WorkSafe
Travail sécuritaire NB

Guide to Logging and Silviculture

General Regulation 91-191 Review

April 2022

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Logging and Silviculture Operations Section XXI

Working in the woods presents many potential hazards. This guide was developed to help employers and employees understand the *General Regulation 91-191 (Reg. 91-191)* Section 21 Logging and Silviculture Operations including the regulation changes that were implemented April 1, 2022. This guide is for direction, and it is always recommended that employers and employees refer to the regulation or contact WorkSafeNB for more information or clarification.

- For quick reference, all the changes in the guide are in "**dark orange font**". Also, all font in "*italics*" is taken directly from *Reg. 91-191*.
- Click on the titles and subtitles in the table of contents to skip directly to that section. You can enable the bookmark function to the left of the PDF which will also display quick access links.
- There are links throughout the guide in "**blue**" that will take you to other resources including New Brunswick's *Occupational Health and Safety (OHS) Act*, Canadian Centre for Occupational Health and Safety (CCOHS) resources, WorkSafeNB resources, etc.

INSIDE

Photo courtesy of Steph Rutherford

Working in the Woods – General

"Logging operation" means work connected with the harvesting of trees and includes the transportation, felling, delimbing, cutting to length, processing on site and extraction of trees.

Silviculture, as defined in the *Reg. 91-191*, *"means the development and care of trees and includes site preparation, planting, thinning and harvesting"*.

Let's review what the new definition of a logging operation is, in more detail.

"Logging operation" means work connected with the harvesting of trees and includes the transportation, felling, delimbing, cutting to length, processing on site and extraction of trees.

The term *felling* means any part of an operation that severs a tree from its stump and brings it to a horizontal position on the ground or a bed. Cutting the tree at ground level can be quite dangerous. It requires precision and extra attention to safety. The felling of trees can be done by mechanized harvesters or by chainsaws. *Delimbing* is defined as removing the limbs from a felled tree. *Cutting to length*, also known as bucking, is cutting the trunk into appropriate lengths. The *extraction of trees* describes the process of removing timber from the point at which it is felled, to the woods roads to get them ready for loading on a truck for transportation. This can be done by a forwarder, skidder, or cable systems using blocks, winches, and cables. The word "extraction" has replaced the word "transportation" in the previous definition as the use of the word transportation in the previous definition of a logging operation was incorrect.

Competency of Employees

Under new legislation, employers must ensure employees are competent. As a result of multiple fatalities and many non-compliance issues on felling techniques, the provision has been added to require training to a standard acceptable by WorkSafeNB.

With respect to the tools, equipment, machines, devices, and materials that an employee is to use, an employer shall ensure that: each employee is competent to use them [345 (a)] and each employee has received training that is acceptable to the Commission. [345 (b)].

How does an employer ensure the employee is competent? The word "competent" is defined as:

- Qualified, because of such factors as knowledge, training and experience, to do assigned work in a manner that will ensure the health and safety of persons.
- Knowledgeable about the provisions of the Act and the regulations that apply to the assigned work.
- Knowledgeable about potential or actual danger to health or safety connected with the assigned work.

To ensure an employee is "competent", the employer must ensure employees are adequately trained in relation to the tools, equipment, machines, devices, and materials they are required to use in the course of work. To ensure competency requirements are met, the employer must establish a minimum for training to ensure employees (and their supervisors) have the required knowledge to understand the hazards/risks, the legislated requirements, and be able to do their job safely (or be able to supervise competently).

To help with these requirements, here's what a "*Standard acceptable to the Commission* *[345 (b)]* could look like:

For a chainsaw operator to meet the competency requirements, an operator should be:

- **Qualified because of such factors as knowledge:**
  - Is the chainsaw operator aware of his employer's procedures related to the work they are performing?
  - Is the employee aware of the legislated obligations on the safe use of chainsaws?
  - Is the employee aware of legislated felling procedures? Delimbing?
  - Is the employee aware of the PPE required for the task?
  - Is the employee aware who the first aid provider is, where the first aid kit is, and how to get help?
  - Is the employee aware of the manufacturer recommendations (owner's manual)?

Photo courtesy of Irving Woodlands

- **Qualified because of such factors as training[1]:**
  - Completion of a chainsaw operators course which includes provisions for sections of *Reg. 91-191* (Could be a chainsaw course from a provider or an in-house training course which meets all the components required to ensure competency).
  - Completing field assessments by the employer/trainer to assess skill level.
  - The chainsaw operator's employer is responsible to assess what training is required. Tip: if the employee is a new chainsaw operator (or an experienced one that does not demonstrate appropriate techniques), a recognized course will be required.
  - Although it is best practice to have one, a supervisor responsible for supervising and directing a chainsaw operation may not require a formal chainsaw course. Supervisors must have enough knowledge to be able to adequately supervise and direct the chainsaw operation (correcting safety issues, for example).

- **Qualified because of such factors as experience:**
  - Will require documented experience of the operator which the employer can supplement with field assessments to determine competency.

[1] The training and experience factors are connected. An experienced employee who can demonstrate the adequate techniques will require little or no formal training.

- **Knowledgeable about *OHS Act* provisions and the regulations that apply to the assigned work:**
  - The competent operator is required to have knowledge of sections 12 (duties of employee) and 19 to 23 (right to refuse dangerous work) of *OHS Act*.
  - The competent operator is required to have knowledge of *Reg. 91-191*, Part XXI - Logging & Silviculture Operations as it relates to their work. This is required to be part of any recognized training program and could be included in employer procedures and employee handbooks.

- **Knowledgeable about potential or actual danger to health or safety connected with the assigned work in a forestry setting such as:**
  - Woodlands and highway driving safety
  - Hazards working in the woods including environmental exposures, chicots, etc.
  - Working in remote locations
  - Communication and transportation plans
  - Forestry first aid
  - Working around powered mobile equipment

In summary, the "*standard acceptable to the commission*" is the training the employer provides to their employees and supervisors to ensure they are competent. Depending on the task of their employees, or the tasks being supervised by their supervisors, each employer is responsible to ensure the training provided is adequate for their employees/supervisors to be competent.

Hazard Identification and Risk Assessment

A hazard is any source of potential damage, injury or adverse health effect that can harm a person. Workplace hazards can come from many sources. Uncontrolled energy such as pressure, temperature, chemical energy, electrical energy, entanglement (kinetic energy) and falling objects (gravitational energy) can also be a hazard source.

All forestry work should be thoroughly planned and organized in advance to prevent inefficiency and to ensure control of safe work practices. WorkSafeNB has developed a guide for employers on how to create a health and safety orientation. Detailed information is provided including:

- Orientation development
- Joint health & safety committees and health & safety representatives
- Employer and employee rights and responsibilities
- How to develop workplace procedures and code of practices
- First aid and reporting illnesses & injuries
- Accident/incident reporting procedures
- Emergency preparedness
- Personal protective equipment
- Workplace Hazardous Materials Information System (WHMIS).

The *Health & Safety Orientation Guide for Employers* also provides examples to follow such as:

- Sample Orientation Policy
- Sample Right to Refuse Form
- Sample Working Alone Policy
- Sample PPE Policy
- Sample WHMIS Safety Audit
- Sample Risk Assessment Chart
- Accident/Incident Reporting Procedure
- First Aid/Accident Reporting Orientation Review Form
- Emergency Preparedness Checklist for New Employees
- JHSC Orientation Form

As with all workplaces (including working areas in the woods), it is the employer's responsibility to complete a **hazard identification and risk assessment program**. Once hazards are identified, a risk assessment must be done. Hazards with the highest risk should always be dealt with first and if necessary, steps must be taken to secure the area of the hazard to prevent anyone from becoming injured. The severity of the risk is assessed by the probability of an incident occurring as the result of the hazard and the potential consequences. The CCOHS defines risk as the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss.

Next is to select a method to control the hazard using the **Hierarchy of Controls**.

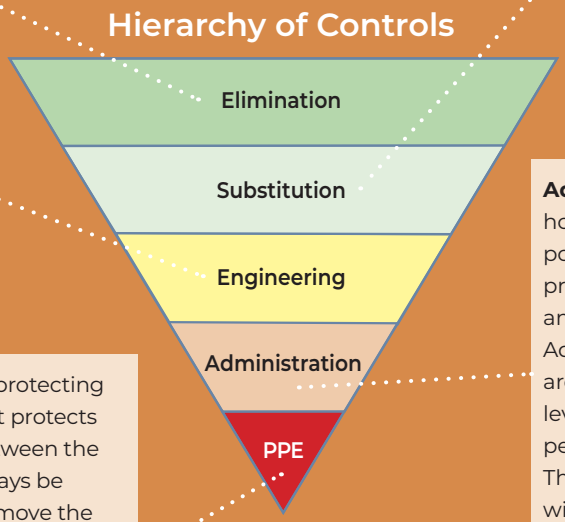
Hierarchy of Controls

As you go down the Hierarchy of Controls, the effectiveness and reliability of controlling the hazard decreases. It's always best to try to eliminate a hazard first.

The first control measure in preventing injuries is to design work procedures and equipment so that workers' exposures to hazards are **eliminated**. This is the most effective control but often the most difficult control to implement. An example in forestry: create a work procedure that does not allow a worker to fell a tree on an incline that is too steep. Since the elimination of hazards is often not possible, then other measures must be taken to protect workers and others.

Substitution replaces the hazard. If a hazardous process or substance can't be eliminated, it may be possible to substitute it with an option that is less hazardous. Substitution is commonly used to remove hazardous substances and products. An example in forestry: replacing an equipment part to lower its noise level.

The next selection would be **Engineering** controls which isolate people from the hazard. The hazardous condition still exists but the risk is reduced to a more acceptable level. An example in forestry: An employer installs a guard on a piece of equipment



Administrative controls direct how people work. They include policies, procedures, safe work practices, training, housekeeping and preventative maintenance. Administrative controls alone are not as effective as the higher levels of control. They don't offer permanent solutions to problems. They're important in combination with other levels of controls. For example, in forestry: rotating employees through various job assignments helps reduce the risk of repetitive injuries.

The use of **PPE** is the last alternative in protecting workers. Personal protective equipment protects the employee by providing a barrier between the employee and the hazard. It should always be the last option selected. PPE doesn't remove the hazard or guarantee permanent or total protection. PPE may be an important component of other levels of controls. It is well recognized that, while employees may continue to be exposed to hazards, the use of PPE can reduce the risk of injuries

Finally, the controls must be implemented. Employers must continuously monitor and evaluate the work area to ensure the controls in place are effective and if additional measures need to be taken. Because working in the woods is a high risk for injury, this monitoring and evaluation will need to occur continuously by not only employers and supervisors, but all workers. All workers must actively participate in risk assessments, report any hazards to their supervisor, and make recommendations for corrective action to the employer. All employees should make suggestions for improvement when appropriate and continue to take training or take part in the development of safe work practices and procedures. For more information on hazard control, visit the CCOHS website. WorkSafeNB has provided detailed information on the Hazard Identification System.

This next section

provides information on hazard identification and risk assessment in logging and silviculture operations and woods roads. This list is by no means exhaustive but will give you a guide of potential sources of hazards to look for. A good question to start with is:

Are there hazards associated with the work area where the employees will be working?

Hazards

Ergonomic Hazards

Ergonomics is matching the job to the worker and product to the user. Without taking ergonomics into consideration, injuries can happen, especially musculoskeletal injuries (MSIs). Hazard identification must be done involving manual material handling, lifting, pushing and pulling, and tool handling. Using tools and machinery with awkward positions and body postures, frequent repetitive motions, static load, vibration, and forceful grip can cause injuries.

An effective prevention strategy must include tool design and maintenance and proper training. It is a good idea to do warm-up and stretch exercises before you begin working. A surprising number of soft tissue injuries occur to chainsaw workers, so it is especially important to be attentive to the terrain and watch your step. WorkSafeNB has a pamphlet on Ergonomics and Musculoskeletal Injury and also a Warm-Up and Stretch guide.

Chemical Hazards

Chemical hazards include **woodlands-controlled products** such as gas, grease, and oil. Employees must be trained on the Workplace Hazardous Material Information system or WHMIS and know where Safety Data Sheets (SDS) are located. Products must be handled using the proper procedures and PPE indicated on the label. Oil and gas can cause skin irritation. Even the paint used to mark logs must be handled properly.

Other dangers include gasoline and oil **aerosols and exhaust gases**. Exhaust from diesel fuel can cause cough and eye irritation, wheezing, difficulty breathing and long-term health effects. Be aware of carbon monoxide poisoning.

