

ONTARIO FORESTRY SAFE WORKPLACE ASSOCIATION

SWO
MECHANICAL LOGGING
RESOURCE PACKAGE



OFSWA
Ontario Forestry Safe Workplace Association

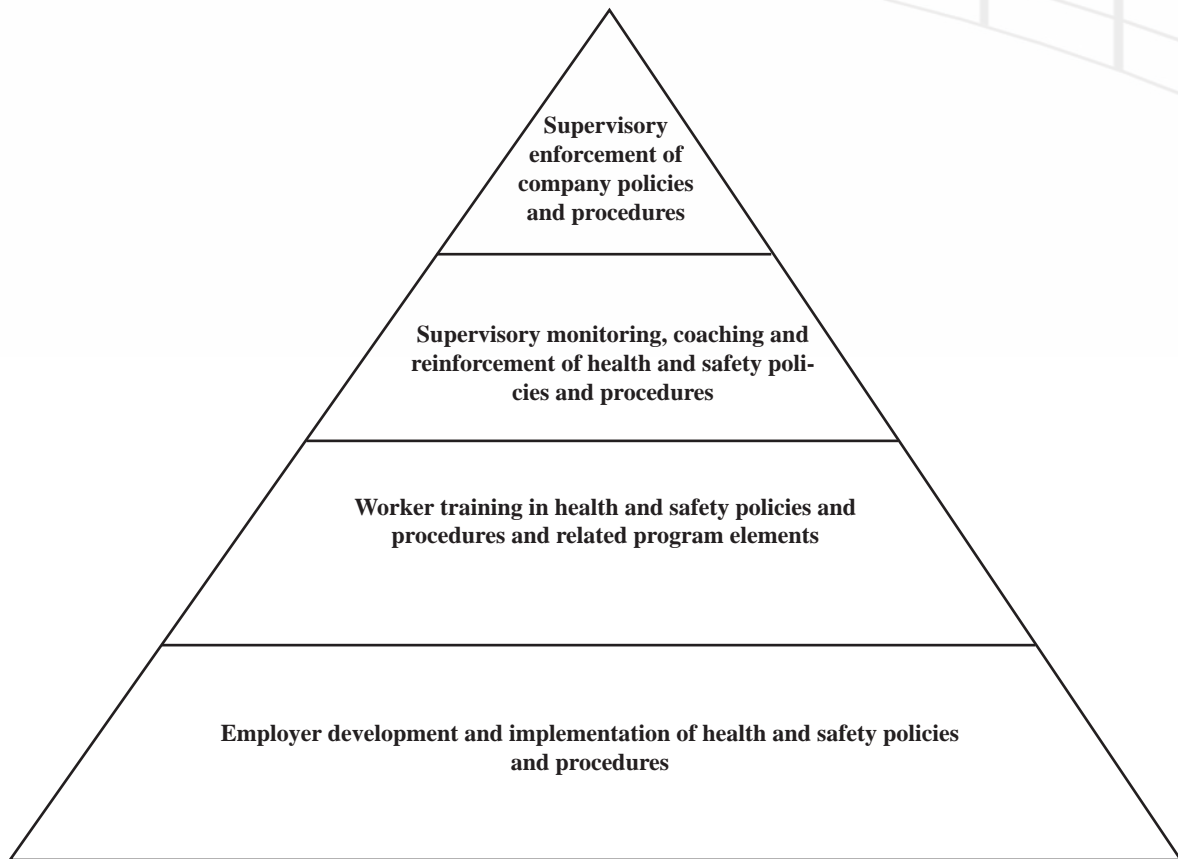
MECHANICAL LOGGING

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Health and safety program development



The following resource package includes a number of samples of important policies and procedures for any conventional logging operation. The package provides guidance on the development of some of the areas, such as lockout and machine guarding, which OFSWA has identified as weaknesses within industry health and safety programs. The above pyramid outlines key elements which are important to the success of any program.

A good starting point in assessing your current health and safety program is to review past workplace injuries. This review can identify injury trends or weaknesses in injury investigations, reporting or follow-up. The following points may assist in this assessment:

- a. Are there consistent injury trends?
- b. Do injury investigations and related reporting address potential weaknesses in:
 - i. Current policies and procedures
 - ii. Worker training
 - iii. Monitoring, coaching and reinforcement
 - iv. Enforcement

The remainder of this resource package has been developed to provide guidance on other important areas such as the Mechanical Harvesting Equipment Operator certification process and the recently developed procedures for feller buncher sawhead guarding. If you have any questions or require additional guidance in relation to this material or in developing your health and safety program, please contact your local OFSWA Consultant Trainer for assistance.

OFSWA CONSULTANT TRAINER FOCUS FIRM ACTION PLAN CRITERIA AND ASSOCIATED PROTOCOLS

- ☑ Review trailing indicators or past year's injuries which have resulted in the firm being identified.
- ☑ Discuss and review injury investigation reports to address potential weaknesses in the firm's incident investigation procedure including ensuring reports address current policies and procedures, worker training, monitoring, coaching and reinforcement of policies and procedures as well as ongoing enforcement by supervision.
- ☑ Review, comment and provide recommendations as necessary on the status of Machine Guarding: Policies, Procedures, worker training, monitoring, coaching and reinforcement of the policies and procedures as well as ongoing enforcement by supervision.
- ☑ Conduct an on-site assessment of the application of these elements: (see OFSWA's Machine Guarding Audit Guidelines for further info.)
- ☑ Review, comment and provide recommendations as necessary on the status of Lockout: Policies, Procedures, worker training, monitoring, coaching and reinforcement of policies and procedures as well as ongoing enforcement by supervision.
- ☑ Conduct an on-site assessment of the application of these elements: :(see OFSWA's Machine Lockout Audit Guidelines for more info.)
- ☑ Review, comment and provide recommendations as necessary on the status of the firms WMSD Program: Policies, Procedure, worker training, monitoring, coaching and reinforcement of policies and procedures as well as ongoing enforcement by supervision.
- ☑ Recommend sector-specific Safe Workplace Ontario (SWO) program as an excellent resource tool in developing and advancing the firm's health and safety program.

