



BC Association for
CRANE SAFETY

Crane Operator Qualification

INDUSTRY WORKSHOP REPORT

**MOBILE, BOOM AND TOWER CRANE TASK GROUPS
JOINT MEETING #3
“FINALISING DETAILS, PREPARING FOR DEVELOPMENT”**

*CLRA,
New Westminster , BC
Nov. 3rd , 2006*

JOINT CRANE TASK GROUP MEETING

New West, BC

Nov. 3rd. 2006

In Attendance:

Kathy Sheppard — tower / chair - WCB

Russ Dowdeswell – tower – Log Building Industry of BC

Ron Karras – tower – Micron Construction

Joe Bishop – tower - operator

Mike Maitland – mobile – Sterling Crane

Wayne Fettback – boom – Western Pacific Enterprises

Greg Starchuk – tower – Eagle West

Jim Barkman – boom / chair – Eagle West

Bob MacMillan – mobile – GWIL - operator

Peter Miller – multi – JJM Construction

Howard Muir– mobile – PG – Caribou Pulp

Don Nelson - WCB

Garry Bancarz – boom – Convoy Supply Ltd.

Rob Magee – mobile – GWIL – chair of BCACS board

Bill Sandhu – boom – B+B Truss

Michael Pelletier – multi – Emil Anderson Group

Val Coupal – tower – Coupal Cranes

Kerry Hawley – multi – Mega Crane

Fraser Cocks – BCACS Executive Director

Lee Middleton – facilitator – Fulford Harbour Group Ltd.

Background

This workshop was the tenth in a series of task group workshops for crane industry stakeholders. These stakeholders are working toward a competency based, licensing and certification framework for mobile, boom and tower crane operators in BC. The BC Association for Crane Safety (BCACS) is facilitating this process and providing the administrative support needed for industry to lead this change. The competency based certification framework will be used by WorkSafeBC as the foundation for a crane safety regulation to be enforced in July of 2007.

Through stakeholder consultation the BCACS determined the need for a workshop to finalise some details on the competency certification and training scheme with direct industry input before proceeding with the development of the assessment tools and training pieces that are now required. The goals of the workshop are outlined below.

Workshop Goals

1. Finalise the certification scheme levels and definition of hands on supervision.
2. Define the theory/ practical assessment process proposed for existing operators.
3. Clarify the operation of the certification scheme and regulation on private industrial sites.
4. Get answers on specific points prior to development of assessments:
 - a. Limited Use / Restricted Use

- b. Role of the BCACS in the management and implementation of the regulation in BC through start up and ongoing operation of the regulation

Assessment of Existing Operators

Review Item:

A process for assessing existing operators was outlined which incorporated best practice learning from other jurisdictions. In brief the process is:

- Applied test of load chart comprehension
- Applied test of hand signals
- Integrated theory practical test of competent crane operation

Other jurisdictions have found that specific focus must be placed on load chart comprehension as a critical competency area that crane operators who do not have the required competence may 'squeak by' where load charts are integrated into a comprehensive assessment.

Action:

Industry endorses best practice use of lessons learned from other jurisdictions and supports development of assessment tools along the approach outlined.

Industry offers the following direction:

- Integrate the load chart test into an overall assessment, but have it scored individually
- Integrate rigging into the hand signal component and have this scored individually
- Provide practice assessments which operators are strongly encouraged to do prior to booking practical assessments. In this way frivolous assessment use is avoided by those operators who may not

have the competence to pass the load chart component of the assessment

- Provide learning materials to allow operators to come up to competence standard on their own initiative prior to assessment

Issues:

The suggestion was put on the table that existing operators simply provide proof from an employer (even if that is themselves in the case of self employed operators) that they are employed to operate a crane prior to booking a practical assessment.

Action:

After discussion that in balance supported this suggestion it was decided to table formal decision making on this item until a future meeting when the industry will focus on validation of assessment tools and overall business planning / coordination of practical assessment.

Requested modifications to Regulation Guidelines

Issue:

The regulation requires 'learners' (a catch all phrase to cover all operators not yet certified competent under terms of the regulation) to operate under direct supervision. Industry strongly felt this situation would require paying two operators for the length of the training or pre-certification period adding tens of thousands of dollars to the cost of certifying operators.

