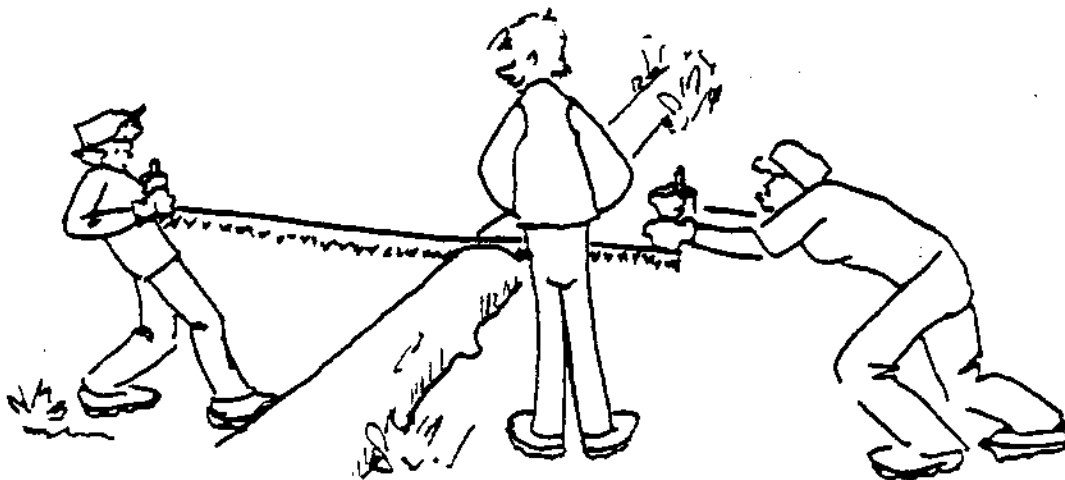
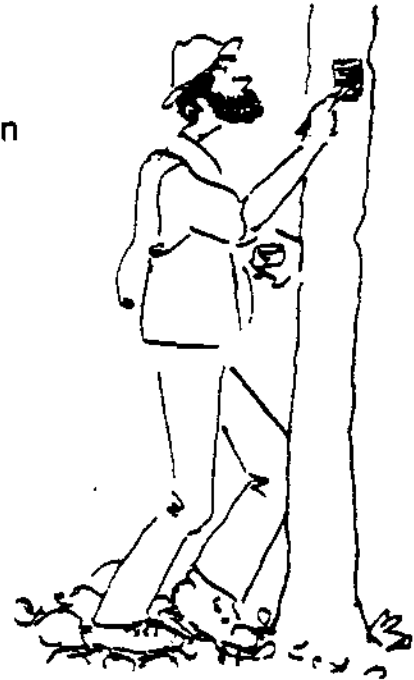


MANUAL
FOR THE MAINTENANCE OF THE
MID STATE TRAIL

Edition 7.2

2005

Mid State Trail Association
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Congratulations. You have just received a section of the wildest trail in Penns Woods. It is staggering how profoundly things have changed in the last few years. It is still possible to maintain a trail with hand tools but gas powered ones have a numerical advantage of up to eight. This edition contains more instructions for the use of these devices as well as the traditional hand tools.

Blowdowns

Blowdowns vary from a stray branch to the intertwined wreckage of many trees. The smallest blowdowns can be picked up or dragged off the trail. Larger blowdowns can be cut with a bow saw and the parts blocking the trail removed. The cut ends of a log help to define the trail.

It helps to have a partner along to work the other end of a bow saw when undercutting. Bow saws are light and easy to carry on the trail but make sure the blade is sharp by installing a new one. A blade guard for a bow saw can be made from an old piece of rubber hose by slitting it lengthwise and sliding it over the blade. Tie on the guard with bits of string or cord. You can borrow a bow saw from MSTA or buy your own. They are really very cheap for the work they do but are getting harder to find. Sandvik is still best.

MSTA is trying to provide each maintainer with a 7" Corona pruning saw. They are light weight and lock open or closed. The blade is short so cut only on the pull stroke. PATC reports the most frequent injuries to their maintainers come from these saws so wear leather gloves when you use one. Cutting rhododendron is particularly hazardous.

An abundance of large blowdowns requires a chain saw. Beg, borrow or buy a saw with a chain brake and a safety chain. Stihl, Husqvarna, and Jonsered are the safest brands. Chain saws need a lot of technical support so choose the brand with the largest number of dealers near you. MSTA has several chain saws that may be borrowed. Each MSTA saw comes with a support pack containing chaps, tools, spare chain, plastic wedge, extra fuel and chain oil. Face shield on helmet is frequently damaged in a pack so it must be carried separately. Be sure to wear the safety equipment, helmet, face guard, ear muffs and chaps even in mid summer when they are infernally hot. Drink plenty of water. Safety equipment can prevent a very serious injury in a remote location. Don't forget work gloves.

Don't let the chain get so loose that it dangles from the bar. Use the chain saw wrench to tighten it up before it comes off. The saw can be

lashed to the pack frame to carry it into the woods. Attend a chain saw safety workshop.

It is easier to undercut a log with a chain saw than with a bow saw but beware of kickback when cutting with the top of the bar. The cut produced by a chain saw is so wide that you have another option at least for larger logs. After you have sawed part way through the log from the top but before it binds, insert the plastic wedge into the kerf and pound it in with a stick or rock. Then you can saw the rest of the way through the log without it pinching shut on the saw.

Don't get involved with leaners or hazard trees unless they are over an obvious camp site. Let leaners and hazard trees "ripen" and fall to the ground before cutting them. Except at a camp site it's unlikely anyone will be underneath when they finally come down in a wind, wet snow or ice storm. Call MSTA for help in the removal of hazard trees at campsites. When in doubt back out.

Sawing into the ground or hitting a rock is the quickest way to dull a saw chain. The most frequent mistake in changing saw chains is to get the new one on backwards. Put the dull chain in a different pack pocket from the sharp ones. Otherwise the dull chain is on top and the next maintainer will reinstall it believing it to be sharp.

Under no circumstances should a blowdown be detoured. We have simply worked too hard to establish the footway that is thrown away by a detour. Chain saw certification is already required for trail workers in national parks and forests but not yet for state parks, forests or game lands.

Brush and Branches

The primary tool for cutting brush and branches is the limb lopper. Don't worry about cutting too much brush. If it really didn't need to be cut it will grow back, but if it did need to be cut it may be a long time before you or anybody else get back to that spot with a lopper.

Cut brush at ground level in hopes of killing the plant. Cut branches flush with the tree trunk to permit the tree to heal the wound. Cut root loops at both ends and remove. For zero trace clearing throw the butt ends away from the trail.

MSTA has limb loppers that can be borrowed. As desirable as it would be for every overseer to have his or her own lopper, the better loppers have become very expensive. The best loppers today are Sandvik (hook and blade) and True Friends(anvil).

The standard width for the Mid State Trail is 91 cm or 3 feet. (ATVs are 4 feet wide.) Don't forget the overhead. Rain or snow can weigh down branches that would otherwise be well above the trail. Cut as high as you can reach.

If your section has a view that has been cleared, be sure to cut the striped maple and black birch to keep the vista open but leave any mountain laurel. The laurel will eventually take over, producing a natural overlook. Only you will know for sure.

For huckleberry, ferns, briars, and other little stuff a weeder is the tool of choice. A weeder consists of a double-edged, serrated blade attached at both ends by curved metal straps to a wooden handle. To use it, grasp the handle firmly with both hands and swing it back and forth. It can cut on both strokes. Use a file to sharpen a weeder blade. The best weeders are made by Ames. A long-handled hedge clipper is an alternative to the weeder if there are too many rocks.

There is also a motorized solution to the problem of encroaching brush, the brush cutter. Brush cutters are believed to be safer to use than chain saws. A three-bladed metal brush knife or a 2.7 mm (105 mil) string trimmer is used to cut most brush. Each MSTa brush cutter has a support pack containing safety equipment, tools, and extra fuel. Wear long pants, leg armor, ear muffs, face shield and work gloves.

DO'S AND DON'TS FOR THE OPERATION OF BRUSH CUTTERS

1. Do wear shin guards, face shield and earmuffs. (Shin guards may be omitted when using the string trimmer.)

2. Don't run brush cutter at steady full throttle or it will quickly overheat. Overheating will cause serious damage to the engine. Just run the cutter fast enough to cut brush. Slow for huckleberry, faster for mountain laurel. Experiment to see how slowly you can run it and still cut.

3. Do swing brush cutter from side to side, clearing both sides of the trail. (exception is sidehill construction)

4. Do remove pour spout from fuel bottle, turn over and reinsert when refueling. Nalge has quit making these bottles.

5. Do try to avoid rocks when using the brush blade but don't hit the same rock more than once. The string trimmer works better around rocks.

6. Do stay at least 15 meters (45 feet) behind the trail worker in front of you when using the brush knife.

7. Don't be a perfectionist. You can't cut everything, so keep moving. With experience, you can clear up to 800 meters per day.

8. Don't try to cut stems over 2 cm in diameter with brush knife. Use a lopper or bow saw.

9. Do turn the blade over when it gets dull (from hitting rocks mostly). Remember, this part of the brush cutter has a left hand thread.

10. Do use file in support pack to touch up blade.

Hikers destroy sidehill construction by walking on the outside of the trail. Discourage this by clearing only the high side of the trail. To repair or extend sidehill construction you will need a mattock or a Pulaski. These tools can be borrowed from MSTA.

Remember, cut away everything that doesn't look like a trail!

Rocks

The most frequent comment in the trail registers is there are "two many rocks." The two rocks referred are never identified, so until they are, we will just have to keep removing all the rocks we can in hopes of getting the right ones.

First get yourself a pair of leather work gloves. Such gloves are useful for all kinds of trail work but absolutely essential for rock work. Find loose rocks with your feet. If the rocks are small, toss them out of the trail. If they are larger, roll them to the side and make a low wall to define the trail. Bears roll rocks back into the trail when searching for ants and grubs.

Freezing and thawing as well as hikers stumbling along the trail will loosen rocks, and a minimal strategy is simply to remove the current crop of loose rocks each year. A steel prybar can be used to remove rocks that haven't loosened up yet.

Ultimately, we will produce an indelible footway consisting of a trench through the rock piles along the trail. Soil forms at the surface. Removing rocks by hand permits this soil to collect in the bottom of the rut along with the yearly accumulation of leaves, sticks and other woody detritus.

Another problem is fire circles. Yes, we're glad that hikers have built their campfires inside a circle of rocks to keep them from spreading. The trouble is that the fire circles are frequently built in the middle of the trail. In this case, the fire circle **MUST** be removed. Throw the rocks as far as you can into the brush and scatter the charcoal.

If a fire circle has been built near the trail, it will be up to you to decide whether it should remain. Is there space for a tent or two? An established fire circle will make a safer place for the next camper to build a fire as the humus underneath has already been destroyed. Such dry camps are delightful places to overnight. But if for some reason the spot is inappropriate (too close to a road or water source), then remove the fire ring.

Blazes

Paint blazes are the most vandal-resistant way of marking a trail. This means that blazing and reblazing must be done with great care. Our experience indicates that double coated wet (as opposed to spray) paint blazes may last eight or more years.

We are currently using lead free boundary marking paints for blazing. These paints are usually available only in gallons from forestry supply catalogs. One gallon of paint will make about 8 miles of double coated blazes. Blazes are 5x15 cm (2"x6"). Wear work gloves when painting.

Warning! Ordinary hardware store orange paints fade to red, yellow, or even a bilious pink, causing confusion. Get a quart of the real stuff before you reblaze. We can drop off paint at state park and forest offices but it can no longer be shipped.

Side trails are blazed blue and we are using boundary marking paints that are generally lighter in hue than the OSHA precaution blue of yester year.

In addition to a container of paint of the right color and a brush, you will need a paint scraper to remove blisters, flakes, trim vertical edges from old blazes and to smooth the bark for new ones. The usual choice is an ordinary paint scraper. If it is new and sharp it does a pretty good job except for new blazes on very rough bark. An old fashioned draw shave is best for scraping chesnut oaks and other rough barked trees. Skill and experience are required to avoid scraping through to the cambium with the draw shave. MSTa also has plywood templates of the correct blaze size painted blue on one side and orange on the other to aid in blazing.

Double coating blazes does not require a second trip. If you work out from your car at one end of your section you will have to walk back anyway. Just wait (30 minutes or longer) at the far end for the first coat to "set" (not dry !) before you start back and paint the second coat as you go.

Blazes must be intrusive. "Low impact " blazes are next to useless and may look just like a patch of lichen on the tree trunk. The corners of a blaze must be kept square. Well made blazes will be visible for a greater distance than poor ones so you can get by with fewer blazes overall.



Make blazes in pairs at eye level, one facing each way along the trail. Usually these blazes will be on both sides of the same tree, but if the trees are very close together the blazes may be on different trees and even on opposite sides of the trail. Cut away branches to improve the line of sight for blazes.

Turns are marked with double blazes, one above the other. Backup blazes are also required at turns. If the trees carrying the regular double blazes die or fall over, it should still be possible for a hiker to see the single backup blaze a bit farther up the trail.

The optimum spacing between blazes is when a hiker standing at one blaze can just see the next one when the leaves are out. In winter several blazes may be visible. Traditionally we have tried to err slightly on the side of overblazing.

Signs

The Mid State Trail is the best signed trail in Penns Woods. Be familiar with the signs on your section and report them to MSTA as soon as they are missing or damaged. It may take a year or more to replace a missing sign.

Maintenance Trips

The minimum number of trips required to keep your section in good shape is three per year. The maximum number is 365. (366 in leap years.) Ideally, one trip should be made in the spring before Memorial Day. Winter blowdowns can be removed on this trip. A second trip in the summer hiking season, between Memorial Day and Labor Day, could be used to cut back new growth. A third trip in the fall is a good time to remove all the rocks that have come loose.

Overseers Inventory

Each winter we take inventory of our overseers. We have to know what sections are available when new overseers apply. **If you do not return your inventory form on time you may lose your section of the trail!**

Trail maintaining clubs are faced with the necessity of documenting the amount of volunteer work performed on trails. Please keep track of the total time you work on your section as well as the time you have to travel from your home to the trailhead. Report these figures on the inventory form each year.

Feel free to enlist friends, family members and other relatives. Most trail maintenance in the east is performed by volunteers, not by the government at any level, and the more people who know this the better. Hiking trails in the east show volunteers at work, NOT your tax dollars. Hiker user fees are still paid in sweat equity but only by 1 % or 2 % of the hiking community.

Without its corps of dedicated maintainers the Mid State Trail would vanish into the brush and blowdowns like many other trails have done over the years. Who could follow the Tar Pit Trail today? The survival of the Mid State Trail depends on your efforts.