Exposure to **herbicides** and **pesticides** in forestry can lead to a variety of health problems. Avoid skin contact and inhaling these products, as these can cause not only immediate effects but long-term health conditions and disease. For more information on the handling and storage of materials refer to Part VIII of *Reg. 91-191*, sections 52-79. CCOHS also has resources on:

- Pesticides
- Material Safety Data Sheets (MSDS)
- Flammable and combustible liquids
- Gasoline

Psychosocial Hazards

These hazards include workplace stress, harassment, and violence. **Workplace stress** can cause harmful physical and emotional responses when there is conflict between the high job demands of the employer and low control of the employee meeting those demands. Stress can cause workplace injuries as it can lead to workers not being able to concentrate or make decisions which are vital in safe logging operations. Physical symptoms can be tense muscles, excessive sweating, chest pain, insomnia, headaches, fatigue, anxiety, forgetfulness, etc. Hazards that can cause stress in the forestry industry include:

- High workload demands
- Lack of training or preparation
- Isolation
- Role conflict
- Uncertain job expectations and level of responsibility
- Exposure to unpleasant conditions and other hazards listed in other categories

For more information on psychosocial hazards, visit CCOHS:

- Workplace Stress - General : OSH Answers
- Mental Health - Psychosocial Risk Factors in the Workplace: OSH Answers
- Mental Health - Dealing with Stress in the Workplace: OSH Answers

Violence and **harassment** in the workplace not only includes physical attacks but also includes threatening behaviour, verbal or written threats, and verbal abuse. Under *Reg. 91-191*, all employers must develop and implement a written code of practice to prevent workplace harassment. All employers must also conduct a risk assessment to analyze the likelihood of violence in their workplace. Once the risk assessment is completed, several factors determine whether an employer must also develop and implement a written code of practice to prevent violence. WorkSafeNB has a guide available on how to develop a workplace violence and harassment code of practice.

There are many other educational resources available at CCOHS including:

- Violence and Harassment in the Workplace: OSH Answers
- Violence and Harassment in the Workplace - Dealing with Negative Interactions: OSH Answers

Safety Hazards

Safety hazards include all machinery, tools, material handling, electricity, driving, and slips, trips, and falls. Specific to the forestry industry are machine hazards associated with chainsaw operation, operation of powered mobile equipment, and cable logging systems which will be addressed later in this guide.

Before working on a piece of equipment, the machine must be in a zero-energy state and locked out. This work includes cleaning, repairing, adjusting, or maintaining.

Workers can become stuck or caught in tools, equipment, and rotating machinery. Make sure employees know the lockout provisions as they apply to the machinery, tools and equipment being used. There is zero tolerance for breaking this law: no exceptions. Equipment must have proper guarding. Never use equipment that has had its guard removed or modified. Be aware when working on equipment on slopes. Never work under a piece of equipment that has not been blocked. Refer to *Reg. 91-191 when working on equipment that is jacked or hoisted [229 (2) (3)]*. Pieces of equipment that are elevated are usually on soil that can slide or compact, so it is essential that equipment is properly blocked. Information on lockout can be found in *Reg. 91-191* sections 239-240. WorkSafeNB has lockout resources:

- Checklist for Lockout - Your Life & Limbs Depend on It
- Safety Talk - Lock Out

Also important is electrical safety and working near powerlines. New legislation has been added specific to woods roads construction near powerlines and is addressed later in the woods roads section. For general electrical safety information visit:

- Overhead Power Lines Pose Threat to Workers and Equipment (worksafenb.ca)
- Electrical Safety - Basic Information (ccohs.ca)

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Workplace Hazards

Some common hazards specific to working in the woods include weather and working alone, **working from heights**, and driving. It is against the law to work at a height greater than three metres without fall restraint for fall protection. This includes working on top of loaded trucks or large pieces of forestry equipment. If the risk of falling cannot be eliminated by bringing the task down to ground level, then fall protection must be used. For more information on fall-protection system, refer to sections 49-50 *Reg. 91-191*. You can also visit the following WorkSafeNB links:

- Fall Protection
- Employees Working from Heights Need Fall Protection
- Safety Talk - Fall Protection - Basic Types

Another category of workplace hazards is **driving**. This includes common driving hazards and distractions, traffic control and road work. CCOHS has valuable information on health and safety issues for drivers and preventative measures. Driver distractions and good driving tips can be found at CCOHS: Driving - Using Cellular Telephones and Other Devices : OSH Answers (ccohs.ca). Also addressed in its own section later in this guide is information related to woods roads and driving safely on them.

General safety information on road work can be found at:

- Road Work - Traffic Control Zone: OSH Answers

You can also find more information on the CCOHS website on topics such as working alone, weather and temperature.

Physical Hazards

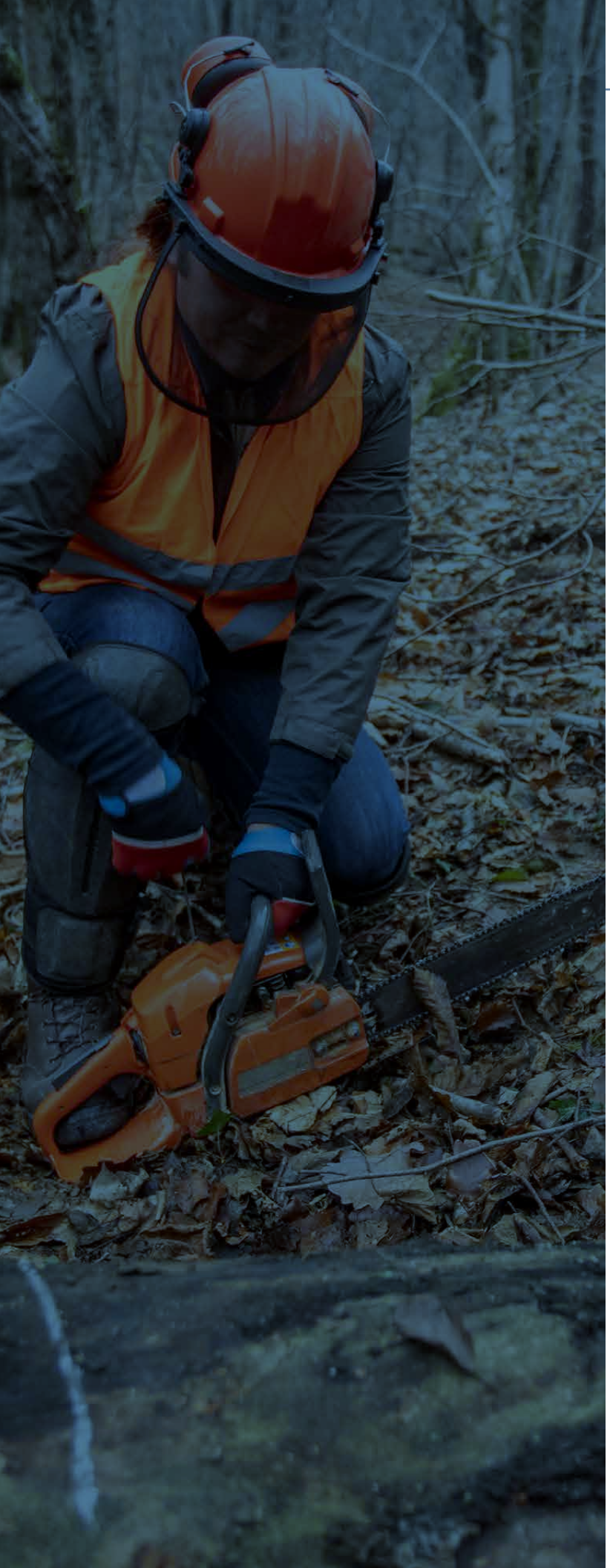
Physical hazards can threaten an employee's physical safety – with or without physical contact. Examples for forestry include noise and extreme temperatures. Temperature control is addressed in the following section under environmental exposures.

Noise is a hazard that can cause permanent hearing loss and can also cause injuries such as acoustic trauma, and tinnitus (ringing in the ear) and injuries due to the inability to communicate with speech. Noise can also cause non-auditory effects such as temporary physiological effects like muscle tension, startling response, changes in respiratory rhythm and heart rate.

To prevent injury from noise exposure, noise levels need to be reduced whether by engineering modifications to the noise itself or to the workplace environment. Measurement of noise level is in section 29 of *Reg. 91-191* and information on exposure is in section 30.

Where necessary, an employer shall provide, and an employee shall use, adequate hearing protective equipment so that the exposure of an employee to noise is kept within the limits prescribed by section 32.

It's important to remember that noise is a collection of sound at various frequencies. Loudness is just one aspect to consider. The more accurate way to think about noise is how loud it is at each frequency. Hearing protectors offer different attenuations for different frequencies. Generally, earmuffs offer better protection for low frequency sounds than ear plugs. Ear plugs tend to offer better protection at higher frequencies.



The standard specifies that a hazard assessment should be done when selecting the appropriate type of hearing protection device and the employer should consider the communication and audibility needs within the workplace. During the assessment, attention should be given to (but not limited to):

- individuals with existing hearing loss
- the noise-exposure levels of the exposed workers
- user preferences on comfort because more comfortable hearing protection is more likely to be used and worn consistently
- the compatibility with other personal protective equipment
- the temperature and humidity in the workplace
- any other applicable ergonomic considerations.

The employer and employee must also understand how the hearing protection device may interact with other PPE. Certain earmuffs may not fit correctly when a visor is worn over the head. WorkSafeNB has more information on noise including employer responsibilities, legislation, and resources.

CCOHS also has some valuable information:

- Noise - Basic Information: OSH Answers
- CCOHS: Noise

Please note: PPE for hearing is included under the PPE section.

Health Hazards

This category includes **biological** hazards and those that can cause diseases and disorders. Biological hazards are included in environmental exposures next section in the guide under biological and wildlife contacts and includes sources such as insects, plants, birds, and animals.

Environmental Exposures Code of Practice

Every worker must know and understand environmental risks, symptoms, and prevention measures. It is essential to evaluate environmental factors that will impact safety as part of the planning process. As of April 2022, it is law that *an employer must develop a code of practice to protect employees from possible hazardous situations caused by environmental conditions, including:*

- *weather conditions; [345.3(a)]*
- *topography [345.3(b)]*
- *wildlife contacts [345.3(c)] and*
- *biological hazards. [345.3(d)]*

This legislation was added because severe environmental conditions can lead to unsafe situations. Other than extremes in temperature, the regulations previously did not address employer obligations during severe storms and high winds. At least one fatality and a few near misses have occurred due to high winds. Following are some details of hazards that should be identified in each category and will help employers write their code of practice.

Weather Conditions

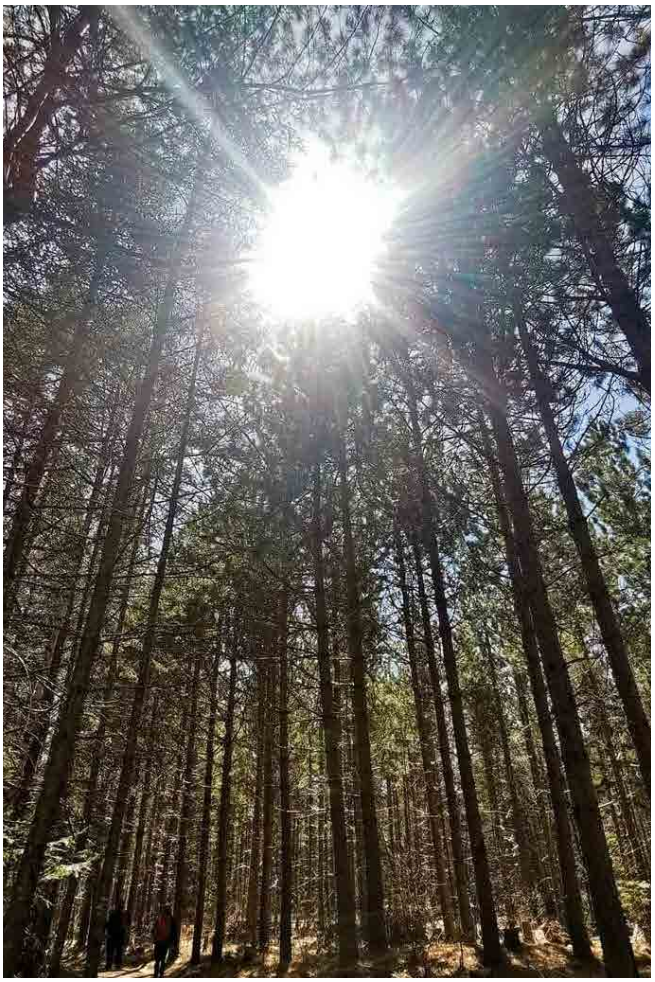
HEAT: Temperature such as extreme heat. *Where an employee is exposed to work conditions that may present a hazard because of excessive heat, an employer shall ensure that a competent person instructs the employee in the significance of symptoms of heat stress such as heat exhaustion, dehydration, heat cramps, prickly heat and heat stroke and in the precautions to be taken to avoid injury from heat stress. [23(1)]*. High temperatures reduce work capacity and may lead to heat stress and dehydration. Heat can cause equipment to overheat and cause fire. Have established shut down criteria and evacuation procedures in case of fire. Dress in light, natural fabric. Drink plenty of water. For more information:

- Heat Stress Can Kill (worksafenb.ca)
- Working Outdoors: Do You Have Everything Under the Sun? (worksafenb.ca)
- Heat and Cold Stress (worksafenb.ca)
- Hot Environments - Health Effects and First Aid: OSH Answers (ccohs.ca)

COLD: Temperature during extreme cold weather can reduce dexterity, blood flow, muscle strength and balance. *Where an employee is exposed to work conditions that may present a hazard because of excessive cold, an employer shall ensure that a competent person instructs the employee in the significance of symptoms of cold stress such as severe shivering, pain in the extremities of the body and reduced mental awareness and in the precautions to be taken to avoid injury from cold stress. [23(2)]*. Dress in layers and cover all skin surfaces. Keep a dry change of clothes on hand. Employers should establish shutdown criteria. Steel can break suddenly in extreme cold, and trees can become more brittle. For more information:

- Surviving the Cold (worksafenb.ca)
- Heat and Cold Stress (worksafenb.ca)
- Cold Environments - Health Effects and First Aid: OSH Answers (ccohs.ca)

Photo courtesy of Debbie Doyle



UV RADIATION: Apply sunscreen regularly to exposed skin, wear eye protection, wear UV protective clothing, and remember you can still be affected in the winter with snow glare. For more information on UV exposure:

- Working Outdoors: Do You Have Everything Under the Sun? (worksafenb.ca)
- Ultraviolet Radiation: OSH Answers (ccohs.ca)
- Skin Cancer and Sunlight: OSH Answers (ccohs.ca)

LIGHTNING: Remember the 30-30 rule. Once you see lightning, begin counting until you hear the thunder. If there is less than 30 seconds between both, take shelter immediately. Know operation shutdown criteria, where to shelter, communication equipment shut off procedures, etc. CCOHS has provided detailed information on lightning.

FIRE: Always be on spark watch if work area is exceptionally dry and hot, know the forest fire risk/index rating for the day, and have established evacuation procedures in case of fire.

WIND: Extreme wind can cause overhead hazards such as broken trees, flying debris, skin exposure, tipping over of equipment, dust, and broken power lines. Develop windspeed shutdown criteria. More information on high winds can be found on the CCOHS website.

SNOW: Be aware of canopy load and hidden dangers under the snow. Snow also decreases visibility and muffles sound making it harder to communicate.

RAIN: Rain can cause slippery ground, road washout, landslides, unstable trees, decreased sounds and visibility.

FOG: Fog also can decrease visibility and muffle sound, making it hard to see overhead hazards and hear nearby workers and equipment. Ensure safe distances are maintained.

POOR VISIBILITY at night.

Topography
(shapes and features of land surface)

SLOPE: Know the slope percentage; steep is over 30% with a consequent high risk of machinery rollovers, accidents, and rock falls. For more on slopes, see page 38.

THICK BRUSH: There is an increased risk of hitting hidden rocks with shovels.

SOIL TYPE: Unstable ground, shallow soil over bedrock, finely textured soils (clays) are slippery when wet. Be aware of over-saturated ground, recently burned ground, boulders, rock outcrops, and gullies.

TRIPPING: Twigs and branches, thorns, spines, and bark can trip or injure a worker.

FALLING TREES: Chicots, unsecure lodged trees, dislodged trees with hung-up limbs, and broken branches are all hazardous. See page 31 to learn more about these dangerous trees.

ICE COVERED WATER can be extremely dangerous. Basic information on working on or near ice covered water is found on CCOHS website.

SAW DUST: Dust and debris from working in the woods can cause respiratory, skin and eye injury. CCOHS has more information on wood dust.

Wildlife Contacts

ALLERGIES: Allergic reactions to insect bites and stings (spiders, bees, wasps, hornets, ants) can happen. Always inspect work area to determine if there are nests located on the ground or surrounding areas. Identify workers who have allergies and ensure they carry an EpiPen®.

DISEASES FROM INSECT BITES: West Nile Virus is a disease present in birds that can be transmitted by the bite of an infected mosquito. Spray insect repellent regularly on your clothes and for skin protection, repellent should have no more than 30% DEET content.

Lyme disease is transmitted by an infected tick. Examine your skin, especially the head, scalp and behind your ears. If one is found it must be removed with tweezers. Pants should be tucked into your socks and boots, and shirts should be tucked into your pants.

ANIMAL BITES: Skunks, raccoons, bats and foxes are commonly infected with rabies so stay clear. Observe them from a safe distance and notify the proper authorities if they exhibit unusual behaviour or do not fear humans.

Photo courtesy of Debbie Doyle

Bears, wolves, and moose are also dangerous animals found in New Brunswick woodlands. Train employees on avoiding and reacting to these animal encounters. Noisemakers and bear spray may be part of the plan. Be aware of increased traffic as well during hunting season and place NO HUNTING signs around the work area to protect workers.

Other hazards include urine of infected animals with leptospirosis (mice, rats, field rabbits, foxes) and exposure to bird and rodent droppings (feces).

Biological

Plants and pollen can be a biological hazard in the woods, especially giant hogweed, which is a noxious and potentially dangerous weed that was first discovered in the province in 2010. WorkSafeNB has more information:

- Giant Hogweed Can Pose Health Risk

Other poisonous plants in New Brunswick include poison ivy, poison oak, and poison sumac which produce a sticky oil (urushiol) that causes an itchy burning rash if you come in to contact. Remember "leaves of three, let it be". Other plants are cow parsnip, hogweed, angelica, wild parsnip, and valerian which are not as dangerous as giant hogweed but can still cause skin reaction. Wear long-sleeve protective clothing, long pants, and gloves. See the Government of New Brunswick's website for more information.

The **Environmental Exposure Code of Practice** should contain information on how to assess the risk of each hazard and the way to manage or control each hazard that was previously reviewed.

The employer must ensure the code of practice is readily available and that employees are properly trained and adhere to the requirements of the code of practice. It should be kept as short as possible and written in language easily understood by all employees.

The code of practice should include a process for employees to report to their supervisor any information on environmental changes. For example, a worker may need to report on weather conditions that occur unexpectedly, such as lightning. There needs to be readily available process to temporarily suspend operations if necessary.

The employer must also monitor and regularly evaluate the Environmental Exposure Code of Practice to ensure the program remains effective. Information in this document can be used to help the overall hazard identification and risk assessment of the work area and be used to inform employees in the legislated mandatory initial safety meeting. *[345.2(1)]*

First Aid, Emergency Procedures, Meetings and Supervision

Legislation now requires *that an employer shall ensure that at least one supervisor is present in each work area.[344]*. Paragraph 344 (b) was removed, and all emergency procedure requirements are captured in the New Brunswick Regulation 2004-130 under *OHS Act*

First Aid Kit

Every place of employment is required, under law, to stock adequate first aid supplies in a central location and have at least one employee qualified to administer first aid. The *First Aid Regulation,* also called New Brunswick Regulation 2004-130 under the *OHS Safety Act* (2004-130), details all the employer's responsibilities on first aid requirements and defines "working at woodland operations" as high hazard work. As the number of employees changes at the worksite, so do the number of first aid kits and properly trained first aid providers that are required [2004-130 (Schedule A)]. The regulation outlines what is to be in the first aid kit; "*An employer shall ensure that each first aid kit required to be provided by the employer is equipped as set out in CSA standard CSA Z1220-17: First aid kits for the workplace" [2004-130 (11)]*.

Another thing to consider are if any of the workers have allergies to bee or wasp stings or insect bites. These employees should be identified and should always carry with them an EpiPen® or other epinephrine auto-injector kit with them. Employers should include an EpiPen® in their first aid kit in case of an unexpected reaction and train their first aid providers on its use.

Emergency Plan

The first aid regulation also says employers must perform a risk assessment to be properly prepared for an emergency and develop an emergency evacuation plan. You should consider emergency communications, road conditions, and the best route to the nearest hospital. The emergency communication procedure must be in writing, describe how to contact help in the event of an accident, and provide directions on how to locate the work area. Each employee must be informed of this procedure.

An emergency transportation procedure must also be in place especially for moving an injured worker from the work site to a place where they can be transported by an ambulance. The maximum distance between a worker and the nearest vehicle should be no more than 600 metres, and it is recommended that you maintain an open (safety) trail between cut strips. This emergency plan must be developed for each work area after the risk assessment has been completed. For more information on first aid, please refer to the Regulation.

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Employee Communication Plan

An employer of a logging operation must also ensure there is *an effective communication plan in place for employees involved in a logging operation and every employee shall follow the communication plan. [345.1]* Logging and silviculture is a hazardous industry, and it is essential that employees can communicate with each other effectively to ensure safety. This amendment was added to the regulations due to an incident where a chainsaw operator was run over by a skidder because of poor visibility and thick undergrowth in the area.

Initial Safety Meeting

Reg. 91-191 now requires an initial safety meeting before employees start work in a new work area.

345.2(1) Before employees start work in a new work area, a safety meeting shall be held to inform the employees of any hazards in that area and the actions to be taken to eliminate or minimize the hazards. 345.2(2) If an employee fails to attend the safety meeting, the employer shall ensure the employee is informed of any hazards in the work area and the actions to be taken to eliminate or minimize the hazards.

The need for increased communication of safety concerns brought about this change. The safety meeting is required to be held every time work is to commence in a new work area. Hazards mentioned previously must not only be identified, evaluated, and managed, but communicated to the employee. This includes emergency procedures, communication plans and PPE requirements. Questions to think about when conducting the safety meeting can include:

- Are employees competent to use the tools, equipment, machines, devices, and materials?

- What hazards are in this work area and what is the means to control them?
- Is there a process for identifying and reviewing all PPE for the employee while doing the task?
- Has the communication procedure been reviewed?
- Have individuals to contact been identified and their contact information supplied to the employee?
- Has the employee reviewed and been trained on all company policies and procedures related to their job and the work area?
- Has the hazard reporting procedure been communicated and reviewed with the employee?
- Are there adequate first aid supplies and equipment available for the employee?
- Has the emergency response procedure been reviewed recently with the employee?
- Has the process for required outside emergency assistance, including emergency evacuation procedures, been reviewed with the employee?

Personal Protective Equipment (PPE)

[General Regulations Part VII and Section 346]

Workers must wear the required PPE according to the work hazards, the employer's requirements, and the legislative requirements. They must also demonstrate appropriate use and care of forestry specific PPE.

Employers have the following responsibilities:

- *Where protective equipment is required to be used by an employee under this Regulation, an employer must provide the protective equipment required and must ensure the employee is instructed and trained in the proper use and care of the protective equipment.* [38(1)].
- Employees also have responsibilities under the law 38(2): *Where protective equipment is required to be used by an employee under this Regulation, an employee shall*:
  (a) *use the equipment that is required in accordance with the instruction and training received,*
  (b) *test or visually inspect the equipment before each use as appropriate to the type of equipment to be used,*
  (c) *report any defective equipment to the employer and not use the equipment, and*
  (d) *care for the equipment properly while using it.*

What do we mean when you see "*or a standard offering equivalent or better protection?*" Most PPE sections found in our legislation have an equivalency clause. This allows employers to select equipment that better meets their needs, without needing a deviation, while also maintaining the necessary level of protection required by legislation. Unless specifically disallowed in regulation or legal interpretation, WorkSafeNB will accept equipment conforming to a newer version of a cited standard as offering equivalent protection, as well as a similar standard from another standard-setting agency. **CSA** stands for the Canadian Standard Association, while **ANSI** stands for the American National Standards Institute. For example, CSA Z94.3-20, which is the 2020 version of the Eye and Face Protection standard, offers equivalent or better protection than the 2015 versions of this same standard. As a note, the two digits at the end of a standard represent the year of the version of the standard.

Alternatively, equipment designed to the ANSI/ ISEA Z87.1-2020 American National Standard for Occupational and Educational Personal Eye and Face Protection Devices may also provide protection that is equivalent to CSA. You might want to confirm with WorkSafeNB if you are unsure that an alternative standard is equivalent to the one cited in the regulation. Employers also have a responsibility to research the issue and be prepared to provide their findings to an officer upon request if they choose to use equipment conforming to another standard.

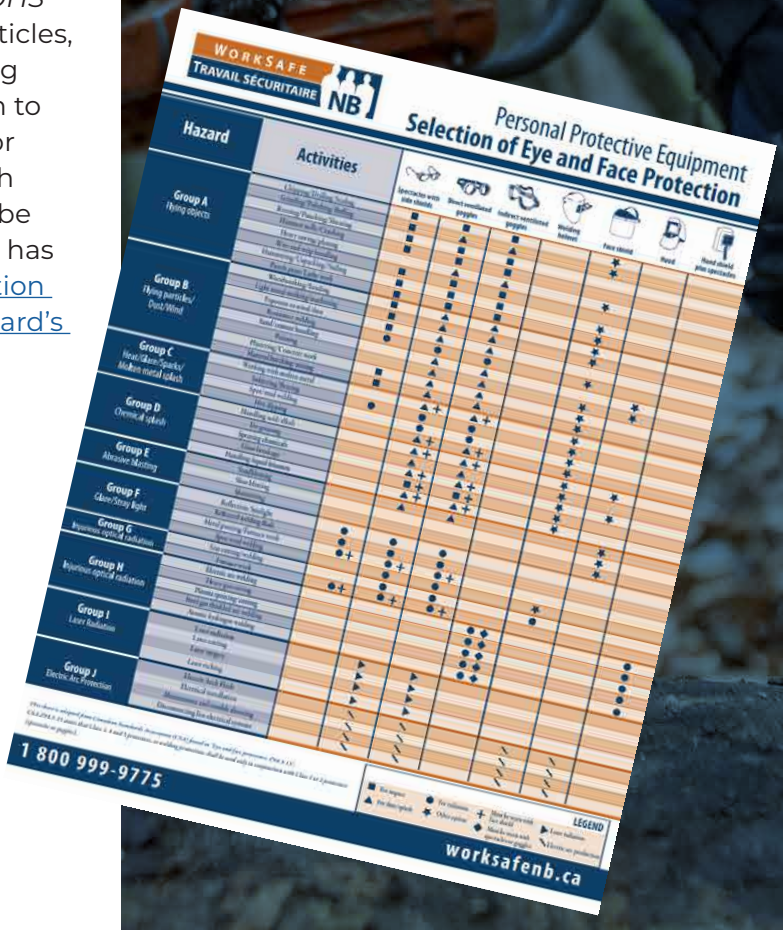
Following

are all the PPE requirements for forestry, including the legislative changes that came into effect in April 2022. The update applies to all employees working in forestry operations including silviculture and road work unless specified for chainsaw operators only.

Eye and Face Protection

39 Where an employee is exposed to a hazard that may irritate or injure the eyes, face, ears or front of the neck, the employee shall use protective equipment that is appropriate to the hazard and that conforms to CSA standard CSA Z94.3-15, "Eye and Face Protectors" or a standard offering equivalent or better protection.

There are 10 types of hazards listed in the *OHS Act*; important are flying objects, flying particles, dust, wind, chemical splash, etc., depending on the job task. For eye and face protection to be effective, it must be properly selected for the job and fitted to the wearer. A thorough hazard assessment, or risk analysis should be done to evaluate the hazards. WorkSafeNB has developed an eye and face protector selection poster that was developed using the standard's table A.1 as a guide.



High-Visibility Safety Apparel (HVSA)

High visibility safety apparel that meets the requirements of CSA-Z96-15, "High-Visibility Safety Apparel" or a standard offering equivalent or better protection. [346(a)(i)].

The use of high visibility apparel was previously just "highly recommended" but is now specifically required by regulation (as of April 1, 2022). There have been fatalities and serious injuries in New Brunswick when employees were run over by heavy equipment because they were not visible to the driver. HVSA is needed due to the poor visibility working in the woods which be caused by low light, weather conditions, leaves/trees, etc. Those operating vehicles or machinery will be able to see workers from farther away as the human eye distinguishes the high colour contrast between clothing and the background. Being seen could save your life.

CCOHS has information on what to look for in HVSA including proper fit for safety and best performance, brightness for the best contrast and visibility depending on the light conditions, design around the criteria for stripes and bands, colour, and care and maintenance. HVSA should always be clean and well maintained to provide the best protection. Once garments become soiled, contaminated, or generally show signs of wear and tear, they should be replaced.

Clothing is also addressed in *Reg. 91-191* Part IV on PPE regarding protective clothing for extreme temperatures. Where an employee is exposed to a hazard from extreme heat or extreme cold, the employee must use adequate protective clothing. [44]

Head Protection (Safety head gear/ Hard hat)

Reg. 91-191 states 40(2) *At a place of employment, other than project site, where an employee is exposed to a hazard that may injure the employee's head, the employee shall use protective equipment that is appropriate to the hazard and that conforms to "CSA standard CSA Z94.1-15, "Industrial protective headwear – Performance, selection, care, and use" or a standard offering equivalent or better protection".* In the forestry sector, the employer must determine the hazards and select the right type and class of headwear. If unsure, the default headwear to use is Type 2, Class E.

The *safety headgear must be highly visible [346(a)(ii)]* and should be equipped with a visor to protect the eyes, or wear safety glasses may be worn instead as mentioned above. The standard refers to standard CSA Z96 - High-visibility Safety Apparel for colour and retroreflective performance specifications. CSA hard hats can be divided into two types - Type 1 and Type 2. Type 1 are designed to protect workers from objects and blows that come from above and strike the top of a helmet, where type 2 also protects the worker from lateral impact. This is a requirement when working around moving equipment or materials where a side blow is possible.

Photo courtesy of Steph Rutherford

The CSA or ANSI label or stamp on the hard hat will identify the type and class. If label is missing or is no longer legible, it is recommended that hard hat be replaced.

The standard also contains additional information on selection, care and use that are important to understand and enforce. Topics include specific guidance on conditions for wearing headwear backwards, objects within the space between the head and headwear, alterations to the headwear, compatible PPE with headwear, headwear accessories, headwear inspection, and proper headwear care.

For more information see:

- Headwear, Care of: OSH Answers (ccohs.ca)
- Legislative Interpretations – Protective headwear – Worn backwards or over a ball cap (worksafenb.ca)

Hearing Protective Equipment

It is important that workers are protected against the noise of saws, machines and other equipment used in forestry. Once the exposure risk is identified and assessed by the employer, *an employer shall ensure that hearing protective equipment conforms to CSA standard CSA Z94.2-14, "Hearing protection devices – Performance, selection, care, and use" or a standard offering equivalent protection.* **48**(1).

48(2) An employer shall consult with a joint health and safety committee or health and safety representative, if any, or with employees if there is no committee or representative, concerning the selection of the types of hearing protective equipment to be used by employees. 48(3) Where hearing protective equipment is required, an employer and an employee who uses the equipment shall each ensure that the equipment is kept in a sanitary condition.

Instruction and training should be provided to workers who are required to wear hearing protection devices. This training should cover all elements listed in CSA Z94.2 (selection, fit, use, care, maintenance, and inspection, etc.). Training should be repeated, as recommended in the standard, at regular intervals and at least once every two years. Hearing protection users must know how to wear, and fit ear plugs properly. More information on hearing protection can be found on the following websites:

- Hearing Protectors: OSH Answers (ccohs.ca)
- Noise-induced Hearing Loss (NIHL) (worksafenb.ca)
- Safety Talk - Hearing Protection (worksafenb.ca)

Hand Protection (Safety Gloves)

It is required by law that employees wear protective gloves. *Reg. 91-191* Part IV states in *43(1) Subject to subsection (2), where an employee is handling objects that may injure the hands, the employee shall use adequate protective gloves or other protective equipment. Subsection 2 is specific to handling wire rope and states that where an employee is handling wire rope in a logging operation, the employee shall wear adequate double-palmed leather mitts or gloves. [43(2)]*

Photo courtesy of Steph Rutherford

Foot Protection (Safety Footwear/ Safety Boots)

The type of protective footwear to be worn by employees is determined after the hazard assessment is conducted by the employer. *At a place of employment, other than a project site, where an employee is exposed to a hazard that may injure the employee's foot, the employee shall use protective equipment that is appropriate to the hazard and that conforms to CSA standard CSA Z195:14 (R2019), "Protective Footwear" or a standard offering equivalent protection. [41(2)]*. Z195-14, is a design standard, therefore it refers to the connected standard CSA - Z195.1- Guideline on selection, care, and use of protective footwear, which provides guidance on selecting the best footwear to not only comply with section 41 and 346, but more importantly, the best protection for the task being performed.

The standard lists different types of footwear protection available, from electric-shock resistant footwear to over-the-shoe toe protectors. CSA Z195-14 also provides advice on:

- Proper selection of footwear protection for the working environment and specific job functions.
- Identifying potential risks and hazards requiring protective footwear.
- Establishing and maintaining a safety footwear program.
- Tips for the proper selection, maintenance, and disposal of safety footwear.

New in *Reg. 91-191* is a change to footwear requirements when an employee is working on a slope. *An employee who is working on a slope that is greater than 30% wears safety footwear that is corked, caulked, or spiked [346 (c)]*. This was added as there have been various equipment rollovers that occurred on steep slopes. More information on 30% grade slopes can be found page 38.

Chainsaw Operators MUST also wear:

SAFETY BOOTS: that meet the updated regulations which state that safety footwear must meet the requirements *of CSA-Z195:14 (R2019), "Protective Footwear" or a standard offering equivalent or better protection, has chain saw protection on the top and sides and has non-slip soles [346(b)(i)]*.

With the expansion of the standard to include chainsaw protection, it will be now easier to determine if chainsaw operators comply with section 346 by wearing footwear with the green fir label inside a white rectangle.

Photo courtesy of Steph Rutherford

LEG PROTECTION: *Leg protection that has a label permanently affixed to the outer surface of the leg protection indicating the standard it meets [346(b)(ii)]*.

Leg protection is designed to stop the chain from operating. They are composed of long, thin, tough fibers such as Kevlar, ballistic nylon, or Tek warp, and when the chainsaw teeth rip out these fibers, they get caught up around the chainsaw's drive pinion in milliseconds and stop the chain. Choosing the proper leg protection will be based on the needs of the worker, including amount of time using a chainsaw, flexibility needs, temperature, etc.

Different models of protection are certified for different threshold chain speeds, with 2,600 feet per minute designed for occasional cutting. Chaps and pants can also be standard 3,000, 3,600 and 4,100 again which represents the tested threshold chain speed. Remember, leg protection effectiveness can depend on many factors such as the duration and angle the chainsaw hits the pants, the chain speed and power. Always follow manufacturer guidelines and safety manuals and remember PPE is the last line of defence. Replace pants/chaps immediately if the chainsaw has hit them as their composition has changed and they are no longer effective in protecting your leg.

Chad Dubois, Technical Manager for STIHL Canada has produced a great video on how cutting protection works.

Photo courtesy of Steph Rutherford

Chainsaws, Brush Saws and Clearing Saws

In addition to the above written PPE requirement, chainsaw operators must also have the following:

[351 (2)] *An employer shall ensure that an employee who operates a chain saw, brush saw or clearing saw has:*

- *a suitable fire extinguisher or a round point shovel readily available,*
- *suitable first aid supplies readily available, and*
- *a pressure bandage. Carry or keep close at hand the pressure bandage provided by the employer. [352 (g)]*

Chainsaw Requirements

By law, employers must inform all employees of any hazards associated with handling chainsaws or any other tool or equipment used on the job. In April 2022 new chainsaw requirements became law.

The owner of the chain saw shall ensure that the chain saw meets the applicable requirements of "CSA standard Z62.1-11, "Chain saws" or a standard offering equivalent or better protection and CSA standard Z62.3-11 (R2021) "Chain saw kickback" or a standard offering equivalent or better protection". [Reg. 91-191 348 (1)]

The new standards arose from a need to decrease injuries related to chainsaw kickback. The top half of the bar's tip is known as the kickback zone. If this zone comes in to contact with something while the chain is moving, the saw can kick up and back towards the operator. Chainsaws are equipped with a chain brake designed to stop the chain if kickback occurs. Changes in the standard include information on computed kickback angle, requirements of a reduced-kickback guide bar, and lower acceptance limits for kickback.

Reg, 91-191 348(2) also states that an owner of a chainsaw must ensure the chainsaw

(a) is used only with a safety chain that is filed according to the manufacturer's specifications,
(b) is equipped with an adequate chain brake, and
(c) is fitted only with component parts specified by the manufacturer.

Before You Begin!

No employee operating a chainsaw may work alone [352 (a)]. An employer shall ensure that an employee who operates a chain saw, brush saw or clearing saw is knowledgeable of the emergency communication procedure and the transportation procedure set out in New Brunswick Regulation 2004-130 under the Act and is accompanied by a person who holds a valid First Aid Workplace Certificate in accordance with that Regulation [351(1)] .

Previous law did not specify that the person accompanying the chainsaw worker be trained and there has been a fatality where the person could not administer first aid or be of any assistance. It is law that a chainsaw operator always has a person with them who holds a valid first aid workplace certificate in accordance with Regulation 2004-130.

Operating the Chainsaw [349]

- *Always stop the motor before carrying the saw from one location to another (a)*
- *Always stop the motor before adjusting the chain (b)*
- *Adjust the saw according to the manufacturer's specifications so that the chain is stopped while the motor is idling (c)*
- *Immediately remove a defective saw from use until it is repaired. (d)*
- *When operating your saw, keep both feet on a firm surface or solid base (i)*
- *Always hold the saw with both hands while operating it (g)*
- *Start the saw when it is cold by holding it against a solid object below waist level (e)*
- *Do not start the saw by pulling on the cord while the other hand engages the throttle mechanism (f).* Never start the saw one-handed.
- Never draw your saw toward yourself
- *Never operate your saw above shoulder height. (h)*
- *Do not climb on or work under a felled tree. (j)*
- Be aware of the pushing and pulling parts of the chainsaw bar.

- Be aware of the kickback zone of the chainsaw bar and never allow this area to touch the wood or any other surface. It's recommended to never use the kickback area (top half of the tip of the saw) for cutting. Position yourself always so that in the event of a kickback the saw will not be directed at you, but to your side or away from you.
- If you must use your saw to cut brush or small saplings, use extreme caution. The risk of kickback is very high.
- *Ensure all trees are cut cleanly and put to the ground (do not girdle trees). [352 (b)]*

Maintaining the Chainsaw

It is your obligation to ensure your saw is maintained and operated according to the manufacturer's specifications. Below are a few rules to follow:

- Always check your chainsaw carefully to ensure all parts are present and working properly (chain brake, throttle lockout, chain catcher, shock absorbers, muffler, and spark arrester).
- Check the chain to ensure it is sharpened to the manufacturer's specifications, and that it has adequate tension.

Maintaining and Operating a Brush Saw or Clearing Saw

It is your obligation to ensure your saw is maintained and operated according to the manufacturer's specifications [350 (a)]. Below are a few rules to follow:

- *Regularly inspect the blade and file it when necessary (d). Check your saw blade for cracks*. If the blade has a nice ring when you snap it, it is a good indicator it isn't cracked. *Replace the blade at the first sign of a crack or fracture (e). Fit the saw only with blades and component parts as specified by the manufacturer (f)*
- *Ensure your saw has an adequate blade guard (b)*. Guards need to be replaced if they are broken or damaged.
- *Use a harness suitable for use with the saw (g). Ensure that the harness is well maintained and properly adjusted and that the emergency release on the harness functions properly (h)*. The snap for attaching the harness to the saw must close securely so the saw cannot come off the harness during operation

Photo courtesy of Irving Woodlands

- Check the overall condition of the saw. Ensure the shut-off and the trigger lock are working, that the handlebars are secure, and that the muffler and spark arrester are in good condition.
- *Do not start your saw while it is attached to the harness (j.)* The saw must be started before it is attached to the harness.
- *Stop the engine before any manual adjustment, cleaning, clearing of debris or other work is carried out on the blade or blade guard (i).*
- *Always maintain a minimum 10 m distance from any other person while operating the brush saw or clearing saw (c).*

Refuelling your Chainsaw, Brush Saw, or Clearing Saw [352]

- *Never refuel your saw while the engine is operating. (C)*
- *Carry fuel in a non-glass container and use a spout or funnel when refueling. (e)*
- *Do not refuel near a source of ignition such as dry tinder or smoking material. (f)*
- *Once you have refueled your saw, move at least three metres away from where you refueled before you start the engine. (d)*

Hydraulically-Driven Chainsaw (Mechanical Harvester)

The employer must: *Ensure that an employee operates a hydraulically driven chain saw in accordance with the manufacturer's specifications and does not operate the chain saw in a way that the saw bar is directly in line with the cab or other persons. [349.1(1)]. Maintain a hydraulically driven chain saw in accordance with the manufacturer's specifications. [349.1(2)]*

These regulations have been added as there were no previous regulations pertaining specifically to chain shots.

Photo courtesy of Irving Woodlands

Felling Procedures

BEFORE YOU BEGIN: *Before starting to fell a tree, an employee shall ensure that (a) all standing dead trees and other hazards are removed from the work area, [353(1)].*

Standing dead trees, also called **chicots**, are a dangerous type of tree that have injured and killed several workers. Chicots can be standing or lodged dead trees. Also commonly known as widow-makers, chicots pose a tremendous hazard in the woods and they need to be treated with respect.

Why are Chicots so Dangerous?

One study showed that, in cases where workers were struck by a falling tree, chicots were a contributing factor in more than 20% of those situations. These trees are dangerous because they are brittle and unpredictable. A gust of wind, vibration from equipment, a heavy snowfall or removing adjacent trees is often all that is needed for branches to fall suddenly from these trees, causing great harm.

Photo courtesy of Debbie Doyle

How to Identify Chicots:

An experienced worker needs to evaluate the presence and conditions of chicots. Look for:

- An absence of leaves (considering the season)
- Missing twigs and small branches
- The condition of the trunk and main branches:
  - Presence of shelf-like fungus growth
  - Detached bark
  - Black filaments under the bark
  - Easily visible cracks along the trunk
  - Canker growth on the trunk
  - Insect infestation
- Rotten roots:
  - Mushrooms growing at the base of the tree
  - Spongy material at the base of the tree

Photo courtesy of Steph Rutherford

Eliminating Chicots with a Skidder

The safest way to fell a chicot is to push it down with the back (plate or mask) of a skidder. *Reg. 191-191* 353.1(1) states that *an employer and an employee shall, whenever possible, operate a powered mobile equipment to fell a standing dead tree.*

This must always be the first choice whenever possible, as it reduces danger to the loggers. The degree of the hazard is determined by the size and the height of the chicot. The skidder operator must be aware of the cab's capacity to withstand the impact of a falling branch or tree and must put the dead tree to the ground. If the chicot is pushed into and lodges in another tree, then the feller must come in and make multiple cuts to get what has become a far more dangerous tree (a hung-up, dead tree) to the ground. Pushing a tree to the ground with a skidder must be done at least two tree lengths away from the feller, and never in the direction that a worker is standing. Dead branches can be projected great distances when they break away from a falling tree.

Photo courtesy of Steph Rutherford

Eliminating a Chicot with a Chainsaw

If a standing dead tree (chicot) *cannot be felled by operating a powered mobile equipment, an employee shall operate a chainsaw to fell the standing dead tree [353.1(2)]*. For example, if the skidder cannot reach a chicot because of the terrain or the density of the forest (such as in cable logging). Critical rules before felling the chicot:

- Only experienced fellers must attempt to fell a chicot.
- Extreme care must be taken as a chicot is unpredictable due to the tree fibre which could be brittle and dry, or rotten. The holding wood is often on the outside of the tree because the core is rotten; this changes the dynamics of the feller's control of the tree.
- These trees must never be felled in windy or heavy snow conditions. If a loose branch (widow-maker) is hanging from the top of a chicot, workers must stay away from this tree.

The experienced fellers must consider the following three factors in determining the direction of the fall:

- The degree and extent of rot;
- The natural lean of the tree, as there is very little control over the direction of the fall of a chicot; and,
- The clearest area so that the chicot can be cleanly brought to the ground.

As with felling any tree, before felling a chicot:

- There must be *a clear path of retreat to safety [353 (1)(b)]*; and,
- *All other persons are moved at least 40 m from the felling area. [353 (1)(c)]*

The rest of the procedure to fell the chicot is the same as felling a tree *(comply with sections 353 and 354 except for paragraph 354(2)(b) [353.1 (2) (a)]* except:

- The feller must *stand straight and tall to reduce the exposure of the employee's neck and back, [353.1(2) (b)]*. This position also allows the feller to see the tree as it is being cut.
- *Use a lever instead of a wedge to avoid hitting the tree [353.1(2) (c]*. The feller must not use wedges or any technique that involves striking the tree. A lever may be used, if necessary, but a **chicot must never be struck**.
- The hinge must be wider than when cutting normal trees, and the width is determined by the degree of rot. As a general rule, the greater the rot, the greater the width of your hinge wood. Remember, in a chicot, hinge wood is never reliable.
- The back cut should be a bore cut, as it provides maximum control as well as maximum escape time. The only exception is for extremely rotten trees with a lean greater than five feet. In this case, a standard back cut is used, as the rotten wood may crush under the forward lean of the tree, catching the saw.

Chicots that Cannot Be Felled

If a standing dead tree cannot be felled by operating a powered mobile equipment or a chain saw, employees must follow the *safe work procedures for hazardous operations caused by a standing dead tree that cannot be felled,* that have *been developed by their employer [353.1(3) (a)].*

As of April 2022, it is law that the following safe work procedures be *written* and it is the employer's *responsibility to ensure employees receive adequate instruction and training with respect to the safe work procedures for hazardous operations, [353.1(3) (b)]* and *ensure that employees follow the safe work procedures for hazardous operations [353.1(3) (c)]*. These procedures may include placing a ribbons all around the tree. The ribbons should be measured out from the base of the tree, with a radius slightly larger than the height of the chicot. This needs to be done before any other work is begun and all the workers must stay out of the marked area. No other trees are to be felled into this area.

Photo courtesy of Irving Woodlands

Felling a Tree

Once the hazards are removed from the work area including chicots, the following must occur for felling all trees:

- *There must be a clear path of retreat to safety [353(1) (b)] and,*
- *All other persons are moved at least **40 m** from the felling area [353(1) (c)].*

It is important to always take a few minutes to assess the tree and the felling area before beginning work. Plan where you want the tree to fall.

Some trees are more difficult to fell than others, so consider these things first:

- Species of the tree
- Wind direction and speed
- Whether the tree is leaning or lopsided
- Overall size and height of the tree
- Snow and ice load
- Terrain: if the tree is growing on the side of a hill, in swampy ground, etc.
- Power lines: never fell a tree near them!
- Watch for and remove any **spring poles**. *A "spring pole" means a section of tree or bush which is, by virtue of its arrangement in relation to other materials, under compression. [354(1)]*

Notches and Back Cuts

In April 2022, new legislation was enacted on felling procedures. *[354(1.1)]* The previous illustration allowed for 4 different types of notches, one of which was the 45° conventional notch, which results in less control of the tree during the felling process. The 45°, conventional notch was determined to be a factor in a recent fatality. *When felling a tree, an employee shall construct a hinge that will safely direct the tree to the ground by completing the following steps:*

- *Cut an open face notch of at least 70° where the cut meets clean and even with no by-pass and make a back cut that is level and no more than 2.5 cm above the intersection of the two notch cuts*; this is to ensure the hinge wood is not weakened. A hinge made of dead wood will snap like a matchstick if there is bypass in the notch.

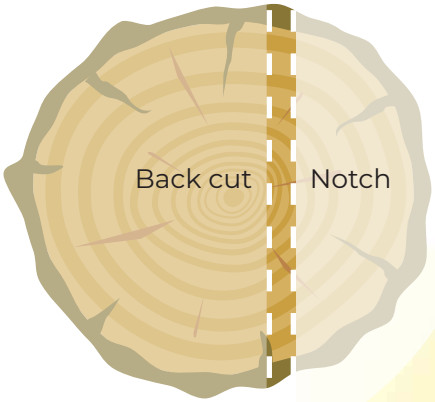
- *Construct a uniform hinge that has a thickness of approximately 10% of the tree's diameter and a width that is approximately 80% of the tree's diameter*; The hinge should be thick as necessary to hold the tree to the stump until felling is completed.

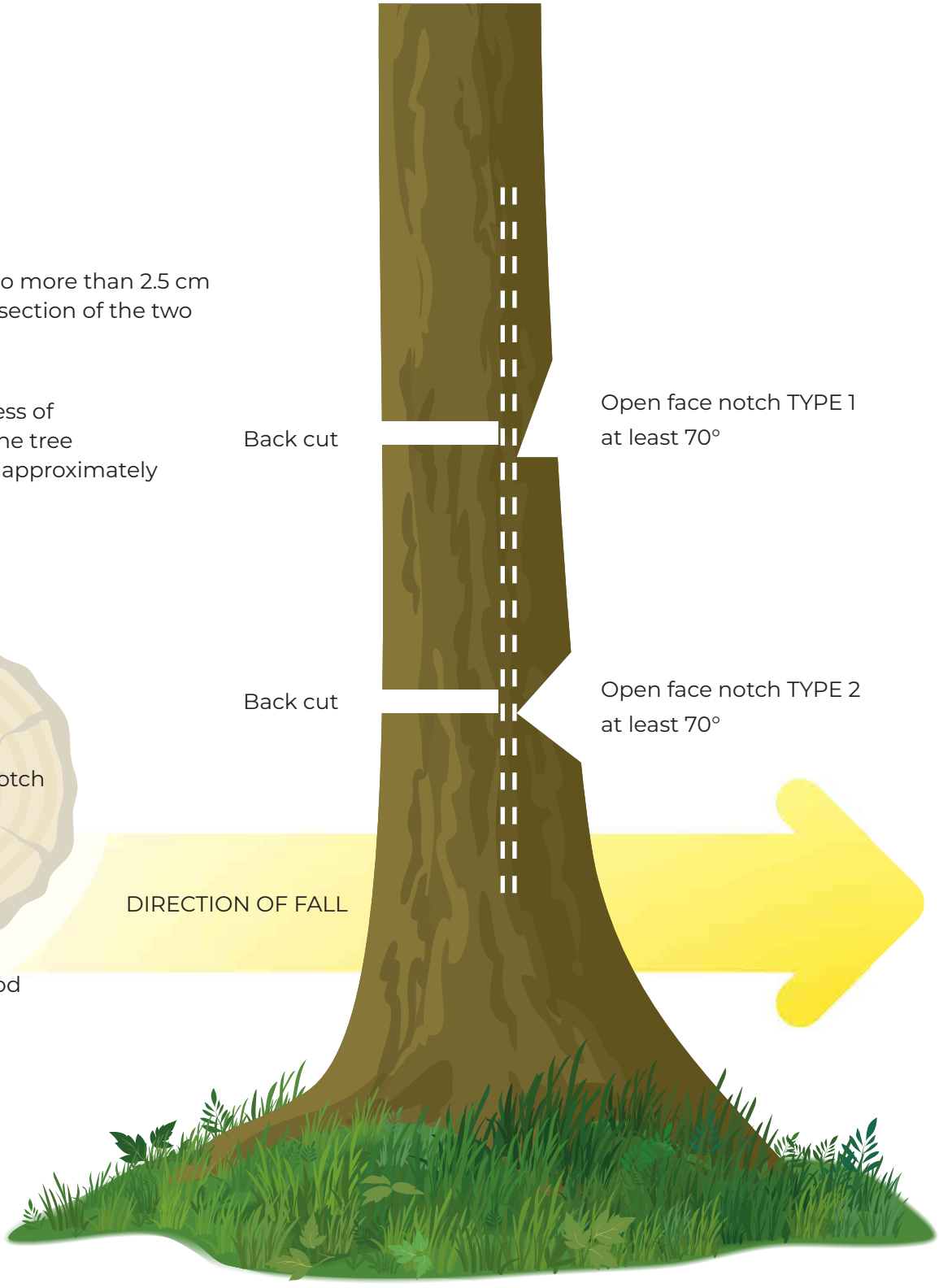
Photo courtesy of Fiskars Group

Follow the instructions as illustrated:

BACK CUT: Level and no more than 2.5 cm (1 inch) above the intersection of the two notch cuts.

HINGE WOOD: Thickness of approximately 10% of the tree diameter and width of approximately 80% tree diameter.





Felling a Tree Less Than 10 cm in Diameter

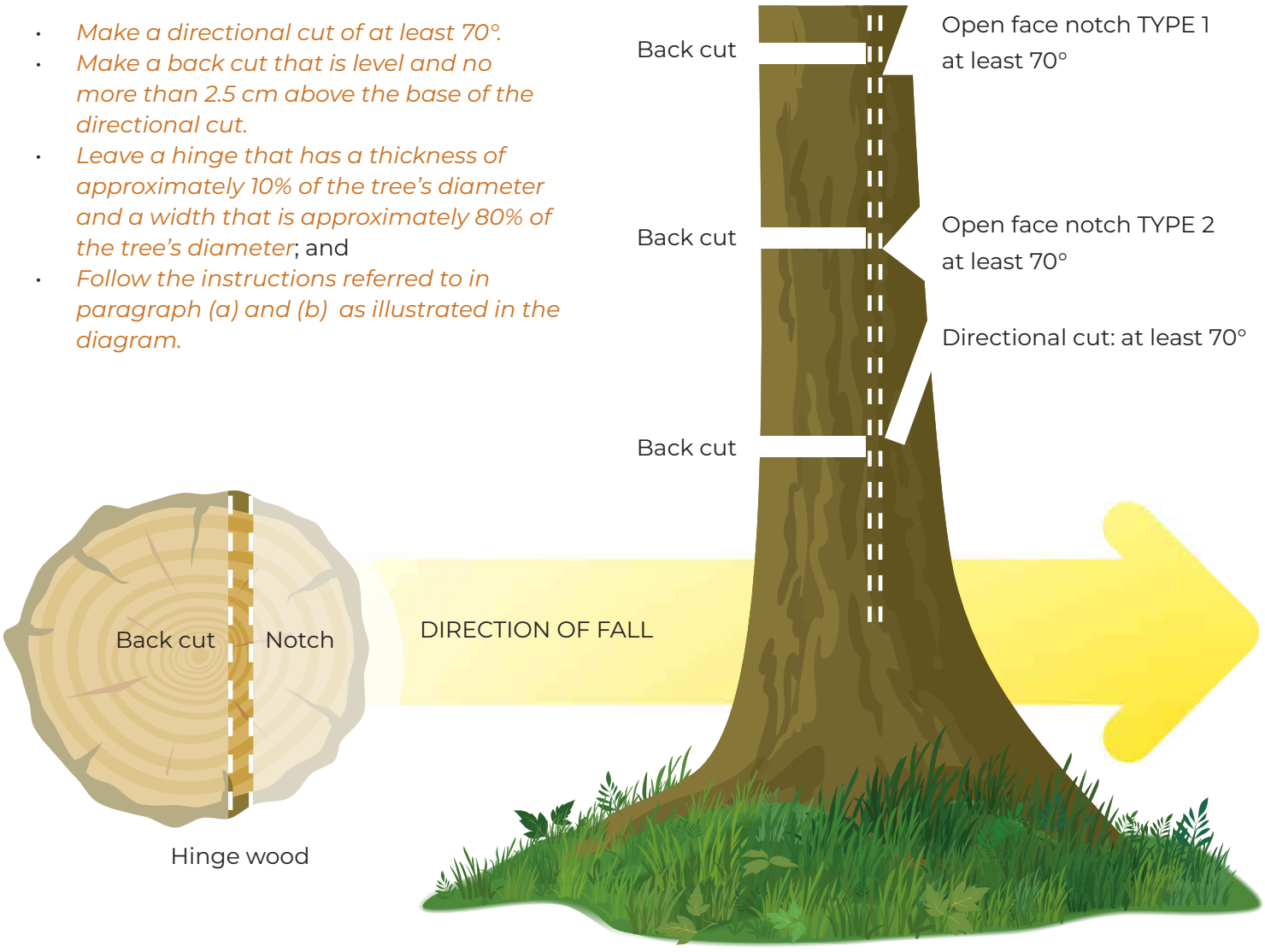
Also, in the new legislation for 2022 is felling procedures for a tree that is **less than 10 cm in diameter**. *[354(1.2)]*. This was added so the work could be done efficiently without the worker being exposed to chainsaw kick back. *When felling a tree that is less than 10 cm in diameter, an employee shall construct a hinge by using the technique set out previously in subsection (1.1) or by completing the following steps:*

- *Make a directional cut of at least 70°.*
- *Make a back cut that is level and no more than 2.5 cm above the base of the directional cut.*
- *Leave a hinge that has a thickness of approximately 10% of the tree's diameter and a width that is approximately 80% of the tree's diameter*; and
- *Follow the instructions referred to in paragraph (a) and (b) as illustrated in the diagram.*

BACK CUT: Level and no more than 2.5 cm (1 inch) above the intersection of the two notch cuts.

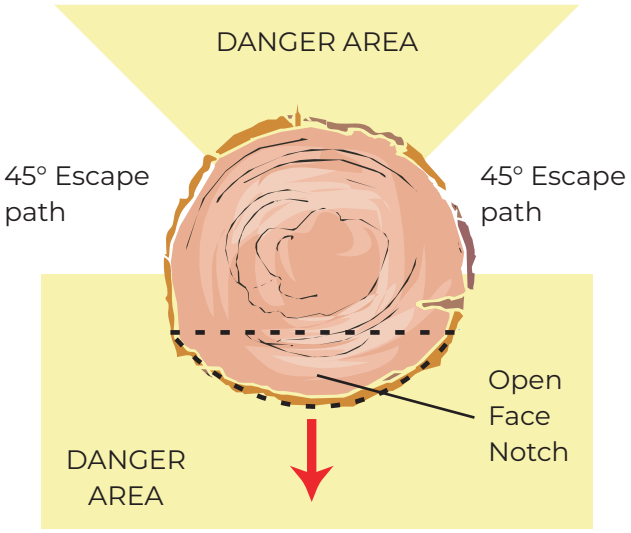
HINGE WOOD: Thickness of approximately 10% of the tree diameter and width of approximately 80% tree diameter.

BACK CUT: Level and no more than 2.5 cm (1 inch) above the base of the directional cut.

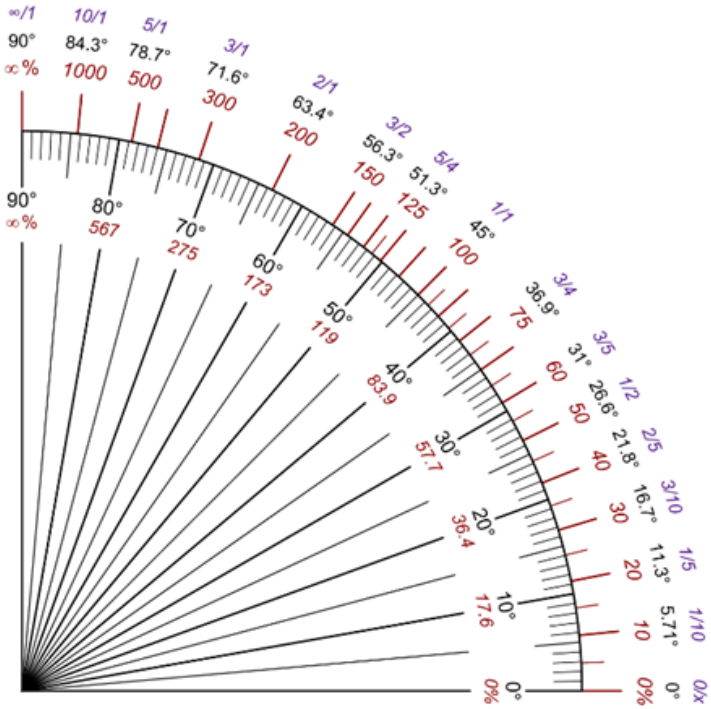


When felling a tree, you can *use a felling lever or wedge as required [354 (2) (a)]* **unless is it is a chicot!** If it is a chicot you can only *use a lever instead of a wedge to avoid hitting the tree. [353.1(2) (c].*

Escape Route When Felling a Tree



Once you start to fell a tree, you must finish the job by bringing the tree completely to the ground. [354 (2) (b)]. Never leave a partially cut tree standing. When the tree is on its way down, use your escape route to get safely clear of it. Don't turn your back on the tree.



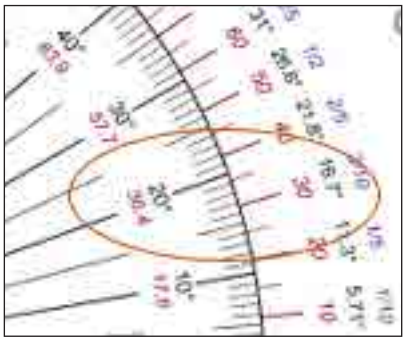
The Regulations now define what a safe distance is. *As soon as the tree begins to fall, move at least **3 m away** from the tree at a 45° angle from the direction opposite to the planned direction of fall. [354 (2) (d)]*. This was added to clarify the direction that the person should move to and defines what is meant by a 'safe distance'.

Felling a Tree on a Slope

The escape route procedure if the tree is on a *slope*, has been added to the regulations. If the slope is *greater than 30%, an employee may use an escape route that is perpendicular to the slope and not in the direction of the fall. [354(2.1)]* It is important to note that percent and degrees when referring to slopes are not the same. The slope describes the direction and steepness of a line and can be expressed in angles (degrees) or a grades (percentage). A slope with a grade of 30% would be the same as an angle of 16.7 degrees. See protractor photo for a visual of a 15-degree slope.

The following links contain more information on percentage versus degrees of slope.

- Today's Mower - 15 degree slope
- Engineering Toolbox – Slope - Degree, Gradient and Grade Calculator
- Wikipedia - Grade

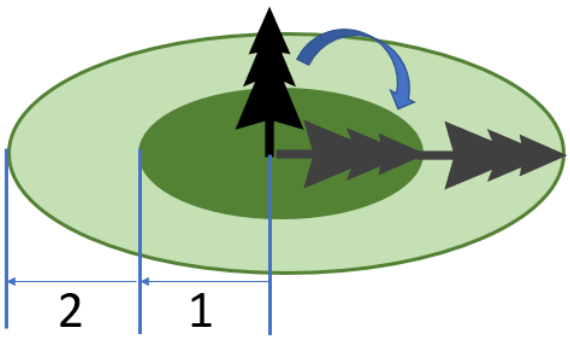


Lodged Tree

The legislation defines a "*lodged tree": means a tree that has not fallen to the ground or a bed after being displaced from its natural position; [354 (1)]*

If a tree remains standing or is caught up in another tree:

- Stay in the area until the lodged tree is removed. If it is necessary to leave the area to obtain help to remove the tree, *clearly mark as hazardous the area comprising a minimum radius of two tree lengths from the stump of the lodged tree, [354 (3) (a)]*. This was added to clarify the word 'area'.



- *Ensure the lodged tree is removed as soon as the circumstances permit by operating a powered mobile equipment* such as a skidder. At no time can a worker climb up or on this tree, fell it by attempting to knock it over with another tree (domino felling) or fell it by cutting the tree in which it is caught *(without being climbed by any person, having another tree felled on it or having the supporting tree cut) [354 (3) (b)]*.