In response to these concerns outlined at the September 8th meeting Don Nelson of WorkSafeBC provided modified regulation guidelines that specify three levels of Operator, each licensed progressively to perform lifts of varying risk and complexity with corresponding reduced supervision requirements the higher a level of license held.

The draft guideline is contained in Appendix A to this report.

Decision:

Industry endorsed the guideline with referencing Level One, Two and Three Operators and the described relationship between these levels, supervision requirements and lift type classifications (routine, significant and high risk). Furthermore the stakeholders endorsed that Level One certification only be held for three months maximum with one renewal possible.

Action:

Industry supports the following outcomes from the revised guidelines:

- Supervision requirements are two – phased. One phase of requirement relying on employer due diligence primarily during the phase in period of the regulation. The second phase follows the regulatory transition and relies upon certification of those exercising ‘hands – on’ supervision.
- The minimum applicability of the regulation on any equipment capable of lifting over 5 tonnes or lifting over a radius greater than 25 feet is supported and should be entered into the regulation guidelines.
- The regulation guideline will be promoted in compliance with the Trade, Investment and Labour Market Agreement between BC and Alberta. The implications of this agreement once in force are likely to drive a harmonisation of crane certification between the two jurisdictions.

Comment:

Industry was very pleased with the guideline modifications tabled. They felt they were enforceable, meaningful and reliable across all sectors of the industry and addressed concerns about duplication of employer due diligence and the differing

context of crane use for industrial operations. See discussion below on Limited Use.

Limited Use/ Restricted Use Decision

Issue:

Limited Use Classification is replaced with Level One and Two Operator classification. Does industry support this?

Decision: Industry endorsed the proposed guideline's focus on operator levels as a means of successfully addressing an industry need for limited use or restricted use crane operations while ensuring compliance with safety regulations. Precise details of how this will operate in heavy industry environments will be addressed through the development phase of the regulation.

Action:

Request WorkSafeBC adopt the Regulation Guideline as tabled by Don Nelson at the September 29th meeting and further understanding of the 'Operator Level' classifications contained in this proposal with industry users.

Comment:

Clarifying the limited use / restricted use license, combined with the proposal that industry certify internal assessors for Level One and Two operator assessment means that the Regulation works well to support safe crane operation in industry.

Business models: Role of the Association in Assessment

Issue:

The Association must present business model options for consideration by the board of the Association who represent crane industry stakeholders.

Decision:

The BC Association for Crane Safety as part of the training and assessment development work underway through Winter 06 / 07 will research several business model options for the Board of the Association to consider in governing the certification and training needs of industry.

Action:

Industry requests the BCACS prepare business plan options for both the start up and the ongoing operation of the certification scheme.

Next steps

The industry will be presented with a request to furnish Subject Matter Experts (SMEs) to continue development of the training and assessment resources required to implement the crane certification scheme and develop revised training program materials. Industry will attempt to provide up to three SMEs from each stakeholder group and has expressed eagerness to do so provided dates and length of commitment all work with operational requirements.

The BCACS with Industry's blessing will now embark upon development of all required tools and resources to implement the crane regulation in July 2007 through support of the funding partners, who are:

- WorkSafeBC
- Industry Training Authority
- Service Canada
- Industry in kind contribution

Appendix A – Draft Operator Certification Guideline (attached)

For discussion purposes only

G14.34 Operator qualifications

Draft Nov 13, 2006

- | | | |
|--------------------------------|--------------|---|
| Operator qualifications | 14.34 | 1) A crane or hoist must only be operated by a qualified person who has been instructed to operate the equipment. |
| | | 2) A person must demonstrate competency, including familiarity with the operating instructions for the crane or hoist and the code of signals for hoisting operations authorized by the Board before operating the equipment |

14.34 (1) & (2) Applies to all crane and hoists including those cranes requiring certified operators.

