

HOW TO PREPARE FOR THE PRACTICAL ASSESSMENT

1 October 2013

Alberta Apprenticeship & Industry Training | Crane & Hoisting Equipment Operator

Assess Yourself First

Prepare for your assessment! Our website contains all the information you need for a successful assessment. Our goal is to find you competent on the assessment. We want you to be as prepared as possible for the assessment so that your chances of success are greatest.

Learn more about the core skills & knowledge for all crane types in the competency guides that give you more background on the competencies we are assessing against. www.fulford.ca/crane/ab/ab-comp.html

Please use this information to get yourself ready for a successful assessment.

What does the Assessment Include

The assessment has two main parts and is designed to allow you to demonstrate your skill and knowledge of safe craning.

Part 1 Hand Signals

Part 2 On-Crane Practical Assessment

- A. Pre-Operational
- B. Crane Set Up & Hazard Assessment
- C. Crane Operation

The assessment takes between 1½ – 2 hours (2½ – 3 hours for Conventional Cranes).

Find more information at:
www.fulford.ca/crane/ab/ab-asst.html.

On-line Resources

See our website for more details and practice exercises.

What's Included in the Assessment

www.fulford.ca/crane/ab/ab-asst.html

Skills & Knowledge

www.fulford.ca/crane/ab/ab-comp.html

Log Book

www.fulford.ca/crane/ab/ab-logbook.doc

Hand Signals

www.fulford.ca/crane/ab/ab-resources.html

Tower Crane Handbook

www.fulford.ca/crane/ab/ab-resources.html

If you are unable to access our website, please call our office and we will make other arrangements for you.

Employers

If you are an employer, please ensure that your crane operators are aware of what the assessment involves and have had the opportunity to review and practise prior to their assessment.

Fulford Certification

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Times to Complete the Practical Assessment

Assessment appointments typically require a total of 1½ to 2 hours of operator and machine time (between 2½ and 3 hours for Conventional Crane). Operators must complete the on-crane practical section within the following time limits:

Crane Type	On-Crane Practical (With + Without Load)
Conventional Mobile	15 + 15 (total 30 mins)
Hydraulic Mobile	15 + 15 (total 30 mins)
Mobile Crane	15 + 15 (total 30 mins)
Stiff Boom Truck	15 + 15 (total 30 mins)
Articulating Boom Truck	10 + 10 (total 20 mins)
Wellhead Boom Truck	10 + 10 (total 20 mins)
Tower	10 + 10 (total 20 mins)

Crane & Site Requirements

Please ensure that the crane being used for the assessment is out of storage and ready to be used when the Assessor arrives.

Crane must possess valid certification

The crane must have a valid inspection certificate. Failure to provide a valid certificate will result in the Assessor automatically terminating the Practical Portion of the Assessment. Additionally, if the assessor feels the crane is unsafe due to mechanical, electrical or hydraulic faults (which are not covered under Structural Certification inspection) the assessor will terminate the assessment. Either of these cases will count as a “no-show”.

Crane must be equipped with a log book

Occupational Health and Safety Regulations require all cranes to be equipped with an equipment log book. A sample log book is posted on our website: www.fulford.ca/crane/ab/ab-logbook.doc.

Load for assessment required on site

The Assessor will require a Load to be used with an approximate weight of 300 to 500 pounds, ideally with an engineered lift point (e.g. on a lock block, a cast in lifting bar versus a wire rope stranded loop).

Location of the on-crane assessment

The location for the on-crane assessment must be free of obstructions and should allow the crane to extend at least 75% of its maximum boom length in the case of hydraulic powered booms. Lattice Booms must have a minimum of 100 feet of boom rigged. Mobile Hydraulic Cranes and Boom Trucks must use a minimum of ¾ of the powered sections of the main boom.

Operator Requirements & Hand-Outs

To ensure the best chance of successfully completing the Practical Assessment, crane operators need to be aware of what will take place during their assessment.

