

MIFACE Investigation Report: #14MI052

Subject: Truck Driver Died When He Was Struck By a Vehicle in a Hit-and-Run Incident

Summary

In summer 2014, a male truck driver owner/operator in his 50s died when he was struck by a vehicle in a hit-and-run incident after pulling his northbound 2005 International Tractor semi-truck with a box style attached empty trailer over to the right shoulder of a dry, 4-lane lane expressway with a posted speed limit of 70 mph. The roadway was unlit and curved slightly to the west. Paved shoulders were present on both sides of the expressway. The decedent had been on his cell phone with his spouse when he told her that another vehicle driver motioned to him that there was a problem with the



Figure 1. Assumed location of the decedent when he was struck by oncoming vehicle based on his shoe location under the rear tire.

trailer's tail lights. He told her that he was going to pull over to check his tail lights because he did not want to get a ticket. The decedent exited the freeway to the right shoulder, parking his semi and trailer fully on the shoulder. He was not wearing a high visibility vest. Leaving the tractor unit running and prior to exiting the tractor cab, he activated the hazard lights. The hazard lights were operational and the tractor's front headlights were lit. While either walking back to or returning from the back of the trailer near the fog line near the rear of the trailer on the roadway side, he was struck by the passenger side of an oncoming car. Passing motorists found him lying face down in the roadway between the two right lanes, just north of his semi-truck. Police found his left shoe wedged under the driver's side front rear trailer tire (the trailer had two rear axles). The tractor cab was not equipped with a forward-facing camera.

MIFACE identified the following key and possible contributing factors in this incident:

- Inattention of oncoming driver
- Walking on roadway side of tractor trailer
- Not wearing a high visibility vest
- Possible - Inadequate vehicle inspection prior to leaving lot
- Possible – Malfunction of trailer lights

RECOMMENDATIONS

- Always wear a high visibility vest when exiting the tractor on a roadway or while walking in a truck yard.
- When possible, after exiting the tractor, minimize exposure to oncoming traffic by walking around the cab (face traffic) and then walking on the non-traffic side of the trailer, keeping the tractor/trailer between you and active traffic. If not possible to minimize exposure to traffic, park the truck/trailer as far to the right as possible to maximize space between truck/trailer and oncoming traffic.
- Perform an adequate pre-trip vehicle inspection, and include both the tractor and the trailer.
- Use a flashlight, moving the flashlight back and forth, to light way and alert drivers when walking/working on a dark roadway.
- When possible, travel to nearest exit/area with appropriate pull-off parking facilities to check vehicle function rather than stop on an active roadway.
- Trucking companies should develop and implement specific policies, such as quarterly safety meetings and safe work practices, such as wearing high visibility vests to reduce the potential for injury. The policies and safe work practices should apply to and be shared with both company and independent contracted drivers.
- Michigan's Move-Over law should be expanded to semi-trucks parked on a roadway shoulder.
- Michigan Department of Transportation should consider retrofitting existing roadways, especially those roadways in highly traveled areas with rumble strips along the roadway pavement edges to warn motorists when their vehicle is approaching the shoulder.

BACKGROUND

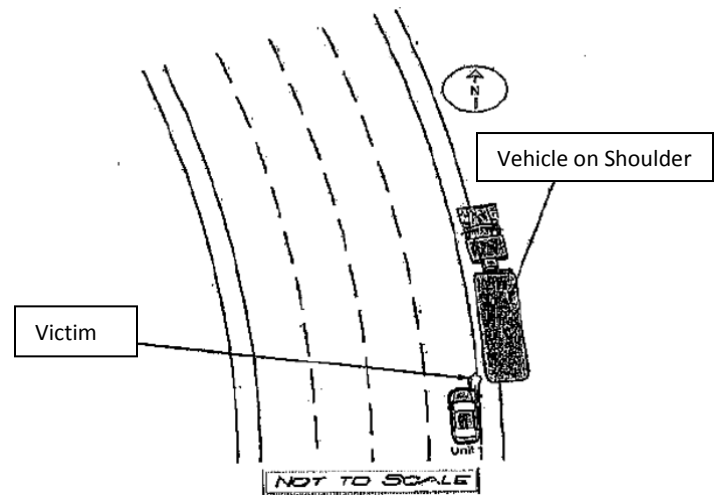
In summer 2014, a male truck driver owner/operator in his 50s died when he was struck in a hit-and-run incident after pulling his northbound 2005 International Tractor semi-truck with a box style attached empty trailer over to the right shoulder of a dry, 4-lane lane expressway with a posted speed limit of 70 mph. MIFACE personnel were notified of this incident by a newspaper clipping and contacted one of the decedent's family members regarding the incident. The family member agreed to speak with the MIFACE researcher. During the course of writing this report, MIFACE reviewed the death certificate, police department report and pictures and the medical examiner's report. Pictures and Drawing 1 in this report are courtesy of the responding police department and have been altered by the MIFACE researcher to remove identifiers.

