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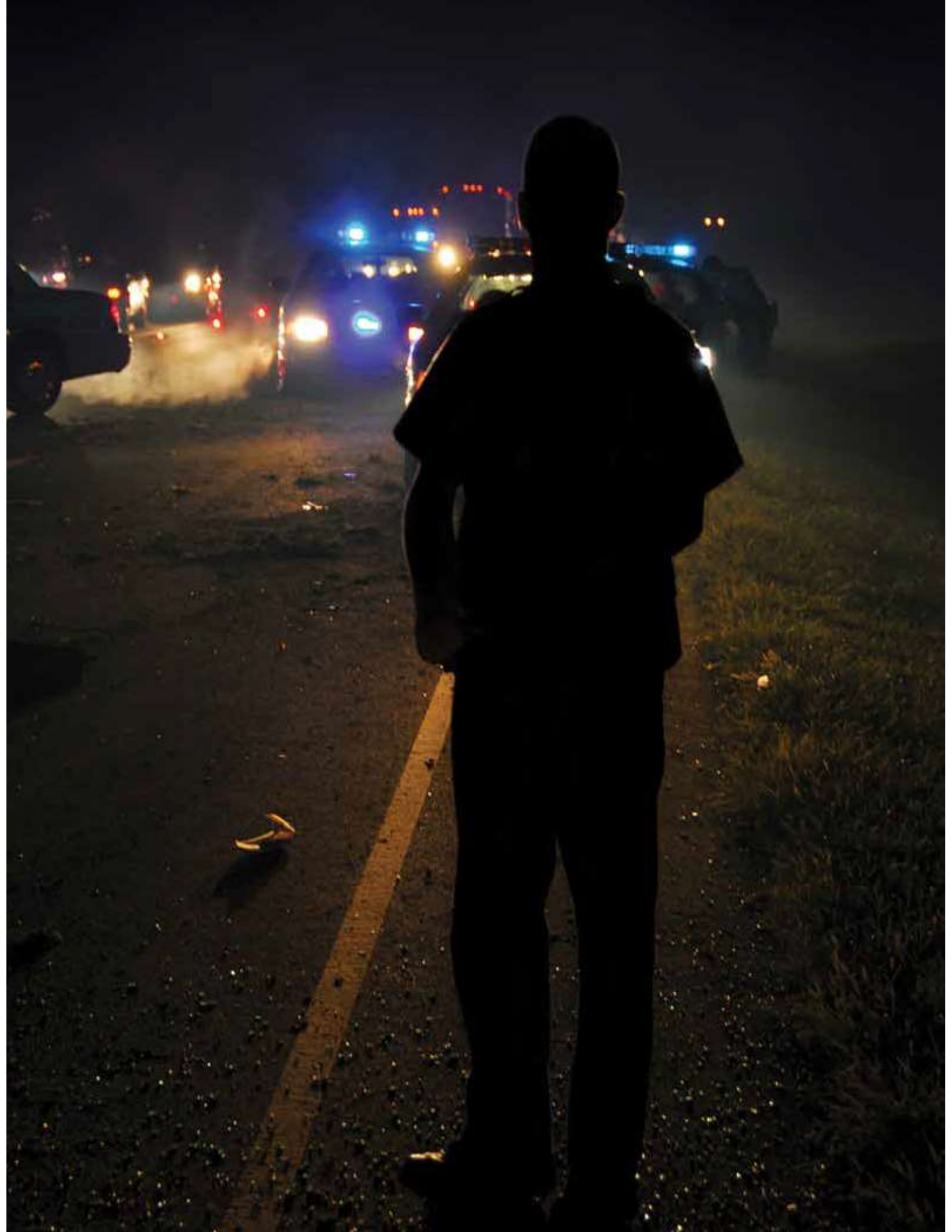


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IMPROVING OFFICER SAFETY ON THE ROADWAYS

BY BRIAN MONTGOMERY

NIJ and the National Institute for Occupational Safety and Health have teamed up to help prevent officer fatalities from motor vehicle crashes and roadside incidents.

The FBI reports that, between 2007 and 2016, crashes involving motor vehicles — including collisions¹ and being struck by moving vehicles while working on roadways — were the single leading cause of officer line-of-duty deaths.² According to the National Law Enforcement Officers Memorial Fund, there were 50 motor vehicle-related officer fatalities in 2014 (37 percent of all officer fatalities), 49 in 2015 (35 percent), and 54 in 2016 (38 percent).³ Of these fatalities, automobile crashes were the number one cause.

