NORTHWEST TERRITORIES & NUNAVUT

CODES OF PRACTICE

In accordance with the *Northwest Territories and Nunavut Safety Acts* and *Occupational Health and Safety Regulations*

Hoists, Cranes, Lifting Devices, and Rigging

WSCC Workers' Safety & Compensation Commission | ᐃᖃᓗᐊᔪᖏᑎᒍᑦ ᐊᑦᑕᓇᖅᑐᓂᒃ ᐊᒻᒪᓗ ᓇᓕᓕᐅᔪᓂᒃ ᖃᐅᔨᓴᖅᓯᒪᓕᖅ

Hoists, Cranes, Lifting Devices, and Rigging

NORTHWEST TERRITORIES
wscc.nt.ca

Yellowknife
Box 8888, 5022 49th Street
Centre Square Tower, 5th Floor
Yellowknife, NT X1A 2R3

Telephone: 867-920-3888
Toll Free: 1-800-661-0792
Fax: 867-873-4596
Toll Free Fax: 1-866-277-3677

Inuvik
Box 1188, 85 Kingmingya Road
Blackstone Building, Unit 87
Inuvik, NT X0E 0T0

Telephone: 867-678-2301
Fax: 867-678-2302

NUNAVUT
wscc.nu.ca

Iqaluit
Box 669, 630 Queen Elizabeth II Way
Qamutiq Building, 2nd Floor
Iqaluit, NU X0A 0H0

Telephone: 867-979-8500
Toll Free: 1-877-404-4407
Fax: 867-979-8501
Toll Free Fax: 1-866-979-8501

WHAT IS A CODE OF PRACTICE?

The Workers' Safety and Compensation Commission (WSCC) Codes of Practice provide practical guidance to achieve the safety requirements of the Northwest Territories and Nunavut *Safety Acts* and related *Occupational Health and Safety (OHS) Regulations*.

Codes of Practice come into effect in each territory on the day they are published in the *Northwest Territories Gazette* and *Nunavut Gazette*.

Codes of Practice do not have the same legal force as the *Safety Acts*, or the *OHS Regulations*. A person or employer cannot face prosecution for failing to comply with a Code of Practice. However, in legal proceedings under the *Safety Acts* and *OHS Regulations*, failure to observe a Code of Practice may be a consideration when determining whether a worker or employer has complied with the *Safety Acts* and *Regulations*.

As per subsection 18(3) of the Northwest Territories and Nunavut *Safety Acts*, "For the purpose of providing practical guidance with respect to the requirements of any provision of this Act or the regulations, the Chief Safety Officer may approve and issue such codes of practice as he or she considers are suitable for that purpose."

Employers and workers should follow WSCC Codes of Practice unless there is an alternative course of action that achieves the same or better occupational health and safety outcomes.

CODES OF PRACTICE

- Provide practical guidelines.
- Adapt to individual work sites.
- May serve as evidence.
- Should be followed unless there's a better way.

FOREWORD

The Workers' Safety and Compensation Commission (WSCC) produced this industry Code of Practice in accordance with subsections 18(3) and 18(4) of the Northwest Territories and Nunavut *Safety Acts*.

The Code of Practice applies to all workplaces covered by the Northwest Territories and Nunavut *Safety Acts* and *Occupational Health and Safety Regulations*.

The Hoists, Cranes, Lifting Devices, and Rigging Code of Practice relates to Sections 4 and 5 of the Northwest Territories and Nunavut S*afety Acts*, Parts 13 and 14, Sections 205-245 of the Northwest Territories and Nunavut *Occupational Health and Safety Regulations*.

This code is in effect as published in the *Northwest Territories Gazette* and *Nunavut Gazette*, in accordance with the *Safety Acts and Occupational Health and Safety (OHS) Regulations.*

IN EFFECT DATES:

Northwest Territories: May 31, 2021

Nunavut: May 31, 2021

Chief OHS Inspector, WSCC

Disclaimer

This publication refers to obligations under workers' compensation and occupational health and safety legislation as administered by the Workers' Safety and Compensation Commission.

To ensure compliance with legal obligations, always refer to the most recent legislation. This publication may refer to legislation that has been amended or repealed.

Check for information on the latest legislation at wscc.nt.ca or wscc.nu.ca, or contact WSCC at 1-800-661-0792.

TABLE OF CONTENTS

1. DEFINITIONS

Anti Two Block Warning Device – a device that warns a worker continued upward movement of a load line could cause a load block to strike the upper sheaves.

Boom – a structural member attached to a crane superstructure, used to support the upper end of hoisting tackle.

Bridge or Overhead Crane – a crane with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure.

Competent – in respect of a function, task or duty, possessing the knowledge, experience and training to perform the function, task or duty.

Contractor – a person or company contracted to supply products or services.

CSA Standards – The Canadian Standards Association (CSA) is an accredited standards development organization and certification body. The standards they develop define requirements for reducing the risk of workplace injuries. Canadian Safety Standards can be found at https://store.csagroup.org

Crane – equipment consisting of a rotating superstructure, operating machinery and a boom, designed to lift, lower and move loads horizontally.

Designated Operator – a worker designated to operate a hoist, crane or lifting device.

Due Diligence – the level of judgment, care, forethought, determination, and activity that a person or organization should reasonably be expected to do under particular circumstances.

Employer – every partnership, group of persons, corporation, owner, agent, principal contractor, subcontractor, manager, or other authorized person in charge of an establishment in which one or more workers perform work.

Hazard – any situation, thing, or condition (such as chemicals, materials, substances, work processes, or noise and vibration) that may expose a person to risk of injury or occupational disease,

Hazard Control – all steps necessary to protect workers from exposure to hazards. The procedures minimize workers' risk of exposure to all present hazards.

Hazard Control Program – identifies the hazards and outlines the methods employers and workers will use to control risks of exposure and how employers will monitor the effectiveness of the controls.

Hazard Identification – identification and documentation of hazards.

High Hazard Work – a work activity described in Schedule C of the Occupational Health and Safety Regulations.

Imminent Danger – any place, matter, or thing, which could reasonably be a source of likely danger to the health or safety of persons employed on or in connection with the work or worksite.

Incident – an occurrence arising in the course of work that could result in an injury or illness.

Jib – an extension attached to the boom tip to provide additional boom length.

Lifting Device – a device used to raise or lower materials or objects, that does not include a crane or a hoist.

Load Rating – manufactures determine and prescribe the maximum load that can be lifted or lowered safely under defined conditions.

Material Hoist – a load-carrying device designed to raise and lower only equipment or material, not people or workers, within fixed movement guides.

Mobile Crane – a crane mounted on a truck, wheel or crawler base that can move freely under the crane's own power without restriction to a set path.

Pendant – a fixed-length rope that forms part of a boom-suspension system**.**

Personal Protective Equipment (PPE) – any clothing, device, or other article for workers to use to prevent injury or to facilitate rescue

Principal Contractor – a person who signs an agreement to undertake a project for an owner. May include an owner who undertakes all or part of a project themselves or by one or more employers.

Project Owner – the worker given overall responsibility and authority for the successful completion of a project.

Project Supervisor – the worker responsible for monitoring contractor safety performance. Reports to the Project Owner.

Qualified Operator – a holder of a certificate of qualification in the crane and hoist operator trade issued under the *Apprenticeship, Trade and Occupation Certification Act*.

Rated Load – the maximum load that can be lifted or lowered safely using a particular configuration under the conditions existing at the time of the lifting or lowering operation.

Rigging – a combination of rope, wire rope, cable, chain, sling, sheave, hook and associated fittings used in a winching or hoisting operation.

Risk – the likelihood and the severity of a person getting harmed, or experiencing an adverse health effect if exposed to a hazard.

Supervisor – a worker authorized by an employer to oversee or direct workers.

Tower Crane – a crane mounted on a tower that can rotate around the axis of the tower.

Tower Hoist – a hoist with a scaffolding structure that guides and supports a load-carrying unit between fixed guides.

Worker – a person engaged in work for an employer, whether working with or without pay.

2. INTRODUCTION

The *Hoists, Cranes, Lifting Devices, and Rigging Code of Practice* provides general guidelines to employers and workers in reference to Parts 13 and 14 of the *Occupational Health and Safety (OHS) Regulations* and the applicable CSA Standards on what is required to ensure worker safety during operation of these machines and devices.

The OHS regulations require procedures to be in place to safeguard the health and safety of the workers and the public. This code focuses on responsibilities, competencies, safe operating procedures, and inspection and maintenance of hoists, cranes, lifting devices and rigging.

A crane or hoist must be designed, constructed, erected, disassembled, inspected, maintained, and operated as specified by the manufacturer or a professional engineer, and must meet the requirements of applicable standards.

The CSA Group has multiple standards and guidelines to assist in developing procedures for safely working with cranes, hoists, lifting devices and rigging:

- **CAN/CSA B167-16:** Overhead cranes, gantry cranes, monorails, hoists, and jib cranes
- **CAN/CSA Z150-20:** Safety code on mobile cranes
- **CAN/CSA Z248-17:** Code for tower cranes
- **CAN/CSA Z256-M87 (R2016):** Safety code for material hoists
- **CAN/CSA Z185-M87 (R2016):** Safety code for personnel hoists
- **CAN/CSA Z150.3-17:** Safety code on articulating boom cranes
- **CAN/CSA C22.2, no.33:19:** Construction and test of electric cranes and hoists

Additional Codes of Practice and OHS resources with more information include:

- Hazard Assessment
- Thermal Conditions
- Personal Protective Equipment
- Powered Mobile Equipment
- Elevated Work Platforms
- Fall Protection

3. KEY RESPONSIBILITIES

3.1 Employer Responsibilities

Employers have an extensive range of responsibilities under Parts 13 and 14 of the NWT & NU OHS regulations whenever a hoist, crane or lifting device is operated at a work site. (**See Appendix G**: Legislation and definition of *Employers* in Definitions section on page 6 of the code.)