The decedent had been driving semi-trucks for more than 30 years. For the past eight years, he was an “independent” driver, and was currently a contract driver for a haulage company. The haulage company paid his mileage. He drove mostly local routes, but if needed he would drive out-of state, mostly in the Midwest. The decedent set his driving schedule, but worked mostly full-time.

INVESTIGATION

The decedent awakened at 3:00 a.m. on the day of the incident, and drove his personal vehicle to the lot where his 2005 International tractor was parked. The family member did not know where the box-style trailer was placed or who hitched the tractor to the empty trailer. It is also unknown whether the decedent conducted a pre-trip inspection of the tractor/trailer unit. The family member indicated that the tractor had bucket seats.

The decedent and his family member were speaking via cell phone while he was traveling northbound to his destination on a dry, 4-lane lane expressway with a posted speed limit of 70 mph. The roadway was unlit and curved slightly to the west. Paved shoulders were present on both sides of the expressway. The right shoulder did not have a rumble strip. The decedent had been on his cell phone with his spouse when he told her that another vehicle driver motioned to him by rapidly turning his headlights on and off. The decedent rolled down his window and the driver yelled that the trailer did not have any tail lights.



Drawing 1. Police depiction on crash report of incident location.



Figure 2. Overview of incident scene. Scene depicts roadway curve and truck position on road shoulder.

The decedent told the family member that he was going to pull over to check his tail lights because he did not want to get a ticket. The decedent exited the freeway to the right shoulder and parked his semi and trailer fully on the shoulder. He told his family member, “I will call you back later”.

A possible incident scenario was developed: At approximately 4:40 a.m., after parking the semi-tractor/trailer unit, placing the unit in park, leaving his headlight lit, he activated the emergency flashers and exited the cab (See Figure 3). He was wearing a light colored shirt and light khaki pants. He was not wearing a high visibility vest/coat. He checked the electrical connection to the trailer and then



Figure 3. Truck location on shoulder. Yellow arrow identifies mirror location. Yellow circle identifies decedent’s location on roadway after being struck by the car.

walked to the back of the trailer to determine if the trailer lights were lit. The incident occurred while he was either walking to or returning from the back of the trailer. He was positioned near the fog line on the roadway side. It appears, based on the location of the debris from the crash and the final resting location of the decedent, that the vehicle driver may have been attempting an evasive maneuver without braking the car; he had crossed over onto the shoulder and then was steering back onto the roadway. The driver struck the decedent and may have struck the rear of the trailer; the mirror was found behind the trailer. The height of the mirror was roughly equivalent to the height of the trailer bed. Passing motorists found the decedent lying face down in the right lane of the roadway near the lane line demarcation between the two right lanes, just north of his semi-truck. Responding police did not note any pre- or post-impact braking by the oncoming driver.



Figure 4. Vehicle damage after striking the decedent.

The decedent’s family member kept calling and texting him but did not receive a response. After returning home from shopping, a police officer was waiting in the driveway and shared the tragic news.

The tractor cab was not equipped with a forward-facing camera. The decedent's family member stated to the MIFACE researcher that the trailer plug "shorted out" and that a police officer had to "jiggle" the plug to make a connection. The police report did not contain documentation of this statement.

The driver did not stop at the scene of the crash instead returning home and placing his vehicle in his garage. The responding police alerted local car dealerships of the damage to the vehicle and requested the dealerships notify them if a car was brought in with similar damage (See Figure 4). A month after the incident occurred, the vehicle driver had his damaged vehicle towed to a local dealership for repair. The dealership notified the police and the driver was arrested, charged and found guilty of leaving the scene of a fatal crash.

The driver indicated to police in his interview statement that he was drowsy that morning, did not have a cell phone, and that he had not been drinking prior to the incident.

CAUSE OF DEATH

The cause of death as listed on the death certificate was multiple blunt force trauma. No illegal, prescription or non-prescription drugs were found on the toxicological testing performed at the time of the autopsy.

RECOMMENDATIONS/DISCUSSION

- Always wear a high visibility vest when exiting the tractor on a roadway or while walking in a truck yard.

Each year trucking industry workers are injured and killed when hit by other drivers who do not see them. Make sure other drivers can see you by wearing a high visibility vest and making eye contact with drivers. Truck drivers should wear their high visibility vest each time they exit their truck or walk in truck yards. If at night or when inclement weather may reduce visibility, truck drivers should consider a Class 3 "retro-reflective" vest, shirt or jacket that reflects back a high percentage of headlight beams. Class 3 vests include additional background and retro-reflective material to help increase visibility and recognition of the body's shape and movement.

- When possible, after exiting the tractor, minimize exposure to oncoming traffic by walking around the cab (face traffic) and then walking on the non-traffic side of the trailer, keeping the tractor/trailer between you and active traffic. If not possible to minimize exposure to traffic, park the truck/trailer as far to the right as possible to maximize space between truck/trailer and oncoming traffic.

