



On-Site Orientation

**Feller and Buncher
Operator**

**Ministry of Training, Colleges and
Universities**

On-Site Orientation

Feller and Buncher Operator

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This document is the property of the trainee/employee named inside and represents the official record of his/her training.

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PREFACE

The Workplace Training Branch of the Ministry of Training, Colleges and Universities (MTCU) developed this equipment-specific orientation/training document, in consultation with representatives from the logging industry. It is intended to be used by employers for on-site orientation/training of their workers/trainees before registration to the on-the job training or operating the machine related to their duties.

The care and maintenance of this document is the joint responsibility of the worker/trainee and the employer. The document is an official record of a worker's/trainee's orientation/training.

Employers or designates and workers/trainees are required to attest to successful on-site machine specific orientation/training by filling their names in the appropriate lines included at the end of each skill area.

FELLER AND BUNCHER OPERATOR

NOTICE/DECLARATION FOR COLLECTION OF PERSONAL INFORMATION

1. This information is collected under the authority of the Order-In-Council Number 701/85.
2. The information is collected for the purpose of administering this modular training program within the Province of Ontario.
3. Questions regarding collection and use of this information may be directed to:

Director
Ministry of Training, Colleges and Universities
Service Delivery Branch
33 Bloor St. E 2nd Floor
Toronto, Ontario
M7A 2S3
416 326-5605

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NOTE

This guide and checklist is designed to refer employers to the most obvious and critical component in each skill area. However, since machine model and make vary greatly, the primary reference material for specific machine safety related operating requirements should be the operator's manual supplied by the manufacturer of the particular machine in question.

Employer Information:

Company: _____

Address: _____

Telephone: _____

Completed On-Site Orientation Checklist: Worker and Employer/Designate Verification:

- Identify feller and buncher components and terminology
- Verify zero energy state
- Conduct circle check
- Check cutting head
- Prepare machine for travel
- Evaluate and recognize ground conditions
- Observe machine limitations
- Plan and organize cut pattern
- Observe cut boundaries
- Verify tree species
- Cut and accumulate trees
- Bundle trees
- Observe danger zone
- Shut down and immobilize feller and buncher
- Refuel feller and buncher
- Perform Minor Maintenance and Adjustments

Worker Name (Please Print): _____

Worker Signature: _____

Date of Completion: _____

Employer/Designate Name (Please print): _____

Employer/Designate Signature: _____

IDENTIFY FELLER AND BUNCHER COMPONENTS AND TERMINOLOGY

Performance Objective

Identify feller and buncher components and terminology, visually and verbally, as described in the manufacturer's manual, in order to ensure safe and efficient operation and maintenance. (Employer, supervisor or trainer refer to manufacturer's manual to provide specifics regarding each component identified)

Guidelines for Performance Objective:

Having an understanding of the terminology used to describe major components is a vital part of using the manufacturer's manual effectively and ensuring that such things as safety information, maintenance schedules, machine capacities and operating directions are understood and correctly applied. Reviewing the major (key) components from the machine manufacturer's manual will assist the operator in identifying the key components, knowing their location on the machine and describing their purpose. (See appropriate pages in manufacturer's machine manual for specific terminology and diagrams)

Component Checklist:

- Boom and Hydraulic cylinders
- Carriage and components (Tires and Tire Chains or Tracks)
- Cab and Operator Controls and Escape Hatch
- Saw head and components (saw, holding arms, etc.)
- Turntable and cab levellers
- Engine
- Hydraulic pumps
- Fire Suppression System

VERIFY ZERO ENERGY STATE

Performance Objective

Verify zero energy state, by lowering hydraulic components to the ground of rest position, turn electrical switches and engine off, according to legislative requirements and manufacturer's specifications and established lockout procedures, in order to protect self and others during inspection and maintenance.

Guidelines for Performance Objective:

The machine must be immobilized and all moving parts de-energized before an operator can begin to work close to the machine and its components. Most importantly all hydraulic implements must be lowered (or blocked), and all moving parts have come to a full stop. The master switch must be in the off position.

