everybody knows what they need to do and how or if they need to change their work process to suit.

Make sure you talk to the right people. This can include:

- Safety officers.
- Site engineers (where applicable).
- Supervisors.
- Colleagues.
- Managers who are authorised to take responsibility for the workplace or operations.
- Health and Safety Representatives.
- Work Health and Safety Committee members.

These people may have information about site hazards and hazard controls that can/should be implemented to manage the risks.

It is important to communicate with other personnel and safety officers before starting on a worksite to ensure that any workplace policies or site-specific procedures are followed.

1.3.2 Identify Hazards

Part of your job is to look around to see if you can find any hazards before you start any work.

Before you get started it's a good idea to check the path that you're planning to take with the forklift, to make sure that you have identified all hazards in the path of movement and put effective control measures in place. This will help to make the workplace safer.

Check that the forklift will fit and that there are no obstacles in the way. Also check for any other equipment or people working in the area.

Checking the weather forecast can help you to prepare for each day and allows you to schedule your work activities, prepare risk controls associated with bad weather and plan out movements around the work environment.

When you start checking for hazards, make sure you look everywhere. A good way to do this is to check:

- **Up high** above your head.

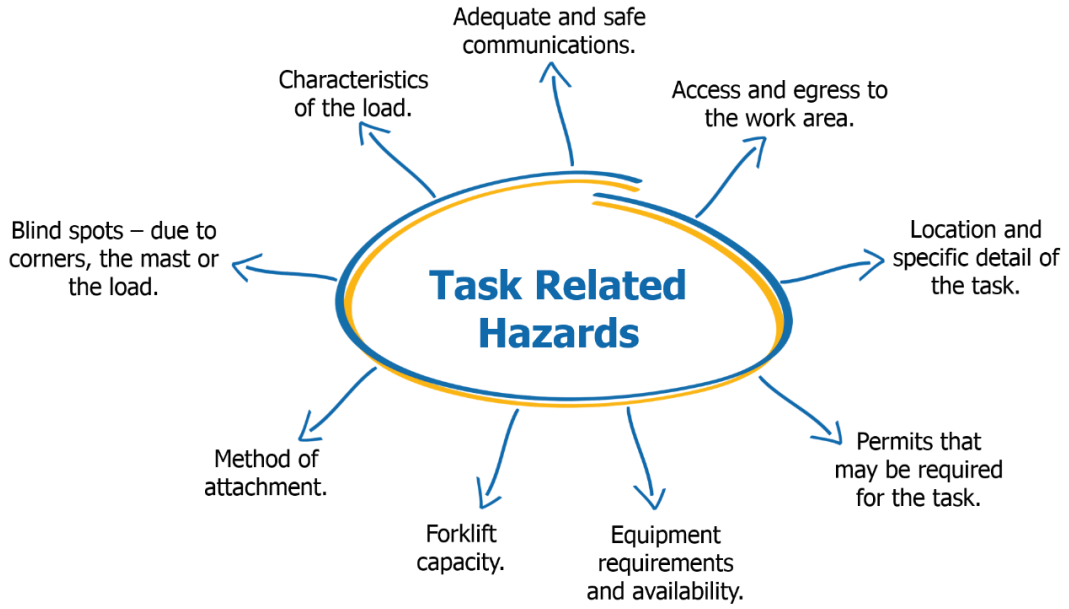
- All around you **at eye level**.
- **Down low** on the ground (also think about what is under the ground).

Some hazards you should check for in the work area:

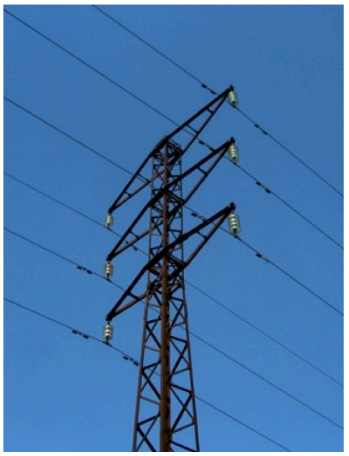
- **Ground conditions:**
  - Condition of pavement.
  - Slopes, ramps and inclines.
  - Underground services.
  - Non-weight bearing surfaces.
- **Overhead hazards:**
  - Power lines.
  - Overhead service lines.
  - Bridges.
- **Poor lighting.**
- **Surrounding structures:**
  - Buildings.
  - Obstructions.
- **Traffic:**
  - Pedestrians.
  - Vehicles.
  - Other plant.
- **Weather:**
  - Strong winds.
  - Lightning.
  - Rain.
  - Snow or ice.
  - Heat and sun exposure.
  - Smoke, fog or limited visibility.
- **Other hazards** (e.g. dangerous materials).

1.3.2.1 Task-Related Hazards

Some hazards may be caused by the way the work is done. You should think about task hazards including:



1.3.2.2 Working Near Power Lines



Working near power lines can be dangerous if you are not careful.

It is very important that you know the safe operating distances for different types of power lines and the steps you must take if your job needs you to work closer than the safe distances.

Generally, if you need to work closer than the safe work distance you must:

- Contact the local electrical authority for permission to work closer (this is called an exemption).
- Have the power lines shut off. If this is not possible then have the power lines insulated.
- Use a spotter (depending on local laws and rules).

Distances are different depending on the state or territory you are working in and the voltage of the power lines. You should check with the local electrical authority for information and advice to find out the voltage of power lines in your work area.

Queensland

The Queensland Electrical Safety Regulation breaks down the distances in detail. Exclusion zones are broken down not only by size of electric/power line but also by the competency level of the operator. This means that the requirements should be clarified with the electrical authority before work commences even if the distance appears to be outside the zones.

The following minimum distances are provided as guidance:

Electric/Power Line Type	Distance
Up to 132kV	3.0m
132kV up to 330kV	6.0m
330kV and above	8.0m

New South Wales

In New South Wales, for anyone who is not accredited, equipment operation may not be any closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Up to and including 132kV	3.0m
Above 132kV up to and including 330kV	6.0m
Above 330kV	8.0m

To work closer than these distances requires authority from the relevant electrical authority and adherence to cl.64(2)(e) of the regulations.

