



**BC Association for  
CRANE SAFETY**

## **Inter-Provincial Practical Assessment of Crane Operators: Ontario**

**WORKSHOP REPORT: WHITBY, ON – AUGUST 8<sup>TH</sup>, 9<sup>TH</sup> AND 10<sup>TH</sup>**

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## **Background**

Continuing from the work begun in Kelowna between Alberta, Ontario and BC Crane Industry stakeholders in June 2006 on developing a standard for practical assessment of crane operators, the BC Association for Crane Safety approved a development and fact finding trip to Ontario. The primary purpose of the trip was to engage with the people who run Ontario's crane licensing system in order to learn from them lessons in conducting practical assessment of crane operators

The proposed BC crane assessment model was described in detail at the Kelowna workshop. It was found by the attendees to build on the experience of Alberta and Ontario's assessments to make a reliable assessment tool that can be delivered with much more flexibility than the Ontario and Alberta assessments. Accordingly both jurisdictions indicated a desire to participate in the development of BC's practical assessment. Alberta and Ontario hope to:

- Benefit from advances in the assessment tool in their own jurisdiction
- Harmonise practical assessment across the three jurisdictions in order to maintain worker mobility and underscore a strong operator standard

The Ontario workshop was held at Durham College's Whitby Campus on August 7<sup>th</sup> and 8<sup>th</sup>.

<b>In Attendance:</b>	Fraser Cocks	BCACS (Executive Director)
	John Woodward	Dean, Whitby Skills Training Centre
	Shawn Robertson	Training Manager, Operating Engineers Training Institute, Oakville Ontario
	John Smith	Chief Instructor, Durham College
	Lee Middleton	Fulford Harbour Consulting (Facilitator)

## **Ontario practical assessment**

Ontario non construction trades were reformed in 1994 to move toward a competency based model for training. Part of the reform identified competencies required for each crane trade and a mechanism to prove competence.

Assessment of competence was further driven by crane licensing which came into effect in 1996. Licensing accelerated the move toward practical assessment of crane operators and led to the first mandatory practical assessment in Ontario. This is the demonstration of skills test (DOST) that all trainee operators must pass to receive an operator's license. More detail is provided below.

### **Ontario Demonstration of Skills Test (DOST) for Current Crane Operators:**

- Step 1: Operator provides proof from employer of his or her crane operation.
- Step 2: Operator registers with Ministry responsible for skills training and requests a DOST.
- Step 3: Operator must then successfully pass an applied load chart reading exercise.
- Step 4: After passing the load chart exercise the operator must then correctly recognise 12 hand signals.
- Step 5: Upon successfully completing the applied theory components of the DOST, the Operator books an appointment for the practical skill demonstration.
- Step 6: The practical skill demonstration may take place at a test site on rented equipment or on the job site where the operator works.
- Step 7: The practical test looks at several elements: set up, safe operation, lift procedure competence and control.
- Step 8: Once the operator passes these elements, as judged to the scoring protocol by the assessor, he or she is issued an operator's licence.

## **What has been learned in ten years' administration of DOSTs?**

The present form of the DOST has been arrived at through ten years' experience administering and monitoring the validity of practical skills tests. During this time several modifications have been made to make the DOST a better test. These are the most important lessons learned along the way, chosen for relevance to BC's proposed practical test of competence:

### **Focus on competence with a load chart.**

The DOST requires an operator to demonstrate competence using a load chart. The Ontario experience shows that many current, otherwise skilled operators, fail the load chart test when they first take it. Allowing the operator to fail this portion, study the appropriate skills and knowledge, and then successfully retake the load chart test without failing the overall assessment means that a lot of expensive and time consuming practical tests are avoided. The operator can only book the practical test after they have passed the load chart test. Not doing well on the load chart test motivates operators to study the theory of hoisting which they have likely become complacent about, and which immediately makes them a safer operator.

In Alberta, as with Ontario, a separate focus on load charts makes this a mandatory competency which must be achieved before being licensed as an operator. For many reasons operators have adopted or inherited unsafe lift planning practices, not appropriate for newer cranes, which don't use the load chart as the key tool in working out lifts. A small theory refresher equips operators with the load chart skills they need to work safely.

### **Do not focus simply on lever pulling.**

Related to specifically focusing on the load chart is that the practical assessment should do more than assess an operator's ability to work the controls of the crane. Competence in crane controls is one aspect of competent crane operations. Crane equipment 'rodeos' are proof of this. Ten year old children, once made familiar with crane controls through the briefest of lessons, are able to manoeuvre the crane ball with a very high degree of precision. This does not make them operators though – they have no sense of safe crane sites, safe set up, maintenance and above all lift planning.

