

# TLILIC2001 – LICENCE TO OPERATE A FORKLIFT TRUCK



# **STUDENT STUDY GUIDE**



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TO PREPARE YOU FOR YOUR FINAL WRITTEN ASSESSMENT YOU ARE REQUIRED TO STUDY THIS BOOKLET.

PLEASE TAKE EXTRA ATTENTION WHEN YOU SEE A AS THESE ARE CRITICAL QUESTIONS YOU WILL BE EXPECTED TO UNDERSTAND AND ANSWER CORRECTLY.

YOU WILL EXPECTED TO ANSWER AT LEAST 90% OF NON-CRITICAL QUESTION CORRECTLY.

#### **ELEMENTS**

HIGH RISK LICENSING AND THE LAW

**ELEMENT 1 – PLAN WORK** 

**ELEMENT 2 – CONDUCT ROUTINE CHECKS** 

**ELEMENT 3 - SHIFT LOAD** 

ELEMENT 4 - SHUT DOWN AND SECURE ORDER PICKER

#### 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.

THERE ARE SEVERAL TYPES OF FORKLIFT TRUCKS WITH THE MOST COMMON BEING THE COUNTERBALANCE FORKLIFT TRUCK



Counterbalance Forklift Truck



Reach Truck



Double-deep Reach Truck



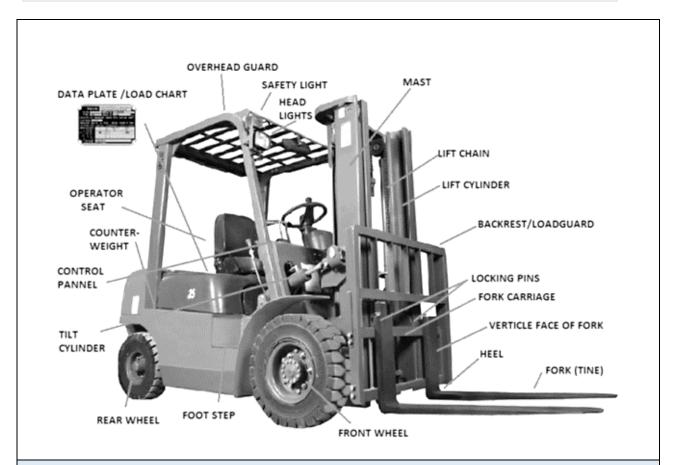
Rough Terrain Forklift Truck



Articulated Narrow Aisle Forklift Truck



Truck Mounted Forklift Truck



#### REQUIRED KNOWLEDGE – HIGH RISK LICENSING AND THE LAW

#### **DUTY OF CARE**

#### Duty of care applies to -

- EMPLOYERS
- EMPLOYEES
- SELF-EMPLOYED PERSONS
- PERSONS IN CONTROL OF THE WORK SITE
- CONSTRUCTION SUPERVISORS
- DESIGNERS
- INSPECTORS
- MANUFACTURERS AND SUPPLIERS
- BUILDING WORKERS
- SUBCONTRACTORS

#### Employers duty of care -

#### By LAW an employer must -

- Provide a workplace that is safe
- Provide a workplace without risk to people's health
- Instruct, train and supervise employees to work safely
- Train workers in a way that is easy to understand

#### Employees duty of care -

By law as an employee you must take care of your own health and safety and the health and safety of other people in the workplace. You must not put the health and safety of yourself or other people at risk.

#### You must also -

- Follow safe work practices
- Follow safety instructions
- Cooperate with your employer
- Obey Workplace Health and Safety Safety Laws

#### National standard for licensing persons performing High Risk Work (HRW).

- To ensure that persons have the skills and knowledge to perform HRW in a safe manner.
- To facilitate the operation of a national licensing system for people engaged in HRW.
- Licences issued in accordance with National Standard will be recognised in all Australian States and territories.
- Providing a national policy approach for authorising the performance of HRW and promoting safety standards relating to HRW.

#### APPLYING FOR A HIGH RISK WORK LICENCE

You have the responsibility to provide the correct information including -

- Your full name, identification and photograph.
- A declaration that you have never had a HRW licence refused, suspended or cancelled before and that you have not been found guilty under Workplace Health and Safety Laws in Australia.
- A signed form stating you do not already have a High Risk Work Licence.
- A copy of the Notice of Assessment.