OFSWA CONSULTANT TRAINER FOCUS FIRM ACTION PLAN FOLLOW-UP CRITERIA

- ☑ Review recent lost time or medical aid injuries occurring since last consultation and where necessary provide recommendations regarding additional action required in policy/procedure development, worker training, monitoring, reinforcement or enforcement by supervision or provide positive reinforcement to the firm for experiencing no injuries. Consider how WMSD issues may have impacted on any injuries which occurred and recommend means of addressing these concerns.
- ☑ Review the firms' progress towards 2006 focus firm action plan recommendations.
- ☑ Confirm that health and safety training requirements for new workers or workers transferring to another job has occurred.
- ☑ Confirm the ongoing monitoring, reinforcement and enforcement of policies and procedures by supervision.

Why work standards?

Under the Occupational Health and Safety Act, an employer must prepare and review at least annually a written occupational health and safety policy, and must develop and maintain a program to implement that policy [OH&S Act, section 25 (2) j)].

Supervisors will be held accountable for the health and safety of workers under their supervision. Supervisors are responsible to ensure that machinery and equipment are safe and that workers work in compliance with established safe work practices and procedures. Workers must receive adequate training in their specific work tasks to protect their health and safety.

Every worker must protect his or her own health and safety by working in compliance with the law and with safe work practices and procedures established by the company.

What is a standard?

A standard is a tool for measuring something. The eight-foot measuring stick used by many pulpwood cutters is a good example of a standard. In order to make sure that every log is the right length, you “apply the standard” by laying the measuring stick down beside the log. If you think the log may be too long or too short, you simply compare it to the standard. The log has to “meet the standard” in order to be acceptable. If the log is too long, you have to trim a piece off to “bring it up to standard.”

You establish the standard once, at the beginning. You find out how long logs are supposed to be. Then you use a tape measure to measure out that length on a pole, and you cut the pole to exactly the right length. From then on, you don’t measure every log with the measuring tape – you just use the stick.

If you have a big operation with many people bucking timber in different locations, you give each one of them a measuring stick – and you make sure that all those sticks are exactly the same length. You want everyone to be working to the same standard.

Establishing a standard for length of logs is easy, and verifying that all logs are “up to standard” is also easy and straightforward.

We can also establish standards for more complex things, such as equipment condition and operating procedures at a workplace.

In each case, the “standard”, whether it is a tool like a measuring stick or a written description, will establish the way to measure something. In the case of a simple standard like log length, the measuring stick can be used to give a hard and fast ruling on how long a log should be.

Subject: _____

Standard:

Definitions:

Personnel affected:

OH&S Act:

Special considerations:

Date: _____

Signatures: _____

Standard safe work practices for bulldozer operators

1. **Mounting/dismounting** - Bulldozers will be mounted/dismounted using three-point contact, making use of steps, ladders, handholds and railings. Do not jump to the ground.

Before leaving the seat, ensure that the blade is lowered to the ground and the shift lever is locked into position. If on a slope, apply the brakes.

While walking on the bulldozer, on the ground, or stepping down from the bulldozer, take extra caution for footing hazards such as sticks, grease, oil and ice, which could lead to slips/trips/falls. Look, then step.

2. **Inspection/maintenance/repairs** - Follow a circle check to do inspections of bulldozers at the beginning and at the end of shifts.

- Operators must grease machine daily. Keep engine and engine area clean to reduce fire hazard.
- Problems found at the beginning of the shift will be reported immediately to the garage for repair.
- Ensure that mechanical personnel understand the problem by discussing it with them, if necessary.
- At the end of each shift, operators' condition reports will be completed, including machine hours, regardless of the condition of the bulldozer. If problems are found, the condition report will be turned in to the garage so prompt repairs can be made.
- Communicate with the opposite shift operators and mechanical department to keep the machine operating in a safe mechanical condition.

3. **Danger zone** - Danger zone is defined as the area around operating machines or working personnel, in which there is potential for being struck by moving equipment or objects. The danger zone may vary according to the work being performed, a 200 ft. (60 m) minimum.

Anyone entering the danger zone must first get the attention of the operator (through radio or visual contact). The operator must stop and lower the blade to the ground.

Operators must avoid working too close to other personnel or equipment, risking injury and/or damage to them.

4. **Communications while assisting in mechanical repairs** - When operators are assisting in mechanical repairs to machines, operators and mechanics must establish clear communications prior to starting any tasks.

With proper communication between those concerned, make sure everyone knows exactly what must be done by whom and when. For example, establish who will be responsible for:

- a) starting or moving a machine
- b) ensuring that anyone involved is in a clear and safe position
- c) directing the movement of the machine
- d) ensuring that it is safe to resume working.

If repair work must be performed while the machine is operating, the operator must have a clear understanding of what he or she is to do and follow the specific instructions given by the mechanic responsible for performing the job.

5. **Bulldozing** - While operating on travelled roads, keep right, especially on corners and hills.
 - When pushing out a road, avoid pushing debris into standing timber, for example stumps, trees, rocks and dirt. Do not create hang-ups. Lower chicots and hung-up trees as they are encountered along roadways.
 - Brush piles will be leveled so that harvesting equipment does not get hung up in them.
 - Roads will be made to proper width, with sufficient turnarounds, turnouts and room for 8 ft. slash piles.
 - Road will be kept free of hazards, for example, stumps, rocks and debris.
 - Keep well back from feller forwarders when they are cutting roadways.
6. **Winching** - Prior to winching, ensure cable is in safe condition and hook-up is secure.
 - Brakes will be applied and blade will be lowered onto ground during winching.
 - Winch only at the proper speed that the machine being winched is able to move. Winch in straight line, not on angle.
7. **Moving trailers** - Prior to hooking or unhooking any trailer, ensure trailers are properly blocked (chocked).
 - Operators will be assisted in hooking up trailers.
 - While hooking or unhooking a trailer, ensure all personnel are clear of the area between the trailer and the bulldozer. While being assisted, ensure communications and directions are clear and understood before moving your machine.
 - Travel at proper speeds when pulling trailers.
 - Ensure that your bulldozer is capable of controlling the equipment/trailer being moved.
 - If moving a fuel trailer, ensure that it is hooked to a drawbar rather than on a winch.
8. **Defensive driving** - When driving company vehicles, drive within the posted speed limits and in keeping with weather conditions. (Proper gear selection will be used, especially on rocky ground). Seat belts save lives and prevent injury. Seat belts must be worn when travelling in any company vehicle equipped with seat belts, on main haul roads, public roads and highways.
9. **Lockout** - Lockout procedures must be followed during mechanical service, repairs or inspection for the protection of workers and equipment.
10. **Housekeeping** - The operator is responsible for good housekeeping. Cabs and windows must be kept clean. Tracks will be cleaned at the end of shift.

Ensure clear footing around machine prior to cleaning tracks.
11. **Personal protective equipment** - Operators must wear hardhats when not inside their cabs.
 - CSA-approved safety boots, in good condition, properly laced, must be worn at all times. Worn-out soles and heels could lead to slips and falls.
 - Eye protection will be worn where there is danger of falling or flying debris, especially in dusty conditions and while using air hose or water hose.
 - Proper eye protection must be worn if the operator is involved in firewatch during welding repairs.
 - Hand protection will be worn when handling cable or any other material where there is a danger of cuts or puncture injury.
 - Hearing protection must be worn if operating a bulldozer without a cab, or when doors or windows of the cab are open.

12. **Fuelling** - Bulldozers will be fuelled at the end of each shift. Shut down the engine during fuelling. No smoking.
- Before entering the danger zone for the purpose of fuelling a machine, ensure that communication (radio/ eye contact) with the operator has been made.
 - The machine should be shut off before the fuelling vehicle approaches the machine, and the fuelling vehicle must be out of the danger zone before the machine is started.
 - Beware of spills and splash-back. Return the hose to its proper storage position when fuelling is complete. Beware of the location of hoses so as not to run over them.
 - When a fuel truck is used for refuelling, have the driver pass the hose up or, if alone, put the hose up onto catwalk and get up on machine by steps or tracks.
 - However your machine is being fuelled, you should use handholds, watch your footing and be careful of possible hazards.
 - Mud, ice, sticks, oil and fuel on or around the machine, fuel truck deck, fuel tanks and the ground can lead to slips and falls.
13. **Proper manual lifting** - Whenever possible, take a proper well-balanced stance with secure footing prior to doing any lifting.
- Try to keep your back straight, bending at the knees, lifting with your legs. If something appears too heavy for one person to lift, get help.
14. **Parking bulldozers** - Wherever possible, bulldozers will be parked on level dry ground, clear of hazards, especially mud, to allow ease of access. Park well clear of other equipment/buildings.
- At completion of your shift, your machine must be parked with the master switch off, and windows and doors closed. Ensure that the blade is lowered onto the ground and the shift lever is locked into position.
15. **Blowdown** - road construction - If a road is required through a blowdown area, care should be exercised with the dozer to avoid spring pole and spear pole hazards.
- Establish a clean face at the butt end of the blowdown. The dozer should remove overhead hazards along the roadway. When required to establish access to a cutting face, try to minimize disturbance of the blowdown.

WORKER: _____ DATE: _____

COMPANY CONTACT: _____ DATE: _____

Standard safe work practices for feller buncher operators

1. **Mounting/dismounting** - The feller buncher should be mounted/dismounted using three-point contact, making use of steps, ladders, handholds and railings.
 - Before leaving the seat, the operator must ensure that the boom is on the ground and the brake is engaged.
 - While walking on the feller buncher, especially in areas without handrails, or on the ground around the feller buncher, workers must take extra caution for footing conditions which could lead to slips, trips, or falls.
2. **Parking the feller buncher** - The feller buncher must be parked on level ground, clear of hazards, to allow ease of access. The boom should be positioned so the door can be let down before the machine is shut off.
3. **Travelling** - Proper gear selection must be used to maintain control up and down hills. If the feller buncher is being pulled, both machines must be kept in the same gears.
4. **Danger zone** - The danger zone is defined as the area around operating machines or working personnel where there is potential for being struck by moving equipment or objects. The danger zone may vary according to the machine or work being performed.
 - Operators must make sure that all employees or vehicles are clear of the danger zone before the feller buncher is moved. No felling will be carried out within two tree-lengths of the machine, approximately 200 ft. or 60 m.
 - Any person approaching a machine must remain clear of the danger zone until the attention of the operator is obtained through some method of communication (for example, radio contact, visual contact.)
5. **Inspection/maintenance/repairs** - Daily inspections of equipment (circle checks) should be carried out at the beginning and at the end of shifts. Defects must be reported promptly for repair and recorded on the condition report.
 - Daily maintenance must be carried out, including greasing and cleaning. Cabs must be swept out daily and decks cleaned at the end of every shift.
6. **Lockout** - Lockout procedures must be followed during mechanical service, repairs or inspection for the protection of employees and equipment.
7. **Personal protective equipment** - Hardhats must be worn whenever operators are not in their cabs.
 - Hearing protection must be worn by operators if working with doors or windows open.
 - Eye protection must be worn by operators while performing maintenance, repairs or cleaning of machine. During welding firewatch, employees must protect themselves from flash injury to eyes by wearing proper eye protection. (For example, cutting goggles.)

At all times employees must wear CSA-approved safety boots that are in good condition and properly laced.
8. **Wood placement for skidding** - Wood bundles must be placed in orderly fashion with bridging, if possible, and in suitable sizes to accommodate the terrain to ensure ease of skidding.
9. **Hazard trees** - Chicots and dislodged trees must be lowered when encountered. Stump heights must be left as low as the terrain will allow.
10. **Communications while assisting in mechanical repairs** - When operators are assisting mechanics to repair machines, clear communications must be established prior to starting the tasks. The operator and the mechanic must each know who will be responsible for:
 - a) starting or moving a machine
 - b) ensuring that anyone involved is in a clear and safe position
 - c) directing the movement of the machine
 - d) ensuring that it is safe to resume working.

If repair work must be performed while the machine is operating, the operator must have a clear understanding of what he is to do and follow the specific instructions given by the mechanic responsible for performing the job.

11. **Fuelling** - Feller bunchers will be fuelled at the end of each shift. Shut off the engine during fuelling. No smoking.
 - Before entering the danger zone for the purpose of fuelling a machine, ensure that communication (radio/eye contact) with the operator has been made. The machine should be shut off before the fuelling vehicle approaches. The fuelling vehicle must be out of the danger zone before the machine is started.
 - Beware of spills and splash-back. Return the hose to its proper storage position when fuelling is complete. Beware of the location of the hoses so as not to run over them.
 - When a fuel truck is used for refuelling, have the driver pass the hose up or, if alone, put the hose up onto catwalk and get up on machine by steps or tracks.
 - However your machine is being fuelled, you should use handholds, watch your footing and be careful of possible hazards. Mud, ice, sticks, oil and fuel on or around the machine, on the fuel truck deck, on fuel tanks, and on the ground surrounding the area, can lead to slips and falls.
12. **Proper manual lifting** – Whenever possible, take a proper well-balanced stance with secure footing prior to doing any lifting. Try to keep your back straight, bending at the knees, lifting with your legs. If something appears too heavy for one person to lift, get help.
13. **Blowdown** - harvesting – Take the top tree first, if possible. If not, pull a tree free rather than lifting against obstacles. Cut all trees as close to the root system as possible. If a long stump is left after the first cut, re-cut it closer to the ground.
 - Keep the work area as free of large debris as possible. Swing uprooted trees to the side before cutting the stump off, where possible, to allow easy access to bundles. Cut all species as you come to them. Pay special attention to spring pole and spear pole hazards. Inspect the cutting head, boom and swing assembly twice per shift. Accumulate trees according to boom capacity. Avoid allowing butts to rub excessively on saw blade due to high fire risk.
14. **Fire** - In extreme fire hazard conditions, accumulate only one tree at a time. During extreme hazard, move to lower ground or predominantly standing timber. Have water supply readily available. Do not cut too far into an area of blowdown to prevent being trapped ahead of a fire. Clean machine more frequently.

WORKER: _____ DATE: _____

COMPANY CONTACT: _____ DATE: _____

Standard safe work practices for skidding full tree

1. **Mounting/dismounting** - Always lower blade before dismounting. Mount and dismount with three-point contact.
2. **Skidding** - Skidder operator must ensure control of the skidder according to conditions and terrain.
 - To ensure proper placement of wood piles, operator safety and prevention of equipment damage, operators will not skid bundles over a pile above three feet (1 m).
 - When winching in a load, the operator must align the machine straight to the load and not winch at an angle.
3. **Danger zones** - Danger zone is defined as the area around operating machines or working personnel in which there is potential for being struck by moving equipment or objects. The danger zone may vary according to the machine or work being performed. As a rule of thumb, the danger zone around a machine is two tree lengths or 200 ft. (60 m).
 - No choking of bundles or skidding will take place within the danger zone of a feller buncher 100 ft., (30 m).
 - Prior to skidding within the danger zone of a delimber, the skidder operator must ensure that the delimber has stopped operating.
 - Skidder operators must not winch or skid the load until co-workers are clear of the danger zone. Winch should only be operated from the operator's seat inside the cab, except on landings.
4. **Hazard trees** - Any chicot encountered within the skidding area must be lowered by pushing down with the fairlead.
5. **Inspection/maintenance/repairs/housekeeping** - Daily inspections of equipment (circle checks) must be carried out at the beginning and completion of shifts. Defects should be reported promptly for repair and recorded on the condition report.
 - Frayed mainline and chokers must be trimmed or replaced. Daily maintenance must be carried out, including greasing and cleaning. Lunch shacks must be cleaned daily in accordance with company fire plans.
6. **Personal protective equipment** - Hardhats, safety boots and safety pants will be worn at all times.
 - Approved safety glasses must be worn when trimming or cutting mainline or chokers (for example, using torch or cable cutter). Skidder operators must wear gloves/mitts with double palm protection. If required to operate a powersaw, operators will wear CSA-approved safety boots with ballistic nylon protection. Hearing protection will be worn when operating on or near equipment that registers a noise level of more than 85 decibels. Safety apparel and equipment must be kept in proper condition at all times.
7. **Communications while assisting in mechanical repairs** - When operators are assisting mechanics to repair machines, clear communications must be established prior to starting the tasks. The operator and the mechanic must each know who will be responsible for:
 - a) starting or moving a machine
 - b) ensuring that anyone involved is in a clear and safe position
 - c) directing the movement of the machine
 - d) ensuring that it is safe to resume working.

If repair work must be performed while the machine is operating, the operator must have a clear understanding of what he or she is to do and follow the specific instructions given by the mechanic responsible for performing the job.

8. **Fuelling** - Skidders will be fuelled at the end of each shift. Shut off the engine during fuelling. No smoking.
 - Beware of spills and splash-back. Return the hose to its proper storage position when fuelling is complete. Beware of the location of hoses so as not to run over them.
 - When a fuel truck is used for refuelling, have the driver pass the hose up or, if alone, put hose up onto catwalk and get up on machine by steps or tracks.
 - However your machine is being fuelled you should use handholds, watch your footing and be careful of possible hazards. Mud, ice, sticks, oil and fuel on or around the machine, on the fuel truck deck, on fuel tanks, and on the ground surrounding the area, can lead to slips and falls.
9. **Proper manual lifting** - Wherever possible, take a proper well-balanced stance with secure footing prior to doing any lifting.
 - Try to keep your back straight, bending at the knees, lifting with your legs. If something appears too heavy for one person to lift, get help.
10. **Blowdown** - harvesting - Establish a face 45° to the direction of the blowdown. When cutting trees under pressure, always cut compression side first, then the tension side. Assess each tree individually for spring hazards and take a safe position prior to cutting. Slip and trip hazards are greater, so more caution is required when walking in a blowdown. Any tops broken off and still attached to the standing stump should be pushed over with the skidder. When cutting a tree from the stump, make sure you are standing in front of the roots and stump, as the stump may fall back in the hole where it came from. Be aware of overhead hazards as there are more broken-off trees overhead in a blowdown.

WORKER: _____ DATE: _____

COMPANY CONTACT: _____ DATE: _____

Standard safe work practices for loader operators

- 1. Mounting/dismounting** - Loaders will be mounted/dismounted using three-point contact, making use of steps, ladders, handholds and railings. Do not jump to the ground.
 - While walking on the loader, on the ground, or stepping down from the loader, take extra caution for footing hazards, such as sticks, grease, oil and ice, which could lead to slips/trips/falls. Look, then step.
- 2. Inspection/maintenance/repairs** - The pre-operating (circle) check will be followed to do inspections of loaders at the beginning and end of shifts.
 - Problems found at the beginning of the shift will be reported immediately to the garage for repair.
 - At the end of each shift, operator's condition reports will be completed, including machine hours, regardless of the condition of the loader. If problems are found, the condition report will be turned in to the garage so prompt repairs can be made.
 - Communicate with the opposite shift operators and mechanical department to keep the machine operating in a safe mechanical condition.
 - Check that the motor area is clean to reduce fire hazard.
 - Ensure that mechanical personnel understand the problem by discussing it with them.
 - In case of breakdown, notify the garage by radio so repairs can be arranged.
 - Operators must grease their machines daily.
- 3. Danger zone** - Danger zone is defined as the area around operating machines or working personnel, in which there is potential for being struck by moving equipment or objects. The danger zone may vary according to the machine or work being performed. As a rule of thumb, the danger zone around a machine is two tree lengths or 200 ft. (60 m).
 - During loading/unloading, drivers must remain in the cab. Only exception: When being unloaded at the mill infeed, the driver may leave the truck and remain in the lunch room.
 - Operator must stop loading if a person enters the danger zone.
 - Operators must make sure that all persons, vehicles and equipment are clear of the danger zone before the machine is moved. This must be confirmed by visually checking their position.
 - Prior to moving, also check to make sure there is clearance for the machine and that the wheels are turned in the proper direction, so as not to strike anything when the travel switch is engaged.
 - No unauthorized personnel will be allowed on the machine during operation.
 - Controls must be operated only while seated in the cab.
- 4. Moving trailers** - If loaders are to be used to haul trailers, ensure that the trailer wheels are still blocked before the loader is hooked to the trailer. Ensure that no one is within the danger zone around the trailer before moving the loader, either to hook, move, or unhook the trailer. Prior to unhooking a trailer, ensure that the wheels are properly blocked (chocked).
- 5. Lockout** - Lockout procedures must be followed during mechanical service, repairs or inspection for the protection of workers and equipment.
- 6. Housekeeping** - The operator is responsible for good housekeeping in the cab and on the machine, using brooms and shovels when necessary. The tracks, steps, ladders and windows must be cleaned when the loader is parked.

7. **Personal protective equipment** - Operators must wear hardhats when not inside their cabs. CSA-approved safety boots in good condition, properly laced, must be worn at all times. Worn-out soles and heels could lead to slips and falls. Eye protection will be worn where there is danger of falling or flying debris from equipment or loads, especially in windy conditions and while using an air hose or water hose to clean the machine. Proper eye protection must be worn if the operator is involved in firewatch during welding repairs. Do not look at welding arc. Hearing protection must be worn if the engine is running and the operator is outside the cab or in the cab with the doors or windows open. Hand protection will be worn when handling cable or any other material where there is danger of cuts or puncture injury.
8. **Defensive driving** - Seat belts save lives and minimize injury. Seat belts must be worn when travelling in any company vehicle equipped with seat belts, on main haul roads, public roads and highways.
9. **Loading/unloading** - The operator will instruct truck drivers as to the best location to park for loading/unloading. Upon request, the operator will assist the driver, to check the load for sticks that need to be straightened or removed. The operator must ensure that small sticks, blocks and debris are not loaded with the wood.
 - Loads are to be built level by alternating large and small ends of logs, if necessary, and crowned.
 - The operator must ensure that the load is not over stake height and within legal limits. Co-operate with drivers to ensure best possible load.
 - When eight-foot wood is being piled, the operator should restrict the pile height so that the pile can be safely re-handled by any loader on site. To safely re-handle the pile, the clam of the loader must be able to reach clear over the top of the pile.
 - Gravel trucks will be loaded according to conditions and maximum legal requirements.
10. **Fuelling** - All loaders will be fuelled daily. Shut off the engine. No smoking.
 - Before entering the danger zone for the purpose of fuelling a machine, ensure that communication (radio/eye contact) with the operator has been made. The machine should be shut off before the fuelling vehicle approaches. The fuelling vehicle must be out of the danger zone before the machine is started.
 - Beware of spills and splash-back. Return hose to its proper storage position when fuelling is completed.
 - When a fuel truck is used for refuelling, have the driver pass the hose up, or if alone, put hose up onto catwalk and get up on machine by steps or tracks.
 - However the loader is being fuelled, watch for hazards. Mud, ice, sticks, oil and fuel on or around the machine, on the fuel truck deck, on fuel tanks, and on the ground surrounding the area, can lead to slips and falls.
11. **Parking loaders** - Wherever possible, loaders will be parked on level ground, clear of hazards, especially mud, to allow ease of access.
 - When parking a loader or leaving it unattended, always shut off the engine, apply the brakes and ensure that the bucket/clam is lowered to the ground.
 - At completion of shift, the loader will be parked with the master switch off, windows up, doors closed and tracks clean.
12. **Manual lifting** - Take extra caution when lifting oil and antifreeze up onto machines. Risk of injury exists when lifting above waist level with a twisting motion of body.
13. **Proper lighting** - At night, leave lights on to assist in mounting/dismounting and walking around the machine.

EMPLOYEE: _____ DATE: _____

COMPANY CONTACT: _____ DATE: _____

Standard safe work practices for slasher operators

1. **Mounting/dismounting** - The slasher will be mounted/dismounted using three-point contact, making use of steps, ladders, handholds and railings.

While walking on the slasher, especially in areas without handrails, or on the ground around the slasher, employees will take extra caution for footing/conditions which could lead to slips, trips or falls.

2. **Parking slasher** - The slasher will be parked in such a position on level ground, clear of hazards to allow ease of access.
3. **Moving slasher** - While the slasher is being moved from pile to pile, the off-loader operator and sawyer operator will be off the machine. When moving up or down hills, first gear will be used. Do not shift gears while on a hill. While the slasher is being pulled up hills, both machines must be kept in the same gears.
4. **Danger zone** - Danger zone is defined as the area around operating machines or working personnel in which there is potential for being struck by moving equipment or objects. The danger zone may vary according to the machine or work being performed, a 200 ft. (60 m) minimum.
 - Operators must make sure that all employees or vehicles are clear of the danger zone before the slasher is started. The saw must be stopped between slasher moves.
 - Prior to leaving their cabs, all operators must communicate their intention by using the bell warning system. This ensures that no one is caught in the danger zones between the off loader and on loader cabs or around the machine.
 - Any person approaching a machine must remain clear of the danger zone, until the attention of the operator is obtained through some method of communication (for example, radio contact, visual contact).
5. **Inspection/maintenance/repairs** - Daily inspections of equipment (circle checks) will be carried out at the beginning and end of shifts. Defects will be reported promptly for repair and recorded on the condition report. Daily maintenance must be carried out, including greasing and cleaning. Debris on walkways and in cabs must be removed by sweeping or by use of an air hose.
6. **Lockout** - Lockout procedures will be followed during mechanical service, repairs or inspection for the protection of employees and equipment.
7. **Changing saws** - During changing of saws (if the saw is lifted mechanically), employees must stay clear of table area until the saw has been lowered into place. If the saw is lifted manually, two people must assist in lifting the saw up to the person on the table.

If a worker is required to walk on the tilt table, the tilt table cylinder should be carefully tested to ensure that the table will not drop, causing the worker to fall.

8. **Personal protective equipment** - Hardhats must be worn whenever operators are not in their cabs. Hearing protection must be worn by operators if working with doors or windows open. Eye protection must be worn by operators while performing maintenance, repairs or cleaning of the machine. During welding, firewatch employees must protect themselves from flash injury to eyes by wearing proper eye protection (for example, cutting goggles). When saws are being handled out of storage crates, gloves must be worn, even if rubber guards are in place. Employees must wear CSA-approved safety boots in good condition, properly laced, at all times.

9. **Communications while assisting in mechanical repairs** - When operators are assisting mechanics to repair machines, clear communications must be established prior to starting the tasks. The operator and the mechanic must each know who will be responsible for:
- a) starting or moving a machine
 - b) ensuring that anyone involved is in a clear and safe position
 - c) directing the movement of the machine
 - d) ensuring that it is safe to resume working.

If repair work must be performed while the machine is operating, the operator must have a clear understanding of what he or she is to do and follow the specific instructions given by the mechanic responsible for performing the job.

10. **Fuelling** - Slashers will be fuelled at the end of each shift. Shut off the engine during fuelling. No smoking.
- Beware of spills and splash-back. Return the hose to its proper storage position when fuelling is completed. Beware of the location of hoses so as not to run over them.
 - When a fuel truck is used for refuelling, have the driver pass the hose up, or if alone, put hose up onto cat-walk and get up on machine by steps or tracks.
 - However the slasher is being fuelled, use handholds, watch footing and possible hazards.
 - Mud, ice, sticks, oil and fuel on or around the machine, fuel truck deck, fuel tanks and the ground can lead to slips and falls.
11. **Proper manual lifting** - Whenever possible, take a proper well-balanced stance with secure footing prior to doing any lifting. Try to keep your back straight, bending at knees, lifting with your legs. If something appears too heavy for one person to lift, get help.
12. **Piling** - When eight-foot wood is being piled, the operator should restrict the pile height so that the pile can be safely re-handled by any loader on site. To safely re-handle the pile, the clam of the loader must be able to reach clear over the top of the pile.

WORKER: _____ DATE: _____

COMPANY CONTACT: _____ DATE: _____

Lockout policy and procedures for logging

Lockout policy:

No worker will conduct repairs, maintenance or cleaning of machinery or equipment without controlling all forms of energy. A zero-energy state will be achieved before a worker enters a danger zone, and no entry of a danger zone is permitted without a proper shutdown and/or lockout.

Procedures:

Responsibilities

The supervisor will train all employees in this lockout policy and appropriate procedure(s) when hired or any time an employee is transferred to another job. Employees will also be shown where to find the main power sources to properly lock out the equipment, be provided with or made aware of the location of locks and related lockout equipment and must demonstrate a proper lockout.

Supervisor is responsible for checking that lockouts are done properly.

Each worker will be responsible for following all established lockout procedures at all times.

Lockout violations are subject to disciplinary action.

General lockout procedures

1. Park equipment on solid level ground by lowering all attachments to the ground or by solidly blocking and supporting in an elevated position. If it is not possible to park on level ground, block machine to prevent movement.
2. Shut down equipment following manufacturer's specifications, apply locking mechanisms, shut off engine and verify that zero-energy state has been achieved.
3. Turn off ignition switch, remove key, keeping it in a secure location, and turn off the master switch.
4. Apply lockout tags and engage locking device to ensure that the equipment cannot be inadvertently energized.
5. When work is complete, clean up all tools, replace all guards and ensure no one is in the danger area.
6. Unlock power sources and return to work.

Specific lockout procedures

1. If the engine needs to be running for maintenance purposes, written non-routine lockout procedures must be followed by trained personnel.
2. Lockout tags and locking devices are to be removed only by the person installing these items and only after ensuring that all personnel and equipment are clear of the danger zone.
3. A supervisor or other trained competent person may remove another person's lockout tag and device only after it has been confirmed that this person is not in the danger zone.
4. Machine-specific lockout procedures may be necessary for specific machinery where unique lockout requirements must be met.

Procedure approved: _____ Date: _____

Created: _____ Date: _____

Revised: _____ Date: _____

Procedure for conducting non-routine tasks

All firms conduct non-routine tasks from time to time and must ensure that the procedure for performing these tasks is well thought-out and planned to prevent potential injury. The following procedure has been developed to assist in ensuring each job is completed safely and effectively.

1. Define and discuss the job to be done with all workers to be involved.
2. Ensure you have qualified personnel and the right equipment and tools for the job, and determine who is in charge.
3. Get input and agreement from everyone involved.
4. Anticipate possible safety hazards and discuss. Take time to assess.
5. Agree on an action plan and consider timing, weather, darkness, special needs and the sequence of steps.
6. Develop a contingency or back-up plan in case of unexpected problems.
7. Ensure everyone understands the communication procedure. Progress on the job must be constantly monitored to identify problems and corrective actions.
8. Clean and return tools and equipment when the job is completed.
9. Discuss the results with all workers involved to improve the procedure for next time.

Machine guarding policy and procedures

<p>All pieces of equipment, processes and situations that pose a potential hazard to workers are to be properly guarded or barricaded to prevent exposure to the hazard.</p> <p>Proper lockout and entry procedures are to followed when entering a hazardous area where barricades are used to prevent exposure to a hazard.</p> <p>Guards or barricades that must be temporarily removed are to be replaced as soon as the need is over and in all cases prior to starting regular work activities.</p>	<p>Signature:</p>
<p>Implementation Date:</p>	<p>Review Date:</p>

PROCEDURES AND RESPONSIBILITIES

<i>Requirement</i>	<i>Workplace Documentation and Requirements</i>	<i>Person(s) Responsible</i>
1. All hazardous equipment, situations and processes requiring guards or barricades are to be assessed and classified. All guards are to be maintained in place at all times.		
2. Required guards or barricades are to be installed in a priority sequence. Interim measures must be taken to protect workers where guarding hazards exist.		
3. Affected workers and supervisors are to be trained in guarding requirements.		
4. Personnel responsible for the design, construction and maintenance of guards and barricades are to receive appropriate training.		
5. Those performing planned workplace inspections and/or guarding audits are to receive appropriate training.		
6. The guarding policy, procedures and worker familiarity are to be reviewed upon hire and annually by the immediate supervisor.		
7. Contractors are to be aware of the guarding policy.		
8. New or modified equipment is to be evaluated for guarding requirements before being put into service.		
9. Regular guarding audits are to be conducted by supervisor and/or management.		

Feller buncher sawhead guarding provincial guideline

Two safe operating procedures have been developed in the form of a provincial forestry guideline which outlines the use of the lock pin and/or saw guard during feller buncher sawhead maintenance and lockout. This guideline has been accepted by the Forestry Sector Interagency Group as a best practice which industry feels would be appropriate to ensure worker safety.

Provincial forestry guideline for conducting maintenance, repairs or cleaning with feller buncher saw blade not running.

- Employers must ensure that a written safe operating procedure is available, workers are trained in this procedure and ongoing monitoring and enforcement of the procedure are maintained.
- Ensure that the danger zone rule with other workers and equipment is enforced.
- Park equipment on level ground, lower all attachments and secure the machine.
- Establish and maintain good communications with other workers.
- De-energize the equipment and ensure that all attachments are in a zero-energy state (follow the established lockout procedures outlined in the safe operating procedure for this machine).
- Wear all required personal protective equipment when exiting the cab.
- Conduct a visual check to ensure that the disc saw blade has stopped moving prior to approaching the sawhead, even a slow-moving saw can cause serious injury.
- Install the saw locking pin to prevent the free rotation of the disc saw blade. The pin is installed through the hole in the outside of the frame of the sawhead and must be fully inserted to block the saw from turning. (It is recommended that the disc saw blade guard not be required when the saw is not running, the machine is locked out and the pin has been secured in place.) It is understood that in certain situations, such as when changing teeth on the disc saw blade, the pin must be removed during the maintenance process to rotate the blade, after which it will be reinserted.
- Upon completion of the necessary maintenance, cleaning or repair activities, the saw locking pin can be removed, lockout is reversed based on the established safe operating procedures and the worker returns to the cab of the machine and follows the regular machine start-up procedures.

Provincial forestry guideline for conducting maintenance or repairs with feller buncher disc saw blade running.

- Employers must ensure that a written safe operating procedure is available, workers are trained in this procedure and ongoing monitoring and enforcement of the procedure are maintained.
- Ensure that the danger zone rule with other workers and equipment is enforced.
- Park equipment on level ground, lower all attachments and secure the machine.
- Establish and maintain good communications with other workers.
- De-energize the equipment and ensure that all attachments are at a zero-energy state (follow the established lockout procedures outlined in the safe operating procedure for this machine).
- Wear all required personal protective equipment when exiting the cab.
- Conduct a visual check to ensure that the disc saw blade has stopped moving prior to approaching the sawhead, even a slow-moving saw can cause serious injury.

- Install the saw guard and secure the guard in place with the necessary bolts. Ensure that the immediate area is free of debris that may be drawn into and thrown by the disc saw blade.
- Return to the cab and follow the established machine start-up procedure. Follow the safe operating procedure for conducting running tests of the disc saw blade based on established procedures.
- When tests are completed, de-energize the equipment and ensure that all attachments are in a zero-energy state (follow the established lockout procedures outlined in the safe operating procedure for this machine).
- Wear all required personal protective equipment when exiting the cab.
- Conduct a visual check to ensure that the disc saw blade has stopped moving prior to approaching the sawhead, even a slow-moving saw can cause serious injury.
- Upon completion of the necessary maintenance or repair activities, the saw guard can be removed, lockout is reversed based on established safe operating procedures and the worker returns to the cab of the machine and follows the established machine start-up procedures.

Workplace Musculoskeletal Disorders (WMSD) policy and procedures

Introduction:

The most common injury in Ontario’s forest industry is no different from what happens in other industrial sectors – gradual damage to muscles, ligaments tendons and nerves as a result of repetitive, forceful or awkward movements. Strain and sprain injuries – also known as workplace musculoskeletal disorders (WMSD) – have accounted for than one-third of all forestry lost-time injuries in recent years. These types of injuries cost. They cost workers – pain and suffering, disruption to home and work life and impact on families, friends and the community. They cost workplaces – loss of productivity and revenue, Ministry of Labour orders, loss of rebates and accumulation of surcharges from Workplace Safety and Insurance Board. Under Ontario’s Occupational Health and Safety Act, employers are required to take every reasonable precaution to protect workers from hazards resulting in strain & sprain injuries. One important way to do this is to recognize, assess, control and monitor workplace hazards that could lead to strain and sprain injuries.

The Ontario Ministry of Labour states that employers, in consultation with workers, are responsible for:

- Ensuring that hazards related to poor design of tools, equipment, workstations or work practices are identified and the risks controlled
- Ensuring that all workers have been provided with adequate equipment required for tasks
- Ensuring that workers have the information, instructions or training in the use of equipment and work practices
- Encouraging and reinforcing proper working techniques
- Encouraging early reporting of an injury or symptoms.

Strains and sprains affect the muscles, tendons, nerves, ligaments and joints in various parts of the body. The key hazards for work-related strains and sprains are the force, posture, repetition and duration involved in performing a particular job or task. Other risk factors, such as stress and workload, may also play an important role.

The following information is intended to promote the internal responsibility system (IRS) by providing some ergonomic tools. Ergonomics is the study of the physical and mental demands of work on individual workers. By analyzing the physical demands of a job and identifying strain and sprain hazards, controls can be put in place to eliminate the hazards.

Workplace Musculoskeletal Disorder (WMSD) Policy:

Review all injury and first aid reports for any WMSD and address as necessary. Susceptible tasks are to be identified and assessed for risks, and effective controls are to be implemented and then evaluated.

Procedure and Responsibilities

Requirement	Workplace Documentation and Requirements	Person(s) Responsible
1. The WMSD prevention policy is communicated to employees.		
2. Review all injury reports for any WMSD consistency and potential trends.		
3. WMSD-susceptible tasks in the workplace are identified. (See checklist on following page.)		
4. WMSD prevention controls are to be assessed for possible implementation.		
5. WMSD prevention controls are to be implemented where practical.		
6. Follow-up for WMSD prevention controls.		

Ergonomic Checklist:

This checklist is designed to help you identify task and equipment factors that can increase a worker’s risk of developing an WMSD. Place a √ in either the “yes”, “no” or “n/a” (not applicable) box.

Job Name:	Date:		
Do the workers on this job:	N/A	Yes:	No:
Lift, lower or carry objects that are, in their opinion, heavy?			
Have difficulties pushing or pulling items/objects?			
Perform tasks that require difficult and forceful gripping with the hands?			
Use tools that require a great deal of effort to hold, control or use?			
Use their hands to pound or hammer things when doing their job?			
Perform any other high force tasks? <i>If yes please indicate:</i>			
Perform tasks with one or both arms behind their body?			
Bend or twist the back/trunk?			
Twist or bend (backward/forward/to the side) the neck?			
Need to bend or twist the wrist?			
Pick up or hold things using difficult grips?			
Perform any other awkward postures that are not covered above? <i>If yes please indicate:</i>			
Have to lift, lower or carry objects repeatedly when doing their job?			
Repeatedly push or pull things when doing their jobs?			
Repeatedly grip or manipulate things with their hands/wrists?			
Repeatedly use awkward arm, hand or wrist postures?			
Repeatedly use poorly designed hand tools when doing their job?			
Repeatedly do tasks or use awkward postures that are not covered above? <i>If yes please indicate:</i>			
Use hand tools that vibrate?			
Are exposed to whole body vibration?			
Have too little space/clearance at their work station or work area?			
Have to stay in awkward postures for a long period of time without change?			
Sit or stand for long periods of time without change in posture?			
Work in cold weather?			
Work in hot and or humid weather?			
Find the job very demanding?			

Common areas to monitor:

Below are some common areas that have been identified as ergonomic hazards. These should also be considered when completing the checklist.

- Not wearing proper-sized gloves to protect hands when working outside in the cold weather
- Not wearing proper anti-vibration gloves to reduce the effects of hand/arm vibration
- Not enough lighting when working in the dark, which can hinder vision and clearance
- Compressed or poorly maintained seats which may increase whole body vibration and lower back and hip pain and discomfort
- Improper use of arm rests which do not allow the operator to reduce some of the strain on the shoulder and elbow joints
- Improper set-up of seat for the individual body type and size

After the checklist is completed:

If there is a ✓ in the “yes” box, this is an area to change, or in some cases monitor, as there is an increased risk to an WMSD.

Once the checklist is completed, it is time to make some recommendations on ergonomic controls. It is a good idea, at this point, to brainstorm some ideas to find if there may be a good way to decrease the risk without significant costs. Brainstorming is a good way to get another point of view on a solution as each person will bring another perspective. After the change is completed, it is recommended that you keep this information on file, as this shows that you are making changes to reduce ergonomic issues.

Once the solution has been implemented, the final step is to ensure that the solution has been successful. It is recommended that you re-evaluate the solution in three months. It is also important to re-evaluate the job or workstation if someone else is performing the work or using that area. This checklist should be completed yearly.

Where to go now?

The information is not intended to solve all problems but to provide some insight into why injuries may be occurring and to help develop effective solutions. In some cases, a professional ergonomist may be needed to review the problem and help solve the issue. The Ontario Forestry Safe Workplace Association has district Consultant Trainers and an Ergonomist who can help firms resolve ergonomic issues.

Mechanical Harvesting Equipment Operator program certification summary

Step 1 – Employer obtains Signing Authority

- Employer must contact local Ministry of Training Colleges and Universities (MTCU) office to obtain Signing Authority (Check the blue pages of your phone book under ‘Training’ for the nearest MTCU office).

Step 2 – Worker completes common core classroom training

- Worker or potential worker must complete the one-day mandatory classroom training. Classroom training must be provided by an approved trainer/evaluator (list of approved trainer/evaluators is available from local MTCU offices).
- Worker/trainee gets Record of Training and submits to the employer.
- The mandatory classroom training is the same for the Mechanical Harvesting Equipment Operator and Forestry Pit and Road Construction Equipment Operator programs.
- This training will need to be retaken after one year if the worker has not registered as a mechanical harvesting equipment operator or a forestry pit and road construction equipment operator trainee.

Step 3 – Employer conducts on-site orientation/training

- The worker must receive the on-site orientation using the MTCU On-Site Orientation Checklist document prior to operating the designated equipment in a logging operation.

Step 4 - Employer registers and initiates training for worker

- Employer registers worker with MTCU by submitting *Modular Training Application*.
- Note : The above step must be completed prior to the worker operating designated equipment in a logging operation.
- Worker can now continue the on-the-job training with a certified/accredited, mechanical harvesting equipment operator or competent supervisor.
- Worker completes training, evaluation and certification within one year.

Step 5 – Worker certification process

- When the employer is satisfied that the worker is properly trained to the program standards, the supervisor and trainee sign the Modular Training Standards Book.
- The employer arranges for the worker to be evaluated by a certified evaluator who conducts the on-site evaluation based on the MTCU on-the-job training standards in the Modular Training Standards Book.
- If the certified evaluator is satisfied that the worker has competently demonstrated his or her skills, abilities and knowledge to operate the specific equipment, the Signing Authority signs the MTCU *Modular Training Report*. The employer then forwards this form to MTCU.
- If the certified evaluator is not satisfied with the worker’s abilities, he or she will indicate what the problems are to the employer. Additional practice, on-the-job training or classroom training will be required. A future evaluation is scheduled with the certified evaluator.
- The worker will receive a wallet card upon successful completion of the machine-specific Mechanical Harvesting Equipment Operator program certification requirements.

Note:

- Steps 3, 4 and 5 are repeated for each machine the operator is seeking accreditation in.
- For more information on the process refer to the program guidelines available through your local MTCU office or check the OFSWA website <http://www.ofswa.on.ca/qa.htm>.
- *Italicized* documentation must be completed by the employer and submitted to MTCU.

Supervisor requirements

- Before a worker can supervise, he or she must complete the mandatory classroom training and a written (or oral) evaluation covering knowledge of safe machine operation. Upon successful completion of the evaluation, the MHEO Supervisor's Evaluation Report (Record of Training) is given to the participant.
- The MHEO Supervisor's Evaluation Report is submitted to the employer (Signing Authority) who then registers the worker with MTCU by submitting the Modular Training Application and Modular Training Report.
- Supervisor will receive a transcript from MTCU confirming successful completion of supervisor requirements.

Certified mechanical harvesting equipment operators becoming supervisors

- For an equipment operator certified in the Mechanical Harvesting Equipment Operator or Forestry Pit and Road Construction Equipment Operator Program to receive a transcript under the supervisor program, the signing authority must complete and submit a Modular Training - Application Form and Modular Training Report under the Supervisor Program. (Only the signing authority signature is required on the training report, as an approved trainer/evaluator has already signed the initial training report for certification.)
- The mandatory classroom training is not required to be retaken.

For more information on the process refer to the program guidelines available through your local MTCU office or check the OFSWA website at <http://www.ofswa.on.ca/qa.htm>

- Underlined documentation must be completed by the employer and submitted to MTCU

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