Thus it is important for the practical assessment of operators to focus on overall lift management as well as load control. Testing competence in load chart use is one aspect of this, but during the assessment asking questions about the crane set up, lifting capabilities with the current set up and safety hazards are all ways of assessing the 'complete operator.'

### **Familiarity with equipment**

The competent operator takes the time to familiarise him or herself with new equipment and does not engage in hoisting until comfortable with the controls and the crane's response to control input. Accordingly the best assessment of a competent operator in a reasonable time period is when the assessment takes place with the equipment the operator is used to operating. Failing that a reasonable amount of time must be set aside for the operator to become sufficiently comfortable to run new equipment in a test situation.

Accordingly, in Ontario a shift in assessment is taking place from testing on a test site, with the test site's equipment, to assessment on the job. The next stage in this shift is to develop flexible assessment scenarios that can be applied to work situations while they are in progress. These

don't exist in Ontario yet, but are recommended for adoption by BC when the assessment tools are constructed in that Province.

The next section describes how the Ontario experience can shape the development of practical assessment for Crane Operators in BC. BC is in a position to build on and benefit from the experience of operator practical assessment in Ontario and Alberta. This means the BC assessments will be able to model best practice in operator assessment. What best practice looks like is described below.

### **BC model is best practice in practical assessment**

The key points of the BC model which build on Ontario's DOST experience are:

- Assessment tools that are flexible: Different tools are available to match different circumstances of employment for each crane category
- Theory and practical application are integrated where possible in the practical assessment to include an assessment of competence in set up
- Assessment takes place at the worksite or in circumstances as close to worksite conditions as possible
- Load chart test is mandatory before practical assessment. This both encourages operator to brush up on skills and reduces the burden on the assessment system by greatly reducing failed assessment attempts
- Learning resources, much like ICBC's 'Safe Rider's Guide' for Motorcycle training are readily available and are a full and comprehensive overview of the competencies required to pass the assessment

## **What needs to be developed to implement practical assessment in BC?**

There are four pieces that need to be developed in order to begin to assessment of operator competence in BC:

1. Assessment tools for each crane classification.

Because these tools are based on the competency requirements identified through industry workshops there are commonalities across the classifications which have already been identified. These will allow assessment tools to build upon each other for both cost effective development and efficient delivery.

Each assessment will need to be developed, as described previously, to accommodate different workplace situations while maintaining a rigorous standard of assessment. This means theoretical questions on crane hazards and operations will need to be built in to each assessment script.

2. Assessment tools to test load chart competence.

These tools will have to accurately reflect the work competent operators do with load charts in day to day craning. They should also be profiled on the web so that operators can study their use in advance of the assessment. Pre-study will improve competence.

Study tools and practice assessments will also allow operators to be assured of their competence through practice and study before taking the assessment.

3. Assessors

Assessors will need to be hired to conduct practical assessments. Assessor qualifications will need to be determined and terms of employment confirmed.

Further, it will need to be determined if Assessors will be able to play a mentorship role to operators prior to assessment (which means assessment and mentorship will need to be coordinated between different assessors), or after a failed assessment. These would be natural roles for the assessor to play, but have implications for assessor impartiality and validity of the assessment system.

#### 4. A tracking and identification system.

This is easy to describe, but potentially costly to implement. Once operators have been assessed, in fact prior to assessment, they will need to be registered and tracked to add validity to the assessment system.

Tracking and issuing of license cards must meet these criteria:

- Limit fraudulent licensing
- Add value to employer / operator hiring decisions
- Which both mean it must be a reliable 'token' of operator competence
- Respect privacy and privacy legislation
- Be understandable and readily verifiable
- Permit education and training opportunities to be promoted

To accomplish all of the above some kind of a database and ID card system will be required. While these can be designed and delivered relatively cost efficiently, such projects are also notorious for spiralling out of budgetary control.

These are the core pieces of competency assessments. Additional components include:

- A training system linked to the competency certification levels
- Flexible training tools that permit self study
- Formal educational opportunities for new entrants
- Strong on job training resources (mentorship and apprenticeship)

### **Next steps**

The BC Occupational Health and Safety regulations mandating proof of operator competence to certify crane operators goes into effect in July 2007. Before that time a viable, reliable and enforceable suite of assessment tools has to be in place. Additionally BC has the opportunity to coordinate development of operator assessments with Alberta to effectively harmonise practical assessments of competence between the two jurisdictions.

Therefore development of practical assessments will be coordinated between Alberta as this process moves forward through Fall 2006.