



GASCOIGNE
TRAINING AND
ASSESSMENT

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Non-Loadshifting Equipment

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TELESCOPIC MATERIALS HANDLER (T.M.H)

(Under 3 Tonne SWL)

- Over 3 Tonne it becomes a mobile crane non slewing and the operator needs a certificate of competency from Worksafe.

Assessment Instrument

Name	
Make/Model	
Date	

On-Site Operator Training & Assessment

Mobile Plant Hazard & Risk Assessments

Operator Certificates for: All types of Earth-Moving Plant

Certificates of Competency for: Cranes, Forklift, Dogging, EWP Scissor and Boom Lifts

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Assessor guidelines – general

1. Introduction

1.1 Scope

These general guidelines apply to all the assessment instruments for the certificates of competency prescribed by the *National Guidelines for Occupational Health and Safety Competency Standards for the Operation of Loadshifting Equipment and Other Types of Specified Equipment*.

Assessors should also be familiar with the publication *Assessment guidelines for National Occupational Health and Safety Certification Standards for users and operators of industrial equipment*.

1.2 Additional guidelines

Guidelines which provide additional specific information to certificate assessors are also included in each assessment instrument. Included, where appropriate, are specific instructions on the usefulness of training records (such as logbooks) and other certificates with overlapping competencies.

1.3 Evidence of competence

Evidence of competence is established in a number of ways. The methods used in the following instruments involve:

- assessment of practical performance
- written and/or oral answers to questions on underpinning knowledge.

2. Preparing for the assessment

2.1 Study the instruments

You need to read the assessment instruments and specific instructions carefully before beginning an assessment.

2.2 Confirm appointments

Prior to an assessment, you need to confirm the date, time and location of the assessment with the applicants and any other relevant people.

2.3 Equipment availability

The availability of equipment, materials and a suitable working area must be organised and confirmed, prior to the assessment.

2.4 Workplace factors

Because procedures and processes vary greatly between workplaces, it is important for assessors to plan their approaches to meet the requirements of the individual workplace.

Make sure you take the timeframe into account when planning the assessment and also make applicants aware of any time limits.

2.5 Selecting questions

Questions for the written/oral assessment should be randomly selected, either by hand or using the computer system, if applicable.

3. Conducting the assessment

3.1 Provide an explanation

Begin by explaining clearly to the applicants what is required of them. Check that applicants have provided (or have been provided with) the necessary tools and equipment.

3.2 Practical performance
Completed the performance checklist, as the applicant works through the required tasks. Wherever possible, this should be done in a normal working environment.

Do not ask the applicant questions while he or she is performing a task, as this can be distracting, and may affect the time taken to complete the assessment.

If, at any time, the applicant is endangering himself/herself or others, stop the assessment immediately. This indicates that the applicant is not yet competent and may require further training, before being reassessed.

Assessments should also be stopped, if equipment or property is likely to be damaged.

3.3 Knowledge
The knowledge assessment covers both oral and written exercises. The model answers provided with the knowledge assessment instruments are not necessarily exhaustive. Use your own judgement when scoring alternative answers.

3.4 Recording responses
Each item and question on the assessment forms you use is accompanied by a box. Assessors must complete every box as follows:

CORRECT
PERFORMANCE/ANSWER

X NOT YET ACHIEVED

N/A NOT APPLICABLE

If a box is marked incorrectly, cross out the mistake, mark the correct response alongside, and initial the change.

4. Determining competencies

4.1 Assessment summary
A specific assessment summary is given for each certificate class. This is to be filled in and signed by the assessor, and countersigned by the applicant.

The original and duplicate are given to the applicant. The applicant provides the original to the certifying authority. The triplicate is retained by the assessor.

4.2 Competency requirements
In order for you to deem an applicant competent, he or she must have completed each section of the assessment to the standard required. You should note any time constraints when arriving at your decision.

The standard required for each instrument is specified in the specific guidelines and/or on the summary page at the end of each assessment.

In the case of a repeat assessment, the assessor can decide to apply the whole or only part of the assessment.

4.3 Additional comments
Where an applicant fails to meet the standard of competence, you should add a written comment on the Assessment Summary, which briefly explains the problem.

Advice to the applicant, on the appropriate remedial action should also be included. This will also assist the certificate assessor, in the event that the applicant undergoes future reassessment.