Component Checklist:

- Lower attachments to the rest position to manufacturer's specifications
- Put engine in idle
- Turn engine off
- Turn master switch off
- Ensure all moving parts have come to a complete stop prior to approaching

CONDUCT CIRCLE CHECK

Performance Objective

Perform visual and operational checks of attachments and moving components, according to manufacturer's specifications, in order to ensure safe and efficient operation.

NOTE: Operators must have proper out-of-the-cab PPE e.g. - safety boots laced to the top, hard hat, high visibility vest or clothing, as well as hand, hearing and eye protection where required.

Guidelines for Performance Objective:

1. Cracks: Explain how to check and identify cracks and point out common locations where cracks may form (stress points). Point out that repairs must be done as soon as possible to prevent costly breakdown and to prevent even further damage or the potential of injury to the operator and others;
2. Leaks: Show the locations where leaks (hydraulic fluid, brake fluid, fuel) can occur. Explain that leaks can lead to further more serious problems, cause fires or damage the environment. Leaks can also cause slip and fall injury to operator and others due to fluid on machine. Explain the danger of checking for leaks where fluid is under high pressure (e.g. hydraulic fluid) and the proper method for checking.
3. Grease fittings: Identify the location (including remote connections), condition and purpose of grease fittings as described in the routine maintenance section of the owner's manual. Check to ensure they are in good condition and connected properly. Excessive grease build-up should be cleaned regularly to prevent the potential of slips and falls and fire.
4. Tires, wheels, and tracks chains: Explain the requirements for correct pressure, adequate tread, no punctures or defects, rim in good condition, cap on valve stem. Follow the manufacturer's guidelines when inflating/deflating tires. Ensure that chains are properly installed and tightened. If too loose, debris can be caught in chains and thrown out with considerable force. Watch for excessive wear, missing or damaged clevis pieces or loose parts of the chain. Also check for loose or missing wheel lugs.
5. Tracks, pads and pad bolts: Ensure adequate tension and proper adjustment of the tracks. Check for loose, worn, damaged or missing pads, bolts, grouser, idlers and main pins. Examine the condition of pins and bushings including the locking device on pins and watch for signs of wear or breakage of pins and bushings.
6. Engine/manifold area: Check engine compartment and exhaust manifold/turbo for debris: Check and remove debris from engine compartment to reduce the potential for fire, pay particular attention to the exhaust manifold/turbo area. *NOTE:* When checking and identifying hydraulic hose requirements, the operator must be familiar with the type of hose fittings. (3 types - GIC, OFS and Pipe Thread)

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7. Gull wings: Engage safety latch for gull wings (where applicable). Check to ensure latch is properly secured to ensure operator safety.
8. Saw/shears and holding arms: Check to ensure saw/shear head is in an immobilized position as described in operator's manual. Rotate saw to ensure all saw teeth are in place, tight and sharp. Inspect the shears for sharpness and check that bolts are properly secured in the head. Remove any debris built up in felling head. Check holding arms for cracks, damage and distortion.
9. Pins and Bushings: Examine holding pins and bushings for damage; ensure they're engaged properly and in place.
10. Check fluid levels: Identify location of site glass and/or dip stick/cap and filler locations and check for proper levels. Check saw chain lubrication. Keep areas clean of debris, spilled fluids and grease build-up. Determine and confirm type of fluid at each filling location. Follow manufacturer's guidelines for proper checking procedures of pressurized systems. No smoking during these procedures and know hazards of hot fluids. When checking and identifying hydraulic hose requirements, the operator must be familiar with the types of hose fittings. (3 types - GIC, OFS and Pipe Thread)
11. Saw/Shears: Check saw/shears and holding arms for proper condition: Check to ensure saw/shear head is in an immobilized position. Rotate saw to ensure all saw teeth are in place, tight and sharp. Check shears to ensure sharpness, properly secured (bolts) in the head. Remove any debris built up in the felling head. Check holding arms for cracks, damage and distortion.
12. Boom and lift cylinders: Check for cracks, condition of pins (locks), and the condition of cylinders keeping an eye out for leaks, damaged grease fittings, hoses, and bolts on turntable.
13. Condition of guards, catwalks, handholds and steps: Examine all guards to ensure that they are properly installed and in good condition. Do not operate without guards installed. Check the condition of all handholds, steps and walkways to ensure that are not damaged and free from debris, ice snow, grease and oil.
14. Fire extinguisher and fire suppression system: Operators must know how to access equipment and how to use it. Check daily to ensure a proper charge, maintenance tag is updated, the pin is in place and device is properly secured in cab. A full water pack in working condition is required for fire season. For machines equipped with fire suppression system, know the location(s) of activation plungers and ensure they are in good condition. Check outlets for good repair.
15. Escape hatch: The operator must know the location of the escape hatch and check to ensure that the hatch opens and the hatch itself, the latches, hinges, handles, and pins are in good condition.

