

Financing Municipal Golf Courses

Fifty years ago, most golfers played at private clubs. But the increasing popularity of the game, combined with growing population and affluence, has reversed the picture. Today, 45 percent of all golfers play municipal facilities, 35 percent play at daily fee courses, and only 20 percent belong to private clubs.

The growing popularity of the game has created an acute shortage of golf courses.

As the nation grows more concerned about physical fitness and preserving its greenbelt areas, municipalities become more interested in providing recreational facilities in natural settings. Developing new golf courses meets both needs. A high-caliber golf program is also influential in attracting new industry and business to a community.

Most municipal golf courses are financed through the sale of general obligation bonds. Such financing is based on the municipality's credit and taxing power and must be approved by the public.

Many municipal golf courses have also been financed through tax-exempt revenue bonds, payable from the net income derived from operating the course. Depending on state statutes, revenue bond issues may also require public approval.

However, there are additional financing options available to municipal planners. All should be explored to select the best plan for the situation. These addition options include the following:

(continued)



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A Legacy of Parks — The Surplus Property Program: Federal government properties declared surplus are made available as parklands to local governments through 1970 legislation. State and local governments are notified of availability and can apply for title to the Bureau of Outdoor Recreation. The federal government deeds this land at little or not cost.

Land and Water Conservation Fund: The Bureau also makes matching grants to states and, through them, to municipalities for public recreation areas including golf courses. To qualify, a state must develop a comprehensive statewide outdoor recreation plan and update it regularly.

Farmers Home Administration Loan Program: To develop facilities for use in rural areas, the Administration is authorized to make loans to communities unable to raise funds from commercial sources. Applications can be made at county offices of the Administration.

For a copy of a list of federal assistance programs related to out-

door recreation, write U.S. Government Printing Office, Superintendent of Documents, Washington, D.C. 20402. Interested communities can obtain a list of golf course architects by writing: American Society of Golf Course Architects, 221 N. LaSalle St., Chicago, Ill. 60601.

SHUTOUT (from page 15)

After the greens become established, Moolenaar slacks off only slightly with his fertilizer and spray program. All through the winter months, the greens are sprayed every 10 days to 2 weeks on a routine basis. They are fertilized every 2 weeks for a more consistent fertility level. Heavy applications at less frequent intervals would be leached out through the porous soil by heavy rains.

Because of the extreme heat on certain days, he waters 3 to 4 times each day but for only a short period of time. "This keeps the greens cool and gets the seed off to a good start," he states.

Normally, Moolenaar tries to water the greens in the morning while covering the fairways at night.

Getting his greens off to a good start has rewarded him with a long, healthy stand throughout the spring. "We had rye here last year until May, although it was beginning to thin out a bit in April," he says.

"Mr. O'Malley (Walter O'Malley, owner of the L. A. Dodgers) is an avid golfer as well as a baseball fan," says Moolenaar. "He encourages all of the players to get out on the courses."

"In fact, the Dodgers use the courses to build good community relations with the people of Vero Beach. Each year they host a tournament where the Safari Pines members and the Dodgers get together. Each foursome includes a team member. The community really supports the team, too," he says.

After the baseball players leave in April, Moolenaar takes a breather — but it's a short one. He has to get the complex in shape for the arrival of the New Orleans Saints football team in mid-July. Last year was the first year that The Saints leased the facility for summer camp-but he looks forward to having them back on a regular basis.

"Their cleats aerify the outfield for me," he says.

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1975 Special Chain Saw Section