#### (MUST BE SUBMITTED WITHIN 60 DAYS OF ASSESSMENT)

#### Your responsibilities when performing High Risk Licence Work.

- You must be trained, competent and qualified to do high risk work.
- Always pay attention and work safely.
- You must not harm the health or safety of yourself or others.
- You MUST also follow relevant safety procedures and laws.

# You are 100% responsible for the actions you take when operating your Forklift Truck.

#### PENALTIES -

Failure to work safely may result in -

- You not being able to renew your licence.
- You having your licence suspended or cancelled.
- You being prosecuted and fined under Workplace Health and Safety Laws.

#### HIGH RISK WORK LICENCE RENEWAL

- You must renew your HRW licence every **5 years**
- You must keep up your experience and stay competent to do high risk work. If you are no longer competent, you MUST NOT do high risk work even if you have a licence.
- Your employer must not allow you to do high risk work if he/she believes you are not competent even if you have a HRW licence.

If you do not renew your HRW licence within **12 months** of expiry then – Your existing licence cannot be renewed.

You will have to re-train and sit a test for your licence again.

(If you continue to do High Risk Work you MUST be supervised by a person who has a HRW licence in that class AND you must be enrolled in a course).

#### When can you do High Risk Work without a licence?

#### ONLY WHEN -

You are enrolled to do a course with a Registered Training Organisation (RTO).

#### **AND**

Being supervised by a person with a HRW licence in the class of which you are being trained.

If your employer asks you, what written evidence do you need to provide before you can begin High Risk Work?

#### You must provide -

Your licence (card) and/or Statement of Attainment.

A letter from a Registered Training Organisation (RTO) stating you are enrolled to undertake a course in High Risk Work.

#### ELEMENT 1 – PLAN WORK

You need to communicate with people on a worksite before you start work. Why do you think it is important to do this?



• To help you follow the rules and procedures for the site. This helps keep you and others safe.

Name ways you can communicate and give information to other workmates on a site?



- Instructions (Verbal or written)
- Signs
- Hand signals or gestures
- Listening and asking questions

Who might you talk to about site hazards BEFORE you start the job?



- Your supervisor or team leader
- Your workmates
- Workplace Health and Safety Representatives or safety officer
- Site engineers

A restricted space is somewhere that doesn't have much space for fresh air. It can be dangerous to use a forklift with a combustion engine in a restricted space. Why?

Combustion engines create gases that can prevent you from breathing properly.
 You could become unconscious and die without help.

You are working in a confined space. A confined space is a closed area with little space or fresh air. What kind of forklift truck is best to use in a confined space?

• Use an electric (battery powered) forklift truck in a confined space because it does not give off gases.

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



Batteries give off gases which can explode.
 Good air flow helps remove the gases and reduces the risk of explosion.

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



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

The fuel could catch fire.

Why is it important to look at your work area and plan the path you will travel?

You need to check the path for hazards so you can work out how you are going to control that hazard to keep yourself and your workmates safe.

- Will you need to reverse?
- Are there any ramps or slopes?
- When should you sound the horn?
- Where will you have to stop?
- Is there enough ventilation and fresh air?
- Where should you slow down?
- What is the safest speed to travel?

You are about to lift a load.



What are some things you must plan for (other than site hazards)?

- Who do you need to talk to or communicate with?
- Staff shift-times and movement of people
- How will you get in and out?
- Where will you lift the load?
- What equipment do you need?
- Do you need any permits?
- Does the forklift have the capacity to lift the load?
- Are there any blind corners? Is the load stable?
- Can the forklift fit through the doorway?

#### **HAZARDS**



You need to plan for possible hazards BEFORE you use the forklift. These hazards could be inside or outside.