Regulatory excerpt

The amendment to section 14.34 of the *OHS Regulation* is:

- | | | |
|-------------------------------|----------------|--|
| Operator certification | 14.34.1 | On and after July 1, 2007, a mobile crane, tower crane or boom truck must be operated only
by a person with a valid operator's certificate issued by a person acceptable to the Board, and
in accordance with any conditions stipulated on the certificate by the issuing person. |
|-------------------------------|----------------|--|

OHSR 14.34.1 Requires a certification for the operators of specific crane types.

Certification of a crane operator means that an operator's knowledge skills, and ability meet a basic standard. The certificate would serve as "Proof of Competency" for that basic standard but employers are still required to ensure the operator is qualified to perform operations that are more complex than that basic standard.

The certification requirement for operators of mobile cranes, boom trucks, and tower cranes does not apply to operators of cranes which have a rated capacity of five tons or less and have a boom length 25 feet or less.

Purpose of guideline

The purpose of this guideline is to set out that WorkSafeBC would consider the BC Association for Crane Safety (BCACS) as an acceptable person under section 14.34.1, given BCACS's proposed program for issuing operators' certificates for mobile cranes, tower cranes and boom trucks. It also provides information about the program. Finally, the guideline gives information on what equipment is included within the meaning of each of the terms, mobile crane, and tower crane and boom truck.

Background

In July 2004, the WorkSafeBC Board of Directors resolved that WorkSafeBC would develop a program model for mobile and tower crane and boom truck operator qualifications, with the assistance and participation from interested stakeholders. After wide industry consultation, a program for assessment and documentation for operators' competency was developed and the BCACS was formed to administer the program. The regulation would implement this programmatic approach. WorkSafeBC would require employers and prime contractors in the construction industry, as well as other industries where these types of cranes and boom trucks are used, to ensure that operators at their workplaces have valid certificates issued by a person considered acceptable to the Board.

Person acceptable to the board

The BCACS would be an acceptable person to the WorkSafeBC under section 14.34.1, given BCACS's program for issuing operators' certificates for mobile cranes, tower cranes and boom trucks.

The BCACS includes representatives of employers and workers from many of the industries that use this type of equipment, as well as representatives of WorkSafeBC and other government agencies. The BCACS has developed a program for assessing mobile and tower crane and boom truck operator competency and the issuing of a "proof of competency" document or certificate to a person who successfully completes the assessment processes.

WorkSafeBC would also consider as acceptable, other persons under section 14.34.1 if they meet evaluation criteria established by the board. Assessment criteria and assessors' qualifications would also have to be met.

For the purpose of this guideline the following definitions are included;

Documented Proof of Competency means a certificate that indicates that an operator has successfully completed an assessment which validates that the operator has the basic knowledge, skills and ability (KSA) to safely operate a specific crane type.

Significant lift includes; lifting where high voltage lines are within working radius of the crane, precision lifts , non-standard set up conditions, lifting loads in excess of 75% of the rated capacity of the crane, lifting when crane is on a barge, blind lifts, demolition lifts when load weights can not be determined.....

High risk lift includes; lifting workers, multiple crane lifts or the first time performing a significant lift.....

Routine lifts do not include first-time significant lifts or any high risk lift

Supervision means a person who instructs, directs and controls workers in the performance of their duties (from Part One definitions of the OHSR)

Hands-on supervision means that the supervisor must be in visual contact with the operator to coach and to have the communication means stop any potential unsafe activity

Incumbent operator means an operator who is registered with the BCACS as of July 1, 2007 or an operator coming from outside of British Columbia after July 1, 2007 and who is in possession of an acceptable certificate. Incumbent operator status will end on July 1, 2008

Level One Operator means a person new to crane operations who has not successfully challenged either the theory or practical assessment and operates strictly under hands-on supervision. A level one operator may only operate up to three months without passing the theory assessment. The Level One Certificate may be extended for an extra three months if circumstances require an extension. The Level One Certificate will be issued jointly to the employer and the operator and the Certificate may apply to any crane type.

Level Two Operator means a person who has passed the theory assessment and is certified to make routine lifts but will require hands-on supervision for all first time significant lifts and all high risk lifts. A level two operator may choose to remain at this level for their working career or eventually they could challenge the practical assessment for a Level Three Certificate. A Level Two Certificate will specify what type of crane the operator may operate.

