2007/09/11-01

THE WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA

RESOLUTION OF THE BOARD OF DIRECTORS

RE: Amendments to requirements of the *Occupational Health and Safety Regulation* (BC Regulation 296/97, as amended)

WHEREAS:

Pursuant to section 225(1) of the *Workers Compensation Act*, R.S.B.C. 1996, c. 492 and amendments thereto (*"Act"*), the Workers' Compensation Board ("WCB") may make regulations it considers necessary or advisable in relation to occupational health and safety and occupational environment;

AND WHEREAS:

The WCB, pursuant to its mandate under the *Act,* has proposed amendments to the following Parts of the *Occupational Health and Safety Regulation* (*"OHSR"*), and has given notice of the proposed amendments, conducted consultations and held a public hearing on the proposed amendments in accordance with section 226(1) of the *Act:*

- Part 3 relating to occupational first aid;
- Part 4, with consequential amendments to Parts 1, 20 and 22, relating to terrain stability and avalanche assessments, fills and stockpiles,
- Part 9 relating to isolation procedures in confined spaces ;
- Part 11 relating to fall protection for stunt workers ;
- Part 13 relating to work platforms and fall protection ; and
- Part 14 in its entirety, with consequential amendments to Part 16, relating to cranes and hoists.

AND WHEREAS:

Pursuant to section 228 of the *Act*, a review of the above Parts was undertaken by the WCB as part of the process of ongoing review of and consultation on its regulations to ensure they are consistent with current workplace practices, technological advances and other changes affecting occupational health and safety and occupational environment;

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AND WHEREAS:

The BOD, after due consideration of all presentations to the WCB, considers it necessary and advisable in accordance with the WCB's mandate under the *Act* in relation to occupational health and safety and occupational environment, to amend Parts 3, 9, 11, 13, 14 and 16 of the *OHSR;*

AND WHEREAS:

Results of feedback received from the public hearing process indicate that more work is required with stakeholders on the proposed amendments to Parts 1, 4, 20 and 22 relating to terrain stability and avalanche assessments, fills and stockpiles;

AND WHEREAS:

The WCB must specify the date on which regulations come into force, which date must be at least 90 days after their deposit under the *Regulations Act*, as per section 227 of the *Act*;

AND WHEREAS:

Pursuant to the Provincial Government's *Regulatory Reform Policy,* the BOD has evaluated the proposed regulatory amendments according to the established regulatory criteria.

THE BOARD OF DIRECTORS RESOLVES THAT:

1. The regulatory amendments to the *OHSR,* as set out in Appendices A to E, are approved.

2. More work is required with stakeholders on the proposed amendments to Parts 1, 4, 20 and 22 relating to terrain stability and avalanche assessments, fills and stockpiles, before being brought to the BOD for decision.

3. WorkSafeBC Standard 13.30, Work Platforms Supported by Lift Trucks, and WorkSafeBC Standard 14.116. Chimney Hoists, as set out in Appendices F and G, are approved.

4. The Regulatory Criteria Checklist in Appendix H is approved.

5. The above regulatory amendments will be deposited with the Registrar of Regulations in such form as may be required by the Registrar.

6. The above regulatory amendments in Appendices A to E come into force on February 1, 2008.

7. The above WorkSafeBC Standards in Appendices F and G come into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS

APPENDIX A

THE BOARD OF DIRECTORS RESOLVES THAT:

1 ***Section 3.1 (1) (a) (ii) of the Occupational Health and Safety Regulation, B.C. Reg. 296/97, is amended by striking out*** "is determined to be not low risk under section 3.16 (2) (b), or" ***and substituting*** "is determined under section 3.16 (2) (b) to create a moderate or high risk of injury, or".

2 ***Section 3.16 is amended by adding the following subsections:***

(1.1) The type and quantity of equipment, supplies, facilities, first aid attendants and services referred to in subsection (1) must be no less than is required by Schedule 3-A.

(1.2) The quality, maintenance and use of equipment, facilities and methods of transportation referred to in this section must be acceptable to the Board.

3 ***Section 3.16 (2) (b) is amended by striking out*** "including whether or not the workplace as a whole creates a low risk of injury," ***and substituting*** "including whether or not the workplace as a whole creates a low, moderate or high risk of injury,".

4 ***Part 3 is amended by adding the following section:***

Air transportation

3.17.1 If air transportation is the primary or only method for transporting an injured worker, all of the following requirements must be met:

(a) before the start of operations in a workplace, arrangements must be made with an air service to ensure that an appropriate aircraft is reasonably available to the workplace during those operations;

(b) the arrangements in paragraph (a) must include procedures for

(i) the employer to determine the availability of appropriate aircraft before the start of each work day, and

(ii) the air service to notify the employer if an appropriate aircraft ceases to be available;

(c) a system must be provided that enables the pilot of the aircraft and the first aid attendant attending to an injured worker to communicate at all times when the aircraft is in transit to the location of the injured worker and during transport of the injured worker to medical treatment.

5 ***Section 3.20 (b) is amended by striking out*** "in accordance with the results of the assessment" ***and substituting*** "required under section 3.16".

6 ***The Regulation is amended by adding the attached Schedule 3-A.***

7 ***The above amendments come into force on February 1, 2008.***

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS JENNS, CHAIR
BOARD OF DIRECTORS

APPENDIX A

SCHEDULE 3-A

MINIMUM LEVELS OF FIRST AID

1 In this Schedule:

"ambulance service" means an ambulance service acceptable to the Board;

"hospital" means a hospital within the meaning of the *Hospital Act* or a diagnostic and treatment centre where the hospital or centre has

(a) an emergency department or resuscitation area, and

(b) a physician on duty or immediately available on call.

2 (1) Tables 1 to 6 have different levels of first aid service that are based on how long it takes to transport an injured person to a hospital and the number of workers per shift.

(2) Exceptions to note: In circumstances in which Tables 1 to 6 would otherwise require a Level 2 first aid certificate under column 3 *[noted with an asterisk (*)]*, a Level 3 first aid certificate is required and an Emergency Transportation Vehicle ("ETV") must be provided, if

(a) there is on the access route to the workplace an obstruction, barrier, rough terrain or other similar circumstances likely to delay the arrival of an ambulance service for more than 20 minutes after it was dispatched, or

(b) there are areas in the workplace which an ambulance service cannot safely access, and for which workers at the workplace are required by this Regulation to be trained, equipped and capable of effecting rescue.

Table 1: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a low risk of injury and that is more than 20 minutes surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1	• Personal first aid kit		
2	2-5	• Basic first aid kit		
3	6-30	• Level 1 first aid kit	Level 1 certificate	
4	31-50	• Level 1 first aid kit • ETV equipment	Level 1 certificate with Transportation Endorsement	
5	51-75	• Level 3 first aid kit • Dressing station • ETV equipment	Level 3 certificate	
6	76 or more	• Level 3 first aid kit • First aid room • ETV equipment	Level 3 certificate	ETV

APPENDIX A

Table 2: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a low risk of injury and that is 20 minutes or less surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1			
2	2-10	• Basic first aid kit		
3	11-50	• Level 1 first aid kit	Level 1 certificate	
4	51-100	• Level 2 first aid kit • Dressing station	* Level 2 certificate	
5	101 or more	• Level 2 first aid kit • First aid room	* Level 2 certificate	

Table 3: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a moderate risk of injury and that is more than 20 minutes surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1	• Personal first aid kit		
2	2-5	• Level 1 first aid kit	Level 1 certificate	
3	6-15	• Level 1 first aid kit • ETV equipment	Level 1 certificate with Transportation Endorsement	
4	16-50	• Level 3 first aid kit • Dressing station • ETV equipment	Level 3 certificate	ETV
5	51-100	• Level 3 first aid kit • First aid room • ETV equipment	Level 3 certificate	ETV
6	101-300	• Level 3 first aid kit • First aid room • Industrial ambulance equipment	Level 3 certificate	Industrial ambulance
7	301 or more	• Level 3 first aid kit • First aid room • Industrial ambulance equipment	2 attendants, each with Level 3 certificates	Industrial ambulance

APPENDIX A

Table 4: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a moderate risk of injury and that is 20 minutes or less surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1	• Personal first aid kit		
2	2-5	• Basic first aid kit		
3	6-25	• Level 1 first aid kit	Level 1 certificate	
4	26-75	• Level 2 first aid kit • Dressing station	* Level 2 certificate	
5	76 or more	• Level 2 first aid kit • First aid room	* Level 2 certificate	

Table 5: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a high risk of injury and that is more than 20 minutes surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1	• Personal first aid kit		
2	2-5	• Level 1 first aid kit	Level 1 certificate	
3	6-10	• Level 1 first aid kit • ETV equipment	Level 1 certificate with Transportation Endorsement	ETV
4	11-30	• Level 3 first aid kit • Dressing station • ETV equipment	Level 3 certificate	ETV
5	31-50	• Level 3 first aid kit • First aid room • ETV equipment	Level 3 certificate	ETV
6	51-200	• Level 3 first aid kit • First aid room • Industrial ambulance equipment	Level 3 certificate	Industrial ambulance
7	201 or more	• Level 3 first aid kit • First aid room • Industrial ambulance equipment	2 attendants, each with Level 3 certificates	Industrial ambulance

APPENDIX A

Table 6: This table applies to a workplace that an employer determines under section 3.16 (2) (b) of the Regulation creates a high risk of injury and that is 20 minutes or less surface travel time away from a hospital.