#### **INSIDE HAZARDS**

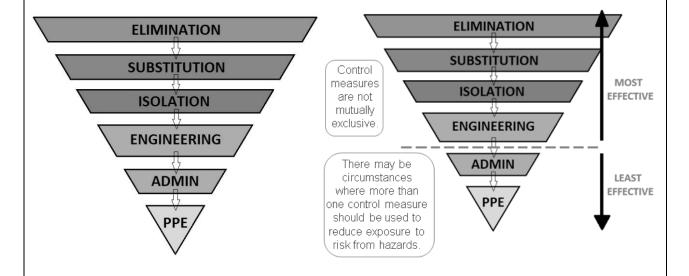
- Overhead service lines such as power lines
- Not enough lighting
- Structures
- People
- · Entry and Exit points
- Facilities such as toilets
- · Dangerous Materials such as chemicals
- Poor 'housekeeping' causing obstructions

#### **OUTSIDE HAZARDS**

- Power lines
- Overhead service lines
- Wind, lightning or rain
- Surrounding buildings
- Ground conditions
- Bridges
- Pedestrians
- Other vehicles
- Other equipment
- Underground services
- Obstructions
- Trees
- Pavement obstructions (speed humps)
- Other hazards unique to the workplace

#### HIERARCHY OF HAZARD CONTROL

In controlling hazards, companies and individuals should refer to the following hierarchy of hazard control in eliminating or reducing the risks involved with each individual hazard in the workplace.



#### **ELIMINATION**

Can the substance, process or activity that creates the hazard be completely eliminated so it no longer becomes a hazard?

#### **SUBSTITUTION**

Can the substance, process or activity be substituted for a less hazardous one? This could include using safer tools or methods.

#### **ISOLATION**

Can the hazard be isolated by the use of fences, barriers, covers as so on? In other words can the hazard be kept away to prevent an incident?

#### **ENGINEERING**

Can the physical environment or surroundings in which the hazard exists be changed? This step can work together with isolation controls.

#### **ADMIN**

Administration Controls look at establishing policies and procedures to minimise exposure to a hazard such as strict safe work procedures, the use of signage and speed zones.



After all other measures have been employed and there is still a risk of injury or illness then Personal Protective Equipment (PPE) must be used.

You will expected to answer these steps in order during your assessment.

Hint to remember: ( Every Saturday I Eat A Pie )

#### **ELECTRICAL SAFETY**



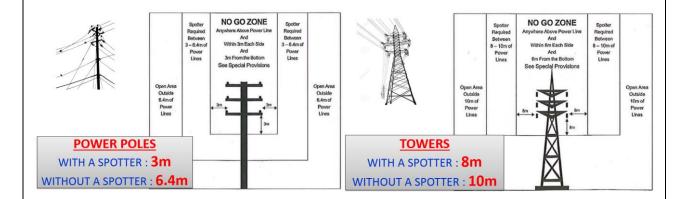
Overhead powerlines on poles – these are usually 'Low Voltage' (<133KV).

Overhead powerlines on Towers - These are usually 'High Voltage' (>133KV)

Always check overhead powerlines and make sure you and any equipment or materials you are using do not come into contact with them.

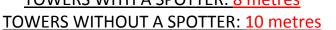
#### **ALWAYS LOOK UP!**

#### WHAT DISTANCE SHOULD I KEEP CLEAR OF A POWERLINE?





POWER POLES WITH A SPOTTER: 3 metres
POWER POLES WITHOUT A SPOTTER: 6.4 metres
TOWERS WITH A SPOTTER: 8 metres





(Please note each State/Territory may have different rules)

Who could you talk to if you need to find out the voltage of overhead powerlines?

• Your local power supply company.

Tiger Tails are black and yellow pipes that hang off powerlines?



What are they for?

Tiger Tails warn that powerlines are there.

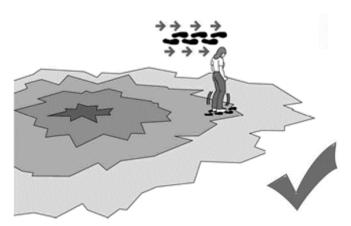
What are some ways you can work closer to powerlines than the minimum distances allowed?

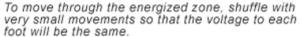
- Get permission from the electricity supply authority. They will make sure the power is turned off.
- The power company may be able to disconnect the power supply.
- If you can't turn off the power, the powerlines will need to be covered by insulation.
- Use a spotter in the inclusion zone if you are allowed in your state/territory.

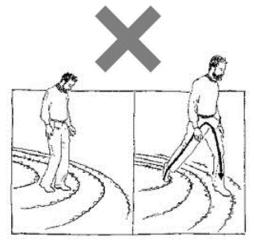
What should you do if your forklift hits electric or live service lines?

