

Safety

and the Tree Surgeon



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SAFETY in the tree business, as in any business, begins by following the slogan, "work safely." In no business is this a meaningless, empty motto.

Tree workers, especially, because of the unusual hazards they encounter, should be conscious of the fact that by safe practices and constant alertness, tree surgery and maintenance can be done without mishaps. Chance-taking men who work trees for a living are going to get hurt. No man is safer than his methods, and neither fear

nor refusal to do the tough, high job is part of a proper work program. There are rotten, dead trees and even faulty green trees which should not be climbed. To climb them and attempt to work on them is to risk a life.

One Fall: Too Much

Men who climb rotten trees or work without using ropes and safety saddles for security, or those who grab power saws and jump up ladders without being "tied in" with ropes or saddles are taking chances. Other climbers are tempted to climb ladders

unbalanced or unsubstantially supported against a tree. Of course, workers may climb such hazardous steps many times without incident, but it takes only one fall to break a leg.

Ladders should be shifted to secure positions on a steady foundation. A rope thrown through a crotch of the tree above the ladder provides climbers with a secure hold on which to balance their weight. We tie a knot in the end of a rope and throw it like an old seaman's heaving line. On one end of the rope we fasten a safety snap (Fig. 1) which is latched to the climber's saddle, and we tie a big multiple knot on the other end. The knot acts as a weight when the tree surgeon hurls it, sometimes 25 to 40 feet high, through a tree crotch and then lets it fall to his reach. If the knot does not readily fall, after the rope is laid through a fork, workers flip the rope, and the knot soon drops to the right level.

Now the worker may climb the tree safely, with or without a ladder, by using the rope. Without a ladder, he can scale the tree by the traditional rope climber's technique: hand-over-hand pull-up with a safe foot hitch (Fig. 2), if he has the rope in the fork of a limb. If the rope is placed through a crotch near the tree trunk, a climber can snap the safety latch to his saddle and pull himself up with the free end of the rope, using his feet against the trunk for bal-



Fig. 1. (left) Safety rope fastened to the snap on the tree surgeon's saddle. A round turn is made in the eye of the snap, and is secured with a bowline knot. The upper knot on the right is the climber's sliding hitch knot.

Fig. 2. (below) The sliding hitch knot allows climbers to change their height to any desirable working altitude. It is used just above the saddle snap, well within reach of the tree surgeon.





Fig. 3. With his rope looped through a fork near the tree trunk, tree surgeon, David Barnes, is suspended by his rope fastened to the saddle snap, and he's balanced on the tree trunk.

ance (Fig. 3). When a ladder is used that cannot be properly secured, a rope is essential, especially when climbers must ascend tall, almost limbless trees.

Lead Weight Rubber Covered

When we throw a rope through a very high crotch, a rubber-covered, lead throwing weight is tied to the line instead of a knot. We use bell-shaped, lead weights (4½" x 2¾") that average one-half pound. The weight carries the rope both upward and over tall limbs, and it makes the rope slide downward rapidly to within easy reach from the ground level. Throws with the lead weight are made not only to get safety ropes in position, but also to maneuver other ropes into

their proper places to lower limbs to the ground.

On jobs where we cannot use a ladder safely or climb up on a rope, we use linemen's spurs. It is much better to do only slight damage to a tree than to have a man take chances. Spurs are useful assets in getting the job done, and any hazard to workmen comes through their inexperience and carelessness. We recommend the use of spurs particularly where safety outweighs the damage caused to the tree. They do some damage to the bark and cambium layers, but these layers heal rapidly in the top parts of the tree. Of course, when trees are removed, piece-by-piece, damage caused by spurs is negligible.

A climber's safety rope and saddle are tools just as important as the saw. We prefer ropes ½-inch thick made of blue-dot or red-dot manila and think there is no substitute. Many in the business have tried nylon rope, but they have found it inferior because it lacks firmness and other qualities which make a rope suitable for tying knots and hitching to saddles. When compared with manila rope, nylon affords a very poor grip for workers who depend on a rope for support while they climb trees. We use lengths of manila rope that vary from 75 to 150 feet depending upon the height of the trees and other needs.

Safety saddles may be purchased in several forms from different supply houses. We use the simple, two-piece saddle made of nylon web without the leather lining. Nylon webbing resists mildew and other forms of rot. Choice of a safety saddle, however, is largely a personal matter and is left to the individual climbers.

Each Climber Responsible

Surgeons should be given good equipment and taught to trust it. Each climber should have his own pruning saw, rope, and saddle, and it is his responsibility to take care of them. Saws must be protected against rust and gums caused by the trees' sap, bends or kinks in the blade, and broken or bent teeth. The latter two often are caused by rough handling or hauling.

Every man should know the condition of his rope; a safety-conscious tree surgeon literally examines every inch of the rope each time he uses it and as it passes through slide knots (Fig. 3) or rings in the saddle as he works. Ropes should be stored in dry places, kept away from heavy or sharp tools, and rigged with safety snaps properly. Periodically, the snap should be switched to the "knot end" of the rope, and the end to which the snap was attached can be used for the knot. The "snap end" wears out faster than the free end.

Safety saddles need only rou-

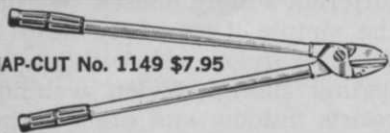
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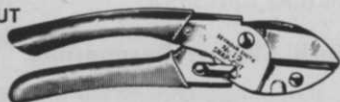
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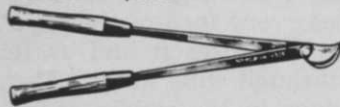
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Fig. 4. The rope climber's foot hitch allows him to lock himself at any height on the rope. Rope is wound around his left foot and pressure from the right foot stops the rope in place. With combined arm and leg action, climbers can lift themselves without considerable strain and can rest at any distance from the ground.

tine care and inspection. They should be stored in dry places and protected when hauled. Most faults appear first in the saddle stitching and joints; however, they usually last for many years without causing trouble.

Spot Troublespots First

Trees are usually cut or trimmed from the top down. I first study a large tree from the ground and note buildings, lines, and other obstacles. Then I select a crotch or fork in the tree for my limb-lowering rope and another for a safety rope. A safety rope looped through a high crotch provides a long lead for more balance, greater working freedom, and maximum safety. It also allows long swings onto limbs and is still effective as a safety rope.

Many large trees can be trimmed or cut by looping the safety rope through a crotch only once, but in others the rope may need to be relocated once or twice. When a worker must swing to the side, supported by a single safety rope, to trim a limb, we use a 6-foot auxiliary rope. One end of this rope is permanently attached to the saddle, and the other end is thrown around a limb or branch and fastened to the saddle with a snap. This auxiliary rope is handy also to carry a power saw.

Trees: No Place For Jokers

The experienced climber's greatest hazard is "distraction." The most common distraction is

anger at the groundman, the boss, or the client, but it can come from many places, even a tangled rope. If our climbers become distracted or upset in any way, they come down to the ground on their safety rope and relax. Only after they are fully in control do they return and finish the job.

Clients are rarely, if ever, allowed to give orders to a man working in a tree; this is the foreman's job. And trees are no place for practical jokers. The best tree crew I ever knew had a big time talking and laughing, and the days were short, but they knew when to talk and when not to talk.

"Timber" Stops Headaches

"Timber" is a call well known to all "small fry," it seems. We prefer that they do their "timbering" within the fence of their own backyards. The call, T-i-m-b-e-r, by a man sawing off a limb is, however, a sound practice. I learned this one day when working with a crew of seven climbers and two groundmen in a large parklike area. After a while, shouting "Timber" grew a little monotonous. I sawed off a short limb ("headaches" we call them) about 3 feet long and 6 inches in diameter, quickly glanced in all directions, I thought, and then pitched it out to fall. No sooner had the limb section started its fall, when I saw a ground worker directly under me. Luckily, it missed

him, but it was close enough to teach me to yell, Timber! Hard hats should be provided tree workers, especially groundmen. Also ground workers should give a warning call when they walk under trees being trimmed or cut.