- *Do not do any work, other than removing the lodged tree, within the area referred to in paragraph (a). [354 (3) (c)]*

Delimbing and Bucking a Tree

There are a few rules to follow when delimbing or bucking tree:

- *The tree must be resting solidly on the ground [355 (1) (a), 356 (2) (b)]*
- Both feet must be positioned firmly on the ground *[356 (2) (a)] No person walks on the trunk of the tree while it is being delimbed [355 (1) (b)]*
- *Whenever possible,* when delimbing*, the tree is worked on from the uphill side. [355 (1) (c)]*

When delimbing or bucking a fallen tree using a chainsaw,

- Never position the chainsaw directly in front of you [355 (2) (b), 356 (2) (c)]
- Never use *the tip of the chainsaw guide bar for delimbing*, as the saw may kick back at you. [355 (2) (a)]
- Never draw the chainsaw toward you [355 (2) (c)]

Powered Mobile Equipment

"*Powered mobile equipment" means self-propelled off-highway equipment used for construction, mining, agriculture, forestry, and other purposes and includes front-end loaders, dozers, backhoes, excavators, skidders, forwarders, tree-harvesters, scrapers, compactors, rollers, graders, agricultural tractors and industrial tractors but does not include industrial lift trucks or mobile cranes. [2]*

Requirements of Powered Mobile Equipment

The following are requirements for the use and operation of equipment for powered mobile equipment and are the responsibility of the employer [224]:

An employer shall ensure that powered mobile equipment

- *is used only for the purposes for which it is designed and equipped;*
- *is operated by a competent employee*, based on their knowledge, training and experience. Training must be reviewed regularly – never assume that a worker knows how to operate and work around equipment safely;
- *is equipped with adequate brakes;*
- *is equipped with a manually operated horn;*
- *has a rear-view mirror or other means of ensuring that the equipment can be safely backed up;*
- *is equipped with an audible back-up alarm that operates automatically when the equipment is in reverse and that is clearly audible above the background noise;*
- *is equipped with adequate headlights and taillights when used after dark or in dimly lit areas;*
- *has gears and moving parts adequately guarded;*
- *has controls that cannot be operated from outside the cab unless the controls are designed to be operated from outside the cab;*
- *has any load on it adequately secured*; and,
- *is provided with a three-point contact to access the operator's cab.*

Photo courtesy of Irving Woodlands

Flying/Intruding Objects

An employer shall ensure that powered mobile equipment has a cab, screen, shield, grill, deflector, guard or other adequate protection for the operator if the operator may be exposed to the hazard of flying or intruding objects [219(1)]. If the powered mobile equipment is a skidder or a forwarder, then the legislation requires that the employer ensures it "*is provided with a completely enclosed operator's cab that is designed to prevent objects from intruding into the cab and to prevent the operator and any passengers in the cab from being thrown outside the cab. [345.6]* This requirement is not new and was in the previous legislation [225]. It has been moved to section XXI with the addition of silviculture operations to better reflect current forestry practices.

Photo courtesy of Irving Woodlands

Rollover

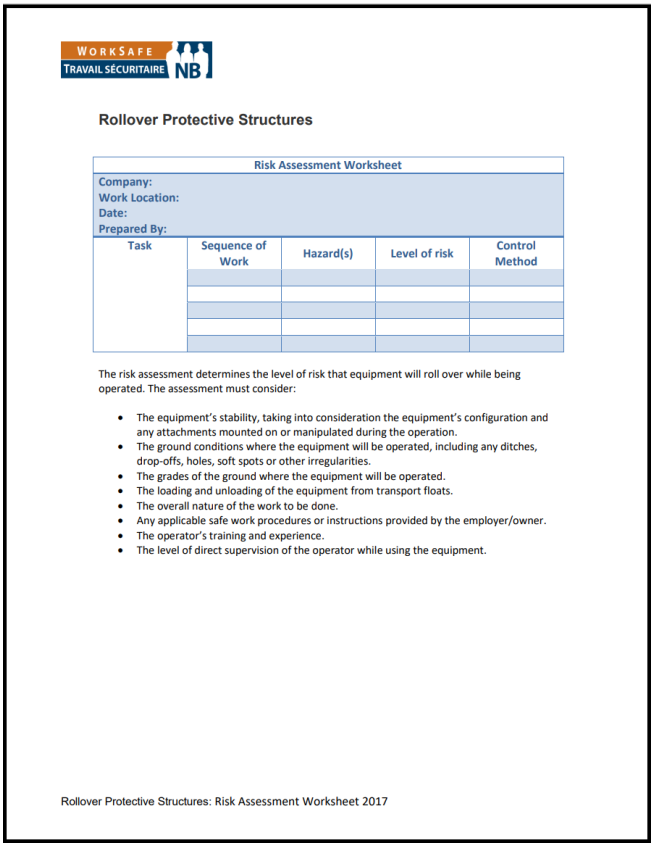
Section 220 discusses rollover protective structures. If the equipment was manufactured on or after January 1, 1974, then the rollover protective structure must meet *the minimum safety requirements of CSA standard B352-M1980, "Rollover Protective Structures (ROPS) for Agricultural, Construction, Earthmoving, Forestry, Industrial, and Mining Machines*". For equipment manufactured before Jan.1, 1974, you can review the rollover protective structure requirements in section 220 (1). Seatbelts and restraining devices are detailed in section 221. WorkSafeNB has a risk assessment worksheet that can be used to assess rollover protective structures.

Access and Egress

Added in April 2022, *Reg. 91-191* outlines more requirements of powered mobile equipment that employers must ensure.

Powered mobile equipment must be equipped with at least two safe and unobstructed means of access and egress that are not located on the same side of the cab of the powered mobile equipment [345.4(1)]

An employer shall ensure that the means of access and egress is inspected visually at least daily and tested monthly and, if the inspection reveals a defect or hazard, the employer shall ensure that no one uses the powered mobile equipment until the defect or hazard has been eliminated. [345.4(2)]



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Rollover Protective Structures

Risk Assessment Worksheet				
Company: Work Location: Date: Prepared By:				
Task	Sequence of Work	Hazard(s)	Level of risk	Control Method

The risk assessment determines the level of risk that equipment will roll over while being operated. The assessment must consider:

- The equipment's stability, taking into consideration the equipment's configuration and any attachments mounted on or manipulated during the operation.
- The ground conditions where the equipment will be operated, including any ditches, drop-offs, holes, soft spots or other irregularities.
- The grades of the ground where the equipment will be operated.
- The loading and unloading of the equipment from transport floats.
- The overall nature of the work to be done.
- Any applicable safe work procedures or instructions provided by the employer/owner.
- The operator's training and experience.
- The level of direct supervision of the operator while using the equipment.

Rollover Protective Structures: Risk Assessment Worksheet 2017

Safe Operation of Powered Mobile Equipment

Employer Responsibilities

Reg, 91-191 has legislation requirements related to the safe operation of powered mobile equipment. The following are **employer** responsibilities:

WHEN SIGNALLER REQUIRED: *An employer shall designate an employee to give signals to an operator of powered mobile equipment who is backing up the equipment and who is not able to see clearly behind the equipment and the operator shall back up the equipment only on signals from the designated employee. [226]*

HAZARD CREATED BY DUST: *Where work with powered mobile equipment is carried out in an area where dust may create a hazard to employees because of poor visibility, an employer, and a contractor, if any, shall each take such measures with respect to the dust as are sufficient to protect employees from the risk of injury. [227]*

OPERATING ON A SLOPE: When operating on a slope or a bank which may give away, *an employer shall ensure that adequate precautions are taken to stabilize the bank and to distribute the load of the equipment. [230]*

WHEN WOODS ROADS ARE FROZEN: *An employer shall ensure that powered mobile equipment is equipped with cleats or corks when woods roads are frozen [345.4(3)]*. Because frost formation varies each year depending on the weather and location, this provision is flexible and is at the judgement of the employer.

WORKING ALONE: *An employer needs to ensure that another employee is within 600 m of an employee operating powered mobile equipment [357(1)(a)] (but not closer than 50 m while the equipment is being operated) or the employee operating the powered mobile equipment is contacted every two hours and, if the employee exits the cab to perform work on the equipment, the employee contacts a person designated by the employer before exiting the cab. [358(1)(b)]*. They would now meet the definition of working alone. This law does not apply to employees assisting the operator of a skidder [357(2)].

There were no requirements previously for communication when an employees working alone must leave their operating cab to do potentially dangerous work, such as repairing chains or tightening cables.

Photo courtesy of Irving Woodlands

Safe Operation of Powered Mobile Equipment

Employee Responsibilities

Section 228 provides the duties of an operator of powered mobile equipment. An operator must ensure:

- *that a person does not ride on any part of the equipment not designed to carry passengers,*
- *not set equipment in motion until all air and hydraulic pressures are fully built up to specified operating pressures,*
- *when leaving the equipment unattended,*
  - *park it on level ground,*
  - *set the brake,*
  - *lower the blades and bucket or safely block them,*
  - *disengage the master clutch,*
  - *stop the engine, and*
  - *remove the key,*
- *follow a safe re-fueling procedure,*
- *not store containers of gasoline, diesel oil or other flammable substances in the cab,*
- *not carry loose articles in the cab, and*
- *keep the equipment in gear when going downhill.*

Additional Skidder Operation Requirements

Because often another worker must help a skidder operator, operating a skidder has additional legislative requirements to those above. The following procedures must be followed to ensure safety.

- The skidder operator must *direct any person assisting the operator to stand clear of any trees or logs after the trees or logs have been attached to the skidder [357 (3)(a)]*
- The skidder operator *must not winch any trees or logs until the person assisting the operator is not only standing clear but also standing opposite to the direction in which the load is to be winched*. This was updated as there has been one fatality and three severe injuries when trees being winched were caught up against a stump or rock and under pressure, catapulted in an unexpected direction. The worker is protected when standing opposite to the direction of the pull.
- *The person must also have* signalled to the operator *that they are clear [357 (3)(b)]*. The signalling should be done visually. However, when visibility is hampered, communication should be ensured with two-way radios or a horn.

Photo courtesy of Irving Woodlands

By law, *the skidder operator must verify the location of the assisting person before moving the skidder [357 (3)(f)]*. This was added as a feller was run over by a skidder in thick brush because of extremely restricted visibility. It is best practice for the operator to do a full 360° walks around before engaging the winch. Be careful of blind spots and get a signaller if your view is obstructed.

The skidder operator must also follow the following procedures to ensure safety.

- *Operate the winch from the seat unless it is deigned to be operated by remote control [357 (3)(c)]*.
- *Keep the wheel chains on the skidder properly adjusted [357 (3)(d)]*.
- *Make sure the skidder brakes are in good working order [224(c)]*
- *Lower the blade and apply the brakes when winching [357 (3)(e)]*. This will increase the stability before winching the load. It is unsafe to drive and winch at the same time.

Take special precautions when working in select cut operations. This situation is inherently dangerous because of decreased visibility, greater risk of logs binding up against standing trees, and a false sense of security that other standing trees offer protection. Identify any hazards and take appropriate measures to ensure the safety of everyone working in these types of operations.

Maintenance, Repair, and Inspection

Employees and supervisors must ensure equipment is properly *maintained in safe working condition* – guards, brakes, and back-up alarms should be checked regularly. Any defective part must be *repaired or replaced before being set in motion*. Ensure safety devices are not deactivated [229.1] and that seatbelts are worn when required by *Reg. 91-191*. Refer to the regulation on precautions that are in place for when work is being done to powered mobile equipment, including precautions when a tire is inflated on a rim [229 (1.1)], when the equipment is jacked or hoisted [229 (2)(3)] and when work is done at points of articulation [229 (4)].

Photo courtesy of Acadian Timber

Photo courtesy of AV Group NB Inc

Transportation of Powered Mobile Equipment

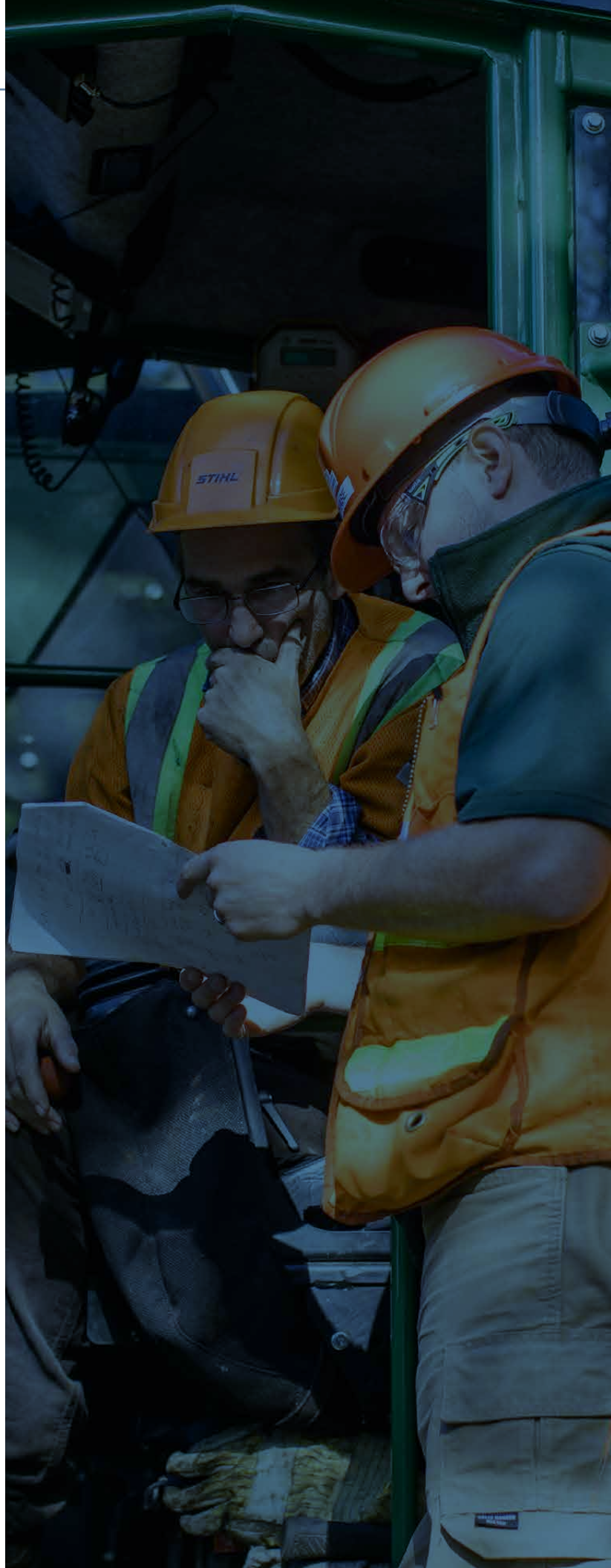
Loading and transportation of powered mobile equipment has also been added to *Reg. 91-191*. There were previously no regulations pertaining specifically to transportation and this is significant consideration in the forestry sector.

When loading or unloading powered mobile equipment onto a transport vehicle, an employer and an operator shall ensure that:

- *The manufacturer's specifications for the powered mobile equipment and the transport vehicle are followed [345.5(1) (a)]*
- *The load is parallel to the transport vehicle [345.5(1) (b)]*
- *No person is within the rollover area of the powered mobile equipment. 345.5(1) (c)]*

When transporting powered mobile equipment by transport vehicle, an employer and an operator must shall ensure that:

- *Articulated powered mobile equipment is restrained in a manner that prevents articulation while the transport vehicle is in transit. [345.5(2)(a)]*
- *Accessory equipment and attachments are completely lowered and secured to the transport vehicle [345.5(2)(b)]*
- *The powered mobile equipment is restrained by at least four tie downs that are attached, as close as is practicable, at the front and rear of the transport vehicle or to mounting points on the transport vehicle that are specifically designed for that purpose, and [345.5(2)(c)]*
- *Each tie down has a working load limit of at least 2,258 kg and the sum of the working load limits is equal to or greater than 50% of the weight of the powered mobile equipment. [345.5 (2)(d)]*



Cable Logging Systems

Cable logging is a pulley system used on very steep slopes. Logs are attached to a moving platform "carriage" on the cable and the logs are winched down to the woods road. More additions have been added to *Reg. 91-191* in April 2022 to provide requirements for the design, installation, erection, maintenance, and operation standards of cable logging systems. They are in addition to the *application of other provisions; Paragraphs 207(1)(a) and (b), sections 208, 209, 210 and 210.01, subsection 211(1), paragraphs 211(2)(a) to (f) and paragraphs 212(a), (b) and (d) apply, with the necessary modifications, to a cable logging system. [359.1]*.

Photo courtesy of Acadian Timber

Review of the "*other provisions*"

207 (1)(a) (b) states that it is an employer's responsibility to ensure that the hoisting apparatus is *sufficiently strong and stable for the intended lift, and equipped with suitable ropes, chains, slings, hooks, and other fittings so as to ensure the safety of a person who uses the apparatus or works in its vicinity*. Sections 208, 209 and 210 give the employer responsibilities as to the safe working load of the hoisting apparatus and maintenance. The hoisting apparatus also must be thoroughly inspected and tested by a competent person before it is put into first use and after any incident that may have caused damage. An inspection also must be done every 12 months by a competent person to make sure the hoisting apparatus meets the manufacturer's specifications, and certify in writing that the apparatus not only meets these specifications, but also provide details on the conditions under which the apparatus was inspected [210.01]. A logbook must be kept by the employer recording all inspections and repairs and made available to a WorkSafeNB officer upon request [210(3)].

The employer must also ensure the *person who operates a hoisting apparatus is competent or is under the direct supervision of a competent person* [210.1] An employer must ensure the following procedures respecting operation of a hoisting apparatus are followed [211(1)]: *211(2) An operator of a hoisting apparatus shall:*

- *Visually inspect the hoisting apparatus before use to verify that it is in safe working order [211(2)(a)],*
- *Where the operator has restricted vision, including restricted vision of electrical utility lines, move a load only on a signal from a signaller designated under section 212 (b) below,*
- *Raise a load vertically unless it is necessary to raise a load obliquely [211(2)(c)],*

- *When raising a load obliquely, ensure that the hoisting apparatus is suitable for lifting a load at an oblique angle and that any pendulum effect does not constitute a hazard to persons working in the vicinity [211(2)(d)],*
- *Not carry a load over any person [211(2)(e)],*
- *Not leave a suspended load unattended if a person may be in the area under the load [211(2)(f)],*
- *Designate a competent employee to be a signaller to direct, by means of visual or auditory signals, the safe movement and operation of a hoisting apparatus by an operator. The signaller must:*
  - *Be readily identifiable by the operator, [212(a)]*
  - *Govern the movement of a load by a well understood distinctive code of signals or another effective communication system [212(b)],*
  - *Verifies that all ropes, chains, slings or other attachments are properly applied to the load and secured to the hooks of the hoisting apparatus and that the area is clear before signalling to move the load. [212 (d)]*

Note: The above legislation applies *with the necessary modifications, to a cable logging system. [359.1].*

Added to the legislation is that *an employer and an owner of a cable logging system must ensure that the cable logging system is installed, erected, inspected, operated, and maintained in accordance with section 7-2.4 of ASME Standard B30.7-2011 "Winches", or a standard offering equivalent of better protection [359.2]*. ASME Standard B.30.7-2011 is the American National Standard on Winches (Formerly Titled Base-Mounted Drum Hoists) and is a "Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings". Section 7-2.4 gives information on Rope Inspection, Replacement and Maintenance.

Also added to *Reg. 91-191* are that the employer must also ensure the following:

- *That a cable logging system is equipped with remote controls that have a failsafe mechanism to prevent the simultaneous operation of two or more remote controls. [359.3(1)]*
- *That employees receive training on how to use the cable logging system. [359.3(2)]*

These regulations were added to Section XXI Logging operations as there previously was no provision specifically retaining to mechanical and or cable logging. It was recommended especially since this is a large component of the forestry sector.

Hauling (Yarding) Logs

An employer must ensure the following if wire rope is used for hauling or yarding logs:

- *Replace the wire rope when signs of wear or damage appear [358 (1)]*
- *Ensure that cable cutters are readily available [358 (2)]*

When hauling logs with a wire rope, an employee shall attach the wire rope no farther than 1 m from the end of the log. [358 (3)]

Woods Roads

Reg. 91-191 defines "woods road" as *any road, other than a local government road or provincial highway, through a forest area that provides access for the harvesting and transportation of raw forest products by means of a vehicle. [360 (1)]*

Construction of woods roads

LOCATION: *An employer shall ensure that a woods road is constructed as close as is practicable to a logging area to allow reasonable access and efficient evacuation in the event of an emergency. [360(3)]*

POWER LINES: New in April 2022 are laws on power lines. *An employer or property owner shall notify the authority owning or operating an energized electrical utility line of the intention to build a woods road close to the electrical utility line. They must provide the location, time and duration of the planned work before any work is done. [360(4)] The authority will specify the distance that the road can be built from the energized electrical utility line. [360(5)]*. This was added as energized electrical lines are often found crossing over woods roads.

Occasionally the height of the power lines crossing the road may be too low, bringing log trucks and other powered mobile equipment in proximity or in contact with high voltage lines. Adding this provision is to minimize the risk of contact when new woods roads are built.
A general rule is to not yard products to within 50 metres of a power line. This will eliminate the risks of delimbers or loaders working too close to the lines.

Overhead Power Lines Pose Threat to Workers and Equipment (worksafenb.ca)

Photo courtesy of Irving Woodlands

BRIDGES: An employer must ensure a bridge on a woods road meets the following criteria:

- *Is constructed according to a plan approved by an engineer [361(1)(a)]*
- *Has the load capacity conspicuously posted 30 m from both ends of the bridge [361(1)(b)]*
- *Has a warning sign conspicuously located 90 m from the bridge if the bridge is not visible from that distance [361(1)(c)]*

The following criteria applies to bridges and culverts on woods roads:

An employer must ensure:

- *If it is over 1.2 m in height that it has bumpers at least 250 mm high running the length of the bridge or culvert on both sides, [361(2) (a)]*
- *It has a hazard marker located on each corner of the bridge or culvert with the bottom of the marker not less than 1.5 m or more than 2.5 m above the level of the travelled portion of the road [361(2) (b)]*
- *Has a sign conspicuously located along the side of the road at least 150 m from the bridge or culvert warning of a narrow passage if the width of the bridge or culvert is less than that of the woods road. 361(2) (c)]*

DESIGN AND SIGNAGE: An employer must ensure a woods road meets the following criteria:

- *Has wide sections for passing if the road has only one travelling lane [360(2)(a)]*
- *Has stop signs conspicuously located at intersections, [360(2)(b)]*
- *Has signs warning of dangerous curves and blind or steep hills conspicuously located to allow for ample reaction time[360(2)(c)]*

- *Adequate warning signs are posted and made visible in both directions when the flow of vehicular traffic is interfered with by a logging or silviculture operation or woods road building work [360(2.1)]* This was added in April 2022 to protect employees and motorists (vehicles, ATVs, etc.) who arrive unexpectedly in a logging, silviculture, and/or road building operation.

- *Signs and hazard markers used on a woods roads must be constructed of light reflective material and of suitable dimensions so as to be clearly visible under normal driving conditions [362]*
- *Is kept in a safe condition. [360(2)(d)].* In the summer, this means grading when necessary as well as spreading calcium or water for dust control. Vegetation that reduces visibility must be cut back. In the winter, the roads need to be salted and graveled, scarifying the roads.

Driving on Woods Roads

- *An operator of a vehicle driving on a woods road shall do so with due regard to the traffic, the environmental conditions, and the conditions of the woods road and, if applicable, the speed limit set by the owner of the woods road [363.1].* Slow down in dust, heavy rain, snow, ice, heavy traffic, deteriorating road conditions and poor visibility. Dust remains suspended in the air and can reduce visibility for a longer time. When driving in winter conditions, remember that snowbanks at intersections can obstruct the view and narrow the roadways.
- *An operator of a vehicle shall keep the headlights of the vehicle on while driving on a woods road.[363]*
- Do not stop in curves, blind areas, and bridges.

Additional requirements of trucks with logs travelling on woods roads

In addition to the above, new regulations in April 2022 have specific legislation on trucks with loads of logs traveling on a woods roads. There were no regulations previously pertaining specifically to cargo securement and the following legislations reflects current practices with log hauling. Employers and employees must ensure loads are properly secured by complying with the following requirements *[364 (1)]*:

- *The truck shall be equipped on the top and on the rear of the cab with structural protection that is strong enough to restrain the cargo. [364(2)]*
- *A rear overhang exceeding one meter shall have a visible means of identification. [364(3)]*
- *A stack of wood in the load shall be restrained with a minimum of two tie-downs. [364(4)]*
- *Stakes that are not permanently attached to the truck frame or bunk shall be secured in a manner that prevents the stakes from separating from the truck while it is travelling on a woods road. [364(5)]*
- *The weight of the load shall not create a hazard. [364(6)]*

An employer shall ensure that an employee conducts a walk around inspection of the load at checkpoints that are designated by the employer and marked with signs along the woods road and before: [364(7)]

- *leaving the work area, [364(7(a)]*
- *entering a highway, and [364(70 (b)]*
- *removing load binders at, an off-loading site [364(7 (c)]*

Loading Operations

The following regulations are to ensure employees are safe during the loading operation. An employer must ensure the following:

- That no employee rides on logs that are being on or off loaded or drawn by a moving vehicle [365(1)].
- That no employee stands on top of the load [365(2)].
- That no employee works or stands under the suspended load where hydraulic loaders are used to load or unload logs [365(3)].

Photo courtesy of Acadian Timber

Photo courtesy of Irving Woodlands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