

LEARNER GUIDE

Haul Truck

HT

Specifications-The following performance assessment covers the Loadshifting Standard elements from [NOHSC: (1992)] which apply to a Haul Truck

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Assessor Guidelines – Specific (Performance Assessment)

- The Assessment requires the operator to check the equipment, plan the work and to safely and competently operate the haul truck.

The Assessment is performed in three sections:

- 1.1 Conduct routine pre-operational check on haul truck.
- 1.2 Inspect the site and plan the work.
- 1.3 Conduct pre-operational and post start up checks on the haul truck.
- 2.1 Drives the haul truck to the work area.
- 2.2 Load, transport, unload material.
- 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 to load, transport, unload material
3. Equipment and resources required:
 - A haul truck
 - Suitable site on which to use the haul truck to load, transport and unload material
 - Loading equipment to load the haul truck
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.

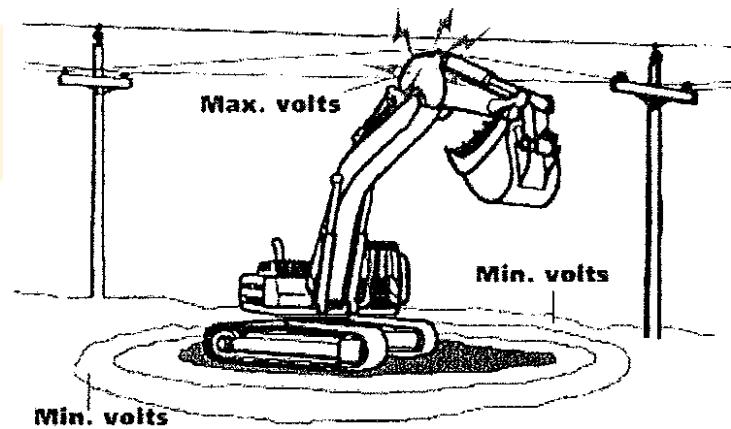
The type of answer provided is to be shown on the assessment sheet as:

- O** Oral assessment
S Simulated assessment
N/A Not Applicable

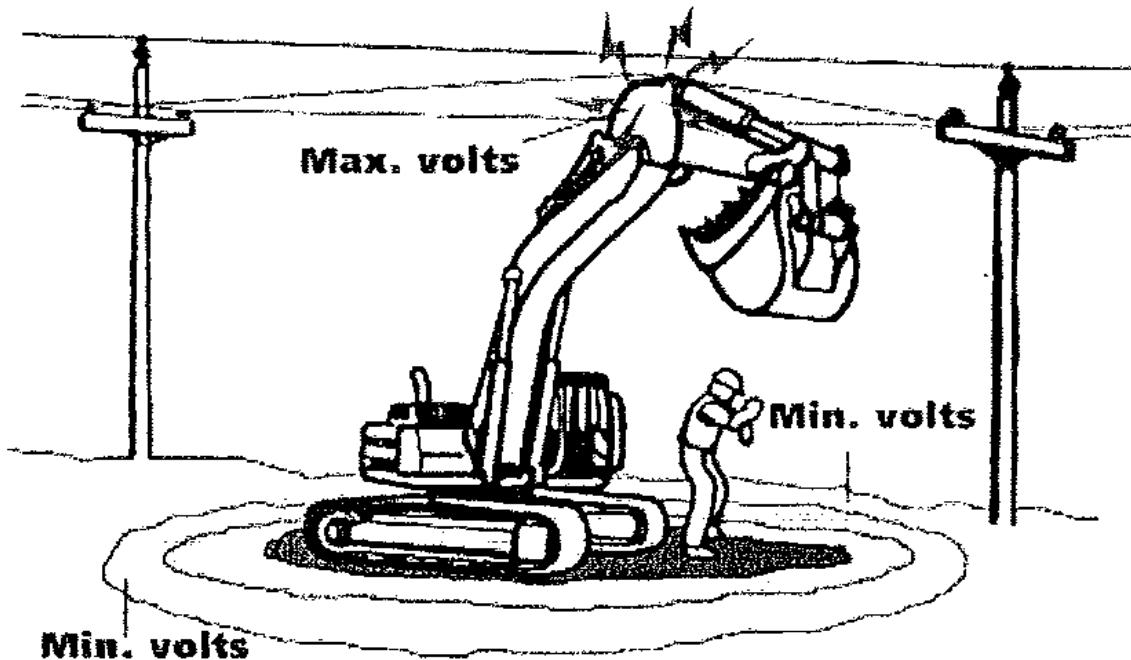
10. Where an Applicant is assessed as "not yet competent" he/she must be informed of the reason(s) for the failure in order to gain further appropriate training.
11. The full Performance Assessment can take up to forty minutes.
12. The Applicant's competence in each unit is to be summarised for both performance and knowledge on the summary sheet.
 Competency is achieved for a unit when the required number of