Level Three Operator means a person who has passed a practical assessment conducted by a third party assessor for a specific crane type. A Level Three Certificate will specify what type of crane the operator may operate.

Interim Level Three Operator means an incumbent operator who has registered before July 1, 2007 and has also signed a statement declaring that he or she is qualified to provide hands on supervision for Level One operators and to provide hands on supervision and sign off for Level Two operators. This interim provision is necessary to phase in OHSR 14.34.1 and will allow the Interim Level Three operator to sign off Level Two operators who have successfully performed first time significant lifts. This interim provision will expire on July 1, 2008 and only certified Level Three operators may provide hands on supervision or sign off after July 1, 2008.

Third Party Assessor means a person recognized by the BCACS to perform practical assessments. This person must be dedicated to assessing only and not be a trainer of crane operators or otherwise be in any other potential conflict of interest

Theory assessment means an assessment administered by the BCACS, conducted on either paper, computer, verbal or other means.

Practical assessment means an assessment conducted by a third party assessor, administered by the BCACS, involving verbal questions as well as a demonstration by the operator that validates that the operator has the basic knowledge, skills and ability to safely operate the crane. If the operator fails the practical assessment they would be

allowed to continue operating with a Level One or Two Certificate as determined by the Third Party Assessor.

Types of competency assessment

An incumbent crane operator may challenge the practical test if the operator feels that they have the necessary knowledge, skills and ability to pass the assessment. However, the operator and the operator's employer may choose to upgrade the operator's knowledge and skills prior to challenging the practical assessment. This decision is between the operator and the employer.

Once a Level One operator passes the theory assessment, they would be issued a Level Two Certificate.

A person with a relevant certificate of qualification or an equivalent documented level of competency from another program or another jurisdiction would not be required to challenge the theory assessment. He or she would be required to pass the practical assessment at which time the assessor will verbally assess the operator's knowledge. An interim Certificate may be issued to a person who has an acceptable out of province or other trade qualification to allow that person to work until he or she passes the practical assessment. The interim Certificate would be valid for a limited time, likely no longer than six months.

Hands-on supervision

Hands-on supervision of persons with Level One or Level Two Certificates entails having a Level Three operator in attendance at the workplace and in close physical proximity and readily accessible when significant or high risk lifts are being performed. Means of communication between the supervisor and the operator, such as through a direct line of sight with hand signals, or radio contact, and a warning system, should be set up as part of the supervision.

Level Two operators will need to have their first-time significant lifts documented and signed off by the supervisor which will allow them to conduct future significant lifts without hands-on supervision. This could be done in the form of a personal operator log book.

Implementation

An operator's Certificate issued by BCACS would be valid for a period of 5 years from the date of assessment. Recertification would normally be given automatically if the person has operated the crane on a regular basis in the previous five years without incident.

The BCACS would initiate its program in January of 2007. By July 1, 2007, all operators of mobile, tower cranes or boom trucks must have in their possession either a Level One, Two or Three Certificate or a document indicating they are registered with BCACS. Being registered with BCACS may allow the operator an extra six months to challenge the practical assessment up until December 31, 2007.

The requirement does not provide for “grandfathering” of existing operators with the possible exception of those operators who have received a recent certification which involved a third party practical assessment.

Apprentice Crane Operators may only operate a crane if they have Level One, Two or Three certificate and comply with the conditions of these certificates.

Types of equipment covered

Section 14.34.1 applies to mobile cranes, boom trucks and tower cranes with a rated capacity over five (5) tons or with a boom length over twenty-five (25) feet. WorkSafeBC considers this equipment to include the following:

Mobile Cranes and Boom Trucks:

As described in:

CSA Standard Z150-1998, Safety Code for Mobile Cranes,
ASME B30.5-2004, Mobile and Locomotive Cranes, or
ANSI/ASME B30.22-2005, Articulating Boom Cranes.

*Tower Cranes**

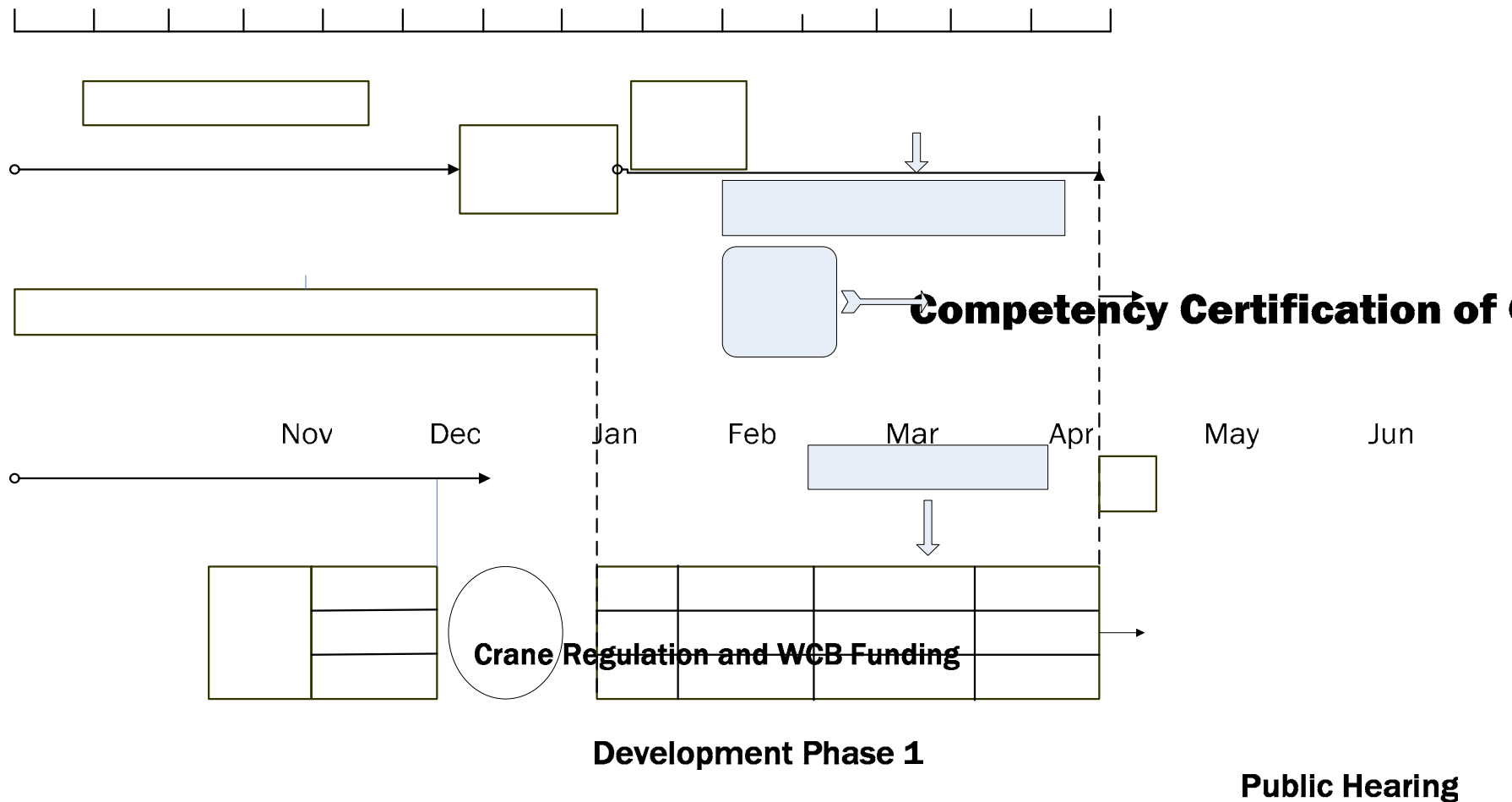
As described in:

CSA Standard Z248-2004, Code for Tower Cranes, or
ASME B30.3-2003, Construction Tower Cranes.