Australian Capital Territory

In the ACT mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Electric/Power Line Type	Distance
Less than 33kv	4.0m
33kV or more (transmission lines)	5.0m

Victoria

In Victoria the Framework for Undertaking Work Near Overhead and Underground Assets states that equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Distribution lines up to and including 66kV (power poles)	6.4m (or 3.0m with a qualified spotter)
Transmission lines greater than 66kV (towers)	10m (or 8m with a qualified spotter)

Tasmania

In Tasmania equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Up to and including 133kV (poles)	6.4m (or 3m with a safety observer)
Greater than 133kV (towers)	10m (or 8m with a safety observer)

South Australia

In South Australia mobile plant operators and persons erecting or working from scaffolding must maintain a safe minimum distance to power lines as outlined in the table below:

Electric/Power Line Type	Distance
Up to 132kv (including 132kv poles)	6.4m (or 3.0m with a spotter)
132kv or more (including 132kv towers)	10.0m (or 8.0m with a spotter)

Western Australia

In Western Australia this falls under Regulation 3.64 from the OSH Regulations and states the following as the minimum distances:

Electric/Power Line Type	Distance
Up to 1kV (insulated)	0.5m
Up to 1kV (uninsulated)	1.0m
Above 1kV and up to 33kV	3.0m
Above 33kV	6.0m

Northern Territory

In the Northern Territory equipment must not be closer than the following distances to electric/power lines:

Electric/Power Line Type	Distance
Up to and including 132kV (distribution lines)	6.4m (or 3m with a spotter)

Electric/Power Line Type	Distance
Greater than 132kV (transmission lines)	10m (or 8m with a spotter)

1.3.2.3 Power Line Visual Indicators

There are a range of different indicators in use across the country to identify the position of overhead power lines.

Important: Visual indicators **DO NOT** insulate the power lines so exclusion zones and safe operating distances must still be used, even when any of these systems are in use.

Tiger Tails and Coloured Markers

Tiger tails or coloured markers are used to clearly show the location of overhead power lines. Poles may also be coloured up to 3m from the ground.

Marker Balls or Flags

Marker balls are fixed to the power line and are often red or another bright colour.

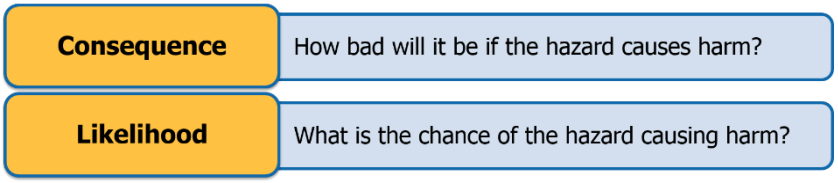
Safety, Warning and Danger Signs

Signage may also be present to warn of overhead power lines and services.

1.3.3 Assess Risks

Once you have identified the hazards on site or related to the work you will be doing you need to assess their risk level.

Risk levels are worked out by looking at 2 factors:



You can use a table like the one shown here to work out the risk level:

Likelihood	Consequence				
	1. Insignificant	**2. Minor** First Aid Required	**3. Moderate** Medical Attention and Time Off Work	**4. Major** Long Term Illness or Serious Injury	**5. Catastrophic** Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	Extreme	Extreme

For example, a hazard that has a **Major** consequence and is **Almost Certain** to occur has a risk level of **Extreme**.

Likelihood	Consequence				
	1. Insignificant	**2. Minor** First Aid Required	**3. Moderate** Medical Attention and Time Off Work	**4. Major** Long Term Illness or Serious Injury	**5. Catastrophic** Kill or Cause Permanent Disability or Illness
1. Rare	Low	Low	Moderate	Moderate	Moderate
2. Unlikely	Low	Low	Moderate	Moderate	High
3. Possible	Low	Moderate	High	High	Extreme
4. Likely	Moderate	Moderate	High	High	Extreme
5. Almost Certain	Moderate	High	High	**Extreme**	Extreme

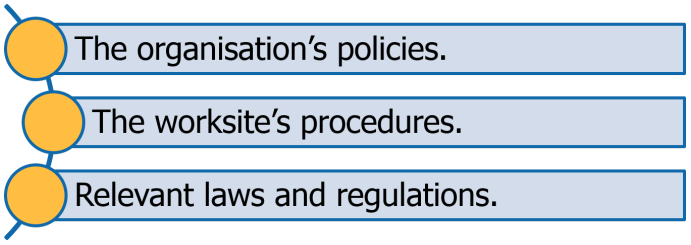
The risk level will help you to work out what kind of action needs to be taken, and how soon you need to act.

The table below is an example of a site risk policy:

Risk Level	Action
Extreme	**This is an unacceptable risk level** The task, process or activity must not proceed.

High	**This is an unacceptable risk level** The proposed activity can only proceed, provided that: 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk controls must include those identified in legislation, Australian Standards, Codes of Practice etc. 3. The risk assessment has been reviewed and approved by the Supervisor. 4. A Safe Working Procedure or Work Method Statement has been prepared. The supervisor must review and document the effectiveness of the implemented risk controls.
Moderate	**This is an unacceptable risk level** The proposed activity can only proceed, provided that: 1. The risk level has been reduced to as low as reasonably practicable using the hierarchy of risk controls. 2. The risk assessment has been reviewed and approved by the Supervisor. 3. A Safe Working Procedure or Work Method Statement has been prepared.
Low	The proposed task or process needs to be managed by documented routine procedures, which must include application of the hierarchy of controls.

The action you take will depend on:



1.3.4 Control Hazards to Reduce Risks

The best way to control hazards is to use the Hierarchy of Hazard Control. The hierarchy of hazard control is a range of options that can eliminate, or reduce the risk level.

You start at the top of the list and see if you can take away (eliminate) the hazard or danger.

If you can't take it away you move down the list to see if you can swap it for something safer (substitution).

Keep working through the list until you find something (or a combination of things) that controls that hazard or danger.

This table shows you the 6 different types of controls in order from best to worst:

Hierarchy Level	Action
1. Elimination	Completely remove the hazard. This is the best kind of hazard control.
2. Substitution	Swap a dangerous work method or situation for one that is less dangerous.
3. Isolation	Isolate or restrict access to the hazard. Includes using signage and barricades.
4. Engineering Controls	Use equipment to lower the risk level.
5. Administrative Controls	Site rules and policies attempt to control a hazard.
6. Personal Protective Equipment	The least effective control. Use PPE while you carry out your work.