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16. Seat belt: Examine seat belt to ensure good working condition (wear, anchors, frayed, buckle works freely).
17. Lights: Turn on all lights to check that they are in good working order. If guarded, make sure the guards are in place, the lenses are cleaned and wiring harnesses are intact.
18. Windows/doors: Examine windows to ensure they are clean and in good condition. Broken or missing windows must be reported and repaired. Check to see door opens and closes properly. Make sure wipers and wiper blades are in working order, and that window guards/screens (if equipped) are properly installed.
19. Housekeeping and loose equipment in cab: Keep tools outside cab unless properly secured. Keep floor clean and air conditioning/heater filters clear of materials. Secure aerosol containers and keep away from heat sources.
20. Radio communications: Check for good working order and that it is equipped for channels used in your area.
21. First-Aid Kit: Know the location, condition and required contents of the easily accessible first-aid kit.
22. Spill Kit (where equipped): Know location, condition, required contents, and how to use the easily accessible spill kit.

Component Checklist:

- Check for cracks and leaks
- Identify grease fittings
- Check Tire/Track components condition
- Check engine compartment and manifold for debris
- Engage safety latch for gull wings (where applicable)
- Check saw/sheers for proper condition
- Condition of pins and bushings
- Check fluid levels
- Check condition of saw head/sheers, teeth and holding arms
- Check condition of boom and lift cylinders
- Check condition of guards, handholds and steps
- Check condition of fire extinguisher and fire suppression system
- Check condition of escape hatch
- Check condition of seat belt
- Check lights
- Check condition of windows and guards
- Check housekeeping and remove, or properly stow loose equipment in cab
- Check radio communication
- Check first-aid kit
- Check spill kit

CHECK CUTTING HEAD

Performance Objective

Check cutting head for proper operation, fluid leaks and damage, according to manufacturer's specifications, in order to ensure safe and efficient operation of equipment

Guidelines for Performance Objective:

1. Activate pilot system and operate controls: Check for bent or damaged arms. Check the danger zone to ensure it is free of co-workers or other equipment prior to activating the system. If the arms bind or are damaged report immediately to your supervisor.
2. Check saw head for damage: Make sure the saw is not bent or damaged and that no leaks are apparent. Activate the saw and check for damage by elevating the felling head, tilting forward and observing for vibrations in movement of the saw or any obvious leaks. If concerns are noted, the saw should be shutdown and boom lowered to the ground. Prior to exiting cab or approaching saw/shear head, ensure that rotation of saw has stopped.

Component Checklist:

- ❑ Activate pilot system and operate controls to check for bent or damaged arms
- ❑ Check saw head for damage (bent or damaged saw) and leaks. Identify feller and buncher components and terminology, visually and verbally, as described in the manufacturer's manual, in order to ensure safe and efficient operation and maintenance. (Employer, supervisor or trainer refer to manufacturer's manual to provide specifics regarding each component identified)

PREPARE MACHINE FOR TRAVEL

Performance Objective

Prepare machine for travel by placing attachments in travel position. Adjust appropriate speed according to manufacturer's specifications to protect self and others and to prevent damage to equipment.

Guidelines for Performance Objective:

1. Place cutting head and boom in the travel position. The cutting head and boom should be maintained in a position not to impede visibility by maintaining an appropriate height and ensuring that grab arms are closed.
2. Select speed appropriate to ground conditions while maintaining control of machine. Obtain a speed and engine RPM that allows operator to maintain full control when taking consideration of ground conditions, weather, etc.
3. Maintain control, travel at a safe speed and keep right on roadways or on route to landing to ensure public safety. Watch local traffic and observe traffic and warning signs posted within work area. Keep speed appropriate to road conditions, weather, volume of traffic and seasonal conditions (dust, weather, etc.). Be aware of soft shoulders.
4. Maintain communication with other equipment operators. Check that radio is working and proper channel used. Monitor local channel for traffic. Check with immediate supervisor for communication protocol within work area. Park machine with felling head on ground and throttle at idle with pilot system disengaged when allowing traffic to pass while on roadside. Ensure saw is stopped and at zero energy state to reduce potential equipment damage or injury to coworkers.

Component Checklist:

- Place boom in travel position
- Select a speed appropriate to ground conditions while maintaining control of machine
- Maintain control, travel at a safe speed and keep right while travelling on roadway or on route to and from work site while maintaining radio communication to ensure public safety
- Maintain communication with other operators

EVALUATE AND RECOGNIZE GROUND CONDITIONS

Performance Objective

Evaluate and recognize ground conditions by observing changes in terrain and weather conditions, in order to prevent equipment and environmental damage that affect efficient harvesting.

Guidelines for Performance Objective:

1. Felling on hills: When possible, felling on inclines should be conducted in direction of slope to reduce potential of roll over. Felling should be conducted straight up and down steep hills. The operator must maintain a low centre of gravity with the load in the felling head kept low to ground. Avoid high stumps, rocks and windfalls. Discuss ground condition concerns with your immediate supervisor or the previous shift co-worker at beginning of each shift.
2. Maintain boom to high side when felling on a slope: This practice reduces the potential for machine roll over by maintaining a stable centre of gravity.
3. Seasonal concerns (winter, summer) requires extra caution be exercised due to poor visibility and hidden hazards. Be aware of these hidden hazards due to seasonal conditions (*i.e.* ditches along roadways frozen/covered with snow, culverts hidden by snow resulting in damage, hidden areas of concerns such as recently planted areas, hidden rock outcrops/cliffs, etc.) In summer, heavy underbrush results in poor visibility and hides hazards such as cliffs, mining holes, etc. Summer conditions pose a hazard of fire being ignited due to machine tracks on rocks or saw. Operators must be on the look out for ignition of underbrush.
4. Recognize considerations with tree species in felling including: variable weights by species and by tree diameter, height, branching, leaf cover, snow build-up in branches, wind speed. Contact immediate supervisor to determine your company procedure for addressing oversize trees. Minimize boom over-extension to maximize machine power and efficiency.
5. Follow manufacturer's specifications for bundle size to reduce potential of roll over and increase machine efficiency.

Component Checklist:

- Felling on hills where possible should be conducted in direction of slope to reduce potential of roll over
- Maintain boom to high side when felling on a slope
- Minimize crossing of drainage areas to reduce rutting in wet areas
- Seasonal concerns (winter, summer) require extra caution due to poor visibility and hidden hazards.
- Adjust bundle size taking into consideration ground conditions

OBSERVE MACHINE LIMITATIONS

Performance Objective

Observe machine limitations according to manufacturer's specifications by identifying equipment load chart, recognizing conditions that affect machine capabilities such as steep terrain, boom over extension in order to protect self and others and prevent equipment damage.

Guidelines for Performance Objective:

1. Apply the manufacturer's standards for machine capacity and limitations in determining the size of load keeping in mind ground conditions, slope and tree species.
2. Maintaining the boom position close to machine and low to ground to avoid damage to machine or possible roll over.
3. Minimizing the boom extension in order to maximize available power and efficiency.

Component Checklist:

- Understand the load limitation of the machine according to ground conditions and tree species (maintain full ground contact at all times)
- Keep boom as close to the machine and as low to the ground as possible, while observing obstructions, during the process of cutting and placing bundles
- Minimize boom over extension to maximize machine power and efficiency.

PLAN AND ORGANIZE CUT PATTERN

Performance Objective

Plan and organize cut pattern, using maps, photographs, and established cut boundaries, in order to facilitate fibre extraction, minimize ground disturbances and travelling during processing and forwarding.

Guidelines for Performance Objective:

1. Identify skidding direction: Check with your immediate supervisor to determine skid way location and any environmental or other concerns utilizing maps, photographs and established cut boundaries to assist you. Be aware of any potential hazards in the immediate area (*i.e.* chicots, hang-ups, terrain, traffic or other equipment, power lines, etc.).
2. Identify travel route: Check with your immediate supervisor and/or cross-shift operator regarding hazardous terrain that must be taken into consideration (*i.e.* Rough terrain, wet areas, etc).
3. Maximize bundle size: Place bundles to facilitate efficient skidding operations, keeping in mind ground and terrain conditions and skidder load limitations. Check with your immediate supervisor and/or cross-shift operator regarding appropriate bundle size. Observe road location and obstructions (swamps, rock outcrops, cliffs, etc.) to ensure a minimum skidding distance.
4. Minimize rutting and ground disturbances: Adjust bundle size to reduce site damage from skidding. Be aware of ground disturbance guidelines for your operation and if unsure check with your immediate supervisor.
5. Maintain a safe operating distance between neighbouring equipment: Be aware of other equipment working in your work area. Check with your immediate supervisor and co-workers to identify appropriate danger zones for your operation. Follow the danger zone communication rules for your operation.

Component Checklist:

- Identify skidding direction
- Identify travel route (considering hills, swamps, etc)
- Maximize your bundle size and minimize skidding distance by observing ground conditions and skidder load limitations.
- Minimize rutting and ground disturbance
- Maintain a safe operating distance between neighbouring equipment and processor (review manufacturer's danger zone requirements and identify site specific hazards)

OBSERVE CUT BOUNDARIES

Performance Objective

Observe cut boundaries, according to pre-established prescriptions and legislative requirements in order to prevent entry into protected and non-allocated areas.

Guidelines for Performance Objective:

Operate equipment within identified boundaries: Check with your immediate supervisor in relation to boundary identification rules. (*i.e.* colour of ribbon used to identify concerns and boundaries). Observe established rules and if unsure confirm with your immediate supervisor.

Component Checklist:

- Operate equipment within identified cut boundaries (if in question immediately contact your supervisor)

VERIFY TREE SPECIES

Performance Objective

Verify tree species using tree characteristics in order to meet product requirements

Guidelines for Performance Objective:

1. Review local tree species: Consult with your immediate supervisor regarding species of wood dealt with in your immediate work area.
2. Review product and company requirements: Discuss with your immediate supervisor the product and sorting requirements for your operation.

Component Checklist:

- Review local tree species
- Review product and company requirements

CUT AND ACCUMULATE TREES

Performance Objective

Cut and accumulate trees, according to legislative requirements and manufacturer's specifications in order to meet product requirements and to ensure safe and efficient operation.

Guidelines for Performance Objective:

1. Cut trees as close to the ground as possible while observing ground condition hazards, in order to optimize fibre utilization and reduce potential hazards for skidding. Be aware of hazards such as rock outcrops, boulders, etc that may damage the saw during the cutting process.
2. Do not cut oversize trees that may exceed felling head limitations: Contact your immediate supervisor to determine your company procedure for addressing oversize trees.
3. Don't over fill felling head while accumulating trees: Be aware of the limitations of your machine. This also reduces the potential of tree breakage, machine damage or hazard to co-workers.
4. Address chicots in the felling area: Chicots that pose a hazard to workers must be lowered to the ground safely.

