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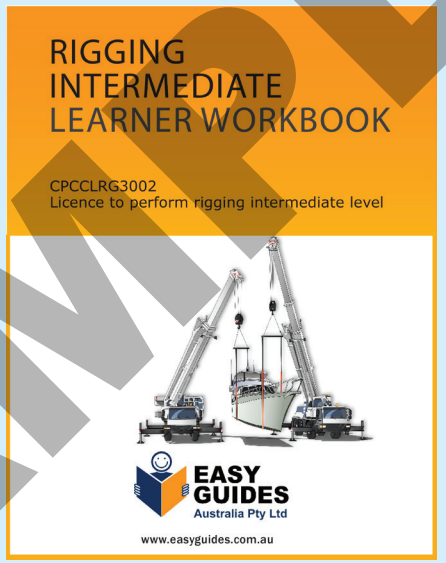

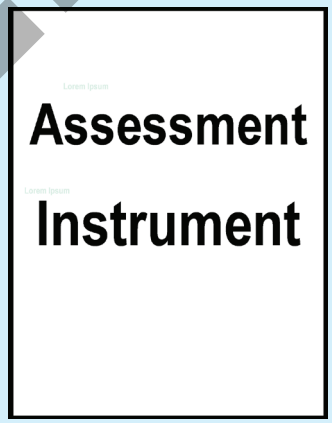

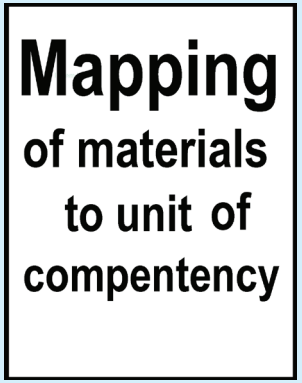

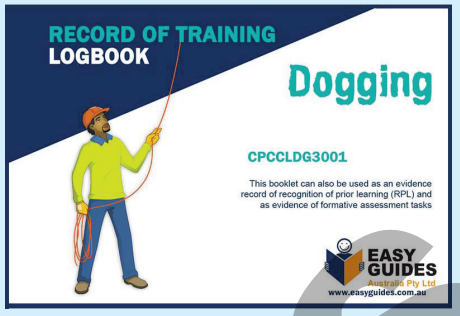

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REACH STACKER
SAFETY AND LICENCE GUIDE

Training support material for:

TLILIC0011
Licence to operate
a reach stacker

(greater than 3 tonnes capacity)

Produced by:

EASY GUIDES
Australia Pty Ltd

PICTURE BASED. PLAIN ENGLISH. LEARNING MADE EASY.