It is important to think about all of the options available when deciding on the best hazard controls. You may need to use more than 1 control measure to bring the risk level down to an acceptable level.

1.3.4.1 Apply Hazard Control Measures

Control measures need to be implemented before you start work, or as soon as a hazard is identified during the work.

Talk to the other workers in the area to make sure they are aware of the work you are doing, and the control measures you have put in place.

Control measures could include:

- Disconnecting power when working near power lines or overhead services.
- Putting safety tags on electrical switches or isolators to stop somebody from turning the power back on while you are working on or near power lines.
- Insulating power lines.
- Using a safety observer (also known as a spotter) inside the exclusion zone to make sure you don't get too close to power lines.
- Setting up barricades and traffic control to keep the area clear.
- Placing pedestrian controls (barricades, signs, etc.) to limit the number of people in the area.
- Moving any obstructions out of the way.

- Wearing PPE such as high-visibility clothing and non-slip work boots.
- Setting up additional lighting in the work area.
- Put excavation safeguards in place (if applicable).

Check the situation after you have applied a control measure to see if more controls, or different controls are needed to make the job safe. If more controls are needed, make sure they are applied before you start or continue the work.

1.3.4.2 Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) is clothing and equipment designed to lower the chance of you being hurt on the job. It is required to enter most work sites.

You should select and inspect your PPE before you start work.

PPE includes:

- **Head protection** – hard hats and helmets.
- **Foot protection** – non-slip work boots.
- **Hand protection** – gloves.
- **Eye protection** – goggles, visors or glasses.
- **Ear protection** – plugs or muffs.
- **Breathing protection** – masks or respirators.
- **Hi-visibility clothing** – clothing that makes you stand out and lets other people know where you are.
- **Weather protection** – clothing that protects you from the sun or from the cold.

Make sure any PPE you are wearing is in good condition, fits well and is right for the job.

If you find any PPE that is not in good condition, tag it and remove it from service. Then tell your supervisor about the problem and they will organise to repair or replace the PPE.

1.3.4.3 Control Strategies for Traffic

If the work area is going to be shared with pedestrians, site personnel, vehicles or mobile plant, you will need to make sure you have control measures in place before you start.

These may include:

- Using a flag person or traffic controller to control traffic.
- Setting up flashing hazard lights.
- Setting up warning signs and barriers.
- Setting up pedestrian and vehicle exclusion zones.
- Using a Traffic Management Plan.

All forklifts should be fitted with flashing amber safety lights and

horns.
Barriers with safety signs, or a traffic controller, should always be in place when the forklift is being operated over a roadway, footpath or public access area.

NEVER lift loads over people's heads. There is a risk of injury or death if the load or part of the load falls from the forklift truck.

NEVER let people ride or be lifted on the forks or a pallet! Passengers may only be carried on the forklift if it has been designed to carry more than one person.

1.3.4.4 Control Strategies for Operating at Night or in Dark Areas

If you are using the forklift at night or in dark areas, additional lighting needs to be used across the entire work area.

This is to make sure you and other workers can see properly and work safely.

1.3.5 Report All Actions

It is important that you report the details of all identified hazards and all action taken to your supervisor.

Complete any forms required by site policies and procedures.

Speak with anybody who is affected by the actions you have taken to make sure they are aware of them, and know if they need to do anything differently.

Please complete section 1 review questions 3 to 7.

1.4 Types of Forklift Trucks

Choosing the right equipment for the job is very important.

Before starting work you need to think about:

- The ground conditions.
- Ventilation in the work area.
- How much room you have to work in.
- The type of load.

These factors will affect your choice of forklift and attachments.

There are a few kinds of forklift trucks that you might use. These include:

DO NOT use an internal combustion (petrol, gas or diesel) forklift in a confined space (e.g. container or cool room).

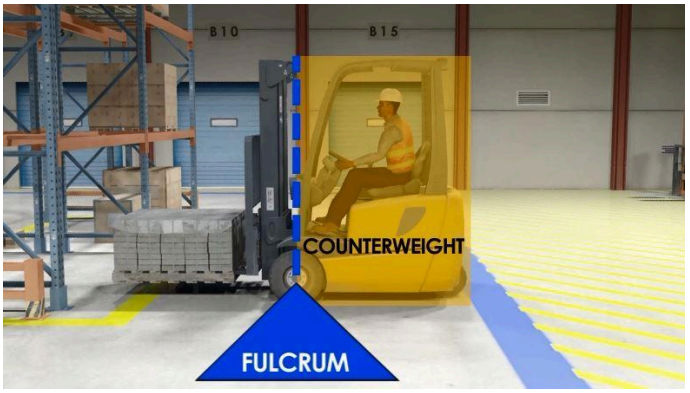
The fumes could kill! Use an electric forklift instead.

1.4.1 Counterbalanced Forklifts

Counterbalanced forklifts use the entire weight of the forklift (behind the point of balance) as a counterweight to the weight of the load.

By using the entire weight of the forklift, a load can be lifted safely without tipping the forklift forwards.

The point of balance (fulcrum) is usually where the front tyre touches the ground. Everything behind this point is used to counter the weight of the load that is being lifted.

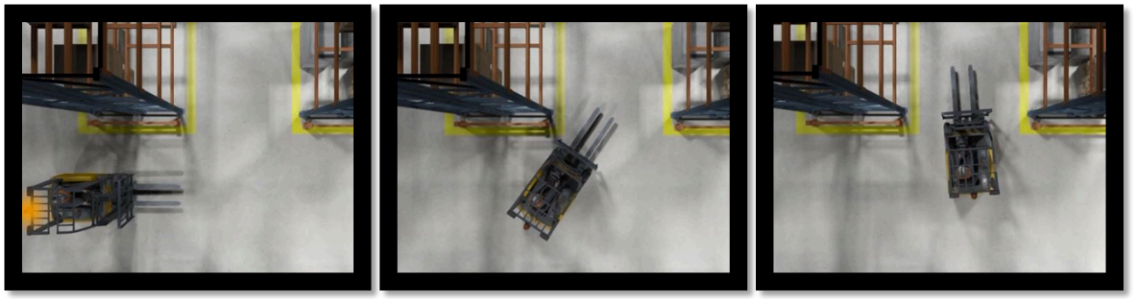


Never add extra counterweights to the forklift truck without checking the manufacturer's instructions first.

