

GROUNDS SAFETY PROCEDURES

USE OF PESTICIDES

The use of pesticides can be dangerous. Chemicals used by the Grounds Department include Roundup, Granular Pre-Emergence, and some Banvill. People who come into contact with pesticides may develop some residue build up in their body. Those who work with pesticides obviously are at greater risk of being contaminated. Therefore, the careful handling of pesticides is important in preventing accidents. This section provides the information needed to be safe and to protect not only oneself, but also one's family and friends.

Protecting Your Body

Once pesticides are applied they are invisible and sometimes odorless. Pesticides can enter the body one of three ways:

- ♦ through the mouth,
- ♦ through the skin and/or eyes,
- ♦ through the lungs.

The extent to which a person is poisoned can be extremely difficult to determine, especially if the pesticide has entered through the skin or lungs. Pesticides can be transferred to the body in the following ways by one of the above methods:

(Orally)

- ♦ not washing hands before eating, drinking, smoking, or chewing;
- ♦ mistaking the pesticide for food or drink;
- ♦ accidentally applying pesticides to food;
- ♦ carelessly splashing pesticide into the mouth.

(Via skin and eyes)

- ♦ not washing hands after handling pesticides or their containers;
- ♦ splashing or spraying pesticide on unprotected skin or eyes;
- ♦ wearing pesticide-contaminated clothing (including boots and gloves);
- ♦ applying pesticides in windy weather;
- ♦ wearing inadequate protective clothing and equipment during mixing or application.

(Via lungs)

- ♦ prolonged exposure to pesticides in closed or poorly ventilated spaces;
- ♦ accidentally breathing vapors from fumigants and other toxic pesticides;
- ♦ breathing fumes, dust, or mist during application without appropriate protective equipment;
- ♦ inhaling fumes present immediately after a pesticide is applied (reentering the area too soon);
- ♦ not having a good seal on your respirator or using an old or inadequate cartridge or canister.

Getting pesticides in your body is accomplished either by acute exposure or by chronic exposure.

Acute exposure is when pesticides are ingested so that symptoms of poisoning occur quickly and the causes of the symptoms are known. This can be caused by:

- ♦ splashing a pesticide into your mouth;
- ♦ spilling or spraying a pesticide onto clothing;
- ♦ being contaminated by broken equipment.

Chronic exposure is repeated exposure to pesticides over a long period of time. This type of exposure may exist for a long period of time without any symptoms being noticed. Continuous exposure to pesticides is dangerous as residues in the body may increase. This low-level exposure can lead to serious illness and should be checked regularly. In the work place, chronic exposure usually occurs from incidents such as:

- ♦ faulty or inadequate protective clothing or equipment;
- ♦ repeated early reentry;
- ♦ inadequate cleanup of clothing and body;
- ♦ contaminated working conditions.

To protect oneself from pesticides entering the body, a person must wear protective clothing and equipment. All directions that appear on the label of the pesticide should be followed.

Protective Clothing for Pesticide Use

When handling pesticides, a coverall-type outfit or at least a long-sleeved shirt and pants should be worn. The fabric should be woven or laminated, and manufactured for this purpose. If working with pesticide concentrates or very toxic materials, a liquid-proof apron must be worn.

Gloves: The type of gloves worn when handling pesticides, especially liquids, should be liquid-proof neoprene gloves. These should be long enough to protect the wrist. Gloves should not be lined with a fabric because linings absorb chemicals. To avoid chemicals running down the sleeve and into the gloves, wear the sleeves over the gloves. When working above head height, wear cuffing gloves.

Hats: Never wear a hat with either a cloth or leather sweatband. The hat should be easy to clean or even disposable. Hats with plastic sweatbands are recommended. Plastic 'hard hats' with plastic sweatbands are liquid-proof and are cool in hot weather.

Shoes and Boots: Sturdy shoes and socks are sufficient for some pesticide applications. Neoprene or rubber boots are a wise precaution with many pesticide applications because canvas, cloth and leather shoes can easily absorb pesticides. When handling liquid concentrates or highly toxic pesticides (those with DANGER on the label), neoprene or rubber boots are necessary. Wear unlined boots with pant legs outside the boots so the pesticide will not run down the leg and collect in the boot.

Goggles or Face Shield Wear: Use goggles or a face shield when there is any chance of getting pesticide in the eyes. Eyes readily absorb pesticides, and the temporary blindness caused by an accident may hinder being able to take care of oneself. Always keep goggles in their best condition.

Protective Clothing for Fumigant Application: Before applying fumigant, read the label and follow any pertinent information. If the label does not give specific instructions, wear gloves, shoes or boots, and a long-sleeved shirt and long pants made from tightly woven fabric. Some fumigants readily penetrate rubber, neoprene, and leather. These fumigants may be trapped inside gloves, boots, or liquid-proof suits and cause severe skin absorption. Labels on fumigants will specify the appropriate protective clothing to be worn while handling.

Care of Clothing: Clothes must be as clean as possible; if they become contaminated with pesticides, destroy them. This is because a toxic residue may remain even after washing. When the clothes are still salvageable, they should be washed alone, away from other laundry. Wash hats, gloves and boots daily, inside and out. Hang them to dry. Test gloves for leaks by filling them with water and gently squeezing. Wash goggles or face shields at least once a day. Wear neoprene headbands, if possible. Elastic fabric headbands often absorb pesticides and are difficult to clean. Always have a spare.

Protective Equipment

Having the correct gear to protect the lungs is vital. The lungs absorb more chemicals through breathing than the skin does by coming in direct contact with a chemical. Therefore, a respirator must be worn when:

- ♦ the pesticide being mixed or applied has a precautionary statement on the label (i.e., Do not breathe vapors or spray mist. Harmful or fatal if inhaled).
- ♦ the spraying equipment is being calibrated and/or adjusted.
- ♦ exposure to the pesticide is for a long period of time.
- ♦ working in an enclosed area.

Cartridge Respirator: A face mask, which covers the mouth and nose, is to be worn when applying pesticides. It should be accompanied by goggles to cover the eyes.

Gas Mask (Canister Respirator): A gas mask (full face coverage) should be worn when continuously spraying pesticides.

NOTE: Neither cartridge nor gas mask respirators will protect from high concentrations of vapor. Neither kind is effective when the oxygen supply is low as in the case of fumigating buildings.

Self-Contained Breathing Apparatus: This apparatus allows a person to carry oxygen with them. This equipment requires certification to use. The air supply in this equipment is limited. High temperatures or excessive exertion will use up the air supply more quickly than normal.

Selection and Maintenance for Breathing Protection: Breathing protection must be approved by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA) for pesticide use. Read and follow the manufacturer's instructions on use and care of any respirator and its parts.

NOTE: All respirators discussed above are negative-pressure respirators and must fit the face well. Beards, sideburns, or glasses will hinder a tight seal.

As pesticides are being applied, wear a mask. If the ability to breathe lessens or the smell of pesticides is evident, replace filters, cartridges, and canisters. These items should be replaced at the end of any job. Wash the face-piece with water and detergent, rinse it, and dry it with a clean cloth.

The useful life of a cartridge or canister depends on:

- ♦ the amount of absorbent material it contains,
- ♦ the concentration of contaminants in the air,
- ♦ the breathing rate of the wearer,
- ♦ the temperature and humidity.

Positive-pressure respirators have longer lasting filters than cartridge and canister respirators. These should be changed after about 150 hours of use when the amount of air being supplied to the applicator drops noticeably. The exposed parts of these respirators also need to be washed and dried after each use.