Employers must assess their work sites to identify existing and potential hazards before work begins. They must eliminate or control the identified hazards based on the hierarchy of controls. (Refer to the *Hazard Assessment Code of Practice* on conducting risk assessment and identify hazard controls.)

There are two primary spheres of responsibilities for employers:

1. Ensure that every hoist, crane and lifting device, including rigging, used at a work site is designed, constructed, installed, maintained, and operated to perform safely the tasks for which it is used.
2. Designate a qualified and/or competent operator trained in the operation of the equipment and make sure only such designated workers operate the equipment. [See pages 12 & 13 of the code: Operator Competency 4.1]

All workers must receive training and supervision to ensure they are competent, qualified, and have knowledge of the procedures and best practices involved with the safe operation of hoists, cranes or lifting devices and rigging.

Employer responsibilities include ensuring the following:

- Equipment transported, assembled and supported according to manufacturer requirements.
- Equipment maintained and inspected in accordance with manufacturer requirements and applicable regulations.
- A thorough and operational equipment maintenance and inspection program, which includes log books and other required documentation.
- Clients and site supervisors capable and aware of their responsibilities.
- Clear designation of responsibility and authority for each crewmember.
- A copy of the manufacturer's specifications for a hoist or crane is readily accessible to the operator of the hoist or crane.
- Operators are not permitted to raise a load that exceeds the rated load recommended by the manufacturer of the equipment.
- Operators follow OHS regulatory requirements with load hoisting and lifting. (See sections 212 to 215 in Appendix G)

3.2 Operator Responsibilities

The operator is responsible for the safety of other workers and anyone else near the hoist, crane, lifting device and rigging.

- Operators must maintain full control of the load to prevent near misses and incidents.
- Operators must follow load rigging, inspection, and maintenance procedures to comply with manufacturer and employer guidelines.
- Operators must know and follow all relevant safe operating procedures, safe work practices and the task hazard analyses required for the job at hand.
- Operators must inform the owner, in writing, of any problems with equipment and record issues, inspections, and maintenance in the log book.

> The crane operator does not determine load weight. However, operators are accountable if they take on this responsibility, or if they lift the load without checking the weight with the site supervisor.

Operators need to review plans and requirements with the site supervisor and check whether the site is properly prepared for operations.

Operators' responsibilities include familiarity with the following:

Setup:

- The characteristics, functions, and limitations of the specific model of machine they operate and information in the machines' operating manual.
- Selection of the best boom, jib, and crane configuration to suit the load, site, and lift conditions.
- Correct assembly, set up, and rigging of a crane.

Load:

- The crane's load chart, including all notes and warnings, and how to calculate or determine the crane's actual net capacity in every possible configuration.
- Factors that may reduce crane capacity and require load adjustment, such as wind speed, power lines, machine configuration, soft footing, unlevelled position, and increased load radius.

Before leaving a machine unattended, the operator must do the following:

- Land any attached load.
- Shut down and secure the machine properly.
- Set all brakes and locking devices.
- Secure the unit against accidental travel and unintentional movement.
- Lock doors to prevent unauthorized access.
- Tag and lock out of equipment when it is unsafe or under repair.

3.3 Supervisor Responsibilities

Supervisors are responsible for the safety of workers and must ensure:

- Designated operators are qualified, competent, and perform safely.
- All workers have the required training.
- Operators have adequate experience to recognize hazards associated with their work. This includes the types of devices they are using, loads they are handling, and the environment they are working in.
- Identification of unsafe acts and conditions.
- Implementation and monitoring of hazard controls.
- Maintenance and inspection records are kept on site, and made available to all equipment operators and WSCC OHS Inspectors upon request.

Site Specific Supervisors Must:

- Supervise all work involving the equipment and ensure the safety of the rigging crew and other personnel potentially impacted by operations.
- Keep the public and all non-essential personnel clear of the crane during operation.
- Ensure that all personnel involved in the operation understand their jobs, responsibilities, and their role in the safety of each lift.
- Ensure personnel know what your hand signal means when there is noise.
- Ensure required precautions are in place when the lift is near powerlines.

Site Supervisor Responsibilities with Rigging Crew and Load:

- Determine the correct load weight and radius, and inform the operator.
- Ensure that the load is properly rigged.
- Supervise the rigging crew.
- Ensure that the rigging crew is experienced and can do the following:
    - Establish weights and judge distances, heights and clearances.
    - Select tackle and lifting gear suitable to the loads.
    - Rig the load safely and securely.

Site Supervisor Responsibilities with Signalling:

- Control the movements of all personnel in the area affected by the lift with the use of appropriate warning signals.
- Designate signallers and identify them to the operator.
- Ensure that signallers know how to direct the crane and load, including the use of the international hand signals when other forms of communication are not possible. (*See Appendix F: Chart of Hand Signals*)

4. OPERATOR COMPETENCY

Many types of hoists, cranes and lifting devices are used for lifting and moving materials, and doing repairs. The use of these devices can be the cause of serious worker injury or death.

The employer or supervisor must verify the operator's competency.

Even a small crane can cause a deadly accident, and one incident can result in injury or fatality to multiple workers. Therefore, cranes, and hoisting and rigging equipment must be operated by trained, qualified personnel only, and according to safety guidelines and product specifications.

A worker shall not operate a crane unless he or she

a) has written proof of training in the operation of the crane that he or she will be required or permitted to operate; and
b) keeps written proof of that training readily accessible while he or she operates the crane.

[NWT & NU Occupational Health and Safety Regulations, Section 210(6)]

4.1 Designated Operator

Under NWT and NU *Occupational Health and Safety Regulations*, the employer has to designate a specific worker called the *designated operator*, to operate the equipment when a hoist, crane or lifting device is operated at a work site. (See section 210 in Appendix G: Legislation)

Qualified Operator

The employer has to ensure that the designated operator is a *qualified operator* if the crane that will be operated is one of the following:

- Tower crane
- Overhead travelling crane with a load rating exceeding 50 t
- Crane used to raise or lower a worker on a personnel-lifting unit suspended from a hoist line
- Mobile crane with a load rating exceeding 5 t

A *qualified operator* is usually a holder of a certificate of qualification in the crane and hoist operator trade, or an apprentice in the trade working under direction of a qualified operator.

However, a worker who has received training and experience in the safe operation of a crane, equivalent to or superior to the holder of a certificate, may also be considered a qualified operator by the Chief Safety Officer.

Competent Operator

A *competent operator* is a worker who has completed a training program in accordance with Schedule M in Appendix G: Legislation for the crane the worker will operate, or is completing the practical training required in Schedule M under direct supervision of a competent or qualified operator.

The employer has to ensure that the designated operator is a *competent operator* if the crane to be operated has a load rating exceeding 5 t.

- With a mobile or overhead travelling crane with a load rating not exceeding 5 t, the designated operator has to be a *competent worker*.

4.2 Competencies Required

Before operating a crane, hoist, or other equipment necessary for hoisting or lifting, an operator must demonstrate competency appropriate to the equipment. This includes, but is not limited to, the following:

Understanding the basics

- The manufacturer's operating manual and safety decals, including information on:
  - Assembly and disassembly of equipment
  - Emergency procedures
  - Limitations of the equipment (for example, use on sloped terrain)
- Lift plans and critical lift definitions
- Safe rigging and lifting procedures
- Use of hand signals and radio protocols during hoisting operations
- Recognition of worksite hazards, including overhead, underground, slope/soil/excavation conditions, as well as potential hazards created by other workers and equipment in the area.

Operational proficiency

- Select the appropriate boom, jib, track or outrigger extension, parts of load line, and counterweight to meet lift requirements and determine the net lifting capacity of a configuration.
- Operate the equipment in a safe and controlled manner in accordance with the manufacturer's specifications.
- Inspect the equipment components (for example, pre-operational checks and regular, periodic inspections) as well as performing maintenance as required by the manufacturer, applicable standards, and the employer.
- Maintain the equipment log book by documenting pre-shift inspections and safety checks, entering any observed defects, operating difficulty, or need for maintenance.

5. INSPECTION AND MAINTENANCE

The employer must put an inspection and maintenance program in place to ensure the following:

- A **competent** person inspects tests and maintains the equipment.
- Inspections, tests and maintenance follow manufacturer's recommendations and requirements, as well as the applicable regulations.
- Operators keep a log book with complete and concise information describing inspections, tests, maintenance, and repairs.
- The log book is kept with the equipment.

5.1 Crane Inspection Frequency

A competent person must inspect the crane for possible failings or hazards:

- At the beginning of a work shift.
- When the crane is put into operation during the shift.

Types of Inspection:

Inspection procedures for cranes in regular service fall in five categories:

1. Regular
2. Daily
3. Periodic
4. Annual
5. Structural

INSPECT BEFORE USE!

Inspect a crane for any potential defects or hazards that could limit the safe performance of the crane **before** putting the crane into operation.

SPECIAL INSPECTION

Special inspections must be carried out after any form of crane incident, such as:

- Electrical contact
- Shock loads
- Known or suspected overstressing
- Stability failure

5.2 Factors of Inspection and Testing

A certifying engineer determines how frequently inspection of components will take place, the extent of inspections, or need for dismantling, assessment, and non-destructive testing (NDT) or other testing. A mobile crane, telescoping or articulating boom truck or sign truck must meet the requirements of CSA Standard Z150:20, *Safety Code for Mobile Cranes*.

