BY
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Motor Vehicle Crash and Struck-By LODD Investigations

NIOSH Case Study and Recommendations

THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH) LAW ENFORCEMENT OFFICER (LEO) MOTOR VEHICLE CRASH AND STRUCK-BY FATALITY INVESTIGATIONS PROGRAM INVESTIGATES LEO LINE-OF-DUTY DEATHS DUE TO MOTOR VEHICLE EVENTS. THIS PROJECT USES THE NIOSH FATALITY ASSESSMENT AND CONTROL EVALUATION (FACE) MODEL TO INVESTIGATE MOTOR VEHICLE-RELATED OCCUPATIONAL FATALITIES OF LAW ENFORCEMENT OFFICERS IN THE UNITED STATES.

These investigations identify risk factors for fatal motor vehicle-related events that will be used to develop prevention recommendations. The recommendations are shared with law enforcement agencies across the United States with the goal of reducing LEO motor vehicle–related deaths.

On the morning of May 10, 2014, two Metropolitan Nashville, Tennessee, Police Department (Metro PD) officers responded to investigate a motor vehicle crash on an entrance ramp to an eight-lane interstate highway. The surface of the interstate roadway was asphalt, and a concrete barrier separated four lanes in each direction, north and south. At the incident scene, a guardrail was present on the outside of lane four (rightmost lane) northbound. Visibility was reported to be 10 miles.

This was a single-vehicle crash that involved a pickup truck towing a large trailer. The driver had tried to avoid crashing into a vehicle that was merging into traffic from an on-ramp when he lost control of his vehicle, which flipped the trailer on its side. The pickup was facing southbound in the rightmost northbound lane, and the trailer was blocking the on-ramp.

Officer A was the primary officer because the incident occurred in his patrol zone. Officer B was providing assistance, protection, and traffic control while Officer A investigated.

Two Tennessee Department of Transportation (TDOT) HELP trucks also responded to this crash to assist with traffic flow and lane closure. TDOT operates HELP trucks on Tennessee's most heavily traveled highways. The mission of HELP is to minimize traffic congestion, promote the safe movement of people and products, and improve the travel environment. HELP works in partnership with emergency response agencies and other TDOT units as part of a highway incident management team. TDOT also controls the dynamic message signs (DMS) that are used to alert motorists to travel conditions, AMBER Alerts, and severe weather. A DMS was located approximately two miles south of the crash scene, alerting motorists traveling northbound of a right lane closure ahead.

Initially, both patrol units and both HELP trucks were located south of and close to the overturned pickup truck. In order to provide a larger buffer zone, one HELP truck (HELP Truck B) and one patrol unit (Patrol Unit B) were repositioned farther south. HELP Truck A remained in lane four and Patrol Unit A's vehicle was parked at an angle across the entrance ramp.

The operator of HELP Truck B repositioned his vehicle farther south, straddling the right shoulder and lane four and placed cones behind the truck. The operator of HELP Truck B judged this position to be as close to the curve in the road as he considered safe. The truck's arrow board with the left directional arrow flashing was activated, and the operator notified his supervisor that an additional HELP truck was needed to assist with traffic farther south due to the location of the crash and the lay of the road.

Patrol Unit B also moved south, blocking lane three and parking its vehicle parallel to HELP Truck B. The emergency lights were activated on Patrol Unit B in a right-to-left directional pattern consistent with the HELP truck arrow board; the HELP Truck B operator repositioned the cones to block lanes three and four, behind both vehicles. Officer B exited his vehicle to speak to the HELP Truck B operator. The HELP Truck B operator advised Officer B that another HELP truck was on the way to assist with traffic control.

The HELP Truck B operator and Officer B were facing each other between their two vehicles discussing traffic control when the HELP Truck B operator noticed a large motorhome pulling a trailer traveling toward them and realized the motor home was not going to stop. The HELP Truck B operator yelled, "Look out," and ran in front of his truck, toward the right shoulder of the interstate. According to the HELP truck operator, Officer B turned facing the motor home, waving his arms. The motor home continued traveling through the cones, sideswiped the HELP Truck B and struck Officer B. The officer was pinned underneath the trailer and dragged 116 feet before the motor home reached its resting point with Officer B trapped under the trailer.

The HELP Truck B operator stated he immediately notified his dispatcher that the officer had been hit, requested an ambulance, and then ran to Patrol Unit A to report Officer B had been struck. Officer A could see Officer B pinned under the trailer and ran to the scene

Top: The incident scene showing the position of the patrol unit and the HELP truck. Bottom: Re-creation of motorist visibility 900 feet south of crash site.

where he determined Officer B showed no signs of life.