1.4.2 Rear End Swing

Rear end swing is the fast sideways movement of the back of the forklift. This creates a hazard so you might need to set up barriers to stop people and plant getting too close to where you are using the forklift.

Forklifts steer with the back wheels so the rear of the forklift turns up to three and a half times faster than the speed of travel. With the rear end steering, operators need to keep to the inside of every turn to allow enough room for the back of the forklift to swing around.



1.4.3 Forklift Stability & Centre of Gravity

Some factors that affect the stability or the forklift are:

- Centre of gravity moving outside of the Stability Triangle.
- Load centre distance.
- Forklift rated capacity.

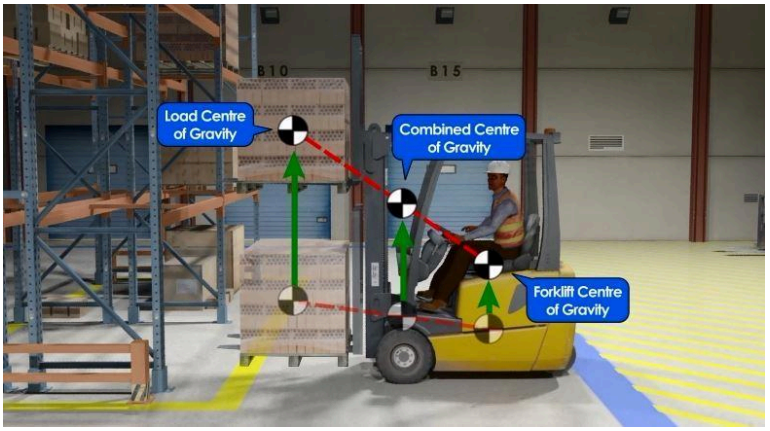
1.4.3.1 Centre of Gravity

The centre of gravity (CG) of any object is the single point where the object is balanced in all directions.

Every object has a centre of gravity. The forklift truck has moving parts which means it has a CG that moves.

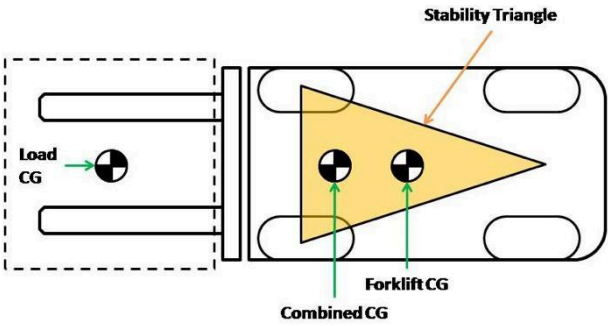
The CG moves forward and back as the mast is tilted forward and back. The CG moves up and down as the forks move up and down.

When you pick up a load, the forklift and load have a new combined CG. The stability of the forklift depends on the location of its CG, or if the truck is loaded, the combined CG.

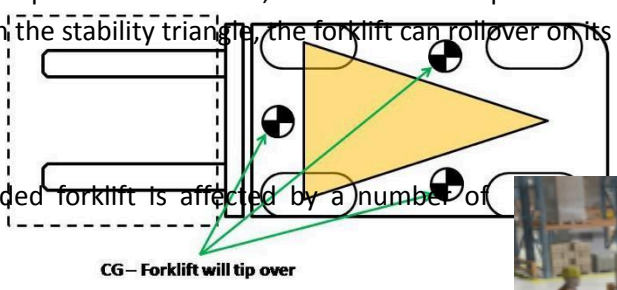


1.4.3.2 Stability Triangle

For the forklift truck to be stable, the CG must stay within an area called the 'stability triangle'. This triangle sits between the drive wheels and the centre of the rear axle.



If the CG moves forward past the drive axle, the forklift can tip forward (longitudinal). If the CG moves out sideways from the stability triangle, the forklift can rollover on its side (lateral).



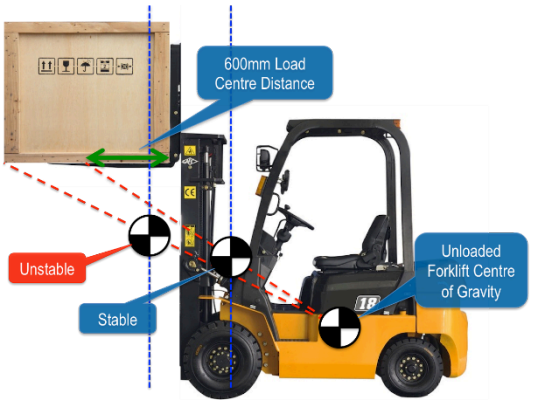
The stability of the loaded forklift is affected by a number of factors including:

- Load size.
- Load weight.
- Load shape.
- Load position.
- Height to which the load is lifted.
- The amount of forward or backward tilt.
- Tyre pressure.
- Speed and momentum created when the forklift is moving, turning or coming to a stop.
- Uneven surfaces and inclines.

You need to be aware of these factors when travelling with an unloaded forklift as well, because an unloaded truck will tip over to the side more easily than a loaded truck with its load in the lowered position.

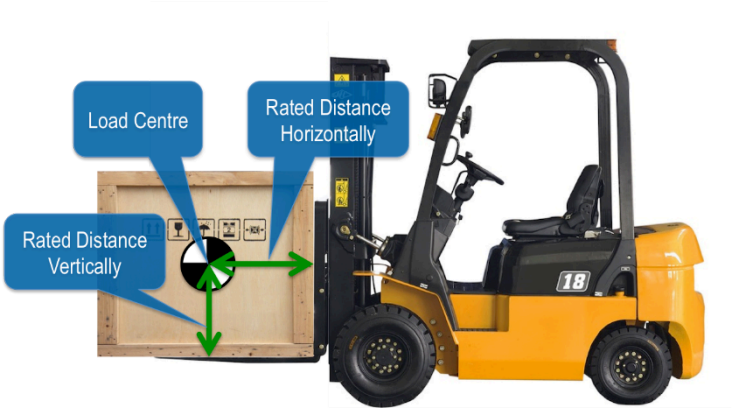
The centre of gravity of the forklift can move outside the stability triangle if:

- Forklift movement causes the centre of gravity to shift.
- The load is picked up on the tip of the forks.
- The load is tilted forward.
- The load is tilted too far back when raised.
- The load is wide.



