

Country Roads & City Streets

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WV LTAP Hosts FLAGGER CERTIFICATION TRAINING

By *Weslie Boyd*



Instructor Clay Lutz trains a group of flaggers in Morgantown, West Virginia.

Local and state roadway personnel from Bridgeport, Fairmont, Morgantown, Shinnston, and Westover participated in flagger certification courses May 24 and 25, 2007. The classes were taught by National Safety Council Certified Flagger Instructor Clay Lutz, and each participant became a certified flagger at the end of each course. Participants partook in both classroom and field instruction to learn the importance of proper flagger clothing, equipment, and procedures. Flagger training manuals were provided to all participants during the training sessions.

“Most people don’t realize just how dangerous flagging can be,” says Kim Carr, West Virginia LTAP program coordinator. “The individual who is flagging in a workzone is responsible for the safety of motorists and his or her peers. There is more to the job than turning the paddle to STOP and SLOW. A knowledgeable flagger is essential to maintaining a safe workzone.”

Please contact Kim or Weslie at the WV LTAP at 304-293-3031, ext. 2612 or 2662 if your municipality is interested in this training.

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TRAFFIC ENGINEERING—TWO SIDES OF THE SAME COIN

By Bradley Dicola, E.I.T

This is the second and final article in the traffic and transportation engineering series, and focuses on the differences between private sector and public sector traffic and transportation engineers.

Traffic engineering has many facets and disciplines involved in its practice. The effective traffic engineer blends the demands of providing a safe system while also allowing for operational efficiency and providing input into the planning of future facilities. There are even more subtle differences involved, however, depending on where in the profession one chooses to work. Generally speaking, the traffic engineer has two options, or two sides of the same coin—to work in the public sector or the private sector. While training and skills are similar for both public and private sector traffic and transportation engineers, the demands placed on the individuals and their objectives vary.

Public Sector

The public sector's role in the transportation system is vital. Most often the public agencies own the facilities (roadways, signals, signs, etc.) that the traffic engineer is concerned with. Subsequently, many traffic engineers work for public agencies, often in the form of a state, county, or city. These engineers often have responsibility of reviewing final plans for projects funded by the public agency. Public agency engineers are also responsible for reviewing submitted design plans for future subdivision or commercial land use to ensure the design meets the agency's standards. Permitting and access management are major issues for public sector traffic engineers.

Being an effective communicator is an essential skill for the public agency traffic engineer. The general

public, when it has an issue or question regarding a roadway facility, typically direct their concerns or questions to the public agency. Communicating with the public, helping resolve public complaints, and listening to public comment are all part of the normal job duties. Public sector engineers are often responsible for assuring that public facilities are properly maintained, as well as any devices or signs associated with the facility. This can be a potential source of liability for the agency, and proper documentation and a systemic approach to maintenance can help guard against those types of action. Additionally, the public sector traffic engineer can become involved in the establishment of design standards and policy, which pertain to facilities owned by the agency.

Private Sector

The private sector holds an equally important role in traffic engineering. Private firms often complete design and analysis work for public agencies on a contractual basis. For instance, in West Virginia, only a few local municipalities have a traffic engineer on staff. Many localities do not have the budget or the need for a full-time traffic engineer; thus, their traffic engineering service needs are hired out to the private sector. However, as land use issues increase, development continues to spread, population rises, and motorist traffic escalates, many local municipalities may find they need a full-time traffic engineer.

Private industry traffic engineers also perform engineering work for private

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Country Roads and City Streets is a quarterly publication of the West Virginia Local Technical Assistance Program (WV LTAP). The purpose of this newsletter is to provide information that is beneficial to roadway construction and maintenance personnel.

The material and opinions contained in this newsletter are those of the West Virginia Local Technical Assistance Program and do not necessarily reflect the views of the Federal Highway Administration or the WV Department of Transportation. Material contained in *Country Roads and City Streets* is a combination of original and borrowed material. Every effort has been made to ensure the integrity and accuracy of this material. However, the West Virginia LTAP does not assume responsibility for any incorrect material.



CONSTRUCTION MATH WORKSHOP

By Kim Carr and Weslie Boyd

A great deal of mathematic skill is required in the construction and maintenance fields. Individuals who work in these areas use arithmetic, algebraic, and geometric skills on a regular basis to perform tasks ranging from how to figure out how much stone to order to how to calculate flow volume for a drainage ditch.

West Virginia LTAP recently hosted a Construction Math Workshop in Bridgeport, West Virginia on June 7, 2007.



Instructor Ed Stellfox (standing) is enthusiastic about his lessons.



A group of participants work together to solve a few math problems.

Thirty WVDOH employees participated in the course designed to help refresh their math skills, specifically related to construction inspection and maintenance. Course topics included basic geometry, fractions, area, volume, and conversions. The class was taught by Ed Stellfox, program manager of Maryland T2 Center.

Ed has a bachelor of science degree in civil engineering and a master's degree in education, along with 34 years of experience in public works and over 17 years of experience in transportation technology. Ed brought real world examples into the class that everyone in attendance could relate to, such as this simple measurement tip:

A quarter (25 cent piece) is an item that most of us carry with us. Not only are quarters useful if you need a drink from a vending machine, but they can be used as a measuring device. A quarter is approximately 1 inch in diameter, so you can use a quarter if you need to figure out a small measurement on the spot. For instance, one quarter = 1 inch or 25 mm. Or, three quarters equal 3 inches or 75 mm.

TEST YOUR MATH SKILLS

Answers are listed on the bottom of this page.

Problem 1

If it takes 600 gallons of asphalt primer to cover 3200 square yards of roadway, how many gallons of asphalt primer will it take to cover 4800 square yards?

Problem 2

$$3.5y + 7.03 = 21.38$$

What does y equal?

Problem 3

If 60% of 377, 000 cubic yards of cut have been removed, what is the number of cubic yards that must still be removed?

Problem 4

The slope of a certain cut is 3:1. If the vertical distance is 15.5 ft., find the horizontal distance. (Express your answer to the nearest tenth of a foot.)

- Answers
- 1. 900 gallons
 - 2. $y = 4.1$
 - 3. 150,800 cubic yards
 - 4. 46.5 ft.

10 TIRE TIPS—FOR TIRE LIFE AND WORKER SAFETY

Tires are tougher than ever these days, so it's easy to forget about them. Remembering a few basics can save you money and may keep you safer, according to Larry Lampe, a trainer for Pomp's Tire Service in Green Bay. "There's a direct relationship between proper air pressure and tire life," says Lampe. "It's the most basic and the most overlooked factor."

1 Under-inflation costs money

Operating on soft tires means they wear faster and the truck burns more fuel. At normal speeds, you'll cut tire life by 16% and increase fuel use by 2% by running tires at 20% under recommended pressure.

2 Explosion is possible

Any radial tire that has been driven at less than 80% of its recommended pressure has the potential to "zipper rupture" when it's re-inflated. A zipper rupture is when the side of a radial tire explodes during inflation. You can learn to recognize hazardous tires and how to re-inflate them safely from videos or in training programs.



Zipper rupture on tire side wall.

3 Expect tires to lose air

Rubber tires are made of a porous material; they lose air continuously. A truck tire is expected to lose up to two pounds a month according to industry standards. In addition, air can leak through valve caps or small punctures.

4 Think about outside temperature

A tire will gain or lose a pound of pressure with every 10 degree difference in outdoor temperature. "You could check truck tires in August and put in 100 pounds of pressure and it could have lost 15 pounds of air by the time you are plowing snow in November or December," says Lampe. "You could be plowing with an under-inflated tire and it isn't due for regular preventive maintenance."

5 Know the proper pressure

Tires are designed to run at specific pressures based on the total load. Gather information on each truck's actual axle load, then use standard load charts to calculate the correct tire pressure. Ask your tire supplier for help and training. (Also, see load charts at <http://www.goodyear.com/truck>)

6 Calibrate gauges monthly

Even with regular checking tires could be at the wrong pressure due to faulty gauges. "On average, about 15% of gauges in a facility are not properly calibrated," says Lampe. You should invest in a master gauge (about \$100) and calibrate all the gauges in the shop monthly, he advises.



You should check tire pressure every season at a bare minimum, and more often is better. There's a direct relationship between proper air pressure and tire life.

7 Check pressure every season or before use

You should check tire pressure every season at a bare minimum, and more often is better. For infrequently used or seasonal equipment — like motor graders, for example — check tire pressure before using it. To get an accurate reading, be sure the tire is cold; at least three hours after last use.

8 "Read" tires regularly

Check for signs of wear before tires sustain serious damage. Regularly look at tire walls for signs of zippering; inspect for cuts, cracks, blisters, or bulges. Measure tread depth. (It should be no less than 4/32" on the steer axle and no less than 2/32" on all others.) Run your hand over the tread and feel for abnormalities like rib edge feathering or cupping. Feathering is an early sign of misalignment or could be caused by

improper pressure. Take the tire/wheel assembly off and look at the face of the tire for any type of irregular wear pattern. For example, drive tires may develop heel and toe wear.

9 Rotate tire position for longer life

Any rotation schedule is better than no rotation, Lampe says. How often it's needed depends on truck usage. "If it rolls very little, you may only need to rotate every other year."

10 Repair correctly

The only proper way to fix a tire is to put a patch on the inside and a plug through the injured area. Any repair from the outside will void the tire warranty, even if it is properly fixed afterwards. "Twenty-five to forty percent of all tires repaired out there today are probably not repaired properly. Besides voiding the warranty it's a safety issue," says Lampe.

This article first appeared in the Spring 2005 edition of Crossroads, the newsletter of the Wisconsin Transportation Information Center (LTAP). Used with permission.

VEHICLE SAFETY: AVOIDING BACKING ACCIDENTS

One of every four accidents involves backing. Considering that the average driver operates in reverse less than a mile every year, this statistic is even more alarming.

1. Continuously check all mirrors while backing.
2. Always back slowly while continuously looking and listening for signs of trouble.
3. Avoid backing whenever possible. Drivers should plan ahead to reduce backing operations in the first place.
4. Try to position the vehicle to avoid backing.
5. If backing cannot be avoided, it is better to back in upon arrival than to back out later while departing.
6. Conduct a visual walk-around of the vehicle to check for maneuvering room or pedestrians.
7. Whenever available, use a passenger to guide you during backing operations.

The following are key collision failures related to backing operations:

- Failure to look before backing
- Failure to check blind spots
- Failure to conduct a walk-around
- Backing at an unsafe speed
- Failure to check mirrors often for potential hazards



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All backing accidents are preventable. Plan ahead to avoid backing in the first place; only back up your vehicle as a last resort.

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2007 ROADWAY MANAGEMENT CONFERENCE A SUCCESS

The West Virginia LTAP Center is a part of the nationwide Local Technical Assistance Program (LTAP), which is funded by the Federal Highway Administration. The program also receives funding from the West Virginia Department of Transportation.

Mission:

The mission of the West Virginia 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.

Overall Goal:

The Center's overall goal is to improve the transportation system by focusing on professional training, technical assistance, and information dissemination.

To achieve this goal, the WV LTAP does the following:

- Provides on-site training and demonstrations
- Publishes a quarterly newsletter
- Maintains a video, CD-Rom, and publications library
- Provides technical assistance via mail, telephone, fax, email, or site visits

Participants from five states met in Charlottesville, Virginia April 2-4, 2007 for the fifteenth annual Region 3 Roadway Management Conference. There were 279 attendees and twenty-three were from West Virginia. During the two-and-a-half-day conference, participants learned from many breakout sessions and demonstrations. WV LTAP Director Ron Eck presented a pre-conference workshop on accessibility. Other speakers from West Virginia included Dave Ross of the Kanawha County Sheriff's Department and Terry Hough and Bill Rumble of the Morgantown Public Works Department. Dave Ross lectured about proper techniques for meth clean-up on the highways, as well as the dangers of the drug. Terry and Bill served on a panel that discussed innovative finance. They spoke about ways their organization stretches its budget, particularly by refurbishing vehicles. They provided photos of the local fire department's ladder truck that is now used as a snow plow as well as others. Thank you to all who helped make the event a success.

WV LTAP will host next year's event March 31 - April 2, 2008. The 2008 Roadway Management Conference will be held at Oglebay Park, in Wheeling, WV.

We are looking for session topic ideas and appreciate any feedback or suggestions you may have. Please send suggestions or comments to weslie.boyd@mail.wvu.edu.

We look forward to seeing you in 2008!



Dave Ross of the WV Kanawha County Sheriff's Dept informs a group about the dangers of meth waste.



WV LTAP graduate assistants, Weslie Boyd and Brad DiCola, enjoy the opening luncheon.



Conference attendees visit vendors.

TRAINING OPPORTUNITIES

The Vancouver Safety Corridor Showcase is scheduled for August 23-24, 2007 in Vancouver, Washington and is sponsored by the Western LTAP Product Demonstration Showcase Coordinating Center. Visit our Web site for more information.

The National Conference on Asset Management will be November 6-8, 2007 in New Orleans, Louisiana. Please visit <http://www.trb.org/conferences/2007/Asset> for more information.

The Consortium for ITS Educational Training (CITE) is offering a free individual or blended course during the month of July 2007 for new students. Some of the courses CITE offers are Road Safety Audits, Traffic Signal Timing and Pavement Marking.

For more information, contact Denise Twisdale, Coordinator
Phone: 301-403-4592
E-mail: mztwiz@umd.edu.

To learn more about CITE visit their Web site <http://www.citeconsortium.org>.

TWO SIDES OF THE SAME COIN

development, often to determine potential impacts of proposed facilities and any additional costs that may need to be incurred by the developer for traffic improvements. The private sector's involvement with the general public usually revolves around public comment on a study completed by the private firm on behalf of the public agency. The private sector traffic engineer often represents the developer in re-zoning cases at public hearings or in meetings with elected officials. The private sector often works in conjunction with the public agency since the private sector is often held to the design standards and policy specified by the public entity. The private sector traffic engineer works with the reviewing agency to get the project approved and completed. These two sectors obviously work closely together, and a proper understanding of the goals of each is vital to successful collaboration.

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The demands placed on public and private sector traffic engineers often differ. However, there are many tasks and objectives that are common to both sides, including participation in design and involvement with the public. Often, the two sides serve as clients to each other. With an understanding of what each side tries to achieve, these collaborations can prove successful.

As a reminder, the WV LTAP is available to provide technical assistance to your community. Please feel free to contact us if we can answer any questions or assist your community.



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THE NEWEST ADDITION TO THE WV LTAP STAFF



After months of waiting to fill our vacant engineering position, West Virginia LTAP is proud to welcome Anthony Ford as our new program

coordinator—professional engineer. Anthony will be instructing workshops and courses, including the popular Roads Scholar I Courses, and providing technical assistance, among many other things. Although he is new to the position, he is not new to the WV LTAP Center. Anthony worked as a graduate assistant from 1999-2001. He earned a bachelor of science degree in civil engineering from WVU in 1999. After earning his master's degree from WVU, Anthony joined Hayes, Seay, Mattern & Mattern in Roanoke, Virginia. He worked as a project engineer until 2003 when he began working for Roanoke County as their transportation engineering manager

in the Department of Community Development. A native of Union, West Virginia, Anthony enjoys landscaping and home improvement projects, golf, and WVU sports. We are happy to welcome Anthony and his wife Jennifer to the area.

“I am excited about this ‘second’ opportunity to work with the LTAP organization and the excellent WV LTAP staff. I look forward to working with the transportation community throughout the state, both in renewing old acquaintances and making new contacts. Please, don’t hesitate to contact me with questions or just to introduce yourself,” he says.

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Change Service Requested

We are excited to announce that we will be reinstating our popular Work Zone Signing Package this year. Applications and in-depth details for municipalities and public service districts will be mailed out in the upcoming weeks and will also be available on our Web site.

<http://wvltap.wvu.edu>

