BC Association for
CRANE SAFETY

Working Together: Inter-Provincial Practical Assessment of Crane Operators

WORKSHOP REPORT: KELOWNA, BC – JUNE 1ST AND 2ND

Background

The BC Association for Crane Safety is an industry association formed in 2005 by the Crane Industry in British Columbia to support the crane industry in a coordinated response to the need for safe operation through operator training in the Province. The need for the Association became more apparent as the Crane Industry got behind the need for new and current operators to prove their competence to operate a crane and began to support WorkSafeBC in moving toward requiring crane operators to prove competence in order to run Cranes in BC. The industry fully supports this move under the umbrella Coordination run In July 2007 WorkSafeBC will be enforcing a crane regulation that requires crane operators to possess proof of competence from an agency acceptable to industry.

The BC Association for Crane Safety is coordinating the development of competency standards for the industry with the Provincial Industry Training Authority. Proof of training to these standards or an equivalency will be required in 2007. Integral to these standards is a practical demonstration of competency. As of January 2007 all crane operators in the Province will be required to prove competence – for new operators this will be a practical exam, while for existing operators there will be a work place based version of this exam.

Having said that, the Association is in process of receiving funding support from The Industry Training Authority to develop the practical assessments for crane operators in BC. The Association and Board concluded that now would be an excellent time to explore what Alberta and Ontario have learned from their practical assessment of Crane Operators so that BC may build on their experience and develop a tool that would integrate with the other provinces so that operators could maintain inter-provincial mobility.

This workshop was held to better understand the practical assessment methods used in Ontario and Alberta to certify crane operators. A particular focus was to

seek out common ground between these provinces to harmonise the assessment process as an aid to inter-provincial operator mobility.

In Attendance:	Fraser Cocks	BCACS (Executive Director)
	Wayne Fox	Program Head, Crane & Hoisting Trades, NAIT, Edmonton, Alberta
	Ken Kosik	Crane and Hoisting Instructor, NAIT, Edmonton, Alberta
	Jack Lane	Crane & Hoist, Fort McMurray, Alberta
	Noel LeChasseur	Manager, Industry Programs & Standards, Ministry of Advanced Education, Alberta
	Gord Lindberg	Instructor, Operating Engineers Training Institute, Maple Ridge, BC
	Rob Magee	GWIL Crane Service Ltd.
	Shawn Robertson	Training Manager, Operating Engineers Training Institute, Oakville Ontario
	John Smith	Chief Instructor, Durham College
	Lee Middleton	Fulford Harbour Consulting (Facilitator)

BC proposed model very well received

The model under consideration was described for the benefit of the Ontario and Alberta delegations. A schematic of the models, which are provided in the appendix, was displayed and described in detail at the workshops. This is one schematic for each of the three classifications of cranes industry uses. The industry divisions are:

- Mobile Crane
- Boom Truck

- Tower Crane

The industry in BC believes that there is a strong common core set of skills that all operators must be competent in. These are described as Common Core Crane and Rigging theory and are the foundation for all competent operators. The training and assessment models reflect this. What the model shows is not only the training pathway that new operators must meet in order to be deemed competent, but also lays out the standards current competent operators perform to. Each certification point requires an assessment of competence in either theory demonstration of knowledge or practical demonstration of competence.

The key points of the model are:

- Assessment tools that are flexible: Different tools are available to match different circumstances of employment
- Theory and practical application are integrated where possible
- Assessment takes place at the worksite or in circumstances as close to worksite conditions as possible

The remainder of the workshop focused on strategies for assessing the practical competence of crane operators. Alberta and Ontario described the specifics and strategies of their practical assessment of operators.

Alberta and Ontario assessment

In Alberta and Ontario the assessment of operators can take place on the work site and can involve different assessment scenarios to match work place conditions, but in practice one set piece assessment in a testing facility has become the operational standard.

Generally an operating seeking assessment of confidence will be asked to run through a set procedure, usually involving crane placement, set-up, lift planning / load chart calculation and performing the actual lift. The operation is graded using either a point system or a competent, not yet competent determination.

Both Alberta and Ontario delegations stressed the importance of conducting a separate assessment on the operator's ability to correctly read and use a load chart. They felt that incorporating this component into the assessment without separately assessing the operators ability in this area leads to operators certified as being competent overall yet lack competence in the critical area of load chart usage.

There appeared a couple of issues of relevance to the British Columbia context from a discussion of Alberta and Ontario practice. In brief these were:

- Assessment in a formal test setting takes more time than would be available to assessment of operators in BC; this is partly because a realistic simulation of actual work practice takes a while to set up.

- The end result is that assessment of an operator can take one half to one full day. In BC existing operators will be assessed using the same tools as will be used to perform 'capstone' assessment of new trainees. This will likely result in an assessment workload of several thousand operators in the first few years of regulatory requirement for proof of competence.

- Assessment is conducted to set scenarios which may not take advantage of the naturally occurring demonstrations of competence the operator engages in on the job site.

Innovations proposed for British Columbia

The Alberta and Ontario delegations generally saw BC's proposals for operator assessment through the BC Association for Crane Safety as an evolutionary advancement of the Alberta and Ontario assessment models. The BC Association had intended the workshop to be a way to learn from the work of Ontario and Alberta with the hopes that in contemplating the design of an assessment system in BC, something 'new and improved' could be developed and possibly adopted by all three jurisdictions. Given that Ontario has agreements with Quebec, and Alberta with Saskatchewan, the newly developed assessment tools for operators could have significant reach.

The innovations that have been broadly applied to the proposed assessment scheme were agreed to be based on these principles:

Principles of assessment

1 **Assess competency on the job:** Due to the length of time set up requires on a mobile crane, and the fact that tower cranes are only found in real work settings, the industry supports assessment of operators while they are performing their regular duties.

2 **Use an independent mobile assessor:** Use an assessor who is very skilled as an operator, who has received training in assessing operators on the job, and who is independent i.e. not affiliated with the employer the operator works for.

3 **Produce assessment tools that are public:** The industry would like to see assessment tools that are publicly

available, closely linked into the skills standards for the operator and which can be used to guide operator learning prior to assessment.

4 **Link theory and practice:** When assessing on the job, and even when assessing in a practical, formal test, carefully design the tools so that a person's theoretical knowledge is demonstrated without their having to write a written test.

Using these principles led the workshop participants to focus quite specifically on these features of assessment that show most promise for supporting a valid and reliable assessment scheme that is economically viable:

1 **A focus on naturally occurring evidence:** This means that wherever possible assessment scenarios will be constructed that very closely resemble what operators are actually called on to do throughout their working day. An example is tower crane operators pouring concrete. This is a demanding task that requires a high skill level. If an operator can be assessed on their performance of this task in a way that ensures they also have some of the theory knowledge underpinning safe operation then we can confidently say assessment will have been conducted to a very high standard of reliability – far higher than with assessment on simulated work tasks – and in a way that has next to no impact on the work place.

2 **Incorporate theoretical material into the practical test:** Many options exist for how to focus assessment on theoretical knowledge – paper and pen test being the

obvious choice. What is a little more elusive is a way of assessing theoretical knowledge in the context of practical assessment. Asking questions and receiving verbal answers is one basic way, observing the operator calculate lift parameters using the load chart is another much more integrated way of doing this work. Future development work will occur in this area.

3 **Use of capstone assessments:** A capstone is the final covering stone on a stone wall. The assessment proposed will be the final assessment of an operator, assessing the operator's skill level to the standard required by industry for participation in a full production role. Thus the assessment tool will need to fully capture the breadth and depth of competence an operator requires to do their job.

Next Steps

The participants in the workshop felt that the BC development of assessment tools for operators presented an excellent opportunity to strengthen practical assessment of operators in Alberta and Ontario beyond the current, fairly rigorous, practical assessment tools in use in those Provinces. Both Provinces committed to participate in the development process of the BC assessment tools to ensure harmonization between the three Provinces and to ensure that all jurisdictions benefit from the advances made in operator assessment through this process.

The following action steps were agreed by the participants.

1 The BC Association for Crane Safety will engage in a fact finding tour of Ontario Operating Engineer and Durham College training facilities.

2 The Association will tour training and assessment facilities at NAIT

3 Development work on assessment will continue upon the receipt of Provincial Government funding in BC, expected in early August 2006. Development work will incorporate lessons learned from Alberta and Ontario.

4 At this point the BC Association and Provincial Government will share the draft developments in assessment with other interested jurisdictions, perhaps at a session organised in Edmonton. This could take place in late September, early October.