

**CONSTRUCTION**  
Training Group

# **LEARNER GUIDE**

## **Vehicle Loading Cranes (CV) <10T**

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**Cranes**

**Vehicle Loading Cranes**

**ASSESSMENT**

**Part 1 – Performance**

**Part 2 – Oral/Written**

**Part 3 – Written**

**August 2000**

# ASSESSOR GUIDELINES – GENERAL

## 1. Introduction

### 1.1 Scope

These general guidelines apply to all the assessment instruments for the certificates of competency prescribed by Schedule B of the *National Occupational Health & Safety Certification Standard for Users and Operators of Industrial Equipment (NOHSC:1006)*

Assessors should be familiar with the publication *Assessment guidelines for National Occupational Health & Safety Certification Standard 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 instruction 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 applicant 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 the applicant 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 practical 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/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 themselves 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 Written Assignment

Refer to the Written assessment instrument for cranes.

### 3.5 Recording Responses

A box accompanies each item and question on the assessment forms you use. Assessors must complete every box as follows:



CORRECT PERFORMANCE/  
ANSWER



X

NOT YET ACHIEVED



NA

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 counter signed by the applicant.

The original and duplicate are given to the applicant. The applicant provides the original to the certifying authority. The triplicate is to be 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

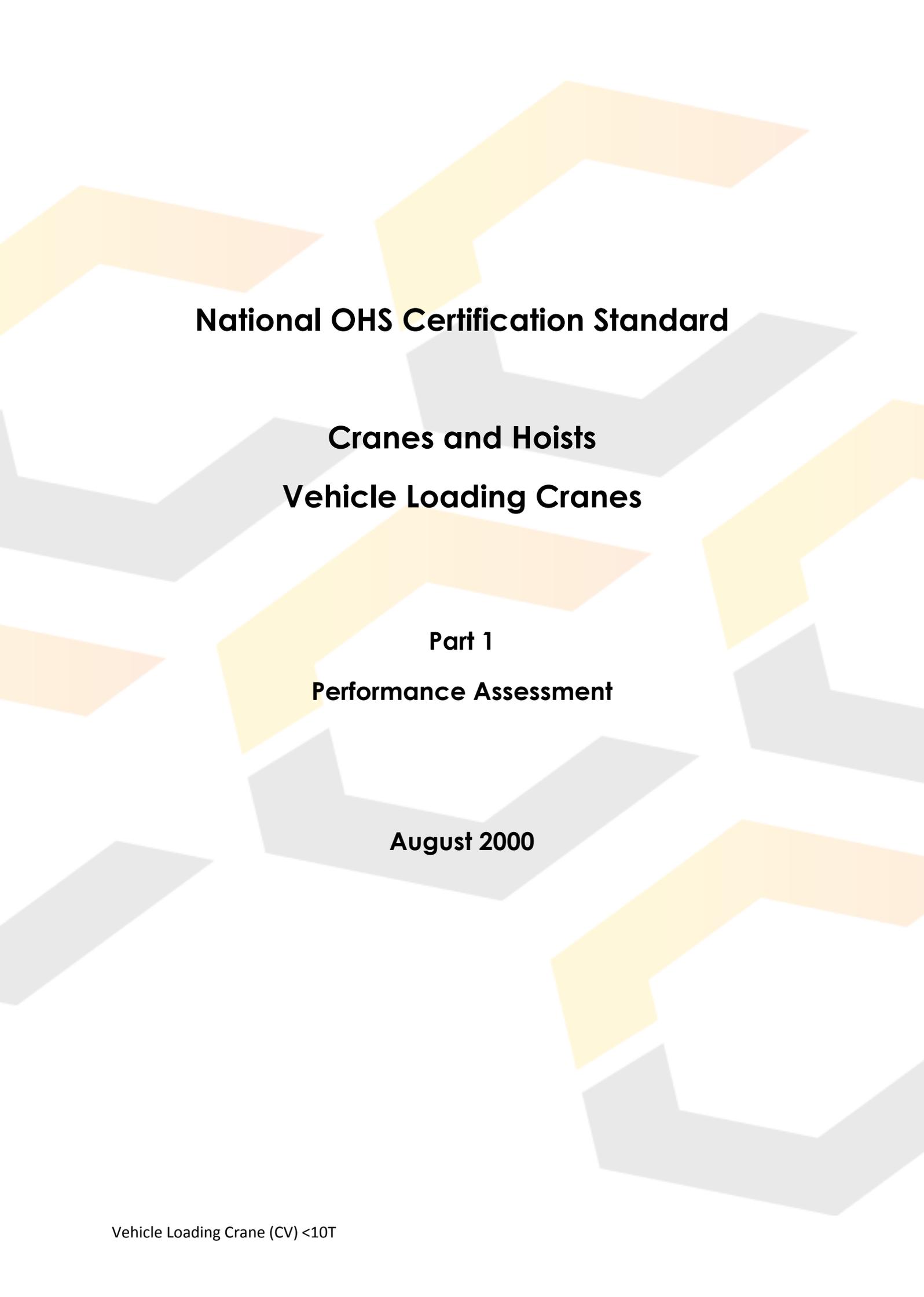
and/or on the summary page at the end of each instrument.

