Hyattsville Volunteer Fire Department Training

Chainsaw Maintenance

Chainsaws

- Chainsaws are essential tools. However, nothing is more frustrating than a dull chain or improperly adjusted carburetor. Chainsaws are versatile and they can last for years if they are maintained on a regular schedule.

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Chain Replacement

- How do you know when a chain is dull?
- Two simple indicators will tell you.
  - First, the teeth on chains are designed to cut by “biting” into the wood. Depth gauges, located in front of each tooth, regulate the size of this “bite” and determine how much wood is cut each pass. A sharp chain will “self feed” and the teeth will cut as deep as the depth gauge will allow. You can feel this when you are cutting—you need to apply just a small amount of pressure and the chain will cut on its own. When chains are dull, they do not “self feed” and you have to push the chain into the wood.
  - Second, sharp chains will cut large (up to 0.25 inch) squarish chips. However, dull chains that do not bite will cut small chips that resemble sawdust.

Chainsaw Fuel

- Always use clean fuel that is free of water or other contaminants. Chainsaws use fuel and oil mixes in differing ratios depending on the manufacturer.
- Check the owners' manual to verify which mix you should use.
- Label your fuel cans. With PPV fans and other small engines around it is easy to confuse one gas can with another.

Chainsaw Fuel (contd.)

- Fuel filters help clear contaminants, but when they get clogged fuel flow is restricted. During heavy-use periods, clean your fuel filter weekly and replace it as needed.
- Clean the fuel tanks about once a month by pouring out the fuel and inspecting the tank for dirt and debris. Do not store chainsaws directly on cool surfaces such as concrete. The air in the fuel tank will cool and condense, causing moisture to entire the fuel.

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Chain Maintenance

- Besides replacing your chain, you should constantly check the chain system for looseness.
- When idle, the chain should slightly hang from the bar. The chain guides (tangs) should still be sticking mostly into the bar.
- When the saw is off and the chain brake released, you should be able to manually feed the chain around the bar without difficulty.
- Check the bar-retaining nuts regularly during operation, the constant vibration will loosen them.

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Chain Maintenance (contd.)

- Visually inspect the bar before each use.
- Look along the length for any curvature or bends.
- Inspect the trough in which the drive link tangs rest to make sure that it is clean and not damaged. If the trough is pinched or too wide, insert a steel shim that is 0.004 inch thicker than the drive link tangs. Use a ball peen hammer to adjust the trough width by tapping on the bar or driving the shim through pinched spots.

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Chain Maintenance (contd.)

- Lubricate roller tips as directed by the manufacturer. Inspect the roller side plate for burs and remove them with a flat file. Look for damage and wear, replace if necessary.
- Remove the bar-retaining nuts and cover to expose the chain-drive sprocket. Inspect the teeth on the sprocket for damage and remove any debris. With the clutch disengaged, rotate the clutch drum and sprocket. Look for any discontinuity that might indicate a problem.
- Inspect the drum and shoe for glazing that is caused by slippage. You can remove the glazing with a wire brush

Chain Maintenance (contd.)

- Remove the clutch drum and repack the bearings periodically. If you live in wet environments or the saw gets drenched with water, remove the clutch drum and thoroughly dry it.
- After every use, remove the chain and bar and clean them to remove dust, dirt and other materials.
- Check the level of bar and chain oil constantly during use. You will be surprised how much oil you will use. If you run out there is no warning light other than the smoke rising from the chain.
- The excess heat can cause severe damage to the bar, chain and sprocket.

Air Filter

- Because chainsaws are always operated in dusty or smoke filled conditions, you must clean the air filter after every use.
- Before you expose the air filter, thoroughly clean the outside of the saw and move it to an area away from sawdust or other materials that could fall into the carburetor.
- Remove the filter and clean it with an air compressor or as recommended in your owners' manual.
- During periods of heavy use you should replace the air filter weekly.

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Chainsaw Engine

- Consult chainsaw service technicians for most engine work. They have the tools and know-how to evaluate all of the components. However, here are 3 maintenance tasks that anyone can perform.
- **Spark plugs.** If you are having trouble starting your saw, check the plug and plug wire. Replace your plugs every year and set the gap to manufacturers specifications.
- **Carburetor.** Minor adjustments can make a remarkable difference. Every time you use your saw, evaluate how it is idling, how it accelerates and how it retains its top speed. If the engine is sluggish or cuts out, consult your owner's manual for carburetor settings and adjustments.
- **Muffler.** Clean the muffler and exhaust ports monthly. Use a scraper to remove black carbon deposits. Clean the muffler guard daily and inspect it for damage weekly.

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Pull Cord

- Visually inspect the pull cord for any fraying or cuts before use.
- Inspect the toggle to ensure that the cord is securely attached.
- If any of these items are damaged, fix them now under your terms or you may experience a failure in the field.

Item	Maintenance	Frequency			
		Daily	Weekly	Monthly	As needed
Screws, nuts, bolts	Inspect and tighten	●			
Controls	Inspect	●			
Air filter	Clean	●			
	Replace		●		
Chain	Inspect	●			
	Replace				●
Sprocket	Inspect	●			
	Replace				●
Fuel Filter	Clean		●		
Muffler	Clean			●	
Muffler screen	Clean	●			
	Replace				●
Spark plug	Clean and adjust		●		
	Replace				●
Starter rope	Inspect		●		
	Replace				●
Carburetor	Clean		●		
	Adjust				●
Fuel tank	Clean			●	
Fuel, oil and hoses	Check	●			