Instructor Manual

“Watch out behind you!”
Responder Safety on the Roadway

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Introduction to Instructor

This valuable program is provided to you by the Cumberland Valley Volunteer Firemen's Association's Emergency Responder Safety Institute. As you know many emergency responders die and are injured needlessly in highway incidents each year. You as an instructor of this course can make an important contribution to emergency responder safety on our roadways. It is through education that we can reduce and hopefully eliminate this cause of the death and injury to emergency responders. As an instructor of this course it is your job to be committed to this cause. **Stimulating class discussion should be a major thrust of the course.** It is up to you not only to teach the material in this class but to motivate the students that take this course so that they to become activists in promoting highway safety in the organizations that they belong too. Thank you again for your dedication and help in making sure "Everybody goes home."

Program Objectives

This program is designed to introduce participants to a set of best practices for Fire Department and EMS operations at incidents on or near a roadway. At the completion of the program the participant should be able to:

1. Document the hazards presented to emergency responders working on or near a roadway.
2. Summarize the actions necessary to improve responder safety at roadway incidents.
3. Correlate the strategies of the National Unified Goal for Traffic Incident Management with actions that will improve responder safety on the roadway.
4. Recommend appropriate PPE for emergency responders operating at roadway incidents.
5. Develop an incident action plan for a roadway incident that includes a safety plan, proper apparatus placement and the appropriate deployment of temporary traffic control measures.
6. Facilitate the implementation of best practices for roadway incidents within the participants agency or jurisdiction.

Preprogram Instructor Checklist

Prior to the program the instructor should verify the following:

- ☐ Course materials – PowerPoint presentation, DVDs – The Hats of Highway Safety and 10 Cones
- ☐ Student Handouts – Note pages and reference material for each student (i.e. local SOPs and 6I of MUTCD)
- ☐ Laptop computer with speakers or a connection to a sound system
- ☐ Computer projector compatible with computer
- ☐ A projection screen – The instructor should avoid using a wall or other surface not designed for projection
- ☐ DVD player with connection to projector (A TV will be required if the DVD player can not be connected to projector)
- ☐ Extension cords and powerstrips for equipment
- ☐ An easel chart and markers
- ☐ End of Program Quiz
- ☐ Student Program Evaluations and Course Certificates

Materials for Tabletop Exercise

- ☐ Printed roadway drawings or a roll of 2' wide craft paper for table top simulations
- ☐ Safe parking Cue Card
- ☐ Roll of masking tape
- ☐ Felt tip markers
- ☐ A selection of Matchbox cars, trucks and emergency apparatus for each team

Optional Equipment for demonstration purposes during program

- ☐ High Visibility Vests (ANSI Public Safety or Class 2)
- ☐ Portable Highway Signs
- ☐ Flashlight with cone
- ☐ 5–28 inch traffic cones to demonstrate a temporary taper

Program Materials

"Watch out behind you!" Responder Safety on the Roadway is provided to in PowerPoint format. The program can be shown using PowerPoint or the PowerPoint Viewer provided on the CD. The instructor can access the standard notes pages using PowerPoint or they can be printed from the PDF file also provided in Instructor Files folder on the CD. The Instructor Notes provide additional detail and background for each slide where required. It is recommended that the instructor review the Instructor Notes prior to conducting the class. There are two versions of a Student handout in PDF format in the Instructor File folder. The instructor can make copies of the version selected and provide them to the participants for note taking during the workshop.

A PDF file titled Scenario Roadway Drawings is also included in the Instructor File folder. This file provides a selection of roadway diagrams that correspond to the Tabletop scenarios provide in Appendix 1 of this manual. The drawings can be printed in a large format for use during the tabletop exercise. Where large format printing is not available the instructor can print the diagrams and provide them to the teams for use in drawing the roadway sections for the assigned scenarios. The Instructor File folder also includes an end of program quiz and a blank certificate that can be printed and provided to the participants at the completion of the program.

The Background folder on program CD includes several NIOSH investigation reports of firefighter struck-by incidents including the Midwest City OK incident that is discussed in the presentation and used as optional scenario 1 for the Tabletop exercise. Also in this folder is a NIOSH paper titled *Building Safer Highway Work Zones: Measures to Prevent Worker Injuries From Vehicles and Equipment* and Chapter 6I *Control of Traffic Through Traffic Incident Management Areas* of the 2003 MUTCD.

It is suggested that the instructor carefully review background information provided and make selected copies available to the participants of the workshop.

Contents of Program CD

Responder Safety Program – PowerPoint file

Instructor Files Folder

- ✓ Certificate of Completion
- ✓ Handout_3 Slides per page
- ✓ Handout_6 Slides per page
- ✓ Instructor Notes
- ✓ Program Evaluation
- ✓ Safe Parking Cue Card
- ✓ Scenario Roadway Drawings
- ✓ End of Program Quiz

Background Materials Folder

- ✓ MUTCD Chapter 6I
- ✓ NIOSH LODD Reports – Struck by Incidents
  - o FL 200235
  - o MN 200337
  - o MS 200213
  - o OK 9927
  - o TX 200313
- ✓ NIOSH Roadway Safety Report

Timing Suggestions

This course is designed to be presented as a one-day intensive workshop or in discrete modules that can be presented over a period of time a part of an ongoing training program. The on-day workshop format will require approximately 8 hours of classroom time including the tabletop exercise and follow up discussion. There is a great deal of material included within the course. Although war stories when pertinent are a good educational tool, they should be kept to a minimum. It is important to pace the class and breaks so that it fills the time restrictions and there is at least 60 minutes for the table top exercises and discussion. When presented in modules it may take additional time and may be enhanced to include a practical drill using one or more of the tabletop scenarios on actual roadways in the jurisdiction. Appendix B provides a plan for a suggested fire department training drill on roadway operations.

Course Set Up Instructions

The room used to present this program should be large enough to comfortably seat the participants and allow for note taking and materials review. As with any classroom, it should have good lighting and ventilation. The room should be provided with a projection screen large enough so that all participants can view the materials bring projected. A sound system should be available so that the CD's and audio clips in the program can be heard by all.

Additionally, there should be sufficient space to conduct the tabletop activity. At a minimum, this will require a 6 foot table with access from all sides for each team of 4 to 6 participants. This space could be part of the classroom or a separate space that the class moves to for the activity.

Prior to the class the instructor should take a look at the space intended for the presentation and verify that it is properly set up and that the equipment needed is available and there is sufficient power available.

Internet Resource List

The following are links to internet resources available to the instructor

ResponderSafety.com

U.S. DOT Federal Highway Administration – MUTCD Part 6 Temporary Traffic Control

U.S. DOT Federal Highway Administration – Managing Travel for Planned Special Events

National Traffic Incident Management Coalition

I-95 Corridor Coalition Quick Clearance Toolkit

NIOSH Firefighter Fatality Investigation and Prevention Program

National Fallen Firefighters Foundation – Everyone Goes Home

Answers to End of Program Quiz

1. A
2. D
3. D
4. A
5. C
6. B
7. A
8. B
9. D
10. C
11. C
12. C
13. B
14. C
15. B

Review these responses with the group after all participants have finished the quiz.

Appendix 1: Tabletop Activity

For this activity the class should be divided into small teams of 4 to 6 members. Each team should be assigned a minimum of two of the following tabletop scenarios. The scenarios selected should be based on the response areas that the students represent.

The teams should develop an action plan for the assigned incident using apparatus and personnel that the students in the team would normally work with (manpower, units usually responding, career vs. volunteer, fire police if available etc. and the traffic control equipment that is normally available at an incident). The plan should include the placement of all responding apparatus, the placement of TTC measures and a command structure that lists all functions/sectors and the primary assignments for each.

The teams should name a spokesperson and present the incident and their action plan to the group after all teams have completed the activity. The members of the other teams and the instructors should ask questions to clarify points and critique the plan. The instructor should use the evaluation criteria provided below to conduct the final critique of the action plan presented.

Instructor Note: MVA = Motor vehicle accident (assume injuries and extrication in all cases). Each scenario can be done in clear weather, snowy weather, daytime or nighttime or any mix of these conditions.

A Safe Parking Cue Card is provided in the Instructor Files folder. This document is intended to assist in the development of incident action plans for roadway incidents. The instructor can provide the participants with this document prior to the exercise or use it as a discussion tool at the end orf the exercise.

The PDF file titled *Scenario Road Sections* in the Instructor Files folder on the program CD provides a roadway layout for each of the scenarios listed below. These drawings may be printed in large format and handed out to the teams for use in the activity. If they can not be printed, the layouts can be sketched on large sheets of paper. The placement of responding apparatus should be done with the model vehicles provided (or marked on the drawing), advanced warning and safety zones should be marked directly on the tabletop drawing.