### 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 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 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.



**National OHS Certification Standard**

**Cranes and Hoists**  
**Vehicle Loading Cranes**

**Part 1**  
**Performance Assessment**

**August 2000**

# ASSESSOR GUIDELINES – SPECIFIC (Performance)

1. The performance assessment comprises 9 areas of assessment covering the following 5 operating competencies:

- 1) Pre-Operational Checks
- 2) Site/Job planning
- 3) Set up crane
- 4) Operate crane
- 5) Shut down crane

2. The applicant must undertake all performance criteria. An assessor must use his/her discretion in assessing competence under each criteria. The elements under each criteria must be marked with the appropriate tick, cross or N/A to indicate the applicants competence level for that element.

**Assessor Note:** All performance criteria marked with a star ☆ are compulsory/critical. To determine a person's competence under each performance criteria, a prescribed number of elements are required to be demonstrated/answered under that criteria. The applicant must achieve the minimum specified number or more, of the performance elements to achieve competence for those criteria. To record the applicant's competence for the criteria a tick must be placed in the star.

3. Where a performance element cannot be performed the assessor can simulate or ask a question. The response must be recorded.

4. The answers provided are only typical of this type of equipment, eg: in shutdown, the sequence varies between types of crane.

5. The assessment should be conducted in an area –

- With sufficient space to operate freely, without obstruction
- With desirably undisturbed level ground conditions.

6. The applicant should provide (or be provided with) appropriate PPE and clothing.

7. In item 7. The assessor is to use the load chard for the crane being used for the assessment, and to select working conditions of the crane, and ask the applicant to determine the maximum load for 4 different crane configurations that cover the scope of operations for that crane.

## Operational Area 1:

### Pre-Operational checks:

#### 1. Demonstrate checks that should be made before you start the motor – walk around check (at least 9 elements demonstrated correctly)



- Tyre Condition, pressure and obstructions between wheels
- All oil levels eg: motor, gearbox, hydraulic & brakes
- Power take off (PTO) is not engaged
- Lubrication (grease) in accordance with manufacturers specifications
- All notices eg: SWL, Data plate of crane, powerlines
- Load radius indicator (where applicable)
- All ropes wires, anchorages and splices where practicable
- Stabilisers and packing
- Lifting hook
- Any structural damage to crane
- Rope drums (where applicable)
- Truck handbrake applied
- Crane attachment to the truck has no loose bolts or damaged parts
- Controls identified and use explained
- Hydraulic hoses are not damaged or leaking
- Fire extinguisher where applicable

#### 2. Demonstrate checks that should be made after you start the motor? (at least 3 elements demonstrated correctly)



- Identify all controls levers and state their functions
- Engage the power take off
- Demonstrate the testing of stabiliser legs
- Demonstrate all operational function

#### 3. Knowledge of where to locate the service log book and of its function



- The applicant explains where to locate the service logbook and the service maintenance carried out and any defects found and repaired.