Factors that influence inspection and testing include:

- Applicable regulations, safety codes, and standards.
- Manufacturer's specifications and instructions.
- The certifying engineer's familiarity with the specific design and model of equipment, including known reliability problems or component problems.
- Previous inspection history and results.
- Age of the equipment and number of hours of use.
- Circumstances of use of the equipment (for example, heavy duty vs. light use), and any known incidents since the last certification.
- General condition of the equipment.
- The environment in which the equipment has been used (for example, a corrosive environment vs. a clean, dry shop or yard area).
- Available use, service, inspection, and maintenance of records.
- The certifying engineer's knowledge of the overall effectiveness of the service and maintenance program.

5.3 Log book

All cranes and hoists with a load rating of more than 5 t must have a **log book**. Operators prepare and keep the crane log book to provide the owner, supervisors, and other operators with a complete history of each machine.

The crane log book:

- Must be readily available to the designated crane operator at any given time.
- Is a standard part of the crane equipment and is transferred to a new owner at the time of sale.

The log book must contain the following information:

- All inspections, tests, maintenance, repairs, revision and modifications.
- The date on which work was performed and by whom.
- The total hours of service recorded on the machine up to that time.

The person performing the inspection and maintenance must sign the log book and communicate the results to their immediate supervisor. (Sample log book sheet is included in *Appendix E*.)

6. WORKING AT HEIGHTS

Anyone conducting maintenance or repair on cranes or hoists at heights greater than or equal to 3 meters must use fall protection.

Fall protection for heights less than 3 meters includes safety harnesses fitted with a lifeline securely attached to a structural member of the crane or building, or properly secured safety nets.

Additional requirements for working at heights include:

- Only consider using a crane as a work platform when conventional means of reaching an elevated worksite are hazardous or not possible.
- Workers shall not ride a moving bridge crane without approval.
- No one may board any bridge crane unless the main disconnect switch is locked and tagged open.
- No one can use bridge cranes without a permanent platform (catwalk) as work platform.
- Bridge catwalks must have a permanent ladder access.
- Personnel must ride seated on the floor of a permanent platform with approved safety handrails, wear safety harnesses attached to designated anchors, and be in clear view of the crane operator.
- Operators must lock and tag open the main (or power) disconnect switch on the bridge catwalk when the crane is parked.

OHS REGULATIONS

Protection Against Falling

119. (1) An employer shall ensure that workers use a fall protection system at a work site if

(a) a worker could fall 3 m or more; or

(b) there is a risk of injury if a worker falls less than 3 m.

7. CRANE OPERATIONS

Cranes are used to lift materials for building multi-story structures, bridges, docks and piers, processing and storage tankage, and more.

Most of the construction cranes used in the Northwest Territories and Nunavut are *mobile cranes,* mounted on a truck, wheel or crawler base that can move freely under the crane's own power. (See CAN/CSA Z150-20 for the safety code on mobile cranes, or CAN/CSA Z248-17 for tower cranes.)

Crane operations present significant risk and a potential for costly disaster on construction projects. Address the risk with thorough hazard assessment and preventative safe operating procedures.

Crane operation requires specialized training and sufficient experience to ensure safe operation. Workers involved with hoisting and rigging activities must have training in safety and in operating procedures.

Safe and appropriate use of a crane, hoist or rigging device, requires they must be designed, constructed, erected, disassembled, inspected, maintained and operated according to manufacturer requirements and applicable standards.

7.1 Crane Operator Guidelines

- Operators of mobile cranes, tower cranes, and boom trucks must have a valid operator's certificate.
- The crane operator is generally responsible for the safety of the operation as soon as the load lifts clears the ground.
- Whenever there is reasonable cause to believe the lift may be dangerous or unsafe, the operator must refuse to proceed until they have reported their concerns to the supervisor, hazards are controlled, and safe conditions established.

Over 50% of all mobile crane accidents are the result of mistakes made during the crane set up.

REMEMBER: Improvising or taking shortcuts in assembly and setup can be fatal.

IHSA.ca Work Safe for Life

- Follow the manufacturer's recommendations for the correct component and use precautions.
- When a crane operator works with a rigger or a rigging crew everyone working needs to know all aspects of the lift and they need to **agree on** how they will communicate. This includes the **signals used during the lift.**

7.2 Five Signal Guidelines

1. A designated signaler must be appointed when the operator of a hoist or crane does not have a clear, unobstructed view throughout the entire range of motion, including:
    - Clear view from pick-up point to setting down the load.
    - Clear view of the hook if there is no load.
2. Signallers must be competent and capable of directing the crane and load to ensure safe, efficient operation.
3. The employer must ensure the operator of the hoist and the designated signaller review the signals they will use **before a hoisting operation begins.**
4. The operator and the signaller must agree on which signals they will use.
5. The signal system used should match the activity and follow an approved standard. (*See Appendix F: Chart of Hand Signals*)

> - Signals should be visible and audible at all times.
> - The operator must not respond to any unclear signal.

7.3 Weather Considerations

Always assess weather conditions and their impacts on crane operations.

STORMS

- Do not operate a crane if you can hear thunder or see lighting.
- If lightning appears, immediately lower the boom as much as possible and clear workers from the area.
- Halt crane operations immediately if visibility at the job site is impaired due to rain, snow, fog, or for any other reason.
- If the job site has had a lot of rain, then before setting up the crane, check the ground for soft sections or other environmental issues that could cause unstable ground underneath or around the crane's operating area.

WIND

Wind is one of the most serious hazards an operator will encounter. Factors to consider when operating a crane in windy conditions include:

- Load charts do not generally take wind speeds into consideration.
- The crane manufacturer should be consulted if the operating manual doesn't have wind speed information.
- Operating procedures, maximum allowable wind speeds, special warnings and instructions need to be posted where clear and visible in the cab.
- Wind strength typically increases the higher an object is raised, and gusts of wind may be stronger at heights than they appear on the ground.

Before the lifting operation begins, discuss and decide:

- Maximum wind speed of the lifting operation in accordance with the type of crane and environment.
- Weather information and risk of rapid, wind speed changes based on topography and season.
- Use of wind speed indicators appropriate to the lift, such as wind speed alarm or controller, in cab weather radio, or other reliable outside sources.

COLD

Avoid sudden impacts and shocks when operating a crane in temperatures below zero degrees Celsius (0°C).

Impact on Workers:

Keep an eye out for effects of cold amongst workers. A crane operator suffering from the impacts of extreme cold may not be able to operate a crane safely. Cold can lead to a loss of sensitivity and dexterity in fingers, hands and toes. At low temperatures, even deep muscles can suffer reduced strength and flexibility.

> ”Mild cold impairs nerve function and lessens sensation and manual dexterity. The critical point in air temperature for manual dexterity is 12°c and for touch sensitivity 8°c.” *(Best Practice -Working Safely in Heat and Cold, p.52, Work Safe Alberta, 2009)*
>
> - See the NWT & NU Thermal Conditions Code of Practice for further information on working in cold conditions.

Impact on Machines:

Pay extra attention to how the hydraulic components are operating in cold, as the **equipment rating may change.** Consider the following guidelines:

If the temperature falls below -15°c →	lower the operating load by 25%
If the temperature falls below -30°c →	lower the operating load by 40%
If the temperature falls below -40°c →	Recommended to postpone work

> Equipment becomes prone to break down at extreme temperatures. For example; personal protective equipment such as safety harnesses are tested to comply with standards ranging down to -35°c only.
>
> *(CSA Standard, Z259.2.5-12 (4.2.3) January 2012, Fall Arresters and Vertical Lifelines)*

8. RIGGING OPERATIONS

Rigging Definition: a combination of rope, wire rope, cable, chain, sling, sheave, hook and associated fittings used in a winching or hoisting operation.

Rigging operations involve tools such as jacks, rollers, hoists, and winches. These devices all have different features, uses and requirements for safe operation and maintenance. Manufacturer's operating instructions must be available on site.

The Employer:

Under Part 14, Sections 233 to 245 of the *NWT & NU OHS Regulations (See Appendix G: Legislation)* the employer has a wide range of responsibilities, which includes, but is not limited to the following:

- Ensure an inspection maintenance system that includes carrying out and keeping record of inspections and maintenance.
- Ensure rigging is assembled, used, maintained and dismantled under the supervision of a competent worker and in accordance with the manufacturer's specifications.
- Ensure rigging safely perform their intended function by visually inspecting them at intervals and visually inspecting them before each use.
- Ensure loads are not imposed on rigging that exceed breaking strength as indicated in the regulations, and are in accordance with the manufacturer's specifications, or as recommended by a professional engineer.

The Rigger must:

- Be familiar with instructions on how to operate and maintain the equipment properly.
- Keep rigging equipment in safe condition.
- Understand the warning information, which has to be stamped or tagged to a rigging device.
- Follow the employer's inspection and maintenance system.

8.1 RIGGER SAFE OPERATING REQUIREMENTS

Workers involved with hoisting and rigging operations need to have training in both safety and operating procedures.

Training and experience enables the riggers to recognize hazards that can have impacts on a hoisting operation.

> "Most crane and rigging accidents can be prevented by field personnel following basic safe hoisting and rigging practices."
>
> *-Hoisting and Rigging Safety Manual, IHSA, Work Safe for Life*

Workers responsible for rigging need to have an awareness of the elements that can affect safe hoisting and be able to recognize factors that reduce capacity.

For a safe rigging operation, the rigger needs to know**:**

- Safe practices in rigging, lifting and landing loads.
- Proper inspection and use of slings and other rigging hardware.
- Appropriate judgment of distances, heights and clearances.
- Select tackle and hardware suitable to the load.
- Weight of the load and rigging hardware.
- Capacity of the hoisting device.
- Working load limit (WLL) of the hoisting rope, slings, and hardware.
- When the weights and capacities are known:
    - How to rig the load safely.
    - How to lift the load so that it is stable.
    - How to recognize damage to ropes.

Best practices includes having a copy of the Rigging Handbook (ISBN / UPC #: 978-1-8-8872418-9), or a comparable resource, at the job site.

