



BC Association for
CRANE SAFETY

Crane Operator Qualification

INDUSTRY WORKSHOP REPORT

TOWER CRANE WORKGROUP MEETING #1
WorkSafeBC, Richmond British Columbia
November 7, 2005

Introduction

The BC Association for Crane Safety (BCACS) was established in November 2005 to promote the development of an industry-driven crane operator qualification system in British Columbia.

The association board has representation from various private bodies that have a stake in the development of that system, and includes:

Larry Sinclair	Marine & Pile Driving Contractors Association
Bob Fedderly	Fedderly's Construction
Jim Barkman	Eagle West Tower Cranes Inc.; Eagle West Truck & Crane Inc.
Geoffrey Nielsen	BC Hydro
Gary Kroeker	IUOE Local 115
Peter Sperlich	Log and Timber Building Industry Association
Brian Savage	Western Industrial Contractors
Mike Stekelenburg	Alcan (Heavy Industry Training Advisory Committee)
Rob Magee	GWIL Industries

There are important differences between industries that use similar hoisting devices, and these differences need to be understood and accommodated in order to create a system that works for everyone. The BCACS has therefore initiated a series of stakeholder workshops to gather information and to identify consensus in areas including:

- a) Creating standards and competencies according to industry, site and usage, and equipment type
- b) Including incumbent crane operators as well as new entrants
- c) Supporting the development of appropriate WorkSafe BC regulations and guidelines for the industry
- d) Creating a system to help crane operators achievement and maintain competency
- e) Developing training and testing materials
- f) Making the industry attractive to talented potential new entrants.

The November 7 Tower Crane workshop was the first in a series that will also include workshops involving the owners and operators of both Boom Trucks and Mobile Cranes. These workshops are the first step in developing a crane operator qualification system that makes sense and has value for all stakeholder groups. The BCACS will take direction from the out comes of these workshops to ensure that the resulting crane operator qualification system is meaningful, enforceable and accessible.

The primary goal of the workshop was to complete a DACUM for a Tower Crane operator. Occupational analyses developed by the Construction Sector Council and Alberta Apprenticeship and Industry Training were utilized to expedite the

process. Subsequent roundtable discussions explored the diverse cultures of different parts of the tower crane industry in order to find areas of commonality and to identify differences that need to be respected and accommodated.

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In Attendance:

Russ Dowdeswell	BC Wood
Ron Karras	Micron
Greg Starchuk	Eagle West
Larry Becker	PCL
Kerry Hawley	Mega Cranes
Joe Bishop	IUEO 115 Tower Crane instructor
Fraser Cocks	BCACS (Executive Director)
Russ Robinson	Industry Training Authority
Betty-Ann Lee	WorkSafe BC (Recorder)
Kathy Sheppard	WorkSafe BC (Work Group Coordinator)
Andrew Klukas	Andrew Klukas & Associates (Facilitator and project support)

Part 1. DACUM

1.1 Description

A DACUM (“Develop A Curriculum”) process is used to define the various tasks, regular duties and procedures that workers perform in their occupation. This is achieved by gathering together representatives from industry to describe each skill set required to become a competent crane operator. The resulting information is used to develop training guidelines and programs and to define and develop meaningful testing criteria.

1.2 Purpose

The DACUM process was the foundational work required to achieve the goals of this project. In order to streamline and speed up the development process, various sources were brought together and compiled in a single document.

Various source materials have already been developed in other jurisdictions and in BC jurisdictions as well. Rather than starting over from the beginning, we compiled these materials for the tower crane workgroup participants. During the workshop the participants selected from these materials to define crane operation competencies that describe how they do business in BC.

1.3 Results

Appendix A contains the document resulting from this work. The content of each competency is a guide and is not intended to be exhaustive. Nonetheless, this definition of competencies was a critical step in developing a meaningful and workable crane operator qualification regime. With a strong solid foundation we can move forward and build a standardized qualification regime that is based on the principle of documented proof of competency.

Part 2. Roundtable Discussion

2.1 The Current System

Workshop participants were asked to describe their current procedures and some common factors can be extracted from their accounts. For example, training usually includes:

- core theoretical training
- a period of time spent rigging (e.g., 6 months)
- a period of time spent operating the crane under the supervision of a qualified operator
- a period of time spent in an apprenticeship

Currently there is no standard, but it was agreed that existing approaches to training involve a basic “orientation” including

- testing and/or training the potential operator according to the operator’s current knowledge and abilities
- some kind of practical demonstration by the operator
- some kind of written questionnaire or test
- signed documentation

One main problem with the current system is that it does not allow for standardized training and it tends to be very basic, taking place in controlled environments. One of the most common instances of operator error is in the inappropriate operation of load lines. Current practice does not address this issue.

It was also noted that the requirements of operators vary. While there is a difference between the career-track operator and the one who only needs to operate a crane as an occasional part of a daily job, the minimum competencies should be the same.

2.2 Issues Outlined

What would the most basic “documented proof of competency” need to include?

It was agreed that there should be some method of **evaluation** which:

- is standardized
- is tiered or modular with a series of levels that might be based on the type of crane being operated
- contains a practical component
- contains a theoretical component

It was also agreed that there should be a **pre-qualification** procedure to screen potential operators for such attributes as:

- age – 18+
- physical fitness – either a formal medical examination or a signed declaration of fitness. Particular concerns include eyesight, fear of heights, motion-sickness
- minimum education – Grade 10 Math and English
- aptitude, via a trade assessment – could be an online self-assessment or something more formal – it is possible that this component could be part of the entry-level training

There was consensus that **entry-level training** must include material dealing with each section in the document “*Tower Crane Operator – Standards CSC*” including:

a) Written component - general testing of a standard set of skills, for example:

- Rigging
- Location and use of controls (i.e. in the cab)
- the ability to read load charts
- the ability to understand hand signals
- the ability to read a manual
- familiarity with safety regulations
- knowledge of the consequences of various operator errors

b) Practical experience – for example, logging a determined number of hours in a logbook to gain experience, perhaps culminating in a formal test. As well:

- There was some discussion surrounding the idea of a system in which hours are logged in a book. Should the logbook include a photograph of the operator? Should it specify restrictions on the kinds of cranes the holder is allowed to operate? On the types of work the operator can do? How many hours of logged time are appropriate?

- If there is to be a practical test, it should be designed to at least prove a minimum standard of competency. Such a test is not likely to demonstrate the full scope of the operator's theoretical knowledge. There was some debate over how formal the process for documenting competency should be. Would it be better to have crane operators observed over time by their employers who would then declare them competent, or would it be better to be tested in a centralized location by a third-party administrator?
- The need for a practical test was also debated, partly because it is very difficult to gain enough experience to have the necessary skills prior to actually being on the job. One problem is that crane cabs are usually designed for only one operator; but it is also difficult to find qualified people willing to mentor new operators. In relation to this is the issue of grand fathering operators with years of experience. Would such a person be required to take a practical test? What would happen if the operator failed?