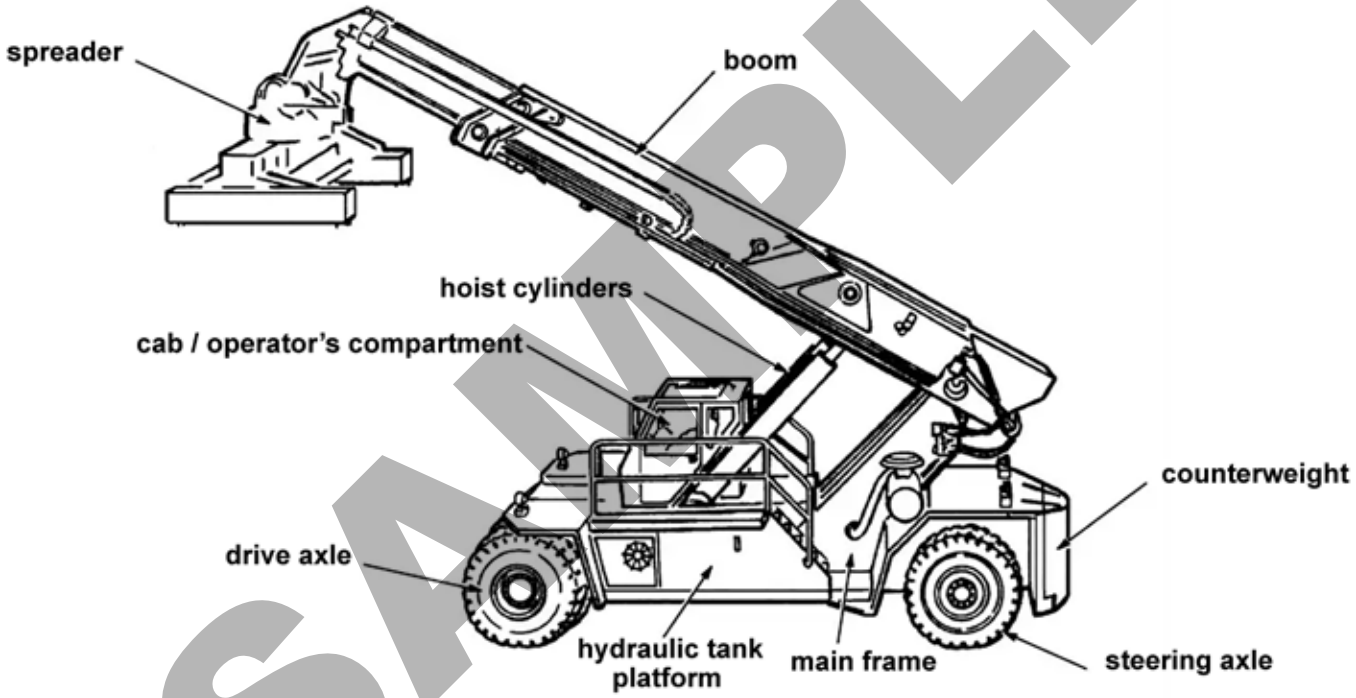
CONTENTS

INTRODUCTION TO REACH STACKERS

What is a reach stacker (container handler)?

A reach stacker is a type of heavy-duty machine used in ports and warehouses to lift and move large shipping containers. It has a long arm (or boom) that can extend and retract, allowing it to reach containers stacked several rows deep. The reach stacker picks up containers from ships or storage areas and stacks them in organized rows or moves them to trucks or trains for transportation. Essentially, it's like a big, powerful reach stacker designed specifically for handling shipping containers.

Parts of a reach stacker



ELEMENT 1

PLAN WORK/TASK

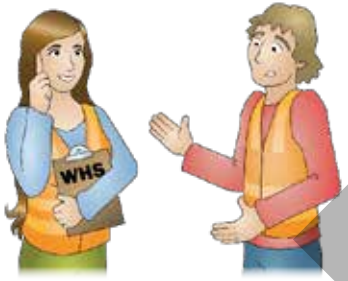
Task requirements

Before operating the reach stacker 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 needed.



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?

How much can a reach stacker lift?

Maximum Rated Capacity (MRC):

MRC refers to the absolute maximum load or weight that a piece of equipment, such as a reach stacker, can handle as specified by the manufacturer.

It is determined based on engineering calculations, stress testing, and compliance with safety standards.

MRC represents the maximum theoretical capacity of the equipment under ideal conditions, assuming perfect operation and no external factors affecting performance.

Work Load Limit (WLL):

WLL is a practical limit set to ensure safe operation of the equipment in real-world conditions.

It considers various factors such as environmental conditions, dynamic loading(movement, acceleration, deceleration etc), equipment wear and tear, and operational considerations.

WLL may vary depending on the specific task, conditions, and regulations, and it is often determined through risk assessments and operational experience.

The WLL is often set lower than the MRC to provide a safety margin and account for operational variables.

It is the responsibility of the reach stacker operator to find out the weight of a load.

Path of travel

Inspecting the work area also helps you to determine the most appropriate pathways for operating the reach stacker and for moving and placing loads.