9. HOISTING SAFETY

Elements that Affect Hoisting Safety

- **Working Load Limit (WLL)**: Know the working load limits of the equipment you are using. Never exceed these limits. Do not use equipment if you do not know the WLL.
- **Defective Components:** Examine all hardware, tackle, and slings before use. Destroy defective components. Defective equipment that has been thrown away could be picked up and used by someone who is unaware of the defects.

Working Load Limit (WLL) is the maximum force you should load a component.

The WLL incorporates a **Safety Factor (SF)**. The SF provides additional protection above the manufacturer's **Design Factor (DF).**

NEVER EXCEED THE WLL!

- **Questionable Equipment**: Do not use equipment suspected to be unsafe or unsuitable until you can have a competent person verify its suitability.
- **Hazardous Wind Conditions**: Do not carry out a hoisting or rigging operation when winds create hazards for workers, the public, or property. Swinging and rotating loads presents a danger to riggers and risk overloading the hoisting equipment.
- **Weather Conditions:** Caution is required when snow, fog, rain, darkness, or dust reduce visibility of riggers or hoist crew.
- **Hoist Line not Plumb**: The working load limits of hoisting equipment apply only to freely suspended loads on plumb hoist lines. If the hoist line is not plumb during load handling, side loads can destabilize the equipment and cause structural failure or tip-over.
- **Overhead Powerline**: An electrical path can be created when a part of the hoist, load line, or load comes into close proximity to an energized overhead powerline.
    - Overhead powerlines carry a high voltage.
    - Electricity flows through conductors like wires and power lines to create a complete circuit and the human body acts as conductor when it comes into conduct with this electrical current.
    - Electrocution is injury or death by electric shock caused by exposure to lethal amounts of electrical energy.

It takes very little electrical current to seriously injure or kill a worker. Direct contact with a circuit with less than one amp of electricity (less than 100-watt light bulb) can cause a worker to stop breathing. Direct contact with a live 15-amp circuit can result in death.

(CCOHS Newsletter, "Electrical hazards shouldn't come as a shock")

- Establish procedures and take specific measures to prevent contact whenever equipment operates within the minimum permitted distance from a live overhead powerline.
    - For example, if you have to operate a crane near a power line, contact the utility company to de-energize and ground the lines.

10. VEHICLE LIFT HOISTS

Untrained persons - including customers and other workers - should not be in the lift area during operation.

Be vigilant! With some vehicles, removing or installing components can cause a critical shift in the vehicle's center of gravity. Prevent instability by using additional high-reach stands and follow the manufacturer's recommendations.

10.1 GENERAL VEHICLE LIFT HOIST SAFETY

- Operate and maintain hoist safety according to manufacturer specifications.
- Only permit trained and authorized workers to operate the lift.
- Position the lift supports according to the vehicle manufacturer's recommendations.
- Record the daily inspections in a log book.
- Use original equipment parts for repairs.
- Do not override or block open controls.
- Do not lift beyond the manufacturer's rated capacity.
- Never raise the vehicle with anyone inside it.
- Keep the lift area free of debris and clear of materials before lowering.
- Ensure others in the area do not hit or run over lift arms, adapters, or axle supports.
- Before workers complete tasks under the vehicle, raise the lift high enough to engage the locking device.
- Watch for sudden movements, erratic operation, unusual noise, or evidence of filings or chips during use.

Always inspect the vehicle lift hoists before the first daily operation begins.

During the inspection, check for the following:

- Readability of the rated load capacity, safety tips and warning labels.
- Malfunction of restraints, locking devices, and controls.
- Deformation or wear and tear of hoses, drive chains, contact points, cables, screws, electrical wires, and structural components.
- Cracks, loose concrete or hydraulic or pneumatic leaks on the floor of the surrounding area.
- Correct oil levels in the hydraulic reservoirs.
- Any evidence of looseness or breakage with the floor anchor bolts.

APPENDIX A: MONTHLY AUTO LIFT INSPECTION CHECKLIST

Make: _____ **Model**: _____ **Serial #**_____

1) If there is more than one inspector, each person will initial the item they inspected.
2) Record comments, observations, and the date items were repaired or replaced.
3) If any item is not applicable to this auto lift, write "NA".

Inspected by: _____ **Date completed:** _____

Inspection / Service Item	OK	Needs Repair	Repaired/ Replaced	Comments/Date of Repair
15 Minute Leak Test (vehicle elevated)				
HYDRAULIC SYSTEM CAPACITY _____ lb				
Test Function:				
Oil Level & Inspect for Leaks:				
Valves:				
Hoses:				
CABLES, CHAINS, V-BELTS, SPINDLES				
Check for Excess Play:				
Amount of Wear:				
Cables Lubricated:				
Pulleys Greased:				
PULLEYS, PINS & SPROCKETS				
Condition:				
COLUMNS, POSTS				
Rust / Damage / Wear:				
Alignment:				
Rubbing Blocks or Guide Rollers:				
ROLLING BRIDGE, WHEEL FREE CAPACITY _____ lb				
Leak Test:				
Locks:				
Rollers or Slides:				
GENERAL				
Decking & Covers Secured:				
Anchor Bolts & Other Fasteners:				
Swing Arm Restraints, Telescoping Stops:				
Wheel Chocks:				
Runway Stops:				
Drive-up Ramps:				
Test Lift Locks:				
Inspect / Test Other Safety Features:				
ELECTRICAL				
Function of Switches:				
Limit Switch:				
Condition of Terminals:				
OTHER				

APPENDIX B: CRANES CHECKLIST

	Cranes Checklist	Yes	No
1	Does the crane appear to be in good physical condition?		
2	Are crane maintenance records available?		
3	Is maintenance conducted according to manufacturer's recommendations?		
4	Is the load rating visible on the crane?		
5	Does the designated operator have all required training? Is a record of training available?		
6	Is the crane being used to raise or lower workers?		
7	Is the load weight within the crane capacity?		
8	Are crane overload switches functioning?		
9	Has a designated signaler been provided? (Training Records)		
10	Is the crane equipped with an adequate warning device to indicate impending movement?		
11	Is a permanent load gauge required (9 T or Tower Crane) and provided?		
12	Is an overload switch required (Tower Crane) and provided?		
13	Is the crane locked or rendered inoperative when not in use?		
14	Does the crane have outriggers? Are they properly positioned?		
15	Are outriggers used according to manufacturer's specifications? (Is extra padding recommended?)		
16	Is there a procedure for assembling and dismantling the crane, when required?		
17	Is there a log book for each crane exceeding 5 T?		
18	Is the log book readily available to operators?		
19	Does a competent person conduct a crane inspection prior to each use?		
20	Does a competent person conduct crane inspections at intervals recommended by the manufacturer?		
21	Are there records of crane testing by an engineer every 2 yrs / 1,800 hrs?		

Operator Name:	**Operator Signature:**	**Date:**

APPENDIX C: RIGGING AND HOISTS CHECKLIST

	Rigging	Yes	No
1	Are rigging and all components used and maintained according to safe rigging practices?		
2	Are rigging and all components visually inspected prior to each use? (Written log available?)		
3	Are rigging and all components inspected at appropriate intervals?		
4	Are slings suitable for, and capable of, supporting the load being hoisted?		
5	Are slings arranged to prevent load from slipping?		
6	Are slings adequately protected from sharp edges?		
7	Are tag lines used when motion of the load could endanger a worker?		
	Hoists		
1	Is each overhead electric hoist equipped with a limit device to stop the hook travel at its highest and lowest point of safe travel?		
2	Will each hoist automatically stop and hold any load up to 125 percent of its rated load if its actuating force is removed?		
3	Is the rated load of each hoist legibly marked and visible to the operator?		
4	Are stops provided at the safe limits of travel for the hoists?		
5	Are the hoist controls plainly marked to indicate the direction of travel or motion?		
6	Is each cage-controlled hoist equipped with an effective warning device?		
7	Are close-fitting guards or other suitable devices installed on hoists to assure hoist ropes will be maintained in the sheave groves?		
8	Are all hoist chains or ropes of sufficient length to handle the full range of movement of the application while still maintaining two full wraps on the drum?		
9	Are nip points or contact points between hoist ropes and sheaves h are permanently located within 7 ft off the floor, ground or working platform, guarded?		
10	Are tag out procedures in place for any chains or rope slings that are kinked or twisted?		
11	Has the operator been instructed to avoid carrying loads over people?		
12	Are hoists and load bearing structures load tested and certified according to manufacturer's specifications?		
13	Are pelican hooks equipped with a spring loaded safety clip to prevent accidental load release?		