1.4.3.3 Load Centre Distance

The distance from the front face of the forks (or the load face of an attachment) to the centre of gravity of the load and from the top face of the fork blades vertically upwards is called the Load Centre Distance.



As load centre distance increases, the forklift's capacity decreases. The use of special attachments instead of forks will also increase the load centre and decrease the regular capacity of the forklift truck.

If the load is not right up against the heel of the fork arms, the forklift truck's capacity is reduced and

stability may also be affected.

The most common load centre distance is 600mm

The forklift trucks shown here are rated at 4200kg at 600mm load centre:

Of these forklifts, only forklift B has a load that is within the rated capacity of the forklift.

- The load centre distance for forklift B is 500mm (within the 600mm limit for 4200kg).
- Forklifts A and C have a load centre distance of 700mm and 650mm (both beyond the 600mm limit).

1.4.3.4 Forklift Rated Capacity

The **rated capacity** is the maximum load a forklift can handle in a specific configuration (load height, mast tilt) based on load weight, height and load centre distance.

Shown here is an example of a forklift load chart or data plate:

FORKLIFT LOAD CHART (example only)				
MODEL	**SERIAL NO.**	**MAX HEIGHT**	**MAX BACK TILT**	**WARNING** 1) DO NOT LIFT LOAD UNLESS PLACED EVENLY ON FORKS. 2) DO NOT TRANSPORT OR MANOEUVRE WITH LOAD RAISED EXCEPT TO CLEAR OBSTRUCTION AND THEN ONLY WITH MAST TILTED BACK TOWARD DRIVER.
XTQ300a	ACLF-011	3855mm	10 DEGREES	

MAST VERTICAL						MAST FORWARD TILT 10 DEGREES				
	LENGTH mm	FORK HEIGHT mm	LOAD CENTRE mm	WORKING LOAD LIMIT kg			LENGTH mm	FORK HEIGHT mm	LOAD CENTRE mm	WORKING LOAD LIMIT kg
Forks	1065	3855	800	2010		**Forks**	1065	3855	800	1755

By reading the chart we can see that the maximum working load limit (WLL) of the forklift when using forks with the mast tilted **forward is 1755kg**.

We can also see that the maximum WLL the forklift can lift with a load centre distance of 800mm and the mast in a **vertical position**, with forks is **2010kg**.

The same weight load with a load centre distance of 900mm **could not** be lifted by this forklift.

But a heavier load with a smaller load centre distance for example 700mm might be safely lifted if the data plate has working load limits for different load centres.

1.4.4 Forklift Attachments

There are different attachments that can be used on forklifts including:

Rotating Attachment

Drum Clamp

Carpet Spike

Jib Attachment

Paper Roll Clamp

Work Platform or Work Basket

Fork Extensions

Bale Clamp

Before using any attachment on the forklift check the manufacturer's specifications and load chart to make sure that the attachment can be used safely. Also make sure the attachment is secured properly before trying to lift a load with it. The manufacturer's instructions will contain this information.

If you have never used the attachment before, read the manufacturer's instructions and ask somebody to show you how to use it.

Please complete section 1 review questions 8 to 14.

1.5 Workplace Communications

All workers on site must understand their own role and the roles of others before starting work. It helps to make sure work is done safely and efficiently.

It is important to coordinate your activities with other workers when you are planning and carrying out the work to make sure everyone knows:

- The work being completed.
- How, when and where you will be operating.
- What they need to do.

As a forklift driver you need to be able to communicate with the people around you while you work, and you need to be able to understand the instructions to use the forklift safely.

Workplace communication methods may be:

- Verbal (spoken) and non-verbal instructions.
- Written instructions.
- Signs and symbols.
- Hand signals.
- Listening carefully and asking questions to check understanding, and appropriate worksite protocols (rules).
- Maintaining eye contact.
- Using two-way radios.

Warning devices fitted to the forklift will also warn others that you are nearby.

Please complete section 1 review question 15.

2.1 Pre-Start Checks

Before you use the forklift you need to check that it is safe to use.

Check for any previous faults with the forklift in the logbook. Make sure these faults have been fixed before using the forklift.

Always use a forklift inspection checklist to make sure you check everything properly and so that you can report any problems that you find.

An example of a daily inspection checklist can be found in Appendix A.

2.1.1 Visual Checks

Walk around the forklift and check to see if there is any visible damage.

You need to check:

- The condition of the forks or attachment.
- Under the forklift for oil leaks.
- The condition of the mast and of the hydraulic rams and hoses.
- The condition and security of the load backrest (load guard). This is important because the load guard stops the load from catching on the mast and also stops the load from falling on the operator.
- For visual evidence of structural weaknesses (including paint separation or stressed welds).

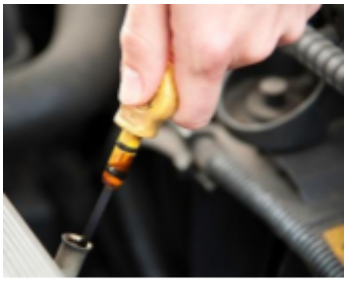
2.1.2 Decals and Signage

Check that the forklift has the right signage and labels. This includes the data plate. Make sure you can read it clearly and that it is firmly attached to the forklift.

DO NOT use a forklift without a data or load plate!

If the forklift does not have a data/load plate, or you cannot read it, you must tag out the forklift and report the defect to an authorised person.

2.1.3 Engine Checks



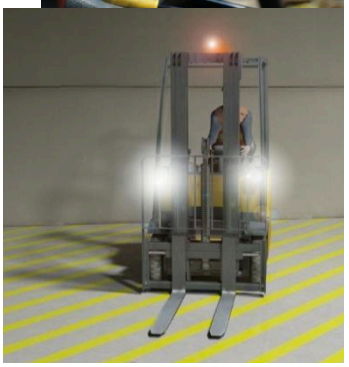
Check the following:

- Hydraulic oil.
- Engine oil.

- Transmission oil.
- Brake fluid.
- Cooling water.
- Fuel.
- Battery.

If you need to refuel the forklift, make sure the engine is switched off. Re-fuelling while the engine is running may cause the fuel or vapour to ignite (catch on fire).

2.1.4 Forklift Controls



Check that you can find and identify the forklift controls. Check the operator's manual if you are unsure.

Controls include:

- Controls for lights and horn.
- Controls for all mast, fork and attachment movements.
- Steering.
- Brakes.