#### The 5 Steps to follow are -

- 1. Warn others to keep away
- 2. Try to break contact with the powerlines.
- 3. Stay in the machine if safe. If it's not safe then jump clear of the machine ensuring you don't touch the machine and ground at the same time. Land with two feet together then jump or shuffle away with your feet together at least 8metres from the machine.
- 4. Report the incident to management, power company and safety regulator.
- 5. Don't use the machine until it is checked by an authorised person.







When is the best time to choose and inspect your PPE and other safety equipment?

- Before you start the job
- When you are planning the job

#### **ELEMENT 2 – CONDUCT ROUTINE CHECKS**

Why should you look over your forklift and do a visual check before using it?

You must make sure the forklift is safe. Using a faulty forklift could injure or kill you or one of your workmates. You might find faults such as —

- Damage or cracks
- Tyre Damage
- · Water and oil leaks
- Missing Logbook
- Missing Manual
- Missing Data plate
- Unreadable Data plate
- Rust, cracked welds
- · Missing or damaged safety equipment (seatbelts)

You have to pick up a load. You can't read the data plate. Can you lift the load?

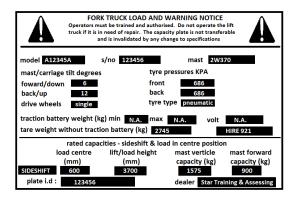
- NO. The load might be too heavy for the forklift.
- YOU MUST be able to read the data plate before you lift a load.

What should you do if the data plate is missing or you cannot read it?

- Remove keys from Forklift
- Put a danger tag on the forklift so no one else can use it
- · Write the problem in the logbook
- · Report the problem

Every Forklift must have a data plate with the information about the forklift. Give some examples of information on a data plate.

- Make and Model
- Serial Number
- Load Capacity
- Height
- Weight
- Tilt



You should know all the controls on your forklift. Forklift controls may be different on each forklift.

Where should you look to learn about the controls?

• You should check the operator's manual.

What are some pre-operational checks you should do before using a forklift truck?



- Fuels petrol, LPG, diesel
- Oil, water and other liquids such as hydraulic fluid
- Tyres Pressure and damage, missing wheel nuts
- Data plate in place and readable
- Mast chain and pulleys in good condition
- All guards, such as overhead guards and backrest
- Tines (forks) make sure they are not cracked or bent

You need to do start-up checks to check the forklift is safe and working properly.



What are some start-up checks you should do after you start the forklift?

- Check the steering
- Check the brakes
- Make sure all parts of the forklift can fully move
- Check the forklift moves properly in all directions
- Check warning devices (horn, beeper)
- Check the lights
- Check the gauges

You are doing the checks on the forklift. You have found a problem what must you do?



- Turn off machine
- Take out the keys
- Put a danger tag on the forklift
- · Write the problem in the logbook
- Report the problem

What checks do you do for a forklift with solid rubber tyres?

- Check that tyre wear is even
- Check the outer tread is not worn down
- Check no big pieces of rubber are missing

Why do all tyres need to have the right air pressure?

· A flat type can make the forklift unstable and it could tip over

How should you get on and off your forklift truck?

- You should get on and off the forklift from the left side.
- Three parts of your body should touch the forklift at the same time. Generally both hands and one foot is best.

Never jump off the forklift. Never grasp the steering wheel or controls as a point of contact.

You are using a forklift truck and hear strange noises. What do you do?

- Turn off machine
- Take out the keys
- Put a danger tag on the forklift
- Write the problem in the logbook
- Report the problem



You should test the mast before using the forklift truck. How can you test the mast is working properly?

- Check you have full movement of forward and backward tilt
- Fork reaches maximum height

Forklift have guards to keep operators safe.

What safety guards do forklifts have and what do they do?

- Overhead guard protects the operator from falling objects and rollover.
- Foot guard protects the operators feet
- Load Backrest stops the load from falling on the operator and hitting the mast.

Are you allowed to fix small problems on the forklift?

• YES, but only if you are authorised and know how to fix the problem.

#### **ELEMENT 3 – SHIFT LOAD**

What are some ways you can find out the weight of a load?