Understanding the circumstances behind line-of-duty deaths from vehicle crashes and roadside incidents is a critical step in reducing officer fatalities. To that end, NIJ conducts and funds research, develops technologies and standards, and partners with other federal agencies to address the concerns and issues related to motor vehicle safety, whether the officer is inside or outside a vehicle. Some of NIJ's efforts over the past few decades have included funding research into vehicle visibility and conspicuity, supporting the development of reflective vest standards, and participating in research advisory groups.

Since 2013, NIJ and the National Institute for Occupational Safety and Health (NIOSH) have been collaborating on two projects that investigate ways to improve officer safety on the roadways. The first project evaluates a comprehensive motor vehicle

safety program in Las Vegas; the second investigates specific officer fatalities to identify risk factors and develop recommendations. The goal of both projects is to help increase safety for law enforcement officers as they perform their duties on the nation's streets and highways.

Evaluating a Comprehensive Safety Program

In 2009, the Las Vegas Metropolitan Police Department lost three officers to motor vehicle crashes in a six-month period. Following these incidents, the department completely overhauled its motor vehicle safety program. It changed its vehicular policies and driver training and implemented a major internal safety campaign, which included posters and signs in frequented areas, decals on law enforcement vehicles, and safety reminders from both dispatchers and supervisors and at roll calls.⁴

An NIJ-supported NIOSH research team reviewed crash and injury data for three years prior to the safety program's inception, the initial year of implementation, and three years afterward. Preliminary findings showed statistically significant decreases in the agency's motor vehicle crash and injury rates after the program was implemented.⁵ Seatbelt usage also improved. Three years after implementation, there were no line-of-duty officer fatalities caused by vehicle

The goal of the NIJ-NIOSH projects is to help increase safety for law enforcement officers as they perform their duties on the nation's streets and highways.

crashes, and the reduction in motor vehicle injuries and associated lost duty days saved the department an estimated \$1.1 million.

The study included data gathered over the same time period from two similar-sized agencies that did not institute comparable safety programs. These agencies did not see any substantial changes in line-of-duty officer motor vehicle crash or injury rates.⁶

Examining Specific Officer Fatalities

NIJ and NIOSH have also created a fatality investigation team to examine law enforcement officer fatalities that occur during traffic-related operations. The goal of the pilot program — modeled after the existing NIOSH firefighter fatality investigation program — is to identify risk factors for fatal motor vehicle-related events and develop recommendations for preventing future fatalities and injuries. This program not only gives the affected agency greater insight into the specific event but also spreads the lessons learned to the broader law enforcement community.

The investigation team — made up of researchers, epidemiologists, and engineers from NIJ and NIOSH — examines officer deaths caused by motor vehicle crashes or by a vehicle striking an officer who is directing traffic, investigating vehicle incidents, responding to calls for service, or conducting traffic stops. The team investigates the scene of the incident and interviews witnesses, agency leadership, trainers, dispatchers, and any other individuals who may have information about the incident or may have been

involved in it. They also collect radio traffic, vehicle GPS information, video, training records, and any other data that they can use to analyze the incident.⁷

The team then describes the event and contributing factors in a report and offers recommendations. Reports are available on the NIJ and NIOSH websites, where law enforcement agencies, officer organizations, and safety and health researchers can easily access them.⁸

As of December 2017, the team had conducted five investigations. Following is a synopsis of three of the completed investigation reports.

New Mexico

On December 5, 2013, a 47-year-old sheriff's office sergeant was investigating multiple minor motor vehicle crashes on an interstate highway during blizzard conditions. Disabled vehicles were situated on the shoulders of the northbound and southbound interstate lanes as well as in the median. Officers from both state and county law enforcement agencies had responded at the scene.

Having crossed the highway to speak to other officers, the sergeant was walking along the northbound shoulder, facing traffic, when a passing motorist lost control of his vehicle and slid onto the shoulder, striking the sergeant. After fire and rescue personnel stabilized him at the scene, the sergeant was transported to a nearby Level 1 trauma center, where he succumbed to his injuries the following day.

Some key contributing factors to the incident included severe atypical weather with little to no warning, lack of traffic control or scene management due to limited resources, and civilian motorists who failed to appropriately adjust to driving conditions. Snow squalls had begun about 90 minutes prior to the incident, temperatures were below freezing, and the roads became icy. Multiple disabled vehicles littered the shoulders and median of the interstate. As officers responded, they identified disabled vehicles and provided assistance. As more officers arrived on the scene, they continued to assist motorists, but they

did not develop a scene management plan or institute traffic control. Traffic was still allowed to flow freely through the area. From dashcam video, it appears that a passing motorist attempted to change lanes while traveling into the incident area and lost control of his vehicle on the icy road, striking the officer.