boxes for the unit has been ticked or marked "O", "S" or "N/A". Overall competency is achieved when all competence in all units has been assessed

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).

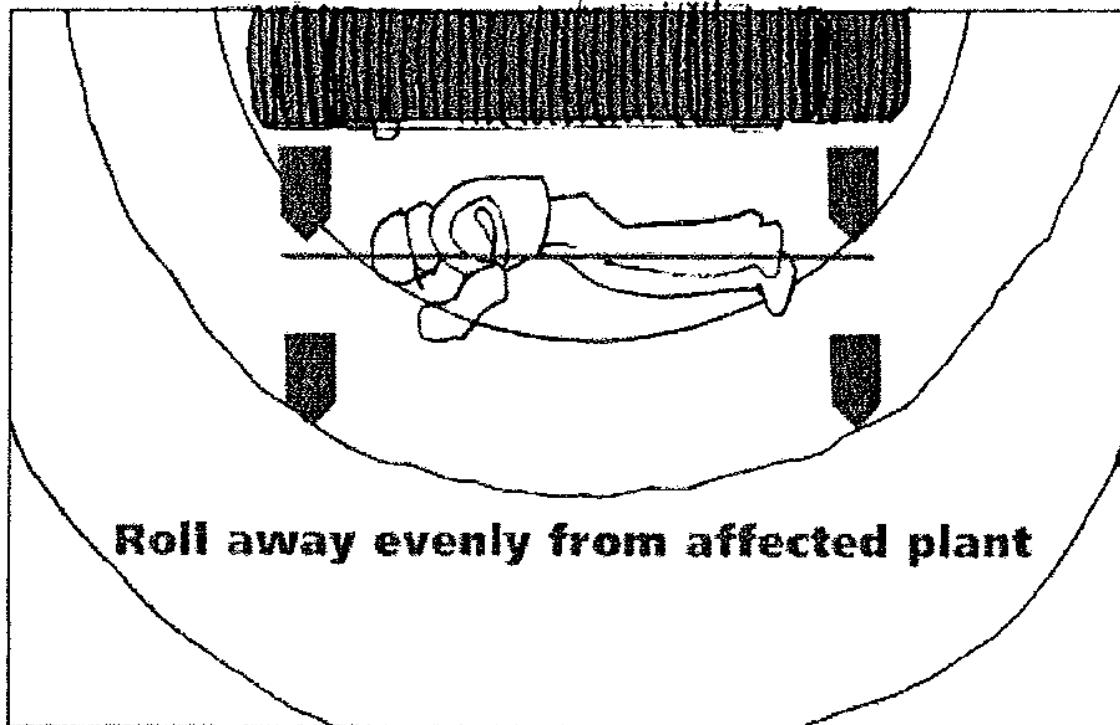
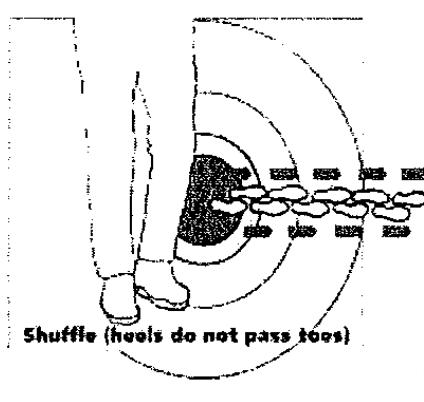
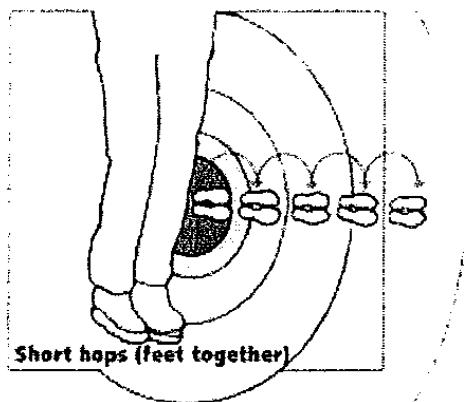