- Check the weighbridge note or consignment note
- Weighing the load
- · Reading the weight on the load
- Calculating the load (for example 50kg x 6 = 300kg)

You have to move a load of 44 bags of flour on a pallet. Each bag weighs 25kg. The pallet weighs 35kg. What is the total weight of the load?



Show how you worked it out.



#### TOTAL WEIGHT OF LOAD = 1135kg

There is a load to be moved. The load is stacked cartons on a pallet.



- 4 cartons per layer
- 6 layers
- 1 carton = 25 kg
- Pallet = 15 kg

What is the total weight? Show your calculations.

Total Weight =

cartons x layers x carton weight + pallet

Total Weight =  $4 \times 6 \times 25 + 15$ 

TOTAL WEIGHT OF LOAD = 615kg

There is a load to be moved. It is drums full of water.



Each empty drum weighs 13 kg

Each drum can hold 200 Litres Water = 1 kg per litre

What is the weight of 6 drums of water? Give your final answer in tonnes.

1 drum of water = drum weight (200kg) + Drum (13kg)

Total Weight = drum of water X number of drums

Total Weight = 213 kg X 6

TOTAL WEIGHT = <u>1278 kg (1.278 tonne)</u>

What does the "rated capacity" of a forklift mean?



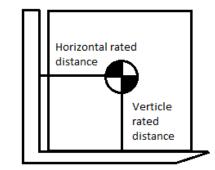
• "Rated capacity" is how much weight (maximum load) a forklift is allowed to lift at a particular load centre distance or load height.

#### LOAD CENTRE DISTANCE



The load centre distance is measured from the vertical face of the fork to the centre of gravity of the load.

Divide by 2 the distance from the vertical face of the forks to the end of the load to get the load centre distance.



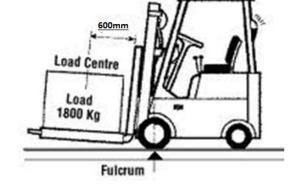


Diagram shows how to find load centre distance

If the load is not pushed up right against the forklift truck tines (forks). What might happen?

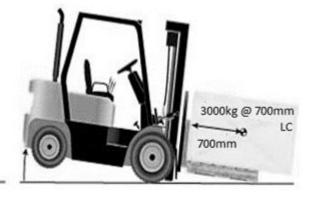
• The forklift can carry less load and may be unstable and could tip over.

The forklifts 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 trucks capacity to carry weight?

• As the load centre distance gets bigger, the weight it can safely lift gets smaller.

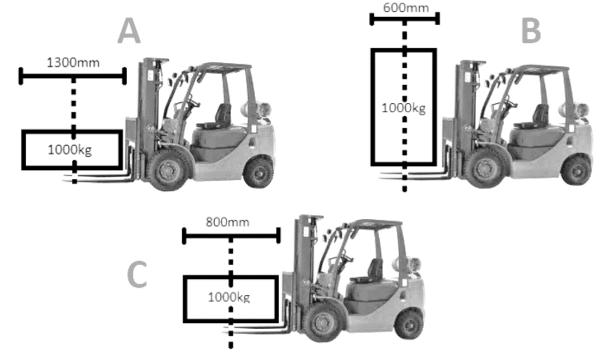




The forklift trucks in the pictures below are rated at 1000kg at a 600mm load centre.



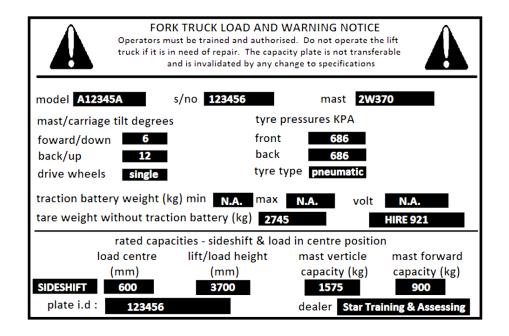
Which forklift is unsafely carrying a load outside its limits?



#### ANSWER:

• Forklift A is outside its limits as the load centre is 650mm (half of 1300mm).

#### REFER TO THIS TYPICAL FORKLIFT DATA PLATE FOR THE FOLLOWING QUESTIONS –





Q: You are about to lift a load. The load centre distance is 775mm. The weight of the load is 1575kg. Can you lift the load? Why or why not?

