

M A S S I N T E R C H A N G E

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MASSACHUSETTS SAFEST STATE FOR DRIVING IN NATION



BOSTON (AP) -- Despite its reputation for aggressive drivers, Massachusetts is the safest state in which to drive, according to a recent national report.

Massachusetts averaged 0.8 deaths per 100 million miles traveled in 2000, compared to the national average of 1.6 deaths, according to a report issued by The National Safety Council.

"It's hard to believe a state with such insane drivers could have such a remarkably low accident rate," said Dan O'Sullivan, a content strategist at an Internet consulting company in Cambridge. "I guess that's the one good thing about living with all this traffic."

Densely populated eastern states, particularly New England states, are the

safest for drivers, at least in terms of traffic deaths. "Driver travel more slowly in states where traffic is dense, and so are less likely to die in a crash," said Alan Hoskin, manager of research and statistics for the Illinois-based NSC.

"The old joke is we can't get going fast enough to kill ourselves because of all the congestion," said Art Kinsman, spokesman for AAA Southern New England.

When serious accidents do occur, densely populated states tend to have more hospitals, so victims are treated more quickly, Hoskin said.

The most dangerous states for drivers tend to have more wide-open spaces, higher speed limits and less likelihood

that a hospital is nearby in case of an accident, Hoskin said. Montana, Louisiana, Arkansas and Arizona all recorded more than 2.0 deaths per 100 million miles traveled in 2000, but the most dangerous state was Mississippi, with 2.7 deaths followed by South Carolina and Montana, with 2.4.

Billy White, executive director of the Governor's Highway Safety Program in Mississippi, said seat belt programs and driving campaigns have so far failed to make the state's roads safe.

"I don't really know why the rate is so high," he said. "It may be the old southern spirit that we are going to do what we are going to do."

Hoskins, of the National Safety Council,

LTAP Local Technical Assistance Program

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Picture Your Audience in Their Underwear!

and other ideas for effective public speaking

by Dawn Jourdan

Do you have nightmares about speaking in public or suffer from butterflies before making a speech in public? There is no need to be ashamed. Speaking in public is a daunting experience! One of the techniques speech teachers often pass on to nervous students involves imagining the audience in their underwear. The idea is that the speaker will not be intimidated by his or her audience if the audience, too, is in a vulnerable position. Techniques like this reduce anxiety.

There are, however, other ways to overcome speech-related anxieties. According to Ken Scudder, Vice President of Virgil Scudder & Associates, preparation, even if done on short notice, is the key to effective speech making.

Eight steps to preparing a speech...on short notice

Lower Your Standards.

One of the biggest roadblocks to effective speech making is the presenter's fear of appearing incompetent in front of peers. No one wants to appear a fool. The desire to speak perfectly, especially at a moment's notice, is unrealistic. One way to combat this fear is to lower your standards. On short notice, it is perfectly acceptable for the speaker to talk from notes for a brief period of time while citing a few sources. But this does not entitle the speaker to be totally unprepared.

Determine Your Objective.

After setting realistic goals for what kind of presentation can be accomplished, the presenter must determine an objective. One basic question comes to mind: For what purpose have I been asked to speak? For instance, if you have been

asked to speak to your coordinated transit district about a new program your agency has developed, focus all of your remarks on that program. Extraneous information will only confuse your audience.

Ask Yourself Questions.

After limiting the scope of your discussion to a particular topic, you should ask yourself a series of questions so that you may fully connect with your audience and provide them with information that



they want to hear. These questions might include: Who is my audience? What are their priorities? What will they want to know? What concerns might they have? These simple questions will further determine and limit the scope and content of your speech.

Create Three Key Points.

Speakers sometimes fail to be effective because their message is too complicated or jumbled together. Experts recommend that speakers limit themselves to three points. Audiences will be unable to retain more information. A speaker may further assist the audience by introducing the three points to be

made at the beginning of the speech, again as each point is made and then reviewing the points at the end of the talk. While this may seem overly repetitious to you, audiences appreciate reminders of what they have heard.

Get Back-up Information.

Sometimes you will not have the opportunity to conduct full-scale research when preparing a speech on short notice. Therefore, you must rely on what you know and sources of information available to your audience. Ask your staff to help you in your research. Whatever you do, confirm all evidence and cite the source in your presentation so that others might check it for themselves. Don't ever guess.

Prepare an Outline.

The next step in effective speech making is preparing an outline. It should contain the following components: introduction, three points with citations, and concluding remarks. The outline can be detailed or sparse, as needed. You might even want to photocopy and distribute the outline to the audience so that they can follow along.

Find Enhancements.

Visual representations, like charts, graphs, pictures and outlines, are very persuasive and also help bolster the effectiveness of presentations. They can make a presentation prepared on short notice look more impressive. Make sure that the enhancements communicate your message effectively and that they are simple enough for the audience to understand with limited explanation. Make sure they are clear enough to read from a distance.

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THE FELLING PLAN

Determine the Tree's Lean

When felling a tree, there are two types of lean the chain saw operator must be concerned with: side lean and forward/back lean. All trees lean to some degree--a tree can lean 360 different directions depending on your viewing position.

To emphasize this point in my training program, I ask a class participant to determine a tree's lean for the class. I position the volunteer at the base of the tree trunk and into the crown and point in the direction that the tree leans. I then ask the operator to move two more times--each move being one-quarter of the way around the tree--and, again, point in the direction the tree leans. Invariably, the operator points in different directions, which brings me to an important point. In order to determine which direction a tree leans, you first have to establish a reference point. The reference point will be the landing zone you've already determined and the path

the falling tree takes will be its direction of fall. To determine the tree's degree of side lean, the operator must be positioned either in front of the tree along its "direction of fall" line or directly behind the tree looking down the "direction of fall" line. It is good practice to back away from the tree so you can get a good look at its trunk and crown. As I mentioned earlier, you can be easily fooled when determining lean by concentrating solely on the tree's trunk. The critical element to focus on is the tree's crown. What must be determined is the location of the tree's weighted center.

If it were to fall naturally, the tree would fall along the path of its weighted center. If the operator doesn't allow for weighted side lean in the felling plan, the tree will end up somewhere other than the intended landing zone. Throughout my years of training, I have witnessed many trees that have fallen 90 degrees to their intended path. Some were the result of

poor cutting technique, but most were due to miscalculation. To determine weighted side lean, straddle



the tree's intended "direction of fall" line and with your finger draw an imaginary circle that encompasses the ends of the outer-most branches in the tree's canopy.

Visualize the center of this imaginary circle and a straight line down from this center point to the ground. Mark this spot on the ground for future reference. The horizontal distance from this point on the ground to the center of the tree's trunk is the amount of its weighted side lean. Side lean is important in determining the "good" and "bad" side of the tree. The bad side of the tree is the side toward the weighted side lean. The good side is the side opposite of the weighted side lean. Whenever possible, the operator should always finish cutting on the good side of the tree. Working from the tree's good side reduces the risk of having the tree break loose unexpectedly and fall toward the operator. Identifying the tree's good and bad side are critical points to remember when formulating the felling plan.

Further discussion on a tree's good and bad side is found in Chapter 9 of *Forest Applications Training eBook* written by Tim Ard and Mike Bolin. To deter-



Felling demo at Lenox workshop with Tim Ard

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PICTURE YOUR AUDIENCE IN THEIR UNDERWEAR!

Rehearse.

Before you give your speech, give yourself some time to clear your mind and rehearse. You can do this on your own or with a trusted co-worker. Just make sure that the practice is conducted in a place that is distraction-free. Don't worry if your rehearsal is not perfect.



Few rehearsals are.

When you are called to speak, let your fears go. Don't apologize to your audience. Simply share your message with them. After all, you are the expert. That's why they called upon you to speak.

These steps are certainly easier said than done. They do offer, however, some realistic advice on how to prepare a professional presentation on short notice--one that will be memorable and effective.

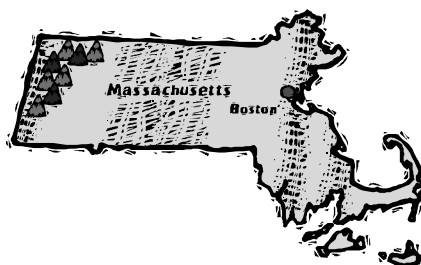
Source:

"You're On in Thirty Minutes!--How to Meet the Challenge," *Presentations*, November 1999.

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MA SAFEST STATE FOR DRIVING IN NATION



said young drivers, larger cars, higher speed limits, lack of seat belt use, and older, narrower roads also lead to traffic deaths.

Across the country, motor vehicle deaths fell 1 percent from 1998 to 1999, the third consecutive decrease in a row, following four years of increases, according to the report. But fewer deaths on the roadways hasn't necessarily translated into more pleasant driving, especially in traffic-clogged Massachusetts, said Kinsman, who lives in Marshfield. "Massachusetts drivers; it's not that they're born bad drivers, but they become that way after years of operating in a hostile, competitive environment," he said

Best and Worst States 2000 *the safest driving states*

★	Massachusetts	0.8 deaths
★	Rhode Island	1.0 deaths
★	New Jersey	1.1 deaths
★	Connecticut	1.1 deaths

the most dangerous driving states

★	Mississippi	2.7 deaths
★	S. Carolina, MT	2.4 deaths
★	AZ, LA, WV	2.2 deaths

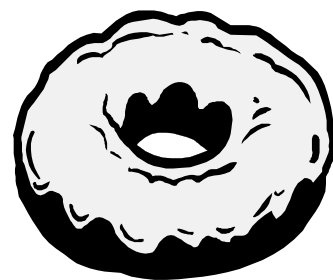
Source: National Safety Council.
Deaths are per 100 million vehicle miles in 2000.

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Driving, doughnuts don't mix

TRAVERSE CITY, Mich (AP) -- Resist that luscious jelly doughnut while driving to work and don't grab for the coffee. One distracting spill and you could end up in the ditch.

Coffee and doughnuts are among the "10 deadliest foods to eat while driving," according to Hagerty Classic Insurance, which insures collector vehicles.



The Traverse City-based company began researching the issue after getting a claim from a customer who had been in so many food-related wrecks that his license included a restriction against driving with food within reach. "People are prone to become distracted while eating," company president McKeel Hagerty said Monday. "I'll set a cup of coffee in the drink holder and hit a bump and it spills all over the place. I get distracted and angry."

He said the top 10 list wasn't scientific, but that it was based in part on figures from the National Highway Traffic Safety Administration and the Network of Employers for Traffic Safety.

Federal auto safety regulators have estimated that driver distraction--is involved in 20 to 30 percent of all crashes.

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Measuring and Calculating Slopes

Roadway grade and travel way, shoulder, and ditch line slopes affect the removal of a road's greatest enemy: WATER. Some slope enables water to flow away from the roadway, but too much creates erosion.

Table 1 contains the recommended slopes for roads cross section, shoulders, and ditches for paved and unpaved roads. Slopes are described by the vertical rise or fall per unit of horizontal distance. For example, the recommended slope for a paved road cross section is a 1/4 inch rise from shoulder to crown for each foot of horizontal road width. This is expressed as "1/4 inch to 1" or "2 percent." Steeper slopes are usually expressed as a proportion. For example, a 1:4 slope, pronounced "1 to 4," has a 1 foot rise (or fall) for every 4 feet of horizontal distance.

Table 1
Recommended Slopes for Gravel Roads

Road Cross Section

1/2 - 3/4" to 1' or 4 to 6%

Shoulder

1/4 - 1" to 1' or 6 to 8%

Ditch Front Slope

1:4 minimum or 1:2 max.

Ditch Back Slope

1:2

Recommended Slopes for Paved Roads

Road Cross Section

1/4" to 1' or 2%

Shoulder

3/4" to 1' or 4 to 6%

Ditch Front Slope

1:4 minimum or 1:2 max.

Ditch Back Slope

1:2

The Pop-level

The most accurate instruments for measuring slope are theodolites and transits. A "pop" or hand level is accurate enough for most maintenance work. Figure 1 shows the elements of a typical eye level. The operator holds the instrument in his/her hand, and steadies it against a temporary, non-bending pole. Another person is needed to help measure vertical and horizontal distance. A leveling rod works well for vertical distance.

Determining the Slope

The slope is the incline or decline between two points. It is the usual practice to call these points "A" and "B". The procedure begins with positioning the eye level (or theodolite or transit) where the operator then reads the elevation of each point on the level rod, and subtracts the values. This is the difference in elevation between points "A" and "B". The crew then measures the horizontal distance between the two points.

It is sometimes convenient to position the instrument at one of the points. In Figure 2, the instrument is placed over Point A. One measures the height of the transit or eye level as the elevation of Point A.

The slope is calculated by dividing the elevation difference by the horizontal distance. The following examples illustrate slope calculation. Note the need to carefully consider the units of measure.

Cross Section Slope

Elevation of Shoulder	4 feet-1 inch
Elevation of Crown	4 feet-8 inches
Difference in Elevation	0 feet-3 inches
Horizontal Difference	12 feet

Slope expressed as inches per foot:
3 inches/12 feet

Slope expressed as a percent:
[3 inches/(12 feet x 12 inches / foot)] x 100% = [3 inches / 144 inches] x 100% = 2 %

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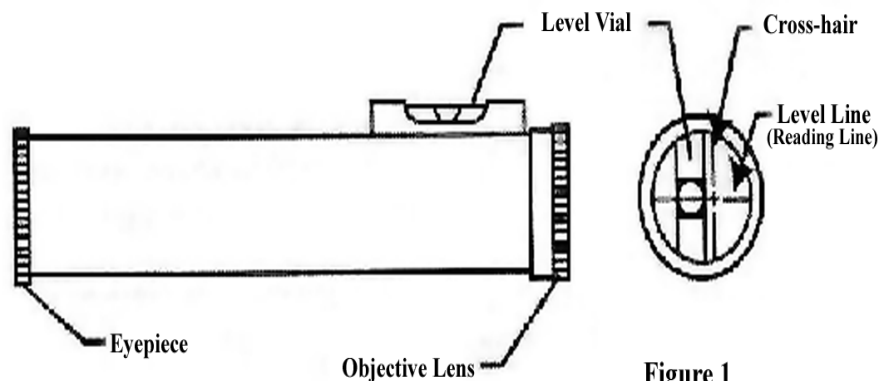


Figure 1

Ditch Front Slope

Elevation of Slope Top	4 feet-1 inch
Elev. of Ditch Bottom	5 feet-5 inches
Difference in Elevation	1 foot-6 inches
Horizontal Difference	6 feet

To express as a proportion, both measures must be the same units.

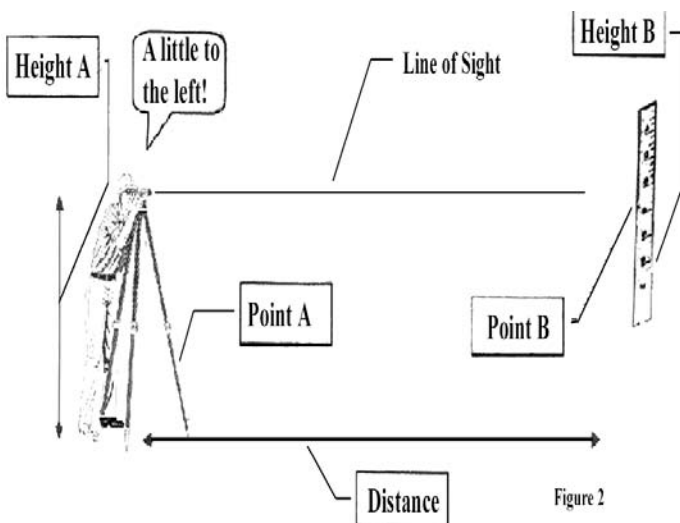
1 foot-6 inches 1.5 feet or 18 inches

6 feet=72 inches

1.5 feet : 6 feet = 1:4 or 18 inches: 72 inches = 1:4

Comparing these results to Table 1 shows that the cross section would be adequate if the road was paved, but too low for a gravel road. The 1:4 ditch slope is a minimum slope for either type road.

Knowing how to calculate roadway slopes helps municipal road crews effectively remove water without incurring erosion from water run-off. Whether using a transit or pop level, crews can determine if slopes are sufficient to carry water away from the road but not so great that water will erode road surfaces and road sides.



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the newsletter of the University of New
Hampshire Technology Transfer Center

New Videos and Publications Available through Baystate Roads

Publications:

UNS-20 Dust Control on Low Volume Roads: A Review of Techniques and Chemicals Used

A practical dust control guide for low volume roads. Includes a historical review of road building techniques. Also includes a review of techniques, products, and cost/benefit analyses.

UNS-21 Dust Pallative Selection and Application Guide

Describes the expected performance, limitations, and potential impacts of various dust pallatives. Basics, application, environmental impact and tips are discussed.

Videos:

MO-240 Forest Roads and the Environment

Provides an introduction to the maintenance of low volume roads, highlighting issues that benefit from proper maintenance activities, such as water temp., fish habitat and aggregate surfacing loss.

MO-241/242

Reading Traveled Way, Reading Beyond the Traveled Way

Considers the natural functions happening beyond the roadway (rain, erosion) and how to use that knowledge before beginning maintenance.

MO-243 Smoothing and Reshaping the Traveled Way

Covers detailed step-by-step processes used for both smoothing and reshaping a road. Covers crowned, insloped and outsloped roads as well as transition sections.

MO-244 Maintaining the Ditch and Surface Cross Drains

Provides comprehensive instructions for constructing and maintaining ditches, culverts and various surface cross drains.

THE FELLING PLAN

mine whether the tree has forward (toward the direction of fall) or backward (away from the direction of fall) lean, the operator must stand 90 degrees (perpendicular) to the intended "direction of fall" line. Back away a sufficient distance so you can observe the whole tree and draw an imaginary circle around the ends of the outer-most branches in the tree's canopy. Visualize the center of this circle and drop a line straight down to the ground from the center of this circle. Mark this spot on the ground. Is this spot in front of or behind the tree? The spot's location will determine whether the tree has forward or backward lean. A forward leaning tree will not be as difficult to fell as a back-leaning tree. However, if the tree has back lean, additional calculations will have to be made to determine if the tree's lean can be overcome and, thus, allow it to fall along its intended "direction of fall" line. Back lean calculations are discussed in Chapter 14 of *Forest Applications Training eBook*.



This is an excerpt from *Forest Applications Training eBook* by Tim Ard and Mike Bolin available from Forest Applications, P. O. Box 1048, Hiram, GA 30141 or 770-459-3791. More information can be found at:

<http://www.forestapps.com>

Chain Saw Workshop with Tim Ard

Baystate Roads was able to offer a Chain Saw Operating Techniques workshop in Lenox on April 26 with assistance from Gerry Coppola, Berkshire County Highway Assn. and Richmond DPW, and Jeff Vincent, Lenox DPW.

As you can see from these photos, attendees were extremely interested in the classroom and on-site segments. This one-day workshop covered the basics of safety and maintenance for new employees as well as those with



Checking the lean -- a crucial step. See related article on page 3.



Tim demonstrates correct cutting techniques

Over sixty attendees braved the snow-storm on a mountain top to watch Tim Ard demonstrate safe chain saw practices. Tim always amazes the crowd with precise targeting of tree placement.

experience who wanted a refresher. Baystate expects to offer the two-day version for a small class with hands-on training in the fall. The website as well as mailings will provide notification when the schedule has been decided.

DRIVING, DOUGHNUTS DON'T MIX

Haggerty analysts rated the difficulty of juggling various foods while gripping the steering wheel and how a driver might respond to a spill. Coffee was rated most dangerous. Second-worst was hot soup, followed by tacos, chili, juicy hamburgers, barbecued food, fried chicken, filled doughnuts, soft drinks and chocolate.



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The Baystate Roads Program, which publishes *Mass Interchange* each quarter, is a Technology Transfer (T2) Center created under the Federal Highway Administration's (FHWA) Local Technical Assistance Program (LTAP). FHWA is joined by the Massachusetts Highway Department, College of Engineering at the University of Massachusetts/Amherst, and local public works departments in an effort to share and apply the best in transportation technologies.

In addition to publishing *Mass Interchange*, the Baystate Roads Program facilitates information exchange by conducting workshops, providing reports and publications and videotapes on request, and offering one-to-one technical assistance on specific roadway issues. Because the program relies on input from many sources, inquiries, articles, and ideas are encouraged.

LTAP Local Technical Assistance Program

To contact the Baystate Roads Program call (413) 545-2604 or FAX 413-545-6471.

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