### OPERATIONAL AREA 2:

#### SITE/JOB PLANNING:

Covered in knowledge assessment.

### OPERATIONAL AREA 3:

#### Set Up Crane:

#### 4. Set up and prepare your crane as if this was a new site (at least 9 elements demonstrated correctly)



- The position of the vehicle is satisfactory in relation to the task to be undertaken.
- Apply vehicle parking brake (additional chocks may be required)
- Vehicle gear level in neutral
- Identify controls as per vehicle manufacturers instructions ie, throttle control instruments
- Hydraulic pump engaged (PTO)
- Stabilisers, extended and set up as per manufacturer's specification
- Correct packing under stabiliser
- Truck tray level
- Slew lock disconnected (where applicable)
- Operate and check all boom motions
- Warning systems/devices (where applicable)
- Hoist brake (where applicable)
- Hoist limit (where applicable)

## OPERATIONAL AREA 4:

### Operate Crane:

5. Demonstrate all of the following signals correctly:



- Stop – hand
- Stop – whistle
- Hoist up – hand
- Hoist up – whistle
- Hoist down – hand
- Luff boom down – whistle
- Luff boom down – hand
- Luff boom up – whistle
- Luff boom up – hand
- Slew left – whistle
- Slew left – hand
- Slew right – whistle
- Slew right – hand
- Creep – hand
- Telescope in – whistle
- Telescope in – hand
- Telescope out – whistle
- Telescope out – hand

**NOTE:** Assessor may use alternate approved signalling methods where appropriate.

6. using the cranes load chart explain the cranes load ratings given the following (note: if load chart in crane note available use load chart 'R')



- Load** \_\_\_\_\_  
Working radius \_\_\_\_\_  
Crane Maximum Capacity \_\_\_\_\_
- Load** \_\_\_\_\_  
Working radius \_\_\_\_\_  
Crane Maximum Capacity \_\_\_\_\_
- Load** \_\_\_\_\_  
Working radius \_\_\_\_\_  
Crane Maximum Capacity \_\_\_\_\_
- Load** \_\_\_\_\_  
Working radius \_\_\_\_\_  
Crane Maximum Capacity \_\_\_\_\_

**Note:** An assessor can give the load and ask for the other items to be calculated or else give the working radius and ask for the load to be calculated.

7. Demonstrate *all* crane movements (if applicable)



- Secure load
- Load correctly slung
- Conduct trial lift
- Lift conforms with load chart
- Jib positioned over load correctly
- Hoise
- Move load
- Lower load
- Luff up
- Luff down
- Slew load
- Telescope boom
- All movements smooth/adequate speed
- Tag line used
- Signals interpreted correctly
- Load placed correctly on dunnage
- Load unslung
- Hook/slew boom raised to safe position

## Shut Down Crane:

**8. Demonstrate the sequence of events in the shut-down, stowing and securing of load. (at least 4 elements demonstrated correctly)**



- Raise, retract and pin stabilisers
- Stow packing on vehicle
- Stow boom in accordance with manufacturers specifications
- Prepare for road travel
- Disengage power take off
- Secure any load on the vehicle and display warning flag on any oversize load
- Secure hook as per manufactures specifications

## Vehicle Loading Crane - Performance

### RELATIONSHIP TO THE NATIONAL CERTIFICATION STANDARD

#### THE UNITS OF COMPETENCE

The items in the practical performance assessment are intended to assess the competencies of the applicant in the safe use of Vehicle Loading Cranes as described in Schedule B of the *National Occupational Health & Safety Certification Standard for Users and Operators of Industrial Equipment*.

These are as follows:

- 1.0 Assess and secure equipment and work area.
- 2.0 Secure and transfer load

Each unit of competence is subdivided into elements of competence, for which performance criteria are prescribed.

The applicant must undertake all performance items. All critical components must be demonstrated/answered correctly. An assessor must use his/her discretion in assessing competence in each area of competence. At least 75% of non-critical elements listed under each competency must be ticked for a competent person.

The questions in each section of the assessment cover the following competencies:

#### **1. Pre-operational checks**

Performance Criteria 1.1.1, 1.1.2, 1.1.3, 1.3.1, 1.3.2, 1.3.3

#### **2. Site/job planning**

Covered in knowledge assessment

#### **3. Set up crane**

Performance Criteria 1.2.1, 1.2.2, 1.2.3, 1.2.6, 2.1.2 and 2.2.1

#### **4. Operate Crane**

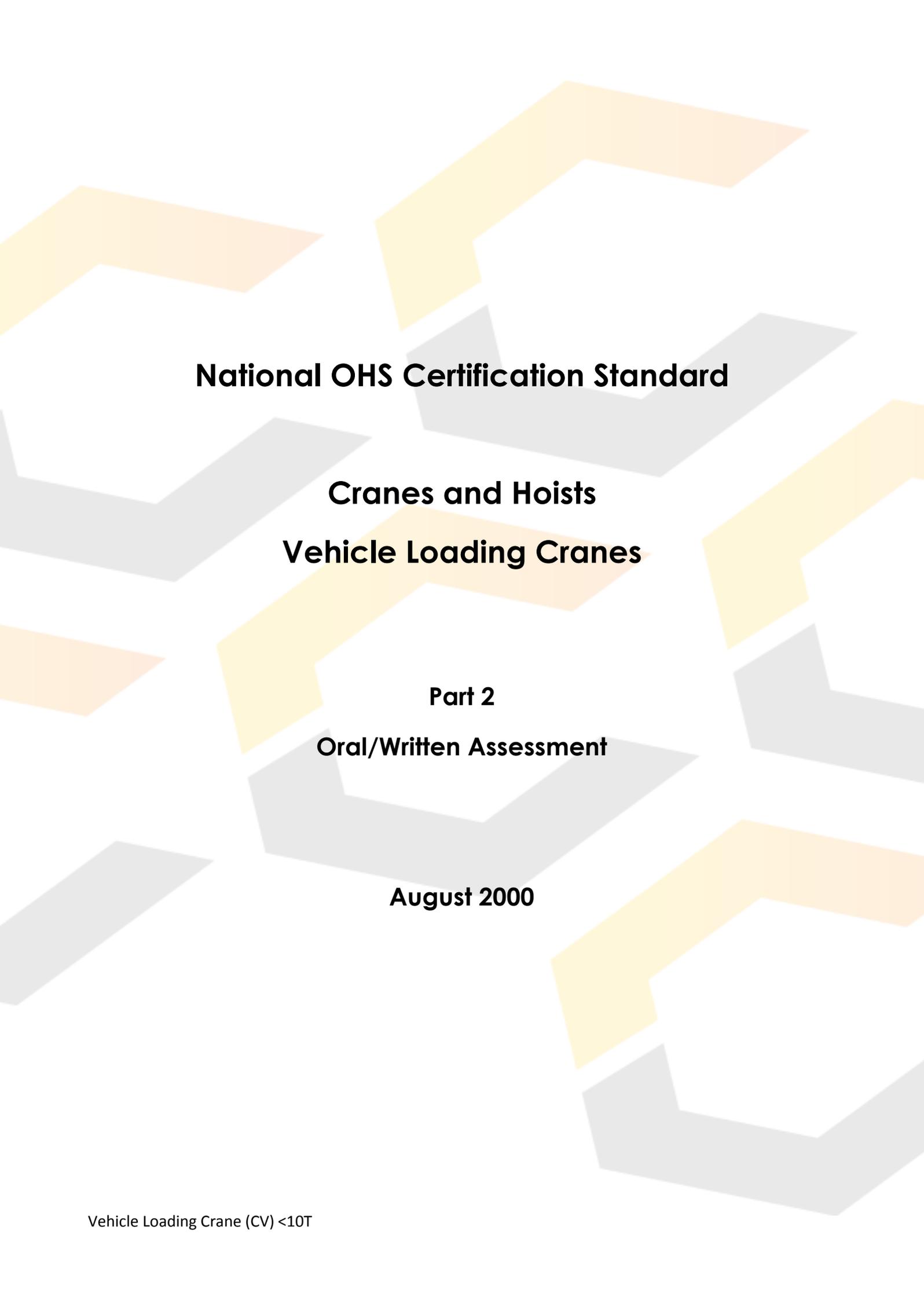
Performance Criteria 1.4.1, 1.4.3 and 1.4.6

#### **5. Shut down crane**

Performance Criteria 1.4.1, 1.4.3 and 1.4.6

#### THE RANGE STATEMENT

The performance assessment takes into account factors described in the range statements, including relevant standards and relevant State/Territory occupational health & safety legislation.



**National OHS Certification Standard**

**Cranes and Hoists  
Vehicle Loading Cranes**

**Part 2**

**Oral/Written Assessment**

**August 2000**

## ASSESSOR GUIDELINES – SPECIFIC (Oral/Written)

**1.** The oral/written assessment consists of 68 questions, with 15 critical questions. The critical questions are identified under each operational area heading.

To satisfy the requirements for competency the applicant must correctly answer (either in writing or orally) all critical questions as indicated by a start and a minimum of 75% of the non-critical questions for each operational area.

**Assessors Note:** The assessment summary specified the appropriate number of non-critical questions to be achieved.

**2.** 15 questions from the other 53 questions are to be randomly selected (manually or by computer) with at least one question from each of the following operational areas:

- 1) Pre-operational checks
- 2) Site/job planning
- 3) Set up crane
- 4) Operate crane
- 5) Shut down crane

The number of questions asked from each operational area should be in proportion to the overall number of non-critical questions in each area, as follows:

Operational Area	No. Critical questions	No. Non critical questions to select	Total questions selected
1	0	1	1
2	6	4	10
3	1	1	2
4	8	8	16
5	0	1	1
<b>Total</b>	<b>15</b>	<b>15</b>	<b>30</b>

**3.** The oral/written assessment may be given orally, or as a mixture of oral and written.

**4.** The oral/written section may take up to 1 hour to complete.

## ANSWERS TO ALL ORAL/WRITTEN QUESTIONS

### OPERATIONAL AREA 1 PRE-OPERATIONAL CHECKS:

#### 1. What action would you take if you found any defective equipment?

Discontinue use, tag and report the situation to an authorised person for replacement

### OPERATIONAL AREA 2 SITE/JOB PLANNING:

#### 2. List four job and/or site procedures that should be considered before you set up a crane?

- Job requirements
- Operational priorities
- Workplace rules
- Procedures
- Identified hazards; and
- Hazard control measures

#### 3. You are about to set up on site, list 6 hazards would you need to take into account in your crane set up plan?

- Powerlines
- Trees
- Overhead service lines
- Bridges
- Surrounding structures
- Obstructions
- Facilities
- Other equipment
- Dangerous materials
- Underground services
- Soil conditions, eg: recently filled trenches
- Vehicle Traffic

#### 4. List 5 methods of reducing hazards on site

- Identify/detect site hazard
- PPE required to be worn by crane personnel
- Erect warning signs
- Erect barriers
- Traffic control
- Lighting
- Storage of dangerous & hazardous materials

#### 5. Why is it important to consult with relevant workplace personnel and OHS officers, before commencing work on sites?

To ensure that the operator is aware of any workplace and site rules and procedures

#### 6. What precautions must be observed when working near overhead power lines?

- Never work closer than the minimum distance specified in AS2550.1 or relevant State Regulation
- Ensure that barriers/barricades are erected account the work area for public safety
- Safety helmets need to be worn
- Traffic signs/cones and barricades should be placed around the work site

**7. What is the minimum distance any part of a crane or load is allowed to set-up near?**

**a) Distribution power lines**

**b) High voltage transmission lines**

- a) At least 6.4m or more from distribution overhead powerlines
- b) At least 10m or more from high voltage transmission lines

**Note: Assessors must ensure that the applicant is aware of Statutory Authority Regulations.**

**8. If you need to work closer to powerlines or high voltage transmission lines than the prescribed distances, what should you do?**

Seek an approval from the relevant authority

**9. What type of loads commonly requires the use of tag lines?**

Oversized or unusually shaped loads always require tag lines

**10. What is the minimum size diameter hand held tag line?**

16mm diameter dry fibre rope. To reduce electrical conductivity.

**11. It begins to rain heavily and you have to stop operating the crane for a period of time. What checks would you make prior to re-commencing work?**

Check crane set up is safe for operation and where necessary relocate crane to stable found.

### **OPERATIONAL AREA 3 SET UP CRANE:**

**12. Who would be responsible for checking all lifting gear, for example chains and slings?**

The crane operator, or person dogging the load or rigger if available.

**13. If the stabilizer/outrigger footplates sink onto the ground or surface, what has the vehicle loading crane operator failed to do prior to commencing work?**

- Failed to assess the site hazards. I.e: failed to identify unstable soil, backfilled trenches or excavations
- Failed to use sufficient packing under stabilisers/levellers to ensure load is distributed over a larger area

### **OPERATIONAL AREA 4 OPERATE CRANE:**

**14. When interference (tampering) is identified to whom should the crane operator report any faults?**

To an authorised person

**15. Give 3 different ways in which the mass (weight) of a 'load' can be determined?**

- Delivery dockets
- Public weight bridge
- The manufacturers information
- Weight may appear on the 'load' itself
- Calculate

**16. When operating a crane in a busy city street, what hazards need to be considered?**

- Underground services both under the roadway and footpath
- Correct packing is used underneath stabilisers especially on bitumen surfaces
- Members of the public are not exposed to any danger, especially lifting over footpaths
- Be sure that all crane operating personnel cannot be stuck by moving vehicular traffic
- Clearance from overhead obstructions ie: powerlines, shop awnings etc

**17. You experience a problem when conducting a trial lift. What should be done?**

Immediately lower the load back down and take the necessary corrective action. Do not proceed any further until situation is rectified.

**18. On a vehicle where the crane is mounted directly behind the cabin, are you permitted to lift a load from a position in front of the vehicle then slew to the side?**

Only in accordance with the load chart.

**19. Why is it important to have the lifting point positioned correctly over the load?**

To reduce the risk of overloading or collapsing the crane and prevent load from swinging on lift.

**20. What is the mass (weight) of a cubic meter of water?**

1t or 1,000kg.

**21. What is the mass (weight) of dry sand**

2t or 2,000 kg.

**22. You start to make a lift and the stabilizer starts to sink in soft ground, what should you do?**

- Put the load down and increase the area of packing under the stabiliser
- Relocate crane to firmer ground

**23. Are you permitted to allow a person to ride upon the lifting hook, sling attachment or suspended load? Explain your answer.**

No. It is against regulations

**24. Although it is not raining, a severe electrical storm is approaching, what would you do?**

Lower load, cease operation, pack up crane if required.

**25. Are you permitted to exceed the safe working load at a given radius of the crane?**

No, not ever.

**26. If you were an owner driver and you found defects within the crane, what action would you take?**

Stop operation. Assess the nature of defect. Continue operation if safe to do so or if not, cease operation and arrange for repair.

**27. When slewing a crane operating at its maximum limits what precautions would you take?**

Ensure that the load is slewed smoothly by avoiding jerky movements of the controls.

**28. What defects would you look for on a fork attachment fitted to the crane?**

- Bent forks
- Cracks on the inside of the bend of the fork
- Excessive wear under the heel of the fork

**29. Who would be responsible for checking the crane?**

The crane operator and where necessary a competent person

**30. Who should be involved in the assessment of the load?**

The crane operator and/or other personnel assisting

**31. If a signal is given that is an unknown signal, what should you do as the crane operator?**

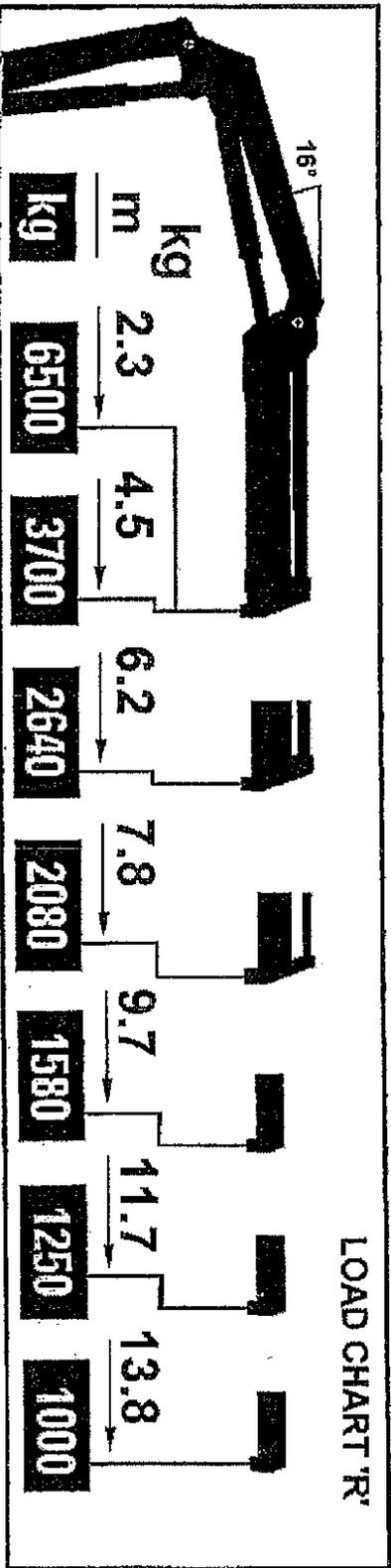
Stop operating and clarify the signal

**OPERATIONAL AREA 5  
SHUT DOWN CRANE:**

**32. Can any loads remain suspended from the hook following shut down or when crane is unattended? Explain your answer**

No. It is against regulations

# LOAD CHART R



## Vehicle Loading Crane – Oral/Written

### RELATIONSHIP TO THE NATIONAL CERTIFICATION STANDARD

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#### 2. Site/job planning

Covered in knowledge assessment

#### 3. Set up crane

Performance Criteria 1.2.1, 1.2.2, 1.2.3, 1.2.6, 2.1.2 and 2.2.1

#### 4. Operate Crane

Performance Criteria 1.4.1, 1.4.3 and 1.4.6

#### 5. Shut down crane

Performance Criteria 1.4.1, 1.4.3 and 1.4.6

#### THE RANGE STATEMENT

The performance assessment takes into account factors described in the range statements, including relevant standards and relevant State/Territory occupational health & safety legislation.

## Vehicle Loading Crane – Assessment Summary

### Oral/Written Assessment

Operational Area Unit	Number of Critical Criteria Required	Number of Critical Criteria Achieved	Number of Non-Critical Criteria Required	Number of Non-Critical Criteria Achieved	Competent		
					Yes	No	
1	0		1				
2	6		4				
3	1		1				
4	7		8				
5	0		1				
Assessment Start Time:		:	Finish Time			:	
		am/pm				am/pm	
Oral/Written Assessment completed within time allowed – approx 2hours							

### Written Assessment

Operational Area Unit	Number of Critical Criteria Required	Number of Critical Criteria Achieved	Number of Non-Critical Criteria Required	Number of Non-Critical Criteria Achieved	Competent		
					Yes	No	
A	0		7				
B	0		4				
C	0		4				
D	0		2				
E	0		1				
F	2		2				
Assessment Start Time:		:	Finish Time			:	
		am/pm				am/pm	
Oral/Written Assessment completed within time allowed – approx 2hours							

## Performance Assessment

Operational Area Unit	Number of Critical Criteria Required	Number of Critical Criteria Achieved	Competent	
			Yes	No
1	3			
2	0			
3	1			
4	3			
5	1			
Assessment Start Time:		: am/pm	Finish Time:	: am/pm
Performance Assessment completed within time allowed – approx 1hr				

### **Summary**

Candidate is:  Competent Date: .....

(tick the result obtained)  Not Yet Competent

Name of Assessor: ..... Name of Candidate: .....

Signature: ..... Signature: .....

Comments/feedback

(Assessors to make any additional comments which clarify the assessment)

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