Scenarios

Scenario 1 – 2-lane suburban/rural road (straightaway):

A. MVA in right lane
B. Brush fire on right side of road
C. Vehicle fire on right side
D. EMS call on right side of road
E. FD Water supply draft site, right side

Scenario 2 – 2-lane suburban/rural road (90 degree curve):

A. MVA in right lane
B. Brush fire adjacent to road
C. Vehicle fire on right side
D. EMS call on right side of road
E. FD Water supply draft site, right side

Scenario 3 – 4-lane rural roadway with grass median (no physical barrier between east and west bound lanes)

A. MVA in left lane
B. MVA in median area
C. Brush fire in median
D. Vehicle fire in left lane
E. EMS call on right side of road
F. FD Water supply draft site, right side

Scenario 4 – 4-lane rural roadway with Jersey wall barrier between east and west bound lanes

A. MVA in left lane
B. Brush fire on right side with heavy smoke across roadway
C. Vehicle fire in left lane
D. EMS call on right side of road
E. MVA on bridge overpass

Scenario 5 – 4-lane x 4-lane intersection (2 lanes each direction) (with turn lanes in each direction)

A. MVA in intersection (left turning vehicle struck by vehicle coming opposite direction)
B. MVA in intersection (left turning vehicle struck by cross traffic)
C. Building fire on any corner at intersection
D. Vehicle fire in turn lane
E. Rear end accident in travel lane
F. EMS call on road

Instructor Note: Should teams complete their assigned scenarios prior to the remainder of the class give them the one of the following scenario to brainstorm. Optional Scenario 1 is meant to simulate the Midwest City, OK situation and to provoke thoughts on how to protect personnel AFTER a secondary crash. The NIOSH report on this incident is provided on the program CD and can be accessed on www.respondersafety.com

Optional Scenario 1 – Drawing from NIOSH report provided

You have been on location of the incident you just worked through for about 20 minutes. Patients have been extricated but are still being packaged and units are still working overhaul and spill control. Your apparatus placed in the block position (furthest Upstream) is struck by a driver who did not move over. What do you do now? Assume no other apparatus to the rear of the unit struck."

Optional Scenario 2 – No drawing provided

6-lane limited-access, high-speed highway w/Jersey wall barrier between EB & WB lanes

- MVA in center lane
- MVA in left lane/shoulder area
- MVA in opposite lane of travel (other side of Jersey wall)
- Vehicle fire in left lane
- Vehicle fire & spill in center lane
- EMS call on right side of road
- MVA w/ Med Evac
- MVA at bottom of entrance ramp, merging into traffic
- MVA at exit ramp, traffic exiting off highway
- MVA on bridge overpass

Evaluation of Scenario Action Plans

The instructor should have the each team present their action plan and review the placement of apparatus and temporary traffic control measures for the scenario.

The instructor should evaluate the plan presented

- ✓ Is the plan realistic? Did the team use realistic equipment, personnel and devices or did they use more than would actually be available?
- ✓ Was the command structure appropriate for the incident and scene safety addressed?
- ✓ Was apparatus positioned appropriately to protect personnel and operate effectively?
- ✓ Did the team deploy temporary traffic control measures that were appropriate to the incident and the projected time that units would be operating on the scene?

Appendix 2: Emergency Operations on the Roadway Drill

Objectives: Firefighters shall establish and operate in safe work areas at emergency on or near the roadway. To accomplish this they should be able to:

1. Properly position apparatus and other vehicles to protect the scene and allow for safe operation.
2. Select and use personal protective equipment for the hazard.
3. Avoid traffic when dismounting apparatus at a roadway emergency.
4. Deploy traffic and scene control devices.
5. Conduct operations at roadway incidents within the safe zone.

NOTE: Consider asking local police and highway departments to participate in the drill to improve understanding of the needs of all responders and agencies.

Setup/Location: The ideal location for this drill is private road with little traffic such as a school access road and parking lot after hours.

Equipment: PPE including Public Safety Traffic Vests and structural firefighting gear; Tools for personnel assigned to direct traffic – flashlights with wands, flags etc.: temporary traffic control devices including cones and signs.

Scenarios:

A. A two car MVA that impacts one lane of traffic on a two lane road.
B. A single vehicle into a utility pole with wires down.
C. A multi-car MVA in an intersection.
D. A car fire in an intersection.
E. Water supply operation using a waters supply that requires apparatus to position on or very close to the traveled way. (Tanker/Tender shuttle)
F. An EMS incident (non-MVA) on or adjacent to traveled way

Have companies respond into each of the scenarios and:

1. Complete an initial size-up of the incident
2. Establish proper short term blocking using first arriving apparatus
3. Establish Command and Safety Office functions
4. Properly additional apparatus, EMS and support units
5. Establish a temporary traffic control zone with sufficient advanced warning for the incident
6. Demobilize units as the event is controlled

Conduct a debriefing with all participants after each scenario. Identify what went right, what went wrong and improvements that should be made in future operations.