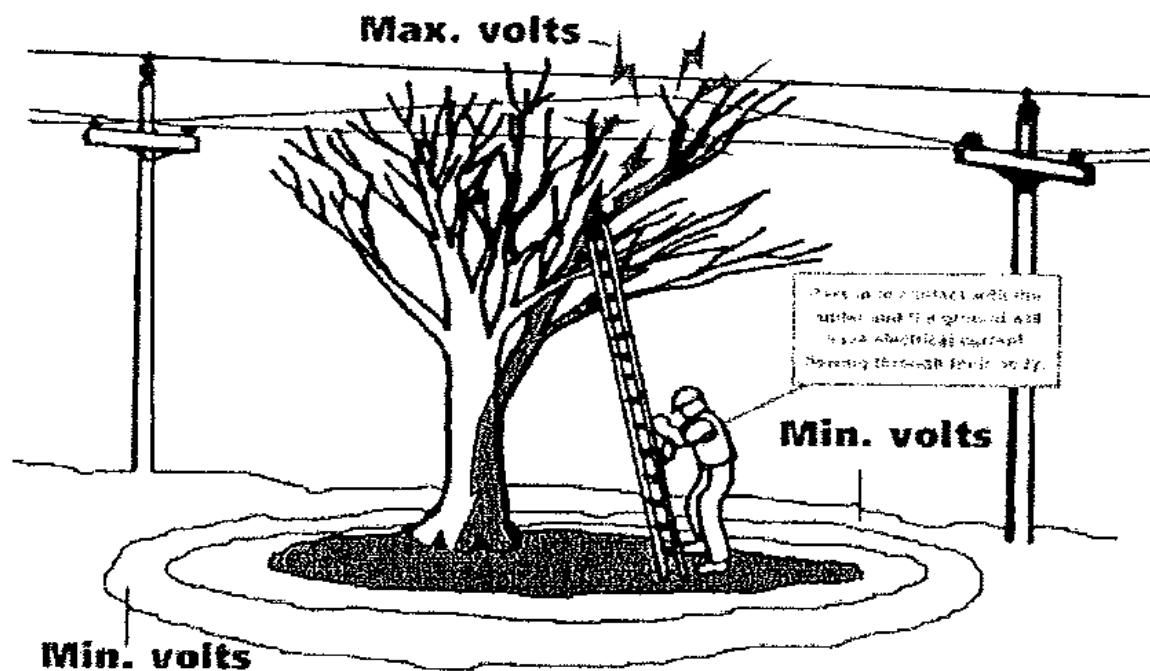
Step potential

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.

CONDUCT ROUTINE CHECKS

1.1 Routine checks on vehicle/equipment

- Tyre condition and inflation, condition of wheels.