Personal Care Following the Use of Pesticides

A shower should be taken immediately after working with pesticides. Many buildings have emergency wash stations. Check with your supervisor for wash station placements and know the

work area ahead of time. Should a pesticide be accidentally spilled on an employee immediately rinse the effected area. Do not handle clothes contaminated with pesticides after showering. Keep contaminated clothes away from children and pets. Follow proper laundering procedures when washing these clothes.

Re-Entering Treated Areas

This is an extremely important part of pesticide usage. Before spraying an area, know how long it will be before people can safely enter the area. This waiting period is called the "Re-Entry Interval." Most pesticides will have information listed on the label regarding the re-entry interval for the particular product being used. Climate conditions and other hazards in the area must be considered.

The supervisor of the crew is responsible for warning workers and other people in the area that a pesticide will be used. The supervisor must post signs, in plain sight, that a pesticide has been used. These signs need to be universally understood, using words and pictures, as directed in the U.S. Dept. of Agriculture's guide, Applying Pesticides Correctly. The warning must include:

- ◆ site (areas, building, or field) which has been treated
- ◆ the re-entry interval,
- ◆ what to do in case of exposure.

The only exceptions to the above guidelines are mosquito abatement, related public pest control programs, and livestock and other animal treatments.

Handling Pesticides Safely

Transportation of Pesticides: The safest way to transport pesticides is in correctly labeled containers. Paper and cardboard packages must be kept dry. If pesticide is spilled, clean it up immediately. Do not leave pesticides unattended. Carry Material Safety Data Sheets (MSDS) when in the truck.

Storage of Pesticides: Pesticides should be stored properly as soon as they are received from the vendor. The storage area must be a cool, dry, well-ventilated, and well-lighted room or building that is insulated to prevent freezing or overheating. Keep the area stocked with detergent, hand cleaner, and water; absorbent materials to soak up spills; a shovel, broom, and dustpan; and a fire extinguisher rated for ABC fires.

A review of key points:

- ◆ Store all pesticides in original containers.
- ◆ Do not store paper or cardboard containers on the floor.
- ◆ Check every container for leaks or breaks. If one is leaking, transfer the contents to a container that has held exactly the same pesticide or use a clean container of similar construction and label it correctly.
- ◆ Clean up any minor spills.
- ◆ Keep an up-to-date inventory of the pesticides on hand.

Mixing and Loading Pesticides

Studies show that those applying pesticides are most often exposed to harmful amounts when handling concentrates. Workers involved in mixing and loading undiluted, highly toxic pesticides are highly susceptible to accidental poisoning. Pouring concentrates from one container to another is the most hazardous activity.

Safety Guidelines

- ◆ Wear protective clothing during mixing and loading pesticides.
- ◆ Mix pesticides with extreme care. Avoid getting into a "hurry up" attitude when mixing to keep from spilling or applying an improper amount.
- ◆ Before opening a pesticide, read the label. Directions, including amounts and methods, often change.
- ◆ Paper containers should be opened with a knife. Do not tear them open.
- ◆ Put the container in which chemicals are being mixed on the floor. This will prevent the pesticides from splashing into the face.
- ◆ Measure carefully! Use only the amount called for on the label, and mix only the amount to be used.
- ◆ When loading pesticides, stand downwind so they are not blown toward the body.
- ◆ To prevent spills, close containers after each use.
- ◆ If a spill occurs, stop everything; remove any clothing that may have been contaminated. Use detergent and water on clothes as soon as possible. Clean up the spill.

Pesticide Application

Clothing: Besides wearing protective clothing while working, a person should also wear waterproof clothing if working in drift, spray, or runoff. Do not wipe gloves on clothing. This will contaminate the clothing and may soak through to the skin. Never eat, drink, smoke, or chew while handling or applying pesticides. Wash face and hands thoroughly first. If a person feels ill, do not try to finish the job. Get out of the area and get help.

Areas to be Sprayed: When working outdoors, choose application equipment, formulations, and additives that will minimize drift and runoff. Do not apply pesticides during or just before expected high winds or heavy rains. Try to spray downwind from sensitive areas such as beehives, residential areas, and waterways. Have optimal ventilation and wear a supplied air respirator. Choose application techniques, equipment, and formulations that minimize exposure to people.

Equipment: Always check application equipment for leaking hoses, pumps, or connections and plugged, worn, or dripping nozzles.

- ◆ Do not blow out clogged nozzles, hoses, or lines with your mouth.
- ◆ Do not allow unauthorized persons to use application equipment, handle pesticide containers, or to enter storage areas.
- ◆ Correctly calibrate equipment before use. Try to use all the pesticide in tank or hopper. If pesticide is left over, use it for other labeled uses.
- ◆ Before application, clear the areas of all unprotected persons. By law, the application of a pesticide (either directly or through drift) must not expose workers or other persons.

Cleaning the Equipment: Only trained people should clean the mixing, loading, and application equipment. Have a special area for cleaning. It is best for the area to have a wash rack or concrete apron with a sump to catch contaminated wash water. Dispose of sump wastes as you would excess pesticides. If equipment is in need of repair, warn the person doing the repair of the potential hazard.

Disposal of Pesticides

The EPA recommends ways to dispose of excess pesticides. Consult the label for disposal instructions or precautions. If there are excess pesticides:

- ◆ use them up as directed on the label,
- ◆ take the pesticides to a landfill operating under EPA or state permit for pesticide disposal.

Containers: Do not leave pesticides or pesticide containers at the application site. Never give away pesticide containers. Leftover pesticide containers must be closed tightly and placed in the storage area. The seal should be checked on a regular basis. Always triple rinse empty containers of liquid pesticides as follows:

- 1) Empty the container. Let it drain an extra 30 seconds.
- 2) Fill it one-fifth to one-fourth full of water.
- 3) Replace the closure and rotate the container.
- 4) Invert the container so the rinse reaches all the inside surfaces.
- 5) Drain the rinse water from the container into the tank. Let the container drain for 30 seconds.
- 6) Repeat steps 2 through 5 at least two more times for a total of three rinses. Remember to empty each rinse solution into the tank.

Non-burnable Containers (metal, plastic, or glass)

- ♦ Rinse the containers three times as above. They should have holes in both ends at least 1 inch in diameter.
- ♦ Send or take them to a place that will recycle them as scrap metal or will dispose of them.
- ♦ All rinsed containers may be crushed and buried in a sanitary landfill. Follow state and local regulations.
- ♦ If it is not possible to rinse containers, take them to a landfill operating under EPA or state permit for pesticide disposal.

Containers that held organic mercury, lead, cadmium, arsenic, inorganic pesticides

- ♦ Rinse three times and bury them in a sanitary landfill. (Use rinse water in spray tank on other labeled targets.)
- ♦ If they are not rinsed, take them to a landfill operating under EPA or state permit for pesticide disposal.

Cleanup of Pesticide Spills

Minor Spills (under 500 lbs.)

- ♦ Call Environmental Health Services.
- ♦ Keep people away from spilled chemicals. Rope off the area and flag it to warn people. Do not leave unless someone is there to confine the spill and warn of the danger. If the pesticide was spilled on anyone, wash it off immediately.
- ♦ Confine the spill. If it starts to spread, dike it up with sand or soil. Use absorbent material such as soil, sawdust, or absorbent clay to soak up the spill. Shovel all contaminated material into a leak proof container for disposal.
- ♦ Dispose of it as you would excess pesticides. Do not hose down the area, as this will spread the chemical.
- ♦ Do not let anyone enter the area until the spill is completely cleaned up.