Operator Name:	**Operator Signature:**	**Date:**

APPENDIX D: OPERATOR DAILY LIFT INSPECTION CHECKLIST

Make/Model: _____

No.	Lift Checkpoint	OK	Fix	Comments
1	Accessibility and readability of the operating procedures			
2	Accessibility and readability of safety warning labels			
3	Accessibility and readability of the rated load capacity			
4	Lift controls, restraints and locking devices operate properly			
5	No deformation or excessive wear of any of the lift structural components			
6	No deformation or excessive wear of hoses, electrical wires, drive chains, cables or screws			
7	No damage or excessive wear on any of the lift contact points which engage the vehicle during lifting			
8	No evidence of hydraulic or pneumatic leaks			
9	No unusual noises, sudden movements, erratic operation or evidence of chips or filings during use			
10	No cracks or loose concrete around floor anchor bolts; evidence of loose or broken anchor bolts			
11	Notable concerns not listed above:			

Operator Name:	**Operator Signature:**	**Date:**

APPENDIX E: SAMPLE DAILY CRANE OPERATION LOG BOOK

Week Ending:
Saturday, _____, 20____ **Operator:**_____

Unit Number: _____ **Model Number**: _____

Hour Meter Reading: ____/____/____/____/____/____/____/

Items Checked	S	M	T	W	T	F	S	Operator Comments
Oil levels – engine, transmission, hydraulic								
Antifreeze (coolant), fan belts								
Headlights, taillights, clearance/marker lights								
Brake lights, revolving beacon light								
Backup alarm, horn, windshield wipers								
All glass – clear/good condition								
Swing brake, house lock								
Boom angle indicator								
Weight load indicator								
Anti-two block device								
All instrument gauges								
Air pressure, low air pressure warning device								
Air tanks drained								
Parking brake, foot brakes								
All controls for proper function								
Outrigger pads, latches, outrigger float pads								
Tire condition/pressure, wheel studs (or tracks)								
Hoists (load, whip, or boom)								

Items Checked	S	M	T	W	T	F	S	Operator Comments
Boom and attachments								
Hooks, load block, headache ball								
Fuel								
Fire extinguisher								
Operator manual								
Walk around inspection for: • Loose/missing bolts • Pins/cotter pins • Leaking fluids • Cracked/damaged hoses • Cracked welds • Dents/damage • Frayed/damaged wire rope • Protective guards/shields in place								

Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

APPENDIX F: CRANE HAND SIGNALS

Hand Signals – Page 1 of 2

Hoist

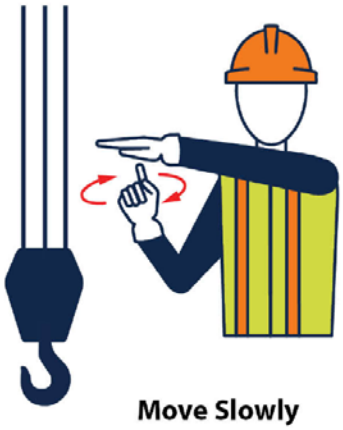
Lower

Use Main Hoist

Use Whipline

Raise Boom

Lower Boom

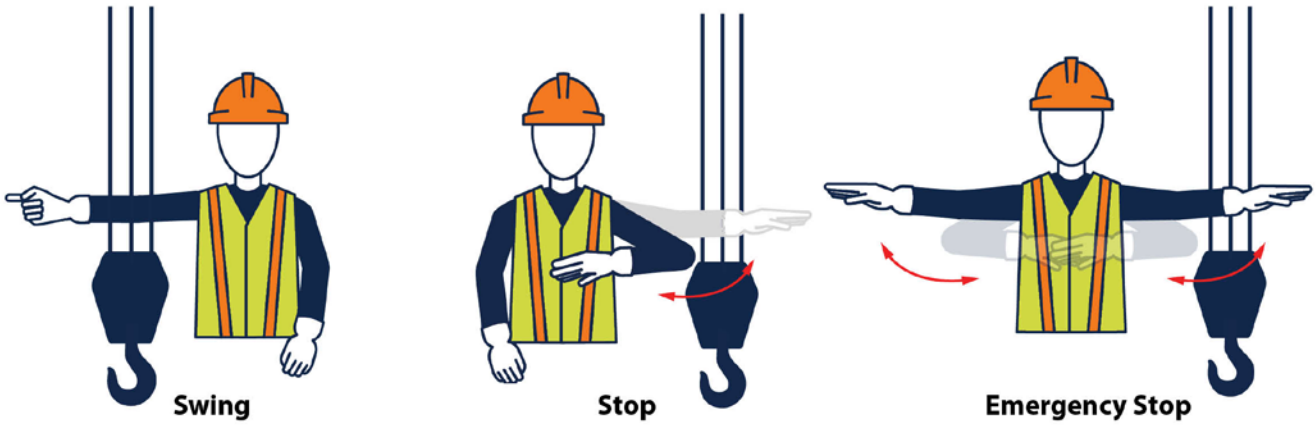


Move Slowly

Raise the Boom,
Lower the Load

Lower the Boom,
Raise the Load

Hand Signals – Page 2 of 2



APPENDIX G: LEGISLATION

Safety Act

Northwest Territories and Nunavut

HEALTH AND SAFETY

4. (1) Every employer shall

a) maintain his or her establishment in such a manner that the health and safety of persons in the establishment are not likely to be endangered;
b) take all reasonable precautions and adopt and carry out all reasonable techniques and procedures to ensure the health and safety of every person in his or her establishment; and
c) provide the first aid service requirements set out in the regulations pertaining to his or her class of establishment.

(2) If two or more employers have charge of an establishment, the principal contractor or, if there is no principal contractor, the owner of the establishment, shall coordinate the activities of the employers in the establishment to ensure the health and safety of persons in the establishment.

5. Every worker employed on or in connection with an establishment shall, in the course of his or her employment,

c) take all reasonable precautions to ensure his or her own safety and the safety of other persons in the establishment; and
d) as the circumstances require, use devices and articles of clothing or equipment that are intended for his or her protection and provided to the worker by his or her employer, or required pursuant to the regulations to be used or worn by the worker.

Occupational Health and Safety Regulations
Northwest Territories and Nunavut

Young Persons

14. (1) An employer shall ensure that an individual under 16 years of age is not required or permitted to work

f) as an operator of powered mobile equipment, a crane or a hoist

Part 13

Hoists, Cranes and Lifting Devices

205. In this Part,

"boom" means a structural member that is attached to a crane superstructure and used to support the upper end of hoisting tackle;

"crane" means equipment that

a) is designed to lift, lower and move loads horizontally, and
b) consists of a rotating superstructure, operating machinery and a boom;

"lifting device" means a device that is used to raise or lower material or an object, but does not include a crane or a hoist;

"load rating" means the maximum load that could be lifted or lowered safely at a series of stated configurations under a series of stated conditions;

"mobile crane" means a crane mounted on a truck, wheel or crawler base that can move freely under the crane's own power without being restricted to a predetermined path;

"rated load" means the maximum load that could be lifted or lowered safely using a particular configuration under the conditions existing at the time of the lifting or lowering operation;

"tower crane" means a crane that is mounted on a tower and that can rotate about the axis of the tower.

206. This Part applies to hoists, cranes and lifting devices at a work site other than hoists, cranes and lifting devices that are governed by the Electrical Protection Act.

207. (1) An employer shall ensure that every hoist, crane and lifting device, including rigging, used at a work site is designed, constructed, installed, maintained and operated to perform safely those tasks for which it is used.

(2) A supplier shall ensure that every hoist, crane and lifting device, including rigging, supplied for use at a work site is designed, constructed, installed, maintained and operated to perform safely those tasks for which it is intended to be used.

208. (1) An employer shall ensure that every hoist, crane and lifting device is constructed, inspected, tested, maintained and operated in accordance with an approved standard.

(2) A supplier shall ensure that every hoist, crane and lifting device is constructed, inspected, tested and maintained in accordance with an approved standard.

209. (1) An employer shall ensure that a hoist, crane or lifting device is provided with a durable and clearly legible indication of its load rating and that the indication is readily accessible to its operator at the control station.

(2) A supplier shall ensure that the indication of the load rating of a hoist, crane or lifting device contains

a) accurate load ratings for the hoist, crane or lifting device;

b) a warning, if applicable, that no allowance is made in the load ratings for such factors as the effects of swinging loads, tackle weight, wind, ice, degree of machine level, ground conditions, inflation of tires and operating speeds; and

c) restrictions, if applicable, on operating in low temperatures.

210. (1) In this section,

"competent operator" means a worker who

a) has successfully completed a training program that includes the elements set out in Schedule M for the crane that he or she will be required or permitted to operate; or

b) is completing the practical training required by Part II of Schedule M under the direct supervision of a competent operator or a qualified operator;

"designated operator" means a worker designated under paragraph (2)(a) to operate a hoist, crane or lifting device;

"qualified operator" means

a) a holder of a certificate of qualification in the crane and hoist operator trade issued under the Apprenticeship, Trade and Occupations Certification Act,

b) a worker who

i. has received training and has experience in the safe operation of a crane that, in the opinion of the Chief Safety Officer, is equivalent to or superior to the training and experience of an individual referred to in paragraph (a) or (c), or

ii. is a member of a class of workers whose training and experience in the safe operation of a crane is, in the opinion of the Chief Safety Officer, equivalent to or superior to the training and experience of an individual referred to in paragraph (a), or

c) an apprentice in the crane and hoist operator trade who is working under the direction of a individual described in paragraph (a) or (b).

(2) If a hoist, crane or lifting device is operated at a work site, an employer shall

a) signate a worker to operate the hoist, crane or lifting device;

b) ensure that the designated operator is trained in the operation of the hoist, crane or lifting device; and

c) ensure that only a worker who is a designated operator operates the hoist, crane or lifting device.

(3) Subject to subsection (4), an employer shall ensure that a designated operator is a qualified operator if the crane to be operated is

a) a tower crane;

b) an overhead travelling crane that has a load rating exceeding 50 t;

c) a crane that is used to raise or lower a worker on a personnel lifting unit suspended from a hoist line; or

d) a mobile crane that has a load rating exceeding 5 t.

(4) In circumstances other than those described in subsection (3), an employer shall ensure that

a) for a crane with a load rating exceeding 5 t, the designated operator is a competent operator; and

b) for a mobile or overhead travelling crane with a load rating not exceeding 5 t, the designated operator is a competent worker.

(5) A worker shall not operate a hoist, crane or lifting device unless he or she is a designated operator and has been trained in the operation of the hoist, crane or lifting device.

(6) A worker shall not operate a crane unless he or she

a) has written proof of training in the operation of the crane that he or she will be required or permitted to operate; and

b) keeps written proof of that training readily accessible while he or she operates the crane.

211. (1) Subject to subsection (2), an employer shall ensure that

a) a copy of the manufacturer's specifications for a hoist or crane is readily accessible to the operator of the hoist or crane; and

b) an operator of a hoist or crane is thoroughly trained in and implements the manufacturer's specifications.