2.1.5 Safety Devices

Check that the forklift has safety devices fitted, including:

- Lights:
  - Flashing amber light.
  - Head lights.
  - Brake lights.
  - Reverse lights.
- Guards:
  - Overhead guard – protects you from falling objects.
  - Load backrest – stops the load from hitting the mast and protects you.
  - Foot guard – protects your feet.

2.1.6 Tyres

Check that the pressure of air-filled tyres is correct. This will help to maintain stability for the forklift.

If the forklift is fitted with solid rubber tyres, check that there are no large pieces of rubber missing, make sure that any wear is even between the tyres and make sure that the wear has not reached the wear limit line.

You also need to make sure that each wheel is properly secured to the forklift.

2.1.7 Check Attachments

luding the forks) are securely fixed.

Check that modifications are approved and that attachments are fitted to the manufacturer's specifications.

Do not use any forklift that has been modified beyond the manufacturer's recommendations.

Please complete section 2 review questions 1 to 5.

2.2 Start the Forklift

Once you have visually checked the forklift, start it as per the manufacturer's guidelines.

Remember: Always use 3 points of contact when getting in and out of the forklift.

Always wear your seatbelt whenever you operate the forklift. It will stop you falling out if the forklift tips over and prevents you from being propelled into the forklift structure or out of the forklift in the event of a collision.

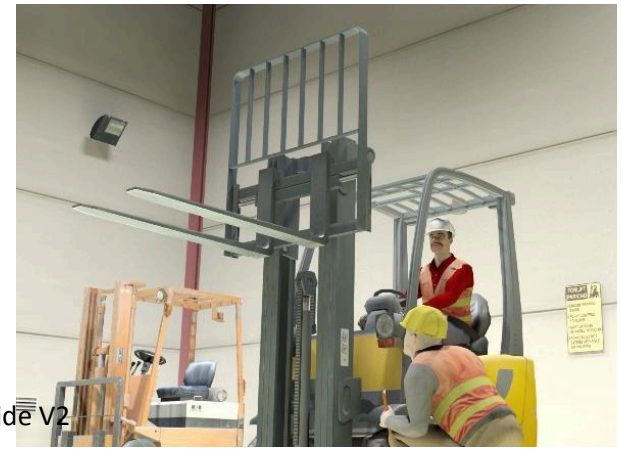
Please complete section 2 review question 6.

2.3 Operational Checks

Operational checks are done once the forklift has been started. Always start the forklift according to the manufacturer's specifications. Listen for any abnormal noises during start-up as these may indicate a fault.

Operational checks include:

- Hazard warning systems (for example lights and horns) and gauges are functional.
- Safety devices are functional (for example deadman's switch, emergency decent device if applicable, reversing alarm or beeper).
- Attachment movements and control functions are smooth and comply with operating requirements.
- Steering, transmission and brake functions comply with operating requirements.



Check all movements and functions to their full extent.

Please complete section 2 review question 7.

2.4 Report All Faults

Once all checks on the forklift are finished, you will need to report any problems, faults, defects and damage that you found so that they can be repaired and the machine and equipment are safe for you or the next operator to use.

If you find anything wrong with the forklift during your routine checks you must:

1. Immediately stop the forklift and remove the keys.
2. Tag the forklift as 'out of service' to stop anybody using it.
3. Record the problem in the logbook or on the inspection checklist. Give as much detail as possible.
4. Report the fault to your supervisor or other authorised person.
5. **DO NOT** use the forklift until repairs are carried out.

Please complete section 2 review question 8.

2.5 Shift a Load

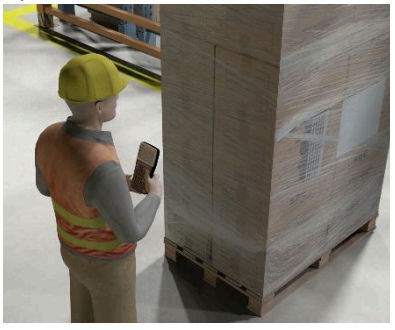
To shift a load with a forklift you need to:

1. Check the load.
2. Make sure the work area is safe to move through.
3. Pick up the load.
4. Drive safely with the load.
5. Place the load.

2.5.1 Check the Load

Before you try to lift something, check that the forklift will be able to shift it safely.

Is the load within the safe working load of the forklift? Check the load plate to make sure.



You can check the weight of a load a number of ways:

- Weigh the load.
- Check for markings on the load.

- Calculate the weight of the load.
- Check the weighbridge certificate.
- Check inventory systems.

When using an attachment, always make sure you have included the weight of the attachment with your calculations.

Check the shape of the load. Make sure the heaviest part of the load is against the load backrest.

If the load is unstable or poorly stacked, restack or repack it before you try to move it.

You may need to secure the load using shrink wrap, strapping or banding.

Check the pallet that the load is sitting on. If it is too damaged to lift, re-stack the load onto a new pallet.

2.5.1.1 Calculating Load Weight

If you find you need to calculate the weight of a load, make sure you consider:

- How many items there are.
- What each item weighs.
- The weight of the pallet the items are placed on.

Example 1:

You need to move a load of cartons that have been stacked on a pallet.

- There are 4 cartons per layer and 6 layers on the pallet.
- Each carton weighs 33kg.
- The pallet is standard size and weighs 15kg.

To work out how much this load weighs you need to add the total weight of all of the cartons to the weight of the pallet:

Carton weight = 33kg x 4 (cartons) x 6 (layers)
Carton weight = 792kg

Total weight = 792kg + 15kg(pallet)
Total weight = 807kg

Example 2:

You need to move a load on a pallet that is made up of:

- 2 large boxes marked as 88kg each.
- 4 smaller boxes marked as 35kg each.
- The pallet is standard size and weighs 15kg.

To work out the weight of the load:

Weight = (Large boxes) + (Small boxes) + Pallet
Weight = (88kg x 2) + (35kg x 4) + 15kg
Weight = 176kg + 140kg + 15kg
Weight = 331kg

OR

Total weight =
88kg + 88kg + 35kg + 35kg + 35kg + 35kg + 15kg
Total weight = 331kg

Example 3:

You need to move a pallet loaded with 4 barrels of liquid.

- Each barrel weighs 210kg.
- The pallet weighs 22kg.

