

CONSTRUCTION
Training Group

LEARNER GUIDE

Repair & Maintenance

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Assessor Guidelines – General

1. Introduction

1.1 Scope

As the Assessment Instruments follow the guidelines set down by the National Guidelines for Occupational Health and Safety Competency Standards for the operation of Loadshifting and Other Types of Specified Equipment, Assessors should be familiar with the publication.

1.2 Evidence of Competency

Evidence of competency is established in a number of ways. The method used in the following Instrument involves:

- Assessment of practical performance
- Written and/or oral answers to questions on underpinning knowledge.

2. Prepare for the Assessment

2.1 Study the Instrument

You need to read the assessment instrument and specific instructions carefully before beginning the Assessment.

2.2 Confirm Appointments

Prior to the 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 vary greatly between workplaces, it is important for Assessors to plan their approaches to meet the requirements of individual workplaces.

Make sure you take the time frame 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 applicant what is required of them. Check that the applicant has provided (or has been provided with) the necessary tools and equipment.

3.2 Practical Performance

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

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

If, at any time the applicant has endangered 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 be stopped, if equipment or property are 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 form you use is accompanied by a box. Assessors must complete every box as follows:

- Correct performance/answer
- Not yet achieved
- Oral assessment
- S** Simulated assessment
- N/A** Not applicable

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

4. Determining Competencies

4.1 Assessment Summary

A specific Assessment Summary is given for each equipment class. This is to be filled in and signed by the Assessor, and countersigned by the Applicant.

The duplicate is given to the applicant. The original with digital identification photo is sent to the certifying authority by the assessor. The triplicate remains with 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 in each Instrument is specified in the specific guidelines and/or on the summary page at the end of each Assessment.

4.3 Additional Comments

Where an Applicant fails to meet the standard of competency, 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 further reassessment.

Likewise, if an Applicant demonstrates 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 restricted equipment operator HSO qualification card.

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

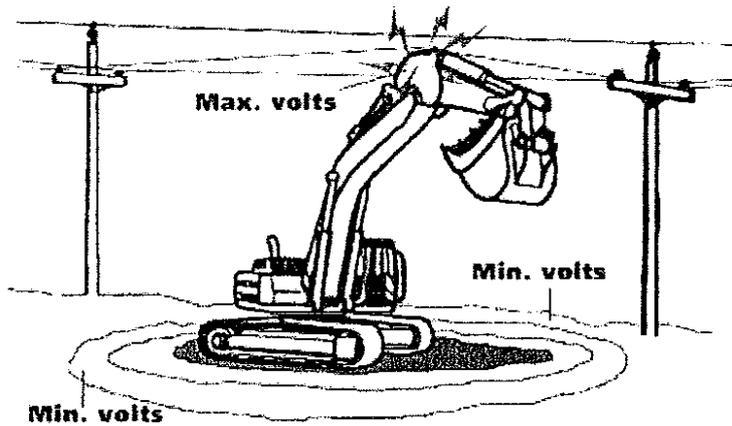
National Guidelines for OHS Competency Standards