• A: NO, as the load centre is too far forward by 175mm.

Q: You have to lift a load and put it on a shelf. The shelf is 3500mm off the ground. Can you lift the load with this forklift? Why or why not?

A: YES, as this forklift can lift to a heights of 3.7metres (3700mm).

Q: You have to lift a load. You must tilt the mast forward. What's the heaviest load you can lift?

A: 900kg

Q: You have to lift a load. You can use the mast vertically. What is the heaviest load you can lift?

A: 1575kg

You are about to lift a load.

You find it's heavier than what the data plate of your forklift says it can lift.

Should you lift the load?

No. Never lift loads heavier than what the forklift data plate says it can lift.

When should you set up hazard controls

- Before you start the job
- As soon as you find a hazard

How can you control the safety of pedestrians, workers or vehicles on site?



- Barricades (safety fences)
- Flashing yellow hazard lights
- Scaffolding, hoarding or gantry
- Warning signs
- A flag person to direct people / vehicles
- Vehicle exclusion zone

You are using a forklift in a dark place. What do you need to have?



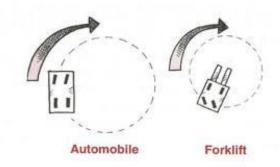
You need good lighting so that you can see everything clearly and easily.

Forklift trucks steer with their rear tyres. This causes "rear-end swing".



Why is "rear-end swing" dangerous?

• Rear-end swing is dangerous due to the rapid speed when turning. This could create a risk to people, structures, equipment and vehicles.



You are operating a forklift in a wet and slippery area.



What action can you take to be safe?

- Go slow
- Avoid driving on ramps and slopes
- Be extra careful

You are about to reverse the forklift truck. What should you do first?

- Check behind you use mirrors and/or look over your shoulder.
- If you cannot see, ask someone to help guide you.
- Check that warning devices are working.

When should you use the horn on a forklift truck?

- · When you want to warn someone that you are coming
- You are going around a blind corner and someone might be around the corner
- Entering and exiting doorways

You need to move a load up or down a ramp.



Which direction should the load be facing?

- When you move up a ramp the forklift must be going forward.
- When you move down a ramp the forklift must be going in reverse.

It is unsafe to turn a forklift truck when it is on a ramp or slope.

#### Why?

• The load can be lost and the forklift might tip over.

Are you allowed to put more counterweights on a forklift truck without checking with the forklift manufacturer?

• No. Forklifts are made to lift specific maximum loads. Changing the counterweights could cause an accident.

Are you allowed to raise or lower a load above people? Explain your answer.



• No, because it is very dangerous. The load might fall on someone and injure or kill them.

Some of your workmates want to ride on the forklift truck.

Is this allowed?

• No. It is unsafe. To carry a passenger the forklift must be fitted with a passenger seat and seat belt.

How does the seatbelt keep you safe?

- The seatbelt keeps you in the seat. If the forklift tips or rolls over it will hold you in.
- The seatbelt also prevents the operator being propelled into the controls and mast.

Why is it unsafe to drive or turn a forklift with the load raised in the air?



Because it makes the forklift unstable and it could tip over.



<u>Note –</u> Driving or turning with the load in the air with the combination of not wearing a seatbelt is a common cause of forklift injuries and fatalities.

Why does the side-shift attachment need to be in the middle when carrying a load?

• To keep the forklift from falling over sideways when carrying a load.

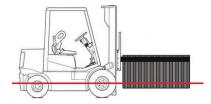
You have to move a load on the forklift. You can't see where to go.

How can you move the load safely?

• Travel in reverse and/or ask somebody to help you go the right way.

When you are moving the forklift, what is a safe height for the load?

• Axle height OR as close to the ground as practicable.



Carrying a load on only one fork arm can be dangerous. Why?



- The forklift and the load are not stable and might tip over
- You may damage the forklift

You are stacking stock onto shelves.

What 3 things do you need to think about when you stack things on top of each other?

- Stack the goods on a solid, level surface.
- The stack of goods should be stable and balanced.
- Heavy goods need to be at the bottom.

You are about to move a pallet. The pallet doesn't look like it is loaded safely.

What should you do before moving the pallet?

Pack the load again.

