

British Columbia - Colombie-Britannique

Aerial Lift - Appareil de Levage

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Occupational Health and Safety (OHS) Regulation

14.2 Standards

- (1) Except as otherwise required by this Regulation, a crane or hoist must be designed, constructed, erected, disassembled, inspected, maintained and operated as specified by the manufacturer or a professional engineer, and to meet the requirements of the applicable standard listed in subsections (2) to (15).
- (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.

[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.3 Identification

- (1) A crane or hoist must be permanently identified by the legible display of the manufacturer's name, model and serial number on the structure.
- (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.
- (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.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.4 Rated capacity

Repealed. [B.C. Reg. 320/2007, effective February 1, 2008.]

14.5 Rated capacity indication

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

(2) The rated capacity of a monorail crane must be permanently marked on the hoist and at intervals not exceeding 10 m (33 ft) on the monorail beam.

(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.

(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.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.6 Load charts

Repealed. [B.C. Reg. 320/2007, effective February 1, 2008.]

14.7 Boom angle indicator

A crane or hoist with a boom movable in the vertical plane must have a device to indicate the boom angle if the rated capacity is affected by the boom angle, and the device must be readable by the operator at the control station.

14.8 Boom extension and load radius indicators

A crane or hoist must have a means or device to indicate the boom extension or load radius if the rated capacity of the equipment is affected by boom extension or load radius.

14.9 Logging exemption

Specialized equipment designed and used only for logging operations is exempt from the requirements of sections 14.5 to 14.8.

14.10 Reeved-in devices

The rated capacity of a crane or hoist with reeved-in lifting devices must be the net capacity of the equipment, except for mobile cranes.

14.11 Support structure

(1) The rated capacity of a hoist must not exceed the capacity of the structure supporting the hoist.

(2) Selector switches or other effective means must be provided to ensure that the supporting structure is not overloaded by simultaneous use of multiple hoists installed on the supporting structure.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.12 Manual and instructions

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.13 Inspection, maintenance and repair

(1) Each crane and hoist must be inspected and maintained at a frequency and to the extent required to ensure that every component is capable of carrying out its original design function with an adequate margin of safety.

(2) A crane or hoist must not be used until any condition that could endanger workers is remedied.

(3) Any repair to load bearing components of a crane or hoist must be certified by a professional engineer or the original equipment manufacturer as having returned the component to a condition capable of carrying out its original design function with an adequate margin of safety.

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

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.14 Inspection and maintenance records

Records of inspection and maintenance meeting the requirements of Part 4 (General Conditions) must be kept by the equipment operator and other persons inspecting and maintaining the equipment, for

- (a) a crane or hoist with a rated capacity of 900 kg (2 000 lbs) or more,
- (b) a crane or hoist used to support a worker,
- (c) a tower crane,

- (d) a mobile crane, boom truck or sign truck,
- (e) a side boom tractor or pipe layer,
- (f) a construction material hoist,
- (g) a chimney hoist,
- (g.1) a logging truck trailer reload hoist, and
- (h) any other type of hoisting equipment specified by the Board.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.15 Modifications

- (1) Each crane or hoist must be erected, dismantled, operated, adjusted, inspected and maintained as specified by the manufacturer's manual unless otherwise approved by the original equipment manufacturer or a professional engineer.
- (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.
- (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.
- (3) Modifications to a crane or hoist must be recorded in the inspection and maintenance records system and the equipment operation and maintenance manuals must be revised as necessary to ensure that adequate and appropriate information is available for safe use and maintenance of the equipment.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.16 Certification required

- (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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.16.1 Certification following misadventure

- (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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.17 Access and egress

- (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.
- (2) If the normal safe means of egress is not always available to the operator during crane operations, an alternative safe means must be provided for the operator to get from the operating position to a safe area in the event of a power failure or other emergency.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.18 Audible warning

- (1) An effective audible warning device must be installed on a crane or hoist, unless the hoisting equipment is operated using a pendant or remote control and the operator walks in a safe position near the load.
- (2) The operator of a crane or hoist must sound a warning signal when it is necessary to alert workers to hoisting operations.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.19 Drop stops

- (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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.20 Rail end stops

- (1) End stops must be provided on crane and hoist tracks and rails to prevent the equipment running off the end of the rail or track.
- (2) The stops must contact the truck frame or be of a height of at least 1/2 the diameter of the wheels if the wheels contact the stops.

14.21 Fenders

(1) Fenders must be provided on a crane or hoist which operates on rails if there is a possibility of injury to workers from contact with the equipment wheels moving along the rail.

(2) Fenders required by subsection (1) must effectively deflect any object from the path of the wheel.

14.22 Securing pins

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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.23 Boom stops

(1) Positive boom stops must be provided on a crane or hoist with a boom that may fall over backward.

(2) A boom hoist disconnect, shutoff or hydraulic relief must be provided on a crane or hoist to automatically stop the boom hoist when the boom reaches the maximum boom operating angle specified by the manufacturer and before the boom stops are contacted.

(3) A jib on a crane or hoist must be restrained from backward overturning.

14.24 Molten metal

A crane or hoist that handles molten metal must have 2 holding brakes on the hoist mechanism.

14.25 Two-block prevention

Repealed. [B.C. Reg. 19/2006, effective May 17, 2006.]

14.26 Sheave guards

A running line sheave on a crane or hoist must have a device to retain the rope in the sheave groove.