When planning your path of travel you should consider some of the following things:

- When should you sound the horn?
- Will you need to reverse?
- Where will you have to stop?
- Where should you slow down?
- What is the speed limit?
- Are there places the reach stacker can't go?
- Where will there be pedestrians?
- Is there a suitable area to place the load?

CHAPTER 2

PREPARE FOR WORK/TASK

Maintain consultation

When preparing for the work task, you must continue to consult with the relevant people as required. This is important to make sure that the work plan is clear, and is consistent with the requirements of the work site and safe work procedures.

Safe work procedures (SWPs)

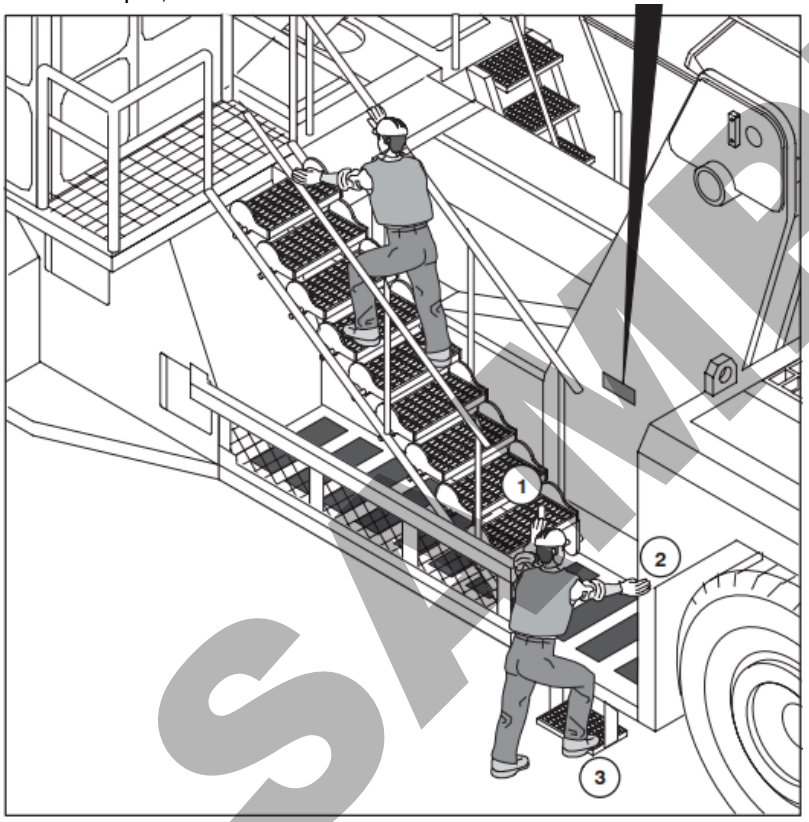
Safe work procedures (SWPs), which may also be referred to as Standard operating procedures (SOPs) are documents that:

- Tell you about the risks involved in doing a certain work task
- Outline the controls that can be put in place to help you do the task safely
- They are usually written as a set of basic steps for workers to follow.

Access reach stacker safely

Always use three (3) points of contact facing the machine.

For example, use two hands and one foot or two feet and one hand.



three points of contact

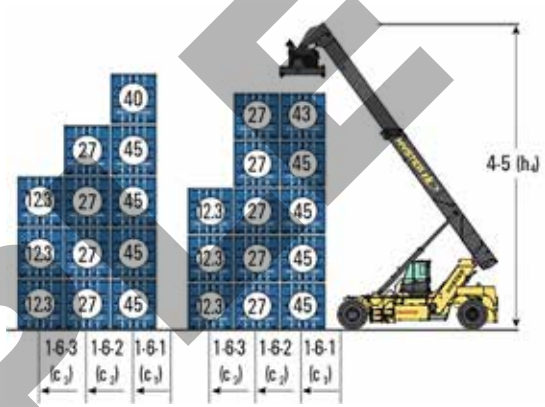
Pre-start checks continued...

Signage:

Check that you can read signage on the reach stacker such as rated capacity and the data plate.

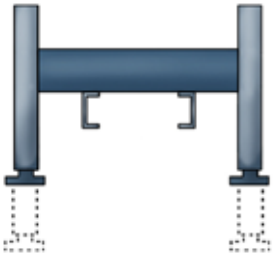
Safety tags:

Check that there are no safety tags on the reach stacker. Do not use the reach stacker if there are.



Load charts:

Check that you have load charts and that they are the right ones for the reach stacker that you are using. Load charts tell you how much you can lift (capacity and capabilities).



Stabilisers:

Check stabilisers if fitted.

Operational checks continued...

Limit switch:

Limit switches can be used to detect when the boom has reached its maximum extension or when the spreader has reached its maximum reach.

Travel limit:

A travel limit on a reach stacker refers to the maximum distance or range that the reach stacker can travel safely.

Operational checks continued...

Check that the reach stacker's computer / visual display is working accurately. You can do this by:

- Check the load against a know weight.
- Follow the manufacturer's specifications for pre-operational testing.
- Compare the computer results compared to the load chart.

Make sure the stack is safe and stable

When stacking containers you should consider the following:

- make sure the ground is stable
- the ground is stable
- the corner castings are aligned
- the containers are stacked square
- wind conditions.

Don't lift loads over people

Lowering loads over people could risk serious injury or death.

CHAPTER 3

PERFORM WORK/TASK

Position container spreader over container

Position container spreader over container following directions from associated personnel (if applicable) in accordance with safe work procedures.

You need to make sure that:

- the twist locks align with the corner castings.
- you prevent damage to the container or spreader.

Note: Twist locks are a type of mechanism used in container handling equipment, including reach stackers. They are designed to securely attach containers to the equipment

Latch container spreader onto container

Container spreader is latched onto container and reach stacker is stabilised appropriately in accordance with safe work procedures

Align the corner castings when stacking containers because:

- the container wall may collapse if you don't.
- the corner castings provide structural support for the container.

CHAPTER 4
PACK UP

Leaving the cabin

Before leaving the cabin you should:

1. Stop the reach stacker on flat ground.
2. Lower the load.
3. Disengage the load.
4. Put the directional controls into neutral.
5. Put on the parking brake.
6. Turn off the engine and controls.
7. Take out the key.

Secure the boom and container spreader

Here are some steps to follow:

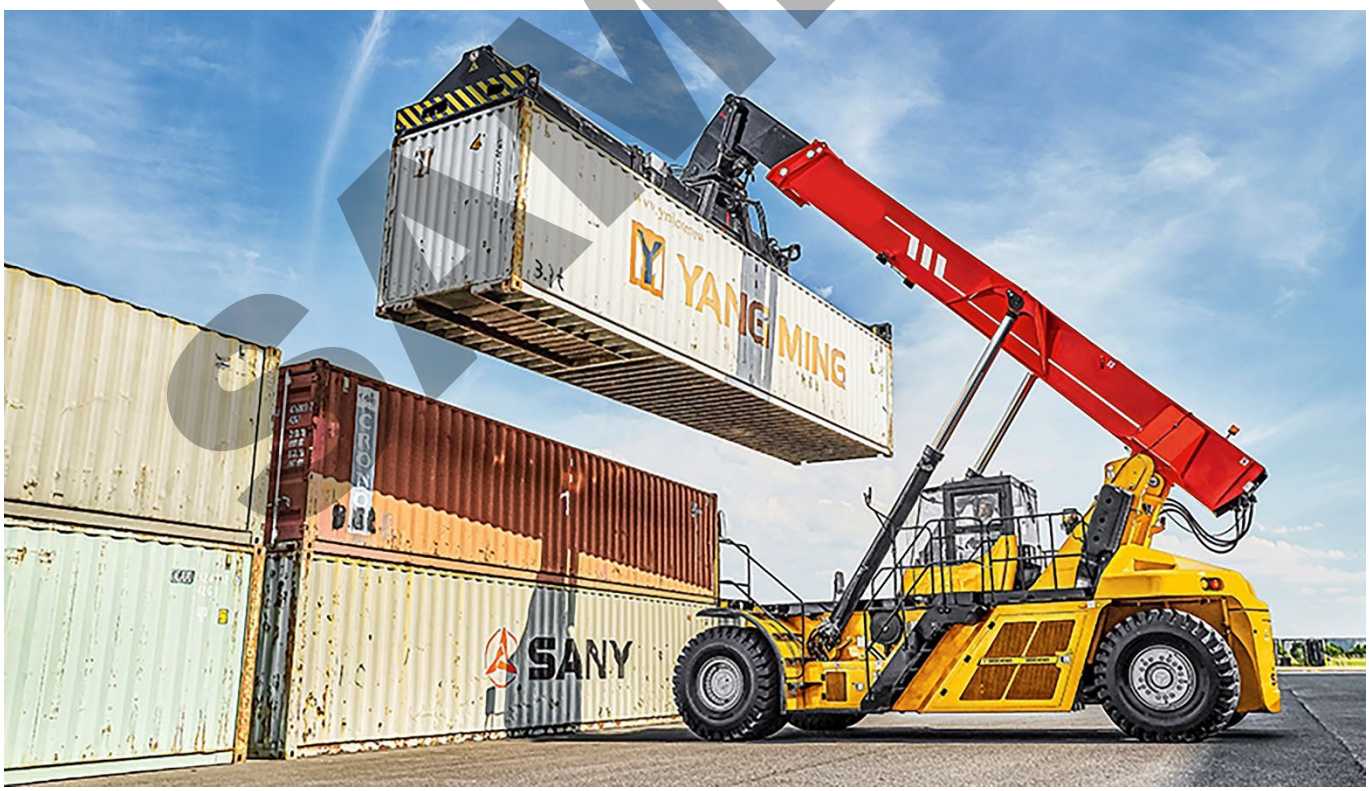
1. Park the reach stacker on level ground and engage the parking brake.
2. Stow the spreaders if applicable, and lower the boom.
3. Engage any locking mechanisms for the boom.
4. Use safety chains or straps to further secure the boom and spreader.
5. Inspect for stability and ensure all locking mechanisms are engaged.
6. Follow manufacturer guidelines and document procedures for securing.

REACH STACKER

Learner Workbook (Formative assessment)

Student copy

TLILIC0011 –
Licence to operate a reach stacker (greater than 3 tonnes capacity)



This resource was developed by
EASY GUIDES Australia Pty Ltd

Table of Contents

1. Plan work / task

Question 1 (PC 1.1)

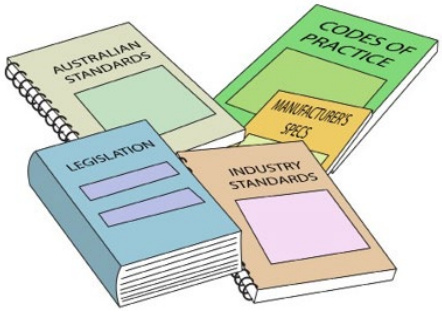
1. What is a reach stacker?

Question 2 (PC 1.1)

Name 4 places you can find information about a reach stacker?

Question 3 (PC 1.1)

Name 4 documents where you might find workplace information?



Question 4 (PC 1.1)

What duties do you have as a worker? List two.

Question 5 (PC 1.1)

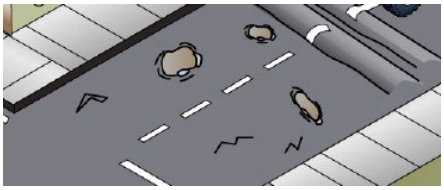
What action can a work health and safety regulator can take if you fail to work safely when using your licence to do high risk work? List two (2).