Major Spills (500 lbs and above)

- ♦ **Vacate the area immediately!**
- ♦ **Dial 911.** CSUPD will notify Environmental Health Services. CSUPD and/or Environmental Health Services will notify all non-university agencies.
- ♦ Give first aid if needed.
- ♦ Keep people away from the area until CSUPD arrives.
- ♦ Environmental Health Services and CSUPD will coordinate the confinement of the spill.

First Aid for Pesticide Poisoning

- ♦ Get medical help immediately (**Dial 911**), if anyone has unusual or unexplained symptoms when working with pesticides. Do not let anyone get dangerously sick before calling for help. It is better to be too cautious than too late.
- ♦ First aid should be initiated, while medical help is on the way. If you are alone with the victim, make sure they are breathing and not being further exposed to poison before you call for emergency help. If you are trained, apply artificial respiration if the victim is not breathing.
- ♦ Read the first aid instructions on the pesticide label, if possible. Follow those instructions. Do not become exposed to poisoning while trying to help. Take the pesticide container (or the label) to the physician. Do not carry the pesticide container in the passenger space of a car or truck.

Poison on skin

- ♦ Act quickly.
- ♦ Remove contaminated clothing and drench skin with water.
- ♦ Cleanse skin and hair thoroughly with detergent and water.
- ♦ Dry victim and wrap in a blanket.

Chemical burn on skin

- ♦ Wash with large quantities of running water.
- ♦ Remove contaminated clothing.
- ♦ Cover burned area immediately with loose, clean, soft cloth.
- ♦ Do not apply ointments, greases, powders or other drugs in first aid treatment of burns.

Poison in eye

- ♦ Flush eye quickly but gently with water.
- ♦ Hold eyelid open and wash with gentle stream of clean running water.
- ♦ Wash for 15 minutes or more.
- ♦ Do not use chemicals or drugs in the wash water. This may increase the extent of injury.

Inhaled poison

- ♦ Carry victim to fresh air immediately.
- ♦ Open all doors and windows so no one else will be poisoned.
- ♦ Loosen tight clothing.
- ♦ Apply artificial respiration if breathing has stopped or if victim's skin is blue. If the injured person is in an enclosed area, do not enter the area without proper protective clothing and equipment. If proper protection is not available, **DIAL 911!**

Poison in mouth or swallowed

- ♦ Rinse mouth with plenty of water.
- ♦ Give victim large amounts (up to one quart) of milk or water to drink.
- ♦ Induce vomiting only if instructions on the chemical label indicate to do so.

Procedure for inducing vomiting

- ♦ Position victim face down or kneeling forward. Do not allow victim to lie on their back, for the vomitus could enter the lungs and do additional damage.
- ♦ Put finger or blunt end of a spoon at back of victim's throat or give Syrup of Ipecac.
- ♦ Collect some of the vomitus so the physician can determine the type of poison if it is unknown.

- ◆ Do not use salt solutions to induce vomiting.

Do not induce vomiting if the victim:

- ◆ is unconscious or is having convulsions.
- ◆ has swallowed a corrosive poison. A corrosive poison is a strong acid or alkali, which will burn the throat and mouth as severely coming up as it did going down. It may get into the lungs and burn them also.
- ◆ has swallowed an emulsifiable concentrate or oil solution. Emulsifiable concentrates and oil solutions may cause severe damage to the lungs if inhaled during vomiting.

Pesticide Poisoning Recognition

Pesticides that target pests can poison humans as well. Some pesticides are highly toxic to humans. Only a few drops in the mouth or on the skin can cause severe injury. Other pesticides are less toxic, but overexposure to them will cause injury. An employee must know the kinds of injury most likely to be caused by the pesticides in use.

There are two clues to pesticide poisoning: 1) nausea and headache, 2) Vomiting. Employees should know what the symptoms might mean and what signs to look for in others who may have been exposed.

Pesticides, which are chemically similar to one another, will generally cause like patterns of injuries. The injury may be mild or severe, depending on the specific pesticide involved and the amount of overexposure. However, the pattern of injury caused by each chemical group is usually the same.

There are two major types of pesticide poisoning injuries:

- ◆ external irritants,
- ◆ internal poisons.

External irritants cause redness, blisters, and rashes on the skin, plus swelling and a stinging sensation in eyes, nose, mouth and throat. Some pesticide groups are irritating to nearly all people; others cause irritation only to sensitive individuals.

Internal poisons injure organs or other systems inside the body. The poison enters the body directly through swallowing or indirectly by absorption during breathing or through the skin. Some pesticide groups cause both external irritation and internal poisoning injuries.

Safe Operation for Spray Equipment

The first rule of safe operation for spray equipment is to know the capabilities and limitations of the equipment. Carry Material Safety Data Sheets (MSDS) in the truck so that it may be taken to the spraying site. Wear the following protective clothing and equipment:

- ◆ hard hat,
- ◆ goggles,
- ◆ respirator,
- ◆ "Tyvek" suit, waterproof gloves and boots (Make sure that pant legs are pulled down over the outside of the boots).

EQUIPMENT OPERATION

General Safety Rules for Operating Equipment

- ◆ Read and understand the contents of the Owner's Manual before starting or operating any

- ♦ piece of equipment.
- ♦ Do not allow children to operate the equipment. Do not allow adults to operate the equipment without proper instructions.
- ♦ Never operate the equipment under the influence of drugs or alcohol.
- ♦ Remove all debris or other objects that might be picked up and thrown by cutter blades or fast moving components of the machine.
- ♦ Keep all bystanders away from the operating area.
- ♦ Do not wear loose fitting clothing that could get caught in moving parts.
- ♦ Prolonged exposure to loud noise can cause impairment or loss of hearing. Hearing protection is required. Hearing and eye protection is provided by the department.
- ♦ Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, have it repaired or replaced before operating the equipment.
- ♦ Handle fuel with care; it is highly flammable, and its vapors are explosive.
- ♦ Use only approved fuel containers.
- ♦ Never add fuel to a running or hot engine.
- ♦ Keep matches, cigarettes, open flames, and sparks away from the fuel tank and fuel container.
- ♦ Fill fuel tanks outdoors. Use a funnel or spout to prevent spilling.
- ♦ Replace machine fuel cap and container cap securely and clean up any spilled fuel before starting the engine.
- ♦ Never attempt to make any adjustment while the engine is running.
- ♦ Batteries contain sulfuric acid. Avoid any contact with skin, eyes, and clothing.

Edger Operation

- ♦ Always wear approved eye and hearing protection.
- ♦ Before each use, always inspect for loose, missing, damaged or broken parts. Have problems corrected before using.
- ♦ Adequate shoes and long pants are required.
- ♦ Before operating, remove any objects that may be thrown by the blade.
- ♦ Keep people away from the area. Stop edging to let pedestrians pass.
- ♦ Do not put hands or feet near or under the blade.
- ♦ Be sure of your footing. Keep a firm hold on the handgrips.
- ♦ Disengage the blade before you start the engine.
- ♦ Do not run the engine indoors.
- ♦ Push-- do not pull-- the edger.
- ♦ Do not lift the edger while it is running.
- ♦ Do not use unless the blade guard, belt guard, and debris guard are in place.
- ♦ Do not touch the engine or muffler during operation or immediately after shutdown. They will be hot.
- ♦ Stay alert for uneven sidewalks, holes in the terrain, or other hazards when operating the edger. Push the edger slowly when on rough ground.
- ♦ Do not leave the edger unattended.
- ♦ Disengage the blade and stop the engine when transporting.
- ♦ If the blade hits an object stop the engine and inspect it for any damage.
- ♦ Adjust the blade angle and set the wheel spacing only after stopping the engine and disengaging the blade.

String Trimmer Operation

- ♦ Before each use, always inspect the machine for loose, missing, damaged or broken parts. Have problems corrected before using.
- ♦ Always wear approved eye and hearing protection. Safety glasses and hearing protection are provided by the department.
- ♦ Do not wear loose fitting clothing while operating.
- ♦ Long pants and adequate shoes are required.

- ◆ Never operate without the shields and guards in place.
- ◆ Keep bystanders away from the area being trimmed. Stop trimming and let pedestrians pass; never trim in congested areas.
- ◆ Never touch the engine or muffler during operation or immediately after shutdown. They will be hot.
- ◆ Never touch the spark plug, ignition plug cap, or the high-tension wire while the engine is running.
- ◆ Always check for fuel leaks before each use.
- ◆ Never operate indoors or in an enclosed area.
- ◆ Always use a shoulder harness.

Trimming with a Blade

- ◆ Extreme care must be taken when using brush or saw blades.
- ◆ When the blade hits a hard object, a serious sideways kickback can occur.
- ◆ Never attempt to use a blade without first inspecting and clearing the work area.
- ◆ Never use a blade near sidewalks, fencing, posts, buildings or other immovable objects.
- ◆ Use the brush and saw blades only for that cutting which is recommended.
 - Brush Blade: up to 3/8" diameter
 - Saw Blade: up to 3" diameter.
- ◆ Never use a blade after hitting a hard object without first inspecting it for bent cutters and cracks. Do not continue to use if either condition is found.
- ◆ Always use a shoulder harness.

Chain Saw

- ◆ With a basic understanding of kickback, the operator may eliminate the surprise of accidents.
- ◆ Kickback may occur when the nose or the tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut.
- ◆ Keep a good firm grip on the saw with both hands while operating. A firm grip will help reduce kickback and maintain control of the saw.
- ◆ Make sure the area is free of any obstructions. Do not let the nose of the bar contact another obstruction while cutting as "kickback" may result.
- ◆ Cut at moderate to high engine speeds.
- ◆ Do not overreach or cut above shoulder height.
- ◆ Follow manufacturer's sharpening and maintenance procedures for each individual piece of equipment.
- ◆ Become familiar with the owner's manual before use.

Additional Safety Procedures for Chainsaws

- ◆ Do not operate chain saw when fatigued.
- ◆ Use proper safety wear such as: eye, ear, face, and head protection, as well as foot protection.
- ◆ Use caution when handling fuel. Also be sure of fuel type and mixture ratios when refueling equipment.
- ◆ Do not allow other persons near saw when starting or cutting.
- ◆ Keep all body parts and clothing away from the saw when operating or cutting.
- ◆ Before starting the equipment make sure all controls are in the safe starting positions.
- ◆ Do not make any adjustments while operating or running the equipment.
- ◆ Operate equipment in well-ventilated areas.
- ◆ Do not operate the equipment until familiar with all working conditions of the equipment.
- ◆ Do not operate equipment that is damaged or requires repair.
- ◆ When transporting equipment, be sure the saw bar is covered by the scabbard to prevent injuries.

- ◆ Keep hands dry and clean and free of oil or fuel mixture as well as the chain saw handles themselves.
- ◆ Carry the chain saw in the stopped position with the guide bar and the chain to the rear of the body and the muffler away from the body.
- ◆ Do not operate the saw until specifically trained to do so.
- ◆ Under no conditions should any modifications be made to the chain saw from its original design.
- ◆ Always use the saw with good common sense, caution, and proper safety techniques and procedures.

Backpack Blower Operation

- ◆ Always wear eye and ear protection when operating the backpack blower unit.
- ◆ Do not operate the equipment without a spark arrestor screen in place. A fire could result if arrestor is not in place.
- ◆ Do not operate the unit when tired, ill, upset, or when under the influence of alcohol, drugs, or medication.
- ◆ Be familiar with all safety precautions and the operations manual before operating the equipment.
- ◆ Check for loose bolts, screws, or fittings before starting and operating the equipment.
- ◆ Check the fuel tank and cap for any leaks or damage.
- ◆ Make sure that the operating area is clear of persons or dangerous debris.
- ◆ A particle mask may be necessary when operating the equipment in very dusty areas.
- ◆ The blower should be operated only in well-ventilated outdoor areas.
- ◆ Never aim the blower outlet in the direction of people or pets.
- ◆ Never use the blower to launch or throw items from the blower outlet.
- ◆ Adjust the backpack strapping system to a secure and snug position.
- ◆ Do not blow burning or smoking materials. A fire may result.
- ◆ Tuck in shirts to avoid its being caught in the equipment.

Snow blower Operation

- ◆ Read and understand the owner's manual and engine instructions before operating.
- ◆ Keep the work area clear of all persons.
- ◆ Wear adequate winter footwear, which will improve footing on slippery surfaces. Wear eye protection. Do not wear loose-fitting clothes.
- ◆ Do not put hands or feet near or under rotating parts. Keep clear of discharge opening at all times.
- ◆ Keep all shields in place.
- ◆ Disengage power to the auger when transporting.
- ◆ Never direct discharge towards bystanders, cars, or buildings. Be aware at all times of direction of discharge.
- ◆ Stop the engine and wait for all moving parts to stop rotating before unclogging the auger or discharge chute. Never use hands to unclog the auger or chute. Even though the engine is off the auger may spring forward when the clog is cleared out. This could result in a serious injury to hands or arms.
- ◆ Never leave the equipment unattended.
- ◆ Always inspect the equipment for damage before you begin to operate.

Riding Lawn Mower Operation

- ◆ Riding lawn mowers are designed with safety features to protect the operator from personal harm or injury. It's also important for the operator to use safe operating practices at all times.
- ◆ Read and understand the contents of the owner's manual before operating the equipment.
- ◆ Never allow children to operate a riding mower. Never allow adults to operate without proper training.

- ◆ Clear the area to be mowed of all foreign objects, which may be picked up and thrown by cutter blades. Pick up all sticks, stones, trash, wire, and other debris.
- ◆ Keep everyone (children, pets, etc.) a safe distance away from the area being mowed. Never mow with bystanders in the area.
- ◆ Do not operate the equipment barefoot or wear loose clothing, jewelry, hair, or footwear. Always wear substantial protective footwear.
- ◆ Always wear eye and ear protection when operating the equipment.
- ◆ Never remove safety shields or safety devices from the equipment. Any damage to the safety devices should be repaired or replaced immediately.
- ◆ Handle gasoline with care; it's highly flammable, and its vapors are explosive.
- ◆ Never add fuel to a running engine or hot engine.
- ◆ Keep matches, cigarettes, cigars, pipes, open flames, or sparks away from fuel tank and fuel containers.
- ◆ Never fill the fuel tank indoors or over the full mark. Always ensure the fuel tank cap is secured before operating.
- ◆ Never make adjustments to the engine or mowing deck while the equipment is running or being operated.
- ◆ Battery for the electrical system contains sulfuric acid, which may be harmful to the eyes, skin, and clothing. Always keep the battery out of reach of children.