(2) If a manufacturer's specifications for a hoist or crane cannot be obtained, an employer shall develop operating manual for the hoist or crane and ensure that

a) a copy of the manual is readily accessible to the operator; and

b) an operator of the hoist or crane is thoroughly trained in and implements the operating procedures set out in the manual.

212. (1) An employer shall not require or permit an operator of a hoist, crane or lifting device to raise a load that exceeds the rated load recommended by the manufacturer of the equipment or a professional engineer for the conditions in which the equipment is to be operated.

(2) An employer shall not require or permit an operator of a hoist, crane or lifting device to use it to raise or lower workers unless the load applied to the hoist, crane or lifting device is less than one-half of the rated load recommended under subsection (1).

(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.

213. (1) If a crane or hoist will be used to raise or lower workers, an employer shall

a) develop and implement work practices and procedures that will provide for the safe raising and lowering of the workers;
b) train the workers in those work practices and procedures;
c) ensure that hoisting equipment and personnel lifting units are inspected by a competent individual before use and daily when in use; and
d) ensure that the competent individual referred to in paragraph (c) records the details of the inspection in the log book referred to in section 221.

(2) An employer shall not require or permit an operator of a crane or hoist to use, and an operator of a crane or hoist shall not use, a crane or hoist to raise or lower workers unless

a) the personnel lifting unit meets the requirements of section 198;
b) the suspension members of the personnel lifting unit are securely attached to the crane, hoist line or hook by a shackle, weldless 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 referred to in paragraph (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 each use a full body harness attached to the personnel lifting unit.

214. (1) An employer shall provide the operator of a hoist, crane or lifting device with information necessary to enable the operator to determine readily and accurately the weight of a load that the operator is required or permitted to raise.

(2) An employer shall provide a permanent load gauge for a mobile crane that could be used for load ratings exceeding 9 t at the minimum operating radius.

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

(4) Subsection (2) does not apply to cranes that

a) use a device suspended by a wire rope to demolish a structure;
b) use a magnet to raise or lower a load; or
c) use a clam-style load carrier to move material.

(5) An employer shall not require or permit a worker to use a mobile crane referred to in subsection (2) unless the crane is equipped with a permanent load gauge that measures the weight of a load being hoisted and instantaneously indicates that weight to the operator.

(6) An employer shall ensure that

a) a worker who is required or permitted to use a crane equipped with a permanent load gauge is trained in the safe use and limitations of the permanent load gauge; and
b) the permanent load gauge is regularly inspected, maintained and calibrated in accordance with the manufacturer's specifications.

215. (1) An employer or supplier shall ensure that a tower crane is equipped with

a) both
   i. an overload limit switch that causes the hoist drum to stop when the load being hoisted exceeds the maximum rated load for a radius or boom angle

or when the overturning moment exceeds the rated load moment, and

ii. a moment overload switch that automatically restricts the radius within which the load can travel; or

b) a permanent load gauge.

(2) An employer shall not require or permit a worker to use a tower crane unless

a) the crane is equipped with the overload limit switch and moment overload switch required by paragraph (1)(a) or the permanent load gauge required by paragraph (1)(b);
b) the worker is trained in the safe use and limitations of the overload limit switch and the moment overload switch or the permanent load gauge; and
c) the overload limit switch and moment overload switch or the permanent load gauge are regularly inspected, maintained and calibrated in accordance with the manufacturer's specifications.

216. (1) An employer shall make use of a designated signaller if the operator of a hoist or crane does not have a clear, unobstructed view of any of the following throughout the whole range of movement of the load or hook:

a) the pick-up point;
b) the setting point and the load;
c) the hook, if there is no load.

(2) Before a hoisting operation begins, an employer shall ensure that the operator of the hoist or crane reviews with the designated signaller the signals to be used.

(3) If a hand signal is to be used in connection with a hoist or crane, an employer shall ensure that the signal used is

a) appropriate for the activity to be carried out; and
b) set out in an approved standard.

(4) An operator of a hoist or crane and a designated signaller shall use the signal set out in the standard referred to in paragraph (3)(b) that is appropriate for the activity to be carried out.

217. (1) In this section,

"anti two block warning device" means a device that warns a worker that continued upward movement of a load line could cause a load block to strike the upper sheaves;

"jib" means an extension to a boom that is attached to the boom tip to provide additional boom length.

(2) An employer or supplier shall ensure that a crane is equipped will effective warning device that

a) can be readily activated by the operator; and
b) is adequate to warn workers of an impending movement of the crane.

(3) An employer or supplier shall ensure that a crane that has a boom is equipped with

a) positive boom stops to prevent inadvertent movement of the boom;
b) a boom stop limit device to prevent the boom from being drawn back beyond a predetermined safe boom angle specified by the manufacturer;
c) a jib stop device to prevent the jib from being drawn back beyond the safe boom angle specified by the manufacturer, if a jib is attached to the boom; and
d) a boom angle indicator that is clearly visible to the operator while seated at the control station.

(4) An employer or supplier shall ensure that a crane is equipped with an anti two block warning device if

a) the crane will be used to hoist workers on a personnel lifting unit; or

b) the crane is a hydraulic crane with a rated load exceeding 9 t.

(5) An employer or supplier shall ensure that a hoist or crane that operates on rails, tracks or other guides is fitted with

a) a positive stop or limiting device installed on the hoist or crane or on the rails, tracks or other guides to prevent the hoist or crane from over-running safe limits or contacting other equipment that is on the same rail, track or other guide;
b) sweep guards installed to prevent materials on the rail, track or other guide from causing dislodgement of the hoist or crane; and
c) stops to prevent the crane or hoist from dropping more than 2.5 cm if an axle breaks.

(6) If a worker leaves a crane or hoist unattended or parked, an employer shall ensure that

a) the crane or hoist is stored in a manner that does not endanger a worker or other individual;
b) the operating machinery is locked or rendered inoperative;
c) the rigging and boom angle are secured; and
d) if it is a mobile crane, that it is stored on level ground with the wheels locked or chocked.

218. If a hoist or crane is designed to be operated with outriggers or other stabilizing devices, an employer shall ensure that

a) the outriggers or other stabilizing devices
   i. are used according to the manufacturer's specifications,
   ii. are set on a solid footing or pad, and
   iii. have their controls, if any, readily accessible to the operator and in a suitable position for safe operation;
b) the area around the outriggers or other stabilizing devices is kept free of obstruction;
c) there is a minimum clearance of not less than 600 mm between moving parts of the crane and obstacles near its base; and
d) if there is a risk to workers of being trapped or crushed by a moving part of the crane when the crane swings, the area around the base of the crane is barricaded to restrict the entry of workers.

219. If an operator's cab is attached to the boom or jib of a tower crane, the employer or supplier shall ensure that the cab is designed, positioned and attached in accordance with the manufacturer's specifications for the crane or the recommendations of a professional engineer.

220. (1) Subject to subsection (4), an employer shall develop a written procedure for safely erecting and dismantling a hoist or crane.

(2) The written procedure required by subsection (1) must include

a) the safe blocking of masts, booms and jibs; and
b) the number and qualifications of workers required to implement the procedure.

(3) An employer shall ensure that the erecting and dismantling of a hoist or crane is carried out in accordance with the written procedure required by this section.

(4) An employer may use, as a written procedure, the manufacturer's specifications for erecting or dismantling a hoist or crane if the specifications meet the requirements of a written procedure under subsections (1) and (2).

221. (1) An employer shall

a) provide a log book for each hoist and crane with a rated load exceeding 5 t;
b) ensure that the log book is kept readily available;
c) provide a copy of the log book to the operator on request;
d) ensure that the hours of service of each hoist or crane and details of inspections, maintenance or calibrations required by this Part are recorded in the log book;
e) ensure that each entry in the log book is signed by the individual who performs the inspection, maintenance or calibration; and
f) review and sign the log book at regular intervals.

(2) If a supplier of a hoist or crane provides a log book, an employer shall ensure that

a) information and signatures required are recorded in the supplier's log book instead of the employer's log book; and
b) the supplier's log book is kept with the hoist or crane.

222. (1) An employer or supplier shall ensure that a hoist, crane or lifting device is inspected by a competent individual to determine whether the hoist, crane or lifting device is in safe working condition

a) at the start of each work shift, before the hoist, crane or lifting device is used; and
b) at regular intervals as recommended by the manufacturer's specifications.

(2) If a defect or unsafe condition that could endanger a worker is found in a hoist, crane, lifting device or rigging, an employer or supplier shall

a) take immediate steps to protect the health and safety of a worker who could be endangered until the defect is repaired or the condition is corrected; and
b) as soon as is reasonably possible, repair the defect or correct the condition.

(3) An employer or supplier shall ensure that a mobile crane is subjected to a thorough inspection, including non-destructive testing, under the supervision of a professional engineer, not less than once every two years or at 1,800 hours of operation, whichever occurs first.

(4) An employer or supplier shall ensure that a tower crane is subjected to a thorough inspection, including non-destructive testing, under the supervision of a professional engineer,

a) before erection at each site; and
b) at subsequent intervals of one year or 2,000 operating hours, whichever occurs first.

(5) A worker shall not operate a crane unless a copy of the results of the testing or inspection required by subsection (3) or (4) is made readily available to the worker at the work site.

223. (1) If an inspection of a hoist, crane or lifting device reveals a condition that might render the hoist, crane or lifting device unsafe or incapable of raising a rated load in accordance with section 212, an employer or supplier shall not require or permit the use of the hoist, crane or lifting device until the condition is remedied.

(2) An employer or supplier shall ensure that a structural repair or modification to a component of a hoist or crane is performed only under the direction and control of a professional engineer.

