

### **PURPOSE/APPLICATION**

To outline safety policy regarding the use and maintenance of hoists, rigging and lifting devices for materials handling.

#### **PPE**

- Strike minimum requirements
- Hard hats; may require side impact based on hazard assessment
- Gloves
- Hearing protection
- Reflective vest (spotters)

#### **TRAINING**

- Crane, Hoisting, Rigging and Boom Training

#### **HAZARDS & CONCERNS**

- Personal injury
- Falling load
- Property damage
- Contact with overhead power lines or other facilities
- Equipment damage
- Traffic
- Equipment failure
- Overhead work

### **PRECAUTIONS**

- Lifting devices are only to be operated by a competent worker authorized by the employer to operate the equipment. No worker other than the competent worker authorized by the employer may operate a lifting device.
- In Alberta, certification to operate a lifting device is required when operating:
  - Booms (including telescoping booms and articulating booms possessing live lines) capable of swinging, hoisting and booming up and down with a lifting capacity of greater than 5 tons (4.5 tonnes) and less than 45 tons (40.8 tonnes)
  - Articulating booms without live lines with a lifting capacity of greater than 8 tons (7.3 tonnes) and less than 45 tons (40.8 tonnes)
  - Mobile cranes with a lifting capacity of 15 tons (13.6 tonnes) and over
- Upon request, an operator, must be able to demonstrate competency in the equipments operation, load charts and in the code of signals for hoisting operations.
- Lifting devices must legibly show the following:
  - Manufacturer's rated load capacity,
  - serial number
  - Manufacturer's name,
  - year of manufacture or shipment date.
  - model,
- All cranes / hoists / and lifting devices will be inspected as per manufactures specifications and be readily available for review.
- Cranes, hoists and lifting devices must have a log book. The logbooks may be paper or electronic, but must include the following:
  1. the date and time when any work was performed on the lifting device;
  2. length of time in lifting service;

- i. recorded as hours of service if the lifting device is equipped by the manufacturer with an hour-meter, or
    - ii. if required by the manufacturer's specifications;
  3. all defects or deficiencies and when they were detected;
  4. inspections, including examinations, checks and tests, that are performed, including those specified in the manufacturer's specifications;
  5. repairs or modifications performed;
  6. a record of a certification;
  7. any matter or incident that may affect the safe operation of the lifting device;
  8. any other operational information specifically identified by the employer;
  9. in the case of a tower crane, whether or not the weight testing device was lifted for that working day, before the work of lifting loads began.
- Each entry in a paper log book must be signed by the person doing the work.
  - A worker must not stand or pass under a suspended load.

### **Reference / additional Information**

### **Considerations When Operating Cranes, Lifting Devices and Other Equipment**

#### **Before moving a load:**

- The operator must be familiar with all recent entries in its log book.
- Inspect equipment, cables, hooks, and document the inspection – keep for duration of equipment possession plus 1-year after equipment is no longer on premise.
- Ensure all loose materials, parts, blocking and packaging have been removed from the load before lifting.
- Remove any slack from the sling and hoisting ropes before lifting the load.
- Make sure that the lifting device sits in the saddle of the hook

#### **To move a load safely:**

- Move crane controls smoothly. Avoid abrupt, jerky movements of the load.
- Follow signals only from one signaler in charge of the lift.
- Make sure everyone is away from the load before hoisting; to do so - sound a bell, siren or other warning device and slowly begin hoisting the load.
- Ensure nothing links or catches on the load while raising it or traveling.
- Ensure that nothing obstructs the movement of a load.
- Keep the load under control when lowering a load. If the braking system fails, the load can usually be lowered by reversing the hoist controller to the first or second point.
- Loads must be positioned as close to the ground or grade as possible before unloading.
- **Before leaving a crane**
  - Remove the load hanging on crane hooks
  - Raise all hooks to a mid-position

- Stop the crane at a designated location
- Place all controls in the "OFF" position
- Open the main switch to the "OFF" position

**When operating a crane, DO NOT:**

- Move a load with a lifting device until it is assured that the working conditions are safe.
- Operate a crane if limit switches are out of order, or if cables show defects.
- Lower the blocks below the point where less than two full wraps of cable remain on the drum.
- Attempt lifts beyond the rated load capacity of a crane or slings.
- Lift a load from the side. Centre the crane directly over the load before hoisting to avoid swinging the load.
- Allow anyone to ride on a load or hooks.
- Leave slings dangling from the load hook. Have sling hooks placed on the sling ring when carrying slings to the load.
- Raise loads higher than necessary to clear objects.
- Pass a load over workers.
- Reverse a motor until it has come to a full stop except to avoid accidents.
- Walk on the crane runway.
- Leave suspended loads unattended

**REFERENCES / ADDITIONAL INFORMATION**

- SWP 55 Rigging

**REGULATIONS****Alberta OHS Code – Part 6 - Cranes, Hoists & Lifting Devices*****Operator requirements 64***

- 2. At the employer's request, an operator, before operating a lifting device, must be able to demonstrate that the worker is competent in the equipment's operation and load charts and in the code of signals for hoisting operations.*
- 3. No worker other than the competent worker authorized by the employer may operate a lifting device.*
- 4. Before operating a particular lifting device, the operator must be familiar with all recent entries in its log book.*

***Log books 65***

- 1. An employer must set up a paper or electronic log book for each lifting device at a work site.*
  - 1.1 Despite subsection (1), the log book requirement does not apply to manually operated hoists.*
- 2. The employer must ensure that*
  - a. the log book is readily available for inspection by an officer at any time,*

