



On-site Orientation

Grapple Skidder Operator

**Ministry of Training, Colleges and
Universities**

On-Site Orientation

Grapple Skidder 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.

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

GRAPPLE SKIDDER OPERATOR

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 skidder components and terminology
- Verify zero energy state
- Conduct circle check
- Plan and organize skidding pattern
- Observe cut boundaries
- Travel with skidder
- Recognize ground conditions
- Verify tree species
- Observe machine limitations
- Observe danger zone
- Position load at landing
- Remove debris
- Use winching equipment
- Shut Down and Immobilize Grapple Skidder
- Refuel Grapple Skidder
- Perform Minor Maintenance and Adjustments

Worker Name (Please Print): _____

Worker Signature: _____

Date of Completion: _____

Employer/Designate Name (Please print): _____

Employer/Designate Signature: _____

IDENTIFY SKIDDER COMPONENTS AND TERMINOLOGY

Performance Objective

Identify skidder components and terminology, visually and verbally, as described in the operator's manual, in order to ensure safe and efficient operation and maintenance. (Employer, supervisor or trainer refer to manufacturer supplied operator'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 supplied owner's manual effectively and ensuring that such things as safety information, maintenance schedules, machine capacities and operating directions are understood and correctly applied. Review the major (key) components from the manufacturer supplied machine owner's manual that will assist the operator in identifying the key components, knowing their location on the machine and describing their purpose. (See appropriate pages in manufacturer supplied manual for specific terminology and diagrams)

Component Checklist:

- Blade and hydraulic cylinders
- Tires and Tire chains
- Cab and Operator Controls and Escape Hatch
- Grapple
- Arch of Grapple and Boom
- Engine
- Transmission
- Differential
- 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 manufactures' 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). 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. Ensure that all attachments are lowered to the ground or in the rest position and the machine is properly shut down prior to initiating the circle check procedure. All substandard conditions and problems must be reported to the immediate supervisor. The circle check must be conducted at the beginning of each shift.

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). Explain that repairs must be done as soon as possible to prevent costly breakdowns and to prevent even further damage or the potential of injury to the operator and others;
2. Leaks: Point out 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, 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 clevice pieces or loose parts of the chain. Also check for loose or missing wheel lugs.
5. Pins and Bushings: Examine holding pins and bushings to ensure that they are not damaged and are properly engaged and in place.

GRAPPLE SKIDDER OPERATOR

6. Check engine compartment and exhaust manifold/turbo for debris: Check and remove debris from engine compartment to reduce the potential for fire, paying particular attention to the exhaust manifold/turbo area.
7. Check fluid levels: Identify the location of site glass and/or dip stick/cap and filler locations and examine each for proper levels. Keep these areas clean of debris, spilled fluids and grease build-up. Determine and confirm the type of fluid at each filling location. Follow the manufacturer's guidelines for proper checking procedures of pressurized systems and the hazards of hot fluids. No smoking during these procedures. NOTE: When checking and identifying hydraulic hose requirements, the operator must be familiar with the type of hose fittings. (Three types - GIC, OFS and pipe thread)
8. Condition of blade, arch and winch: Check for cracks, condition of pins, condition of cylinders, grease fittings throughout the arch, the entire blade and blade support arms. Examine the condition of the winch cable and drum, chokers (if equipped) and winch hook for burrs or frayed cables, check rollers for free movement and wear. Wear double palm gloves when handling cable.
9. 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.
10. Fire extinguisher and fire suppression system: The operator must know how to access this equipment and how to use it. It should be checked daily to ensure a proper charge, maintenance tag updated, the pin is in place and the device is properly secured in the cab. A water pack full of water and in working condition is required for fire season. For machines equipped with fire suppression system, the operator must know the location(s) of activation plungers and ensure that they are in good condition and check outlets for good condition.
11. 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.
12. Seat belt: Examine the seat belt to ensure that it is in good working condition (wear, anchors, frayed, buckle works freely).
13. Lights: Turn on all lights to check that they are in good working order. Make sure the guards are in place (if equipped), and the lenses are cleaned and wiring harnesses are intact.

14. Windows: Examine the windows to ensure they are clean and in good condition. Broken or missing windows must be reported and repaired. Make sure the wipers and wiper blades are in working order, and that window guards/screens (if equipped) are properly installed.
15. Housekeeping and loose equipment in cab: Keep all tools outside the cab or properly secured in the cab. No loose items in the cab. Keep floor clean and air conditioning/heater filters clear of materials. Aerosol containers should be secured and away from heat sources.
16. Radio communications: Check the radio to ensure that it is in good working order and equipped for channels used in your area.
17. First aid kit: Know the location, condition and required contents of the first aid kit. It should be easily accessible.
18. Spill Kit (where equipped): know the location, condition, how to use it, required contents of the spill kit. It should be easily accessible.

Component Checklist:

- Check for cracks and leaks
- Identify grease fittings
- Check tire condition, tire chains and wheel lugs
- Check condition of pins and bushings
- Check engine compartment
- Check fluid levels
- Check condition of blade, arch and winch
- 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
- Check housekeeping and stow any loose equipment in cab
- Check Radio Communications
- Check First Aid kit
- Check Spill Kit

PLAN AND ORGANIZE SKIDDING PATTERNS

Performance Objective

Plan and organize a skidding pattern by observing terrain, ground conditions and machine load limitations to prevent damage to non-target species, minimize ground disturbance and facilitate safe and efficient transportation to the loading site.

Guidelines for Performance Objective:

1. **Identify skidway location:** Check with your immediate supervisor to determine skidway location and any environmental or other concerns. Be aware of any potential hazards in the immediate area (i.e. chicots, hang-ups, traffic or other equipment in the immediate area, 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, slopes and inclines, drop off, wet areas, etc).
3. **Maximize load and minimize skidding distance.** Observing ground conditions and machine load limitations. Refer to your operator's manual for load capacity and machine limitations. Where possible double up small bundles to optimize load.
4. **Minimize rutting and ground disturbances:** Adjust load size to reduce site damage or determine alternate routes. Be aware of ground disturbance guidelines for your operation. If unsure check with your immediate supervisor.
5. **Maintain a safe operating distance between equipment:** Be aware of other equipment working in your immediate work area. Check with your immediate supervisor and co-workers to identify appropriate danger zones for your operation.

Component Checklist:

- Identify skidway location
- Identify travel route (considering hills, swamps, etc.)
- Maximize your load and minimize skidding distance by observing ground conditions and machine load limitations
- Minimize rutting and ground disturbances
- Maintain a safe operating distance between equipment

OBSERVE CUT BOUNDARIES

Performance Objective

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

Guidelines for Performance Objective:

Operate equipment within identified boundaries: Explain 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 boundaries

TRAVEL WITH SKIDDER

Performance Objective

Travel with skidder by selecting appropriate speed, placing attachments in the travel position according to manufacturer's specifications, in order to protect self and others and to prevent equipment damage.

Guidelines for Performance Objective:

1. Place blade and grapple in the travel position: The blade should be maintained in a position not to impede visibility and not to prevent air flow to radiator. Ensure that the grapple is closed and elevated to an appropriate height when in the travel position.
2. Select a speed appropriate to ground conditions while maintaining control of the machine. Maintain a speed and engine RPM that allows the operator to maintain full control of the machine at all times taking into consideration ground conditions, weather, etc.
3. Maintain control, travel at a safe speed and keep right while travelling on roadways or on route to landing to ensure public safety: Be aware of local traffic and observe traffic and warning signs posted within your work area. Keep speed appropriate to road condition, weather, concentration of traffic, seasonal conditions (dust) and be aware of soft shoulders.
4. Maintain communication with other equipment operators: Check to ensure your radio is in good working order and proper channel is used. Monitor the local channel for traffic. Check with your immediate supervisor for communication protocol within your work area.

Component Checklist:

- Place blade and grapple in travel position
- Select a speed appropriate to ground conditions while maintaining control of the machine
- Maintain control, travel at a safe speed and keep right while travelling on roadways or on route to landing to ensure public safety
- Maintain communication with other equipment

RECOGNIZE GROUND CONDITIONS

Performance Objective

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

Guidelines for Performance Objective:

1. Skidding on hills should be conducted in the direction of the slope to reduce the potential of rollover: Skid straight up and down hills where practical; maintain low centre of gravity with load. Avoid high stumps, rocks and windfalls. Discuss ground condition concerns with your immediate supervisor or the previous shift co-worker at the beginning of each shift.
2. Do not cross drainage areas: Crossing drainage causes environmental damage and can pose unsafe conditions for machine operation.
3. Minimize rutting in wet areas: Ruts can pose unsafe conditions for machine operation.
4. Seasonal concerns: Seasonal weather changes require extra caution to be exercised due to poor visibility and hidden hazards. Be aware of hidden hazards due to seasonal conditions (i.e. ditches along roadways frozen and 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 conditions, heavy underbrush results in poor visibility and hides hazards such as cliffs, mining holes, etc.

Component Checklist:

- Skidding on hills should be conducting in the direction of the slope to reduce the potential of roll over
- Do not cross drainage areas
- Minimize rutting in wet areas
- Seasonal concerns (winter, summer) require extra caution due to poor visibility and hidden hazards

VERIFY TREE SPECIES

Performance Objective

Verify tree species, by 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

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 and 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 load position as close to the machine and as low to the ground as appropriate given terrain and ground conditions. This will avoid damage to machine or prevent possible roll over.
3. While turning with load, be aware of stumps or obstacles that may cause roll over. Also be aware of tail swing of a long load when other workers and machines are nearby.

