



Training Solutions, Delivered!

Traffic Control Through Work Zones

Leader's Guide, Fact Sheet
& Quiz

Item Number: 3012
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This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation.

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

- a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.
- b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.
- c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.
- d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes before the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

- a) Begin the meeting by welcoming the participants. Introduce yourself and give each person an opportunity to become acquainted if there are new people joining the training session.
- b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.
- c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.
- d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

3012 TRAFFIC CONTROL THROUGH WORK ZONES FACT SHEET

LENGTH: 20 MINUTES

Production Year: 1991

PROGRAM SYNOPSIS:

In the streets, it's never easy. It's crowded. People are in a hurry. They're busy; maybe too busy to notice you and the job you're working on. Somehow you've got to protect yourself and them and get the job done and that's what we'll cover in this session when we take a look at controlling traffic through work zones. We'll start by discussing the equipment that's used for traffic control around work zones and see how it's installed. We'll also see how to handle a typical lane closing as well as the safe work practices to follow whenever you're working around traffic.

PROGRAM OBJECTIVES:

After watching the program, the participant will be able to explain the following:

- The PPE needed for work;
- Warning signs and channelization devices;
- Preparing the work zone;
- Traffic control equipment and use.

INSTRUCTIONAL CONTENT:

INTRODUCTION

- In the streets, it's never easy. It's crowded. People are in a hurry. They're busy; maybe too busy to notice you and the job you're working on.
- Somehow, you've got to protect yourself and them and get the job done and that's what we'll cover in this session when we take a look at controlling traffic through work zones.
- We'll start by discussing the equipment that's used for traffic control around work zones and see how it's installed. We'll also see how to handle a typical lane closing as well as the safe work practices to follow whenever you're working around traffic.
- However, you need to realize that there are a lot of regulations covering work zone traffic control. These laws and their specific requirements may actually vary somewhat between local and national codes so you've got to do your homework and study both local and national traffic control regulations.
- Also your department may have recommended procedures to help you do your job safely. Find out what they are and be sure to follow them. Don't hit the streets until you've done your homework.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Let's start by looking at the equipment you'll need for controlling traffic. Controlling traffic safely starts with what you wear on the job.
- Orange safety vests or orange work clothes are required anytime you're working around traffic. They're important because they help motorists to see you. This may sound strange but it's very easy for you to blend into the background when a motorist's attention is on driving through the work site.
- Also having a vest that's reflectorized makes you stand out if you're working in dark areas like tunnels, in bad weather or at night.
- Hard hats can add to your visibility and protect against overhead hazards when putting up signs or working around heavy equipment.
- You may also have to wear additional personal protective gear such as steel-toed shoes and eye protection.

WARNING SIGNS

- The next group of equipment you'll use to control traffic through a work zone is warning signs. Generally they're orange diamond shaped signs that are placed ahead of the site.
- They're used to alert and inform motorists about the job up ahead. In work zones, these tend to be temporary signs that are put up and removed by the crew.

- However regulatory signs are different, usually square with black or red lettering. They tell motorists what is legally required. Because these signs have legal authority, you should never remove or cover up these types of signs, unless you receive permission from the agency responsible for the signs.
- Any signs that you put up should be of a legal and approved standard size that's spelled out in your traffic regulations. This is because homemade signs not following the required standards may be illegal and might confuse or be ignored by motorists.
- Signs should also be clean and in good condition to be sure they're visible to all drivers. After all, if they can't clearly see the sign and its message, how can it help to protect you?