Item	Column 1 Number of workers per shift	Column 2 Supplies, equipment, and facility	Column 3 Level of first aid certificate for attendant	Column 4 Transportation
1	1	• Personal first aid kit		
2	2-15	• Level 1 first aid kit	Level 1 certificate	
3	16-30	• Level 2 first aid kit • Dressing station	* Level 2 certificate	
4	31-300	• Level 2 first aid kit • First aid room	* Level 2 certificate	
5	301 or more	• Level 2 first aid kit • First aid room	* 2 attendants, each with Level 2 certificates	

APPENDIX B

THE BOARD OF DIRECTORS RESOLVES THAT:

1 Part 9 of the Occupational Health and Safety Regulation, B.C. Reg. 296/97, is amended by adding the following section:

Exemptions

9.18.1(1) In this section:

"public water supply system" includes valve and meter chambers and pressure reducing stations;

"dam water passageway" includes conduits, pipes, penstocks, power generating chambers, valves and related structures located within storage, diversion or other dams.

(2) Section 9.18 (4) does not apply to water piping that is part of a public water supply system if the piping and associated equipment is designed, constructed, maintained and certified by a professional engineer to American Water Works Association standards.

(3) Section 9.18 (4) does not apply to a dam water passageway if the structures of the passageway, including a gate valve or other flow control device, are certified by a professional engineer as being safe for workers to enter to perform the intended work.

2 The above amendments come into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS

THE BOARD OF DIRECTORS RESOLVES THAT:

1 Section 11.10 of the Occupational Health and Safety Regulation, B.C. Reg. 296/97, is amended by renumbering it as subsection (1) and by adding the following subsections:

(2) Subject to subsection (3), subsection (1) (b) does not apply to a personal fall protection system designed and intended for reuse by a performer in the entertainment industry for conducting a planned fall sequence.

(3) The following conditions must be met before a personal fall protection system described in subsection (2) will be exempt from subsection (1) (b):

(a) the system must be designed and used in accordance with a standard acceptable to the Board;

(b) each use of the system must be carried out in accordance with the plan for the conduct of the fall;

(c) the peak arrest forces generated in the system during each use must be at or below both the planned limits and the maximum forces allowed for the system;

(d) after each use of the system no part of the system, including the anchorage, may be reused until a qualified person has inspected it and determined it is in serviceable condition and safe for reuse

2 The above amendments come into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS

THE BOARD OF DIRECTORS RESOLVES THAT:

1 Section 13.24 of the Occupational Health and Safety Regulation, B.C. Reg. 296/97, is repealed and the following substituted:

Work platforms on wheels

13.24 (1) If a moveable work platform on wheels is not designed for or intended to be moved along the floor or other supporting surface while a person is occupying the platform, the platform must be secured to prevent that movement before a person accesses or occupies the platform.

(2) If a moveable work platform is designed for and intended to be moved along the floor or other supporting surface while a person is occupying the platform, the platform must be moved only in the manner and under the conditions specified by the platform's manufacturer.

(3) Despite subsection (2), if the height of the work platform of a rolling scaffold that is occupied by a person is

(a) not more than one and one half times the least base dimension of the scaffold, the scaffold may be moved by the effort of the person occupying the platform or by the effort of a person on the floor or other supporting surface,

(b) more than one and one half times the least base dimension of the scaffold, the scaffold must be moved only by the effort of a person on the floor or other supporting surface, and

(c) more than two times the least base dimension of the scaffold, the scaffold must not be moved while the person is occupying the platform.

2 Section 13.30 is repealed and the following substituted:

Lift truck (forklift) mounted work platforms

13.30 (1) A work platform supported by a lift truck may be used to support people only if other conventional means of access for the task, such as ladders, scaffolds and elevating work platforms, are not practicable.

(2) A work platform supported by a lift truck must be designed and used in accordance with *WorkSafeBC Standard 13.30 Work Platforms supported by Lift Trucks.*

3 Section 13.33 is amended

(a) by striking out "worker" *wherever it appears and substituting* "person", *and*

(b) by adding the following subsection:

(3.1) Despite subsection (3), a person is not required to use a personal fall protection system on an outrigger or suspended mason's scaffold with guardrails on the open sides.

4 The above amendments come into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS

THE BOARD OF DIRECTORS RESOLVES THAT:

1 *Section 14.1 of the Occupational Health and Safety Regulation, B.C. Reg. 296/97, is amended*

(a) by repealing the definition of **"aerial ladder crane"**, *and*

(b) by adding the following definitions:

"critical lift" means

(a) a lift by a mobile crane or boom truck that exceeds 90% of its rated capacity while it is lifting the load at a load radius of more than 50% of its maximum permitted load radius, taking into account its position and configuration during the lift,

(b) a tandem lift if the load on any one crane, hoist or other piece of powered lifting equipment exceeds 75% of the rated capacity of that crane, hoist or other piece of powered lifting equipment,

(c) a tandem lift involving the simultaneous use of more than two cranes, hoists or other pieces of powered lifting equipment,

(d) a lift of a person in a work platform suspended from or attached to a crane or hoist,

(e) a lift in which the centre of gravity of the load changes during the lift,

(f) a lift in which the length of one or more sling legs changes during a lift,

(g) a lift by a crane, boom truck or hoist, supported on a floating base, that exceeds 90% of rated capacity for the lifting system,

(h) a lift of a load over or between energized high voltage electrical conductors, or

(i) a lift of a submerged load;

"duty cycle work" means

(a) the use of a crane to do dragline work, clamshell work, dynamic compaction work or pile driving work, including pile extraction using a vibratory pile extraction device, or

(b) the use of a crane with an electromagnet or grapple for the handling of scrap metal and other similar materials;

"load bearing component" means any component that transfers load through a crane or hoist to the surface supporting the crane or hoist;

"sign truck" means a truck that is

(a) capable of acting as a crane and as an aerial ladder, and

(b) used as a work platform or used for hoisting loads or accessing a work location;

"tandem lift" means a lift using

(a) more than one crane or one hoist, or

(b) a crane or hoist and another piece of powered lifting equipment.

2 *Part 14 is amended by adding the following section after section 14.1:*

Application

14.1.1 (1) This Part applies to a crane or hoist of a type required to meet a standard specified in section 14.2 and to any other equipment with a different primary design function that is being used in a hoisting or lifting application.

(2) Except as otherwise specifically provided, this Part applies to logging equipment that uses a load line for lifting.

(3) This Part does not apply to a front end loader, an excavator or other earth moving equipment that is being used

(a) in applications consistent with its primary design purpose, or

(b) during a lifting task incidental to its primary design purpose if the manuals and operating instructions of the manufacturer of that equipment provide criteria for that lifting task.

3 Section 14.2 is amended

(a) in subsection (1) by striking out "in subsections (2) to (12)." ***and substituting*** "in subsections (2) to (15).", ***and***

(b) by repealing subsections (2) to (12) and substituting the following subsections:

(2) A bridge, jib, monorail, gantry or overhead travelling crane must meet the design requirements for electrical components and functions of *CSA Standard C22.1-94, Canadian Electrical Code, Part 1, Section 40* and *CSA Standard C22.2 No. 33-M1984 (Reaffirmed 1992), Construction and Test of Electric Cranes and Hoists.*

(3) A bridge, jib, monorail, gantry or overhead travelling crane must meet the design requirements of

(a) *ANSI Standard MH27.1-2003, Specifications for Patented Track Underhung Cranes and Monorail Systems,*

(b) *Crane Manufacturers Association of America (CMAA) Specifications for Top Running Bridge & Gantry Type Multiple Girder Electric Overhead Traveling Cranes – No. 70 (2004),* or

(c) *Crane Manufacturers Association of America (CMAA) Specifications for Top Running and Under Running Single Girder Electric Overhead Cranes Utilizing Under Running Trolley Hoist – No. 74 (2004).*

(4) A bridge, jib, monorail, gantry or overhead travelling crane must meet the safety requirements of

(a) *CSA Standard B167-96, Safety Standard for Maintenance and Inspection of Overhead Cranes, Gantry Cranes, Monorails, Hoists, and Trolleys,*

(b) *ANSI Standard ANSI/ASME B30.2-2005, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist),*

(c) *ANSI Standard ANSI/ASME B30.11-2004, Monorails and Underhung Cranes,*

(d) *ANSI Standard ANSI/ASME B30.16-2003, Overhead Hoists (Underhung),* or

(e) *ANSI Standard ANSI/ASME B30.17-2003, Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist).*

(5) A mobile crane, telescoping or articulating boom truck or sign truck must meet the requirements of