Likewise, if an applicant demonstrated outstanding or remarkable performance, this should be noted.

4.4 Further investigation

As a certificate assessor, it is your role to determine whether or not an applicant has achieved the standard necessary for the certifying authority to be able to grant a certificate of competency.

Whenever you are unsure of the applicant's performance or knowledge ask additional questions, and obtain additional evidence, before making your final decision.

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National Guidelines for OHS Competency Standards

Loadshifting Equipment

Telescopic Materials Handler

Performance Assessment

January 2000

TELESCOPIC MATERIALS HANDLER

(Performance assessment)

Assessor guidelines – specific

ASSESSMENT INSTRUMENT - SPECIFICATIONS

The performance assessment covers
the following Loadshifting elements.

1.1, 1.2, 1.3, 2.1, 3.1 & 3.2

1. The assessment requires the operator to check the equipment, plan the work and to safely and competently operator the Telescopic materials handler.

The assessment is performed in ten sections:

- 1.1 Conduct routine pre-operational check of telescopic materials handler, equipment and the security of attachments.
- 1.2 Inspect the site, plan work and select and fit appropriate attachments.
- 1.3 Conduct pre-operational and post start up checks.
- 1.4 Drive the telescopic materials handler to the work area.
- 1.5 Use the telescopic materials handler in the crane mode.

- 1.6 Demonstrate the correct operating techniques for different attachments

- 1.7 Pick up material in the bucket.

- 1.8 Shut down equipment and secure site.

2. Prior learning and experience

- 2.1 An applicant who holds a front-end loader/backhoe, front-end loader, forklift or excavator certificate does not require assessment in sections 2, 3, and 4.

- 2.2 Applicant who produces satisfactory documentary evidence (such as a log book) which establishes 50 days experience in telescopic materials handler operations specifically covering competencies tested in assessment sections 2, 3, and 4 does not require assessment in those sections.

3. The performance assessment can be conducted at any location which has:

- sufficient clear space to operate the machine
- ground suitable for leveling and shifting materials

4. Equipment and Resources Required:
- Telescopic Materials Handler and equipment.
 - A wire rope sling, chain sling, shackle and a fibre rope tag line.
 - Suitable loads to sling (such as a bundle of timber and a concrete pipe).
 - Suitable site on which to use the telescopic materials handler and equipment to demonstrate the correct operating techniques for different attachments, use the telescopic materials handler in the crane mode and to load or simulate loading of a truck.
5. Unless other arrangements are agreed to by the assessor, it will be the responsibility of the applicant, applicant's employer or trainer to provide the required equipment and resources.
6. To be assessed an applicant must wear:
- safety helmet (where required)
 - appropriate footwear
 - other protective clothing and equipment as appropriate.
7. The performance of each applicant is to be recorded on the assessor's checklist.
8. Safety of personnel:
- When an applicant is working dangerously, recklessly or without the necessary co-ordination, the assessor must direct the applicant to cease work and terminate those parts of the assessment immediately.
9. The items in the shaded boxes are of critical importance. Failing to get any of these correct means that competency has not been achieved.
10. The applicant's competence in each unit is to be summarised for both performance and knowledge on the summary sheet. Competence is achieved for a unit when the required number of boxes for that unit have been ticked or marked 'N/A'.
- Overall competence is achieved when competence in all units has been assessed.
11. Where an applicant is assessed as 'not yet competent' he/she must be informed of the reason(s) in order to gain further appropriate training.
12. The full performance assessment can take up to 1 hour 15 minutes.
13. The general assessment requirements are set out in Assessor's guidelines – general.

CONDUCT ROUTINE CHECKS:

Performance Criteria 1.1.1 and 1.1.2

1. Conducts routine checks on vehicle/equipment:

- Tyre condition and inflation

Checks liquid levels –
• fuel

- hydraulic oil

- engine oil

- battery

- coolant

Checks structure for defects -
• damaged or broken parts

- loose nuts, bolts and couplings

Checks attachments for defects –
• damage

- purpose built attachment for cracks or wear

- hoses, fittings, hydraulic rams for oil leaks

- connections for missing pins or keepers

- grease holes and grease pins

Checks other equipment for defects –

- wire slings

- chain slings

- shackles

- other gear

- checks attachments for security

PLAN WORK AND CHECK EQUIPMENT:

Performance Criteria 1.2.1, 1.2.3 and 1.3.5

2. Inspects site and plan work:

Identifies Hazards –
• power lines

- phone lines

- service drains

- obstructions

Indicates access and path of movement-

- to work area

- for loads

Fits appropriate equipment –
• suitable tools used

- secures catches

- correct procedure adopted

- works safely

Performance Criteria 1.3.1

3. Conducts pre-operational and post start-up checks in accordance with manufacturer's specifications/operating manual.

- mounts correctly

- adjust seat

- in neutral

- warning device

- engine start

- gauges
- warm-up allowed
- boom and attachment movement
- clear for travel
- foot brake
- holding break
- steering

SHIFT LOAD:

Performance criteria 2.1.1 and 2.1.3

4. Drives to the work area:
- raises attachments smoothly
 - raises stabilizing legs (were applicable)
 - ensures travel direction is clear
 - selects appropriate route
 - travels at safe speed

Performance Criteria 2.1.2

5. Operates machine as a crane:
- checks sling attachment point
 - establishes weight of load
 - load not more than SWL for the operation
 - selects appropriate slings and gear
 - positions attachment to connect load
 - supervises correct slinging of the load

- ensures tag line connected (if required)
- trial lifts load
- moves load to hand signals
- moves load safely
- lowers load to a designated location

6. Demonstrate the correct operating techniques for different attachments:

- attachment at correct level and angle
- uses sufficient revs and speed
- avoids excessive wheel spin
- crowds attachment to fill or hold
- ensures direction of travel is clear
- travels with attachment low
- operates at an acceptable and safe speed
- minimises spillage or load from shifting
- uses appropriate path of travel
- approaches trench, truck, rack or other correctly
- smoothly raises and places or empties load
- repositions attachment ready for reload
- maintains a level working surface

7. Picks up and moves material with the attachment:

- picks up material
- carries material

Shuts down equipment –

- neutralises controls
- applies holding brake

**Performance criteria 2.1.1, 2.1.4
2.1.5 and 2.1.6**

- idles to stop, locks ignition
- moves controls to release pressure

**General performance of sections 4, 5, 6,
7 and 8:**

- equipment suitable for the work
- machine suitable for ground conditions
- competently shifts material
- equipment operated at a safe speed
- signals are interpreted and observed
- loads placed to ensure stability
- loads placed to avoid causing hazard

- applies safety lock (where applicable)

Post operational check –

- minor servicing
- checks and reports any damage

Avoids hazards –

- parks away from danger areas
- removes keys
- locks cabin (if applicable)

**SHUT DOWN EQUIPMENT AND
SECURE SITE:**

**Performance criteria 3.1.1, 3.1.2, 3.1.3 and
3.2.1**

8. Shuts down equipment and secures site:

Parks equipment –

- machine parked in suitable area
- attachments lowered to ground
- cutting edge of bucket on ground (where applicable)

National Guidelines for OHS Competency Standards

Loadshifting Equipment

Telescopic Materials Handler

Oral/Written Assessment

January 2000

TELESCOPIC MATERIALS HANDLER

(Knowledge)

Assessor guidelines – specific

ASSESSMENT INSTRUMENT - SPECIFICATIONS

The knowledge assessment covers the following Loadshifting elements.

1.1, 1.2, 1.3, 2.1, 3.1 & 3.2

1. Knowledge assessment for Telescopic Materials Handler is divided into three units and seventeen sections (performance criteria 1.1, 1.1.2 etc).
2. To satisfy the requirements for competency the applicant must correctly answer (either in writing or orally) the specified number of questions in each of the following sections:

Unit 1.0

1.1 Conduct routine checks

- 1.1.1 (select 4)
- 1.1.2 (select 1)

1.2 Plan work

- 1.2.1 (select 2)
- 1.2.2 (select 3)
- 1.2.3 (select 1)
- 1.2.4 (select 1)
- 1.2.5 (select 1)

1.3 Check controls and equipment

- 1.3.1 (select 1)
- 1.3.2 (select 1)

Unit 2.0

2.1 Shift load

- 2.1.1 (select 1)
- 2.1.2 (select 5)
- 2.1.3 (select 2)
- 2.1.5 (select 1)
- 2.1.7 (select 2)

Unit 3.0

3.1 Shut down equipment

- 3.1.1 (select 1)
- 3.1.3 (select 1)

3.2 Secure site

- 3.2.1 (select 1)

3. Prior learning and experience:

An applicant who holds a front-end loader/backhoe, front-end loader, forklift or excavator certificate and who answers questions for performance criteria 1.1.1, 2.1.2 and 2.1.5 satisfactorily, is not required to complete the rest of the assessment.