Checks liquid levels -

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

Checks equipment for defects -

- Safety guards and covers
- Warning signs
- Damaged, worn or broken parts
- Loose nuts, bolts
- Hoses and fittings
- Grease holes and grease pins
- Connections for missing pins or keepers

PLAN WORK AND CHECK EQUIPMENT

1.2 Inspects site and plans work.

Identify Hazards -

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

Access and path of movement is indicated -

- To work area
- For work

Appropriate equipment for the task -

- Equipment is appropriate for the task

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
- Gauges, warning lights
- Braking system
- Steering
- Retarder brake

DRIVES UNIT

2.1 Drives to the work area.

- Dump body lowered
- Selects appropriate route
- Ensures travel direction clear
- Travels at safe speed
- Obeys road and warning signs

2.2 Load, transport, unload material

- Maintains safe distance from edges as directed by supervisor, site instructions, spotter, signing or barricades
- Positions haul truck in correct position for loading
- Remains in cabin while being loaded
- Checks that loading area is clear of other plant before moving off
- Uses transmission, brakes and retarder correctly
- Travels on haul road as directed by site instructions
- Maintains safe following distance with other equipment

- Travels at safe and acceptable speed
- Drives haul truck to suit ground conditions eg mud, boggy areas, inclines, rough ground, slippery ground
- Avoids sudden steering or severe braking actions on sloping ground if driving an articulated haul truck (if applicable)

Note: If not applicable the assessor is to verbally ask the applicant why these areas should be avoided.
- Avoids travelling across sloping ground if possible when driving an articulated haul truck (if applicable)

Note: If not applicable the assessor is to verbally ask the applicant why this area should be avoided.
- Checks unloading area is clear
- Obeys directions given by spotter (if applicable)
- Checks rear-view mirrors before reversing, aware of personnel
- Aware of danger areas eg obstructions, edges, excavations, overheads, other plant and equipment
- Dump body not raised while reversing over uneven ground
- Stockpile unloading, rear wheels same distance from edge (not at an angle), dump body level, obeys directions
- Hopper unloading, abides by safety directions as per company policy eg siren, bell, lights, radio communications
- Unloading over a bank, obeys spotter, uses wheel stops, safety barrier, dump body level
- Travels with dump body fully lowered
- Gives way to loaded haul trucks and scrapers
- 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
- Dump body lowered, or safety props in place

Shuts down equipment -

- Neutralises controls
- Sets parking brake/safety lock
- As per Operation Manual
- Removes keys
- Locks cabin (if applicable)
- Dismounts correctly

Post operational check -

- Minor servicing
- Checks and reports any damage

National Guidelines for OHS Competency Standards

Haul Truck Safety

PART 2

ORAL/WRITTEN ASSESSMENT

Assessor Guidelines – Specific (Knowledge Assessment)

1. Knowledge assessment for haul truck 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 must record the answers provided by the applicant.

1.1 Conduct routine checks

Select 9

1.2 Plan Work

Select 13

1.3 Check controls and equipment

Select 3

2.1 Drives Unit

Select 13

3.1 Shut down equipment

Select 3

3.2 Secure site

Select 1

4. The full knowledge assessment of forty two (42) questions can take up to 1 hour.

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 9 from Q1-16 including all shaded boxes)

1. What should be the first check of your haul truck at the start of your shift?

- 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 body or a crush point area?

- Provision provided to prevent personnel from being injured by striking or crushing.

3. Name three defects that you would look for when conducting a routine check on the hydraulic system of the haul truck.

- Hydraulic oil leaks, loose connections and hoses for splits, fractures or bulges

4. Name five pre-operational checks that should be carried out on the haul truck before it is started.

- Radiator, battery, fuel, oil, hydraulic lines, tyres, structure etc

5. What warning device must function on the haul truck to warn personnel that the haul truck is to travel or is travelling in reverse?

- A reverse warning device

6. If an air system is installed on the haul truck what daily action would you take with condensation in the air receiver?

- Drain the water from the tank

7. What problem could be indicated by bubbles or milky engine oil in the sump?

- Water leaking into the sump

8. 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

9. When changing a battery which battery clamp should be removed first?

- The earthed battery clamp

10. How would you remove the radiator filler cap of a haul truck that has not completely cooled off?

- Slightly loosen cap to release pressure and then slowly remove cap

11. What should be provided on the haul truck to prevent the operator from being dislodged from the seat of the haul truck?