Safe Operating Procedures for Riding Lawnmowers

- ◆ Operate the mower in daylight, or under good artificially lighted conditions.
- ◆ Always sit on the mower seat when starting and operating the mower. Keep feet on the mower footrests at all times when operating.
- ◆ For beginning operator, learn to steer and maneuver the equipment with slow engine speed before attempting to mow at faster speeds. Become familiar with the operation of the equipment.
- ◆ Be aware that mowers with front-mounted deck configuration have the back wheels positioned to swing the back of the mower to the outside during turns.
- ◆ Disengage the mowing blades before transporting or moving from one area to the next.
- ◆ Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could be deadly to the operator and individuals around the equipment.
- ◆ Never carry passengers. Maximum seating capacity of all mowers is one person.
- ◆ Be aware of holes, roots, rocks, and other hidden hazards in the terrain. When mowing tall grass, mow higher than desired to expose any hidden objects, then clean the area, and then mow at the desired cutting height.
- ◆ Avoid sudden starts and stops! Always look to the rear of the machine when backing up.
- ◆ Never raise the mowing deck or blades when the blades are running.
- ◆ Before adjusting the cutting height or servicing, disengage the blade drive, stop engine, and remove the ignition key.
- ◆ Wait for all movement of the machine to stop before getting off the machine.
- ◆ In case of clogging of the mower deck:
 - Stop the machine and shut it off.
 - Be sure all moving parts are stopped before unclogging.
 - Dislodge any clogged grass from the deck, blades or shut and resume moving.
- ◆ If the cutting blades strike a solid object or the machine begins to vibrate abnormally, immediately disengage the mowing blades and stop the engine. Inspect for loose bolts, screws, fittings, or damaged parts.
- ◆ Make sure the cutting blades are in good condition, the blade is balanced, and the blade nuts are tight.
- ◆ Never touch the engine, muffler, or other machine components while the machine is running or immediately after stopping the equipment since these areas may be hot and cause a severe burn.
- ◆ Never operate the machine while fatigued, or under the influence of drugs or alcohol.
- ◆ Be aware of people moving in and around the mower at all times, especially when mowing in

- ♦ highly-traveled areas.
- ♦ Report all damage to the machine immediately to the shop repair personnel. Never operate a damaged machine.

Turf Vacuum Operation

- ♦ Always use ear protection, eye protection, and a particle mask when operating the turf vacuum.
- ♦ Use caution when refueling the machine; gasoline is flammable around heat, flame, or sparks.
- ♦ Be sure the machine is in safe operating condition before operating.
- ♦ Inspect the machine daily and replace worn or damaged parts.
- ♦ Never remove safety devices, stickers, or guards from the machine and replace when damaged.
- ♦ Operator should be familiar with the operations manual before operating the machine.
- ♦ Check the operation of the interlock system before operation and never remove the interlock devices; they are for the operator's safety.
- ♦ Always keep people and pets a safe distance away from the machine.
- ♦ There is strong suction at the nozzle, which may cause damage to any bystanders close to the nozzle end.
- ♦ Never maneuver the machine in reverse with the pickup nozzles in the operating position.
- ♦ Always make sure the vacuum is properly attached to the truckster unit before using the machine.
- ♦ The operator should be familiar with all operating controls before use of the machine.
- ♦ Leaving the jack stand on the lower mounting bracket while transporting the vacuum unit may cause damage to the unit.
- ♦ Doors to the vacuum unit open outward. Never allow people to stand behind or near the hopper while dumping.
- ♦ Never reach down into the impeller unit while the machine is in use. Never touch any moving parts while the machine is running.
- ♦ Serious injury to the operator may occur if the blower inlet connector is removed from the blower impeller while it is in motion.
- ♦ Always place safety support stand between hopper and frame when servicing the machine, while the hopper is raised, to prevent accidents or injury.
- ♦ Do not perform any service work on the machine unless it is secured on a level surface.

21" Push Mower Operation

- ♦ Read and understand all safety precautions and operations manuals before operating unfamiliar equipment.
- ♦ Keep all persons and pets away from the operating areas.
- ♦ Before operating the unit, thoroughly inspect the unit for loose bolts, screws and fittings that may result in injury to the operator or damage to the equipment.
- ♦ Remove all rocks, sticks, wire, string, and debris from the area, which is to be mowed.
- ♦ Wear long pants and substantial shoes. Never operate while wearing loose clothing, jewelry or when having loose hair or being barefoot.
- ♦ Never operate the unit without ear, eye, and foot protection. Face shields may be necessary to protect the head from foreign objects the machine may throw.
- ♦ Always use caution when mixing fuel or refueling the machine.
- ♦ Never remove any guards, shields, safety devices, grass shields or safety precaution stickers. Repair or replace any damaged safety devices before each use.
- ♦ Do not operate engine indoors. Always be sure the area of operation is well ventilated.
- ♦ Always maintain secure footing. Grip the handle firmly when walking with the unit.
- ♦ When mowing slopes, mow across the face of the slope, never up and down. Always use extreme caution when changing directions. Never mow excessively steep slopes.
- ♦ Keep hands, face, and feet away from the mower housing and cutter blade when the engine

- is running. Always keep clear of the discharge.
- ♦ Stop the engine and wait for all moving parts to stop before unclogging the discharge tunnel. Never try to clear the discharge tunnel with the engine running.
- ♦ Always remove the spark plug cap before removing the blade when sharpening or replacing, otherwise firing of the engine may result.
- ♦ Never adjust the cutting height while the engine is running.
- ♦ Always shut off the engine when going up, down, or over a curb.
- ♦ Never touch the engine during or immediately after operation; engine will be hot and may require a cool-down period.
- ♦ If the engine or machine vibrates abnormally, or if an object is struck, shut off, cool-down and inspect for loose parts, damage, or an unbalanced blade and make repairs before operating the machine again.
- ♦ When transporting the equipment, always tie down or strap the unit in place to prevent damage to the unit.
- ♦ Never tip the mower upward or on edge while running or operating.
- ♦ Never operate the machine on a gravel or sandy road, walkway, or driveway.
- ♦ Always disconnect the wire to the spark plug when making repairs or adjustments to the engine.
- ♦ Engine exhaust may be dangerous and result in injury if not operated in a well-ventilated area.

Brush Chipper

Read and follow all instructions contained in the operator's manual and the decals placed on the brush chipper before operating the equipment.

- ♦ Be sure the machine is in good operating condition and that all safety devices, including shields and slip resistant strips, are installed and functioning properly.
- ♦ Allow only responsible, properly instructed individuals to operate the machine. Carefully supervise inexperienced operators.
- ♦ Make no modifications to the equipment unless specifically recommended.
- ♦ Loose clothing is more easily caught in moving parts and tree branches. Keep items such as sleeves, shirttails, and long hair properly confined. Avoid wearing items such as wristwatches, rings, necklaces, and neckties.
- ♦ Always wear personal protective equipment appropriate to the job conditions. Always wear gloves, safety glasses, and hearing protectors. All conditions require safety gear such as hard hats or reflective clothing.

BRUSH CHIPPER ROTATING FEED ROLLERS AND KNIVES DURING OPERATION

Rotating Feed Rollers

CAUTION: Improper operation could result in personal injury or death.

- ♦ **Always** place the control bar in neutral and stop the engine before working on or near the feed rollers for any reason including cleaning, servicing, or unclogging the feed intake area.
- ♦ **Never** climb onto the feed table or reach near the feed rollers while the engine is running. Use another piece of wood to move short pieces of wood into the feed rollers.

- ♦ **Never** place your hands near the feed rollers while feeding brush.
- ♦ **Never** operate the machine with the swing-down feed table removed.
- ♦ Keep all spectators and other workers away from the machine and work area while in operation.
- ♦ Feed rollers on machines with the optional autofeed system may start unexpectedly with a small increase in engine speed. Shut off autofeed switch, place feed control bar in neutral, and stop engine before working on or near feed rollers for any reason including cleaning, servicing, or unclogging feed intake area.

Rotating Knives

- ♦ Don't risk a cutting injury or being struck by high-speed particles. **Always** place the feed control bar in neutral, shut off the engine, and wait for the chipper rotor to stop before opening the access cover or removing the discharge chute. Never throw in any materials that might contain wires, stones, nails, or other metal objects, which may damage the knives and become dangerous projectiles.
- ♦ Keep everyone away from the front of the discharge chute while the cutter disk is turning. Material leaving this chute can cause personal injury.
- ♦ Keep hands and feet away from power-driven parts.
- ♦ Exhaust fumes can be fatal. Do not operate this machine indoors for more than a few seconds unless the area is adequately ventilated to remove toxic fumes.
- ♦ Never refuel the chipper while smoking or with the engine running. Do not allow any hot or burning materials near the chipper.
- ♦ High pressure can build up within the cooling system when the engine is hot. Allow the radiator to cool before removing the radiator cap. Place a rag over the cap and turn very slowly to release pressure gradually.
- ♦ Hydraulic fluid under pressure can penetrate the skin and cause personal injury, blindness, or death. Fluid leaks, under pressure, may not be visible. Use a piece of cardboard or wood to find leaks; never use bare hand. Wear safety glasses for eye protection. If any fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury.
- ♦ Keep the battery cables away from the fuel line.
- ♦ Check periodically and tighten any loose bolts or connections.

Transporting Brush Chipper

Before transporting the brush chipper, the following precautions should be followed to reduce the risk of injury due to collision or loss of vehicle control:

- ♦ Properly attach the safety chains to the towing vehicle.
- ♦ Install the jack in the transport position.
- ♦ Rotate the tongue to the transport position and insert the lock pin through the tongue and mainframe. Secure the lock pin with a hitch pin (or retainer pin and clip).
- ♦ Raise the feed table and lock it in position.
- ♦ Rotate the discharge chute to transport position and lock it in place.

- ◆ Attach the electrical connector to the towing vehicle and check the lights. This will also connect your electric brakes.
- ◆ Attach the breakaway chain (optional surge brakes) to the towing vehicle.
- ◆ Use good judgment and obey all applicable laws governing road use.
- ◆ The brush chipper is to be used only for those purposes for which it was intended as explained in the operator's manual.

Safety Decals

- ◆ Safety decals located on the machine contain important and useful information that will help in safe operation of the equipment.
- ◆ Keep decals clean. Use soap and water - not mineral spirits, abrasive cleaners, or other similar cleaners that will damage the decal.
- ◆ Replace any damaged or missing decals.

ROLL-OVER PROTECTIVE STRUCTURES (ROPS) ON TRACTORS

A roll-over protective structure (ROPS) and seat belt were standard equipment for the tractor at time of factory assembly. The seat belt, when used by the operator, maximizes the protection offered by the ROPS. ALWAYS use your seat belt with the ROPS. Seat belts save lives when they are used.

If your Ford tractor is equipped with a ROPS it must be maintained in a serviceable condition. Be careful when driving through doorways or working in confined spaces with low headroom.

Under no circumstances:

- ◆ Modify, drill or alter the ROPS frame in any way as doing so could render you liable to legal prosecution.
- ◆ Attempt to straighten or weld any part of the ROPS frame or cab or retaining brackets which have suffered damage. By doing so the structure may be weakened and endanger safety.
- ◆ Secure any parts on the ROPS frame or secure the ROPS frame with other than the special high tensile bolts and nuts specified.
- ◆ Attach chains or ropes to the ROPS frame for pulling purposes.
- ◆ Take unnecessary risks even though your ROPS frame affords you the maximum protection possible.

ROPS Maintenance and Inspection

After the first 20 hours of operation, and then after every 300 hours of operation or six months, whichever comes first:

- ◆ Check the torque of the ROPS mounting bolts. Tighten, if necessary, to the specified torque.
- ◆ Check the operator's seat mounting bolts and the seat belt mounting parts. Tighten bolts to torque and replace worn or damaged parts.

Damage to the ROPS

- ◆ If the tractor has rolled over or the ROPS has been damaged (such as striking an overhead object during transport), the ROPS must be replaced to provide the original amount of protection.

- ◆ After an accident, check for damage to the (1) ROPS, (2) operator's seat, (3) seat belt and seat belt mountings. Before operating the tractor, replace all damaged parts.
- ◆ DO NOT TRY TO WELD OR STRAIGHTEN THE ROPS.

WARNING:

- ◆ Never attach chain, ropes, or cables to the ROPS for pulling purposes; this may cause the tractor to tip backward. Be careful when driving through door openings or under low overhead objects. Make sure there is sufficient overhead clearance for the roll bar.
- ◆ If the ROPS is removed or replaced, make certain that the proper hardware is used and the recommended torque values are applied to the attaching bolts.
- ◆ Always wear your seat belt when the tractor is equipped with a ROPS.

Tractor

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read and follow the precautions below before operating the tractor. Equipment should be operated only by those who are responsible and instructed to do so.

- ◆ Read the Operator's manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.
- ◆ Ensure any attached equipment or accessories are correctly installed, are approved for use with the tractor, do not overload the tractor, and are operated and maintained in accordance with the instructions issued by the equipment or accessory manufacturer.
- ◆ Use an approved ROPS and seat belt for safe operation. Overturning a tractor without ROPS can result in death or injury.
- ◆ Always use the seat belt with the ROPS.
- ◆ Use the hand holds and step plates when getting on and off the tractor to prevent falls. Keep steps and platform clear of mud and debris.
- ◆ Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.
- ◆ Remember that the tractor, if abused or incorrectly used, can be dangerous and become a hazard both to the operator and bystanders. Do not overload or operate with attached equipment which is unsafe, not designed for the particular task, or poorly maintained.
- ◆ Replace all missing, illegible, or damaged safety decals.
- ◆ Keep safety decals clean of dirt and grime.

Servicing the Tractor

- ◆ The cooling system operates under pressure, which is controlled by the radiator cap. It is dangerous to remove the cap while the system is hot. Always turn the cap slowly to the first stop and allow the pressure to escape before removing the cap entirely.

- ♦ Do not smoke while refueling the tractor. Keep any type of open flame away. Wait for the engine to cool before refueling.
- ♦ Keep the tractor and equipment, particularly brakes and steering, maintained in a reliable and satisfactory condition to ensure operator safety and compliance with legal requirements.
- ♦ To prevent fires or explosions, keep open flames away from battery or cold weather starting aids. To prevent sparks, use battery charger to start engine.
- ♦ Stop the engine, apply the hand brake, and lower the loader and backhoe to the ground before performing any service on the tractor.
- ♦ Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury.
 - **DO NOT** use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
 - Stop the engine and relieve pressure before connecting or disconnecting lines.
 - Tighten all connections before starting the engine or pressurizing lines.
 - If fluid is injected into the skin obtain medical attention immediately or gangrene may result.
 - Do not modify or alter, or permit anyone else to modify or alter, this tractor or any of its components or any tractor function without first consulting the dealer.
 - The fuel oil in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle, or any other part of the fuel injection system. **Failure to follow these instructions can result in serious injury.**
- ♦ Never allow anyone to stand, or work under, or reach through the loader lift arms when the loader is raised, unless the loader cylinders are blocked in the extended position using a suitable support.
- ♦ Never attempt to repair or tighten hoses under pressure.
- ♦ Always check pivot pins, snap rings, and main attaching bolts daily.
- ♦ When it is necessary to remove pins from the loader that require a hammer and drift, use only a brass hammer and a brass drift, and wear safety glasses.
- ♦ Do not lubricate or make mechanical adjustments while the unit is in motion or when the engine is running. However, if minor engine adjustments must be made, apply the parking brake, securely block the wheels, and use extreme caution. Be certain that the loader is fully lowered or supported so that it cannot fall.
- ♦ Always wear safety goggles when servicing or repairing the machine.
- ♦ When it is necessary to tow the tractor, do not exceed 5 mph (8.0 kmph). Avoid towing the tractor over long distances.
- ♦ Adequately support the loader when it is detached from the tractor.
- ♦ Some components on the tractor, such as the cylinder head gasket, may contain asbestos. Breathing asbestos dust is dangerous to your health. It is therefore advised to have any maintenance or repair operations on such components carried out by the dealer. If, however, service operations are to be undertaken on parts that contain asbestos, the essential precautions listed below must be observed:

- Work out of doors or in a well-ventilated area.
- Dust found on the tractor or produced during work on the tractor should be removed by extraction, not by blowing.
- Dust waste should be dampened, placed in a sealed container, and marked to ensure safe disposal.
- If any cutting, drilling, etc., is attempted on materials containing asbestos, the item should be dampened and only hand tools or low- speed power tools used.
- Tractor wheels are very heavy. Handle with care and ensure, when stored, that they cannot topple and cause injury.

Operating the Unit

- ◆ Position the transmission in neutral and apply the parking brake before starting the tractor.
- ◆ Do not start the engine or operate controls while standing beside the tractor. Always sit in the tractor seat when starting the engine or operating the controls.
- ◆ Do not bypass the safety-start switch. Consult the dealer if the safety-start controls malfunction. Use booster cables only in the recommended manner.
- ◆ Avoid accidental contact with the gearshift levers or power-reversing lever while the engine is running. Unexpected tractor movement can result from such contact.
- ◆ Do not get off the tractor while it is in motion.
- ◆ Never attach chains, ropes, or cables to the loader or ROPS for pulling purposes.
- ◆ Pull only from the swinging drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle or any point above the axle may cause the tractor to overturn.
- ◆ If the front-end of the tractor tends to rise when heavy implements are attached to the three-point hitch, install front-end or front-wheel weights. Do not operate the tractor with a light front end.
- ◆ Always set the hydraulic selector lever in a raised position when attaching equipment and when transporting equipment. Be sure hydraulic couplers are properly mounted and will disconnect safely in case of accidental detachment of implement.
- ◆ Never leave the tractor without first lowering hydraulic equipment and loader buckets to the ground.
- ◆ Stop the engine, apply the parking brake, and put the gearshift levers and/or power-reversing lever into neutral before dismounting.
- ◆ Do not engage the parking brake while the tractor is in motion.
- ◆ Never leave the tractor when it is parked on an incline. Always park the tractor on level ground where possible. If the tractor is to be parked on an incline, always lower the buckets so that the cutting lips contact the ground, apply the parking brake, and securely block the wheels.
- ◆ Always keep a lookout for bystanders.
- ◆ Always check overhead clearance, particularly when transporting the tractor.

- ◆ If the engine or power steering ceases to operate, stop the tractor immediately.
- ◆ Do not run the engine in a closed building without adequate ventilation, as exhaust fumes can cause suffocation.
- ◆ Always carry out the recommended checks before commencing work each day.
- ◆ Do not enter the platform from the rear.
- ◆ Always check the location of gas and electrical lines before starting to dig.
- ◆ Watch out for overhead and underground high-voltage electrical lines when operating the loader.
- ◆ Never operate any controls when standing on the ground.
- ◆ Always travel slowly over uneven ground.
- ◆ Always use the recommended amount of counterweight to ensure good stability.
- ◆ Do not transport anyone in the loader bucket.
- ◆ Always carry the loader bucket low for maximum stability and visibility, whether the bucket is loaded or empty.
- ◆ Be careful when handling round objects such as oil drums, pipes, or poles. Lifting too high or rolling back too far could result in these objects rolling rearward, down the loader arms onto the operator.

Operating the P.T.O.

- ◆ When operating P.T.O. driven equipment, shut off the engine and wait until the P.T.O. stops before getting off the tractor and disconnecting the equipment.
- ◆ Do not wear loose clothing when operating the power take-off or when near rotating equipment.
- ◆ When operating stationary P.T.O. driven equipment, always apply the tractor parking brake and block the rear wheels front and back.
- ◆ To avoid injury, do not clean, adjust, unclog or service P.T.O. driven equipment when the tractor engine is running.
- ◆ Make sure the P.T.O. guard is in position at all times and always replace the P.T.O. cap when the P.T.O. is not in use.

Driving the Unit

- ◆ Always drive with care and at speeds compatible with safety, especially when operating over rough ground, crossing ditches or slopes, or when turning.
- ◆ Never allow the tractor to over-run when going downhill. Do not coast or free wheel down hills.

- ♦ Lock the foot brake pedals together when traveling on the highway to provide two-wheel braking.
- ♦ Do not engage the differential lock when turning the tractor. When engaged, the lock will prevent the tractor turning.
- ♦ Always sit in the driver's seat, and wear your seat belt when driving the tractor.
- ♦ Ensure the tractor lights are adjusted to avoid blinding an oncoming driver.
- ♦ Use the Flashing Warning Lights and SMV signs when traveling on public roads, both day and night, unless prohibited by law.
- ♦ Avoid accidental contact with the gearshift levers or power-reversing lever while the engine is running. Unexpected tractor movement can result.
- ♦ Any towed vehicle whose total weight exceeds that of the towing tractor must be equipped with brakes for safe operation.
- ♦ When the tractor is stuck or tires are frozen to the ground, back out to prevent upset.

Diesel Fuel

- ♦ Under no circumstances should gasoline, alcohol, or blended fuels be added to diesel fuel. These combinations can create an increased fire or explosion hazard. In a closed container such as a fuel tank, such blends are more explosive than pure gasoline. **Do not use these blends.**
- ♦ Never remove the fuel cap or refuel with the engine running or hot.
- ♦ Do not smoke while refueling or when standing near fuel.
- ♦ Maintain control of the fuel filler nozzle when filling the tank.
- ♦ Do not fill the fuel tank to capacity. Allow room for expansion.
- ♦ Wipe up spilled fuel immediately.
- ♦ Always tighten the fuel tank cap securely.
- ♦ If the original fuel tank cap is lost, replace it with a Ford New Holland approved cap. A non-approved, proprietary cap may not be safe.
- ♦ Keep equipment clean and properly maintained.
- ♦ Do not drive equipment near open fires.
- ♦ Never use fuel for cleaning purposes.
- ♦ Arrange fuel purchases so that summer grade fuels are not held over and used in the winter.

Trencher/Backhoe

- ♦ Be a qualified, trained operator to run this machine.
- ♦ Know the capacity of the machine.

