

Tracked Loading Shovel

A22

Technical Test – Theory

Roles and responsibilities	1. What is the definition of, or how can a hazard be described?
	A
	2. What is the purpose of a risk assessment?
	A
	3. List SIX typical subject areas that should be covered in a site induction.
	A
	4. What THREE main duties of The Health and Safety at Work Act must employees follow?
	A
	5. What does The Health and Safety at Work Act require employers to do with regards specifically to plant?
	A
	6. a) What is the purpose of a Method Statement and b) what is required of the operator?
	A
	7. Name FOUR different types or levels of sanctions that can be applied (by employers and judicial bodies) to plant operators who do not comply with, or follow legislation and regulations.
	A
	8. Plant operators are generally regarded as 'safety-critical' workers. What does this mean?
	A

continued...

Roles and responsibilities continued	9. Name THREE ways in which an operator can minimise their impact upon the environment whilst using the machine.
	A
	10. In what situation does a hard hat NOT need to be worn when operating a loading shovel?
	A
	11. The operator has to use a new type of tracked loader that they are unfamiliar with. What do Regulations (i.e. PUWER 98) and other guidance require the operator to have?
	A
	12. What are the possible outcomes if being prosecuted (by judicial bodies) for not complying with legislation and regulations?
	A
	13. Give TWO examples of where The Work at Height Regulations 1995 may apply to loading shovel operations.
	A
	14. How can a qualification or card benefit a plant operator?
	A
	15. Name THREE ways that a plant operator can contribute in ensuring repeat business with the client or main contractor.
	A
	Preparing for work
A	
17. If the operator has to top-up the hydraulic oil, state TWO precautions to ensure cleanliness of the system.	
A	
	18. What is the purpose of a roll or ROPS frame?
	A

continued...

Preparing for work continued	For questions 19 and 20 the Operator's Manual for the machine being used for the test MUST be available for reference by the candidate
	19. Using the Operator's Manual, state the figure for setting track tension.
	A
	20. Using the Operator's Manual, state the cold-starting procedure for the machine.
	A
	21. a) What are the functions of 'grousers' or 'cleats' as found on track pads and b) what is the result if excessively worn?
	A
	22. If checking the oil level using a dipstick, why must gloves be worn?
	A
	23. How are loading shovel bucket sizes calculated?
	A
	24. Apart from the operator, who else may need to use the machine's Operator's Manual?
	A
	25. a) What are the purposes of the track guards and b) where would it/they be located?
A	
26. Why are most tracked loading shovels rear-engined?	
A	
27. During work, the engine starts to overheat. Explain the danger if someone tries to remove the radiator or expansion tank cap.	
A	

continued...

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Travelling and manoeuvring	28. a) Give ONE advantage and b) TWO disadvantages of rear mounted cameras.
	A
	29. Name THREE conditions that mirrors must be in, on the machine.
	A
	30. Why must the seat belt be worn, even with the cab door closed?
	A
	31. What problems and hazards can soft ground cause to a loaded tracked shovel?
A	
Setting up for work	32. a) What is the minimum distance allowed near open trenches when travelling with a loaded loading shovel and b) explain why.
	A
	33. Give FOUR reasons that may cause the loading shovel to tip over sideways.
	A
	34. Whenever possible, who should decide the positioning of the dump truck when being loaded?
	A
	35. Name TWO types of equipment that are used to ensure that excavation levels, measurements and positions are to the required specification.
A	
Setting up for work	36. Give THREE possible reasons why loading shovels should not stray off the designated travel routes.
	A
	37. If setting up to work near a pedestrianised area, state THREE factors that need to be taken into account.
A	

continued...

Setting up for work continued	38. What is regarded as the most productive position for the dump truck to be in when being loaded by a loading shovel working from a stockpile?
	A
	39. Before manually changing any bucket: a) where should the bucket be positioned (in relation to the ground) before removing the final pin and b) why?
Setting up for work continued	A
	40. Give TWO reasons why the loading shovel operator should have an understanding of the type of material being loaded.
	A
Working tasks	41. When working in a confined area or space: a) what danger can be present with regards to the counterweight of the machine, b) what is the recommended minimum distance and c) what measures must be implemented if the gap is less?
	A
	42. If fitted, describe ONE application when the hand throttle can safely be used.
	A
	43. The operator is asked to tip material into a trench. State FIVE different requirements that must be considered or implemented before tipping commences.
	A
	44. Why should different materials be segregated during excavating?
	A
	45. Who should determine the maximum load that should be placed into the body of the dump truck?
	A
46. What factors determine the shoring requirements of a trench?	
A	
Working tasks	47. If a load has to be tipped on a slope, what may happen if the load is tipped downhill and why?
	A

continued...

Working tasks continued	48. When working in a confined area or space, name THREE hazards that can occur.
	A
	49. a) What is the recommended minimum distance to be kept away from overhead power lines mounted on wooden poles when tipping loads and b) explain why a distance should be kept.
	A
	50. State TWO requirements of using a stop block or earth bank (berm) at a trench discharging point.
	A
	51. When constructing a ramp to load a crusher, name THREE considerations to take into account.
	A
	52. Give TWO reasons why, wherever possible, operators should excavate ground in layers.
	A
	53. Why is it poor practice to reverse the loader at high speed?
	A
	54. a) What effect on loader operations does making too deep a cut have when filling the bucket and b) what <i>effect</i> does making too shallow a cut have?
	A
55. When backfilling trenches by pushing spoil toward the trench, why should the bucket start to be emptied / raised before reaching the trench?	
A	
56. Tracked loading shovels are normally equipped with a clamshell bucket. Name FOUR functions of this type of bucket.	
A	
Completing work	57. Describe TWO actions to be taken for an open trench at the end of a working day.
	A
	58. Before leaving the cab for a rest break, after parking and switching off the machine, what final action must be carried out?
A	

continued...

