RIGGING INTERMEDIATE
FINAL REVIEW STUDY GUIDE

Training support material for:

CPCCLRG3002A – Licence to perform rigging intermediate level

Produced by:

EASY GUIDES Australia Pty Ltd

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Introduction to rigging intermediate

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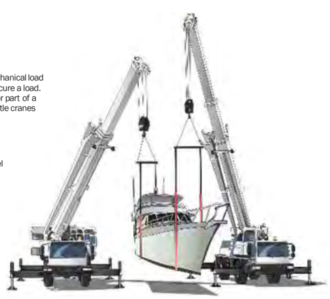
What is intermediate rigging?

- Rigging of cranes
- Rigging of conveyors
- Rigging of dredges and excavators
- Rigging tilt slabs
- Demolition work
- Dual crane lifts.

Intermediate rigging includes using mechanical load shifting equipment to move, place or secure a load. It also involves using plant, equipment or part of a structure/building to set up and dismantle cranes and hoists.

Prerequisite

- CPCCLRG3001A
  Licence to perform rigging basic level
- A valid licence for basic rigging (RB)



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plan job

Element 1

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QUESTION 8

What kind of jobs can an intermediate rigger legally do?

Any rigging work to do with:

- erecting cranes, excavators, conveyors and dredges
- erecting hoists
- self-climbing hoists
- erecting tilt slabs, pre-cast and tilt up concrete panels
- demolition work
- overseeing dual/multiple crane lifts
- All work that a basic rigger can do.

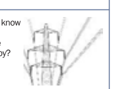
QUESTION 9

You will plan for site hazards later.

What other things do you plan for before starting a task?

Where is the job?

Things you must know about the site. For example, are powerlines nearby?



How will you get in and out of the site?

What permits do you need for the task?

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QUESTION 9

...CONTINUED FROM PREVIOUS PAGE

You will plan for site hazards later.

What other things do you plan for before starting a task?

What equipment do you need for the task?

Is the equipment available and suitable for the job?

What is the size and mass of the load?

What is the mass of the required lifting gear?

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QUESTION 9

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You will plan for site hazards later.

What other things do you plan for before starting a task?

Have you chosen crane/s with the right capacity?

For example,

Hand signals:
If you can see the crane driver at all times.

Whistle signals:
If you cannot always see the crane driver.

Fixed channel radio:
If the site is noisy (fixed change two-way radios stop others from interfering with your instruments).

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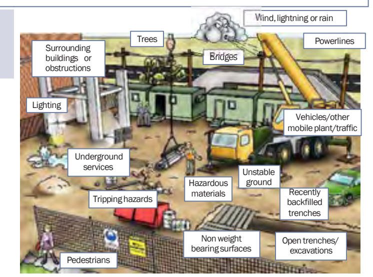
QUESTION 10

What are tiger tails for?

Tiger tails show where power lines are.

QUESTION 11

What hazards (dangers) might you find at the worksite when doing rigging work?



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QUESTION 12

The Hierarchy of Hazard Control is a list of controls that you can use to eliminate or lower the danger from a hazard in the workplace.

What are the six (6) levels in the hierarchy from the first choice to the last choice?

1. **Elimination:** If possible, remove (take away) the hazard.
2. **Substitution:** Use a safer method if you can't remove the hazard.
3. **Isolation:** Stop access to the hazardous (dangerous) area.

4. **Engineering Control Measures:** Change the tools, equipment or environment to make it safer.
5. **Administrative Practices:** Reduce the time the worker is exposed to the hazards by using training, job rotation, the timing of jobs, etc.

Memory aid: Every **S**aturday **I E**at **A P**ie

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How to remember the Hierarchy of Hazard Control

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QUESTION 13

What standards and processes can you use to control the hazard of high wind (wind load)?

Make sure crane drivers know the crane's ability in high wind.

Find out about wind using:

- AS 2550 Cranes, hoists and winches – Safe Use
- the crane's load chart
- the crane's operating manual
- other manufacturer's information.

Have a worksite policy. If it is very windy, stop crane lifts and working at heights.

Beaufort Scale Number	Description	Unit in kms/h	Description for land
0	Calm	0	Smoke rises vertically
1 - 3	Light winds	19 km/h or less	Wind felt on face Leaves rustle Ordinary vanes moved by wind
4	Moderate winds	20 - 29 km/h	Raises dust and loose paper Small branches are moved
5	Fresh winds	30 - 39 km/h	Small trees (in leaf) begin to sway Crested wavelets form on inland waters
6	Strong winds	40 - 50 km/h	Large branches in motion Whistling heard in telephone wires Umbrellas used with difficulty
7	Near gale	51 - 62 km/h	Whole trees in motion Inconvenience felt when walking against wind

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QUESTION 14

What is meant by a crane lifting plan (sometimes known as a safe work method statement)?

A Safe work method statement (SWMS) is a document that:

- lists the types of high risk construction work being done
- states the health and safety hazards and risks arising from that work
- describes how the risks will be controlled
- describes how the risk control measures will be put in place.

AS 2550 suggests planning for crane work should begin as soon as possible. The plan should include how cranes will get into the site, making sure the ground or supporting structure can support the crane, what loads will be lifted and where they will be lifted to.

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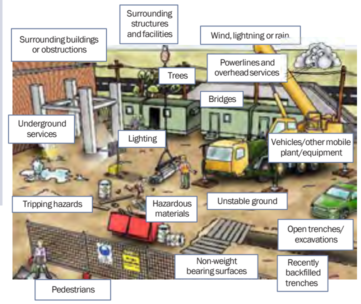
QUESTION 15

Description of worksite:

- It is a large industrial site and other companies and people are also using the site
- A mobile crane is already operating
- The site is new and has underground services.

What are some common hazards you might find at the worksite?

How do you control some of these hazards?



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QUESTION 15

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- A mobile crane is already operating
- The site is new and has underground services.

What are some common hazards you might find at the worksite?

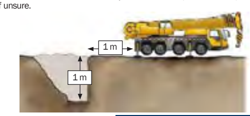
How do you control some of these hazards?

Hazard: Power lines and overhead service lines (for example, cable TV).

Hazard control: Crane lift plan must allow for safe distances. In some states, you can use a spotter to work closer.

Hazard: Ground conditions, for example, if there have been recent excavations (trenches dug and filled in) for underground services.

Hazard control: Set up the cranes at a safe distance from trenches or soft ground. A general rule is however deep the trench was or is, be at least that far away. For example, if the trench is one metre deep, cranes should be one metre or more away from the trench (the 1 to 1 rule). Always ask the engineer if unsure.



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QUESTION 15

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Description of worksite:

- It is a large industrial site and other companies and people are also using the site
- A mobile crane is already operating
- The site is new and has underground services.

What are some common hazards you might find at the worksite?

How do you control some of these hazards?

Hazard: Poor lighting.

Hazard control: Make sure lighting is adequate. Set up light towers if necessary.

Hazard: Pedestrians and other workers.

Hazard control: Set up barriers and exclusion zones.

Hazard: Wind, bad weather and trees.

Hazard control: Check the lift plan or SWMS as well as the cranes limitations for working in bad weather conditions (eg: wind rating).

Hazard: Buildings, bridges, surrounding structures and obstructions.

Hazard control: Crane lift plan must make sure that all parts of the crane or cranes and load are kept clear. Maintain a safe distance and operating radius.

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QUESTION 15

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Description of worksite:

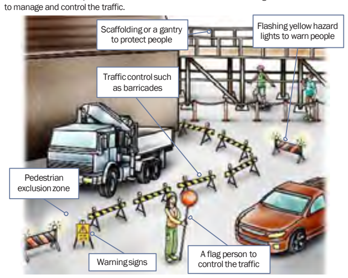
- It is a large industrial site and other companies and people are also using the site
- A mobile crane is already operating
- The site is new and has underground services.

What are some common hazards you might find at the worksite?

How do you control some of these hazards?

Hazard: Plant and equipment.

Hazard control: Set up barriers and exclusion zones. Also consider using a worker to manage and control the traffic.



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QUESTION 16

Before you begin working on a new site, what sort of information do you need from the safety officer, engineer (if available), and supervisor?

Safety officer: Site hazards, hazard controls for the site, safety policies for the site.

Engineer: Site plans and drawings, load bearings details such as soil bearing pressure forces in a structure.

Supervisor: Job instructions, local information about the site, other contractors and work area arrangements.

QUESTION 17

How do you get information about nearby powerlines, for example powerline voltage?

Contact the local electricity supply authority.

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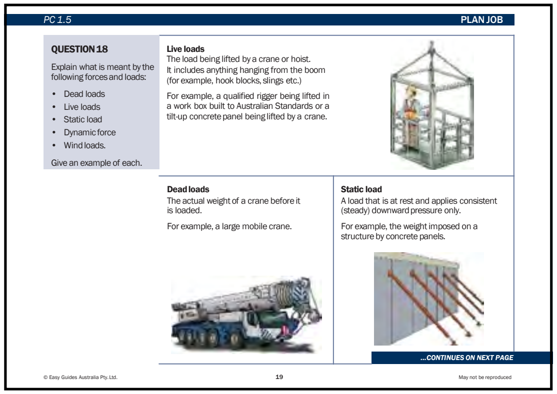

PC 1.5 — PLAN JOB

QUESTION 18

Explain what is meant by the following forces and loads:

- Dead loads
- Live loads
- Static load
- Dynamic force
- Wind loads.

Give an example of each.

Live loads
The load being lifted by a crane or hoist. It includes anything hanging from the boom (for example, hook blocks, slings etc.)

For example, a qualified rigger being lifted in a work box built to Australian Standards or a tilt-up concrete panel being lifted by a crane.

Dead loads
The actual weight of a crane before it is loaded.

For example, a large mobile crane.

Static load
A load that is at rest and applies consistent (steady) downward pressure only.

For example, the weight imposed on a structure by concrete panels.

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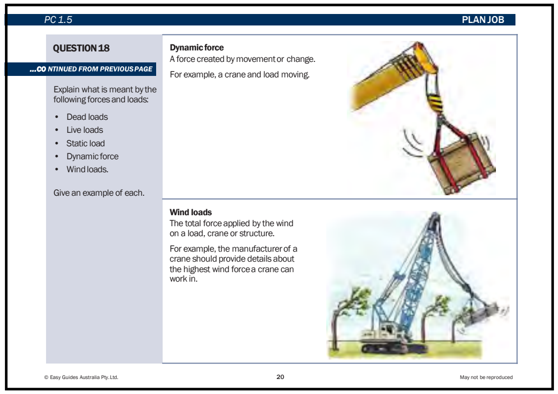

PC 1.5 — PLAN JOB

QUESTION 18

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Explain what is meant by the following forces and loads:

- Dead loads
- Live loads
- Static load
- Dynamic force
- Wind loads.

Give an example of each.

Dynamic force
A force created by movement or change.

For example, a crane and load moving.

Wind loads
The total force applied by the wind on a load, crane or structure.

For example, the manufacturer of a crane should provide details about the highest wind force a crane can work in.

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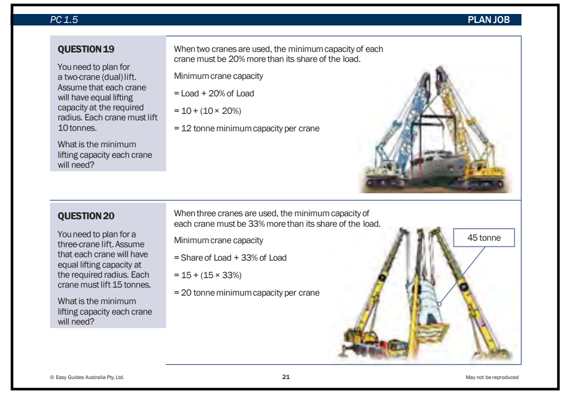

PC 1.5 — PLAN JOB

QUESTION 19

You need to plan for a two-crane (dual) lift. Assume that each crane will have equal lifting capacity at the required radius. Each crane must lift 10 tonnes.

What is the minimum lifting capacity each crane will need?

When two cranes are used, the minimum capacity of each crane must be 20% more than its share of the load.

Minimum crane capacity

= Load + 20% of Load

= 10 + (10 × 20%)

= 12 tonne minimum capacity per crane

QUESTION 20

You need to plan for a three-crane lift. Assume that each crane will have equal lifting capacity at the required radius. Each crane must lift 15 tonnes.

What is the minimum lifting capacity each crane will need?

When three cranes are used, the minimum capacity of each crane must be 33% more than its share of the load.

Minimum crane capacity

= Share of Load + 33% of Load

= 15 + (15 × 33%)

= 20 tonne minimum capacity per crane

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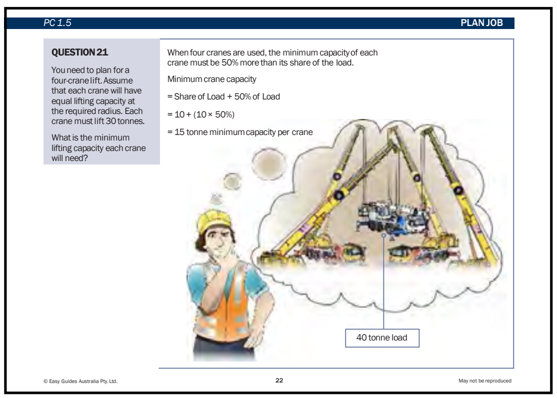

PC 1.5 — PLAN JOB

QUESTION 21

You need to plan for a four-crane lift. Assume that each crane will have equal lifting capacity at the required radius. Each crane must lift 30 tonnes.

What is the minimum lifting capacity each crane will need?

When four cranes are used, the minimum capacity of each crane must be 50% more than its share of the load.

Minimum crane capacity

= Share of Load + 50% of Load

= 10 + (10 × 50%)

= 15 tonne minimum capacity per crane

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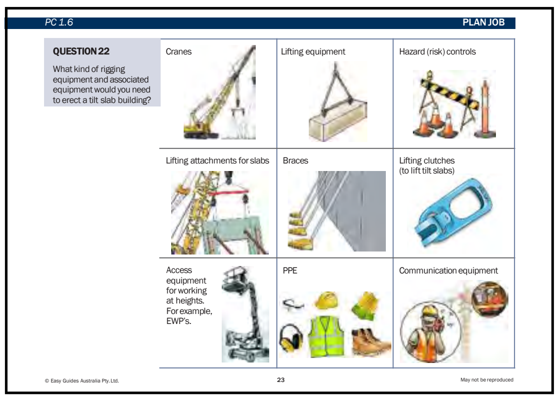

PC 1.6 — PLAN JOB

QUESTION 22

What kind of rigging equipment and associated equipment would you need to erect a tilt slab building?

Cranes	Lifting equipment	Hazard (risk) controls
Lifting attachments for slabs	Braces	Lifting clutches (to lift tilt slabs)
Access equipment for working at heights. For example, EWP's.	PPE	Communication equipment

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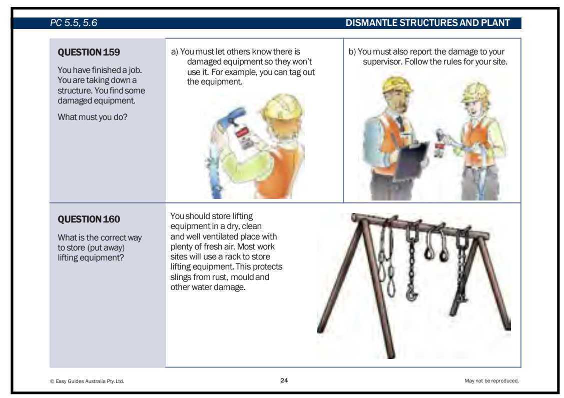

PC 5.5, 5.6 — DISMANTLE STRUCTURES AND PLANT

QUESTION 159

You have finished a job. You are taking down a structure. You find some damaged equipment.

What must you do?

a) You must let others know there is damaged equipment so they won't use it. For example, you can tag out the equipment.

b) You must also report the damage to your supervisor. Follow the rules for your site.

QUESTION 160

What is the correct way to store (put away) lifting equipment?

You should store lifting equipment in a dry, clean and well ventilated place with plenty of fresh air. Most work sites will use a rack to store lifting equipment. This protects slings from rust, mould and other water damage.

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QUESTION 161

You have finished rigging work.

What do you have to do with the hazard prevention equipment?

Some things you might do are:

Put away barriers and bollards.
Take down signs.

Take down safety nets.