Prior to assessment, all operators should read these documents:

- **How to Prepare for the Practical Assessment**

- **OHS Regulations: Wire Rope, Rigging and Attachments**

Operators should bring this document with them to their assessment to use as a reference.

- **OHS Regulations: Overhead Power Lines**

- **Sample Target Layouts**

for the On-Crane Practical portion of the assessment which must be completed with and without load.

Rescheduling Policy

Applicants must provide a minimum of 48 hours (2 business days) notice to re-schedule an assessment.

Please notify Fulford Certification by phone toll-free at 1.888.952.6033 or by email at info@fulford.ca.

Hoist Lines

306 Wire Rope

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| <p>(1) An employer must ensure that wire rope is permanently removed from service if</p> <p>(a) wear or corrosion affects individual wires over more than one third of the original diameter of the rope,</p> <p>(b) there is evidence that the rope structure is distorted because of bulging, kinking, bird-caging or any other form of damage,</p> <p>(c) there is evidence of heat or arc damage, or</p> <p>(d) the normal rope diameter is reduced, from any cause, by more than</p> <p style="margin-left: 20px;">(i) 0.4 millimetres if the normal rope diameter is 8 millimetres or less,</p> <p style="margin-left: 20px;">(ii) 1 millimetre if the normal rope diameter is more than 8 millimetres and less than 20 millimetres,</p> <p style="margin-left: 20px;">(iii) 2 millimetres if the normal rope diameter is 20 millimetres or more and less than 30 millimetres, and</p> <p style="margin-left: 20px;">(iv) 3 millimetres if the normal rope diameter is 30 millimetres or more.</p> | <p>(2) An employer must ensure that a running wire rope is permanently removed from service</p> <p style="margin-left: 20px;">(a) if six or more randomly distributed wires are broken in one rope lay, or</p> <p style="margin-left: 20px;">(b) if three or more wires are broken in one strand in one rope lay.</p> <p>(3) An employer must ensure that a stationary wire rope such as a guy line is permanently removed from service</p> <p style="margin-left: 20px;">(a) if three or more wires are broken in one rope lay in sections between end connections, or</p> <p style="margin-left: 20px;">(b) if more than one wire is broken within one rope lay of an end connection.</p> <p>(4) An employer must ensure that wire rope that does not rotate because of its construction is permanently removed from service</p> <p style="margin-left: 20px;">(a) if there is evidence of the damage referred to in subsection (1),</p> <p style="margin-left: 20px;">(b) if two randomly distributed wires are broken in six rope diameters, or</p> <p style="margin-left: 20px;">(c) if four randomly distributed wires are broken in 30 rope diameters.</p> |
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299 Rope Wound on Drum

- (1) An employer must ensure that rope on a winding drum is securely fastened to the drum.
- (2) An employer must ensure that the number of wraps of rope remaining at all times on a drum
- (a) complies with the manufacturer's specifications for the rope and the drum, or
- (b) if there are no manufacturer's specifications, is not less than 5 full wraps.

292.1 Safety Factors

- (1) Subject to section 292, an employer must ensure that rigging components are rated relative to their ultimate breaking strength in accordance with the following safety factors:
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|-------------------------------------|----------|
| (a) running lines | 3.5 to 1 |
| (b) non-rotating hoist lines | 5 to 1 |
| (c) tugger lines/blocks for pulling | 3 to 1 |
| (d) pendant lines/guy lines | 3 to 1 |
| (e) winch lines | 2 to 1 |
- (2) An employer must ensure that rigging components or hoisting lines that are used in any towing operation are not used for any hoisting operation.

Blocks, Overhaul Balls, Hooks & Sheaves

302 Matching Components

- (1) An employer must ensure that the wire ropes, sheaves, spools and drums used in rigging have a diameter of not less than the diameter specified by the manufacturer for use in that circumstance.
- (2) An employer must ensure that the rope used in rigging is of the correct size for the sheave, spool or drum over which the rope passes.
- (3) An employer must ensure that the grooving of wire rope sheaves is of the correct size for the wire rope used.
- (4) An employer must ensure that end fittings and connectors used on a wire rope conform to the manufacturer's specifications as to number, size and method of installation.
- (5) An employer must ensure that rigging blocks are constructed and installed so that the ropes cannot jump off the sheaves.