Component Checklist:

- Understand the load limitations of the machine according to ground conditions and tree species (maintain ground contact with four wheels at all times)
- Keep load as close to the machine and as low to the ground as possible, while observing obstructions, when placing the load in the travel position
- While turning with load be aware of stumps which may facilitate machine roll over

OBSERVE DANGER ZONE

Performance Objective

Observe danger zone from pulling trees and or flying debris during skidding by keeping a safe distance between self, others and equipment, taking into consideration limited visibility and blind spots, according to legislative requirements and manufacturer's specifications 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. Explain company policies and procedures in relation to danger zone as it applies to other equipment and operating equipment near other workers. Consult your operator's manual for recommended danger zone for this equipment.

Component Checklist:

- Review local company dangers zones requirements and identify site specific hazards

POSITION LOAD AT LANDING

Performance Objective

Position load at the landing, in a manner that protects self and others and meets safety and production requirements.

Guidelines for Performance Objective:

1. Approach landing or roadway with caution observing other equipment, people, and oncoming traffic, taking into consideration limited visibility and blind spots. Drive at a reduced speed watching for equipment and people at the landing and approach the landing when safe to proceed both for yourself and other workers. Where limited visibility and blind spots are an issue at the landing, proceed at a reduced speed and take added caution.
2. Position load taking into consideration processing requirements: For an efficient operation the load must be dropped and/or piled in a manner to facilitate the next stage of processing and optimizing available space. Because of high noise levels, skidders bringing bundles to a whole tree chipping operation must keep the windows closed when approaching the chipping operation. The load should be dropped at the infeed area of the chipper.
3. Minimize product damage: Review with your immediate supervisor your company's internal practice for piling wood at the landing in ways that reduce product damage.

Component Checklist:

- Approach landing or roadway with caution observing other equipment, people, and oncoming traffic, taking into consideration limited visibility and blind spots
- Position load taking into consideration processing requirements
- Minimise product damage

REMOVE DEBRIS

Performance Objective

Remove debris in a safe manner, using required equipment attachments, in order to meet operational requirements.

Guidelines for Performance Objective:

1. Avoid contact with other equipment while operating near or around other equipment: Reduce speed when approaching and leaving pick-up area and operate attachments taking into consideration surrounding equipment. Ensure windows are closed at all times when approaching a whole tree chipping operation.
2. Be aware of all personnel in the chipper operation at all times

Component Checklist:

- Avoid contact while operating near or around other equipment
- Be aware of all personnel in the chipper operation at all times

USE WINCHING EQUIPMENT

Performance Objective

Use winching equipment according to legislative requirements and manufacturer's specifications in order to protect self and others and prevent equipment damage.

Guidelines for Performance Objective:

1. Ensure proper personal protective equipment is worn while handling winch cable: Workers must wear double palm gloves when handling cable. When out of the cab proper head pr
2. Position and immobilize skidder to facilitate a straight pull: The skidder is positioned with blade down and parking brake on to allow winching to be done safely in a straight line. Winching from an angle can cause a roll over. It also reduces the potential for damage to the cable and the machine.
3. Ensure skidder is immobilized and winch is released before dismounting: Release winch cable controls to the free wheel position prior to dismounting cab to connect cable to the other machine.
4. Maintain communication between equipment: Establish a plan of action between all workers prior to initiating the pull. Maintain ongoing communication between workers involved using radio, hand signals or other means.
5. Ensure other workers are clear of the potential cable breakage danger zone before engaging the winch. Establish an appropriate danger zone for the circumstances and ensure that this danger zone is maintained throughout the pull.
6. Immobilize all equipment and allow slack in the cable prior to disconnecting. In all cases parking brake must be engaged, blade down and machine secured prior to any workers entering the danger zone. No worker shall enter the danger zone until signalled by the operators.

Component Checklist:

- Ensure proper personal protective equipment is worn while handling winch cable
- Position skidder to facilitate a straight pull.
- Ensure skidder is immobilized and winch is released before dismounting
- Maintain communications between equipment
- Ensure other workers are clear of the potential cable breakage danger zone before engaging the winch
- Immobilized all equipment and allow slack prior to disconnecting cable

SHUT DOWN AND IMMOBILIZE GRAPPLE SKIDDER

Performance Objective

Shut down grapple skidder, according to manufacturer's specifications and requirements.

Guidelines for Performance Objective:

Lower blade and grapple to the ground. Park machine on level bare mineral soil and lower blade and grapple 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:

- Lower blade and grapple to the ground
- Safe dismount, maintaining 3-point contact

REFUEL GRAPPLE SKIDDER

Performance Objective

Refuel grapple skidder 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 grapple skidder: 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 grapple skidder, 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 grapple skidder: 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 grapple skidder and lock out
- Safe dismount, maintaining 3-point contact
- Lubricate/maintain fluid levels
- Report deficiencies