Question 6 (PC 1.1)

What duties does an employer have to make sure of the health and safety of a worker? List two (2).

Question 7 (PC 1.1)	
You have your reach stacker licence but are asked to operate an unfamiliar machine. What should your employer provide? List two (2).	
	

Question 8 (PC 1.1)	
What are some of the things you should know about the job / task before you start? List two (2).	
	

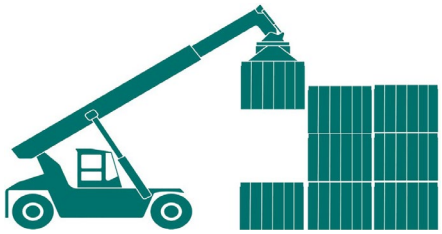
Question 9 (PC 1.2)	
Why is it important to inspect the operating surface before you start? List two (2) reasons.	
Answer may include but is not limited to: • So you can identify any hazards that exist • To determine the suitability of the surface • So you can find out the best path for driving the reach stacker and moving and placing loads.	

Question 10 (PC 1.2)

Name three (3) types of ground types preferred for operating a reach stacker.

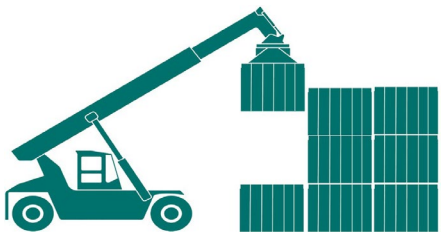
Question 11 (PC 1.3)

What is maximum rated capacity (MRC)?



Question 12 (PC 1.3)

What is working load limit (WLL)?

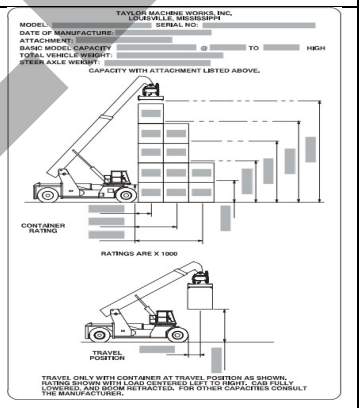


Question 13 (PC 1.3)

What is dynamic loading?

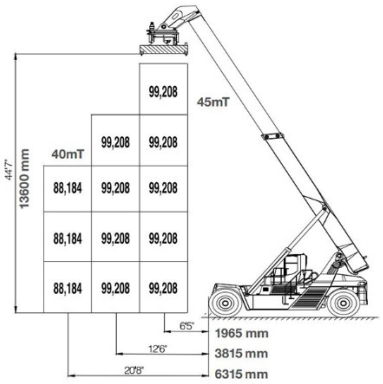
Question 14 (PC 1.3)

What information can you get from the data plate? List two (2).



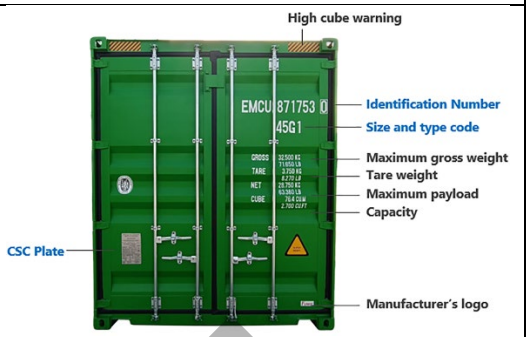
Question 15 (PC 1.3, 3.1)

What things should you keep in mind when reading a load chart? List three (3).



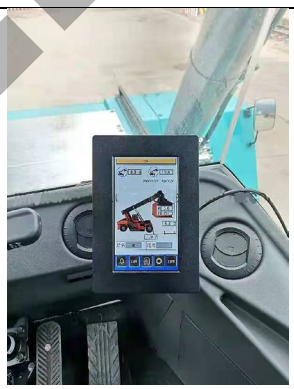
Question 16 (PC 1.3)

What does the data plate on a shipping container tell you?



Question 17 (PC 1.3)

What information will the load computer / weight scale give you? List two (2).



Question 18 (PC 1.4)

What should you consider when planning the path you will travel? List three (3).

Question 19 (PC 1.5)

What is a hazard?

Question 20 (PC 1.5)

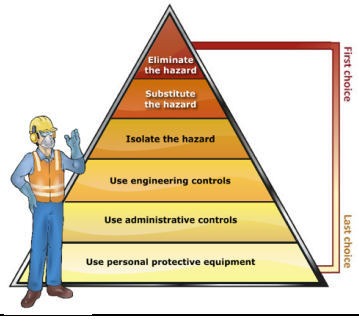
What is a risk?

Question 21 (PC 1.5)

What are some hazards you should look out for? List three (3).

Question 22 (PC 1.5)

What is the Hierarchy of Hazard Control?



Question 23 (PC 1.5)

List the six (6) levels of the Hierarchy of Hazard Control from the FIRST CHOICE to the LAST CHOICE.

1. ……..
2. ……..
3. ……..
4. ……..
5. ……..
6. ……..

Question 24 (PC 1.5)

What are some hazard control measures when using a reach stacker? List three (3).

Question 25 (PC 1.5)

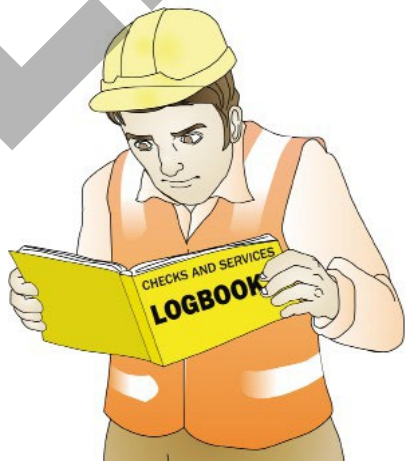
Sometimes you might be allowed to work closer to powerlines than the minimum distances (NO GO ZONES). To do this what would you need to do?

Question 40 (PC 2.7)

What should make sure of when checking on the stability of the reach stacker?

Question 41 (PC 2.8)

What should you check the logbook for? List three (3) items.



Question 42 (PC 2.9)

What are some weather and environmental conditions that can affect the operation of a reach stacker? List two (2).

Question 43 (PC 2.1)

What should you consider when stacking containers? List two (2).

Question 44 (PC 2.10)

Can you lift loads over people?

Question 45 (PC 2.10)

What should you do if working at night or in a darkened area?

MAPPING – KNOWLEDGE AND PERFORMANCE EVIDENCE

Assessment Requirements for TLILIC0011 Licence to operate a reach stacker (greater than 3 tonnes capacity)

• other specific hazards and dangerous materials (PC 1.5)	Question/s 4, 9, 21
Overhead hazards including:	
electric lines (PC 1.5)	Question/s 21,25, 26, 27, 46
• service pipes (PC 1.5)	Question/s 21
• structures (PC 1.5)	Question/s 21
• vegetation (trees) (PC 1.5)	Question/s 21
• traffic including pedestrians, vehicles and other plant (PC 1.5)	Question/s 24, 29
• operations on unusual, uneven or difficult terrains (PC 1.5)	Question/s 54
Impact of factors affecting reach stacker stability including:	
• overloading (PC 1.3, 3.1)	Question/s 15, 17
• poor container placement (PC 3.8)	Question/s 16
• unbalanced container (PC 3.5)	Question/s 32
• articulation of reach stacker (PC 3.4, 3.5)	Question/s 15
• tyre deflation/condition (PC 2.4)	Question/s 36, 40, 70
• manufacturer requirements on stabiliser procedures (PC 4.3)	Question/s 36, 56, 57, 68
• manufacturer requirements and instructions on shutting down reach stacker (PC 4.1, 4.2, 4.3, 4.4, 4.5)	Question/s 65, 69, 71
• reach stacker characteristics and capabilities including spreader operation (PC 1.3, 2.6)	Question/s 14, 15, 54, 56
Reach stacker configuration mathematical calculations to:	
• estimate loads (PC 1.3, 3.1)	Question/s
• reach requirements (PC 1.3, 3.1)	Question/s
• relevant workplace instructions, safety information, emergency procedures (PC 2.2, 4.2)	Question/s 3, 14, 31, 34, 38, 54, 67, 71
• relevant documentation requirements and procedures for recording, reporting and maintaining workplace records and information (PC 2.4, 2.6, 2.8, 3.6)	Question/s 27, 39
Risk assessment management and mitigation strategies including hierarchy of control:	
• elimination (PC 1.5)	Question/s 22, 23
• substitution (PC 1.5)	Question/s 22, 23