14.27 Ungrounded supply

An electrically powered crane receiving its source of power from an ungrounded supply must have a ground fault indication system that is monitored on a routine basis.

14.28 Controls

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.29 Operator protection

The operator of a crane or hoist must be protected against hazardous conditions such as falling or flying objects and excessive heat or cold that could adversely affect the health or safety of the operator.

14.30 Cab windows

- (1) Cab windows on a mobile crane must be made of safety glazing materials meeting the requirements of *ANSI/SAE Z26.1-1990, American National Standard for Safety Glazing Materials for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways -- Safety Code*.
- (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.
- (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.
[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]
[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.31 Operator's seat

The operator's seat on a crane or hoist must be of a design that allows the operator to safely operate the equipment and the seat must be kept in good condition.

14.32 Storage

- (1) The operator's cab of a crane or hoist must be kept free of unnecessary tools, material or equipment.
(2) Adequate storage facilities must be provided if it is necessary to keep tools or equipment in the operator's cab of a crane or hoist.

14.33 Fire extinguisher

A fire extinguisher having at least a 10 BC rating must be immediately available in the cab of each crane.

Equipment Operation

14.34 Operator qualifications

- (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.
(3) Repealed. [B.C. Reg. 243/2006, effective January 1, 2007.]
[Amended by B.C. Reg. 312/2003, effective October 29, 2003.]
[Amended by B.C. Reg. 243/2006, effective January 1, 2007.]

14.34.1 Operator certification

On and after July 1, 2007, a mobile crane, tower crane or boom truck must be operated only

- (a) by a person with a valid operator's certificate issued by a person acceptable to the Board, and
(b) in accordance with any conditions stipulated on the certificate.
[Enacted by B.C. Reg. 243/2006, effective January 1, 2007.]

14.35 Pre-use inspection

- (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.
(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.

(2) Any defects found during inspection or use of a crane or hoist must be recorded in the inspection and maintenance record system and be reported immediately to the supervisor, who must determine the course of action to be taken.

(3) If a defect affects the safe operation of the crane or hoist, the equipment must not be used until the defect has been remedied.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.36 Load weight

(1) The weight of each load to be hoisted by a crane or hoist must be determined and communicated to the equipment operator and to any person rigging the load.

(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.

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

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.37 Calibration

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.37.1 Operator's duties

The operator of a crane, hoist or boom truck must have full control of the equipment controls whenever the hoisting equipment is in use, and engage in no other duties while operating the equipment.

[Enacted by B.C. Reg. 258/2008, effective January 1, 2009.]

14.38 Safe lifting

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.39 Contact with loads and structures

(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.

(2) If contact as described in subsection (1) occurs, a qualified person must inspect the point of contact, and visible damage such as a cracked weld or a bent or dented member must be assessed, repaired as necessary, and the damaged or repaired area certified by a professional engineer as safe for use.

(3) Equipment used for handling logs and specifically designed for the logs to contact the boom or other structural member is exempt from the requirements of subsections (1) and (2), provided workers are kept out of the hazard area created by the loads being handled.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.40 Swing and shear hazards

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.41 Position of equipment

(1) Equipment must be positioned so that no moving part of the equipment will come within 60 cm (2 ft) of any obstruction in any area accessible to workers.

(2) If the clearance required by subsection (1) cannot be provided, entry to such areas must be prevented by barriers or other effective means.

14.42 Tandem lift

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.42.1 Critical lift

- (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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.43 Travelling with a load

- (1) When a crane or hoist is travelling with a load, the operator of the crane or hoist must ensure that the load is carried as close to the ground or grade as possible and rigged to control load swing.
- (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.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.44 Loads over work areas

- (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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.45 Unattended loads

A load must not be left suspended from or supported by a crane or hoist when an operator is not at the controls.

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.46 Vertical load line

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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.47 Signals

(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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.48 Alternative to hand signals

(1) Two-way radio or other audio or video systems acceptable to the Board must be used if distance, atmospheric conditions or other circumstances make the use of hand signals hazardous or impracticable.

(2) Audio and video communication systems used in a hoisting operation must be designed, installed, operated and maintained according to a standard acceptable to the Board.

14.49 Dedicated radio system

(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.

(2) Multi-channel radios are not permitted for use to direct crane or hoist movement.

(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).

[Amended by B.C. Reg. 320/2007, effective February 1, 2008.]

14.49.1 Communication between equipment operators

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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.50 Unhooking loads

A load on a crane or hoist load hook must be safely landed and supported, before being unhooked.

14.51 Riding hook or load

A worker must not ride on a load, sling, hook or any other rigging equipment.

14.52 Induced voltage

(1) Before a crane or hoist is operated near a source such as a radio transmitter or energized high voltage electrical equipment which may induce an electric charge which could pose a hazard to workers, the following precautions must be implemented:

(a) the crane or hoist must be effectively grounded;

(b) any induced electric charge on the load must be dissipated by applying grounding cables or by other effective means before workers contact the load;

(c) flammable materials must be removed from the immediate work area.

(2) Subsection (1)(a) and (b) does not apply if work is being performed on a power system in accordance with the requirements of Part 19 (Electrical Safety).

14.52.1 Work near high voltage

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.

[Enacted by B.C. Reg. 320/2007, effective February 1, 2008.]

14.53 High voltage electrical conductors

Repealed. [B.C. Reg. 312/2003, effective October 29, 2003.]