FORKLIFT TRUCK
SAFETY AND LICENCE GUIDE

Training support material for:

TLILIC0003
Licence to operate
a forklift truck

Produced by:

EASY GUIDES Australia Pty Ltd

Picture based. Plain English. Learning made easy.

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Introduction to forklift trucks

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What is a forklift truck?

A forklift is a powered industrial truck used to lift and move loads. It has a mast and an elevating load carriage with a pair of fork arms or other load-holding parts. As you can see below, there are different types of forklifts. The most common forklift is the counterbalance forklift truck.

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Counterbalance forklift truck	**Order picking forklift truck (LO licence)**	**Walkie reach stacker**
		
Rough terrain forklift truck	**Narrow aisle turret truck (Lo licence)**	**Sit-on reach forklift truck**
		

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Counterbalance forklift

The most common forklift is the counterbalance type. This means they carry the load on the front mounted forks (tynes) and use all the weight behind the front wheels to counterbalance the load.

The point of balance on a forklift is called the **fulcrum**. The fulcrum is where a vertical line drawn through the centre of the front axle would meet the ground. An easy way to remember this is the fulcrum is where the front wheels touch the ground.

Everything behind the fulcrum acts as a counterweight.

Think of the forklift as being like a see-saw. If you have more weight than counterweight the forklift will tip forwards.

You cannot add more counterweight to try to lift a heavier load. Forklifts are not designed for this. If you did this you could damage the forklift.

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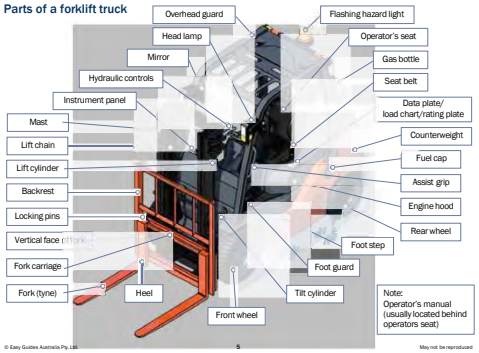
Parts of a forklift truck



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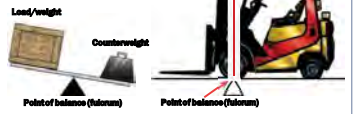
QUESTION 1

A forklift has a point of balance (fulcrum).

Where is it?

The fulcrum (point of balance) is at the bottom of the front tyre.

It is the point where the front tyre touches the ground.



QUESTION 2

Does all of the weight behind the point of balance work as a counterweight?

Yes. All the weight behind the point of balance acts as a counterweight.

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Task requirements

Before operating the forklift you must know what the work task requires you to do.

Task requirements may be given to you verbally, in writing or electronically. They may be called work orders or something similar. If you are unclear about the requirements you should always speak to a supervisor or relevant person.

When the task requirements are known, you will be able to consider and plan for other important things such as:

Communication 	Attachment method (for the load) 
Where will you do the lift? What do you need to do? 	What equipment do you need? Is the equipment available? 

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Task requirements (continued)

Do you need any permits? 	Does the load have any special features? 	Does the forklift have enough capacity to carry the load? Check the data plate. 
Blind spots caused by: • Corners • The mast • The load.		

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Hazard versus risk

What is the difference?

Different hazards and risks emerge constantly—sometimes instantly.

Hazard

A hazard is anything or any situation which could injure or harm you.

In other words, it is anything that can hurt you.

Risk

A risk is the chance of a hazard causing harm such as injury, illness or even death.

In other words, how likely it is that somebody or something may be harmed by the hazard.

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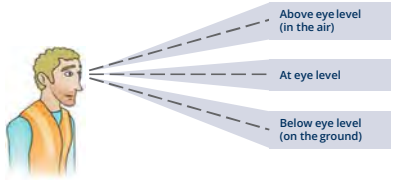
Site inspection

There are a lot of hazards and risks on work sites that you need to be aware of. Hazards can cause accidents, injuries and even death.

Hazards and hazard controls need to be considered when planning work. The work site should be inspected by looking for hazards and risks that exist:

- Above eye level (in the air)
- At eye level
- Below eye level (on the ground).

You should **always** follow workplace procedures for conducting site inspections.



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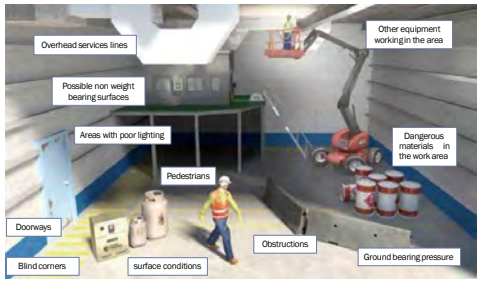
Hazards – indoors

Before you begin work, you must be aware of hazards. A **hazard** is any thing or situation with the potential to cause injury or harm. In other words it is any 'thing' or 'action' that can hurt you or other workers.