• isolation (PC 1.5)	Question/s 22, 23
• engineering controls (PC 1.5)	Question/s 22, 23
• administrative controls (PC 1.5)	Question/s 22, 23
• personal protective equipment (PPE) (PC 1.5)	Question/s 22, 23
• roles and responsibilities of duty holders as per legislative obligations Work Health and Safety (WHS)/Occupational health and Safety (OHS) requirements and safe work/workplace procedures (PC 1.1)	Question/s 1, 2, 3, 4, 5, 6
• prestart and operational checks required for a reach stacker (PC 2.4, 2.6)	Question/s 36, 38, 70
• problems and equipment faults, and application of appropriate response procedures to unplanned and/or unsafe situations (PC 2.4)	Question/s 39, 59
• starting procedure of reach stacker as per manufacturer requirements (PC 2.5)	Question/s 8, 36
Weather bureau forecasts and environmental conditions that could impact operation including:	
• lightning (PC 2.2)	Question/s 42
• wind (PC 2.2)	Question/s 40, 42, 43
• water on ground (PC 2.2)	Question/s 42
• Ultra Violet (UV) exposure (sun glare) (PC 2.2)	Question/s 42
• workplace standards, requirements, policies and procedures for conducting operations for the mobile reach stacker (PC 1.1, 2.4, 3.6)	Question/s 3, 33, 34, 40, 41, 64, 71
Work area suitability based on relevant ground reports including:	
• backfilled ground (PC 1.2)	Question/s 40
• bitumen (PC 1.2)	Question/s 10
• concrete (PC 1.2)	Question/s 10
• hard compacted soil (PC 1.2)	Question/s 10
• pre-contaminated soils (PC 1.2)	Question/s 10
• rock (PC 1.2)	Question/s 10
• rough uneven ground (PC 1.2)	Question/s 10
• soft soils (PC 1.2)	Question/s 10

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements and performance criteria on at least one occasion and include:

Criteria	TASK
Applying mathematical procedures in conjunction with reach stacker load chart to determine:	
• radius requirements	TASK 1
• container stack height	TASK 1
• ability to perform work/task	TASK 1
• applying best mobile practice including:	TASK 2
• allowing for boom deflection	TASK 2
• carrying container near to ground surface	TASK 2
• container spreader as low as possible	TASK 2
• gently accelerating and braking	TASK 2
• minimising boom length	TASK 2
• minimising speed as applicable to reach stacker stability	TASK 2
Assessing suitability of planned route for reach stacker and ensuring appropriate path is in accordance with traffic management plan and is:	
• clear of obstacles	TASK 3
• clear of personnel	TASK 3
• free of ramps or inclines	TASK 3
• checking container weights to ensure they are within reach stacker capacity in accordance with range diagram/container chart	TASK 4
Communicating with other workplace personnel through using appropriate worksite protocols which must include:	TASK 5
• 2-way radio	TASK 5
• active listening	TASK 5
• demonstrating and interpreting hand signals	TASK 5
• questioning to confirm understanding	TASK 5