Repair and Maintenance Personnel

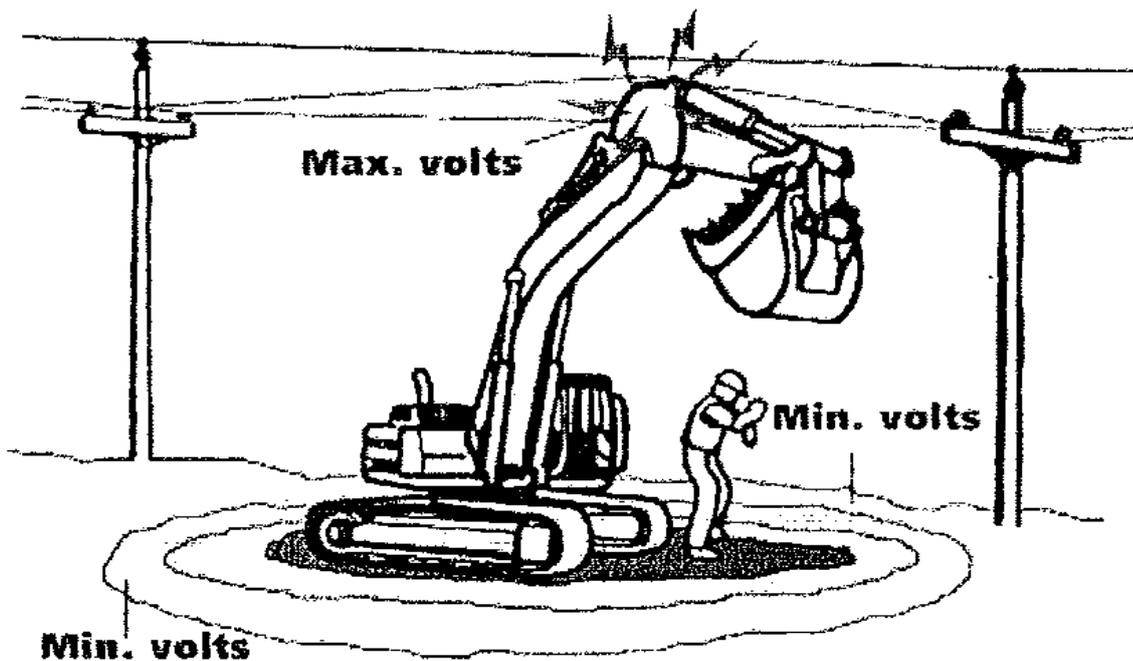
PART ONE

Performance Assessment

Diagram 1:



If anything touches a high-voltage power line or if a power line falls to the ground, electricity will flow to the ground energising the tree or equipment and anything in contact with it. The surrounding ground may be extremely hazardous. The voltage gradually decreases from the point of contact until it reaches zero. The safe distance shown here— 10 metres — is for line voltages up to and including 66 kV (66,000 V).

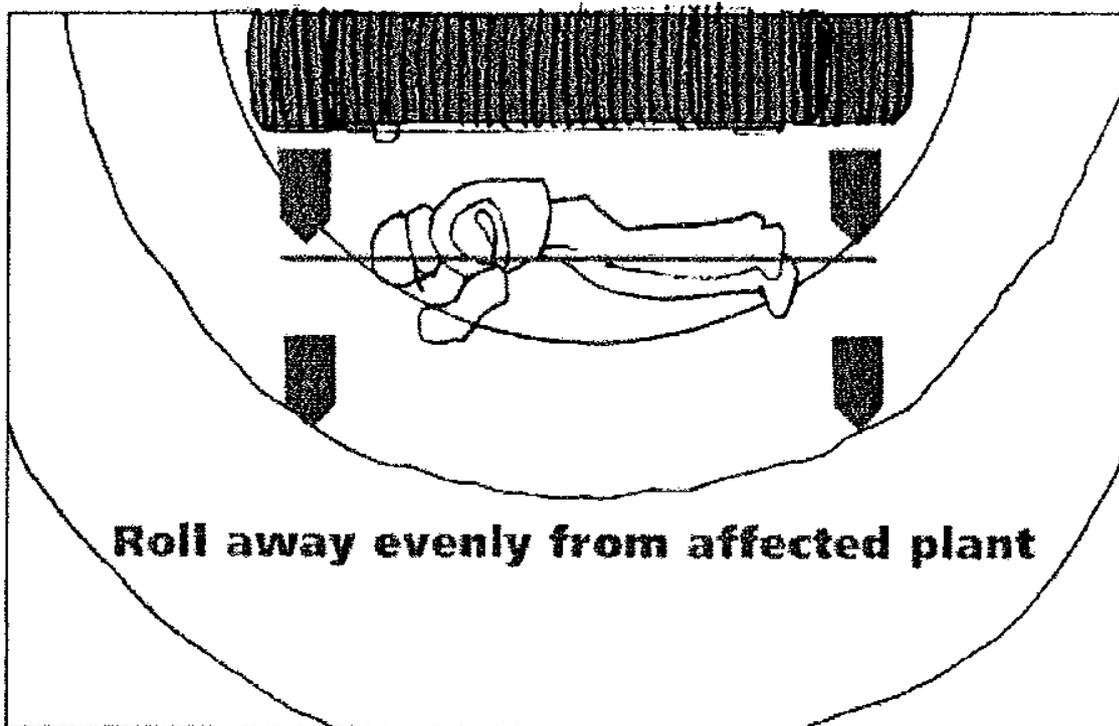
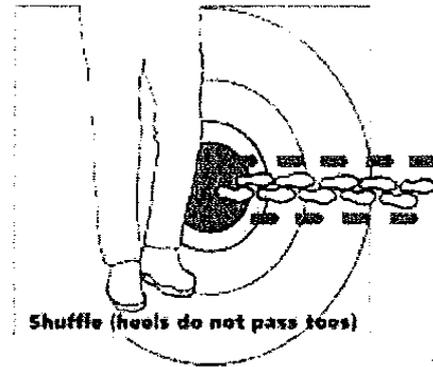
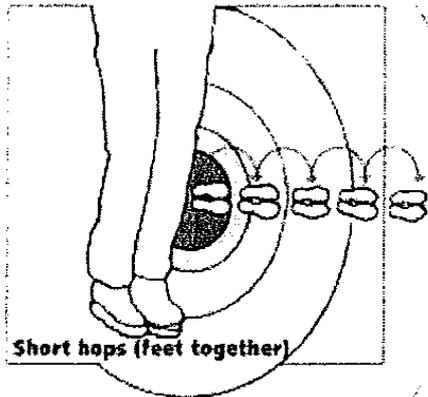