- A safety belt

12. How would you establish that pre-start checks have been carried out?

- By recording relevant information on to the daily operator's check sheet

13. Why shouldn't tyres be checked when they are heat effected from travelling?

- The pressure in the tyres would be increased by the heat

14. How would you establish the service and the frequency of the service to be carried out on the haul truck you are required to operate?

- By the service manual provided by the manufacturer

15. To establish if the required service has been conducted what document would you refer to?

- The log book

16. What fault in the haul truck would excessive or uneven wear on tyres be an indication of?

- A bent axle or wheel misalignment

1.2 Plan Work

(select 4 from Q17-23) including all shaded boxes)

17. What hazards would you look for when establishing the most appropriate haul route for loads?

- Sloping, soft or rough terrain, inclines, declines, obstructions such as boggy ground, rocks and underground services

18. What would you refer to in order to establish the location of underground services?

- Supply authority or council maps

19. If you accidentally damaged an electrical cable who would you immediately contact to render the power supply safe?

- The electrical supply authority*

20. Before hauling loads what action would you take with a rutted, rough or pitted hauling route?

- Have the hauling route levelled with a grader or dozer*

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

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

22. What effect would a rough surface have on the operating speed of the haul truck?

- It would decrease the safe operating speed of the haul truck and reduce productivity*

23. What is the danger of travelling near the edge of the fill, haul road and unloading area? List two.

- The edge may collapse or Haul truck could tip or roll over) (Injury to operator*

(Select 3 from Q24-29 including all shaded boxes)

24. What should be provided to prevent a person falling into a trench or excavation?

- Barricades or guardrails or fencing*

25. How should the flow of road traffic be controlled where signs and barricades are considered inadequate to control a potential hazard?

- By a traffic controller) (Or by Police Officer*

26. When should ear protection be worn?

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

27. If there is a likelihood of the haul truck being overturned what must be provided on the haul truck to protect the operator?

- A rollover protective structure and seat belts*

28. When should a person wear a safety helmet?

- Where the person could be struck on the head*

29. What is the minimum type of footwear that an operator should wear to operate a haul truck?

- Non-slip footwear that encloses the foot*

(Select 3 from Q30-34 including all shaded boxes)

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

- Directly down the sloping surface*

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

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

32. In hazardous working areas where permission is required to work what must the operator ensure before the work is commenced?

- That the required permits have been obtained*

33. What is required to be obtained before an unregistered rubber tyred haul truck is driven along a public road?

- An unregistered vehicle permit*

34. What Government license do you require to drive a rubber tyred haul truck on a public road?

- Relevant State Government license*

(Select 3 from Q35-40 including all shaded boxes)

35. Why must the operator remain in the cabin of the haul truck being loaded?

- For his own safety and also so the loading equipment operator knows of his location*

36. Is it permissible to carry passengers in a haul truck?

- No. Only if there is approved seating and seatbelts*

37. How would you establish the capabilities and limitations of the equipment?

- By information provided by the employer and documented by the manufacturer*

38. Name the body types that are fitted to haul trucks. List 2.

- Linerless, suitable for hauling clay sand and gravel) (Rock body, suitable for hauling rocks at quarries or construction work)
- Rubber lined body suitable for hauling large and dumped stones

39. What are the advantages of rigid haul trucks?

- They are capable of carrying loads up to 150cum, at speeds of 70kph (approximate figures) suited to long hauls, on flat roads where they can utilise their high speeds and large payloads

40. What are the advantages of articulated haul trucks?

- They have 4x4, 6x4 and 6x6 wheel drive, well suited to muddy, soft ground conditions capable of carrying loads up to 25cum, at speeds of 57kph (approximate figures)

1.3 Check controls and equipment

(Select 3 from Q41-44 including all shaded boxes)

41. What actions would you take if you detected any damage or defects on the haul truck?

- Report the damage and defects to the authorised person. Refrain from operating if a danger exists and "tag out"