Based on the team's investigation, some recommendations include providing resources for oversight at a scene, ensuring that officers are properly trained in traffic management, providing officers with temporary traffic control devices, and ensuring that officers are provided with and use reflective vests while working traffic incidents. When multiple officers respond to a scene, at least one officer should be responsible for oversight. This officer should continually assess the scene, request resources as needed, and verify that all of the traffic control measures implemented are effective.⁹

Oklahoma

On January 31, 2015, a 30-year-old Oklahoma Highway Patrol trooper was at the scene of a crash involving a tanker truck when he was struck by a passing motorist and fatally injured. The tanker truck was overturned; it blocked the left westbound lane of the interstate and extended into the median. One additional trooper and two officers from the local county sheriff's office also responded to the crash.

The two troopers were standing in a westbound lane, upstream of the lane closure, in an area that was partially blocked to traffic. They had their backs toward oncoming traffic as they assessed the scene. At that time, a motorist driving in the westbound lane partially left the roadway, went around a patrol car, and struck both troopers. One trooper died on impact; the other was critically injured and transported to a Level 1 trauma center.

A distracted motorist, distracted officers, and vehicle and officer positioning were all contributing factors to this incident, according to the investigation team. The motorist who struck the officers had been using a cellphone for a long time prior to reaching the crash scene. The driver recognized that there were police

vehicles present; however, the driver believed that it was a traffic stop and not a crash blocking part of the roadway.

When the officers arrived on the scene, they were unable to place their vehicles in an optimal configuration. The drivers of multiple civilian vehicles, including a tractor trailer, had stopped to assist the overturned tanker truck. The officers instructed these drivers to move their vehicles; however, they did not reposition their patrol vehicles before the fatality occurred. The officers were also distracted by civilian bystanders who were trying to provide the officers with information about the incident and were walking near moving traffic next to the crash.

The investigation team recommended that agencies consider providing training and instituting a campaign to remind officers that safety for themselves and others is the top priority when responding to traffic incidents. After officers provide proper traffic management, assess what other assets are needed (ambulance, fire service, tow truck), and verify that all individuals in the area are in a safe location, then they can begin to investigate the crash. Agencies should also consider implementing or continuing to promote public awareness campaigns to remind the driving public to be more cautious when approaching incident scenes and emergency response vehicles.

Lastly, the investigation team recommended that law enforcement agencies consider advocating for policies or agreements with neighboring jurisdictions to provide both law enforcement and fire service responses to all traffic incidents. In this case, the fire service was not dispatched until after the officers had been struck. The investigation team found that if the fire service had been dispatched to the original call, there may have been more opportunity to provide a safer scene for all involved.¹⁰

Tennessee

On May 10, 2014, a 25-year-old police officer was fatally injured when he was struck by a motor home and dragged under its trailer on a four-lane interstate highway. The officer had responded to a jackknifed

and overturned pickup/trailer combination that was blocking an entrance ramp to the interstate's northbound lanes. To assist with traffic control, the officer positioned his patrol unit south of the entrance ramp in Lane 3 (the lane second from the right). A Tennessee Department of Transportation help-truck operator positioned his vehicle next to the patrol unit to block the shoulder and Lane 4 (the far right lane).

The officer and help-truck operator were standing between their vehicles, near the driver's side door of the help truck, when a motor home pulling a trailer approached the scene in Lane 3. The driver of the motor home reported that the speed and volume of traffic in Lanes 1 and 2 prevented him from moving to the left; as a result, he attempted to drive between the police car and the help truck. The help-truck operator saw the oncoming motor home, yelled to the officer, and ran out of the way; the officer was unable to do so. The motor home and trailer sideswiped the help truck and struck the officer. The officer was dragged underneath the trailer for 116 feet before the motor home came to a stop. He died at the scene.

The investigation team identified the following contributing factors in this incident: failure of the motor home driver to slow down and merge left, the position of the patrol unit, the position of the officer (standing in a partially open lane, facing away from oncoming traffic), and a delay in updating the dynamic message sign. The positioning of the response vehicles allowed just enough room for a vehicle to drive between them. Cones were placed to warn oncoming motorists to move over; however, they did not provide a barrier to protect the responders on the roadway.