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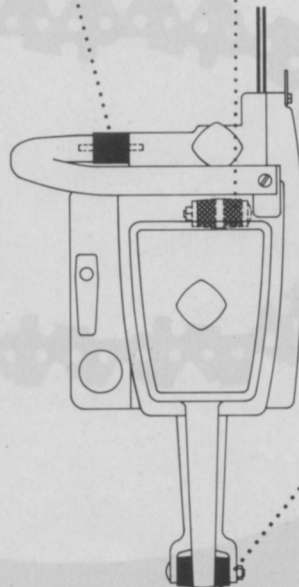
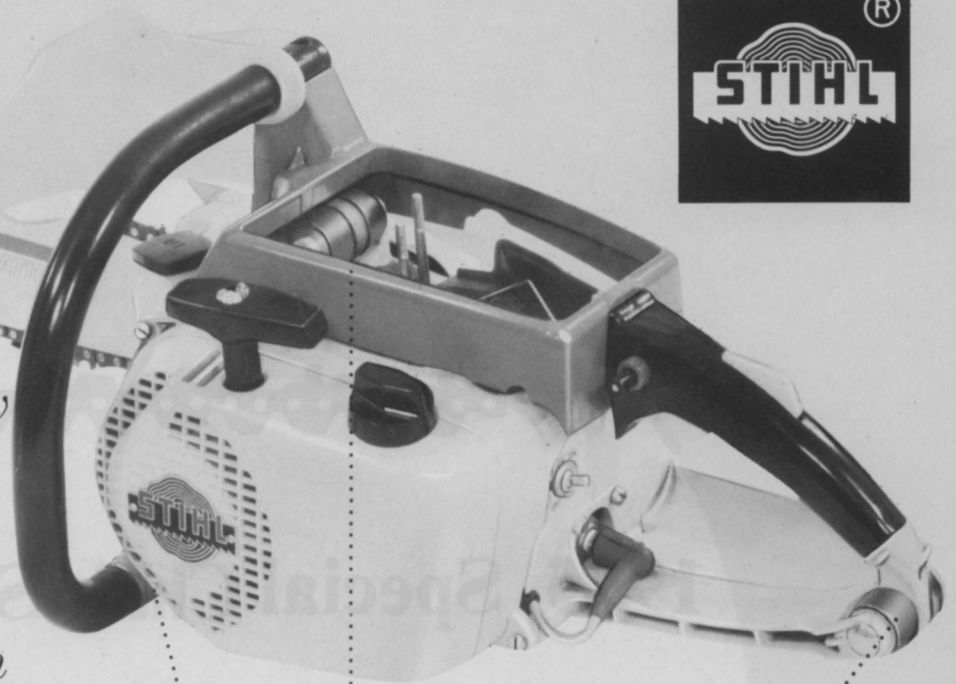
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IN THE HANDS of an experienced, capable operator a smooth running chain saw is a high production harvesting tool. It can be a pleasure to watch a skillful operator using a chain saw effortlessly as if it were a part of himself. Some of these men are "artists" who never appear to waste a single movement and are capable, productive and safe chain saw operators. This requires experience, alertness, concentration and, above all, knowledge. Knowledge in the case of safety refers to understanding the potential hazards and the limitations of the operator himself and his chain saw.

What Causes Accidents?

Three basic factors must be considered in examining possible chain saw related accidents: the environment, the operator and the machine. Environmental factors include terrain, ground cover (understory), timber type and density and, of course, the weather. Operator factors involve training, experience and skill to recognize unsafe acts or conditions. Alertness and attitude are also important, plus attention to such details as footing, clothing and personal protective gear. But the major cause of accidents is fatigue.

Machine factors involve selecting the right size and type of chain saw and cutting attachment, in addition to proper maintenance. Weight and balance are important for safety, as are handling characteristics. Noise, smoke and vibration contribute to operator fatigue. Ease of maintenance, elimination of fire hazards and availability of special protective safety devices also should be considered.

One of the less obvious environmental factors is ground cover. Thick brush, heavy blowdown and soft or loose rocky ground certainly affect footing. Since man is a two-legged animal, his own balance is vital, especially when he has a chain saw in his hands! The timber type and density can affect his cutting technique and present varying degrees of hazard. Rain, snow, ice or wind can double the hazard since they can affect mobility, footing and the operator's grip on the saw. Frozen wood reacts to cutting and splitting quite differently from wet or green timber. The weather affects the operator's mental attitude as well (who can possibly feel good

Proper Handling For Chain Saw Safety

By BLAKE STRETTON
Vice President, Stihl American, Inc.

when every branch you touch with your hardhat pours half a cup of icy rain water down your neck!)

Training, Experience and Supervision

Many progressive companies engaged in wood harvesting have initiated training courses for their chain saw operators. Most chain saw companies are usually willing to provide maintenance and operating instruction, and a few provide some form of operator safety training. Many of the timber companies who have such training programs can also point to their safety records with a great deal of pride.

Experience cannot be acquired merely by instruction, but good supervision is important. Supervisory staff should be quick to point out any unsafe acts that they observe saw operators performing, and to help the operators recognize potential cutting hazards on the job.

An operator's personal health can also affect his mental attitude and alertness. No responsible supervisor will allow a man who is "not really feeling well" to operate a chain saw, or they are both asking for trouble.

