



BC Association for  
**CRANE SAFETY**

# Crane Operator Qualification

INDUSTRY WORKSHOP REPORT

**TOWER WORKGROUP MEETING #2**  
*WorkSafeBC, Richmond British Columbia*  
*December 6, 2005*

# TOWER CRANE WORKGROUP MEETING #2

*WorkSafeBC, Richmond British Columbia*

*December 8, 2004*

<b>In Attendance:</b>	Ron Karras	Micron
	Greg Starchuk	Eagle West
	Larry Becker	PCL
	Joe Bishop	IUEO 115 Tower Crane Operator
	Fraser Cocks	BCACS (Executive Director)
	Betty-Ann Lee	WorkSafeBC (Recorder)
	Kathy Sheppard	WorkSafeBC (Work Group Coordinator)
	Chris Bywater	Fulford Harbour Consulting (Facilitator)

---

## Part 1. Certification structure

---

### 1.1 Description

The certification structure refers to the organization by which the different levels of tower/ self-erect operator certification are identified and associated competencies (both theoretical knowledge and practical skills) are assigned. Once all of the different levels and associated competencies are identified, the certification structure also shows what competencies are common across each level as well as the path an operator can follow move from one certification to another.

### 1.2 Purpose

The tower/ self-erect operator occupation spans a variety of equipment types from small self-erect cranes to city cranes to large tower cranes. In developing a certification structure it is important to strike a balance between certification requirements that ensure a safe and competent level of operation and one that does not impose an inappropriate number and/or level of competencies for the different levels of required work.

### 1.3 Results

During the workshop three distinct operator groups were identified:

- Tower crane operators
- City crane operators

- Self-erect crane operators

A certification structure emerged that paralleled a traditional time based apprenticeship process for tower crane operators. The foundation of the tower crane certification structure included core competencies that would be required of all crane operators and could form the foundation level for self-erect crane operators. Self-erect operators would utilize a similar certification structure but scaled down from the tower crane process. City crane operators were identified as a third certification category, while the competency requirements for city crane operators were not finalized, it is assumed that they would share many of the competency requirements for tower crane operators as they are effectively small tower cranes operated both remotely and from boom mounted cabs.

Appendix A contains the diagram of the proposed certification structure for tower crane/city crane and self-erect operators.

---

## **Part 2. Review of competency profile**

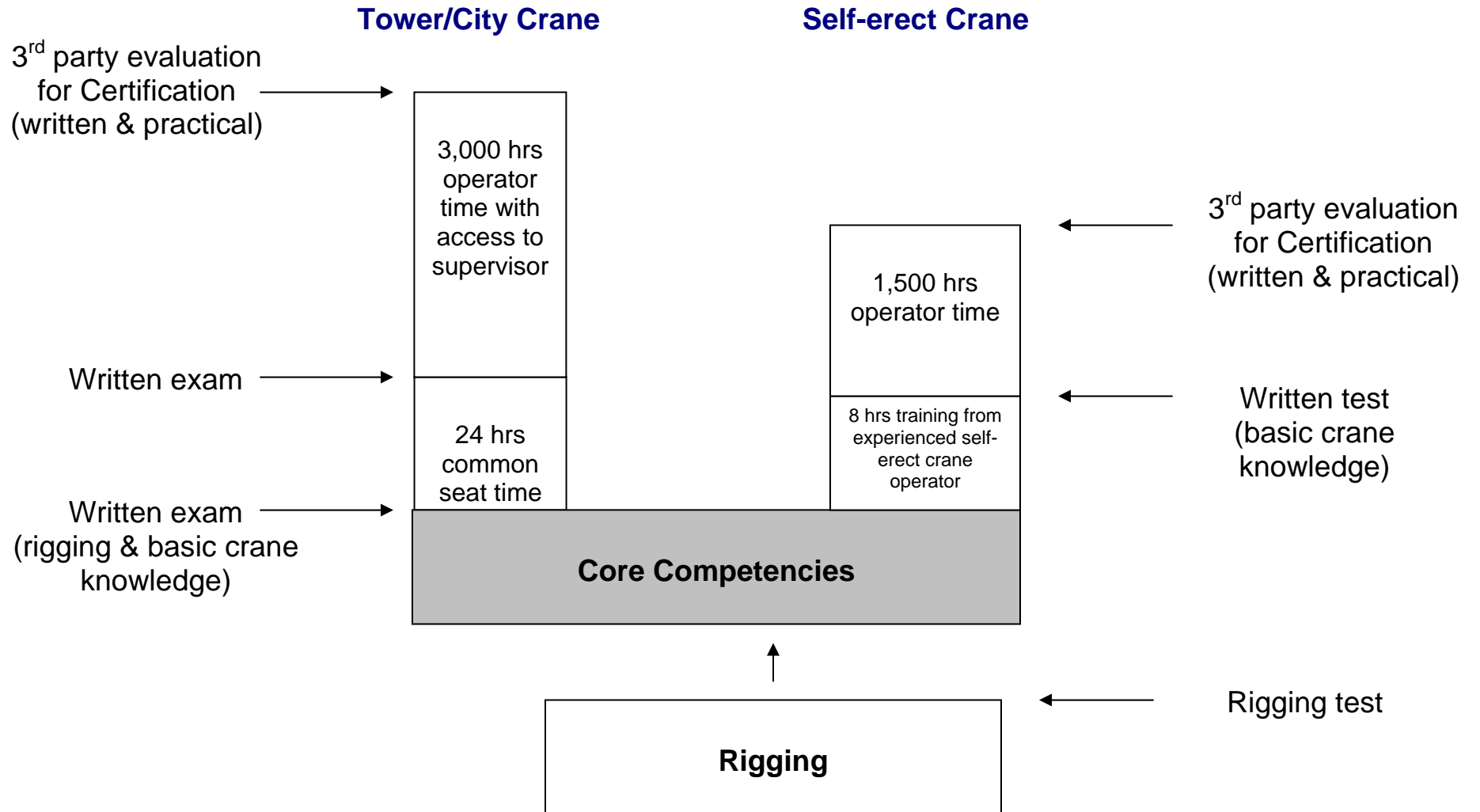
---

At the previous tower / self-erect workshop participants identified a list of operator competencies by reviewing a compilation of source documents from a variety of other jurisdictions. At the second workshop the participants were presented with a summary competency profile compiled from the headings of the more detailed competency list from the previous workshop.

Workshop participants reviewed the summary competency profile to refine the overall list of competencies and to also identify those competencies that were more core to all operators.

The result of the competency profile refinement exercise is listed in Appendix B.

# Appendix A – Draft Certification Structure



## Appendix B – Competency Profile

### Tower Crane Operator – Profile Chart

<b>1. Describe Tower Crane /Self Erect Industry</b>	<b>1.01</b> Explain operators' duties and responsibilities	<b>1.02</b> Explain the training process for operators	<b>1.03</b> Describe the tower crane industry	Level 1 Competencies
	<b>1.04</b> Identify general types of cranes and their application	<b>1.05</b> Describe Ind. specific hoisting applications		
<b>2. Uses Communication Skills</b>	<b>2.01</b> Acts Professionally	<b>2.02</b> Speaks and Listens Effectively	<b>2.03</b> Uses Documentation	
<b>3. Crane communication</b>	<b>3.01</b> Communicate using Signals	<b>3.02</b> Uses Electronic Communication Equipment	<b>3.03</b> Radio protocol and communications	
<b>4. Interprets Applicable Legislation &amp; Policies</b>	<b>4.01</b> Interprets Legislation	<b>4.02</b> Interprets Company Policy & Procedures		

**5. Works Safely on Site**

<b>5.01</b> Completes site orientation (hazards, PPE)	<b>5.02</b> Maintains a Safe Work Environment
----------------------------------------------------------	--------------------------------------------------

**6. Safe Crane operations**

<b>6.01</b> Prepares for Emergencies	<b>6.02</b> Responds to Emergencies (DEP)	<b>6.03</b> Working Around & Contact with High Voltage	<b>6.04</b> Weather Conditions Affecting Operation	<b>6.05</b> Multi-crane safety protocol
<b>6.06</b> Uses PPE (fall arrest, lock-out)	<b>6.07</b> Public safety			

**7. Describes Equipment & Attachments**

<b>6.01</b> Describes Types & Sizes of Tower Cranes	<b>6.02</b> Describes Types of Bases Used for Tower Cranes	<b>6.03</b> Describes Erection Process of Tower Cranes	<b>6.04</b> Describes Types of Climbing & Lowering Methods	<b>6.05</b> Describes Functions of Tower Crane Components
<b>6.06</b> Describes & Maintains Guards, Covers & Labels	<b>6.07</b> Describes Capacities & Capabilities of Types & Sizes	<b>6.09</b> Describes Basic Tools & Supplies associated with Tower Cranes	<b>6.10</b> Describes Rigging Equipment (table forms, sky hook)	<b>6.11</b> Terminology/vocabulary
<b>6.08</b> Describe function and demonstrate ability to use different types of controls				

<b>8. Performs Pre-Operational Inspection &amp; Daily Service</b>	<b>7.01</b> Start of Shift Inspections	<b>7.02</b> Manufacturers Inspections	<b>7.03</b> Annual or Special Inspections	<b>7.04</b> Maintain a Logbook
-------------------------------------------------------------------	-------------------------------------------	------------------------------------------	----------------------------------------------	-----------------------------------

<b>9. Performs Pre-Operational Inspection &amp; Daily Service with Engine/Power On</b>	<b>8.01</b> Dynamic testing
----------------------------------------------------------------------------------------	--------------------------------

<b>10. Complies with Scheduled Maintenance Requirements</b>	<b>9.01</b> Arranges for or Performs Scheduled Maintenance
-------------------------------------------------------------	---------------------------------------------------------------

<b>11. Plans Work Procedures</b>	<b>10.01</b> Assesses Load	<b>10.02</b> Load Charts including gear range and parts of line	<b>10.03</b> Lifting Personnel	<b>10.04</b> Plans Lifts & Tasks
----------------------------------	-------------------------------	--------------------------------------------------------------------	-----------------------------------	-------------------------------------

<b>12. Pre-Lift Planning &amp; Rigging</b>	<b>11.01</b> Inspect Rigging Equipment	<b>11.02</b> Inspect Lifting Devices	<b>11.03</b> Select Rigging Equipment	<b>11.04</b> Perform Rigging	<b>11.05</b> Maintain & Store Rigging Equipment
--------------------------------------------	-------------------------------------------	-----------------------------------------	------------------------------------------	---------------------------------	----------------------------------------------------

<b>11.06</b> Inspects and Services Attachments
---------------------------------------------------

<b>13. Performs Lifts</b>	<b>12.01</b> Performs Hoisting Operations	<b>12.02</b> Performs Specialty Lifts
---------------------------	----------------------------------------------	------------------------------------------