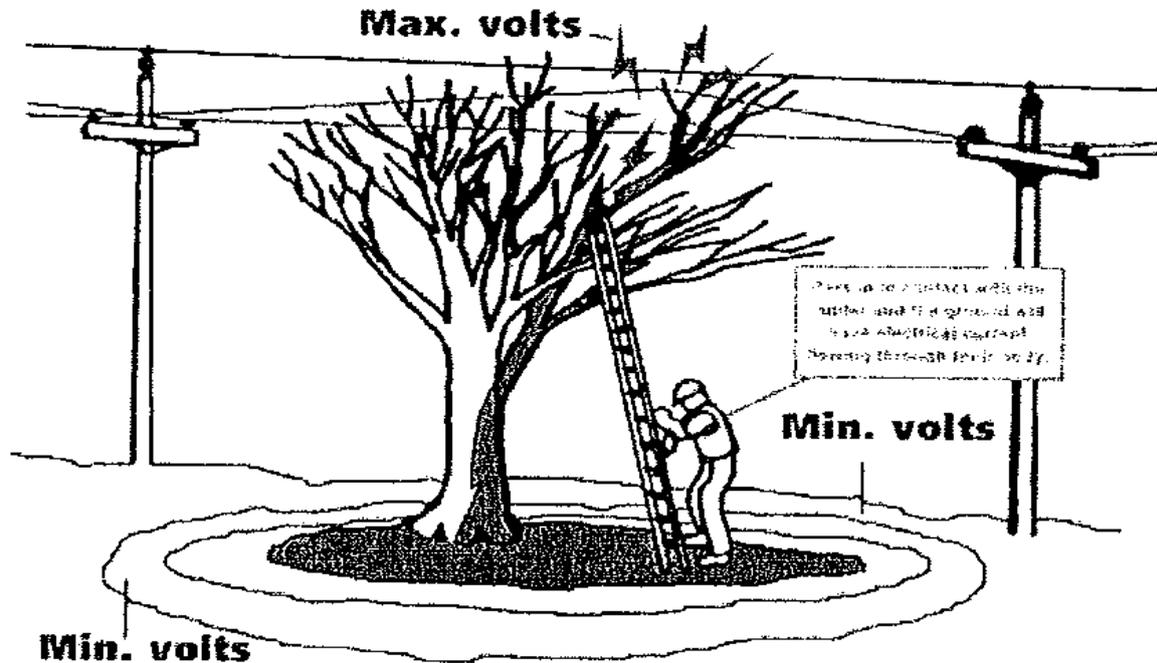
Step potential

Step potential is the voltage difference between two places that are a step apart on energised ground. For example, if you are standing on energised ground, there could be a significant difference in voltage between where one foot and the other are placed, and an electric current could flow up one leg and down the other.