(3) Before a hoist or crane is used after a structural repair or modification, an employer or supplier shall ensure that

a) the hoist or crane is tested under the direction of a professional engineer; and
b) a professional engineer has determined the rated load of the repaired or modified hoist or crane and has certified the hoist or crane.

(4) If the rated load of a hoist or crane after repair or modification differs from the rated load before repair or modification, an employer or supplier shall ensure that a new indication of load rating is provided in accordance with section 209.

224. On a construction site, an employer shall ensure that material is not hoisted vertically by a rope driven by friction between the rope and a powered surge wheel or drum unless the hoist is equipped with

a) a safety device that will prevent a free fall of the load; and
b) an emergency stop device.

225. (1) In this section, "material hoist" means a hoist that

a) is designed to raise and lower equipment or material but not workers, and
b) has a load-carrying unit that moves within fixed guides. (monte-matériaux)

(2) If a material hoist is in use, an employer shall ensure that

a) workers are not required or permitted to ride on the hoist; and
b) loads do not project beyond the edges of the load-carrying unit.

(3) If the controls of a material hoist are not remote from the hoist, an employer shall ensure that an adequate overhead barrier is provided to protect the operator.

(4) An employer shall ensure that

a) the braking systems on a material hoist are capable of stopping 150% of the rated load referred to in subsection 212(1) at the maximum speed;
b) the area around the base of a material hoist is fenced or otherwise barricaded to prevent the entry of workers, and that workers are not required or permitted to enter that area other than when the load-carrying unit is at the lowest level; and
c) a landing gate is installed
    i. on each landing served by a material hoist, and
    ii. between 600 mm and 900 mm from the edge of the landing.

(5) An operator of a material hoist shall not

a) leave the controls while a load-carrying unit is in the raised position;
b) operate the hoist while a landing gate is open; or
c) move a load-carrying unit until the operator is informed by signal that the load-carrying unit can be moved safely.

(6) An employer shall ensure that

a) an operator of a material hoist and a designated signaller at a landing where loading or unloading is carried on, are able to maintain visual or audible communication with each other during loading or unloading; and
b) a material hoist that is designed to exceed 20 m in height, is equipped with a signal system that will
    i. allow voice communication between a worker at a landing and an operator, and
    ii. inform an operator of the landing from which a signal originates.

(7) An employer shall ensure that a power driven material hoist is equipped with a safety device that will stop and hold a load-carrying unit if a hoist rope or braking system fails.

226. (1) In this section, "tower hoist" means a hoist with a tower that forms an integral part of the supporting structure and a load-carrying unit that travels between fixed guides. (tour monte-charge)

(2) If a tower hoist is used, an employer shall ensure that

a) the pulley block is securely anchored and the ropes from the pulley to the hoisting engine are enclosed, and

b) at each landing, the hoist is equipped with landing gates and devices that will prevent

i. movement of the load-carrying unit when a landing gate is open, and
ii. opening of a landing gate when the load-carrying unit is not standing at that landing.

(3) If a tower hoist is not erected inside a structure, an employer shall ensure that the hoist

a) is enclosed on all sides, other than the landing side, by solid walls or equally effective fencing from ground level to a height of not less than 2 m; and
b) is adequately braced or guyed to prevent sway or movement.

(4) If a tower hoist is erected inside a structure, an employer shall ensure that

a) the hoist is enclosed on all sides, other than the landing side, at the ground level and at each floor level by solid walls or equally effective fencing from ground or floor level to a height of not less than 2 m;
b) each point of access to the hoist is conspicuously marked by a warning sign; and
c) the hoist structure is adequately supported at vertical intervals not exceeding 6 m.

227. (1) If a roofer's hoist is used, an employer shall ensure that

a) counterweights on the hoist

i. are designed as an integral part of the hoist,
ii. remain securely attached to the hoist when hoisting is in progress, and
iii. are designed to exert an opposing moment that is equal to not less than four times the moment exerted by the maximum rated load; and

b) a part or section of the hoist that could become disconnected is equipped with suitable locking devices.

(2) An employer shall not require or permit a worker to use roofing material as a counterweight on a roofer's hoist.

(3) An employer shall ensure that a roofer's hoist is used only to perform vertical lifts.

(4) An employer shall ensure that workers are not required or permitted to a wooden gallows frame roofer's hoist.

228. (1) In this section, "lock" means to fix the controls of a hoist in one position by mechanical means. (verrouiller)

(2) An employer shall ensure that a pneumatic or hydraulic vehicle hoist is equipped with clearly marked controls that raise or lower the hoist only when a worker is applying pressure to the controls.

(3) An employer shall ensure that a worker is not required or permitted

a) during raising or lowering of the hoist, to lock the controls referred to in subsection (2); or
b) to work or be under a raised vehicle or trailer unless the vehicle or trailer is supported by

i. a vehicle hoist that is designed to safely support the weight of the vehicle or trailer, or
ii. substantial stands or blocks and, if necessary, wheel chocks.

(4) For the purposes of subparagraph (3)(b)(ii), jacks alone are not sufficient.

(5) An employer shall ensure that pneumatic or hydraulic vehicle hoists are assembled, installed, operated and maintained according to the manufacturer's specifications.

229. (1) An employer shall ensure that a hand operated hoist is designed, constructed, installed, operated and maintained in accordance with an approved standard.

(2) An employer or supplier shall ensure that a hand operated hoist is equipped with a spring-actuated or weighted ratchet and pawl, load brake or other mechanism that will stop and hold the load at a height desired by the operator.

(3) An employer shall not require or permit a worker to work under a load raised by a hand operated hoist unless the load is supported with adequate stands or blocks.

230. (1) An employer shall inspect manually operated hoisting or winching equipment thoroughly at appropriate intervals to ensure that the manually operated hoisting or winching equipment is capable of safe operation.

(2) Before a worker operates a winch on a vehicle, he or she shall ensure that brakes are applied or other effective means are taken to prevent movement of the vehicle.

(3) A worker who operates a vehicle equipped with a winch while the winch is in use shall not move the vehicle until the winch operator has given a signal that the vehicle can be moved safely.

(4) An employer shall not require or permit a worker to cross over or under a winch cable between a winch and the load or to go underneath the load while a winch is in use.

231. An employer shall ensure that

a) an A-frame or gin pole is not inclined more than 45° from the vertical;
b) an A-frame or gin pole is restrained from uncontrolled lateral and vertical movement; and
c) the sheave and the cable keeper of an A-frame or gin pole are attached securely enough to withstand a load to which the assembly could be subjected.

232. (1) An employer shall ensure that

a) piledriving equipment is operated, inspected and maintained according to the manufacturer's specifications; and
b) structural repairs or modifications to piledriving equipment are made under the direction of a professional engineer and certified by the professional engineer before the equipment is put in service.

(2) If piledriving equipment is used, an employer shall ensure that a brake band or clutch that is contaminated by oil or grease is dismantled and cleaned or replaced before further use.

(3) An employer shall ensure that

a) before a pile is placed in position for driving, the pile head is cut square and, in the case of a timber pile, cleaned free of debris, bark and splintered wood; and
b) workers are adequately protected from injury that could be caused by the failure of a pile being driven.

(4) An employer shall not require or permit a worker who works with piledriving equipment

a) to remain or ride on a load being moved;
b) to work, stand or pass under a suspended load; or
c) to be on the superstructure of the equipment or within range of a falling pile unless the worker is directly involved in the operation of hoisting piles.

(5) If a worker uses piledriving equipment, an employer shall ensure that

a) the pile hammer is securely chocked while the hammer is suspended and the equipment is not operating; and
b) piles are not hoisted in the leads while a worker who is not directly involved in the operation is on the superstructure of the equipment or within range of a falling pile.

(6) If piledriving equipment is fitted with pressure hammers, an employer or supplier shall ensure that the hoses are equipped with safety chains or safety ropes on the pressure side

of the hose connections.

(7) An employer shall ensure that

a) crane booms used with vibratory hammers or vibratory pile extractors are inspected monthly by a competent individual for structural defects; and
b) structural defects found during an inspection are repaired under the direction of a professional engineer and certified by the professional engineer before the booms are put back into service.

(8) An operator of piledriving equipment shall ensure that

a) the pile hammer is securely chocked while the hammer is suspended and the equipment is not operating; and
b) piles are not hoisted in the leads while a worker who is not directly involved in the operation is on the superstructure of the equipment or within range of a falling pile.

PART 14
Rigging

233. In this Part,

"pendant" means a fixed-length rope that forms part of a boom-suspension system;

"rigging" means a combination of rope, wire rope, cable, chain, sling, sheave, hook and associated fittings used in a winching or hoisting operation.

234. An employer shall ensure that

a) rigging is assembled, used, maintained and dismantled under the supervision of a competent worker and in accordance with the manufacturer's specifications; and
b) a worker who is required or permitted to assemble, use, maintain or dismantle rigging is trained in safe rigging practices.

235. An employer shall ensure that rigging and components of rigging safely perform their intended function by

a) inspecting them thoroughly at appropriate intervals; and
b) visually inspecting them before each use.

236. (1) An employer shall ensure that loads are not imposed on rigging that exceed

a) 10% of the breaking strength of the weakest part of the rigging, in the case of rigging used to raise or lower workers; and
b) 20% of the breaking strength of the weakest part of the rigging, in the case of any rigging other than that described in paragraph (a).

(2) Subject to subsection (3), an employer or supplier shall ensure that the maximum load that could be winched or hoisted by rigging, as determined in accordance with the manufacturer's specifications or as recommended by a professional engineer, is conspicuously marked on the rigging.

(3) If it is not reasonably possible to conspicuously mark the maximum load on the rigging, an employer shall ensure that information about the maximum load that could be winched or hoisted by the rigging is made readily available to the workers at the work site.