* Note Self-erecting tower cranes are included in the Code for Tower Cranes

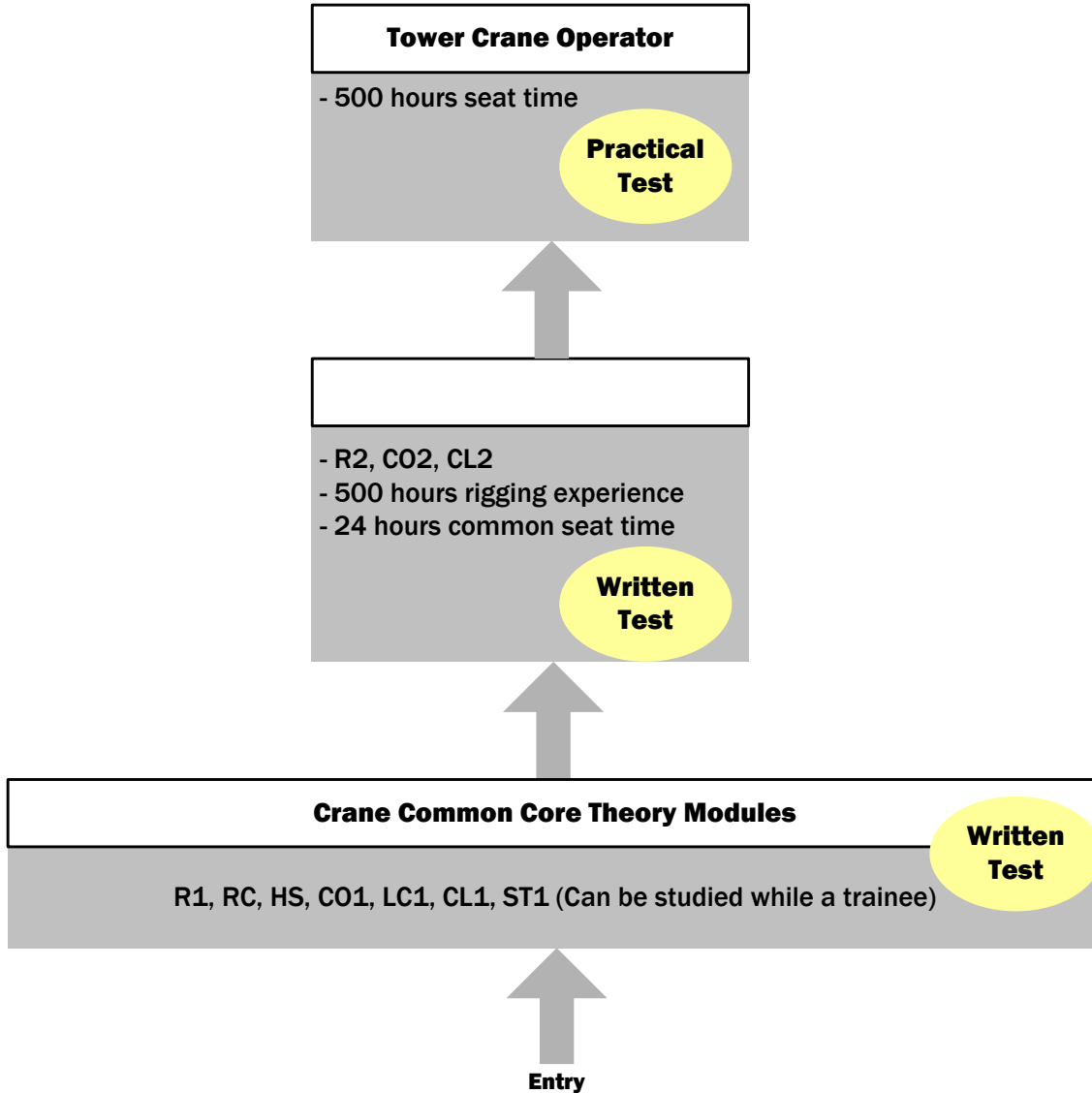
Appendix B – Diagrams

- **Competency Certification Scheme**
- **Map of each Qualification and Certification Equivalencies**