(a) *CSA Standard Z150-1998, Safety Code for Mobile Cranes,*

(b) *ANSI Standard ANSI/ASME B30.5-2004, Mobile and Locomotive Cranes*, or

(c) *ANSI Standard ANSI/ASME B30.22-2005, Articulating Boom Cranes.*

(6) A tower, hammerhead crane or self erecting tower crane must meet the requirements of *CSA Standard Z248-2004, Code for Tower Cranes.*

(7) A portal, tower or pillar crane must meet the requirements of *ANSI Standard ASME B30.4-2003, Portal, Tower, and Pillar Cranes.*

(8) A construction material hoist must meet the requirements of *CSA Standard CAN/CSA-Z256-M87, Safety Code for Material Hoists.*

(9) A chimney hoist must meet the requirements of *WorkSafeBC Standard 14.116 Chimney Hoists.*

(10) A base mounted drum hoist must meet the requirements of *ANSI Standard ASME B30.7-2001, Base Mounted Drum Hoists.*

(11) A guy, stiffleg, basket, breast, gin pole, Chicago boom, shearleg or A-frame derrick must meet the requirements of *ANSI Standard ASME B30.6-2003, Derricks.*

(12) A side boom tractor used for pipe laying or similar operations must meet the requirements of *ANSI Standard ASME B30.14-2004, Side Boom Tractors.*

(13) A manually lever operated hoist must meet the requirements of *ANSI Standard B30.21-2005, Manually Lever Operated Hoists.*

(14) A patient lift must meet the requirements of *CSA Standard CAN/CSA Z10535-03, Hoists for the Transfer of Disabled Persons-Requirements and Test Methods.*

(15) A crane or hoist of a type not covered by the standards specified in subsections (2) to (14) must meet good engineering practice and be able to safely perform its function.

4 Section 14.3 is amended

(a) by repealing subsection (2) and substituting the following:

(2) Each major interchangeable structural component of a crane or hoist must be uniquely identified and must be legibly marked to enable confirmation that the component is compatible with the crane or hoist. ***, and***

(b) by adding the following subsections:

(3) If a crane or hoist was not commercially manufactured and does not have a model number or serial number, the crane or hoist must not be used unless engineering documentation signed by a professional engineer, including technical specifications and instructions for use, are available at the workplace where the crane or hoist is being used.

(4) A crane or hoist described in subsection (3) must be identified in a manner that links the engineering documentation referred to in that subsection with that crane or hoist.

5 Section 14.4 is repealed.

6 Section 14.5 is amended

(a) by repealing subsection (1) and substituting the following:

(1) Subject to subsection (3), the rated capacity of a crane or hoist system must be permanently indicated on the superstructure, hoist and load block of the equipment. ,

(b) in subsection (2) by striking out "10 m (33 ft) intervals" *and substituting* "intervals not exceeding 10 m (33 ft)",

(c) by repealing subsection (3) and substituting the following:

(3) If the rated capacity of a crane or hoist is affected by

(a) the vertical or horizontal angle of a boom or jib,

(b) the length of a boom or jib,

(c) the position of a load supporting trolley, or

(d) the use or position of outriggers to increase the stability of the structure,

a load chart must be permanently posted on the crane or hoist or must be issued to the crane or hoist operator who must keep it available at all times when operating the crane or hoist. , *and*

(d) by adding the following subsection:

(4) A load chart under subsection (3) must indicate the rated capacity for the crane or hoist for the working positions and configurations in use and must be in a legible condition.

7 Section 14.6 is repealed.

8 Section 4.11 (2) is amended by striking out "by multiple hoists" *and substituting* "by simultaneous use of multiple hoists".

9 Section 14.12 is repealed and the following substituted:

Manual and instructions

14.12 (1) In this section:

"engineer's instructions" mean instructions, approved in writing by a professional engineer, for the assembly, erection, dismantling, maintenance, inspection and operation of the component parts of a crane or hoist and of the assembled crane or hoist;

"manufacturer's manual" means a manual, prepared by the manufacturer of a crane or hoist, that describes the approved methods of assembly, erection, dismantling, maintenance, inspection and operation of the component parts of the crane or hoist and of the assembled crane or hoist.

(2) A crane or hoist must not be used unless the following is reasonably accessible to the equipment operator and other persons inspecting or maintaining the equipment at the workplace where the crane or hoist is to be used:

(a) the manufacturer's manual for the crane or hoist;

(b) if the manufacturer's manual is not available, an engineer's instructions for the crane or hoist.

(3) A crane or hoist must not be used unless the following is readily available at the workplace where the crane or hoist is to be used:

(a) the portions of the manufacturer's manual related to the assembly, erection, dismantling, inspection, routine maintenance and safe operation of the crane or hoist;

(b) if the portions of the manufacturer's manual referred to in paragraph (a) are not available, the portions of an engineer's instructions related to the assembly, erection, dismantling, inspection, routine maintenance and safe operation of the crane or hoist.

10 Section 14.13 is amended by adding the following subsection:

(4) Maintenance or repair of a crane or hoist must be done by or under the direct supervision of a qualified person.

11 Section 14.14 is amended

(a) in paragraph (a) by striking out "1 000 kg (2 200 lbs.)" *and substituting* "900 kg (2 000 lbs.)",

(b) in paragraph (d) by striking out "aerial ladder crane" *and substituting* "sign truck",

(c) in paragraph (g) by striking out "and", *and*

(d) by adding the following paragraph:

(g.1) a logging truck trailer reload hoist, and .

12 Section 14.15 is amended

(a) by repealing subsection(2) and substituting the following:

(2) If a modification that affects the rated capacity or safe operation of a crane or hoist is made to its structure, to one of its mechanical components or to its control system, the crane or hoist must

(a) be assessed,

(b) have its rated capacity adjusted as necessary, and

(c) be certified as safe for use. ,

(b) by adding the following subsection:

(2.1) The assessment, rated capacity adjustment and certification under subsection (2) must be carried out

(a) in accordance with the applicable design or safety standard specified in section 14.2, and

(b) by the original equipment manufacturer or a professional engineer. , *and*

(c) in subsection (3) by striking out "equipment manuals " *and substituting* "equipment operation and maintenance manuals" .

13 Section 14.16 is repealed and the following substituted:

Certification required

14.16 (1) Subsection (2) applies in respect of a crane or hoist if

(a) the origin or rated capacity of the equipment is not available,

(b) the continued safe use of the equipment cannot be assured because of its condition, age or history, or

(c) modifications referred to in section 14.15 that affect the rated capacity have been made to the crane or hoist.

(2) A person must not use a crane or hoist described in subsection (1) unless a professional engineer has certified the rated capacity of the crane or hoist in accordance with the applicable design or safety standard specified in section 14.2.

Certification following misadventure

14.16.1(1) In this section,

"misadventure" means

(a) a contact with a high voltage electrical source,

(b) a shock load,

(c) a loss of a load,

(d) a brake failure,

(e) a collision or upset, or

(f) any other circumstance that may impair the safe operation of the crane or hoist.

(2) If a crane or hoist has been subject to a misadventure, it must be removed from service until a professional engineer has

(a) supervised an inspection of, and supervised any necessary repairs to, the equipment, and

(b) certified the equipment as safe for use at the manufacturer's rated capacity for the equipment or as provided by section 14.16 if the manufacturer's rated capacity is not available.

14 Section 14.17 (1) is repealed and the following substituted:

(1) A crane or hoist must have a safe means of access to and egress from

(a) the operator's position, and

(b) all maintenance and inspection locations on the crane and hoist.

15 Section 14.18 (1) is amended

(a) by striking out "pendant control" ***and substituting*** "pendant or remote control", ***and***

(b) by striking out "walks near the load" ***and substituting*** "walks in a safe position near the load".

16 Section 14.19 is repealed and the following substituted:

Drop stops

14.19 (1) A top-running crane, under-running crane, wheel- or rail-mounted gantry crane, tower crane and monorail hoist must have a means to limit the drop of the crane, trolley and bridge truck frames to 25 mm (1 in.) if a tire, wheel or axle fails.

(2) Drop stops must be able to support the trolley, bridge and gantry with the crane or hoist loaded to its rated capacity and must be certified to be able to do so by the original equipment manufacturer or a professional engineer.

17 Section 14.22 is repealed and the following substituted:

Securing pins

14.22 A heel-pin, sheave-pin, shackle-pin or similar device must be secured against inadvertent dislodgment, in the manner specified by the equipment manufacturer or by the professional engineer who designed and certified the equipment.

18 Section 14.28 is repealed and the following substituted:

Controls

14.28 (1) Each control for a crane or hoist must have its function clearly identified and must be maintained in good condition.

(2) Each control for a crane or hoist that causes load movement must return to neutral when pressure from the operator is released.

(3) Subsection (2) does not apply to a crane or hoist manufactured before January 1, 2000 for which continuous pressure controls were not previously required.

(4) Each control for a crane or hoist must be located to allow safe operation of the equipment and if the control is not located in a cab it must be located to provide a safe distance between the operator and the load being handled.