To work out the weight of the load:

Weight = (Barrel weight) + Pallet
Weight = (210kg x 4) + 22kg
Weight = 840kg + 22kg
Weight = 862kg

2.5.2 Picking Up a Load

When picking up a load with the forklift make sure that you:

1. Approach the load from front on.
2. Insert the forks all the way into the pallet.
3. Raise the forks and tilt the load back slightly for stability.
4. Position the load at axle height or as low to the ground as possible for safe travel.

NEVER pick up the load on only one fork arm. If you do the stability of the forklift may be affected, and you may damage the mast, carriage or forks.

2.5.3 Travelling Safely with a Load

Always be careful when driving the forklift. These are some ways to help make sure you operate safely:

- Drive slowly and avoid using ramps or other inclined pathways.
- Be aware of ground and weather conditions. If the ground is wet or slippery you will need to reduce your speed, avoid braking suddenly, avoid using raps or inclines and always drive cautiously.
- Use your horn when approaching blind corners.
- Keep to forklift zones and barricade off the work area if there are people nearby.
- Keep the load at about axle height while travelling and tilt the mast backwards for stability.
- Do not travel or turn the forklift with the load raised up in the air. The load height can affect the stability of the forklift while travelling, braking or turning. This creates a hazard that could result in the forklift tipping over, rolling over or losing the load.

- If the load blocks your view:
  - Travel in reverse.
  - Check that the pathway is clear.
  - Get somebody to direct you and keep an eye out for other people or equipment in the area. If they give you a signal that you don't understand stop all motions and ask for clarification.
  - Make sure the warning devices are working correctly and always check your mirrors and look over both shoulders before reversing in the forklift.
- Be aware of rear end swing. This can be very dangerous for people, equipment, plant and structures nearby.

Maintaining a safe operating speed is based on:

- The size and type of the load.
- Worksite policies, procedures and signage.
- Weather conditions.
- Ground or floor conditions.
- Personnel and other equipment in the area.
- Forklift size, capacity, turning circle and technical limitations or capabilities.

You need to constantly monitor the load movement to ensure that workers in the area are safe, and that the load and forklift are stable.

If loading onto a truck from a loading dock, make sure there are secured dock plates or bridge plates in place.

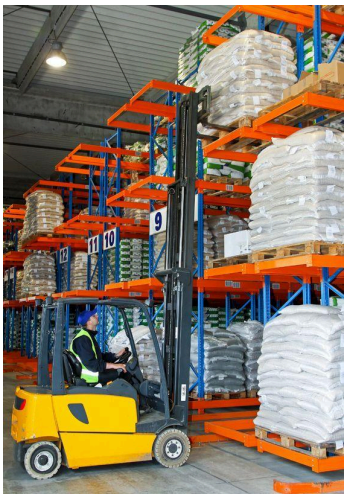
2.5.4 Travelling Safely on Ramps

When travelling on a ramp, ensure that you do not turn on it or travel across it – always be sure to travel up or down.

Turning or travelling across a ramp can affect the stability of the forklift, increasing the chance of tipping or rolling the forklift over, or dropping the load.

When travelling with a load on a ramp (either up or down), always face the load uphill (forks pointing up the ramp).

2.5.5 Placing a Load



When placing a load using a forklift truck, make sure that you remember the following steps:

1. Approach the load destination slowly.
2. Raise the load (where required) to ensure clearance.
3. Lower the load onto the stack or ground.
4. Tilt the forks slightly forward.
5. Look over both shoulders and reverse the forklift to remove the forks, making sure you don't scrape the forks on the pallet.

You may need to lean out slightly to one side for a better view of the load.

If refilling stock into racking or shelves, you need to make sure that:

- Loads need to be stacked on a firm level surface.
- Heavy loads should go at the bottom of the stack.
- The stack should not get so high that it becomes unstable.
- The loads at the bottom need to be able to support the weight of the loads going on top.

2.5.6 Using Forklift Attachments

There are various attachments that can be used with a forklift truck. Ensure that you follow all manufacturer and safety guidelines with all attachments.

2.5.6.1 Forklift Work Platforms

These are used to elevate workers where other equipment cannot easily access an area.

The work platform must be secured to the forklift.

The operator of the forklift must stay seated at the controls of the forklift at all times while personnel are elevated in the work platform.

No more than two people are to be lifted in a work platform.

Personnel must stay in the work platform during raising or lowering and must not be moved from place to place other than for small positional adjustments.

The load capacity of the platform must not exceed 250kg unless the type and design of the forklift is manufactured in accordance with AS 2359 Powered industrial trucks and the appropriate hazard identification and risk assessment has been done.

Remember: You must NOT use ladders while in the work platform to gain additional height.

2.5.6.2 Jib Attachments

The jib attachment should have the Safe Working Load (SWL) marked at every hook position.

The hook on the jib attachment should be able to swivel (not a fixed hook).

Always make sure the jib attachment hook is centred directly over the load before lifting it to prevent the load from swinging on lift and to maintain the forklift's stability.

Whenever using a jib attachment make sure you:

- Travel at low speed and make all turns slowly.
- Keep the load as low to the ground as possible.
- Keep the jib as low as possible.
- Keep the jib vertical or tilted back at all times.
- Treat the forklift as if it is partially loaded at all times, even when no load is on the jib.

Make sure a qualified person has checked and selected the lifting gear used to attach the load to the jib.

Jib attachments will reduce the load capacity of the forklift because it alters the centre of gravity of the machine. This will also make the forklift less stable so you should be careful to avoid driving in a way that causes the load to swing.

2.5.6.3 Carpet Spike Attachments

When using a carpet spike the length of the spike causes the longitudinal stability and load capacity of the forklift to be reduced.

Be careful when turning the forklift and make sure you have enough room to move properly.

2.5.6.4 Rotating and Side Shift Attachments

Side-shift attachments need to be centred before travelling with a load or the forklift truck will become

unstable. This is because the centre of gravity of the load is off to one side.

While travelling, a revolving attachment must never be used to rotate the load. It can impact on the forklift's stability.

Rotation of loads should only be done once the forklift has stopped.