Step potential. If your feet are spread apart on energised ground, electricity can flow through your body from the area of higher voltage to the area of lower voltage.

If your feet are close together and touching, you are fairly safe. Since there is almost no voltage difference between the places your feet stand, there is little reason for electricity to seek a path through your body.





Touch potential

Touch potential is another danger that comes from the difference in voltage. It occurs when you touch something that is energised while standing on the lower voltage ground. For example, if some equipment is in contact with a power line, it will be energised to the same voltage as the power line; the surrounding ground will be energised to a lower voltage. If you touch the energised equipment or tree at the same time as you touch the ground with your feet, electricity will flow through your body from the higher voltage equipment to the lower voltage ground.

Touch potential: Trees and equipment become energised when they contact a power line. Electricity can flow through a worker who touches the energised tree or equipment, often causing serious injury or death.

Currents greater than 75 mA can cause ventricular fibrillation (rapid, ineffective heartbeat) and will cause death in a few minutes.

Assessor Guidelines – Specific (Performance Assessment)

ASSESSMENT INSTRUMENT – SPECIFICATIONS

The following performance assessment covers the Loadshifting Standard elements from [NOHSC: (1992) which apply to personnel who repair & maintain equipment

1. The Assessment requires personnel to check the equipment, plan the work and to safely test the equipment.

The Assessment is performed in three sections:

- 1.1 Conduct routine pre-operational check on the equipment.
- 1.2 Inspect the site and plan the work.
- 1.3 Conduct pre-operational and post start up checks on the equipment.

- 2.1 Drives the equipment to the work area.
- 2.2 Test equipment safely.

- 3.1 Shut down the equipment and secure the site.

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

- Sufficient clear space to operate the machine
- Ground suitable for testing the equipment

3. Equipment and resources required:

- Relevant equipment
- Suitable site on which to use the equipment

4. 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.

5. To be assessed an Applicant must wear:

- Safety helmets (where required)
- Appropriate footwear
- Other protective clothing and equipment as appropriate

6. The performance of each Applicant is to be recorded on the Assessor's checklist.

7. Safety of personnel

When an Applicant is working dangerously, recklessly or without the necessary coordination, the Assessor must direct the Applicant to cease work and terminate the Assessment immediately.

8. The items in the shaded boxes are of critical importance. Failure to get any of these correct means that competency has not been achieved and the Applicant must be failed.

9. In cases where criteria cannot be physically performed the applicant is required to demonstrate his/her understanding of these criteria by answering relevant questions orally, or by simulation. The type of answer provided is to be shown on the assessment sheet as:

O Oral

S Simulated assessment

N/A Not applicable

10. Where an applicant is assessed as “not yet competent” he/she must be informed of the reason(s) for the failure in order to gain further appropriate training.

11. The full Performance Assessment can take up to forty five minutes.

12. The Applicant’s competence in each unit is to be summarised for both performance and knowledge on the summary sheet. Competency is achieved for a unit when the required number of boxes for the unit have been ticked or marked, “O”, “S” or “N/A”.

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

Conduct Routine Checks:

1.1 Routine checks on vehicle/equipment

- Tyre condition and inflation or condition of drums, wheels or tracks

Checks liquid levels -

- Fuel
- Hydraulic Oil
- Engine Oil
- Coolant
- Transmission

Checks equipment for defects -

- Damaged, worn or broken parts
- Loose nuts, bolts
- Hoses and fittings
- Ground engagement tools

Plan Work and Check Equipment:

1.2 Inspects site and plans work.

Identify Hazards -

- Rough/uneven/unstable terrain
- Obstructions
- Plant/personnel
- Soft and sloping edges
- Services, eg power, gas
- Wet slippery conditions
- Restricted operator vision area

Operational Checks:

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

- Mounts correctly
- Adjusts seat, secures safety belt
- In neutral, park, start
- Warning device
- Personnel clear
- Starts engine
- Checks gauges – warning lights
- Familiarisation of controls
- Braking system
- Steering

Drives Unit:

2.1 Drives to the test area.

- Attachments in correct travel position
- Ensures travel direction clear
- Selects appropriate route
- Travels at safe speed
- Obeys road, warning signs

Test Equipment:

2.2 Tests equipment safely.

- Maintains safe distance from edge as directed by Supervisor, Site Instructions, Spotter, Signing or Barricades
- Aware of personnel/plant
- Checks control movements
- Operates on level ground
- Ensures travel direction is clear
- Smoothly operates controls
- Operates with attachments at correct height
- Operates at a safe and acceptable speed
- Signals are interpreted and observed

Shuts down equipment and secures site:

3.1 Shuts down equipment and secures site

Parks equipment -

- Parks away from danger areas and in a suitable location
- Attachments lowered to ground or, if left raised safety locks in place

Shuts down equipment -

- Neutralises controls
- Sets parking brake/safety lock
- As per Operation Manual
- Moves controls to release pressure
- Tags out unit (if applicable)
- Removes keys
- Locks cabin (if applicable)
- Dismounts correctly

National Guidelines for OHS Competency Standards

Repair and Maintenance Personnel

PART TWO

ORAL/WRITTEN Assessment

Assessor Guidelines – Specific (Knowledge Assessment)

1. Knowledge assessment for repair and maintenance personnel is divided into three units.
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:

If the assessment is conducted orally, the assessor should record the answers provided by the applicant.

1.1 Conduct routine checks

Select 8

1.2 Plan Work

Select 8

2.1 Drives Unit

Select 8

3.1 Shut down equipment

Select 4

4. The full knowledge assessment of twenty eight questions can take up to forty five 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 and the applicant must be failed.

1.1 CONDUCT ROUTINE CHECKS

(select 8 from Q1-11 including all shaded boxes)

1. What should be the first check of the equipment before start-up?
 Walk around it looking for visual defects
2. What precautions must be taken when an inspection or work has to be performed under a raised attachment or crush point area.
 Provision provided to prevent personnel from being injured by striking or crushing
3. Name five pre-operational checks that should be carried out on the equipment before it is started.
 Radiator, battery, fuel, oil, hydraulic lines, tyres, structural etc
4. Name three defects that you would look for when conducting a routine check on the hydraulic system of the equipment.
 Hydraulic oil leaks, loose connections and hoses for splits, fractures or bulges
5. What action would you take with any structural defects you found while conducting an external check on the equipment.
 Report the defects to the authorised person or take action according to company policy
6. What warning device must function on the equipment to warn personnel that it is to travel, in reverse or is travelling,?
 A reversing or motion warning alarm
7. What should be provided on the equipment to prevent the operator from being dislodged from the seat?
 A safety belt
8. What would you look for to ensure that attachments are securely attached to the equipment?
 Safety pins, clips, locks in place
9. How would you remove the radiator filler cap on an engine that has not completely cooled off?
 Slightly loosen cap to release pressure and then slowly remove cap
10. Why shouldn't the hydraulic oil storage tank be filled above the filled mark?
 Space in the tank is needed for displacement in the system
11. When changing a battery which battery clamp should be removed first?
 The earthed battery clamp

1.2 Plan Work

(select 8 from Q12-23 including all shaded boxes)