(5) A pendant control for a crane or hoist must be supported independently from its electrical conductors.

(6) A remote control panel for a crane or hoist must be designed to safeguard effectively against the unintended activation of the crane or hoist.

(7) A wireless remote control system for a crane or hoist must incorporate

(a) error checking to prevent the controlled equipment from responding to corrupt data, and

(b) identification coding methods to prevent a transmitter other than the designated transmitter for that crane or hoist from operating the equipment.

(8) A remote control system for a crane or hoist must be designed to ensure the following:

(a) if the power to the remote control system is removed for any reason, all crane or hoist functions stop;

(b) if the control signal for any crane or hoist motion becomes ineffective, the crane or hoist motion stops;

(c) the remote control panel has an operator controlled emergency stop feature that

(i) permits the operator to stop all crane or hoist movement regardless of a malfunction within the remote control system, and

(ii) requires resetting of the emergency stop feature before equipment operation can resume.

(9) A remote control panel for a crane or hoist must be marked to identify the corresponding base control unit to be used with it.

(10) The maximum distance between a remote control panel and the crane or hoist being operated by the remote control system must

(a) not exceed the limit specified by the control system manufacturer, and

(b) be communicated to the operator before the operator uses the crane or hoist.

19 Section 14.30 is amended

(a) by repealing subsection (2) and substituting the following:

(2) Cab windows on a hoist or crane, other than a mobile crane, must be laminated glass, tempered glass, wired glass or clear polycarbonate plastic. *, and*

(b) by repealing subsection (3) and substituting the following:

(3) Operator cab windows on a crane or hoist must

(a) be kept clear,

(b) provide an unobstructed field of vision toward the load hook, and

(c) have window wipers, if necessary to maintain a clear view through the window.

20 Section 14.35 is amended

(a) by repealing subsection (1) and substituting the following:

(1) Before an operator uses a crane or hoist, the operator must ensure that

(a) the crane or hoist was inspected for that work shift, and

(b) the control and safety devices were tested for that work shift. *, and*

(b) by adding the following subsection:

(1.1) The inspection and testing in subsection (1) must be carried out in the manner specified

(a) by the manufacturer,

(b) in the applicable design or safety standards set out in section 14.2, and

(c) in this Regulation.

21 Section 14.36 is amended

(a) in subsection (1) by striking out "any other worker involved in the hoisting operation." *and substituting* "any person rigging the load.",

(b) by repealing subsection (2) and substituting the following:

(2) If the weight of a load to be lifted cannot be accurately determined, the crane or hoist to be used for the lift must have a load weight indicator or an overload prevention system. *, and*

(c) by repealing subsection (3) and substituting the following:

(3) Subsections (1) and (2) do not apply to logging equipment that is being used to lift logs or to lift a log trailer.

22 Section 14.37 is repealed and the following substituted:

Calibration

14.37 (1) The following devices or systems on a crane or hoist must be calibrated at the intervals specified by the manufacturer and whenever there is an indication the device or system is not functioning correctly:

(a) a load weighing device;

(b) a load moment indicator;

(c) an overload prevention system.

(2) The dates of calibration under subsection (1) must be recorded in the inspection and maintenance records system for the crane or hoist.

23 Section 14.38 is repealed and the following substituted:

Safe lifting

14.38 (1) The rated capacity of a crane or hoist must not be exceeded.

(2) The operator of a crane or hoist must not move a load unless the operator is satisfied that the load can be handled safely.

(3) A load must be secured during a lift to ensure that all or any part of the load cannot be dislodged.

(4) A load line on a crane or hoist must not contact anything other than the load block or hook and the sheaves and hoist drum.

(5) Tag lines or other effective means must be used when necessary to control hazardous movement of a load or to assist with positioning a load.

(6) If a crane or hoist is being operated at the same time and in the same location as other work activity, the employer or the prime contractor must organize and control the work of any persons who are not involved in that operation to ensure that the operation can be carried out safely.

24 Section 14.39 is amended

(a) by repealing subsection (1) and substituting the following:

(1) A load must not contact a structural member of a crane or hoist and a structural member of a crane or hoist must not contact any building, bridge, other crane or any other structure, fixture or improvement. *, and*

(b) in subsection (3) by adding "or other structural member" *after* "boom".

25 Section 14.40 is repealed and the following substituted:

Swing and shear hazards

14.40 (1) If a hazard is created by the swing or shearing movement of a load, cab, counterweight or any other part of a crane or hoist, the operator of the crane or hoist must not move the equipment when a person is within range of the swing or shearing movement of the load or equipment.

(2) If a hazard is created by the swing or shearing movement of a load, cab, counterweight or any other part of a crane or hoist, a person must not enter or remain within the range of the swing or shearing movement of the load or equipment.

26 Section 14.42 is repealed and the following substituted:

Tandem lift

14.42 (1) If a tandem lift is a critical lift or if the lifted load is to be moved laterally, the tandem lift must be carried out under the direction of a qualified supervisor who

(a) is not operating a crane, hoist or other piece of powered lifting equipment, and

(b) is responsible for the safe conduct of the operation.

(2) A written lift plan must be prepared for every tandem lift and must be available at the worksite during the lift.

(3) The lift plan required in subsection (2) must include the following:

(a) rigging details;

(b) wind speed limitations;

(c) maximum hoist line speed;

(d) maximum crane travel speed, if applicable;

(e) load distribution;

(f) the need for and position of signallers.

(4) If a tandem lift involves the use of a tower crane, the lift plan required in subsection (2) must be certified by a professional engineer.

(5) At a pre-job meeting held immediately before commencing hoisting operations for a tandem lift, the lift plan required in subsection (2) must be communicated to all people involved and the supervisor must document the meeting.

(6) The pre-job meeting required under subsection (5) must be repeated whenever there is a change in the people or equipment involved in the tandem lift.

(7) Effective communication must be established and maintained between all people involved in a tandem lift.

27 Part 14 is amended by adding the following section:

Critical lift

14.42.1 (1) A written lift plan must be prepared for every critical lift and must be available at the worksite during the lift.

(2) The written lift plan required in subsection (1) must include the following:

(a) rigging details;

(b) wind speed limitations;

(c) maximum hoist line speed;

(d) maximum crane travel speed, if applicable;

(e) load distribution;

(f) the need for and position of signallers.

(3) At a pre-job meeting held immediately before commencing hoisting operations for a critical lift, the lift plan required in subsection (1) must be communicated to all people involved and the supervisor must document the meeting.

(4) The pre-job meeting required under subsection (3) must be repeated whenever there is a change in the people or equipment involved in the critical lift.

(5) Effective communication must be established and maintained between all people involved in a critical lift.

28 Section 14.43 is amended

(a) in subsection (1) by striking out "If travelling with a load, the operator" *and substituting* "When a crane or hoist is travelling with a load, the operator of the crane or hoist", *and*

(b) by repealing subsection (2) and substituting the following:

(2) When a crane or hoist is travelling with a load, adequate safety measures must be taken to ensure people are not endangered by the movement of the crane, hoist or load.

29 Section 14.44 is repealed and the following substituted:

Loads over work areas

14.44 (1) If practicable, work must be arranged to prevent passing a load over any person.

(2) A crane or hoist operator must not pass a load over a person unless no practicable alternative exists and then only after the person has been warned of the danger by an audible alarm or other effective means.

(3) A person working at a workplace must not stand under or pass beneath a suspended load.

30 Section 14.45 is amended by striking out "the load hook of a crane or hoist" *and substituting* "or supported by a crane or hoist".

31 Section 14.46 is repealed and the following substituted:

Vertical load line

14.46 The load line above the load hook or the load block of a crane or hoist must be kept vertical when lifting a load in order to prevent side loading of the crane or the load swinging.

32 Section 14.47 is repealed and the following substituted:

Signals

14.47 (1) When the operator of a crane or hoist does not have a clear and unobstructed view of the boom, jib, load line, load hook and load throughout the whole range of the hoisting operation, the operator must act only on the directions of a qualified signaller who has a clear view of the things the operator cannot see.

(2) The operator of the crane or hoist must stop the operation of the equipment on receiving a stop signal from any person.

33 Section 14.49 is amended

(a) by repealing subsection (1) and substituting the following:

(1) A two-way radio system, used for communications between the operator of a tower crane or a self erecting tower crane and the riggers and signallers working with that operator, must operate on a frequency and at a transmitter power assigned and coordinated by the Board or by a person acceptable to the Board. , *and*

(b) by adding the following subsection:

(3) Only the operator of the crane and the riggers and signallers working with the operator may have the capability to transmit on the radio frequency assigned under subsection (1).

34 Part 14 is amended by adding the following sections:

Communication between equipment operators

14.49.1 If, during the operation of a crane or hoist, another piece of equipment is operating in the vicinity and has the reach to interfere with the movement of the crane or hoist, or the load being handled,

(a) each operator must have effective voice communication with every other operator, and

(b) written procedures must be developed and implemented to ensure coordination of the operation of the equipment to prevent any physical contact.

