

Roadway Safety + and Summary of ANSI A10.47 Work Zone Safety

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Introduction

Work zones remain a dangerous element of the transportation network, representing over 1000 fatalities annually. The work-zone related injuries and fatalities involve motorists traveling through the work zone, as well as workers working on roadway construction/maintenance/utility projects. The trends of growing traffic, increased road construction, and public frustration with work zones have contributed to the growing intensity of work-zone safety impacts on workers and traveling public. The impacts raise an urgent need for guidance and training for work-zone workers, the public, and transportation agencies and groups towards prevention of highway work-zone injuries and fatalities.

This is was the driving force for the creation of a labor/management partnership that was formed and has developed an award winning "Roadway Safety" training program for workers involved in roadway construction.

The Roadway Safety Awareness Program provides an overview of common hazards in highway and road construction and simple prevention measures. It is designed for use by supervisory personnel with some safety and health experience or by safety and health personnel to orient new workers as they arrive on the jobsite. The program contents are available in English, Spanish, and Portuguese. This program includes modules on the following topics:

- Runover/Backover
- Operator Safety
- Struck or Crushed
- Flagger Safety
- Temporary Traffic Control Devices
- Nightwork
- Excavations
- Electrical Hazards
- Sprains and Strains
- Fall Hazards
- Noise Hazards
- Health Hazards
- Working Outdoors
- Emergencies
- Safe Driving
- Disaster Response
- MUTCD Typical Applications

This program is not intended as a compliance guide. It is intended to help your company produce the worker awareness needed to achieve best practices. It is not a substitute for an OSHA 10-hour course or more in-depth training. It is a labor-management safety reminder.

Roadway Safety Program in Detail

Our labor-management-government consortium members are:

- Laborers' International Union and their Health, Safety and Training Joint Funds
- International Union of Operating Engineers
- American Association of State Highway Officials
- American Road and Transportation Builders Association
- National Asphalt Pavement Association
- Texas Transportation Institute
- CNA Insurance Company

The Roadway Safety presentation has four objectives:

1. To introduce the Roadway Safety Training Program so you can see how you might be able to use it in your work;
2. To demonstrate navigational and presentation features that make the Roadway Safety Training Program easy and fun to use;
3. To answer any question you might have about the program, its operation, its availability, or its uses.
4. To provide basic best practices for safe access to work zones by compliance officers.

The Roadway Safety Training Program is an interactive presentation system focused on the most *significant* safety and health hazards and abatements in road construction. Some highlights of the program include:

- 21 interactive modules
- Instructor Guide to all the modules
- 21 toolbox training pamphlets
- 4 trainee take-away booklets
- A 20 × 14 inch, 54-screen laminated Flip Book for field use

All presentation and print products, except the laminated flip book, are included in the free CD or web download.

The Roadway Safety Training Program includes 15 basic awareness topics, ranging from *Driving to Runovers/Backovers* and seven advanced topics, ranging from *Disaster Response* to detailed *Night Work* modules. Most Roadway Safety modules incorporate real-world scenarios to build the graphics. Here, hazards of daytime and night time work are compared, using the Federal

Highway Administration's *Manual of Uniform Traffic Control Devices*, also known as the MUTCD.

Most Roadway Safety products are provided in English, Spanish and Portuguese. The interactive modules also include a 'voice' option that enables the screen language to be *spoken* in the selected language by a professional narrator.

Many RSP modules contain one or more interactive *demonstrations*. These demos cover everything from stopping distances and vehicle blind spots to trenching, night-time visibility, heat stress, and more.

One of the highlights of the RSP is the *Compliance Mode* option. When Compliance Mode is selected, the user can display OSHA, DOT, ANSI, and other standards, by state or by all states, which are associated with the individual bullet points on each screen. As with all other features, this will be reviewed specifically during the module presentations.

The Home screen is the first screen seen after opening the program. At the Home screen, you can select and set many options using the *tabs* across the top. We will not review these options in detail now. Instead, we will run the program to familiarize you with the content and operation. Then, at the conclusion of the demonstration, we will return to this Home screen to describe briefly how you can customize your presentations based on your needs. There is a "*How-To Video*" on the Home screen that shows navigation in step-by-step detail. When you receive the program, you can run the how-to video to refresh yourself on the program operation.

To start, click the START button. You see two options: Interactive or Slide Show. The interactive menu displays bullets and visuals line by line, allowing more graphics, more discussion, and more interaction on each item. Slide Show displays the entire screen at once, as a static screen.

The program always starts with this title screen, and moves directly into the first screen of the introduction module. These two screens must be presented before any of the other screens of the program can be displayed. The program is free, but we want users to remember where it came from, and to see the obligatory disclaimers and funding information.

To move to a new screen, use the arrow keys at the bottom right of the screen. The right arrow advances to the next screen. The left arrow takes you to the previous screen. The Detour allows you to go to any screen within the module.

Structure of Modules

Each screen opens with a large question. On this screen, the question is "What Are Runovers and Backovers?" In interactive mode, the instructor can query the trainees for their responses before displaying the second line. The second line begins to answer the question. And the subsequent items augment the information. We call this approach the 'Questioning Method' and all the screens follow this format. It is a format proven effective in adult education and whenever discussion is a key component in the learning process.

Moving to Other Screens

On completing a screen, move forward using the *right arrow* at bottom. In this module, Screen 2 establishes the extent of the problem and tells us that Struck By Vehicles is the biggest problem in road work, divided about 50-50 between construction vehicles and other vehicles. We also see an emphasis on dump trucks.

Numbers at left

Throughout Roadway Safety, you will see numbers in the left margin. Clicking these numbers takes you to Demo screens with more information.

When you complete a Demo, click **BACK** to return to the main screen. By the way, you are never required to click a Demo number. You can use it or not as you want. This gives you a lot of control over presentation length and detail.

Show: Help and Acronyms

Notice the Show button. When you mouse over it, it offers two options. Help and Acronyms. Help helps you learn to navigate on and between screens. With Acronyms turned on, you can mouse over an acronym to see the full name. For example, mouse over TTCD to see Temporary Traffic Control Devices. Now mouse over '1.' Help tells us to click this, or strike the '1' key to see more. When you move your mouse over the right arrow key, notice it says to click this or strike the right arrow key to go to the next screen.

Language Button

First is the Language button. At top right, it says English. If you click that, you see three choices: English, Espanol, and Portuguese. When you take Espanol, the entire screen instantly changes to Spanish. It does the same for Portuguese. The chosen language will remain until you change it.

Out of Order Menu

To go to that module, we are going to use another feature of the program. We call this the 'Out of Order Menu' button. It is located at the top left of the screen. When we click on that menu, it shows us all the modules we have selected as part of our program, and allows us the opportunity to visit any module in any order. So let's do that now. And we are going to select a very technical module that introduces trainees to the Federal Highway Administration MUTCD typical applications.

Print Materials

The Print Materials tab contains printable PDF files of all print materials available from Roadway Safety. These include:

- **Modules.** A drop-down list of all *modules* lets you select for printing a PDF containing the *static screen shots* for that module. Print materials are provided in English, Spanish, and Portuguese.
- **Trainee Booklets.** A drop-down list of *trainee booklets* lets you select one for printing. The booklets are available in English, Spanish, and Portuguese.
- **Toolbox Pamphlets.** A drop-down lists let you select a toolbox pamphlet for printing. Toolbox pamphlets come in English, Spanish, and Portuguese.

- **Instructor Manual.** The 98-page Instructor Manual covers all modules. It offers *technical notes* and suggested *classroom interactions*. It also flags the location of *interactive demos* and offers instructions in their use. The Instructor Manual is provided in English.
- **Case Studies.** Case Studies describing real-life events bring relevance to the training environment. The Case Studies are provided in English, and Spanish.

To print any PDF, click the printer icon in the lower left corner of the screen.

ANSI A10.47, Work Zone Safety for Highway Construction

In conjunction with this Roadway Safety training program, an overview of the new ANSI A10.47 Standard, *Work Zone Safety for Highway Construction* will be given. This standard is a worker safety standard. It is a voluntary consensus standard, developed by a diverse committee of industry representatives to describe minimum safe practices to protect construction workers working in this industry. The A10.47 standard has an extensive definition section, specifically defining roadway construction terminology and it further details best practices in the following areas:

- **Traffic Control.** Requires a traffic management plan, positive protection, speed reduction management and proper set up of traffic control devices.
- **Flagger Safety.** Discusses visibility requirements, training, and safe positioning.
- **Runover/Backover Prevention.** Includes requirements to prevent runovers and backovers of pedestrian workers through the use of mirrors, spotters, internal traffic control plans, and safe access/egress to the work area.
- **Equipment Operator Safety.** Covers lockout/tagout requirements, rollover protection, inspection, and maintenance of equipment and operator qualifications.
- **Excavation, Electrical and Power Tool Safety.** Requires compliance with other ANSI A10 standards and includes requirements to prevent power line contacts.
- **Fall Prevention.** Covers protection for workers who are working at heights (e.g., bridge work).
- **Materials Handling.** References the ANSI A10.40, *Reduction of Musculoskeletal Problems in Construction and Demolition Operations* standard.
- **Health Hazards.** Requires that potential health hazards, such as heat stress, concrete exposures, silica, and noise, be identified and workers protected through engineering controls, work practices, and personal protective equipment (PPE).
- **Night Work.** Includes requirements for illumination plans for the work zone, vehicle lighting, and glare control.
- **Personal Protective Equipment (PPE).** Covers high-visibility safety apparel, eye and face protection, hearing protection, foot protection, respiratory protection, and weather protection.
- **Paving Operations.** Requires compliance with the ANSI A10.15, *Safe Operating Practices for Hot Mix Asphalt (HMA) Construction* standard.

Although ANSI standards are voluntary, the Occupational Safety and Health Administration (OSHA) often cites them, and they have become precursors to OSHA standards. They can also be viewed as an industry “best practice” standard.