Officers from the Metro PD and Tennessee Highway Patrol, ambulances, fire department emergency vehicles, and additional HELP trucks arrived to secure the scene. The northbound lanes of the interstate were closed, and traffic was rerouted until the scene was cleared.

After the incident, the motorist told the investigating officer that, as he approached the crash site, he saw the DMS, and, at that time, the sign read right lane closed. In response, he moved left one lane (lane four to lane three) and continued driving. The motorist stated his speed was approximately 60 miles per hour as he came around what he described as a blind curve in the road. He could see the patrol unit and the HELP truck blocking the two right lanes, as well as the two people standing between the vehicles. He stated he was not able to move into a farther left lane due to the traffic density. Although he saw the two people standing between the HELP truck and patrol unit, he thought driving through the opening was the only option.

The Tennessee Crash Investigation Unit investigated the incident. During their investigation, an older police department command vehicle, similar in size and geometry to the motor home, was used to recreate the motorist's actions. At 900 feet south of the crash site, the parked patrol unit and HELP truck were clearly visible.

Key contributing factors identified in this investigation include the following:

- Motor home driver not slowing down and merging left
- Positioning of patrol unit
- Law enforcement officer standing in partially open lane
- Law enforcement officer looking away from oncoming traffic while discussing traffic control with HELP truck operator
- Delay in updating dynamic message sign

RECOMMENDATIONS

The following recommendations focus on methods that could be used to eliminate or mitigate the factors identified as contributing to this incident. They are not aimed at any agency, but are intended for consideration by all law enforcement agencies, state and local governments, and departments of transportation, as well as safety researchers and the general public.

Recommendation 1: State, county, and municipal authorities should consider promoting public awareness campaigns to inform motorists of the risks that law enforcement officers face while operating along the roadside and of the need to follow "move over" laws.

Recommendation 2: Law enforcement officers and other emergency responders should identify and move to a safe area within an established temporary traffic control zone that minimizes their exposure to oncoming motor vehicle traffic and should maintain situational awareness.

Recommendation 3: Law enforcement agencies should consider developing a standard operating procedure (SOP) that includes guidance on how to properly establish a temporary traffic control plan, including advance warning and transition areas for roadway emergency incidents.

Recommendation 4: Emergency responders should consider positioning patrol units and other emergency vehicles as they arrive on the scene to maximize the protected work zone for the emergency responders.

Line-of-duty deaths for law enforcement officers during motor vehicle–related incidents are preventable. It is important to promote motor vehicle safety among officers so they can stay safe while working to make communities safer.

ACKNOWLEDGMENTS

The NIOSH Fatality Investigations Team would like to acknowledge the Tennessee state and local law enforcement agencies, fire department members, and emergency medical responders who were involved in this incident for their assistance and willingness to share their stories so that other agencies and first responders can learn from their experience.

ADDITIONAL INFORMATION

- NIOSH Law Enforcement Motor Vehicle Safety webpage: www.cdc.gov/niosh/topics/leo
- Full investigation Report: www.cdc.gov/niosh/topics/leo/pdfs/L201601.pdf