If you are working indoors you must think about things like:



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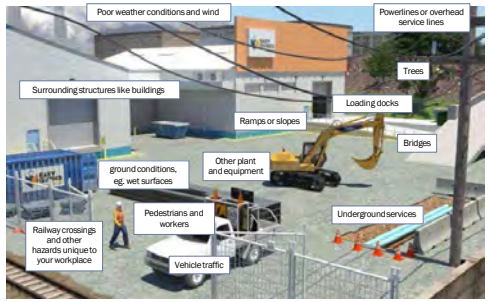
Hazards – outdoors

If you are working outdoors there may be hazards such as:



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Checking the rated capacity

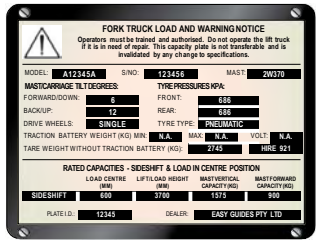
Check the data plate to find the rated capacity.

The forklift with the following data plate attached has the rated capacity of:

1575 kg with a **sideshift attachment** lifting a load to a **3700 mm height** with **vertical mast** and a **600 mm load centre**

OR

900 kg with a **sideshift attachment** lifting a load to a **3700 mm height** with **forward tilted mast** and a **600 mm load centre**



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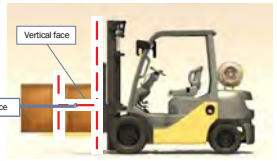
Load centre distance

Load centre distance is the **distance measured from the vertical face of the forks to the centre of gravity of the load.**

The load centre distance affects how much weight the forklift can lift.

The load centre distance will be marked on your forklift's data plate.



For example, this forklift is lifting a 1500 kg load.

The forklift rated capacity is **1575 kg** at a **600 mm load centre** distance.

It's okay to lift this weight.

But the load centre distance must be checked to make sure it is 600 mm or less first. 600mm is the most common load centre distance in millimetres.

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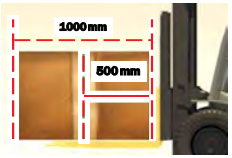
Calculating the load centre distance

Measure from the vertical face of the forks to the front of the load. For this load the measurement is 1 metre (or 1000 mm).

Halve this measurement and you get the load centre distance. With this load it's 500 mm.

This forklift can **safely** lift and carry this load if:

- The load centre distance on the data plate is greater than 500 mm
- The weight of the load is within capacity
- The load is against the face of the forks.



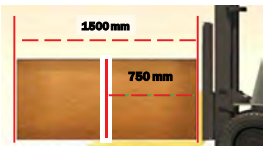
But watch what happens when we change the load centre distance of the same 1500 kg load.

The distance from the vertical face of the forks to the front of the load is now one and a half metres (or 1500 mm).

This makes the load centre distance 750 mm. The maximum load centre distance for this forklift is 600 mm.

This forklift cannot safely lift this load.

The forklift would be unstable and the lifting capacity reduced. This might cause it to tip over.



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Hazard control (continued)

Personal Protective Equipment (PPE)

The best way to make the workplace safe is to take away hazards altogether. But often you can't do this. This is where Personal Protective Equipment (or PPE) can help.

PPE is clothing or equipment worn on the body to protect you from hazards. PPE will not take away the risk of harm altogether, but it will help keep you safe. These are some examples of PPE.

Note: Before starting any work all PPE should be chosen and checked to make sure it is in good working order

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Traffic management

Pedestrians and other vehicles are a major hazard where forklifts are in operation. Whenever there is a chance of forklifts colliding with pedestrians or other vehicles in the workplace a traffic management plan should be in place.

Always look at your workplace traffic management plan before operating the forklift.

Rear-end swing

Because forklifts steer with the rear wheels, when a forklift turns it creates a hazard called **rear-end swing**.

Rear-end swing is the fast sideways movement at the rear (counterweight section) of the forklift.

Rear-end swing is hazardous to any pedestrians, other vehicles and structures in the area.

Remember: Pedestrians and forklifts do not mix!

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QUESTION 16

What does load centre distance mean?

Load centre distance is the distance from the vertical face of the forks to the centre of gravity of the load.

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QUESTION 18

The forklift's capacity is the weight it is allowed to lift at a particular load centre distance, or load height.

If the load centre distance gets longer, what can happen to the forklift truck's capacity to carry weight?

As the load centre distance gets longer, the weight it can safely lift gets less.

QUESTION 19

If the load is not pushed up right against the heel of the forklift truck's tynes (forks), what might happen?

The forklift can carry less load and may be unstable and could tip over.

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QUESTION 22

You need to refuel the forklift truck. The forklift uses diesel, petrol, LPG or compressed natural gas (CNG).

What is the risk if you leave the engine running while you refuel?

The fuel or fuel vapour could catch on fire.

QUESTION 23

Why should you charge a battery in an area with good air flow?

Batteries give off gasses which can explode. Good air flow helps to remove the gasses.

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