- ◆ Never alter or remove safety equipment
- ◆ Buckle-up before starting the equipment.
- ◆ Keep others away from the area of operation.
- ◆ Use extreme caution on slopes and inclines.
- ◆ Avoid hazardous areas.
- ◆ Wear all the protective clothing and safety gear issued by the employer. Wear all the protective equipment called for by the job conditions.
 - Heavy gloves
 - Personal hearing protection
 - Reflective clothing
- ◆ Learn where fire extinguishers are kept, and make sure you know how to use them.
- ◆ Learn where first aid or emergency equipment is kept and where to get help in a hurry.
- ◆ Study all the information and warning plates on the machine and read the manufacturer's operator manual before trying the equipment.
- ◆ Keep all protective devices in place and securely fastened.
- ◆ Never disengage or remove any safety device.
- ◆ Before using the equipment, check it out!. Use a flashlight to see into dark corners. Wear gloves to protect your hands.
- ◆ Check for missing or damaged parts. Have everything put back in good repair.
 - Check the tires for cuts, bulges, and correct pressure. Replace badly worn or damaged tires.
 - Check the engine oil system. Add oil as required.
 - Check the hydraulic system.
 - Check engine-cooling system.
 - **Never check for hydraulic leaks by using the hands. Use a scrap of cardboard or wood.**
- ◆ Cover the radiator cap with a cloth before opening it. Release radiator pressure by turning the cap slightly before removing it completely. If the radiator is hot, permit it to cool before adding liquid.
- ◆ Clean the grab-irons, rails, steps, pedals, and floor. Wipe up grease or oil. Brush away dust or mud. In the winter, scrape away snow and ice.
- ◆ Remove loose items from the operator's compartment. Put away tools, lunch buckets, chains, and hooks.
- ◆ Check at ground level. Inspect the work area for holes, drop offs, or obstacles. Examine the soil. Look for hard or soft spots, standing water, rocks or stumps.

Warning: Never approach overhead or underground power cables with any part of the trencher unless all Local, State, and Federal (OSHA) required safety precautions have been taken.

- ◆ Check overhead. Know exactly how much clearance there is under power and telephone lines, tree limbs, and overpasses.
- ◆ Check underground. Look for traces of buried rubbish, footings, and walls. Make sure the location of all buried telephone and power cables, gas lines, and sewer or water mains is known. If the location of any buried utilities is unknown, check with the local electric, telephone, gas, water, and sewer companies.
- ◆ **WARNING:** Never fill the fuel tank with the engine running, while smoking, or when near an open flame.
- ◆ Never overfill the tank. If fuel is spilled, wipe it up immediately.
- ◆ Before starting, walk completely around the equipment. Make sure no one is under it, on it, or close to it. Let other workers and bystanders know you are starting up; don't start until everyone is clear.
- ◆ Always use handrails, grab-irons, ladders, or steps when mounting the machine.
- ◆ Never use the steering wheel or control levers as a handhold when climbing on or off.
- ◆ Never try to board moving equipment.
- ◆ Start the trencher only from the operator's seat or station.
- ◆ Depress service brake and set parking brake, disengage all clutches, and set all controls in neutral before starting the machine.
- ◆ Never start the equipment until others in the area have been warned.
- ◆ When starting the equipment in an enclosed space, make sure ventilation is adequate.
- ◆ After starting, check all instruments, gauges, and lights. Check all warning devices. Make sure everything is working properly.
- ◆ Always be aware of what is going on. Be alert. Watch out for others who may cause trouble by their carelessness.
- ◆ **Never permit riders on the equipment.**
- ◆ Never permit an unqualified person to operate the trencher.
- ◆ Never swing the trencher boom or wheel over anyone.
- ◆ When moving the equipment from one area to another, make sure it is in transport condition with all safety chains, tie downs, blocks, and counterweights in place.
- ◆ Adjust travel speed to ground conditions.
- ◆ Watch for obstacles. Go around rocks and stumps. Avoid crossing exposed railroad tracks, ditches, ridges, or curbs. If the crossing cannot be avoided, reduce speed and cross at less than a 90-degree angle. Avoid soft edges, deep holes, and steep grades.

- ♦ Stay in gear when traveling down hill. Do not shift into neutral. Use the service brakes carefully.
- ♦ Be aware of the surroundings at all times. Watch for low branches or overhangs from the blind side.
- ♦ Use extreme caution in working along the edge of high banks and steep slopes. Keep away from the edges of cuts or drop-offs.
- ♦ Use extreme caution when working close to a bank side, or beneath an overhang. Avoid undercuts. Stay alert for falling rock and sliding earth.
- ♦ Stay alert to changes in soil conditions. Cave-ins, especially on deep cuts, can be extremely hazardous to anyone nearby.
- ♦ Operate the trencher from the operator's seat only. Never attempt to work the controls from the ground. Never leave the operator's seat without first stopping the engine.
- ♦ Never allow other workers near the digging chain or wheel while the equipment is being operated.
- ♦ When starting a new cut, set the digging boom or wheel down carefully and have the chain moving slowly. Dropping a rapidly moving digging chain or wheel on the ground is extremely hazardous. It may cause the trencher to move quickly and unexpectedly.
- ♦ Never make sharp turns while digging. Whenever the trencher boom or wheel is down, turn very carefully
- ♦ During digging, if the machine strikes anything, begins to labor, or jams, shut down and inspect the work site and chain condition.
- ♦ Never attempt to free a stuck chain or wheel while the trencher is running. Turn the engine off before clearing away any jams.
- ♦ Stop the engine for all inspections. When working around a trencher that has just been shut down, keep away from the exhaust pipe and muffler.
- ♦ The vibration set up by digging may loosen attached hardware. Check nuts, bolts, and screws every day.
- ♦ If you move your trencher over public roads or streets, be sure all local and state regulations are followed.
- ♦ Stop at all railroad crossings. Look both ways before proceeding.
- ♦ Correct shutdown procedures are important. A shutdown sequence should include these steps:
 - Lower the trenching boom or wheel and all attachments to the ground.
 - Chock wheels or set the parking brake (if your unit has one).
 - Place the transmission in PARK or NEUTRAL.
 - Idle engine for gradual cooling.
 - Shut off the engine.
 - Cycle all hydraulic controls, and move steering wheel or operating levers to eliminate any remaining pressure in the hydraulic system.

- ◆ Always stop trencher and shut off the engine before dismounting. Never dismount from moving equipment.
- ◆ Always face the machine when climbing down. Use handrails and steps. Check for slippery conditions on steps or ground. Never jump off the machine. Dismount carefully.
- ◆ If your machine becomes disabled, attach a warning tag describing the trouble. If the equipment should not be started, remove the ignition key.
- ◆ Never work on or clean any part of the machine with the engine running unless specifically instructed by manufacturer's manuals, and then only with another person at the controls.

Backhoe

- ◆ Know the positions and functions of all controls before attempting to operate. Know the meaning of any identification symbols on the controls and gauges.
- ◆ This is a one-person machine. NO RIDERS ALLOWED.
- ◆ When operating the backhoe, always carry the loader bucket low for maximum visibility and stability. Be sure your vision is not obstructed when traveling or working.
- ◆ Before operating the backhoe, lower stabilizers so that rear wheels are just off the ground and machine is level.
- ◆ Always operate the backhoe from the correct seated position, NEVER from the ground.
- ◆ Never under dig the backhoe stabilizers, a cave-in may be the result.
- ◆ When using the backhoe to lift and place objects, such as sewer pipe, do so over the back end of the unit, NEVER TO THE SIDE. Excessive weight to the side could tip the machine.
- ◆ OVERLOADING IS DANGEROUS. Make certain to be within the safe load and work radius limitations of the machine, and on solid, level ground before lifting any load.
- ◆ When lifting, be sure the load is properly balanced. If possible, use a tag line and move slowly so the load does not sway or swing around.
- ◆ Never leave a load hanging, place it down as soon as possible. If the machine must be left, lower the load.
- ◆ The correct shutdown procedure for the backhoe is important.
 - Place transmission in neutral or park position.
 - Set parking brake.
 - Lower loader bucket to ground.
 - Lock backhoe in transport position or lower bucket to ground.
 - Idle engine for gradual cooling, then stop engine.
 - Keep the work area clean and dry.

Keep your mind on the job. Your own safety as well as your fellow workers' depends on YOU!