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OCTOBER 2019

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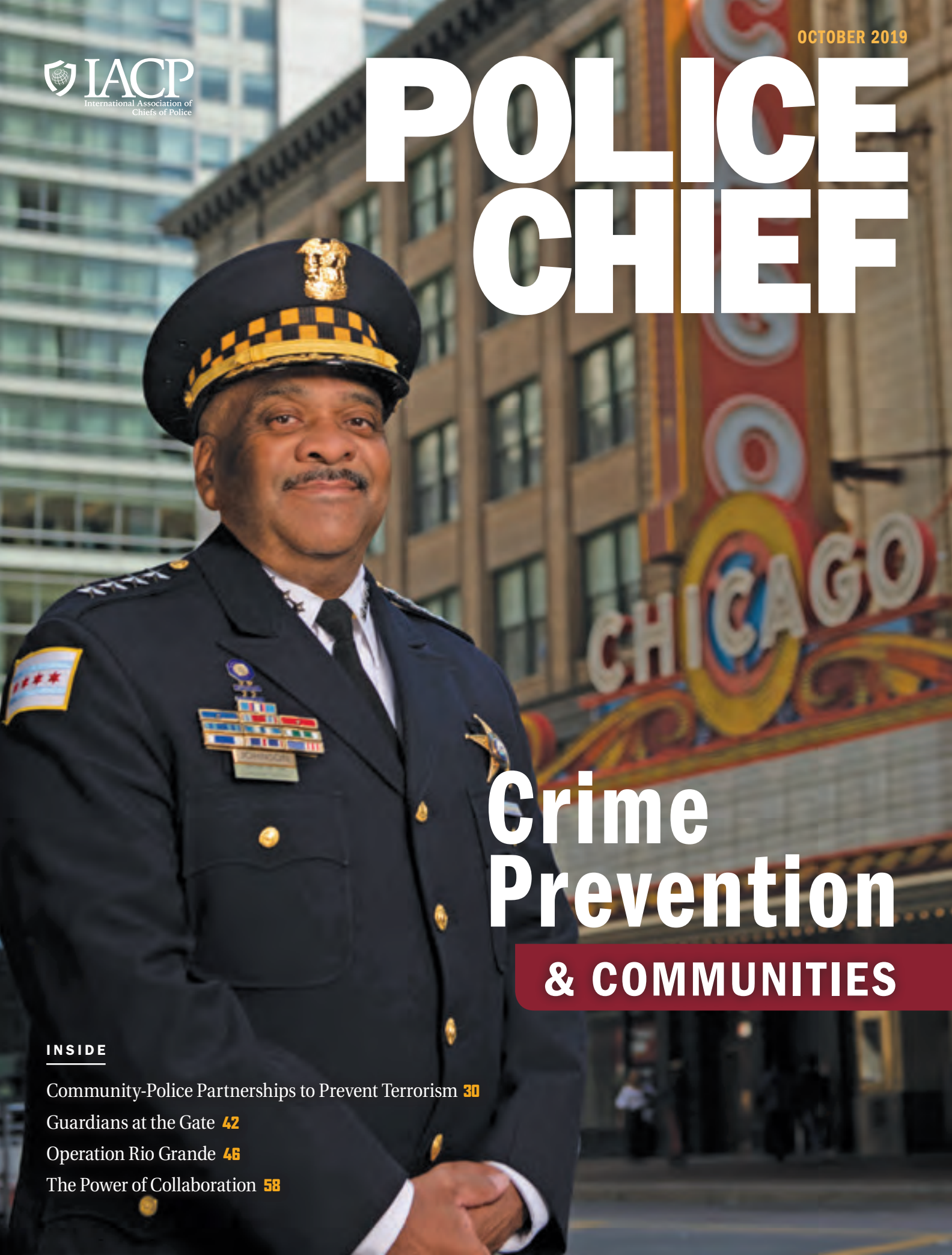

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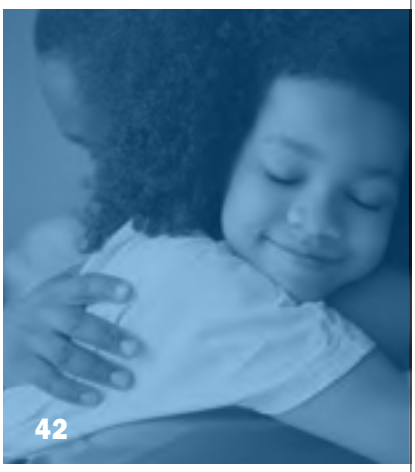

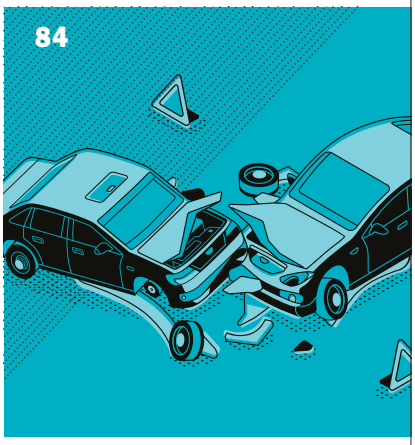

84 Combating Distracted Driving

Distracted driving is not a new problem, but the proliferation of cellphones has increased driver distraction. Agencies in Arizona and elsewhere are addressing driver behavior to curb the danger and reduce crashes.

KENT KISER, JERRY SJOGREN

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14

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16

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16

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18

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24

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24

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24

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30

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42

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42

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42

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46

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58

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70

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70

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84

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84

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POLICE CHIEF

A PUBLICATION OF THE IACP

OCTOBER 2019 | VOLUME 86, NUMBER 10

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Article notes are available online.

The Police Chief (ISSN 0032-2571) is published monthly by the International Association of Chiefs of Police, 44 Canal Center Plaza, Suite 200, Alexandria, VA 22314-2357, USA; 703-836-6767; fax: 703-836-4543. Periodicals postage paid at Alexandria, Virginia, and additional mailing offices. Subscription rate of $30 to IACP members is included in annual membership dues; subscription rate to nonmembers is $30 per year, domestic and foreign. Single copy, current issue, $2.50; back issues, $3, except APRIL Buyers' Guide issue, $12.50.

POSTMASTER: Send address changes to the Police Chief, 44 Canal Center Plaza, Suite 200, Alexandria, VA 22314, USA.

Canada Post: Publications Mail Agreement #40612608 Canada returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2

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Printed in the USA.

BPA business publication membership granted September 1991

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