- b. the most current log book of a mobile crane accompanies it or is available to the operator at all times, and*
  - c. if ownership of a lifting device is transferred to a new owner, the log book is transferred to the new owner.*
- 3.** *The employer must ensure that the following details are entered into the log book:*
- a. the date and time when any work was performed on the lifting device;*
  - b. length of time in lifting service*
    - I. recorded as hours of service if the lifting device is equipped by the manufacturer with an hour-meter, or*
    - II. if required by the manufacturer's specifications;*
  - c. all defects or deficiencies and when they were detected;*
  - d. inspections, including examinations, checks and tests, that are performed, including those specified in the manufacturer's specifications;*
  - e. repairs or modifications performed;*
  - f. a record of a certification under section 73;*
  - g. any matter or incident that may affect the safe operation of the lifting device;*
  - h. any other operational information specifically identified by the employer;*
  - i. in the case of a tower crane, whether or not the weight testing device was lifted for that working day, before the work of lifting loads began.*
- 4.** *The employer must ensure that each entry in a paper log book is signed by the person doing the work.*
- 5.** *The employer must ensure that each entry in an electronic log book identifies the person doing the work.*

### **Preventing an unsafe lift 66**

*If the operator of a lifting device has any doubts as to the safety of workers in the vicinity of the lift, the operator must not move any equipment or load until the operator is assured that the working conditions are safe.*

### **Load weight 68**

*An employer must ensure that the operator of the lifting device, the rigger supervised by the operator and the person in charge of a lift are provided with all the information necessary to enable them to readily and accurately determine the weight of the load to be lifted.*

### **Loads over work areas**

- 2.** *An operator of a lifting device must not pass the load on the device over workers unless*
  - a. no other practical alternative exists in the circumstances, and*
  - b. the workers are effectively warned of the danger.*
- 3.** *A worker must not stand or pass under a suspended load unless the worker has been effectively warned of the danger and the operator of the lifting device knows the worker is under the suspended load.*
- 4.** *The operator of a lifting device that is traveling with a load must ensure that the load is positioned as close to the ground or grade as possible.*

### **Tag and hoisting lines 70**

1. *If workers are in danger because of the movement of a load being lifted, lowered or moved by a lifting device, an employer must ensure that*
  - a. *a worker uses a tag line of sufficient length to control the load, and*
  - b. *the tag line is used in a way that prevents the load from striking the worker controlling the tag line.*
2. *The operator of a lifting device that is lifting a load must ensure the hoisting line is in a vertical position over the centre of gravity of the load.*

### **Controls 72**

3. *The employer must ensure that an operator who uses a remote control to operate a lifting device is visually distinguishable from other workers at the work site.*

### **Containers for hoisting 74**

1. *An employer must ensure that a container used for a load being lifted by a hoist is designed for that particular purpose and bears a marking to indicate its maximum load rating.*
2. *A person must not use an oil drum or similar container as a container for a load being lifted by a hoist unless the drum or container is hoisted in a cage designed for that purpose.*

## **Saskatchewan OHS Regulation – Part XIII – Hoists, Cranes and Lifting Devices**

### **Rated load 206**

3. *An operator of a hoist, crane or lifting device shall not raise a load unless:*
  - a. *the operator has determined the accurate weight of the load; and*
  - b. *the load is less than the rated load for the operating conditions.*

### **Raising and lowering workers 207**

3. *An operator of a crane or hoist shall not use the crane or hoist to raise or lower workers unless:*
  - a. *the personnel lifting unit meets the requirements of section 192;*
  - b. *the suspension members of the personnel lifting unit are securely attached to the crane, hoist line or hook by a shackle, weld-less link, ring or other secure rigging attachment;*
  - c. *there is a secondary safety device that attaches the suspension members of the personnel lifting unit to the crane or hoist rigging above the point of attachment mentioned in clause (b);*
  - d. *the load line hoist drum has a system or device on the power train, other than the load hoist brake, that regulates the lowering rate of speed of the hoist drum mechanism; and*
  - e. *workers in the personnel lifting unit use fall-arrest protection attached to the personnel lifting unit.*

### **Determining weight of load 208**

3. *A permanent load gauge required by subsection (2) must measure the weight of any load being hoisted and instantaneously indicate that weight to the operator.*

### **Designated signaler 210**

4. *An operator of a hoist or crane and a designated signaler shall use the signal set out in the standard mentioned in subsection (3) that is appropriate for the activity to be carried out.*

### **Inspections 216**

5. *No worker shall operate a crane or cause a crane to be operated unless a copy of the results of the testing or inspection required by subsection (3) or (4) is readily available or is on site.*

### **British Columbia OHS Regulation – Part 14 – Cranes and Hoists**

#### **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.*

#### **14.16 Certification required**

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.*

#### **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.*

#### **14.28 Controls**

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.*
8. *A remote control system for a crane or hoist must be designed to ensure the following:*
  - I. *permits the operator to stop all crane or hoist movement regardless of a malfunction within the remote control system, and*
10. *The maximum distance between a remote control panel and the crane or hoist being operated by the remote control system must*
  - b. *be communicated to the operator before the operator uses the crane or hoist.*

#### **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.*

#### **14.32 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.*

#### **14.35 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.*

*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.*

#### **14.38 Safe lifting**

- 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.*

#### **14.43 Traveling with a load**

- 1. When a crane or hoist is traveling 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.*

#### **14.44 Loads over work areas**

- 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.*

#### **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.*

#### **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.*

**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.*

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