4. The full knowledge assessment of twenty-nine questions can take up to thirty minutes

5. The items in the shaded boxes are of critical importance. Failing to get any of these correct means that competency has not been achieved.
6. The applicant's competence in each unit is to be summarised for both performance and knowledge on the summary sheet. Competence is achieved for a unit when the required number of boxes for that unit have been ticked or marked 'N/A'.

Overall competence is achieved when competence in all units has been assessed.

CONDUCT ROUTINE CHECKS:

Performance criteria 1.1.1 (select 4 including 1 with a shaded box)

- 1. What precaution must be taken when inspecting under a raised attachment?
Provision provided to prevent attachment descending.
- 2. Name three defects to look for in the hydraulic system.
Oil leaks, loose connections, splits, fractures or bulges in hoses.
- 3. When should slings be inspected?
Prior to their use. (AS1666)
- 4. What % wear in a shackle would cause it to be discarded?
10% wear.
- 5. Briefly describe how you would check the air pressures of water filled tyres.
Check with the valve stem at the top of the wheel.
- 6. What safety precautions should be taken to inflate split rim wheels?
Do not stand in front of the wheel and inflate the tyre in a cage where possible.
- 7. Is it permissible to join a chain sling with a bolt?
No.
- 8. What percentage of broken wires within a lay or eight diameters of a wire rope sling would cause it to be discarded?
10%.

Performance criteria 1.1.2 (select 1)

- 9. What must be done to a lowered bucket before travelling?
Raise the bucket and secure it.

- 10. What shall be provided on a telescopic materials handler before it is used as a crane?
Special provision to attach the slings to and the SWL marked on the machine.

PLAN WORK:

Performance criteria 1.2.1 (select 2)

- 11. In built-up areas what checks should be made before excavating?
Check for power, telephone, gas or drainage lines, etc.
- 12. What would you refer to in order to establish the location of underground services?
Supply authority or council maps.
- 13. Name two methods that you would use to prevent a cave-in of a trench or excavation?
Shoring, battering or benching.
- 14. If you accidentally damage an underground electrical cable who would you immediately contact to render the power supply safe?
The electrical supply company.

Performance criteria 1.2.2 (select 3 including 1 with a shaded box)

- 15. What shall be provided to prevent a person falling into a trench?
Barricades or guardrails or fencing.
- 16. When should ear protection be worn?
Where the noise could contribute to the loss of hearing.
- 17. What is the danger of loading a truck across a sloping surface?
The machine turning over.

18. When should a person wear a safety helmet?
Where the person could be struck on the head.

19. In doubtful soil, what depth trench is required to be shored before it is entered?
Trenches over 1.5m deep.

20. What is the minimum type of footwear that an operator should wear to operate loadshifting equipment?
Non-slip footwear that encloses the foot.

Performance criteria 1.2.3 (select 1)

21. Which is the preferred route of travel, diagonally across or directly down a sloping surface?
Directly down the sloping surface.

22. What gear should be selected to travel down a steep sloping surface?
A low gear. The gear required to climb the sloping surface.

Performance criteria 1.2.4 (select 1)

23. What would you be required to obtain from the Relevant Authority to operate a machine in a hazardous working area?
The required permits.

24. What Government license do you require to drive loadshifting equipment over 4.5 tonne within the gazetted road reserve boundaries?
The appropriate heavy vehicle license.

Performance criteria 1.2.5 (select 1)

25. What two main items should be provided on loadshifting equipment to prevent the operator from being pinned by an overturned machine?
Roll over protection equipment.

26. When earthmoving equipment is used in a demolition process what shall be provided on the machine to protect the operator?
An overhead protective structure. (AS 2601)

CHECK CONTROLS AND EQUIPMENT:

Performance Criteria 1.3.1 (select 1)

27. What action would you take if you noticed a bulge form in a hydraulic hose?
Repair the hose before the machine is used.

28. When should the operator carry out tests, checks and inspections on the telescopic materials handler that is to be operated?
Daily before use.