The investigation team noted that all workers on the roadway need to be fully aware of their surroundings at all times and identify hazardous areas to avoid — in this case, the space between the response vehicles. Mobile dynamic signs are useful when kept up to date. In this incident, the sign indicated only that the far right lane was closed; however, at the time of the incident, the two right lanes were closed. Although drivers should always use caution when approaching an incident, providing

accurate and timely information to motorists may help prevent these types of crashes.¹¹

Officers Must Remain Vigilant

One of the commonalities in these investigations has been officers who are distracted by processing the scene or who become complacent while on or near the roadways. Even though officers routinely respond to roadway incidents, conduct traffic stops, and assist other first responders, they must always be aware of their surroundings and should not assume that motorists will drive in a safe manner when approaching emergency response vehicles. Situational awareness is key, no matter the volume or speed of traffic in and around the response area.

Training Is Critical

Another underlying theme from these two NIJ-NIOSH projects, as well as other research, is that strong officer safety policies and training can mitigate the underlying causes of fatalities and injuries sustained by officers if they are constantly reinforced, implemented consistently across the entire agency, and hold officers and supervisors accountable. Agencies should have a mechanism for assessing the effectiveness of their policies and training, the impact of any changes to those policies and training, and other factors that may influence their officers' environment.

About the Author

Brian Montgomery is a general engineer in NIJ's Office of Science and Technology.

For More Information

To learn more about NIJ's work in police roadside safety, visit NIJ.ojp.gov, keyword: roadside safety.

This article discusses the following interagency agreements:

- Interagency agreement number 2013-ER-R-3794
 - Interagency agreement number 2013-ER-R-3795
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Notes

1. This includes all types of collisions, whether the fault of the officer or the other driver.
2. U.S. Department of Justice, 2016 Law Enforcement Officers Killed & Assaulted (Washington, DC: Federal Bureau of Investigation, Criminal Justice Information Services Division), <https://ucr.fbi.gov/leoka/2016>.
3. National Law Enforcement Officers Memorial Fund, Causes of Law Enforcement Deaths Over the Past Decade (2008-2017) (Washington, DC: National Law Enforcement Officers Memorial Fund).
4. For more information on the Las Vegas Metropolitan Police Department's safety program, contact Sergeant Lou Maldonado at L4070M@LVMPD.com or (702) 828-4010.
5. Hope M. Tiesman, Melody Gwilliam, Jeff Rojek, Scott Hendricks, Brian Montgomery, and Geoff Alpert, *The Impact of a Crash Prevention Program in a Large Law Enforcement Agency*, forthcoming.
6. Ibid.
7. Under this pilot program, the investigation team analyzes both new incidents and incidents from the past year involving motor vehicle-related fatalities. The team selects cases that differ from previous investigations so they can generate a broader set of lessons learned and determine

what types of incidents might generate the most useful information. The team then contacts the agency to determine whether it is interested in participating in an investigation. After the agency and investigation team reach an agreement, investigators gather information through interviews and review available records to develop a description of the conditions and circumstances leading to the death or deaths. Participation in the investigation is voluntary, interviewees are not asked to sign any statements, and interviews are not recorded. The reports do not name the deceased officer, the law enforcement agency, or those interviewed.

8. As the reports become available, they can be downloaded from the "Law Enforcement Officer Motor Vehicle Safety" webpage of the National Institute for Occupational Safety and Health at www.cdc.gov/niosh/topics/leo/.
 9. Division of Safety Research, *Sergeant Struck by a Motor Vehicle on Interstate Highway — New Mexico* (Morgantown, WV: National Institute for Occupational Safety and Health, January 21, 2016), <https://www.cdc.gov/niosh/topics/leo/pdfs/L201401.pdf>.
 10. Division of Safety Research, *Trooper Struck by Vehicle While Investigating Crash on Interstate Highway — Oklahoma* (Morgantown, WV: National Institute for Occupational Safety and Health, July 10, 2017, revised August 4, 2017), <https://www.cdc.gov/niosh/topics/leo/pdfs/L201501.pdf>.
 11. Division of Safety Research, *Officer Struck by a Motorhome While Establishing Temporary Traffic Control on Interstate — Tennessee* (Morgantown, WV: National Institute for Occupational Safety and Health, November 7, 2017), <https://www.cdc.gov/niosh/topics/leo/pdfs/L201601.pdf>.
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