

## Trail Maintainer Safety On the Appalachian Trail

**Issues:** Review of safety direction and practices to ensure safe Club- and ATC-led Trail construction and maintenance.

ATC suggests regular “tailgate safety sessions,” familiarization with safety practices and First Aid, review of Volunteers in the Parks (VIP) and Volunteers in the Forests (VIF), and related improvements to ATC direction and club Local Management Plans.

**Background** (Recent Club-Maintainer Accident): In late October 2011, a rare early season snowstorm blanketed the northeast from West Virginia through southern New England. Because the leaves were still on the trees, many limbs broke, isolating towns and causing power outages.

Five days after the storm, Mid-Atlantic Regional Director Karen Lutz sent a message warning all mid-Atlantic clubs “to be alert for spring poles and tree branches under extreme and complex tension. Pay particular heed to overhead hazards, as I have personally observed a lot of large broken crowns that are hung up in the remaining overstory...”

About two weeks later, a club work party of four (family and friends) ventured forth on a maintenance trip on the A.T. in Pennsylvania. One of them had seen Karen’s warning, but they had no safety briefing or hazard-tree training.

After working about two hours, they came across the crown of a 12- to 15-inch-diameter tree blocking the Trail. The tree had broken about 25 feet up, but the top was not fully detached. Thinking it would be unsafe for hikers to pass under it, they trimmed branches from the crown and then tried to move it. The top broke loose, hit some rocks, and “seesawed,” catching one maintainer under the arm, throwing him, and causing serious injuries.

The others acted immediately, providing first-aid and treating the victim for shock, contacting 911 and staying on the line, and sending one member out to meet and guide local fire and rescue personnel back to the scene. The evacuation went smoothly, and the victim was airlifted to a trauma center where he spent several days. He is now home and recovering.

**Analysis:** The National Park Service and ATC conducted an “after-action-review” with the workers. As a result, ATC and NPS are identifying opportunities to coordinate with the Trail-maintaining clubs to share best practices in safety training for maintainers, and would like to broaden the dialog to solicit practical recommendations for any improvements to our safety programs and management of the A.T. overall. *Our goal is to ensure that all volunteers have appropriate training to complete their invaluable work proficiently and safely.* This issue paper is our effort to broaden the safety dialog.

Specifically, in this case, the ATC feels a need to emphasize overhead and uphill blowdown hazards, and to suggest a new emphasis:

**Overhead and Uphill Blowdown Hazards:** The best course of action when encountering a challenging situation beyond a maintainer's experience and training would be to flag the dangerous area to alert hikers and request assistance from the club's Trail management supervisor, ATC's regional office, or state and federal agency personnel.

*The first rule should always be: Individual Trail maintainers have the obligation to say “NO” and walk away from any situation they determine to be an unacceptable risk.* (Adapted from the Forest Service’s [Health and Safety Code Handbook](#).)

Working with experienced club managers, ATC proposes that it prepare direction on overhead hazard tree management and consider updating its existing safety policies, 2(K) “Trail-Crew

Safety and Skills Training; and 2(L) Chainsaw and Crosscut Saw Training and Certification, and in the *Local Management Planning Guide*, by adding a club-generated policy, “A.T. Maintaining Club Safety and Skills Training.”

**Current Direction:** ATC policies

**Attachment:** Trail Maintenance and Construction Tasks, Hazards and Recommended Safety Gear

## TRAIL MAINTENANCE AND CONSTRUCTION TASKS, HAZARDS, AND RECOMMENDED SAFETY GEAR

This chart is intended as a guide and is not comprehensive. Common sense and awareness are the best tools for any task. Basic safety equipment for all trail work includes a first-aid kit, boots, work gloves, long pants, and appropriate dress for the weather.

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TRAIL TASKS	LIKELY JOB HAZARDS	SAFETY GEAR Boots, work gloves, long pants and helmets are recommended or required for all tasks	ADDITIONAL COMMENTS
<b>Overhead and Uphill Forest Hazards</b>	"Widow Makers" (dead limbs and other overhead or above-shoulder-height hazard trees, branches and blowdowns – if unstable or dead, "uphill and overhead" of workers)	Helmets required in some jurisdictions, and strongly recommended for all Trail maintenance workers	Before working, LOOK UP! If dead limbs or leaner trees are evident, AVOID DANGER ZONES
<b>Cutting Brush</b>	Sharp tools, spring poles, loose footing, flying brush, poison ivy, bee stings, snakebites, ticks	Eye protection*, shin guards	Have soap and wash water available, know who is allergic to bee stings and poison ivy
<b>Power Mowing, Power Weed Whacking</b>	Loud noise, thrown debris, poison ivy, ticks	Eye protection*, hearing protection**, long pants	Do not operate near other people; cool engine before refueling
<b>Crosscut Saw Operations</b>	Severe, ragged cuts from the saw, back or muscle strains, rolling logs, falling trees or limbs	<b>Required safety gear:</b> Gloves, boots, hardhat, eye protection* (and/or face shield), first-aid kit  Other: wedges, ropes or winches,	Sawyer certification <b>required</b> , two-person crew minimum (one as a spotter)
<b>Chain Saw Operations</b>	Severe, ragged cuts from the chainsaw, kickback, fire, back or muscle strains, falling trees or limbs, rolling logs, loud noise	<b>Required safety gear:</b> Gloves, leather or cut-proof boots, chainsaw chaps to overlap boot rim by 2-inches, saw wedges, hardhat, eye protection* (and/or face shield), long pants, long sleeves, first-aid kit Other: srench, extra chain, ropes or winches	Sawyer certification <b>required</b> , two-person crew minimum (one as a spotter), cool saw before fueling, keep saw tuned and chain sharp and tight
<b>Tree Felling</b>	Falling trees or limbs, hollow trees, bee stings, barber-chairing	<b>See Chain Saw and Crosscut Saw Operations</b>  Other: ropes or winches, wedges	<b>See Chain Saw and Crosscut Saw Operations</b>
<b>Clearing Balds</b>	Sharp tools, back and arm strain, dehydration, loud noise (if using power equipment), lightning, overexposure to sun, rain, or wind	Sun hat, sunscreen, eye protection*, hearing protection** (if using power equipment), weed eater harness	Drink at least two quarts of water per day, keep proper spacing between workers, leave ridgecrest before lightning storms
<b>Log Work (peeling, rolling, setting)</b>	Sharp tools, slippery logs, rolling logs, back or muscle strains	Shinguards	Keep back straight, lift with legs or mechanical advantage; work in unison; keep tools sharp
<b>Sidehill Trail Construction, Waterbars</b>	Back or muscle strain, carpal tunnel syndrome, sharp tools, slippery or unstable footing, steep slopes, working too close to or walking by other workers	Shinguards, hardhat, eye protection* recommended.	Keep wrists rigid when swinging tools, place one foot in front of the other, and keep back straight when swinging or pulling digging tools; keep proper spacing between workers
<b>Rock Work</b>	Rock shrapnel or dust, crushed extremities, slippery or unstable footing, back or muscle strain, rattlesnakes	Steel-toed boots recommended, eye protection*, hardhat, shinguards	Keep back straight, lift with legs or mechanical advantage, work in unison
<b>Rigging (winch work)</b>	Frayed cable, improper attachment of load or anchors, standing in the "bight," use of inadequate climbing	Gloves, boots, hardhat	Station lookouts, inspect equipment frequently, protect trees from damage, avoid

	hardware, overhead loads, hard-to-see cable, overloading system & parts		improper use of winch (do not be seduced by the power of the winch)
<b>Crush and Fill (site-made gravel)</b>	Rock shrapnel, splinters or broken tool handles, carpal tunnel syndrome, working too close to others	Eye protection*, shinguards, hardhat, long pants and sleeves	Keep wrists rigid when swinging sledgehammer; keep proper spacing between workers
<b>Sharpening</b>	Cuts from tools, flying metal filings	Gloves, eye protection*, file handle and knuckle guard	
<b>Carpentry</b>	Sharp tools, splinters, flying nail chips or sawdust, smashed fingers or thumbs	Eye protection*	Measure twice, cut once