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SAFE RESPONSE TO HIGHWAY AND TRAFFIC INCIDENTS

BY JACK SULLIVAN, CSP, CFPS

Since 1987, 45 firefighters have died as a result of being struck by vehicles. Almost 50 percent of these incidents occurred within the past four years. In addition, far more "struck by" incidents that resulted in apparatus damage and injuries have taken place within the same time frame; more than 30 incidents were recorded last year alone. The trend for "struck by" incidents is on the upswing and shows no signs of dropping off in the near future.

Fire officers need to take steps to protect their personnel by increasing training, providing guidelines and procedures, enforcing the use of appropriate personal protective equipment, and coaching drivers/operators on how to spot fire apparatus and how to protect the scene and emergency responders. Impatient drivers are showing a decided lack of respect for emergency responders, and their "me-first" attitude is threatening our safety. Add in the drivers who are under the influence of drugs or alcohol and young, inexperienced, tired, distracted, and elderly drivers with reduced reflex times, and you have a large percentage of highway motorists who present a hazard to fire personnel operating on or near roadways.

Many in the fire service are not aware of the alarming increase in the number of "struck by" incidents. We've been concentrating on two-in/two-out compliance; construction hazards; firefighter health and fitness; and a variety of other, more visible firefighter safety issues.

INCREASED EXPOSURES TO HIGHWAYS

Over time, fire departments have experienced a dramatic increase in the number of EMS first-response calls they handle each year. That change alone is exposing more firefighters to more highway-related incidents than ever before. Motor vehicle accidents are common emergencies for firefighters these days, even if the incident doesn't need a hoseline or a rescue tool. By far, more firefighters have been struck by vehicles at the scene of motor vehicle accidents than at any other type of emergency response. A response to an accident scene on a limited-access highway presents hazards such as traffic that is moving at higher speeds, lane obstructions, distracted drivers, and lack of traffic controls. To operate safely at these types of incidents, firefighters, apparatus drivers, and officers need to be trained in proper safety procedures and techniques, as well as "best practices" for highway incidents.

HAZARDS OF OPERATING NEAR MOVING TRAFFIC

Firefighters must be made aware of the hazards of operating near moving traffic. Like many other fire service safety issues, awareness of the hazard is step one. The usual entry-level firefighter training does not cover the subject well, if at all. In many volunteer fire departments, new members may be issued turnout gear and be permitted to respond on emergency calls in a limited capacity with only a basic orientation session. The new personnel are most vulnerable to "struck by" accidents because they may not be aware of the hazard. More experienced firefighters, volunteer and career, tend to focus on the job at hand and don't always look over their shoulder at approaching traffic. In January 2001, following several "struck by" incidents involving firefighters in Illinois, Fire Commissioner James Joyce of the Chicago Fire Department instructed his firefighters to operate on calls "as if someone is trying to run you over." There is no better way for the word to get out to all personnel than to have the chief officer of the fire department make the first move and issue a similar statement.

All personnel should be trained in highway incident safety before they ever respond to an emergency. Although not every emergency is a highway-related incident, our personnel are exposed to traffic hazards every time they respond to a call. The simple act of parking in front of a residence for a medical-assist call exposes crews to the possibility of being struck by a vehicle—for example, the driver has to exit the cab on the street side of the rig, stepping into the roadway.

On some apparatus, personnel in jumpseats have no choice but to exit the rig on the traffic side. In newer trucks, enclosed crew cabs may enable personnel to exit from either side, and firefighters need to be trained to exit on the side away from moving traffic whenever possible. Additionally, all personnel need to be taught to look for approaching vehicles before exiting the apparatus. They should use cab windows and rear-view mirrors on all sides to make sure traffic has stopped before they leave the truck.

ADD TO THE CHECKLIST

The incident commander needs to add scene safety and traffic control to the ever growing checklist of incident command activities. The job can be delegated to a scene safety officer or other line officer, but someone needs to be looking out for firefighters' safety and the hazards presented by passing traffic. A recent National Institute of Safety and Health (NIOSH) Firefighter Fatality Investigation report (# 99-27) recommended that fire departments should, among other things, "ensure that firefighters responding to a scene involving a highway incident or fire must first control the oncoming vehicles before safely turning their attention to the emergency." NIOSH also recommends that "personnel position themselves and any victims in a secure area when it is impossible to protect the incident scene from immediate danger."

In the same report, NIOSH also recommends that every fire department have a standard operating procedure (SOP) regarding emergency operation for highway incidents. This is an excellent tool for training personnel also. All firefighters, new and experienced, should know the highway incident SOP before they respond on any call. At the same time, many of the procedures outlined in the SOP should also be used at every incident.

One way to train personnel on the procedures outlined in the SOP is to conduct a tabletop session in the station. The instructor can use die cast fire trucks, a large roll of craft paper, and markers. Any number of roadway scenarios can be presented for drivers and officers pertaining to how to approach an incident, spot or park apparatus, channel traffic, and close lanes. You can draw roadways on the paper to simulate highways in your response area. Draw intersections, freeway entrances and exit ramps, blind curves, bridges, hills, and

other features found in your area. Simulate motor vehicle accidents, car fires, haz-mat situations, medical-assist calls, and brush fires. Be sure to discuss where equipment is located on various apparatus for each type of scenario. Simulate how attack and supply lines would be pulled on each piece of apparatus, and emphasize working on the side away from traffic whenever possible. Consider relocating some equipment on your rigs if it would make for safer operations along a roadway.

CHANNELING TRAFFIC

Personnel should know how to properly deploy cones for channeling traffic, assuming the cones are available on the apparatus. If you don't currently have road cones on your rigs, consider adding them to your equipment to help mark out safe work zones at highway incidents. Taller traffic cones with reflective bands are best and can create an effective channeling system around an incident for motorists. When safe to do so, using flares near the cones can enhance visibility in low-light situations. Be sure to train personnel in how to deploy the cones far enough back from the incident to give motorists a chance to react properly before entering the scene. For highway speeds higher than 50 mph, cones need to be deployed at least 250 feet before the incident to be effective. The cones should be used diagonally across the roadway where necessary and along the entire length of the safe zone, including in front of the apparatus, to mark where traffic can safely reenter the blocked lanes. Arrangements should be made with local highway department officials to assist with road cones and warning signs when fire department equipment is not sufficient for properly protecting the scene. Report any incident that is going to involve roadway impairments for more than an hour to local or state highway officials so they can assist with traffic management.

APPARATUS LIGHTING

Drivers should know how to arrange apparatus warning lights in a way that will most effectively protect the scene. Apparatus lights, especially headlights, should not pose glare hazards for motorists passing the scene. The work area should be lighted with floodlights; make certain they do not blind motorists. While strobe warning lights are excellent for calling attention to emergency apparatus, they can also confuse some motorists and do nothing to inform motorists of the action you want them to take as they approach the scene. Flashing arrow boards and portable warning signs can indicate the direction in which you want motorists to shift as they approach the scene. If your fire department apparatus doesn't have either, look to local highway officials for assistance in deploying these effective traffic-control tools. If your apparatus does have these warning devices, be sure all personnel know how to deploy them for maximum effectiveness. Amber warning lights are very effective for identifying work zones and convey the message "caution-slow down." Some fire departments are using more amber lighting on the back of apparatus to protect highway incident scenes.

COORDINATE WITH LAW ENFORCEMENT

Coordinate and communicate with law enforcement officials on traffic-control strategies before you have a highway incident. Road and lane closures are not popular with law enforcement or the general public, but they may be necessary to provide for a safe incident scene. Preplanning for road or lane closures will enable that strategy to be implemented quickly and safely. Fire departments need to be aware of the additional hazards presented by lane closures, and they should minimize the length of time that lanes are closed. Make sure personnel know how to properly close off roadways and travel lanes using apparatus, signage, police cars, arrow boards, traffic cones, or other devices in as safe a manner as possible.

PROTECTING THE SCENE WITH APPARATUS

Park fire apparatus used to protect a scene at a 45° angle with the front wheels turned as far as possible in the same direction as the angle. Be sure to teach drivers to position far enough back from the work area so that the truck will protect the scene and the workers. Proper spotting and parking of the rig will prevent a moving vehicle from pushing the truck into the work area. The incident commander should direct later-arriving apparatus to specific parking areas; this will keep the work zone safe. Responding apparatus not needed at the scene should be staged off the highway and away from the scene until needed. For motor vehicle accidents, establish a safe loading area for ambulances that will be transporting victims.

PERSONAL PROTECTIVE EQUIPMENT

All firefighters working a highway incident should have high-visibility personal protective equipment (PPE) available. In 1999, the Safety Equipment Association published an American National Standard for High-Visibility Safety Apparel (ANSI/ISEA 107-1999). The standard provides a guide for safety apparel that signals the user's presence visually in hazardous situations under any light conditions by day and under illumination by vehicle headlights in the dark. Much emphasis has been placed on the reflective aspects of turnout gear and safety vests in the past, but today's highway traffic situation requires high visibility at all times, not just in the dark. High-visibility apparel is both retroreflective and fluorescent. When specifying new safety vests, be sure to consider apparel designed to meet the requirements of the new standard for the best visibility of your personnel during all light conditions.

Helmets, preferably with reflective markings, should also be worn. Bunker gear should have reflective striping as outlined in current National Fire Protection Association (NFPA) standards. Once you have high-visibility PPE, officers should monitor their usage. Spares should be available, and firefighters should be trained in the proper storage, care, and use of this apparel so that maximum visibility is maintained. Scene safety officers should make sure all personnel on-scene are properly dressed for the function they are performing.

ACCOUNTABILITY SYSTEM

Have a personnel accountability system in place, and use it at all incidents. In a 1998 highway incident on the Pennsylvania Turnpike, eight firefighters and two EMTs were struck by an overturned tractor trailer that went out of control while passing a minor injury accident. One firefighter was killed; the others suffered extensive injuries. The firefighter accountability system in place at the time enabled the crews responding to the call for assistance to confirm that no emergency responders were trapped under the overturned trailer. Would you be able to do the same with your current accountability system?

Fire departments need to take the lead in creating highway incident management teams that include all emergency responders in their area. They should also be proactive about training all personnel in highway incident safety. If the current trend continues, five more firefighters will be killed in "struck by" incidents in 2001. We need to do everything we can to interrupt that trend.

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