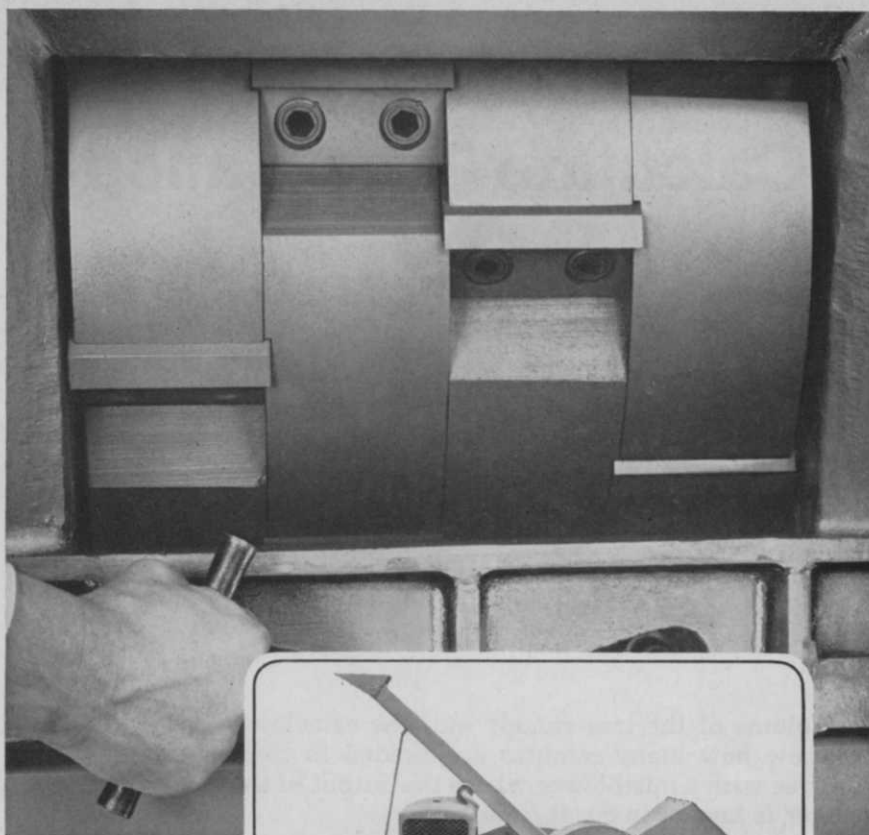
Cautious Climbers Live

A tree climber has to be stout, agile, and well balanced in the tree. He must like to climb and must know every limb on which he puts a hand or foot. He asks, "Is it green or dead? is it a sucker attached only to the bark or a limb anchored to the heartwood? or is it hollow or weakened by rotten knots, breaks, or gall wounds?"

A limb which has grown up with the tree originates from the heartwood, but a sucker or "water-sprout" comes from a later bud and is never anchored deeper than the sapwood. They are not difficult to recognize, but young climbers should be made aware of the dangers caused by insecure limbs.

Climbers should know what kind of tree they're working in and the strength characteristics of each. Rotten knots, breaks, and gall wounds appear more often in some species than in others. Hackberry, for example, is often affected by gall wounds in the Dallas area, so we carefully examined every hackberry limb before trusting it with our weight. Visible wounds and weaknesses are, of course, detected easily, but the treacherous, invisible dangers are sensed many times only by experienced climbers.

Your "safety school" is actually on the job. Owners, foremen, or experienced climbers can be the teachers. Sometimes a good climber can pass along more "tips" and "pointers" to young climbers and groundmen than the boss can. If you have such an experienced climber, make teaching part of his job and pay him for it. Each new worker can be taken to a suitable tree where the object is not to get work done, but to teach the correct method. In the end it pays off in more work completed safely.



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