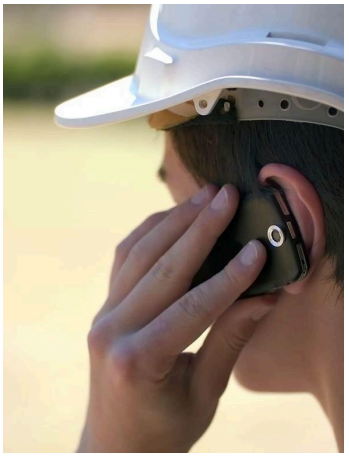
2.5.6.5 Drum and Paper Roll Clamps

Drums can be carried by the forklift using a drum clamp.

Alternatively, drums can be transported while loaded on a pallet.

Please complete section 2 review questions 9 to 19.

2.6 Emergency Procedures



If something goes wrong while you are using the forklift it is important that you have an idea of what to do.

You may need to communicate with other people at the workplace, your safety officer, your manager or supervisor and emergency services.

In the case of any workplace emergency you must make sure that you:

- Alert the relevant personnel of the emergency situation.
- Communicate the nature of the emergency to the supervisor and others.
- Inform workers of unsafe areas.
- Provide information to emergency services.

It is important that you give right of way to all emergency vehicles during emergency situations.

2.6.1 Lateral Instability

Things that may cause a forklift truck to tip over sideways (lateral instability) are:

- Unevenly distributed load.

- Turning at an unsafe speed.
- Driving with side shift not centred.
- Driving over uneven surfaces.
- Driving with a flat or underinflated tyre.
- Driving too fast (loaded or unloaded).
- Turning with the load raised.
- Operating on a sloping surface.

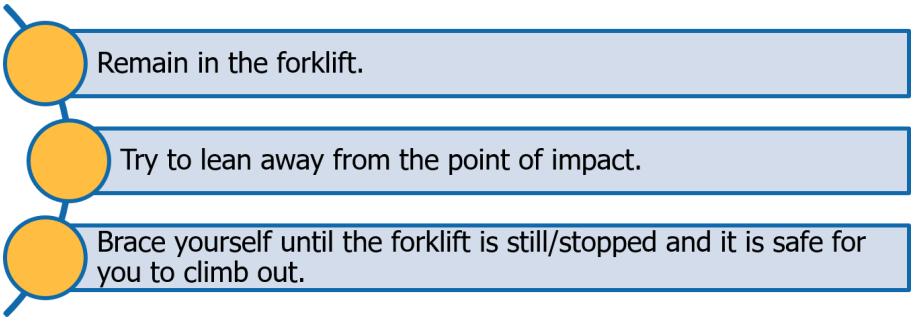
2.6.2 Longitudinal Instability

Things that may cause a forklift truck to tip forward lengthways (longitudinal instability) are:

- Overloading.
- Severe braking.
- Incorrect use of the mast tilt (especially with the load carried at a high level).
- Unevenly distributed load.
- Shifting of the load centre forward (centre of load is forward of the approved load centre).
- Operating on sloping surface.
- Driving over uneven surfaces.
- Load not positioned against the heel of the fork arms.
- Driving too fast (loaded or unloaded), including reversing.
- Driving with the load too high.
- Hitting an overhead structure.

2.6.3 Forklift Rollover Procedure

If you lose control of the forklift and it begins to tip sideways:



DO NOT try to jump from the forklift while it is still moving.

2.6.4 Contact with Power Lines

If the forklift truck makes contact with power lines you must:

1. Warn people to stay away.

2. Try to break contact with the power lines.
3. Stay in the forklift if it is safe. Otherwise jump from the forklift without touching the forklift and the ground at the same time. Keep your feet together and jump or shuffle away from the forklift until you at least 8m away from it.
4. Report the incident to your supervisor, power company and safety regulator.
5. **DO NOT** use the forklift again until it has been checked and returned to service.

2.6.5 Forklift Malfunction

If the load drops suddenly, or you think there might be a problem with the hydraulic system, immediately lower the load and turn off the forklift.

Lock out and tag the forklift then report the problem to management. Make sure the forklift has been properly check before you use it again.

Please complete section 2 review question 20.

2.7 Shut Down and Secure Forklift Truck

When you have finished using the forklift, you need to park it, remove the keys and conduct post-operational checks.

2.7.1 Parking the Forklift

Always park the forklift on a flat surface out of the way of other traffic.

DO NOT park the forklift:

- On sloping surfaces.

- Near First Aid stations.
- Near fire fighting appliances.
- Near doorways.
- On or near pedestrian walkways.
- Emergency exits.
- Where it is obstructing other traffic.

When parking the forklift:

- Make sure the fork arms are correctly positioned (tips down, tilted forward, and lowered to the ground).
- Select an appropriate transmission or gear (neutral) and apply the hand brake or parking brake.
- Turn the engine off and remove the keys from the ignition to prevent unauthorised movement of the forklift (if applicable).
- Shut off the LPG gas cylinder valve (if applicable).
- Carry out any other site-specific procedures such as securing the equipment and site as required.

If you have to park the forklift on an incline, make sure you also chock the front wheels in addition to normal parking procedures.

Please complete section 2 review questions 21 to 23.

2.8 Post-Operational Checks

After you have finished using the forklift, you need to check it to make sure it is ready for the next operator.

General maintenance activities are done to keep all plant and equipment working safely for longer.

As part of your job as a forklift operator, you need to inspect your machine to find and report any faults or damage that may have occurred during your work activities.

Your inspection should include:

Visual Inspection of the Forklift	Physically looking for anything odd, wrong, broken or damaged.
Visual Inspection of the Environment	Is any fluid leaking?
Signals	Alarms, lights, electronic indicators showing that something may be wrong.
Gauges	Showing temperatures and the levels of fuel, oil and other fluids.

Make sure the forklift is secured (keys are removed) after you have finished checking it.

2.8.1 Charging the Battery

Always charge batteries in a well-ventilated area away from any naked flame.

Do not smoke around a charging battery – the fumes could ignite, causing an explosion or a fire.

2.8.2 Report All Defects

Once a fault has been found, it needs to be reported and fixed.

If you find any fault with the forklift during the inspection:

1. **Stop** any operation and remove the keys.
2. **Tag** the forklift – put an out of service tag on the forklift to stop anybody using it.
3. **Record** the problem in the logbook or on the inspection checklist. Give as much detail as possible.
4. **Report** the fault to an authorised person.

Most sites have a fault report form that will need to be filled in with the details. The form will generally need the machinery or equipment make and model numbers, the site identification numbers, the type of fault and the person reporting the fault.

Please complete section 2 review questions 24 to 25.