There is a gap between the loading dock and the forklift truck. What do you need to do?

• You need to use secured bridge plates or secured dock plates to cover the gap.



What are some things that can make a forklift truck tip over **sideways**?

- Turning when the forklift is moving fast
- Driving on a bumpy or uneven surface
- The load not being balanced
- Driving with a flat tyre
- Going around a corner with the load raised in the air
- Side shift attachment not in the middle
- Driving on a ramp or slope

What are some things that can make a forklift truck tip over forwards or backwards?

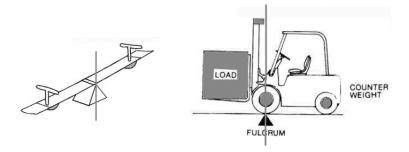


- The load is not balanced
- Driving on a bumpy or uneven surface
- Driving with a flat tyre
- · Breaking too hard
- Over loaded (too much weight)
- · Not using the mast tilt properly
- Load not pushed right up against heel of the forks
- Load centre is too far forward

A forklift has a point of balance (fulcrum).

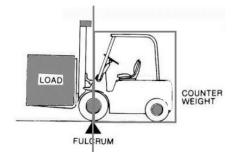
Where is it?

• The forward point of balance is a vertical line through the front axle (wheel).



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

• Yes. All the weight behind the point of balance (fulcrum) acts as a counterweight.



Why should you keep checking your load while you are moving?

• To make sure people are safe and to make sure the load is still stable.

Why is it important to know and learn your site evacuation plan?

So you can get out quickly and safely in an emergency.

There is an emergency. What would you communicate to people?



- That there is an emergency
- The nature of the emergency
- The location or unsafe areas of the emergency

Who should you tell?

- Other people
- Workplace safety officer
- Management
- Emergency services

There has been an accident on your worksite. Which vehicles have the right of way?

You MUST give way to all emergency vehicles, such as ambulances police and fire trucks.



What do you do if the forklift starts to tip sideways and you think it might roll over?

- STAY ON THE FORKLIFT. DO NOT JUMP OFF.
- BRACE YOURSELF and wait until the forklift stops, then get off.

#### ELEMENT 4 – SHUT DOWN AND SECURE FORKLIFT TRUCK

You are looking for a place to park the forklift truck.



Where are some places you should NOT park?

- Firefighting equipment (extinguishers, fire hoses)
- First aid stations
- Emergency exits
- Doorways and exits
- Ramps and slopes
- Pedestrian walkways
- Less than 2m from train and rail tracks
- Where the forklift can block other traffic or people

What are the normal procedures when you park a forklift truck?

- Tines (forks) should be touching the ground
- Put the forklift in neutral (N) gear
- Apply the handbrake
- Follow the site specific safety procedures.

What must you do when you park on a slope or a ramp (inclined surface)?

• Do the normal parking procedure and chock the wheels of the forklift. Choking the wheels will stop the forklift rolling away.

You have finished using the forklift truck. You should do some post-operational checks. What checks should you do?

- Look for leaks on and under the forklift
- Make sure everything is closed off and turned off
- · Walk around the forklift and check for damage

What do you need to do when shutting down a forklift truck?

- · Park the forklift away from hazards
- Put the forklift arms to the ground and use the forward tilt
- Put the forklift in neutral (N) gear
- Put the handbrake on
- Take out the key
- Get off the forklift properly. Make sure you are touching the forklift with 3 body parts
- Turn off the gas cylinder valve
- Charge the battery (if flat)
- Update the logbook and do a post-operational check on the forklift truck.

You are doing the post-operational checks. You find a problem with the forklift truck.



What should you do?

- Remove keys from Forklift
- Put a danger tag on the forklift
- so no one else can use it
- Write the problem in the logbook
- Report the problem

Why do you need to take out the ignition key when leaving the forklift unattended?

• To stop the forklift truck being moved by someone who is unauthorised (does not have permission or does not have a licence).

### **NOTES:**



## **Star Training and Assessing**

Factory 9/381 Bayswater Rd, Bayswater Vic 3153 78b Tamar St, Palmyra WA 6157

Contact us -

VIC, NSW, and TAS: (03) 9720 7666

QUEENSLAND: (07) 3106 3410

WA: 0412 224 168



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www.startraining.com.au