237. (1) An employer shall ensure that a sling used to hoist a load and the sling's fittings and attachments are

a) suitable for the intended use;
b) suitable for, and capable of, supporting the load being hoisted;
c) arranged to prevent the load or a part of the load from slipping or falling;
d) arranged to ensure that the load is equally divided among the slings, if more than one sling is used;

e) capable of supporting

i. not less than 10 times the load to which the sling, fittings and attachments could be subjected, if they are used to support a worker, and

ii. not less than five times the maximum load to which the sling, fittings and attachments could be subjected, in any case other than to support a worker; and

f) guarded to prevent damage to the sling, if the sling could be used over a sharp edge.

(2) An employer or supplier shall ensure that a sling is

a) clearly labelled to indicate the sling's maximum load, or the sling's maximum load is made readily available to workers at the work site; and

b) not used if the sling has been or could be damaged.

238. (1) An employer shall ensure that a shackle is not subjected to a load exceeding the maximum load indicated on the shackle.

(2) An employer shall ensure that

a) shackle pins are installed to prevent accidental withdrawal; and

b) a bolt is never used in place of a properly fitted shackle pin.

239. (1) An employer shall ensure that

a) the diameter of a sheave, spool or drum for wire rope is not less than the diameter specified by the manufacturer of the rope, and the rope is the correct size for the sheave, spool or drum over which the rope passes;

b) the grooving of a sheave is the correct size for the diameter of rope; and

c) a block or sheave is constructed or installed so that the rope cannot leave the block or sheave groove.

(2) An employer shall ensure that

a) rope fastened to a winding drum is fastened securely;

b) the number of full wraps of rope that remain on a winding drum corresponds to the manufacturer's specifications; and

c) if there are no manufacturer's specifications, not less than five full wraps of rope remain on a winding drum.

240. (1) An employer shall ensure that

a) a knot or wire rope clip is not used as a stopper on a rope or rope end that passes through a winding drum; and

b) a knot is not used to connect rigging hardware to a wire rope.

(2) An employer shall ensure that wire rope clips are

a) made of drop-forged steel;

b) installed according to the manufacturer's specifications; and

c) inspected at frequent intervals to ensure the nuts are tight.

(3) If U-bolt clips are used to fasten wire rope, an employer shall ensure that

a) the U-bolt is installed so that the U section bears on the short or dead end of the rope and the saddle bears on the long or live end of the rope;

b) the nuts are correctly torqued; and

c) the number of clips and the amount of rope turn-back conform with the manufacturer's specifications.

(4) If double saddle or fist clips are used to fasten wire rope, an employer shall ensure that the clips are installed in numbers and with the amount of rope turn-back in accordance with the manufacturer's specifications.

(5) If double base clips are used to fasten wire rope, an employer shall ensure that the clips are not less than six rope diameters in length.

241. (1) An employer shall ensure that an eye loop used in a sling

a) is formed from

i. a Flemish eye splice secured by a pressed steel ferrule; or

ii. a steel wire loop secured by a cold-formed aluminum alloy ferrule; and

b) is readily identifiable as being formed in accordance with paragraph (a).

(2) Unless the manufacturer of a rope specifies otherwise, an employer shall ensure that a suitable and properly sized thimble is inserted in an eye loop to increase the strength of the eye and decrease wear on the rope.

242. (1) If the dislodgment of a hook could injure a worker, an employer shall ensure that the hook is secured by a safety latch, mousing, shackle or other effective means, unless

a) skeleton steel is being hoisted or a similar operation is being performed while a sorting or grab hook is being used;

b) power poles or telephone poles are being hoisted into place or removed using an approved S-hook;

c) the design of the hook and the work practices used prevent dislodgement of the hook; or

d) the health and safety of a worker disconnecting the hook would be placed at risk.

(2) An employer shall not require or permit a worker to use a hook if

a) the throat opening of the hook has been increased or the tip has been bent more than 10° out of plane from the hook body; or

b) a dimension of the hook has been reduced by more than 10%.

(3) An employer shall not require or permit a worker to side load, back load or tip load a hook unless the hook has been specifically designed for that purpose.

(4) An employer or supplier shall ensure that

a) a hook is clearly labelled with the maximum load of the hook in a location where workers using the hook can easily see the rating; or

b) the hook's maximum load is made readily available to workers.

(5) An employer shall not require or permit a worker to allow a load to bear against a safety latch, mousing or shackle.

243. If a wedge socket is used to anchor a wire rope, an employer shall ensure that

a) the wedge socket is installed according to an approved method;

b) the dead end of the wire rope extends not less than 15 cm beyond the wedge socket; and

c) the wire rope is fitted with a wire rope clip to prevent accidental release or loosening of the wedge.

244. (1) An employer shall ensure that wire rope used in rigging is

a) the type, size, grade and construction recommended by the manufacturer's specifications for the hoisting equipment or is rope of an equivalent type, size, grade and construction;

b) compatible with the sheaves and the drum of the hoisting equipment;

c) lubricated to prevent corrosion and wear;

d) not spliced or knotted; and

e) fitted with end connections that

i. conform to the manufacturer's specifications concerning number, size and installation method, and

ii. are securely fastened to the wire rope.

(2) An employer shall ensure that wire rope used in rigging

a) subject to subsection (3), does not contain

i. six or more randomly-distributed wires that are broken in one rope lay, or

ii. three or more wires that are broken in one strand in a rope lay;

b) is not worn by more than one-third of the original diameter of the wire rope's outside individual wires; or

c) shows no indications of

i. kinking, birdcaging, corrosion or other damage resulting in distortion of the rope structure, or

ii. damage that could result in rope failure.

(3) An employer shall ensure that wire rope that is static or that is used for pendants does not have

a) three or more broken wires in one lay or in a section between end connectors; or

b) one or more broken wires at an end connector.

(4) An employer shall ensure that rotation-resistant wire rope is not used

a) as a cable in boom hoist reeving and pendants; or

b) if an inner wire or strand of the wire rope is damaged or broken.

(5) An employer shall ensure that a load is not imposed on a wire rope that exceeds the maximum load recommended by the manufacturer's specifications for the wire rope.

245. If a worker could be endangered by the motion of a load during winching or hoisting, an employer shall ensure that

a) one or more taglines are used to control the motion of the load;

b) the taglines are of sufficient length to protect the workers from an overhead hazard;

c) the taglines are not removed from the load until the load is securely landed; and

d) only workers directly engaged in the winching or hoisting operation are required or permitted to be in the area where the load is being winched or hoisted.

SCHEDULE M (*Subsection 210(1)*)

Minimum Training Requirements for Competent Operator of a Crane

1. Course Content:

(1) *Occupational Health and Safety Regulations*, Related to Cranes:
(a) duties of employers and operators;
(b) protection of workers;
(c) approved standards for cranes;
(d) operation of cranes;
(e) maintenance of cranes;
(f) signalling.

(2) Types of Cranes:
(a) terminology;
(b) types of cranes;

(c) specific design of crane to be operated;
(d) basic geometry of cranes, including effect of configuration changes and operating in different quadrants.

(3) Site Evaluation:
(a) check route of travel, clearances and ground conditions, including the presence of structures, power lines or other equipment that could constitute a hazard;
(b) check site of operation, including the nature of ground, gradients, stabilizers, tire pressure and blocking under outriggers;
(c) identify potentially dangerous situations and the appropriate response.

(4) Crane Controls:
(a) identify and use controls;
(b) pre-start check;
(c) start-up;
(d) shut-down;
(e) post-operating check;
(f) perform operating adjustments.

(5) Operation of Crane:
(a) movement to location;
(b) set-up; extend stabilizers and outriggers;
(c) change configuration; insert boom sections; extensions; jibs; counterweights;
(d) check for safety of other persons before movement;
(e) safety precautions while crane is unattended, in storage or in transit.

(6) Load Estimation:
(a) load gauge incorporated in the crane;
(b) calculation of load from material density and volume;
(c) incorporate weight of attachments, hook, block and headache ball.

(7) Establish Capability of Crane:
(a) implications of moments, leverage and mechanical advantage on capability;
(b) use of load charts to determine capability;
(c) effect of boom length, angle and load radius;
(d) effect of configuration changes, boom extension and jib;
(e) centre of gravity;
(f) abnormal loading; wind velocity;
(g) multi-crane hoists.

(8) Rigging:
(a) inspection of ropes and rigging equipment;
(b) reeving: sheaves; spools; drums; wire ropes;
(c) rigging loads: hooks; safety catches; shackles; end fittings and connections;
(d) rigging slings: configurations; angles; safe working loads;
(e) safety factors for loads and workers.

(9) Signalling:
(a) designated signaller: position; visibility; number;
(b) methods of signalling: hand; radio;
(c) standard hand signals.

(10) Maintenance of Crane:
(a) maintenance schedule; planned preventative maintenance;
(b) inspection and repair procedures;
(c) blocking and the safe position of parts during maintenance;
(d) wire rope inspection and maintenance.

(11) Log Books:
(a) record inspections, maintenance, calibrations and work activities;
(b) hours of service;
(c) signed by employer and person performing inspection, maintenance and calibration.

2. Course Duration:

(1) Overhead travelling crane or hoist: 40 hours, classroom and practical.

(2) Tower or mobile crane: 100 hours, classroom and practical.

(3) Crane used to raise or lower a worker in a personnel-lifting unit on a hoist line: 20 hours of classroom and 200 hours of practical experience operating the crane in addition to the requirements set out in subsections (1) and (2).

R-013-2020,s.424.

HOISTS, CRANES, LIFTING DEVICES AND RIGGING

Workers' Safety and Compensation Commission

Northwest Territories and Nunavut

WSCC Emergency Reporting
24-hour Incident Reporting Line

1 800 661-0792

If you would like this Code of Practice in another language, please contact us.