Work near high voltage

14.52.1 A crane or hoist must be operated in a manner that prevents any part of the crane or hoist, load line, rigging or load from coming within the minimum distance of energized high voltage electrical conductors or equipment as specified in Part 19.

35 Section 14.54 is amended

(a) by repealing subsection (1) and substituting the following:

(1) This section applies to

(a) a bridge crane, gantry crane or overhead travelling crane that was installed after January 1, 1999, and

(b) a crane referred to in paragraph (a) or its runway that has been reinstalled, modified or rebuilt. ,

(b) by adding the following subsection:

(1.1) The following tests must be performed before the equipment described in subsection (1) is used for the first time after it has been installed, reinstalled, modified or rebuilt, as applicable:

(a) all crane motions, holding brakes and travel brakes must be tested to meet the manufacturer's specifications and the requirements of the applicable design or safety standard for when the hook is carrying a load at rated capacity;

(b) all circuits, controls, interlocks and sequences of operation of the equipment must be tested to ensure they are functioning properly;

(c) all crane motions, holding brakes and travel brakes must be tested to prove the crane's ability to safely handle a load of 125% of the crane's rated capacity;

(d) all limit switches, brakes and other protective devices must be tested to ensure they function properly when the crane is carrying a load of 100% of the rated capacity;

(e) structural deflection must be measured with a load of 100% of the rated capacity and must not exceed the allowable deflection specified by the applicable design standard;

(f) the load must be travelled over the full length of the bridge and trolley runways during the load tests at 100% and 125% of rated capacity, and only the parts of runways that have been successfully load tested may be placed into service. ,

(c) by repealing subsection (3) and substituting the following:

(3) A replacement crane or hoist to be installed on an existing runway may be load tested in the manufacturer's facility and installed on the existing runway provided that the rated capacity of the replacement crane or hoist and the loads imposed on the runway by the replacement crane or hoist are equal to or less than the previously tested load rating for the runway. , ***and***

(d) by adding the following subsection:

(4) In the circumstances set out in subsection (3), the existing runway is not required to be load tested as required in subsection (1.1) unless the runway has been modified since it was previously load tested.

36 Part 14 is amended by adding the following section:

Detailed inspection

14.54.1 A bridge crane, gantry crane or overhead crane must be inspected by a qualified person in accordance with

(a) the inspection criteria specified by the manufacturer of the crane,

(b) the applicable design or safety standard specified in section 14.2, and

(c) the requirements of this Regulation.

37 Section 14.55 (2) is repealed and the following substituted:

(2) The device required by subsection (1) must be tested at the beginning of each shift.

38 Section 14.57 is amended by adding at the end "and this means must require a manual reset before power is restored to the crane."

39 Section 14.59 is amended

(a) by repealing subsection (1) and substituting the following:

(1) The air supply for a pneumatically powered hoist or winch must

(a) be sufficient to safely operate the hoist, and

(b) not exceed the maximum allowable pressure for the operation of the hoist, as specified by the hoist manufacturer. , ***and***

(b) in subsection (2) by adding "for a pneumatically powered hoist or winch" ***after*** "Air supply hoses" .

40 Section 14.64 is amended

(a) in subsection (1) by striking out "After January 1, 2000, a mobile crane" ***and substituting*** "A mobile crane", ***and***

(b) in subsection (2) by adding "required by subsection (1)" ***after*** "A load indicating device".

41 Section 14.65 is repealed.

42 Section 14.66 is amended

(a) by repealing subsection (1) and substituting the following:

(1) A mobile crane or boom truck must be operated with the crane turntable or boom truck frame level, unless the manufacturer provides that it may be operated otherwise.,

(b) in subsection (2) by striking out "permit the operator to determine" *and substituting* "permit the operator of a mobile crane or boom truck to determine", *and*

(c) by adding the following subsections:

(3) When a mobile crane or boom truck is operating on a floating support, the rated capacity must be determined by a professional engineer or the manufacturer of the crane or boom truck, taking into account the list and trim characteristics of the floating support and the mobile crane or boom truck operating together as a system.

(4) When a mobile crane or boom truck is used on a floating support, a device to measure the list of the floating support must be provided and located so it can be read by the operator from the operator's position for the mobile crane or boom truck.

(5) A mobile crane or boom truck being used on a floating support must be blocked and secured as necessary to prevent it from shifting relative to the bearing surface of the floating support.

43 Section 14.67 is amended

(a) by striking out the marginal note **"Outriggers"** *and substituting* **"Outriggers and stabilizers"**, *and*

(b) in subsection (2) by striking out "Outrigger beams" *and substituting* "Outrigger beams and stabilizers".

44 Section 14.69 is repealed and the following substituted:

Supporting surface

14.69 (1) A mobile crane or boom truck must be used only on a surface capable of safely supporting the equipment and any hoisted load.

(2) If a mobile crane or boom truck will be used adjacent to an excavation, slope or backfilled area, a qualified person must determine the location for the equipment for hoisting operations.

(3) In subsection (2), **"adjacent to an excavation"** has the same meaning as in section 20.1.

(4) Blocking, shoring or cribbing must be sized and used as necessary to ensure the load from a mobile crane or boom truck support does not exceed the bearing capacity of the supporting surface.

45 Section 14.70 is repealed and the following substituted:

Travelling with a load

14.70 A mobile crane or boom truck may travel with a suspended load only if

(a) the crane manufacturer specifies load ratings for this operation, and

(b) the operation is carried out in accordance with the manufacturer's instructions for this operation.

46 Section 14.71 is repealed and the following substituted:

Annual inspection

14.71 (1) A mobile crane or boom truck must be inspected at least once every 12 months in accordance with good engineering practice to ensure it meets

(a) the crane or boom truck manufacturer's specifications,

(b) the requirements of the applicable design or safety standard specified in section 14.2, and

(c) the requirements of this Regulation.

(2) A mobile crane or boom truck must not be used after an inspection under subsection (1) unless a professional engineer certifies it is safe for use on the basis of that inspection.

47 Section 14.72 is repealed and the following substituted:

Boom inspection

14.72 (1) A crane boom used with a vibratory hammer for driving piles must be inspected at least once every 3 months in accordance with good engineering practice to ensure it meets

(a) the crane boom manufacturer's specifications,

(b) the requirements of the applicable design or safety standard specified in section 14.2, and

(c) the requirements of this Regulation.

(2) A crane boom used with a vibratory pile extractor or with a drop hammer or used for dynamic compaction must be inspected at least once a month in accordance with good engineering practice to ensure it meets

(a) the crane boom manufacturer's specifications,

(b) the requirements of the applicable design or safety standard specified in section 14.2, and

(c) the requirements of this Regulation.

(3) A boom must not be used after an inspection under subsection (1) or (2) unless a professional engineer certifies it is safe for use on the basis of that inspection.

(4) A crane used in any operation described in subsection (1) or (2) must not be returned to lifting service unless a professional engineer inspects the crane and certifies that it is safe for such use.

48 Section 14.73 is amended

(a) in subsection (1) by striking out "An aerial ladder crane" *and substituting* "A sign truck", *and*

(b) by repealing subsection (2) and substituting the following:

(2) When a sign truck is being used, the load rating charts for the configuration in use must be available at the workplace.

49 Part 14 is amended by adding the following sections after the heading "**Tower Cranes**":

Definition

14.73.1 In sections 14.73.2 to 14.93, **"tower crane"** means a tower crane that is erected on site from component parts or that is self erecting.

Tower crane erection

14.73.2 The erection, climbing and dismantling of a tower crane must be done by qualified persons and in accordance with the instructions of

(a) the crane manufacturer, or

(b) a professional engineer, if the installation varies from the crane manufacturer's instructions.

50 Section 14.74 is amended by adding the following subsections:

(4) The bearing capacity of the supporting surface for a tower crane must be determined by a professional engineer.

(5) The loads from a tower crane must be distributed onto its supporting surface to prevent the bearing capacity of the supporting surface being exceeded.

51 Section 14.75 is repealed and the following substituted:

Before use

14.75 (1) Before a tower crane is put in service, the erector of the tower crane must verify that the crane has been erected according to

(a) the manufacturer's specifications, or

(b) the specifications of a professional engineer, if the engineer has authorized the crane to be erected otherwise.

(2) If a tower crane is not erected according to the manufacturer's specifications, a professional engineer must certify before the crane is put in service that

(a) the variations from the manufacturer's specifications meet the requirements of the applicable design or safety standard,

(b) the load charts are adjusted as necessary, and

(c) the crane is safe for use.

(3) The erector of a tower crane must adjust the overload prevention system as necessary to meet the load chart for the crane as erected.

(4) Before a tower crane, other than a self erecting tower crane, is put in service after its mast has been repositioned, a professional engineer must certify that the parts of the crane affected by the repositioning process have been properly installed and any required reshoring for, and bracing to, the supporting structure is in place.

(5) Before a tower crane is put in service following its erection or the repositioning of its mast, the person responsible for the erection of the crane or the repositioning of its mast must make available at the workplace where the crane is installed a report verifying that

(a) the certification documents required by section 14.74 and subsections (2) and (4) of this section are available at the workplace, and

(b) the overload prevention system of the crane has been adjusted as required in subsection (3), including specifying the load limits set for the various devices.

52 ***Section 14.76 is amended by striking out*** "The structural components" ***and substituting*** "The interchangeable structural components".

53 ***Section 14.77 is amended***

(a) in subsection (1) by striking out "Before erection of a tower crane" ***and substituting*** "Subject to subsection (4), before the erection of a tower crane",

(b) by repealing subsection (1) (b) and substituting the following:

(b) certified by a professional engineer as safe for use after the inspection in paragraph (a) and any necessary repairs. ,

(c) by repealing subsection (3) and substituting the following:

(3) If a tower crane is scheduled to be dismantled within 15 months of its being erected, subsection (2) does not apply provided that a visual inspection, conducted 12 months after erection of the crane and supervised by a professional engineer, shows no evidence of cracking or other structural weakness. , ***and***

(d) by adding the following subsections:

(4) A self erecting tower crane must be

(a) inspected visually by a qualified person each time it is erected, and

(b) inspected and certified under subsection (1) at least once every 12 months.

(5) Subsection (3) does not apply to a self erecting tower crane.

54 ***Section 14.79 is repealed and the following substituted:***

Manual and records

14.79 The following documents respecting operation, inspection, maintenance and repair of a tower crane must be kept at the workplace where and while the crane is erected:

(a) the portions of the manufacturer's manual or engineer's instructions required by section 14.12 (3);

(b) all records dated from the date of structural certification under section 14.77, including those specified in section 14.75 (5);

(c) in the case of a self erecting tower crane, all records dated from the date of the last certification of the crane.

55 ***Section 14.80 is amended***

(a) in subsection (1) by adding "and ballasts" ***after*** "Counterweights",

(b) by repealing subsection (2) and substituting the following:

(2) Each counterweight and ballast element must be accurately weighed and the weight of the counterweight or element must be clearly and durably marked on it. ***, and***

(c) by repealing subsection (3) and substituting the following:

(3) The weight of counterweight and any ballast installed on a tower crane must be recorded in the report required by section 14.75 (5).

56 ***Section 14.81 is amended***

(a) in subsection (1) by striking out "protection" ***and substituting*** "prevention",

(b) by repealing subsection (2) and substituting the following:

(2) Subject to subsection (4), limit devices on a tower crane must be tested before the crane is first used on each work shift. , *and*

(c) by adding the following subsections:

(4) If it is not practicable, due to the configuration of the workplace, to position sufficient test weights to test the maximum load limit switch before the crane is first used on each work shift, the maximum load limit switch must

(a) be set to activate at a load of less than 80% of the maximum rated capacity for the crane and tested using test blocks, and

(b) be reset to the maximum load limit for the crane and tested using test blocks before making any lift that is greater than the load limit setting established under paragraph (a).

(5) A tower crane with a luffing boom must have an automatic limit device that prevents the boom being raised beyond the maximum permitted boom angle.

(6) In subsection (5), "**luffing boom**" means a boom that is raised and lowered about a pivot point to change the load radius.

57 Section 14.82 is amended

(a) in subsection (1) by striking out "Blocks for testing overload protection devices" *and substituting* "Test blocks for testing overload prevention devices",

(b) by repealing subsection (2) and substituting the following:

(2) The weights of test blocks required by subsection (1) must be as specified by

(a) the crane manufacturer if the crane is erected in accordance with the manufacturer's instructions, or

(b) a professional engineer if the crane has been erected other than in accordance with the manufacturer's instructions. ,

(c) by adding the following subsection:

(2.1) The weight of each test block required by subsection (1) must be accurately determined and durably and legibly marked on that block. , *and*

(d) by repealing subsection (3) and substituting the following:

(3) Test blocks, including the lifting point, must be designed by the crane manufacturer or a professional engineer.

58 Section 14.84 is repealed and the following substituted:

Monitoring jib swing

14.84 (1) The operator of a tower crane must have a clear view of the jib of the crane whenever the jib is being slewed.

(2) Subsection (1) does not apply if a signaller or a rigger who is able to see the jib of the crane is in communication with the operator of the crane and provides directions to the operator.

59 Part 14 is amended by adding the following section:

Overlapping operating zones

14.84.1(1) In this section:

"operating zone" means,

(a) in the case of a tower crane, the complete circular area covered by the swing of the tower crane's jib as it rotates, and

(b) in the case of any other equipment, the area covered by the swing or movement of the equipment;

"overlapping operating zone" means the area where the operating zone of a tower crane intersects the operating zone of another tower crane or other piece of equipment.

(2) If practicable, tower cranes must be erected to avoid the overlapping of their operating zones.

(3) If it is not practicable to comply with subsection (2), the following procedures apply:

(a) the cranes must be erected and maintained so that the lowest point of any component of the higher crane is at least 3 m (10 ft.) above the highest component of the lower crane that crosses into the overlapping operating zone;

(b) the boundaries of the overlapping operating zone must be marked so the boundaries are visible to the operators of all the affected cranes;

(c) any load suspended by the higher crane must be positioned at a location that ensures at least 3 m (10 ft.) lateral clearance between it and an operator's cab on the jib of the lower crane;

(d) written operating procedures must be developed and implemented to coordinate lifting tasks in the overlapping operating zone to prevent collision or interference between a component or suspended load of one crane with a component or suspended load of another crane.

(4) The procedures required in subsection (3) (d) must do the following:

(a) minimize the time each crane spends in the overlapping operating zone;

(b) establish that the lower crane has priority for working in the overlapping operating zone;

(c) establish that the operator of the lower crane must give temporary permission to the operator of the higher crane for each lifting sequence in the overlapping operating zone;

(d) establish a means and protocol for communication between the crane operators when a crane operates in the overlapping zone, including a requirement for the operator of the higher crane to contact the operator of the lower crane when the higher crane is required to enter the overlapping operating zone;

(e) establish that the lateral clearance of the load of the higher crane will be at least 3 m (10 ft.) from

(i) the occupied cab of the lower crane, and

(ii) the space above it;

(f) establish that when the lower crane is being operated or when a person is on the lower crane, the higher crane will not pass a load over the lower crane unless

(i) the activity follows work procedures acceptable to the Board, and

(ii) either

(A) the higher crane is being used to erect, service or dismantle the lower crane, or

(B) there is a minimum of 18 m (60 ft.) clearance between the underside of the jib of the higher crane and the highest point on the lower crane that is within the tip radius of the higher crane.

(5) If the operating zone of a tower crane overlaps the operating zone of another piece of equipment with a reach capable of interfering with the movement of the crane or hoist, or the load being lifted,

(a) written operating procedures must be developed and implemented to coordinate lifting tasks in the overlapping operating zone to prevent collision or interference between a component or suspended load of the tower crane with a component or suspended load of the other equipment, and

(b) the boundaries of the overlapping operating zone must be marked so the boundaries are visible to the operators of all affected cranes and equipment.

60 Section 14.85 is repealed and the following substituted:

Clearance and freedom to slew

14.85 (1) Except as otherwise required by this Regulation, at all times and under all load conditions, a tower crane must have vertical and lateral clearances, between any component of the tower crane jib and counter jib and any obstruction, that are the greater of

(a) the vertical and lateral clearances specified by the crane manufacturer, and

(b) a vertical clearance of 1 m (3.3 ft.) and a lateral clearance of 30 cm (1 ft.).

(2) At all times and unless otherwise specified by the crane manufacturer, a tower crane must be able to slew 360 degrees.

61 Sections 14.87 to 14.90 are repealed and the following substituted:

Access

14.88 (1) A tower crane must have a fixed ladder installed in or on the mast to provide access to the jib and crown of the crane.

(2) The ladder under subsection (1) must meet the following requirements:

(a) the ladder must be able to support two 1.1 kN (250 lbs.) point loads between any two consecutive points where the ladder is attached to the crane;

(b) there must be a minimum horizontal distance of 15 cm (6 in.) between the rungs and the object to which the ladder is attached;

(c) landing platforms must be provided at least every 9 m (30 ft.) on the ladder;

(d) each section of the ladder must be offset horizontally from adjacent sections or the landing platforms must have trap doors;

(e) if a section of the ladder has a climb exceeding 6 m (20 ft.) in length, that section of ladder must have a ladder safety cage 68 cm to 76 cm (27 in. to 30 in.) in diameter or a ladder safety device must be used.

(3) Each tower crane jib must have a continuous walkway from the mast to the tip.

(4) The walkway referred to in subsection (3) must meet the following requirements:

(a) the walkway must be at least 30 cm (12 in.) wide and constructed with a non-skid surface;

(b) a handline, which is approximately 1 m (39 in.) above the level of the walkway, and a midline must be provided on both sides of the walkway not more than 30 cm (12 in.) out from the edge of the walkway and supported at intervals not exceeding 3 m (10 ft.);

(c) the handline and midline referred to in paragraph (b) must be wire rope of at least 1 cm (3/8 in.) diameter;

(d) if it is not practicable to provide handlines in accordance with paragraph (b), alternative means of fall protection, such as a horizontal lifeline system, must be provided in accordance with the requirements of Part 11 (Fall Protection) and must be set out in the fall protection plan.

(5) If, due to the design or size of the tower crane, it is not practicable to meet the requirements set out in subsections (1) to (4), alternative safe means of access must be provided.

(6) The climbing space of a tower crane mast must be clear of protruding objects and must provide a safe and unobstructed passage.

(7) A written fall protection plan, which addresses the requirements of fall protection when a person is operating, inspecting, servicing and maintaining the tower crane, must be developed and implemented.

62 Section 14.91 is amended by adding the following subsection:

(3) The equipment records for a tower crane must contain the following information about the hoisting rope installed on the crane:

(a) the name of the manufacturer or supplier of the rope;

(b) the type of rope installed as described by the rope construction, number of outer strands, type of lay, direction of lay and type of core;

(c) the diameter and the length of the rope;

(d) the nominal or minimum rated breaking strength of the rope;

(e) the rated working load limit for the rope;

(f) the date the rope was installed;

(g) if the rope was not new at the time of installation, the name of the qualified person who inspected the rope before installation on the crane to ensure that the rope was in a suitable condition for use as the hoist line on the crane;

(h) the name of the qualified person who installed the rope.

63 Section 14.92 is amended by adding the following subsections:

(5) A sign or other item that would increase the surface area of a crane structure exposed to wind must not be installed unless authorized by the crane manufacturer or a professional engineer.

(6) A tower crane must not be erected, operated or dismantled when the wind speed exceeds the upper limit specified by the crane manufacturer for erection, operation or dismantling of the crane.

64 Sections 14.94 and 14.95 are repealed.

65 Section 14.96 is repealed and the following substituted:

Certifications and instructions

14.96 (1) Before a construction material hoist is put into use, a professional engineer must certify that

(a) the hoist is safe for use, and

(b) the installation of the hoist complies with

(i) the design criteria for that installation,

(ii) the hoist manufacturer's specifications,

(iii) the requirements of *CSA Standard CAN/CSA-Z256-M87, Safety Code for Material Hoists,* and

(iv) the requirements of this Regulation.

(2) If, after certification under subsection (1), a modification is made to the structure, mechanical components or control system of a construction material hoist or it is changed through the addition or removal of a support section of the hoist, the hoist must not be used until it is recertified as safe for use by a professional engineer.

(3) Subsections (1) and (2) do not apply to a light duty portable material hoist installed and operated in accordance with the hoist manufacturer's instructions.

(4) A copy of the certifications required in subsections (1) and (2) or the manufacturer's instructions referred to in subsection (3) must be available at the workplace where the hoist is installed.

66 ***Section 14.97 is amended by striking out*** "unless required " ***and substituting*** "unless it is necessary to do so".

67 ***Sections 14.99 to 14.117 are repealed and the following substituted:***

Permission to use

14.116 If it is not practicable to provide safe access to a work platform on a chimney or similar structure using stairs or other means acceptable under the *BC Building Code* or this Regulation, a chimney hoist meeting the requirements of *WorkSafeBC Standard 14.116 Chimney Hoists* may, with the prior permission of the Board, be used to provide access for any person.

Certification

14.117 (1) Before a chimney hoist is used, a professional engineer must certify that

(a) the chimney hoist is safe for use, and

(b) the installation of the hoist complies with

(i) the design criteria for that installation,

(ii) the hoist manufacturer's specifications,

(iii) the requirements of *WorkSafeBC Standard 14.116 Chimney Hoists*, and

(iv) the requirements of this Regulation.

(2) A copy of the certification required in subsection (1) must be available at the workplace where the chimney hoist is installed.

68 ***Section 14.119 is amended by striking out*** "cage." ***and substituting*** "cage and must not be exceeded."

69 ***Sections 14.120 to 14.132 are repealed.***

70 Section 16.3 is amended by adding the following subsections:

(7) In addition to complying with the applicable requirements in this Part, a class 7 variable reach lift truck must meet and be used in accordance with the requirements of sections 14.5, 14.7, 14.8, 14.12, 14.13, 14.15, 14.39, 14.43 and 14.69.

(8) A record of inspections and maintenance meeting the requirements of section 4.9 must be kept by the operator of a class 7 variable reach lift truck and any other persons inspecting and maintaining that truck.

71 Section 16.19 is amended by renumbering it as subsection (1) and by adding the following subsection:

(2) The installation specified by the equipment manufacturer or certified by the professional engineer under subsection (1) for hoists or load handling attachments must

(a) include instructions for safe use of the equipment with the load handling attachment, and

(b) provide for the evaluation of the stability of the equipment, including the effect of load swing.

72 The above amendments come into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS

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APPENDIX F

WorkSafeBC Standard 13.30
Work Platforms Supported by Lift Trucks

1. Scope

1.1 This standard sets out the minimum requirements for the design and use of a work platform supported by a lift truck to elevate personnel.

1.2 This standard does not apply to an order picker or operator-up high lift truck designed to lift personnel.

2. Definitions

2.1 The definitions set out in Part 3 of *CSA Standard B335-04 Safety standard for lift trucks* apply to this standard.

3. Lift Truck Requirements

3.1 The lift truck used to support a work platform must meet the requirements of *CSA Standard B335-04 Safety standard for lift trucks*. (Note: *CSA Standard B335-04* incorporates the design and construction requirements of *ANSI/ASME B56.1 Safety Standard for Low Lift and High Lift Trucks* and *ANSI/ASME B56.2 Safety Standard for Rough Terrain Forklift Trucks*, so a lift truck manufactured to meet the applicable ANSI standard meets the requirements of *CSA Standard B335-04*.)

3.2 The lift truck must be in good working order with all controls and functions operating in accordance with the manufacturer's specification, the requirements of the applicable safety standard and the *Occupational Health and Safety Regulation*.

3.3 Forks must be secured against tilting or dislodgement.

3.4 If the lift truck uses a hydraulic or pneumatic system to raise the fork carriage the system must be equipped to prevent unintended descent of the carriage in excess of 0.6 metres per second in the event of hydraulic or pneumatic line failure.

4. Platform Requirements

4.1 The work platform must be built by the manufacturer to meet the requirements of the applicable lift truck safety standard or custom designed by a professional engineer in accordance with design criteria from the applicable lift truck safety standard. A custom designed platform must be certified by a professional engineer as having been built in conformance with the engineer's design.

4.2 The work platform must be legibly marked to show:

(a) The name of the manufacturer or the certifying engineer;
(b) If a manufactured platform, the part number or serial number to allow the design of the platform to be linked to the manufacturer's documentation;
(c) If a custom built platform, a unique identification number or code that links to the design and certification documentation from the engineer;
(d) The safety standard the platform was designed to meet;
(e) The weight of the platform when empty;

(f) The rated load that may be placed on the platform (the maximum combined weight of the people, tools and materials permitted on the platform);
(g) The minimum rated capacity of the lift truck needed to safely handle the platform either by specifying the make and model of truck(s) that may be used with the platform or by specifying the minimum wheel track and lift truck capacity. (Note clause 5.7 of this standard requires the lift truck must have a minimum rated capacity of at least two times the weight of the platform plus the rated load for a high lift truck and at least three times the weight of the platform plus the rated load for a rough terrain forklift truck.)

4.3 The means or method for securing the work platform to the forks or fork carriage must be specified by the manufacturer or a professional engineer.

4.4 There must be a means to prevent the platform and carriage from rotating or pivoting.

4.5 The floor of the platform must have a slip resistant surface located not more than 200 mm (8 inches) above the normal load supporting surface of the fork.

4.6 Platform floor depth, measured from the front to the back, must not exceed two times the load centre distance specified on the lift truck name plate. The platform width must not be greater than the overall width of the lift truck measured to the outside of the load bearing tires, or to the outside of the stabilizers if they are to be used, plus 250 mm (10 inches) on either side of the tires or stabilizers as applicable.

4.7 If a particular application requires a platform with dimensions greater than specified in clause 4.6, a professional engineer must design the platform and limit its maximum rated load to ensure the platform and lift truck system will maintain stability at least equivalent to the stability performance a platform meeting clause 4.6 would provide consistent with the factors specified in clause 5.7.

4.8 There must be guardrail or equivalent protection on all sides of the platform. Guardrails or equivalent protection must meet the requirements of Part 4 of the *Occupational Health and Safety Regulation*. If due to the nature of the work task to be done, guardrails or equivalent protection is not practicable for one or more sides of the platform, there must be designated anchor points on the work platform for the securing of personal fall protection systems. There must be sufficient anchor capacity or individual anchors to allow for the maximum number of platform occupants to secure their personal fall protection systems. Personal fall protection systems must meet the requirements of Part 11 of the *Occupational Health and Safety Regulation*.

4.9 The platform must be constructed so it does not cause a hazard to the occupants and so the occupants cannot reach any hazard created by movement of the lifting mechanism of the lift truck.

5. Use Requirements

5.1 The instructions from the manufacturer or designer relating to safe use of the platform must be available in the workplace.

5.2 The lift truck and work platform must be in good condition and in compliance with the *Occupational Health and Safety Regulation* prior to use of the system to raise personnel.

5.3 The lift truck must be operated by a qualified operator authorized by the employer to use the lift truck to raise personnel in the work platform.

5.4 The work platform must be secured to the forks or fork carriage in the manner specified by the manufacturer or a professional engineer.

5.5 If the carriage of the lift truck can rotate or pivot, these functions must be disabled to prevent the platform and carriage from rotating or pivoting.

5.6 A trial lift must be performed at each task location immediately prior to raising personnel in the work platform to ensure the lift truck can be positioned on an appropriate supporting surface, there is sufficient reach to position the work platform to allow the task to be done, and the mast is vertical or the boom travels vertically. The tilt function for the mast may be used to assist with final positioning of the platform at the task location but the mast must travel in a vertical plane. The trial lift must ensure adequate clearance can be maintained between the work platform and the elevating mechanism of the lift truck and any surrounding object such as a structure, overhead obstruction, storage rack, or scaffold, and from any hazard such as energized electrical lines and equipment.

5.7 The weight of the platform plus the maximum rated load for the platform must not exceed one half the rated capacity of a high lift truck or one third the rated capacity of a rough terrain forklift truck for the reach and configuration being used.

5.8 A system for communication between the platform occupants and the lift truck operator must be implemented to control platform movement. If there is more than one occupant on the platform, one person on the platform must be designated to be the primary person to signal the lift truck operator regarding platform movement requests. If hand and arm signals are not the main communication method, a system of hand and arm signals must be developed as an alternative in the event the primary voice or other electronic communication means becomes ineffective during platform use.

5.9 The platform must be lowered to floor or grade level before a person gets on or leaves the platform.

5.10 Personnel must not be transported in the work platform, including between task locations.

5.11 If the platform does not have guardrail or equivalent protection on all sides, each platform occupant must use an appropriate personal fall protection system secured to a designated anchor point on the platform.

5.12 Platform occupants must work off of the platform surface and must not stand on guardrails or use other devices to increase the effective working height of the platform.

Whenever the platform is occupied, the lift truck operator must remain within 3 metres (10 feet) of the lift truck controls and in visual contact with the lift truck and platform and in communication with the platform occupants.

WorkSafeBC Standard 13.30, Work Platforms Supported by Lift Trucks, comes into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS

APPENDIX G

WorkSafeBC Standard 14.116
Chimney Hoists

1. Scope

1.1 This standard sets out the minimum requirements for the design and use of a chimney hoist to transport personnel to a work platform on a chimney and similar structure.

2. Definitions

2.1 The definitions set out in *ANSI Standard A10.22-1990, American National Standard for Rope-Guided and Nonguided Workers' Hoists -- Safety Requirements* apply to this standard.

2.2 "Cage" means the cage, platform, or skip of a chimney hoist used to raise or lower one or more people to a work platform on a chimney or similar structure.

3. Chimney Hoist Requirements

3.1 Design Requirements
A chimney hoist must meet the requirements of *ANSI Standard A10.22-1990, American National Standard for Rope-Guided and Nonguided Workers' Hoists -- Safety Requirements,* except as otherwise specified in this standard.

3.1 Certification
A professional engineer must certify that a chimney hoist has been designed, installed and tested in conformity with this standard and the equipment manufacturer's requirements, and it is safe for use before the hoist is put into service.

3.3 Certification after alteration
A professional engineer must test and certify a chimney hoist system following any alteration to the system, other than ordinary adjustments or repairs, and update the system design documents and operating instructions as necessary to ensure such documentation is complete and allows for safe use of the system.

3.4 Support structures
The structure supporting a chimney hoist, together with all hoisting gear and equipment, must be well constructed, accurately aligned, securely anchored and have the required strength and stability to safely withstand the loads imposed.

3.5 Load rating
The rated capacity of a chimney hoist must be conspicuously marked on the cage.

3.6 Emergency brakes
The cage of a chimney hoist must be prevented from falling if a cable fails, by automatically applied arresting devices operating on at least 2 separate guide cables.

3.7 Safety factors
Suspension and guide cables, supporting structures, slings and metal fittings used on a chimney hoist must have a safety factor of 10.

3.8 Drive restrictions
The hoisting winch of a chimney hoist must have a positive drive and there may be no clutch between the transmission and the hoisting cable drum.

3.9 Brakes
The hoisting winch of a chimney hoist must have 2 independent braking systems, one of which must apply automatically when the controls are in the neutral position, and one that must apply automatically in the event of loss of power.

3.10 Limit switches
Each chimney hoist must have upper and lower terminal stopping devices that automatically stop the platform from normal travel speed, within the top and bottom travel limits.

3.11 Speed governor
The hoisting equipment of a chimney hoist must have a governing device which will effectively prevent the drum speed from exceeding 110% of the design speed.

3.12 Equipment condition
The hoist, ropes and cage must be in good working order with all components, controls and functions meeting and operating in accordance with the manufacturer's specifications, the engineer's design specifications and the *Occupational Health and Safety Regulation*.

4. Cage Requirements

4.1 Cage markings
The cage must be legibly marked to show:

(a) The name of the certifying engineer;
(b) A unique identification number or code that links to the design and certification documentation for the chimney hoist from the engineer;
(c) The weight of the cage;
(d) The rated load of the cage (the maximum weight of people or materials permitted in or on the cage).

4.2 Cage layout and guarding
The cage must be constructed so it does not cause a hazard to the occupants and so the occupants cannot reach any hazard created by movement of the cage or the hoisting mechanism.

5. Guardrails and gates

5.1 Fall protection at landings
Each landing 3 m (10 ft) or more above grade must have gates, hinged guardrails, or hinged covers that protect people at or near the landing from the hazard of falling off of or through the landing platform whenever the cage is not at that landing.

5.2 Guarding at the lower landing
The lower landing for a chimney hoist must be guarded by perimeter guardrails and a gate.

6. Use Requirements

6.1 Instructions for use and maintenance
The instructions from the engineer who designed the chimney hoist system and from the manufacturer of component parts, such as the hoist, relating to safe use and maintenance of the chimney hoist system must be available in the workplace.

6.2 Prior to use
The chimney hoist system and cage must be in good condition and in compliance with the *Occupational Health and Safety Regulation* prior to use of the system.

6.3 Operator authorization
A chimney hoist operator must be authorized by the employer to operate the hoist, and must not be so authorized until the operator has demonstrated competency in operation of the hoist and familiarity with the operating instructions and signal codes for use of the system.

6.4 Daily testing
Before first use on each work shift, the chimney hoist must be raised to its maximum operating height and lowered back to the ground or base to ensure all functions are operating correctly, all limit devices are functioning properly, and there is adequate clearance between the platform and any surrounding object such as a structure, overhead obstruction, storage rack, or scaffold, and any hazard such as energized electrical lines and equipment.

6.5 Attending the controls
The operator of a chimney hoist must not leave the hoist controls unattended unless the cage is at the lowest landing level (usually ground or grade level) and no people are in the cage.

6.6 Communication with the operator
There must be effective voice communication between the chimney hoist operator, occupants of the cage and people at each hoist landing. If there is more than one occupant in the cage, one person in the cage must be designated to be the primary person to signal the hoist operator regarding cage movement requests.

6.7 Backup communication plan
A system of hand and arm signals must be developed and implemented as an alternative in the event the primary voice communication means becomes ineffective during system use, in which case the hand and arm signals must be used to bring the cage down to the lowest landing and the hoist must not be used until the voice communication system is effectively restored.

6.8 Cage not fully enclosed
A worker in a chimney hoist cage that is not a fully enclosed cage must use a personal fall protection system, meeting the applicable requirements of Part 11 of the *Occupational Health and Safety Regulation*, secured to a designated anchorage point in the cage.

6.9 Maximum load
The weight or load placed in the cage must not exceed the rated capacity of the cage.

6.10 People or materials
Materials, equipment or supplies must not be raised or lowered by the chimney hoist with a worker in the cage.

6.11 Getting in or out of the cage
The cage must be at a designated landing before a person gets into or leaves the cage.

6.12 Hoisting speed
A person must not be raised or lowered on a chimney hoist at a speed greater than 76 m/min (250 fpm).

6.13 Position of gates
All gates of a chimney hoist system must be kept closed, except at the landing where the cage is located for loading or unloading.

6.14 Emergency evacuation
A plan for the evacuation of personnel from the cage in the event of loss of power or equipment malfunction must be developed and implemented and the hoist operator must know how to initiate a request for an evacuation.

WorkSafeBC Standard 14.116, Chimney Hoists, comes into force on February 1, 2008.

Dated at Langley, British Columbia, September 11, 2007.

By the Workers' Compensation Board

DOUGLAS J. ENNS, CHAIR
BOARD OF DIRECTORS