12. Why should side hill travel be avoided where possible?

- There is a greater risk of turning the equipment over with side hill travel*

13. What effect would a rough or stony surface have on the operating speed of the equipment?

- It would decrease the safe operating speed of the equipment*

14. Where a danger exists, what should be posted or positioned to warn persons of a danger?

- Warning signs, barricades*

15. What checks should be made before excavating?

- Check for services in area*

16. What are the dangers of operating near the edge of fills - embankments? List 2

- The edge of fill may collapse. The equipment could tip or rollover. Injury to operator*

17. When should ear protection be worn?

- Where the noise could contribute to the loss of hearing*

18. If there is a likelihood of the equipment being overturned what must be provided to protect the operator?

- A rollover protective structure and safety belts*

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

- Directly down the sloping surface*

20. Why shouldn't a gear change be made while driving equipment up a steep sloping surface?

- If the gear change was missed the equipment may not be able to be safely controlled*

21. What gear should be selected to travel down a steep sloping surface?

- A low gear. The gear required to climb the sloping surface*

22. What should the operator check after the seating position has been changed?

- The steering actions of the equipment*

23. What is required to be obtained before unregistered equipment is driven along a public road?

- An unregistered vehicle permit*

2.1 Drives Unit

(Select 8 from Q24-34 including all shaded boxes))

24. What is the danger of travelling or turning with highly raised attachments?
- The equipment could overturn*
25. Is it permissible to hoist persons in the bucket of the equipment?
- No
26. Is it permissible to attach slings to the teeth of the bucket?
- No
27. Is it permissible to carry passengers on the equipment?
- No. Only if there is approved seating and seatbelts*
28. As an operator would you leave an unattended engine running?
- No
29. Before reversing equipment what precaution should be taken?
- Ensure the direction of travel is clear*
30. Would you coast the equipment downhill?
- No
31. What direction would you approach and how **would** you cross a ditch?
- At an angle and slowly*
32. When travelling what would you do before travelling down a steep grade?
- Reduce speed with service brake and select the appropriate gear for the grade*
33. How would you dismount from equipment that has contacted live power lines?
- Jump clear ensuring contact with the ground and equipment is not at the same time*
34. What actions would you take if equipment you were operating started to slide over an embankment?
- Immediately stop the equipment. Get help if it is not possible to drive or reverse out slowly.*

3.1 Shut Down Equipment

(Select 4 from Q35-40 including all shaded boxes)

35. Name three areas where you would not park the equipment.

- Access ways, near overhangs, refuelling sites, tidal or flood areas, adjacent to an excavation

36. Where possible what type of surface should be selected to park the equipment on?

- A level surface

37. Which direction should the equipment face if it has to be parked on a sloping surface?

- Across the slope

38. When leaving the equipment what should be done with all hydraulically raised attachments?

- Lowered and pressure removed from lines, or if left in raised position, safety pins, locks in place

39. What shall be provided when equipment has to be parked on or protrudes onto an access way?

- Barricades, lights and signs

40. For what reason should the key be removed from the ignition of the equipment?

- To prevent unauthorised movement

Unit	Form of assessment	Total number of boxes in the assessment	Number of boxes given or NA	Number of boxes required to meet standard	Were all critical boxes given or NA?		Assessment standard requirements achieved *		
					Yes	No	Yes	No	
1	Performance	26		20	Yes	No	Yes	No	
	Knowledge	16		12	Yes	No	Yes	No	
	Assessment completed within time allowed							Yes	No
2	Performance	14		11	Yes	No	Yes	No	
	Knowledge	8		6	Yes	No	Yes	No	
	Assessment completed within time allowed							Yes	No
3	Performance	10		7	Yes	No	Yes	No	
	Knowledge	4		3	Yes	No	Yes	No	
	Assessment completed within time allowed							Yes	No

*Performance standard = Number of items required to meet standard (including all critical boxes)

Knowledge standard = Number of questions required to meet standard (including all critical boxes)

Summary

Candidate is:

COMPETENT

NOT YET COMPETENT

Date: _____

Name of Assessor: _____ Signature: _____

Name of Candidate _____ Signature: _____

Comments/feedback:
