

MODULE 3-05

BRUSH CHIPPER

ALL EMPLOYEES ARE TO BE TRAINED PRIOR TO USING EQUIPMENT



Purpose

Providing clean, well-maintained facilities is an essential function of OPRD’s mission and part of the Centennial Horizon goals for world-class visitor experience. The use of gas-powered equipment, such as brush chippers, helps keep landscapes, trails, and campsites clean, safe and well maintained.

Use of gas-powered chippers requires an ability to walk over uneven surfaces, use job hazard analysis to identify worksite dangers, and use equipment and materials safely according to OPRD and a manufacturer’s instructions. The purpose of operating any equipment in Oregon Parks is to accomplish the business of the State while protecting visitors, employees, and volunteers.

Significant Environmental Aspects

OPRD has developed an Environmental Management System (EMS). Information about the EMS and other completed training modules included in the EMS can be located on the “R” Drive at: R:\Environmental Management System. Those activities and operations that may have significant environmental impact have been identified and included in the EMS. Operating gas-powered equipment, such as a brush chipper, has the potential for significant environmental impact involving: vehicle and engine use, non-hazardous waste, potentially hazardous waste and air quality. Operators of gas-powered equipment should choose the most efficient equipment to perform assigned tasks.

I. Pre-Operation

A. Read Operators Manual prior to use. Be sure you fully understand and strictly follow safe operating, trouble shooting, and machine maintenance procedures recommended by the brush chipper manufacturer.

B. Inspection/Service

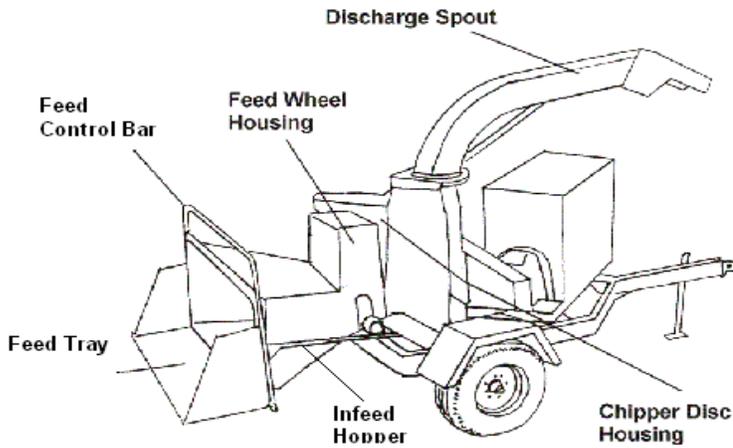
- **Check** gas and oil, tires, and tighten bolts and nuts.
- **Check** for clogs and chip build up; check matt/flap at feedhole.
- **Pre-Start** before leaving shop. Test safety features.
- **Take Tool Pack** for maintenance.
- **Signals** - Establish hand signals for when machine is running, i.e., stop, time out, wait, okay
- **Red tag** any tools or non-energized equipment requiring replacement or repair and remove from service.
- **Lockout/Tag-out (LO/TO)** any energized tools or



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equipment if repairs are needed, in accordance with Procedure Module 09-04, Lockout/Tag-out.

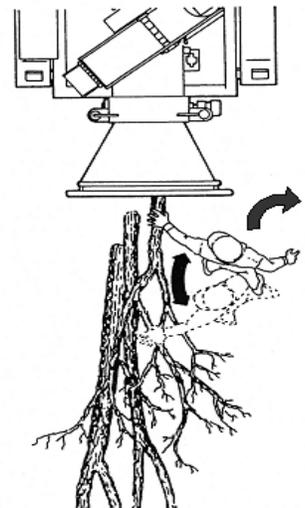
II. Sustainable Operation



- A. **Engine Use** – Use job hazard analysis and project planning to minimize engine idle time.
- B. **Maintenance** – Proper maintenance of equipment helps increase fuel efficiency and reduce air pollution.
- C. **Chemical Use** – Where possible use low-smoke oil and bio-based lubricants.
- D. **Waste Disposal** – Properly dispose of all petroleum-based waste according to park procedures or waste management plan. Reuse chips as soil additive or for landscaping.

III. Operation

- A. **Starting - Operators Manual** - Refer to operator’s manual for machine-specific start-up procedures.
- B. **Personal Protective Equipment (PPE)**
 - **Head Protection** – Wear hardhat
 - **Hand Protection** – Leather gloves must be worn.
 - **Hearing Protection** – Ear plugs/muffs are required for loud equipment
 - **Eye protection** – Safety goggles/glasses or face shield
- C. **Site Assessment**
 - **Chipper Type** - Determine appropriate chipper for task.
 - **Location** - Determine where chipper will be operated. Locate as close as possible to material.
 - **Second Person** - A second person is required when operating a chipper as a safety watch person to assist the brush chipper operator.
 - **Pathways** - Determine pathways to chipper. Ensure that the area in front of the in-feed hopper is free of tripping hazards. Avoiding dragging brush through gravel.
 - **Discharge** - Avoid pointing outflow of chipper towards roads, people and equipment.



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D. Operation Includes

- **Wearing** appropriate footwear and clothing for the task, no loose fitting clothing that could get snagged, or sandals, tennis shoes, etc.
- **Watch** for build up of chips in undesirable areas. See Dump Bed Procedure 07-04.
- **Roll** windows up on tow vehicle.
- **Cover** windshield with plastic, especially if tree limbs have a lot of pitch in them.
- **Check** deflection shield to be sure it hasn't loosened.
- **Never** place any body part (hands or feet), into chute to push debris; use tree limb, stick or equivalent.
- **Always stand to side** of in-feed hopper when feeding the brush chipper.
- **Feed brush and limbs into the in-feed hopper butt end first**
- **Lay short/small material on top of longer material** to feed (or use a push paddle to push) short or thorny brush through the in-feed hopper.
- **Be aware of surroundings** when changing direction of deflection shield.
- **Cut** pieces into manageable sizes.
- Sometimes the chipper will freeze up and refuse to chip, generally with too much brush or large limbs in the chute. To clear the chute, and lock out the energy source either with the ignition key or by removing the sparkplug, then remove the clog with a push stick.



KNOW how big a limb your machine will chip!

NEVER push, or lean in to the chipper. **ALSO**, note the lack of PPE on this home owner!



IV. Post-Operation

A. Clean Up, Hazard Warnings, Storage

- Clean area where brush was chipped.
- Clean and inspect tools and equipment for damage or needed maintenance.
- Place hazard signs/tape to identify any park hazard for the safety of staff and visitors.
- Red Tag any non-energized tools or equipment damaged during work project.
- Complete Lockout/Tag-out process for any energized tools or equipment damaged during work.
- Schedule repairs or replacement on damaged tools or equipment.

V. Demonstration of Proficiency

Anyone expected to use a brush chipper must be trained in that process and is required to demonstrate proficiency prior to signing training ledger.

MODULE 3-05 BRUSH CHIPPER TEST

I. Multiple Choice

1. Before leaving the shop, you need to:
 - a) Check the gas/oil, tires, and tighten bolts and nuts
 - b) Start the equipment to be sure it runs
 - c) Find the maintenance bag or box that goes with the equipment and make sure it has tools for chipper
 - d) Test safety features, especially emergency shut off button, if equipped with one
 - e) All of the above

2. What personal protective equipment is needed when operating the chipper?
 - a) Hardhat, leather gloves
 - b) Hearing protection
 - c) Safety goggles/glasses or face shield
 - d) All of the above

3. Prior to starting a job, you need to do a site assessment that includes:
 - a) Determine where chipper will discharge materials
 - b) Determine the appropriate chipper for the task
 - c) Walk around the job site to see what hazards may be present (gravel, overhanging trees, wait a minute vines... roots)
 - d) Ensure the discharge chute is pointed at roads, the office and day use campers
 - e) All of the above
 - f) a, b and c only

4. When clearing a clog in the chute, you should TURN THE MACHINE OFF and:
 - a) Use your hand, preferably your non-dominant one to push hard on the brush
 - b) Climb up on the chute and kick at it with your feet. Be sure to hold on tight to the discharge chute to prevent falling off and worker's comp injuries.
 - c) Use a push stick and beat on the top of the feed wheel housing
 - d) Lock out the energy source either with ignition key or by removing sparkplug, then remove the clog with a push stick

II. True/False

5. _____ It is important to determine the best pathways to the chipper so you avoid dragging brush over or through gravel, tree roots, firepits, standpipes, gopher runs, occupied camp sites.
6. _____ Brush chippers are so precise once you set the deflection shield, you don't have to worry about where chips are blowing.
7. _____ It is wise to roll up the windows on the tow vehicle, and even cover the windshield.
8. _____ Take the chipper to the brush pile if possible, not the brush to the chipper.
9. _____ Hand signals get confusing so just shut the chipper down each time you want to talk.

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10. ____ Feed brush and limbs into the in-feed hopper butt end first
11. ____ Always stand directly in front of the in-feed hopper, and lean into your work when feeding the brush chipper.
- 12 ____ Always Wear loose fitting clothes and tennis shoes when feeding the discharge hopper, especially if you are feeding it “wait a minute” or blackberry vines.
- 13 ____ Lay short/small material on top of longer material to feed (or use a push paddle to push) short or thorny brush through the in-feed hopper.
14. ____ A second person is required when operating a chipper as a safety watch person to assist the brush chipper operator.

III. Discussion Questions

1. What actions need to take place to set up a brush chipper at a work site?
2. What can go wrong when operating a brush chipper? What can you do to reduce the likelihood it could go wrong?

Employee Name: _____ Pass _____ No Pass _____ Date: _____

Take this test to your supervisor or trainer for sign off.