Shutdown	59. How can tracks be prevented from becoming frozen to the ground during cold weather?
	A
	60. Many loading shovels have a turbo-charged engine. A) What is the normal procedure before switching off the engine after working and b) what happens if the procedure is not followed?
	A
	61. The operator has been asked to drive the machine onto a transporter/trailer. A) Who is responsible for the loading operations and b) state FOUR actions to be considered by the operator before loading commences.
	A
62. If the operator has loaded the machine onto a transporter/trailer on behalf of a driver, what checks must be carried out before they leave the cab?	
A	
63. Why should a loading shovel be re-fuelled at the end of the day?	
A	

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Technical Test – Practical

RESOURCES

Required

Machine	<ul style="list-style-type: none"> • Tracked Loading Shovel with: <ul style="list-style-type: none"> – Clamshell (4 in 1) bucket
Area	<ul style="list-style-type: none"> • Ground, clear of hazards which must include: <ul style="list-style-type: none"> – level area to allow excavations up to 2 metres deep – rough terrain – slope or slopes – a straight run for reversing – spoil/material to load vehicles
Other equipment	<ul style="list-style-type: none"> • Load-carrying vehicle for spoil/material • Laser equipped measuring equipment to ensure excavation specifications are met • Items to create restrictions for manoeuvring
Notes	<ul style="list-style-type: none"> • The machine selected for the test must be in serviceable condition and conform with current legislation • The operator's manual must be with the machine • The slope must have at least an 18% (1:5.5) incline with sufficient manoeuvring room at the top, or a straight ramp with an up and down route with a flat area at the summit • The load carrying vehicle must be rear tipping and have a minimum capacity equivalent to 4 full bucket loads of the loading shovel being used for the test

ACTIVITY

Instructions

Sequence	<ul style="list-style-type: none"> • Activity 1 must be undertaken at the start of the test • Activity 2 can be undertaken at any time during the test • Activities 4 and 5 can be undertaken in any order • Activity 7 must be undertaken at the end of the test <p>The test must be completed within a given time. The specifications' section gives further information.</p>
Preparing for work	1. Complete all manufacturers' pre-start and running checks and prepare the loading shovel for travel
Travelling & manoeuvring (refer to specifications)	2. In a loaded and unloaded state: <ul style="list-style-type: none"> – travel up and down the slope – stop and start on the slope in the up direction – travel over rough terrain – reverse (loaded only) in a straight line for a minimum of 30 metres and pass through a restriction at the end of the run
Setting up for work	3. Prepare and set the loading shovel for the relevant work
Working tasks (refer to specifications)	4. Extract material from below ground level to the specified dimensions and form a stockpile 5. Load material into a vehicle 6. Reinststate the work area back to the original state
Shutting down	7. Park the loading shovel and carry out shut-down and securing procedures
Notes	<ul style="list-style-type: none"> • The stockpile formed by the excavation may be used to load the vehicle • If the machine is hot, checks unable to be carried out (i.e. coolant) may be assessed by the Tester using verbal questions

Activity measurements

Travel restrictions	<ul style="list-style-type: none"> • 800 mm
Excavation depth	<ul style="list-style-type: none"> • 0.5 metre \pm35 mm
Trench length	<ul style="list-style-type: none"> • 5 x the length of the loading shovel
Trench width	<ul style="list-style-type: none"> • 2.5 times the width of the bucket
Loading vehicle	<ul style="list-style-type: none"> • Minimum of eight full bucket loads (vehicle can be re-loaded to achieve this figure)
Test timings	<ul style="list-style-type: none"> • The test must be completed within 2 hours and 45 minutes

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Technical Test – Practical

Basic details	Test ref.	Candidate name
	Tester name	Candidate ref.
	Tester ref.	Date of test
	Make and model	Start time of test
		Duration

MANDATORY

		Correctly carried out during the test?	Y / N
Preparing	1 All pre-start and running checks (or responses to relevant questions)		
	2 Loading shovel set for travel		
Travelling	3 Restrictions and hazards cleared		
	4 Full control maintained when ascending and descending slopes		
	5 No opposite movement of intended direction when restarting on slopes		
	6 Travel direction on slopes		
	7 Straight line kept during reversing activity		
Setting up	8 Allocated area checked and clear of hazards prior to extracting and loading		
Working	9 Excavation conforms to stated sizes and tolerances		
	10 Smooth ramp to the excavation		
	11 Loading vehicle positioning prior to loading		
	12 Vehicle loaded to capacity		
	13 Vehicle evenly loaded but not overloaded		
	14 Spillage of material kept to minimum		
Shutdown	15 Loading shovel stable during activities		
	16 Excavated area reinstated back to the original contours		
Other	17 All shutdown and securing procedures		
	18 Legislation, manufacturers' and health and safety requirements complied with		
	19 Test completed within the given time		
		All of these items must be awarded	Achieved / Not achieved

FAULTS

		Candidate incorrectly carried out the following:	Fault	Mark	Penalty
Travelling	1 Loading shovel mounting and dismounting			1	
	2 Full observation before moving and reversing			3	
	3 Full observation whilst travelling			2	
	4 Transmission drive engaged smoothly			1	
	5 Travel speed matched to the ground type and conditions			1	
Working	6 Bucket kept low at all times (except during loading work)			2	
	7 Minimised ground damage when turning			1	
	8 Full bucket loads maintained (except for cleaning work)			2	
	9 Material cleanly placed into the loading vehicle			1	
	10 Contact with vehicle avoided when loading			2	
	11 Use of steering/braking/hydraulic controls			1	
		Not exceeded 8 penalties	Total penalties		
				Achieved / Not achieved	