303 Safety Latches

- (1) An employer must ensure that a hook has a safety latch, mousing or shackle if the hook could cause injury if it is dislodged while in use.
- (2) Despite subsection (1), if a competent worker disconnecting the hook would be in danger if the hook has a safety latch, mousing or shackle, the employer may use another type of hook.
- (3) Despite subsection (1), an employer may use a sorting hook for hoisting a skeleton steel structure or for performing similar operations if a sorting hook is safer to use than a hook with a safety latch, mousing or shackle.
- (4) During a hoisting operation in a caisson, an employer
- (a) must not use a spring-loaded safety latch hook, and
- (b) must use a shackle assembly consisting of a pin fully shouldered into the eyes of the shackle and secured by a nut that is prevented from rotating by a cotter pin.

309 Damaged Hooks

An employer must ensure that a worn, damaged or deformed hook is permanently removed from service if the wear or damage exceeds the specifications allowed by the manufacturer.

Safe Limit of Approach Distances

If work is done or equipment is operated within 7 metres of an energized overhead power line, the employer must contact the power line operator to determine the voltage of the power line.

As shown in the table below, the power line voltage determines the safe approach distance.

Until the power line operator verifies the voltage, the employer must maintain a safe clearance distance of 7 metres.

Operating Voltage between conductors of overhead power line	Safe Limit of Approach Distance for persons and equipment
0-750 volts Insulated or polyethylene covered conductors (1)	300 millimetres
0-750 volts Bare, uninsulated	1.0 metre
Above 750 volts Insulated conductors (1) (2)	1.0 metre
750 volts – 40 kilovolts	3.0 metres
69 kilovolts, 72 kilovolts	3.5 metres
138 kilovolts, 144 kilovolts	4.0 metres
230 kilovolts, 260 kilovolts	5.0 metres
500 kilovolts	7.0 metres

Notes:

(1) Conductors must be insulated or covered throughout their entire length to comply with this group.

(2) Conductors must be manufactured to rated and tested insulation levels.

Situations may arise in which work must be done or equipment operated near an energized power line at distances less than the safe limit of approach distance for that particular voltage.

In such cases, the employer must notify the operator of the power line before beginning the work and obtain the operator's assistance in protecting workers involved in the work.

The operator may protect workers by deenergizing the power line, relocating it, isolating it, or performing some other equally effective action.

