

CHAIN SAW OPERATION: SAFE USE AND BEST PRACTICES PART ONE OF TWO

The information for the articles on pages 1-3, beginning with the Starting Procedures section, is taken directly from the *United States Department of Agriculture (USDA) Forest Service's Chain Saw and Crosscut Saw Training Course, Student's Guidebook, 2006 edition*. This guide in its entirety can be found online at <http://www.fs.fed.us/t-d/pubs/pdfpubs/pdf06672805/pdf06672805dpi300.pdf>.

This past year West Virginia experienced a variety of turbulent weather—from floods to a derecho (a wide-spread, long-lasting windstorm associated with a fast-moving band of lightning and thunderstorms) that brought lots of damage and necessary clean-up. Past winters in West Virginia have brought ice and snow storms that often weigh trees down, resulting in broken limbs and fallen trees. As roadway workers, many of you are responsible for cutting and clearing brush, damaged trees and limbs, and other vegetation from your roadways and rights-of-way; knowing how to safely and properly operate a chain saw is an essential skill.

Part one of this article focuses on basic safety procedures to use when starting and handling a chain saw and basic felling awareness. Part two, which will be included in the winter edition of this newsletter, will address safe sawing procedures to use when working with spring poles and snow or ice covered trees and limbs.

STARTING PROCEDURES

The methods to safely start and operate a saw can vary with the make and model. Take extra care when starting your chain saw. Because you won't have both hands on the saw, you



Image from Istockphoto

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Country Roads & City Streets is typically published quarterly. The purpose of this newsletter is to provide information that is beneficial to decision makers, elected officials, and roadway construction, maintenance and management personnel.

The material and opinions included in this newsletter are those of the West Virginia LTAP and do not necessarily reflect the views of the Federal Highway Administration or the West Virginia Department of Transportation. Every effort has been made to ensure the integrity and accuracy of both original and borrowed material; however, the West Virginia LTAP does not assume responsibility for any information that is found to be incorrect.



The West Virginia LTAP is part of the National Local Technical Assistance Program, which is funded by the Federal Highway Administration. West Virginia LTAP also receives funding from the West Virginia Department of Transportation.

MISSION:

The mission of the WV LTAP is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

To help achieve this mission, training, demonstrations, personalized technical assistance, and resource materials are provided.



This image from IStockphoto shows a sawyer (a person who saws) during a cleanup operation of a large oak tree that had fallen across a city street after a wind storm.

will need to be more careful to maintain complete control. Remember that on/off switches may vary with different makes of saws.

- Ensure that appropriate PPE [personal protective equipment] is available and is worn correctly.

- Maintain a secure grip on the saw at all times.

- Always start the saw with the chain brake engaged.

- Start the saw on the ground or where it is supported firmly with the nose of the saw bar over a stump or log. To successfully start a cold saw, “feather” the throttle trigger. Avoid engaging the throttle lock or the fast idle position of the on/off switch.

- Make sure that the saw’s bar and chain do not contact anything.

- “Drop starting” a chain saw is strictly forbidden. Do not drop start a chain saw. This is the most dangerous method of starting a saw because you have no control of the saw.

Starting the Chain Saw on the Ground

- Set the chain brake.

- Place the saw on firm ground in an open area.

- Grip the front handlebar firmly with your less dominant hand.

- Pull the starting rope with your dominant hand until you feel resistance.

- Give a strong, brisk pull. Gradually return the starting rope to the saw housing. Do NOT allow the starting rope to snap back.

HANDLING

- Never operate a chain saw with one hand. You do not have control of the saw and increase the risk that you will be injured if the saw kicks back.

- Grasp the throttle handle firmly with your dominant hand and grasp the handlebar with your less dominant hand. Your fingers must encircle the handlebar with the thumb wrapped underneath.

- Never operate a chain saw with the throttle lock engaged. If you do, you will not be able to control the saw or the chain speed.

- Make sure your work area is clear of people and obstacles, such as rocks, stumps, holes, or roots that may cause you to stumble or fall.

- Make sure the saw chain does not contact any materials such as rocks or wire. Such contact is a safety hazard and will dull the chain. The chain will require filing or it may be damaged in ways that filing cannot correct.

- Cutting with the bottom of the bar pulls the chain saw away from the sawyer. Cutting with the top of the bar pushes the saw back at the sawyer. Cutting with the bottom of the bar increases efficiency and decreases the sawyer’s fatigue.

BASIC FELLING – SITUATIONAL AWARENESS

The following are important items to consider and be aware of before cutting or felling any tree.

ANALYZE THE FELLING JOB BY CONSIDERING:

- Species (live or dead)
- Soundness or defects
- Widow makers and hangups
- Rusty (discolored) knots
- Frozen wood
- Heavy snow loading
- Direction of lean
- Head lean or side lean
- Splits and frost cracks
- Heavy branches or uneven weight distribution
- Size and length
- Twin tops
- Spike top
- Punky (swollen and sunken) knots
- Footing
- Bark soundness
- Degree of lean (slight or great)
- Nesting or feeding holes
- Deformities, such as those caused by mistletoe
- Damage by lightning or fire

CHECK THE BASE OF THE TREE FOR:

- Thud (hollow) sound when struck
- Shelf or bracket fungi
- Split trunk
- Feeding holes
- Resin flow on bark
- Conks and mushrooms
- Wounds or scars
- Insect activity
- Bark soundness
- Unstable root system or root protrusions

EXAMINE SURROUNDING TERRAIN FOR:

- Steepness
- Draws and ridges
- Stumps
- Ground debris that can fly or kick up at the sawyer
- Irregularities in the ground
- Rocks
- Loose logs

EXAMINE THE IMMEDIATE WORK AREA FOR:

- People, roads, or vehicles
- Hangups and widow makers
- Fire-weakened trees
- Structures
- Other trees that may be affected
- Hazards such as trees, rocks, brush, low-hanging limbs
- Powerlines
- Snags
- Reserve trees
- Openings to fall trees into
- Other trees that may have to be felled first

Background Image from Istockphoto

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FEDERAL-AID ESSENTIALS FOR LOCAL PUBLIC AGENCIES WEB SITE LAUNCHES

The information for this article is taken from the Federal-Aid website.



Image from Istockphoto

This past August, the Federal Highway Administration (FHWA) launched the Federal-aid Essentials for Local Public Agencies website. This is a transportation resource designed to help local agency professionals navigate the Federal-aid Highway Program and develop a better understanding of Federal-aid requirements. The Federal-aid Essentials website contains information (presented in plain language) on Federal-aid policies, procedures, and practices. The website address is: <http://www.fhwa.dot.gov/federal-aidessentials/index.cfm>.

The Federal-aid Essentials website contains a resource library of informational videos and related materials. Readily accessible and available when you need an answer, each video addresses a single topic presented in everyday language, condensing the complex regulations and requirements of the Federal-aid Highway Program into easy-to-understand concepts and illustrated examples. This website allows you to indicate areas of interest and receive alerts when material that matches your interests becomes available. You can also give feedback that will help FHWA continue to provide useful assistance.

Federal-aid transportation topics that are addressed include:

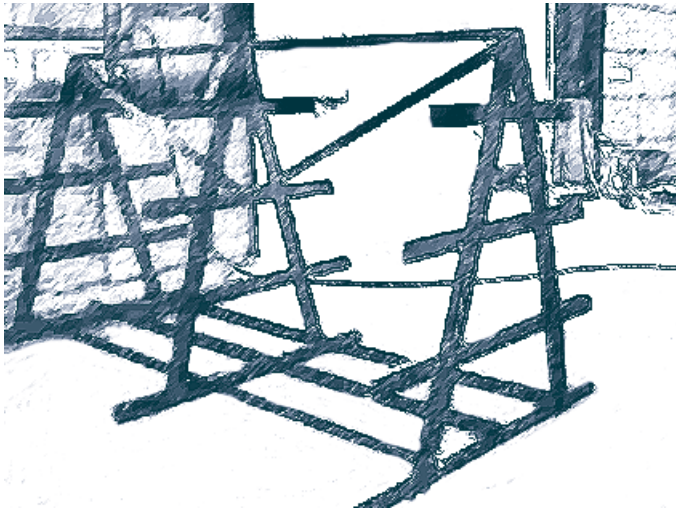
- Overview of the Federal-aid Program
- Environment
- Right-of-Way
- Project Construction and Contract Administration
- Civil Rights
- Finance
- Project Development

To demonstrate how this works, let's say you go to the **About tab** and select the **Project Development topic**. Upon clicking this link, several videos and other resources will come up, including the video, **Value Engineering Requirements for Federal-aid Projects**. This brief video defines what value engineering is, when it is required, how it works, and the benefits. You can also go directly to the Federal-aid Essentials Video Library tab to see at a glance all of the available videos.

The WV LTAP encourages you to bookmark this resource and visit this site. Whether you want to learn more about the Federal-aid Program, or if you have specific topics you could use more information about, this resource should prove beneficial.

INNOVATIVE RACK FOR PLOW BLADES

Information and Image Adapted from FHWA LTAP/TTAP Build a Better Mousetrap National Competition 2011 Entry Booklet



Across the country, the roadway agencies that LTAP and TTAP Centers serve are filled with innovative and resourceful workers, many who find new and better ways to accomplish everyday tasks. This has led many Centers to develop contests called, “Build a Better Mousetrap” or “Show Us.” The purpose of these competitions is to collect and disseminate real world examples of best practices, tips from the field, and assist in the transfer of technology.

Each year at the National LTAP Association (NLTAPA) meeting, LTAP and TTAP Centers are given the opportunity to submit examples from their state competitions into the NLTAPA competition.

The following innovative solution, from the Town of Merrimack, New Hampshire, was awarded 2nd place in the 2011 competition. With the winter maintenance season just around the corner, the WV LTAP staff thought many of you may be looking for a new way to store your plow blades. The WV LTAP staff would also love to know if you or anyone in your agency has developed or refined a best practice, has an innovative idea, created a new device, or any other tips from the field you may have. Just give us a call, shoot us an email, stop by the office, or invite us to your site; we love to share the good work that you are doing.

HIGHWAY DIVISION PLOW BLADE RACK: MERRIMACK, NEW HAMPSHIRE

PROBLEM

Plow blades were being stored in the highway garage on blocks of wood or pallets on the floor. Employees had to bend down very low to pick up the blades. Some of the blades weighed in at 160 pounds a piece and were very cumbersome to carry. With the variety of blades the Merrimack New Hampshire Road Agency needed to inventory, they used up a lot of scarce floor space. This resulted in trip hazards as employees often had to step over the blade stock to reach the one they needed. The Merrimack New Hampshire Road Agency recognized that they had a bad fall or a back injury waiting to happen.

SOLUTION:

The solution that the roadway agency employees devised was to raise the blades higher off the ground so they were more easily accessible in a limited space and organize them by application and size. They wanted the heaviest blades as high up off the floor as possible to minimize bending, and the area under the rack could be used for the lighter three and four foot blades. This would help with employee safety and free up valuable floor space.

LABOR, EQUIPMENT, AND COST

The material that was needed to make this happen consisted of 100 feet of 3½ inch channel steel and 50 feet of 2 inch angle iron. The roadway agency employees used in-house saws and welding tools to cut the materials and assemble the storage rack. In-house personnel did all the labor, as time allowed, in between snow and ice maintenance activities. The completed rack takes up approximately 9.5 feet X 5.5 feet of garage floor space (5.5 feet tall). Based on 2011 prices, if steel were ordered, it would have cost around \$410.00.

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ROAD SLEUTH INFORMATION SHEET

There are many myths about transportation related issues. Road Sleuth has been designed to help dispel these myths and reveal the truth. Road Sleuth came from conversations WV LTAP staff had with public works directors, street supervisors, and others. From these conversations, one common theme emerged: public works personnel getting the same questions and requests time and again from their elected officials and residents and not having educational information readily available.

The Road Sleuth series can be downloaded from the WV LTAP website (wvltap.wvu.edu) as a PDF or Microsoft Publisher file. The Publisher files are formatted so agencies can add their individual contact information if desired. The WV LTAP does ask that the main text not be changed or altered without permission. Agencies are encouraged to post these information sheets on their webpage, distribute printed copies to city council members, send out in mailings, etc. The WV LTAP staff welcomes your suggestions for new topics and will continue adding new sheets as they become available.

Photo taken by WV LTAP staff



By walking with their back to traffic, these pedestrians are unaware of an approaching vehicle, potentially putting themselves at risk.

a pedestrian has to avoid getting hit is to move out of the way. If pedestrians are walking with their back to traffic, they will be less aware of approaching vehicles and the dangerous hazards posed by them.

Other tips for pedestrians walking in areas without sidewalks are:

1. Stay alert at all times.
2. Wear retro-reflective material to increase visibility. This is especially important during dusk and evening/nighttime. Motorists have a difficult time seeing pedestrians who are not wearing retro-reflective material at night.
3. Avoid using a cell phone or listening to music with earphones.
4. Walk as far away from the roadway as possible.
5. When possible, put natural or roadway barriers in between you and the cars.
6. When walking with another person stand one in front of the other, not side-by-side.

Following these simple safety guidelines can make your walking trip a great deal safer.

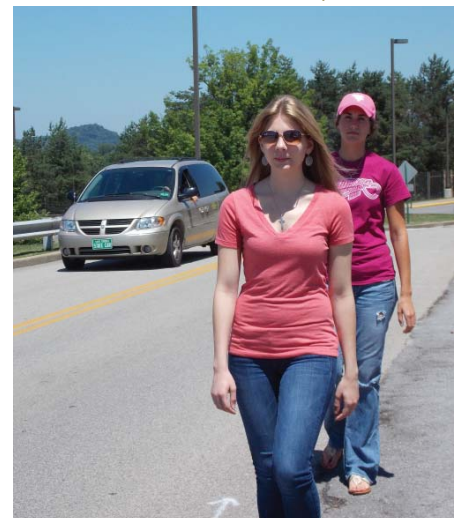
MYTH: PEDESTRIANS SHOULD WALK IN THE SAME DIRECTION AS TRAFFIC WHEN SIDEWALKS ARE NOT AVAILABLE.

When sidewalks are not present, which is often the case on West Virginia's roads and streets, it is not unusual to see pedestrians walking along the edge of the road traveling the same direction as the traffic flow. The West Virginia State Code states, "where sidewalks are not provided any pedestrian walking along and upon a highway shall when practicable walk only on the left side of the roadway or its shoulder facing traffic which may approach from the opposite direction." It is also important to note that according to the West Virginia State Code "where sidewalks are provided it shall be unlawful for any pedestrian to walk along and upon a adjacent roadway."

Approximately 4,500 pedestrians are killed each year by motor vehicle crashes and about 8% of those killed were walking on the edge of a road. To avoid this safety risk, pedestrians should only travel along the edge of the road when there is no sidewalk or footpath adjacent to the roadway.

Walking against traffic allows pedestrians to see motorists and be more aware of potential hazards. Drivers are often distracted, and sometimes the best defense

Photo taken by WV LTAP staff



Here the pedestrians are more aware of their environment and are practicing key safety tips.

ELECTRONIC AND POSTAL MAILING LIST UPDATE

The WV LTAP is pleased to announce that you will now be able to read our newsletter directly from your email inbox! Electronic versions of *Country Roads & City Streets* have long been available on the WV LTAP website and accessing the newsletter will now be even more convenient as you can choose to have it mailed to your inbox rather than your postal box. This doesn't mean that we have any immediate plans to go to an electronic format only. We recognize that many of you have limited computer and internet access, so printed versions will still be available. However, we also recognize that many of you would rather receive our newsletter, information on upcoming workshops, conferences, and other information electronically. Therefore, we ask you to let us know your contact preference and provide us with your current information so we can update our records and serve you better.

Please complete the following information and send back to the WV LTAP. You can email this information to Kim Carr at kim.carr@mail.wvu.edu, fax to 304-293-7109, or mail to WV LTAP, PO Box 6103, Morgantown, WV 26506.

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CHECK OUT THE WV LTAP FACEBOOK PAGE



The WV LTAP wants to remind you that we are on Facebook! We encourage you to visit our page and give us your feedback. You can find us by typing in www.Facebook.com/WVLTAP or within the search feature in Facebook, by typing WV Local Technical Assistance Program (WVLTAP). The page is set up so everyone can post comments; you don't need to become a "friend" or be accepted to post items. Just make sure to "like" us so anytime we add announcements, they will show up in your newsfeed.

This is a great place to check for upcoming training events, available give-a-ways, current transportation related items, photos, and much more. We also hope that in addition to checking out our announcements, this will be an interactive tool for you, our clients, to pose questions, share solutions, successes, challenges, etc.

STREET SMARTS CONTEST

The WV LTAP is pleased to announce the **Street Smarts Contest**, which from time to time, will be published in this newsletter and on our Facebook page.



The contest is simple: a photo of a street or roadway in WV will be displayed, and the first person to email or call Stephanie Spangler, WV LTAP Technical Assistant, with the correct answer, will win a fabulous prize! (*As fabulous as a prize can be under \$25 dollars.*)

The winner will be announced on our Facebook page and in the next edition of this newsletter. So in addition to the fabulous LTAP prize, you'll also get bragging rights!

Do you know in what West Virginia city or town this street is located and the name of the street?

You can email your answer to Stephanie Spangler at Stephanie.Spangler@mail.wvu.edu or leave your answer on her voice mail, 304-293-9922. The first correct answer that Stephanie receives by either email or phone will be the winner.

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The WV LTAP is working on our training calendar for the remainder of this year and for next year.

Please contact Kim if you would like to get a class scheduled or have a specific training or technical assistance request.