No supervisor should allow a chain saw operator on the job without proper personal protective gear and proper footwear or clothing. This includes a hardhat, with or without screen visor. Goggles are not always the best since they fog up, get covered with fine saw or bark dust, and can limit the operator's peripheral vision range.

Good fitting boots with steel toe caps are needed, and they must be in good repair.

Durable, properly fitted clothes are also important to safe operation in the woods (too snug can affect mobility and too loose can catch on brush or tangle with the saw). Hearing protection should also be considered, depending on the brand or model of saw being used. Fatigue is one of the biggest factors contributing not only to chain saw mishaps but all industrial accidents.

Fatigue and Handling Ease

Many characteristics of the chain saw itself can contribute to fatigue. These include vibration, noise and exhaust smoke, as well as balance, handling and control of the saw. Chain saws vary greatly in such areas as design, construction, power output, balance, handling and reliability. But let's talk about the machine factors: To help in selection of the right tool for the job and to provide some guidelines for the selection of a safer tool, here is a "checklist" of design parameters that apply to any chain saw used in commercial cutting.

Weight and Power

Low weight is useless if the unit is so flimsy that it lacks durability and reliability, or has limited fuel and chain oil capacity. Don't be misled by "dry weight — less bar and chain." Some saws run considerably longer on the same quanti-

(continued on page 50)



Upper left: Sawdust and other debris allowed to build up under sprocket housing can cause improper alignment of the guide bar, leading to poor cutting performance. **Left:** Proper fuel preparation is one of the most important aspects of chain saw maintenance. McCulloch saws operate on a 40:1 fuel/oil mixture. **Above:** Instructions for carburetor adjustment, if necessary, are contained in the owners manual. Following procedures can help the operator obtain maximum performance and reliability.

A Maintenance Schedule for Cost Cutting

By DAVE KIRBY, McCulloch Corporation

DEPENDING on how you care for it, a chain saw can be either very expensive or relatively inexpensive to maintain.

Unless cutter teeth are properly sharpened and lubricated, the chain, bar, and engine will be subjected to premature wear, resulting in rough, slow cutting.

Following are tips for long, reliable use:

1. Keep the chain sharp. A properly sharpened chain will feed itself into the wood. If you must force the chain saw or have difficulty making a straight cut, immediately resharpen the cutters and/or lower the depth gauges.

2. Keep the chain fitting properly. When the engine is stopped, the chain should not hang down below the bar. It should be as snug as possible to the bar and still be loose enough to be easily pulled along with a gloved hand.

3. Rotate your cutter bar. Because most wood cutting is done with the bottom side of the bar, turn it over every four to six hours of cutting to avoid excessive wear, which can cause chain damage.

4. Lubricate chain adequately. This may be the most important single maintenance item for your chain saw. Skimping on chain oil will increase maintenance and repair costs.

On saws with only manual type oilers, a full stroke should be made every 10 to 15 seconds while cutting. Automatic chain oilers will deliver adequate oil except in very dirty, dry wood or while boring with the end of the bar. In these cases, the manual oiler should be used.

A good practice is to check the chain oil reservoir each time fuel is added. Under normal conditions a reservoir of oil should be used for

each tank of fuel.

5. Use proper and recommended oil in the fuel mixture. When a two-cycle engine is operating at 7,000 to 8,000 r.p.m., there is a little margin for error in the amount of lubrication provided by the fuel.

Chain saw cylinder temperatures are as much as 200 degrees higher than those of other engines. Oil must be able to withstand the higher temperatures without breaking down.

A chain saw user should not attempt to save maintenance dollars by using the same type of oil for his chain saw that he uses for his car, lawnmower, truck, or other equipment.

Here is a checklist of additional saw maintenance procedures:

- Remove and clean air filter regularly.
- Clean the external engine and cylinder fins regularly.
- Check and tighten fasteners every day the saw is in use.
- Ask for use and maintenance training from your chain saw dealer.

Even more important than using proper maintenance procedures is the observance of safe handling practices — especially by the first time or infrequent chain saw user.

Following are chain saw handling tips compiled from McCulloch Corporation's booklet, "Chain Saw Operation," available at McCulloch dealers or directly from the company.

1. Starting. Place the saw on the ground or other firm surface before starting. Make sure the chain and bar do not touch anything. Grasp the top handle firmly and pull

quickly and evenly on the starter cord. After starting, guide the starter cord back onto the take-up reel. Do not let go and allow it to snap back.