Tower Crane Certification

Tower Crane

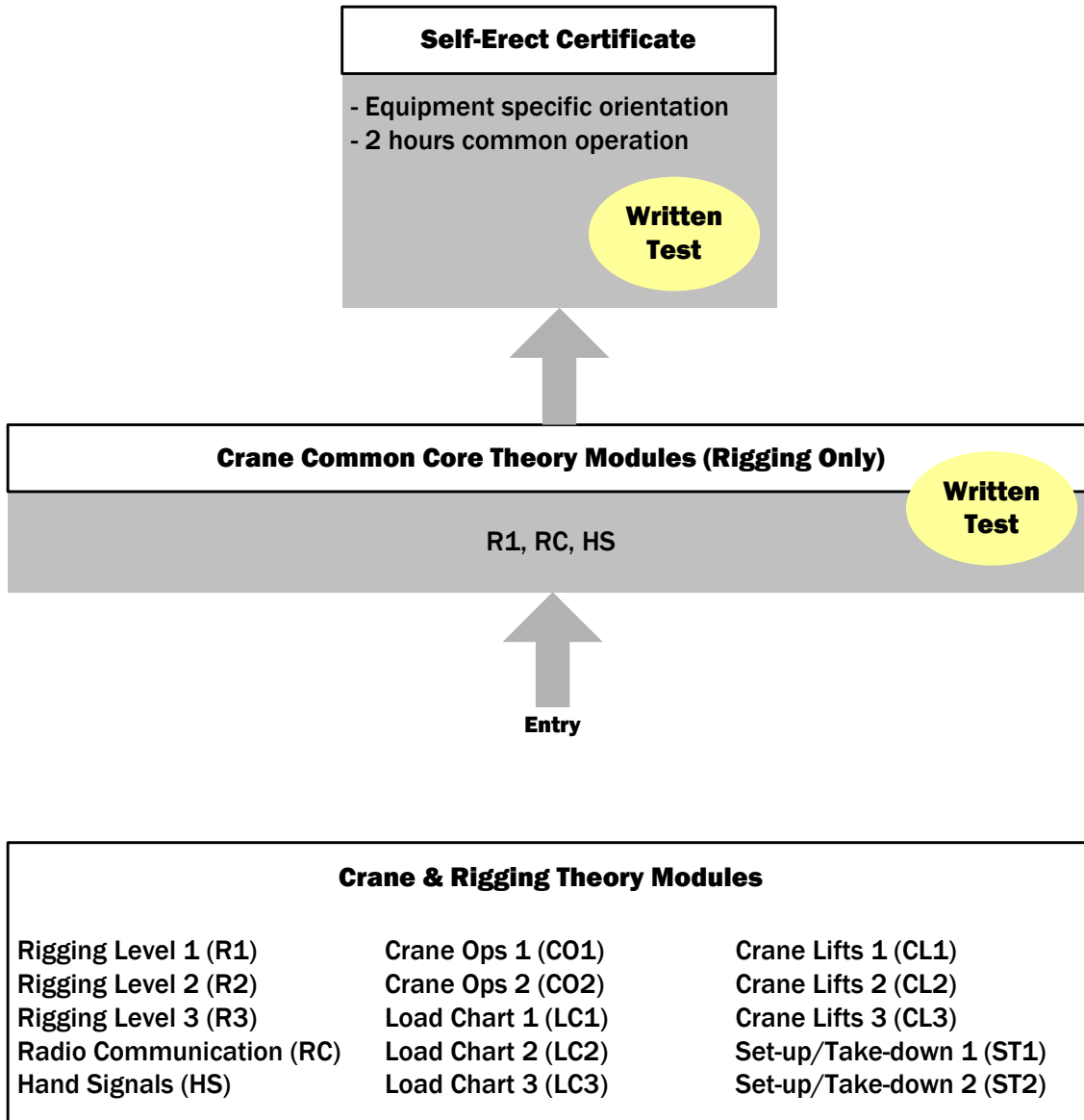


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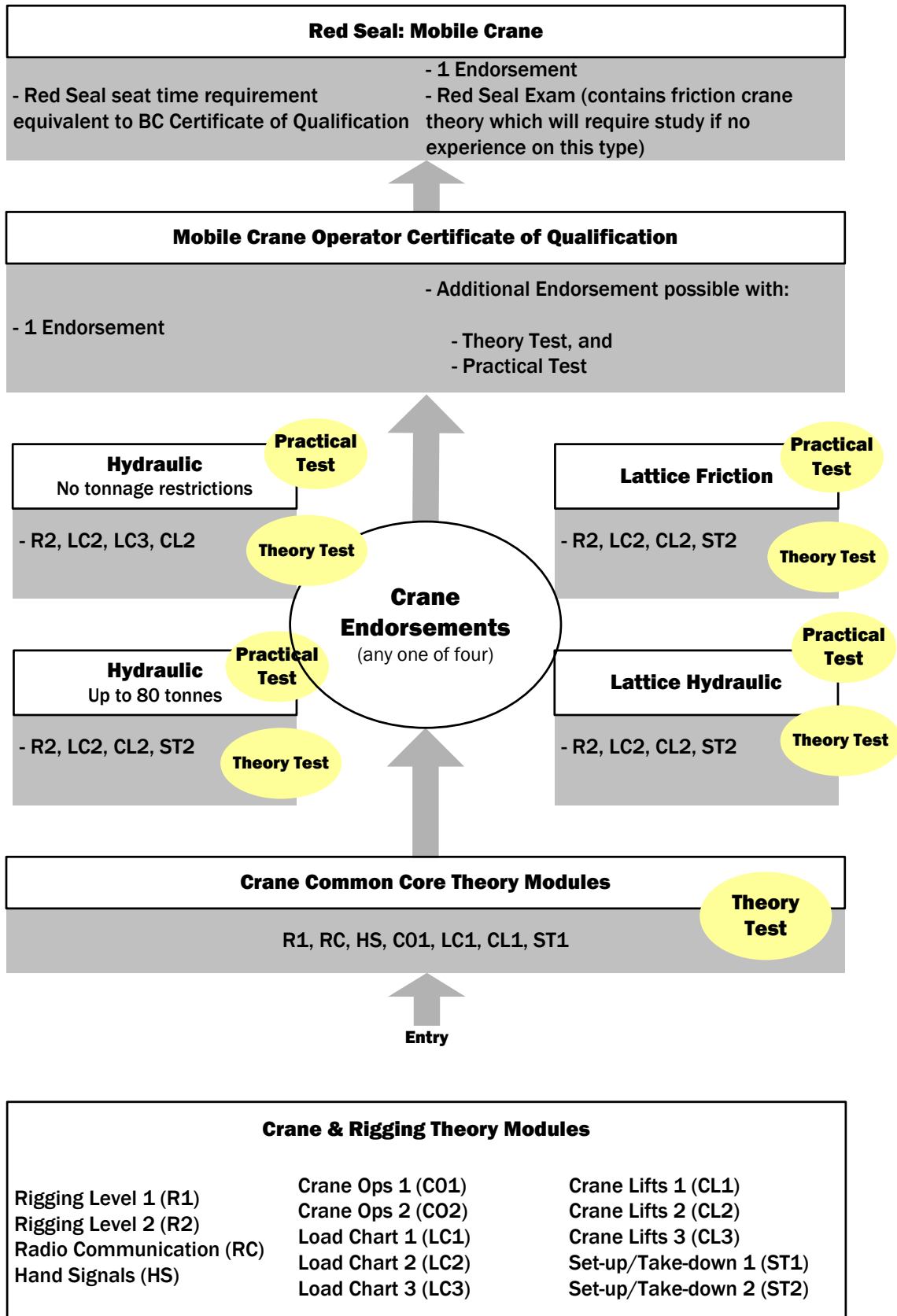
Crane & Rigging Theory Modules		
Rigging Level 1 (R1)	Crane Ops 1 (CO1)	Crane Lifts 1 (CL1)
Rigging Level 2 (R2)	Crane Ops 2 (CO2)	Crane Lifts 2 (CL2)
Rigging Level 3 (R3)	Load Chart 1 (LC1)	Crane Lifts 3 (CL3)
Radio Communication (RC)	Load Chart 2 (LC2)	Set-up/Take-down 1 (ST1)
Hand Signals (HS)	Load Chart 3 (LC3)	Set-up/Take-down 2 (ST2)

Self-Erect Crane Certification

Self-Erect



Mobile Crane Certification



Boom Truck Certification