Component Checklist:

- Cut trees as close to the ground as possible while observing ground condition hazards
- Do not cut oversize trees which exceed felling head limitations
- Don't over-fill felling head while accumulating trees
- Address chicots in the felling area

BUNDLE TREES

Performance Objective

Bundle trees, according to skidding direction, load size and ground conditions, in order to reduce site and regeneration damage and facilitate load pick-up and skidding

Guidelines for Performance Objective:

1. Identify skidding direction with butts facing the skid way and/or chipper site: This set-up optimizes production and reduces the potential of tree breakage and site damage.
2. Adjust bundle size: When placing trees in a bundle release the trees prior to the tops hitting the ground. This method reduces the potential of machine damage. Keeping the butts as even as possible facilitates the skidding process.

Component Checklist:

- Identify skidding direction with butts facing the skid way (chipper site)
- Adjust bundle size taking into consideration ground conditions and skidder capacity

OBSERVE DANGER ZONE

Performance Objective

Observe danger zone by keeping a safe distance between self, others and equipment, recognizing potential hazards from falling trees, flying debris from felling head, limited visibility and blind spots, according to manufacturer's specifications, legislative requirements and established procedures, in order to protect self and others and damage to equipment.

Guidelines for Performance Objective:

Review local company danger zone requirements and identify site-specific hazards. Discuss with your immediate supervisor company policies and procedures in relation to danger zone as it applies to other equipment and operating equipment near other workers. Consult operator's manual for recommended danger zone for this equipment.

Component Checklist:

- ❑ Maintain a safe operating distance between skidder and feller and buncher (review manufacturer's danger zone requirements and identify site specific hazards)

SHUT DOWN AND IMMOBILIZE FELLER AND BUNCHER

Performance Objective

Shut down feller and buncher, according to manufacturer's specifications, company requirements.

Guidelines for Performance Objective:

1. Turn off saw and stop rotation by placing saw on a stump. Ensure danger zone with other workers and equipment is maintained.
2. Tilt saw head to confirm saw has completely stopped
3. Lower boom to the ground. Park machine on level bare mineral soil and lower boom while positioning cab to facilitate safe and effective dismount. Shut off master switch when completing shutdown procedure. Maintain 3-point contact during dismount.

Component Checklist:

- Turn off saw and stop saw rotation by placing saw onto stump
- Tilt saw head to confirm saw has completely stopped
- Lower boom to the ground
- Safe dismount, maintaining 3-point contact

REFUEL FELLER AND BUNCHER

Performance Objective

Refuel feller buncher in a well ventilated area; shutting off engine; maintaining the area free of smoking; and preventing spills or damage to the environment; according to legislative requirements, manufacturer's specifications and recommendations.

Guidelines for Performance Objective:

1. Use caution when approaching fuel tank to prevent damage to the fuel tank.
2. Shutdown feller and buncher: Follow previously noted shutdown procedures.
3. Fuelling procedures: Follow local fuelling procedures, no smoking, never leave the nozzle unattended, and properly store the hose after use.
4. Always use 3-point contact.

Component Checklist:

- Use caution when approaching fuel tank
- Shut down procedures
- Fuelling procedures
- Safe dismount, maintaining 3-point contact

PERFORM MINOR MAINTENANCE AND ADJUSTMENTS

Performance Objective

Perform minor maintenance and adjustment on the feller buncher, after immobilizing (locking out) machine, lubricating equipment and attachment, maintaining fluid levels, ensuring replacement of belts and hoses, and checking and completing maintenance and/or deficiencies report, according to legislative requirements, manufacturer's specifications and recommendations,

Guidelines for Performance Objective:

1. Shut down feller buncher: Immobilize machine, lower attachments to the ground, shut down engine, and follow lock out procedures.
2. Dismount using 3-point contact.
3. Lubricate/maintain fluid levels: following manufacturers' specifications for greasing. It is a good opportunity to check for cracks, leaks, wear in pins and bushings.
4. Report deficiencies: Complete report according to local procedures, perform repairs that you are qualified to do and/or report to the supervisor or mechanic or service person.

Component Checklist:

- Shut down feller buncher and lock out
- Safe dismount, maintaining 3-point contact
- Lubricate/maintain fluid levels
- Report deficiencies