CHANNELIZATION DEVICES

- The third type of equipment used for traffic control is designed to safely guide or channel the traffic around the work site. These channelization devices can include a lot of different equipment but let's take a look at some of the more common types.
- Cones are one of the most familiar channelizing tools for controlling traffic. They're easily installed and are good for short-term jobs if you keep a few things in mind.
 - First, be sure they're tall enough to be seen. The faster the speed of traffic, the taller the cones need to be and if they're used at night be sure they're properly reflectorized according to regulations.
 - Some of the other types of channelizing equipment include tubular markers, vertical panels and specially designed plastic drums.
- There are also three types of barricades that may be used. The Type 1 uses one rail, the Type 2 barricade is larger and consists of two rails, while the Type 3 is the largest and has three rails.
- Remember though, all channelizing equipment has to be at a standard size and shape that meets regulations. If you're unsure about what's required, ask questions and do your homework and like all traffic safety equipment, be sure that the devices you use are in good condition and visible. That means clean. If it's used in dark areas or at night, it should be properly reflectorized.
- As mentioned, one of the best methods to control traffic is to alert and inform drivers before they come into the work zone. The sooner they know what's ahead, the less likely they'll make wrong turns or dangerous movements.
- One of the biggest obstacles in doing this is that a driver's line of sight is blocked by other vehicles in front, so you have to get above those vehicles to warn and inform the drivers. There are two things you can use to supplement warning signs and channelizers to get above this problem.
 - One is a piece of gear known as a high-level warning device or as it's sometimes called a flag tree. Because it's tall, it can easily be seen above other vehicles. The flags help catch the driver's attention and can direct it to a warning sign that may be mounted in the middle.
 - The other piece of equipment used to supplement signs and channelizing gear is an arrow panel, known by various names such as an arrow board or a flashing arrow sign. Also the arrow pattern display must follow the appropriate regulations.
- Notice that I keep saying arrow signs and high-level warning devices are great supplements to warning signs and channelizing equipment. That's because they can't be used by themselves.
- You don't just haul an arrow board onto a lane, turn it on and start the job. That's not how you control traffic. That's how you set yourself up for an accident.
- Arrow boards and high-level warning devices are designed to be used with warning signs and channelizing equipment to safely control traffic around the work zone and the key to doing that is how you install the equipment that we've been discussing.

INSTALLING TRAFFIC CONTROL EQUIPMENT

- Generally, there are two approaches to installing traffic control equipment. The first is to follow a formal written traffic control plan.
- If you're required to install traffic control equipment according to such a plan, be sure you follow that plan exactly. Often these plans have engineering symbols or notations that might be unfamiliar, so find out what they mean if you're unsure.
- The other approach is for the crew leader or whoever's in charge to inspect the site and figure out the safest traffic control for that job. Usually this involves closing at least one lane of traffic to create a safe area to work in.
- Let's take a look at the different sections of a typical work zone, then we'll follow an example of closing a curb lane to

see how this is done safely.

WORK ZONES / TRAFFIC CONTROL AREAS

- Typically, most work zones can be broken down into five different traffic control areas. First is the advanced warning area where warning signs are usually posted. Its purpose is to tell drivers what to expect ahead.
- Next is the transition area. This is where you begin to move the traffic out of its normal path. This is usually where you position the channelizing devices such as cones; they're gradually angled or tapered across the lane. This angle is known as the merging taper.
- Next is the buffer space. This area provides a buffer or extra room for traffic to stop if a vehicle should accidentally drive through the taper.
- Then there's the workspace itself. There should be enough room not only for workers, but also for all the equipment and material you'll need for the job.
- Finally, there's the termination area. It may include a second but shorter taper, called a downstream taper, where traffic resumes its normal pattern.

PREPARING THE WORK ZONE

- Back at the site, the crew leader inspects the area prior to closing the curb lane. He notices an active driveway that they'll have to put cones along to guide cars through the work zone.
- The first thing the crew will do is put up warning signs in the advanced warning area to alert drivers to the job ahead. The location of the first sign is measured from where the taper will start. The exact distance depends on the traffic speed, lane width and taper length. Typical distances for a 25-mile an hour road can range from 150 to 200 feet depending on whose regulations you follow.
- This time there's enough space to position the sign the required distance and height. If there wasn't, the crew might want to ask their supervisor or double check their traffic regulations.
- After positioning the sign, they're ready to move on to the transition area, where they'll install the channelizing devices, in this case traffic cones.
- The first step is for one person to start flagging the traffic over into the next lane while the other person puts out the cones behind the flagger.

FLAGGING

- Now let's take a moment here and quickly review the basics of flagging. The first basic when you're flagging is your attitude. You've got to be alert and watching the traffic every second.
- Stay close to the curb when you begin signaling, then work your way out gradually as the vehicles move over.
- Use the correct flagging signals too. For paddles, you may raise and lower your free hand to indicate direction or to emphasize the need for drivers to slow down. Avoid waving the paddle.
- If flags are legal under your regulations, they'd be handled with similar motions. To stop traffic with paddles, hold your free arm up with your palm facing out and your eye on the driver.
- Again, if flags are legal in your area hold them straight out with your other arm in the same position and keep your eye on those vehicles. If a driver doesn't seem to notice you, you've got to be ready to get out of the way fast.
- And that goes for the rest of the crew too. It's in the transition area when you're starting to set up traffic controls that most accidents happen.
- Everyone has to be alert and facing the traffic. Don't turn your back to traffic. Be ready to move out of the way quickly.

CHANNELIZATION DEVICES AND TAPERS

- Once the flagger is moving vehicles over, it's time to start putting out the cones or whatever channelization devices you're using. They're positioned at an angle across the lane until they get to the beginning of the buffer area and they must be positioned according to the required specifications.
- What's required can vary a lot. A taper length varies according to the speed limit, the width of the lane you're closing and your area's traffic regulations.
- Again, this is one of those areas where you've got to do your homework. Regulations also specify the minimum number and spacing of channelizing devices to be used.
- What's important to remember is to make the taper long enough. Again, the exact length depends on the traffic

regulations you've got to follow, but commonly where the speed limit is only 25 miles per hour, required taper lengths can range from 105 to over 150 feet.

- In other words setting up a short taper should be avoided. A longer taper will get the vehicles over and merged before they get to the workspace, making it a safer place for you to work.
- What you don't want to do is to set up something like a flashing arrow sign and stick a few cones in front of it. Not only is it probably illegal but it's just not safe for anyone, not for the crew and not for the drivers.
- Sooner or later, someone is going to crash into the taper, another vehicle or a person, so find out the recommended lengths and spacing for merging tapers on your job.
- As you set up the taper, remember that it's the most hazardous area in a work zone and the most hazardous time is when you're setting up the taper.
- Always face the traffic and watch out for any vehicles coming at you. As you put the cones down, walk inside the lines of cones, keeping away from the traffic.
- The next thing is to cone along that active driveway noticed during the earlier inspection, then continue putting out cones and extending the taper. The cones or whatever channelizing devices you're using should be spaced according to regulations and extended along the buffer and work area.
- One general approach is to space them according to the speed limit. For example, where its 25 miles per hour, they'd be spaced 25 feet apart but be sure to double check your traffic codes first.
- You might think at this point that all the traffic controls are in place but the second most hazardous area is behind the actual workspace in the termination area. What happens is that vehicles may turn back into the closed lane too soon and end up hitting someone or something.
- An easy way to minimize this hazard is to put in a short taper at the end known as a downstream taper. It shows the drivers that they're past the work area.
- As usual, recommended lengths vary and a downstream taper may be optional according to some regulations. However, if installing it is up to you, just remember that this area is the second most hazardous traffic control area on any job.

PEDESTRIANS

- Setting up traffic control around work zones also covers pedestrians too. If the work zone includes a sidewalk, you'll have to do one of two things.
- The first is, where possible, keep part of the sidewalk open. Channelizing devices may be used to guide pedestrians around the work area.
- However, if you have a temporary overhead hazard or you need the whole sidewalk, it may be safest to close it. If you do, be sure it's properly marked and barricaded.
- Warning signs should also be posted to divert pedestrians to other walkways.

TRAFFIC FLOW

- Let's get back now to the lane closure we've been following and see what's next. Be sure to watch the traffic flow for 10 to 15 minutes after all the control equipment is in place.
- You could also drive through the area yourself. You want to look for any traffic problems like sudden swerving, braking or vehicles backing up excessively.
- If you notice problems now or during the duration of the job, you may be able to correct them by adjusting warning sign placement or taper length to provide earlier warning and channelization.
- If flaggers are present, be sure they're visible and doing their job correctly. But don't sacrifice the safety of the crew for the convenience of the drivers.
- Not only should you look for traffic problems but be sure there's enough room for the crew to do their work safely. If there isn't, you may have to close additional traffic lanes or sidewalks or begin closing the lane even sooner.

TRAFFIC CONTROL EQUIPMENT

- Another way to improve safety is to use any extra traffic control equipment you may have. For example, if an arrow board could make the job safer, don't leave it back at the yard; bring it along.
- And while regulations may specify a certain number and spacing of cones or devices, these numbers are usually just the minimum. If there are extra cones available, put them out.
- On the other hand, take down or cover any devices or warning signs you don't need anymore. For example, if the

flaggers are done, take down any posted flagger warning signs and if the right lane is closed, be sure that's what the warning signs say.

- When the job's done, don't keep a lane closed unnecessarily or leave unneeded warning signs up; take them down.

PRECAUTIONS DURING WORK

- Back at the site everything is in place. The crew checked for any initial traffic safety problems, parked their truck and put up a high-level warning device as required by their regulations. They're ready to start the job now.
- As the work continues, they'll be using some safe work practices that everyone can follow. First stay alert, the constant sound and motion of all traffic can lull you into not noticing hazards, then you might make a simple mistake like stepping in front of a vehicle.
- Also avoid blocking any signs or flaggers either with equipment or by standing in front of them and don't stand in the line of cones or whatever channelizers you're using. That's too close to moving traffic.
- Always wear a safety vest. As I mentioned, it's easy for a driver to be distracted by all the activity around a work zone and not notice you. Wear an orange safety vest or orange work clothes to help you avoid this.
- Finally, if you notice a hazard or you're unsure about the safest way to do something, check with your supervisor. The dumb questions are the ones you should have asked.

FINISHING THE JOB

- Once the jobs done, it's time to remove the traffic control equipment. Basically, it's the reverse of installation. You start at the back with the downstream taper and work your way forward, eventually removing the warning signs last.
- As you go keep your eyes on the traffic and stay inside the taper. Follow it forward until the last cone is removed and then get the signs and that's it, traffic's back to normal by now and you're on your way.

TRAFFIC CONTROL BASICS

- Unfortunately, we don't have enough time today to get into the more complicated traffic control patterns. However, the key to making any traffic control work is the basics we've covered in this session.
- Warn and inform the drivers ahead of the job by setting up an advanced warning area using the right signs, then use a good long merging taper to move them over well ahead of where you're working.
- Plan for the unexpected by leaving a buffer area, make sure your work area is large enough to work in safely and then put in a downstream taper to keep vehicles from cutting back in too soon.
- Periodically monitor or drive through the area to be sure your traffic controls are working and make adjustments as necessary.

CONCLUSION

- There are three reasons for using traffic controls.
- One reason is to keep a smooth and constant flow of traffic without a lot of backups and traffic jams.
- Another reason is to protect the drivers from possible accidents and the third reason: to make sure no one on the job gets run over, so be good to yourself and the people you work with.
- Use what we've covered in this program and follow your regulations when setting up traffic controls through work zones.

Traffic Control Through Work Zones

ANSWERS TO THE REVIEW QUIZ

1. a
2. d
3. a
4. b
5. a
6. a
7. c
8. a
9. b
10. a

TRAFFIC CONTROL THROUGH WORK ZONES

REVIEW QUIZ

The following questions are provided to determine how well you understand the information presented in this program.

Name _____ Date _____

1. Controlling traffic safely starts with what you wear on the job. Orange safety vests or orange work clothes are required anytime you're working around traffic.
 - a. True
 - b. False
2. Warning signs in a work zone _____.
 - a. Are orange and diamond shaped
 - b. Are used to alert and inform motorists
 - c. Are temporary and put up and removed by the work crew
 - d. All of the above
3. Cones are one of the most familiar channelizing tools for controlling traffic.
 - a. True
 - b. False
4. The Type 3 barricade is the smallest and only has two rails.
 - a. True
 - b. False
5. Two supplemental warning signs are a high-level warning device, sometimes called a flag tree, and an arrow panel.
 - a. True
 - b. False
6. Typically, most work zones can be broken down into five different traffic control areas.
 - a. True
 - b. False
7. A short taper at the end of a work zone is known as a _____ taper.
 - a. Upstream
 - b. Median
 - c. Downstream
8. Take down or cover any devices or warning signs that are no longer needed.
 - a. True
 - b. False
9. Signs or flaggers can be blocked by other equipment if that is necessary.
 - a. True
 - b. False
10. Periodically monitor or drive through the area to be sure your traffic controls are working and make adjustments as necessary.
 - a. True
 - b. False