2. Cutting. Always maintain control with both hands and avoid making cuts above shoulder height. Never cut a limb or other wood directly overhead. Stay alert; the sound of a chain saw engine can drown out warning voices or audible signals. Cut as close as possible to the base of the guide bar; attempting to cut with the tip of the bar can cause "kickback."

3. Between cuts. Stop the engine whenever doubtful about safety or cutting performance and when moving between cuts. Check the wood carefully for nails, wire or other metal. Have a second person within calling distance whenever working with a chain saw.

4. Felling. Many factors determine safe practice in cutting down a tree, including the tree's size and condition, its lean, other trees in the area, terrain and wind conditions.

First, determine a retreat path to follow when the tree begins to fall. Make an undercut in the direction the tree is to fall. This cut forms a wedge about one-third the diameter of the tree.

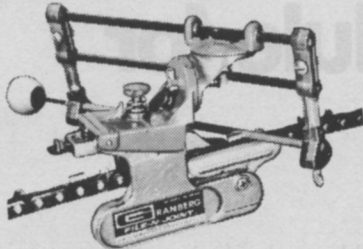
After the undercut is made and the wedge removed, stop the engine and move around to the back of the tree for the back cut. This is a straight cut slightly higher than the undercut. Do not cut clear through to the undercut; a small "hinge" should be left to guide the fall of the tree.

6. Limbing and pruning. Limbing is the removal of branches from a tree that has been cut down. Pruning is the removal of branches from

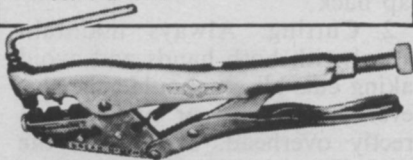
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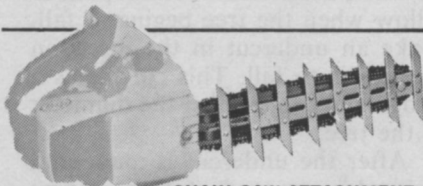
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a standing tree.

Limbing cuts should be started at the crotch, or top side of the branch. The best way to limb a tree is to begin at the base and work towards the top. Take extra care with underneath branches on which the tree rests. The tree may settle when they are removed.

When pruning large branches, notch the underside of the branch first. Complete the cut from the upper side, a few inches further out on the limb to keep the trunk bark from being stripped.

7. Bucking. This is the term used for cutting felled trees or logs into shorter lengths. Firm, sure footing is important; on sloping ground, stand uphill from the log. Avoid "traps" where the log may bind the bar during the cut. Do not allow the chain to bite into the dirt or hit rocks or other debris.

8. Clothing and equipment. Clothes should fit well, but not tightly. Loose sleeves, sweaters and open jacket flaps may catch on branches or other projections and throw the operator off balance.

A hard hat should be worn anytime trees are being felled, or limbs pruned. Heavy, reinforced-toe work shoes and snug fitting work gloves are recommended and safety glasses should be worn whenever a chain saw is operated.

Every chain saw operator should be constantly aware that his saw is a powerful cutting tool — potentially dangerous when misused.

According to the American Pulpwood Association, forty-five percent of logging industry accidents to chain saw operators are not caused by the saw itself, but by overhead hazards, such as limbs that fall during felling, or improperly felled trees.

The Association lists three primary unsafe acts which lead to injury accidents as:

1. Failure to use mechanical means to safely pull a lodged tree — one which fell partially and is suspended by other trees — to the ground.

2. Failure to remove potential overhead hazards such as dead standing trees (snags) and limbs which are loosely hanging overhead prior to cutting.

3. Carrying out felling operations while other personnel are in close proximity. □



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WEEDS TREES and TURF

The Lightweights: Little Saws for Big Jobs

By JERRY KARTHEISER, Product Manager, Skil Corp.

USE and application of lightweight chain saws is well known to many members of the Green Industry who earn a sizeable percentage of their income with chain saws. But for those whose familiarity is limited to an occasional limb removal, merits of lightweight chain saw use should be carefully considered.

For starters, we will be "basic": why use a chain saw?

The casual user may submit just one reason: easier cutting. The commercial user sees this as a major factor, too, but he finds other benefits:

Faster cutting. For the man who must cut wood as part of his occupation, time is money. Where a golf course superintendent may want to lop a few branches, the commercial user may have five or ten trees to cut or trim, or several cords of firewood to prepare, and he wants to finish this task and move on to another. The chain saw provides a cumulative savings in time which can have practical workday values.