Performance criteria 1.3.2 (select 1)

29. What action would you take with damage and defects found on the machine?
Report the damage or defects to an authorised person and ensure safety is not jeopardised.

SHIFT LOAD:

Performance criteria 2.1.1 (select 1)

30. Do telescopic material handlers have an attachment that is permissible to hoist a person with? Explain your answer
Yes. Elevated work platforms.

31. What attachment is required to be fitted to the telescopic materials handler before using chains and slings?
A jib attachment.

Performance criteria 2.1.2 (select 5)

Load charts (select 1)

32. What effect would soft or uneven ground have on the load that you would hoist and carry with the telescopic materials handler?
It would reduce the load that could be safely carried.
33. From the telescopic materials handler in cab load chart, what is the SWL to be hoisted at a radius of 3.0 metres and at a hook height of 3.0 metres?
Assessor to calculate answer from the in cab load chart.
34. From the telescopic materials handler in cab load chart, what is the SWL to be hoisted at a radius of 6.0 metres and at a hook height of (minus) – 0.5 metres?
Assessor to calculate answer from the in cab load chart.

Weight of materials (select 1)

35. What is the approximate weight of a cubic metre of concrete?
2.4 tonnes.
36. What is the approximate weight of a clay brick?
3.6 kg/each

Load factors (select 1)

37. What effect does a choker hitch around a square load have on the SWL for the sling?
Reduces the SWL by 50%.
38. What effect does a choker hitch around a round load have on the SWL for a wire rope sling?
Reduces the SWL by 25% or to 75% of SWL.

Rule of thumb formulae (select 1)

39. State the rule of thumb formula used to calculate the SWL or wire rope.
Diameter in mm squared x 8 = SWL in kgs.
40. State the rule of thumb formula used to calculate the diameter for the wire rope sling required for a specified load.
Square root of load in kg/8 = Diameter in mm.

SWL of slings (select 1)

41. What is the SWL of a 12mm diameter wire rope?
12 x 12 x 8 = 1152 kg.
42. What diameter single leg wire rope sling is required to hoist 2048 kg?
Square root of (2048/8) = 16mm.

Performance criteria 2.1.3 (select 2 including 1 shaded box)

43. What is the danger of extending the boom with a load, when the telescopic materials handler is not level?
The machine could overturn.
44. It is permissible for loads to be transported with the boom extended and/or raised?
No.
45. Before reversing a machine what precaution should be taken?
Ensure the direction of travel is clear.

Performance criteria 2.1.5 (select 1)

46. Applicant to state the meaning of the hand signal for "hoisting lower" demonstrated by the assessor.
Hoisting lower.

47. Applicant to state the meaning of the hand signal for "hoisting raise" demonstrated by the assessor.
Hoisting raise.

48. Applicant to state the meaning for the hand signal of "stop" demonstrated by the assessor.
Stop.

Performance criteria 2.1.7 (select 2)

49. What action would you take if a hydraulic hose sprung a leak while the boom was raised?
Lower boom and have repairs carried out.

50. How would you dismount a machine that contacted live power lines, which could not be released or the power turned off?
Jump clear ensuring contact with the ground and machine is not at the same time.

51. If the slings shifted on a load being hoisted, what action would you take?
Stop the machine, warn people in the area, then carefully lower the load and have the slings re-positioned and secured.

SHUT DOWN EQUIPMENT:

Performance criteria 3.1.1 (select 1)

52. Name three areas where you would not park the telescopic materials handler.
Access ways, near overhangs, refueling sites, tidal or flood areas, adjacent to an excavation.

53. When leaving the telescopic materials handler what should be done with all hydraulically raised attachments?
Attachments lowered and pressure removed from the hydraulic lines.

Performance criteria 3.1.3 (select 1)

54. What post-operational checks should the operator carry out on the telescopic materials handler, to prepare it ready to be re-operated?
Check the structure and equipment for defects and wear and the oil, fuel and water levels.

SECURE SITE:

Performance criteria 3.2.1 (select 1)

55. What shall be provided when a telescopic materials handler has to be parked on or protrudes onto an access way?
Barricades, lights and signs.

56. For what reason should the key be removed from the ignition of the machine?
To prevent unauthorised movement.

57. Before leaving the site what must be provided to restrict access to the site?
Barricades or fences.