

# Chipper/shredder safety precautions

**'It can't happen to me,' you say? Chipper/shredder accidents do happen to landscape and tree care specialists who don't follow these rules.**

by James E. Guyette

■ Chippers and shredders come in a number of sizes and configurations, ranging from homeowner models to commercial pull-behinds, but one factor is constant: the need for the ultimate in safety precautions.

Larger chippers made for tree branch disposal can be especially dangerous to careless operators or others in the immediate area.

Most chipper accidents are caused by operator negligence or error, not because of the machine's design. They happen to experienced, confident operators who have a lapse in paying attention to what they're doing—perhaps caught up in the belief that "it can't happen to me."

Actual chipper injury figures are not available, but the risks are real.

Aside from the obvious mayhem of coming into contact with high-speed rotating blades, an operator can be stuck by a stick knocked askew from the hopper. Or an operator working along a roadside can be run over by a passing vehicle. And the chips coming from the chute have enough force to peel the paint off a house.

Industry sources say that more than half of all chipper injuries are suffered during maintenance procedures.

Always let the moving parts come to a full stop and then remove the ignition key before beginning any maintenance, says John Such, field sales representative for Lanphear Supply in South Euclid, Ohio. He stresses that operators should read all the manuals and be thoroughly trained before working on these machines.

**Safety tips**—Wearing the proper attire is crucial. Loose clothes or too-tight gloves (always avoid the gauntlet-type) can catch on brush going into the blades. A hard hat and eye and ear protection is mandatory. And the noise level means that an operator has to take special note visually of sur-

rounding people and activities.

When setting up, make sure you're not parked under the tree being worked on. (People have actually done this.) Block the wheels, taking care to keep your feet out from under the tongue mechanism. Many accidents happen during the hooking and unhooking process.

Before hauling, the safety chains should be crossed under the trailer tongue and securely fastened so the chipper will not fall to the ground should there be a hitch failure.

Check the chute discharge direction, and don't stand in front of it.

Look in the hopper before starting. This prevents shovels, water coolers or whatever from being fed into the blades.

When feeding, never let your hands cross the plane of the hopper, and *never* use a hand, foot or rake to push items in. Don't force items in, and avoid feeding metal, glass, stones and any other foreign matter. Be certain that a climbing rope isn't still entangled in a branch.

**Smooth running**—Certain periodic,

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weekly and daily inspections and maintenance tasks are necessary for equipment upkeep and safety.

For example, on engines with external governors, Such says that a frequent belt inspection is absolutely required. If there's the slightest question about that belt, replace it immediately.

"If the governor belt breaks, the machine will run out of control," Such warns.

The knives should be checked daily for sharpness, and they should all be the same length. The chipper belts require daily inspection, as do the fluid levels, air cleaner, lights, hitch and pintel ring. Make sure there's no dirt on the radiator. If there is,



**Hard hats, goggles and gloves are required safety gear for chipper/shredder operators.**

the machine can overheat.

When checking belts, make sure you don't over-tighten them. This can cause bearing, pump and/or PTO failure. The PTO/clutch should be checked daily. It should take about 90 ft./lbs. of force to engage the clutch handle.

**Don't turn blue**—The major cause of PTO failure is "facing burn-out" from either incorrect use, incorrect adjustment or a combination. "It will turn blue and you'll fry it," says Such, who recently conducted a seminar on chipper use for the Ohio Chapter of the International Society of Arboriculture.

The engagement time for the PTO and the adjustments must meet the manufacturer's specs to avoid costly breakdowns.

Lubricate the bearing properly. One manufacturer reports that 95 percent of all bearing failures are caused by improper lubrication. Another big cause of bearing failure is operating when the grease is cold. This will ruin the shaft along with the bearing. Such says that it is absolutely crucial that the correct specified warm-up and idle periods be followed. Heed the manufacturer's specs and don't try for short cuts.

## Do/don't

### DO:

- ✓ Understand safety, maintenance materials
- ✓ Wear head, eye, hearing protection
- ✓ Be extra observant
- ✓ Set up far from road
- ✓ Use cones, signs and a flagger
- ✓ Feed from the right side or rear of hopper
- ✓ Check discharge chute direction
- ✓ Look in the hopper first
- ✓ Look for climbing ropes in branches
- ✓ Check governor belt often
- ✓ Specified daily, weekly, periodic inspections
- ✓ Keep radiator clean
- ✓ Check PTO
- ✓ Follow PTO specs
- ✓ Follow specified warm-up period
- ✓ Lubricate bearings correctly

### DON'T:

- ✓ Wear clothes that are too loose
- ✓ Wear gloves that are too tight
- ✓ Set up under targeted tree
- ✓ Run toward road
- ✓ Let branches flip into road
- ✓ Stand in front of discharge chute
- ✓ Set non-brush items in hopper
- ✓ Let hands cross hopper plane
- ✓ Use hand, foot, rake, etc. to push brush in
- ✓ Force anything in
- ✓ Push in foreign items
- ✓ Use dull knives
- ✓ Ignore any part of the machine
- ✓ Over-tighten belts
- ✓ Try any short cuts

When an inspection timetable is presented, it's there for good reason. It does no harm to check each part—be it bolt, screw, filter, fluid—as often as possible.

"Common sense, reading all safety instructions and a good maintenance

program are the keys to chipper safety and a trouble-free chipper," says Such.

—James E. Guyette is a freelance writer specializing in the green industry. He is based in South Euclid, Ohio.

## Questions to ask before spraying

■ Dr. Stephen Pearson, technical services manager at Spraying Systems Co., Wheaton, Ill., encourages pesticide and fertilizer applicators to consider drift potential before spraying. Here are five questions you should ask yourself:

1) Are there sensitive plants nearby? Allot extra buffer zones on the border of the application zone.

2) What size spray tip is being used? Larger, heavier droplets from larger nozzles or special drift control spray tips minimize drift.

3) From what height is the product being applied? Higher booms mean droplets have more time to drift before hitting the target.

4) What is the wind velocity? Even a slight breeze of 6 mph can cause measurable drift.

5) What is the spray pressure? If an applicator reduced the pressure, drift is reduced through increased droplet size. But remember, decreasing the spray pressure too much can affect spray pattern and volume. Always re-calibrate sprayers after a significant change in pressure.