Versatility. A chain saw will handle probably any outdoor cutting of wood that can confront, for example, a nursery-

man or a golf course superintendent. It will cut any type of wood. And it can zip through the odd cutting job that crops up every so often.

Safety. The chain saw minimizes the body movement and exertion that, with a manual saw, can pose possible safety problems while working up in the branches of a tree.

If the merits of the chain saw have been established for the commercial user, the next decision is whether to buy gasoline or electric.

The first point to emphasize is that, when both types are the same size and power output, there is no difference in cutting ability.

The first and most obvious difference between the two is accessibility to the job at hand. This of course eliminates the electric-powered chain saw from many applications. And the much greater portability of the gasoline-powered saw has advantages even where a source of electricity is available.

The electric, on the other hand, has advantages where its use would be indoors or in or near public areas. It's quieter and has the merit of not producing exhaust fumes.

Some more pro's and con's on the electric saw:

- There's no problem in starting nor with the possibility of running out of fuel . . . worth consideration when the job at hand is in an awkward location such as up in a tree.
- The electric chain saw generally is less expensive at retail than the gasoline; maintenance also will tend to be less expensive.
- On the negative side, distance from a power source has another limiting effect on the use of an electric chain saw. It operates best within the limits of a 100-foot extension cord. Beyond 100 feet voltage begins to drop, and beyond 150 feet the saw will not provide consistently effective cutting.

Special features in today's lightweight chain saws contribute to

their versatility and make them an even more efficient partner in heavier cutting operations.

Gasoline models, and some electric chain saw models, have a centrifugal clutch which disengages if the chain gets bound in the cut, a periodic occurrence when cutting large-diameter trees and branches. This clutch action . . .

- reduces the chance of kick-back;
- reduces possible risk when working in a tree;
- reduces load on the saw and thus helps prolong its life.

Another 'plus' in modern lightweight chain saws is their fuel capacity. With certain models the operator has up to 15 or 20 minutes of cutting time available, an attribute which permits railroad or power line right-of-way work far from the base of operations.

How big a chain saw is needed? Almost all chain saw work in the applications considered here can be handled by 10, 12, 14 or 16-inch cutting bars. The effectiveness of today's saws means that a chain saw with a 16-inch bar will make an efficient 16-inch cut, and an efficient 32-inch double cut. □



A 100-ft. extension cord gives a good bit of mobility — and utility — to a light-weight electric chain saw.



Positioning of the cutting bar on this 16-in. gasoline chain saw enables the operator to cut close to the tree trunk.



Important factors in operating a chain saw safely are good footing and a clear area.

ty of fuel. I've yet to see any chain saw cut much wood empty and without a guide bar or chain. Compare "ready to work" weights only.

An operator should not carry more saw than he needs, for this affects his mobility, tires him quickly and is a poor investment. Consider the weight-to-power ratio. Very few chain saw manufacturers provide horsepower rating and there are no industry standards. Displacement is not necessarily a

reliable guide to power output, either. Some makes of chain saws derive much more power per cubic centimeter or cubic inch than others. Always compare two saws with the same chain and guide bar length, because the type of bar and chain can greatly affect cutting speed.

Balance and Handling

Look for excellent balance in both felling and bucking attitudes. This makes a saw "handle better" and feel lighter which, of course, reduces fatigue. Look for a low, narrow profile, a smooth bottom and an exterior with no sharp corners, exposed linkages, oil lines or parts that will catch on clothing or brush. Try the saw "limbing" to see how it handles.

Note the controls. Are they simple? Positive action? Within easy reach of the control hand? Does it have a throttle trigger interlock? (This means the operator "control" hand must be firmly in place before the throttle can be opened.) Are all rotating parts enclosed? (except the chain, of course) Is it equipped with a front hand guard? (to prevent the "holding" hand from slipping onto the revolving chain.) How about a rear or "control" hand from whipping brush, stubs or a broken chain "fling" as well as accidental activation of the controls. Some saws are available with an automatic chain brake that stops the chain in the event of a kickback in less than two-tenths of a second.

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Before you can hire handicapped people, you've got to know where to find them.

If you are interested in hiring people who have overcome their handicaps, hard-working, skilled men and women, write to your State Director of Vocational Rehabilitation.

Tell him what kind of business you're in. What job openings need to be filled.

And he'll put you in touch with the right people for your company or organization. People who will work to their fullest potential. And help your company—and our nation—prosper.

Write: Director, State Department of Vocational Rehabilitation at your state capitol.

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