42. What controls would you test to ensure that the haul truck can be slowed and stopped?

- The retarder and braking control levers

43. On the start up check you notice a bulge form in a hydraulic hose. What action would you take?

- Switch off the machine and have the hose replaced

44. When should tests, checks and inspections be made by the operator on the haul truck that is to be operated?

- Daily before use

2.1 Drive Unit

(Select 3 from Q45-48 including all shaded boxes)

45. Applicant to state the meaning of the hand signal of "stop" demonstrated by the examiner.

- Stop

46. How would you dismount a machine that contacted live power lines?

- Jump clear ensuring contact with the ground and machine is not at the same time

47. 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 and use retarder

48. Before reversing a haul truck what precautions should be taken?

- Ensure the direction of travel is clear

(Select 10 from Q49-62 including all shaded boxes)

49. What is the danger of slipping tyres on shale or rock?

- The tyres may be cut and blow out

50. Would you coast the haul truck downhill?

- No

51. In addition to service brakes, for what purpose is a retarder fitted to haul trucks?

- To control the speed of the haul truck on downgrades instead of the service brakes

52. What effect does fanning the brake control instead of a firm application of the brake control have on the air pressure for the brakes?

- Fanning may exhaust the pressure faster than the compressor can replace it

53. Why is it important to place the haul truck in the correct position for loading?

- The loading equipment can load quicker and therefore increase productivity*

54. Why must caution be shown when travelling on sloping ground with an articulated haul truck. Explain your answer.

- The haul truck may tip over.
Articulated haul trucks are not as stable as rigid haul trucks on sloping ground*

55. Why must the dump body be lowered before travelling?

- With the dump body raised the haul truck would become unstable and therefore may tip over*

56. Explain why empty haul trucks must give way to loaded haul trucks and scrapers.

- The empty haul truck has better braking and manoeuvrability and can move quicker than a loaded vehicle*

57. Why is it important to obey the spotter's directions?

- The spotter has better vision at the rear of the haul truck than the operator*

58. What aids can be used to guide the haul truck operator when unloading over a bank? List two.

- Wheel stops, safety barrier, spotter*

59. What aids are used to guide the haul truck operator when unloading into a hopper? List two.

- Siren, bell, lights, radio communication*

60. Why should sudden steering or severe braking actions be avoided on sloping ground when operating an articulated haul truck?

- The haul truck could tip or roll over*

61. If the brakes, (including holding emergency brake and transmission) failed while travelling downgrade what action would you take to stop the haul truck?

- Take evasive action by running the haul truck into a drain, batter or soft area if possible*

62. As an operator would you leave an unattended haul truck engine running?

- No*

3.1 Shut down equipment

(Select 3 from Q63-67 including all shaded boxes)

63. Name the areas where you would not park the haul truck.

- Access ways, rear overhangs, refuelling sites, tidal or flood areas, adjacent to excavations*

64. Which direction should the haul truck face if it has to be parked on a sloping surface?

- Across the slope*

65. Where possible what type of surface should be selected to park the haul truck on?

- A level surface*

66. When leaving the haul truck what should be done with the dump body?

- The dump body lowered, or safety bars/props in place if the body is to be left in a raised position*

67. What post-operational checks should be carried out by the operator at the end of the shift?

- Check the equipment for defects and wear*

3.2 Secure Site

(Select 1 from Q68 - 69)

68. What shall be provided when a haul truck has to be parked on or protrudes on to an access way?

- Barricades, lights and signs*

69. For what reason should the key be removed from the ignition of the machine?

- 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 *	
1	Performance	37		28	Yes	No	Yes	No
	Knowledge	25		19	Yes	No	Yes	No
	Assessment completed within time allowed						Yes	No
2	Performance	27		20	Yes	No	Yes	No
	Knowledge	13		10	Yes	No	Yes	No
	Assessment completed within time allowed						Yes	No
3	Performance	10		8	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

Date: _____

NOT YET COMPETENT

Name of Assessor: _____ Signature: _____

Name of Candidate _____ Signature: _____

Comments/feedback:
