

SLEWING MOBILE CRANE LEARNER WORKBOOK

TLILIC0010 Licence to operate a slewing mobile crane (up to 20T)

**With load chart calculations
similar to NAI**



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Learner name:

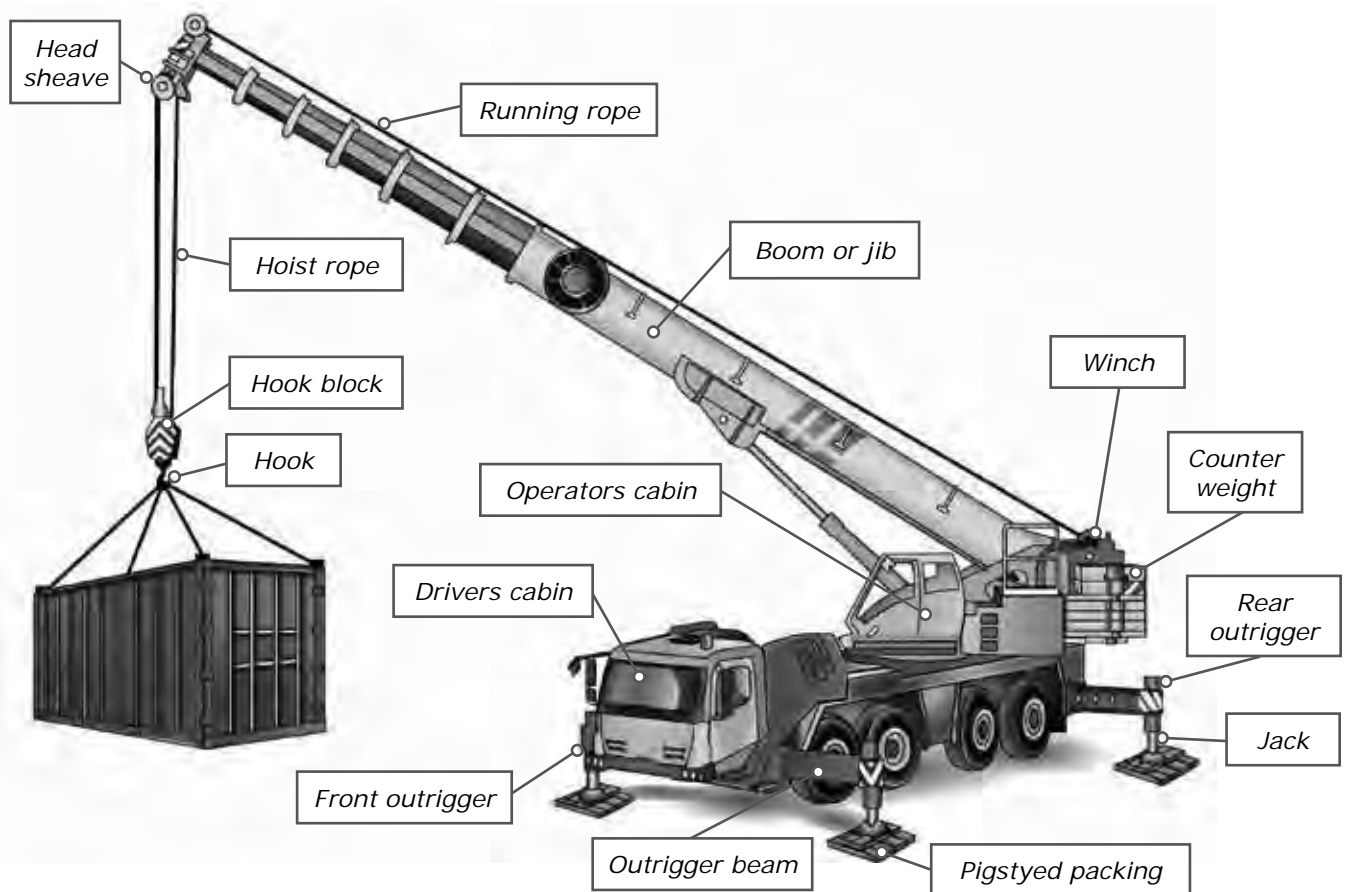
Student number:




Date:

What is a slewing mobile crane?

A slewing mobile crane is a powered crane which features a boom or jib that can slew from front to back. The crane is mounted on a vehicle.

Parts of a slewing mobile crane



<p>Slewing mobile crane</p> 	<p>Crawler crane</p> 
<p>Rough terrain slewing crane</p> 	

This learner resource does not cover front-end loader, backhoe, excavator or similar equipment when configured (arranged or set up) for crane operations.

Performance Criteria: 1.2

Check the ground conditions

Before you set up the crane in the work area, check that the ground can support the crane and the load.



Theory Training Task 32

Performance Criteria: 1.2

Do you think the following **ground conditions** are safe to set up a slewing mobile crane or need further checking to make sure they are stable?

Circle the correct answer.

Recently flooded ground	Safe	Needs further checking
Hard compact soil	Safe	Needs further checking
Bitumen road	Safe	Needs further checking
Swamp area	Safe	Needs further checking
Soft soil	Safe	Needs further checking
Uneven ground	Safe	Needs further checking



Theory Training Task 33

Performance Criteria: 1.2

What might happen if you set up the slewing mobile crane over underground services?

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Load charts

This book covers up to 100 tonnes slewing mobile crane capacities.

Read this page, and answer the questions about the crane capacity you are studying for. For example, if you are studying for the Licence to operate a slewing mobile crane (up to 20 tonnes), you only need to do those questions.

Introduction to load charts

All cranes have their own load chart. The load chart gives information about the load capacity of the crane in a given configuration (set up). The crane's capacity changes depending on how the crane is set up.

The configuration of the crane includes:

- the outrigger set up
- the length and angle of the main boom
- maximum line load and winch capacity
- fly jib and hook attachments.

Other important information can include:

- specific limitations of boom angles
- operational condition such as wind speed.

Read all of the information on the load chart.



Part 5

Set up the crane





Theory Training Task 38

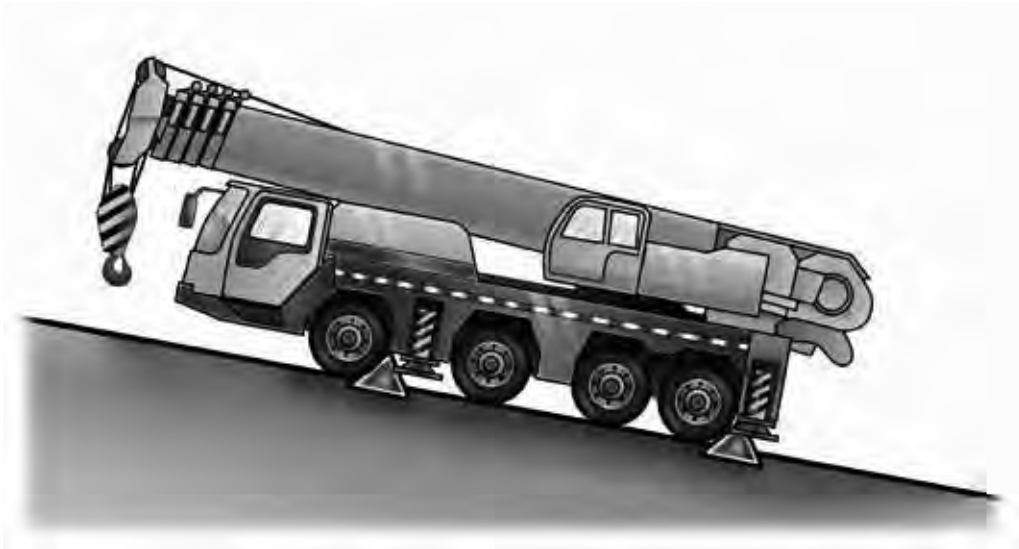
Performance Criteria: 1.2

Write a number in each box to show the right order in which you **set up** a slewing mobile crane on **sloping ground**.

Chock the wheels

Put on the parking brake

Set up the outriggers on the lowest side to level the truck



Theory Training Task 39

Performance Criteria: 3.3



Why are outriggers and packing important when you use a slewing mobile crane?

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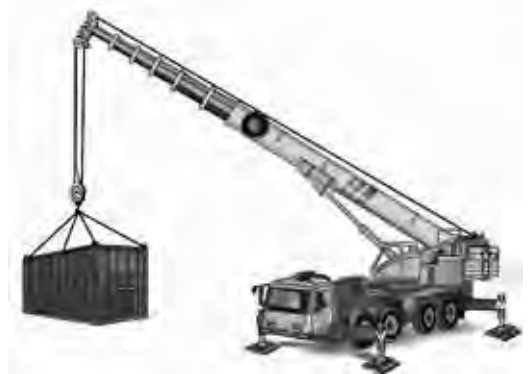


Theory Training Task 40

Performance Criteria: 1.8, 3.3

a) What is the formula for calculating packing?

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b) Use the figures below to estimate the area needed for packing.

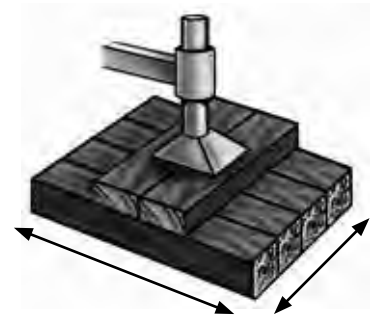
Cm (crane mass) = 42 t

L (load mass) = 21 t

V (bearing pressure of the ground in tonnes m²) = 25 t

Round up to the nearest whole centimetre.

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c) What is the length of one side of packing?

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Theory Training Task 41

Performance Criteria: 1.2

Label the types of packing shown below.



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Part 6

Do the lift





Theory Training Task 49

Performance Criteria: 2.6, 3.2

What do you need to plan for when moving a load within the crane's working radius?

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Theory Training Task 50

Performance Criteria: 2.5

Can you exceed the safe working load (SWL) at a given radius of the crane?

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Performance Criteria: 3.2

Position the boom/jib

Position the boom/jib and hoist block over the load's centre of gravity.



Theory Training Task 51

Performance Criteria: 2.6, 3.2

Who guides you when you're positioning the boom/jib and hoist block over the load?

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