



**BC Association for
CRANE SAFETY**

Crane Operator Qualification

INDUSTRY WORKSHOP REPORT

BOOM TRUCK WORKGROUP MEETING #2
WorkSafeBC, Richmond British Columbia
December 8, 2005

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WorkSafeBC, Richmond British Columbia

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In Attendance:	Ken Morrison	BC Hydro
	Wayne Fettback	Western Pacific Enterprises
	Jim Barkman	Eagle West
	Will Denhertog	Curtis Lumber
	Richard Schneck	Phoenix Truck Crane
	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 boom crane 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 boom crane operator occupation spans a number of industries and a variety of equipment types including stiff and folding booms as well as lifting capacities ranging from 8 tons to over 40 tons. 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.

During the workshop, participants reviewed the certification structure that emerged from the previous day's mobile crane workshop to evaluate its relevance to the boom truck environment.

1.3 Results

The basic structure of the certification model developed in the mobile crane workshop was found to be applicable to boom trucks. Workshop participants recast the mobile crane model with boom reference levels. Appendix A contains the diagram of the model revised for boom truck operators.

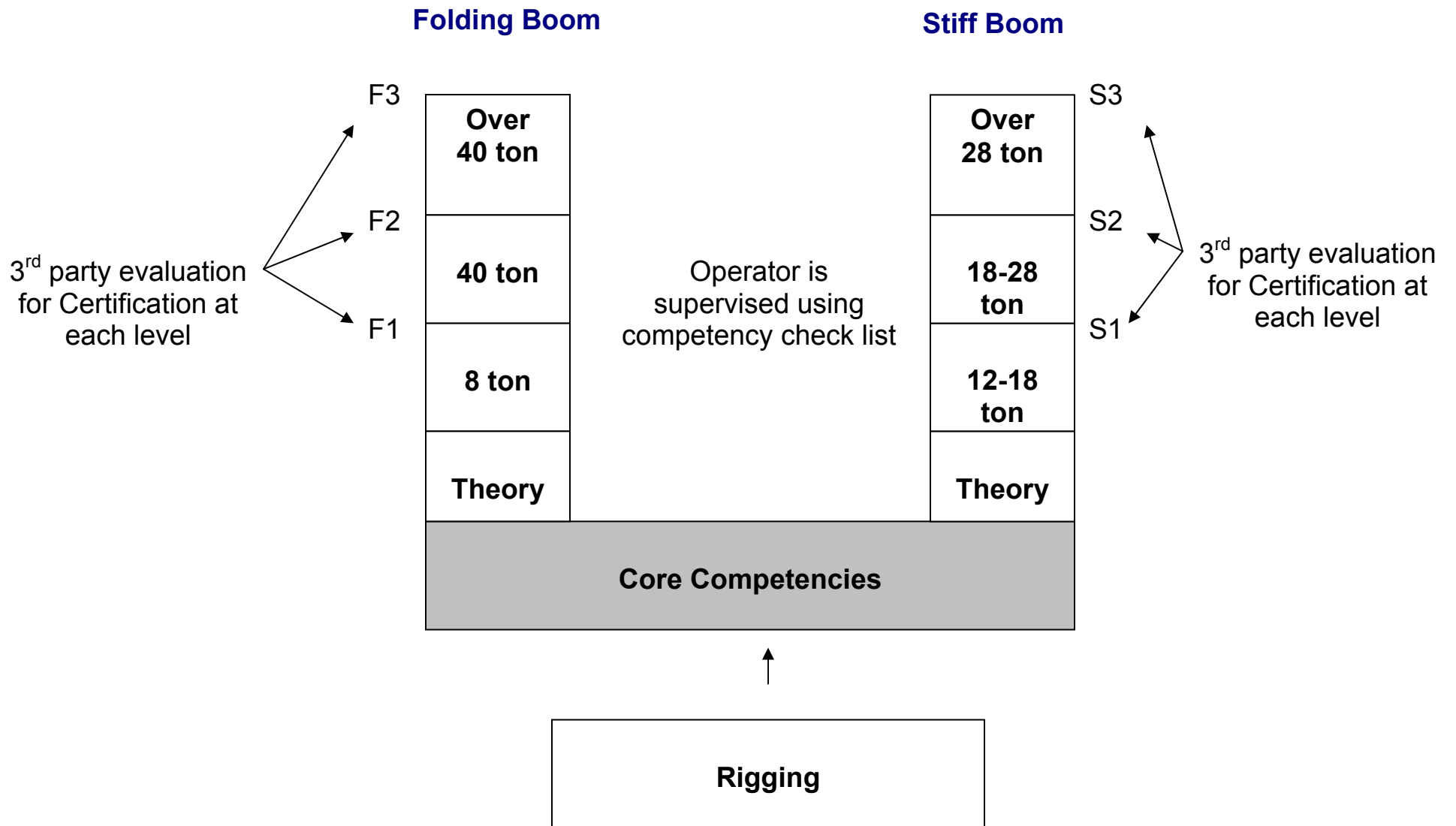
Part 2. Review of competency profile

At the previous boom truck workshop participants identified a list of boom truck operator competencies by reviewing a source document from the Construction Sector Council. 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 are core to all boom truck operators.

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

Appendix A – Draft Certification Structure



Appendix B – Competency Profile

Level 1
Competencies

Boom Truck Operator – Profile Chart

1. Describe Boom Truck Industry	1.01 Explain Operators' Duties and Responsibilities	1.02 Explain Trainees' Duties and Responsibilities	1.03 Explain Employers' Duties and Responsibilities	1.04 Describe the Boom Truck Industry	1.05 Identify Types of Boom Trucks and their Application
	1.06 Describe Ind. Specific Hoisting and Transport Applications				
2. Uses Communication Skills	2.01 Acts Professionally	2.02 Speaks and Listens Effectively	2.03 Uses Documentation	2.04 Communicate Using Signals	2.05 Uses Electronic Communication Equipment
3. Interprets Applicable Legislation & Policies	3.01 Knowledge of regulatory bodies related to boom cranes and where to locate detailed information				
4. Works Safely	4.01 Uses PPE				
5. Complies with Site Emergency Plan	5.01 Prepares for Emergencies	5.02 Responds to Emergencies			

6. Describes Equipment & Attachments	6.01 Describes Types & Sizes of Boom Trucks	6.02 Describes Major Components & Functions	6.03 Describes Common Attachments & Purposes
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7. Basic Trade Math	7.01 Perform basic load calculations using accepted industry formulas
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8. Rigging & Equipment	8.01 Describe construction, types & functions of wire rope	8.02 Identify grades of chain	8.03 Identify and demonstrate use of rigging hardware & tools	8.04 Demonstrate proper use of slings	8.05 Identify accessories and interpret related regulations
	8.06 Describe types and function synthetic slings	8.07 Inspect rigging and id. Criteria for taking out of service	8.08 Calculate safe working loads for slings	8.09 Interpret and describe rope lay	8.10 Interpret sizes, grades and classification grp. of wire rope
	8.11 Demonstrate advanced rigging techniques				

9. Performs Pre-Operational Inspection & Arrange Service with Engine/Power Off	9.01 Inspects & Arrange Service Lubrication Systems	9.02 Inspects and Arrange Services Electrical Service System	9.03 Inspects and Arrange Services Hydraulic System	9.04 Inspects and Arrange Services Cooling System	9.05 Inspects and Arrange Services Air Intake System
	9.06 Inspects and Arrange Services Suspension System	9.07 Inspects and Arrange Services Drive Train	9.08 Inspects Load Bearing Structure & Arrange Service	9.09 Inspects and Arrange Services Operator Station	9.10 Inspects and Arrange Services Fuel System
	9.11 Inspects and Arrange Services Carrier Braking	9.12 Inspects and Arrange Services Boom Components	9.13 Inspects and Arrange Services Hoisting System	9.14 Inspects and Arrange Services Stabilizing System	9.15 Inspects and Arrange Services Attachments
	9.16 Inspects Safety Equipment and Arranges Service	9.17 Describes Tools & Supplies Associated with Boom Trucks			
10. Performs Pre-Operational Inspection & Daily Service with Engine/Power On	10.01 Starts and Warms Up Engine	10.02 Cycles Equipment Functions			
11. Complies with Scheduled Maintenance Requirements	11.01 Arranges for or Performs Scheduled Maintenance	11.02 Knowledge of CSA/ASME & WCB inspection requirements			

12. Plans Work Procedures

12.01 Assesses Site Hazards	12.02 Discusses Environmental Concerns with Site Personnel	12.03 Reviews Job Specifications & Safety with Site Personnel	12.04 Assesses Load	12.05 Plans Tasks
12.06 Plans and Confirms Travel Route	12.07 Determines Best Set-up Location On Site	12.08 Determines Work Procedures	12.09 Determines procedures for work around electrical hazards	

13. Load Chart Reading

13.01 Interpret load charts	13.02 Explain difference between gross capacity vs net capacity	13.03 Explain difference between gross load vs net load	13.04 Determine % of capacity load from chart	13.05 Determine capacity limited by structural or stability
13.06 Calculate main boom capacities (attachment)	13.07 Calculate boom extension capacities	13.08 Identify and determine jib capacities	13.09 Describe crane factors influencing capacity	13.10 Describe site factors that influence capacity & safe operation
13.11 Describe principles of leverage	13.12 Determine boom angles	13.13 Determine boom lengths	13.14 Interpret range diagrams	13.15 Determine load radius
13.16 Identify and calculate load hoist lines				

14. Operates Boom Truck	14.01 Complies with safety requirements	14.02 Sets up equipment	14.03 Installs attachments	14.04 Performs hoisting operations	14.05 Performs Specialty Lifts
	14.06 Monitors Activities on Site	14.07 Monitors Equipment Performance	14.08 Troubleshoots Equipment Performance	14.09 Optimizes Equipment Capabilities	14.10 Responds to Weather & Site Conditions

15. Follows Shut-Down Procedures	15.01 Parks Equipment in Appropriate Location	15.02 Shuts Down & Secures Equipment	15.03 Performs Housekeeping Tasks	15.04 Conducts Post Operational Inspection
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