Precautions to Take

When Working Near Overhead Lines

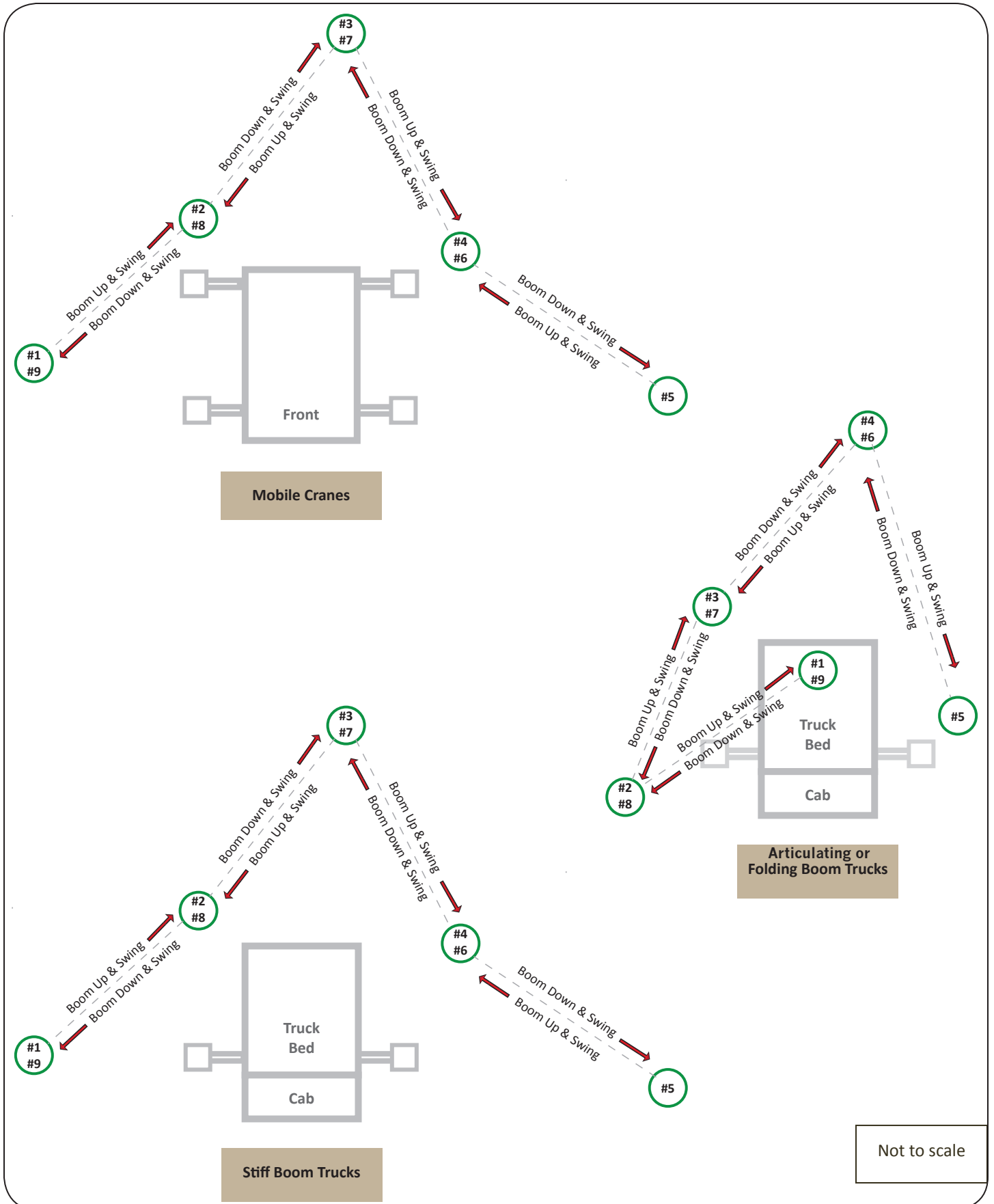
The following is a list of suggested practices that should be followed when working near overhead power lines.

1. Equipment operators and users must respect the safe limit of approach distances specified in section 225 of the OHS Code.
2. A competent signaller as described in section 191 of the OHS Code should be used. The signaller's only responsibility is to make sure that the equipment operator does not get closer than the safe limit of approach distance.
3. No one should be allowed to touch the load or any part of the equipment until the signaller indicates it is safe to do so.
4. Other workers not directly involved in the work being performed should be kept away from equipment when it is being used near overhead power lines.
5. Equipment operators must always be aware of the position of their equipment in relation to overhead power lines. They should not depend on safety devices such as hook insulators, insulating blankets, etc.
6. Equipment operators should be aware that a long span of power line can rise and fall as the ambient temperature changes, affecting safe limit of approach distances. Wind-induced swing can also affect these distances.
7. Grounding equipment in the area of the power line is not a safe practice.
8. The route that a crane or similar equipment will follow should be marked out before it is moved. Uneven terrain can cause the boom or other structure to weave or bob, increasing the likelihood of power line contact.
9. When using tag lines to control an elevated load, the tag lines should be made of a non-conducting material such as dry rope.

ON-CRANE PRACTICAL ASSESSMENT SAMPLE TARGET LAYOUTS

1 January 2013

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ON-CRANE PRACTICAL ASSESSMENT SAMPLE TARGET LAYOUT – TOWER CRANE