The electrical connections to the trailer were on the driver's side of the trailer. The easier and most time efficient way of checking the connections was from the driver's side of the truck, but it wasn't the safest position. A safer position for a truck driver to be when checking these connections and walking to the back of the truck is when the truck and trailer are positioned

between the truck driver and oncoming traffic. MIFACE recommends that drivers approach the cab door from the front of the truck to minimize exposure time and enable the driver to face the traffic instead of walking back to the truck cab. Additionally, the driver should look around the corner of the cab before stepping out on the road shoulder.

Always, the driver should ensure that he/she has an escape route on the non-traffic side of the truck.

It is unknown if the decedent was walking facing traffic, turning to walk back to the tractor or in the process of walking back to the tractor when he was struck by the car. If it is necessary to walk on the traffic side of the tractor/trailer, truck drivers should always assume that other drivers cannot see them outside the vehicle. Vehicles traveling at 70 mph (approximately 102 feet per



Figure 5. Tuck parked on roadway showing room to walk on non-active roadway side to access the rear of the trailer.

second) can overwhelm both a pedestrian's and driver's reaction time. Complicated by the dark, it may have been difficult for the decedent, even if he was facing traffic, to judge distance and react in time to move out of the way of the oncoming car. The only area he had for safety was under the truck. It is important for semi-truck drivers who are pedestrians on a roadway to stay vigilant and never turn their back to traffic.

- Perform an adequate pre-trip vehicle inspection, and include both the tractor and the trailer.

The purpose of a pre-trip inspection is to ensure that the vehicle is safe to operate. It is unknown whether the decedent conducted or to what extent he conducted a pre-trip inspection on the vehicle. In this case, according to the police report and the family member's statement, the electrical lighting system of the trailer was the factor which caused him to pull over to the shoulder. It is important that drivers check the electrical system for their tractors and trailers prior to traveling on the roadway by conducting a walk-around to ensure that all lights are functioning properly.

- Use a flashlight, moving the flashlight back and forth, to light way and alert drivers when walking/working on a dark roadway.

The decedent was not utilizing a flashlight while walking next to the roadway which may have contributed to him not being seen or perhaps contributing to a trip/slip hazard on the side of the road which may have caused him to briefly enter the travel lane of the expressway. MIFACE

watched the video produced by the police vehicle camera. Responding police, who were wearing high visibility vests, used flashlights to locate vehicle debris on the roadway. Their flashlight's light moving back and forth shining on the roadway was readily visible. MIFACE recommends that when truck drivers need to exit their vehicle on an unlit active roadway, they use a flashlight, and keep the flashlight moving to illuminate the walking surface and increase the opportunity for oncoming drivers to see them.

- When possible, travel to nearest exit/area with appropriate pull-off parking facilities to check vehicle function rather than stop on an active roadway.

Less than one mile to his north the decedent had a safer point to check his trailer lights – a freeway exit to a major road with adequate space for him to pull off and check his vehicle. Although it may mean more time to pull off the road rather than pulling over to the shoulder of the road, a parking lot or other non-active roadway area is a safer place to check tractor/trailer function than an active roadway. MIFACE recognizes that it is against the law to drive without tail lights. Firms employing truck drivers should develop a policy regarding stopping on an active roadway. Self-employed owner/operators should determine, based on his/her location, whether driving to the next exit and the risk of a ticket outweighs the risk of pulling over and exiting the tractor on an active roadway to perform a vehicle check.

- Trucking companies should develop and implement specific policies, such as quarterly safety meetings and safe work practices, such as wearing high visibility vests to reduce the potential for injury. The policies and safe work practices should apply to and be shared with both company and independent contracted drivers.

Minimizing risk for the driver and the vehicle saves lives and money. The development of company-specific written policies and safe work practices will enable the company and all drivers, both company and independent contract drivers to meet regulatory requirements and reduce risk of driver injury. The MIFACE researcher searched the Internet and found several written health and safety manuals for specific for trucking firms (see RESOURCES section).

The trucking firm should provide quarterly safety meeting and require all drivers for the company, both company drivers and independent contractors to attend. Safety topics could include all of the topics in these recommendations, as well as other safe driving topics such as, but not limited to fatigue, driving ergonomics, injury prevention (such as appropriate footwear to minimize slips and falls while exiting the cab), defensive driving, loading/unloading freight, load securement, etc.

- Michigan's Move-Over law should be expanded to semi-trucks parked on a roadway shoulder.

Currently, Michigan's Move Over law applies to police, fire, rescue, ambulance, and road service vehicles. Road service vehicles include wreckers and courtesy vehicles operated by the

Michigan Department of Transportation. The Move Over law requires vehicle drivers traveling on a highway designed with two or more lanes of travel in the same direction when approaching a stationary emergency vehicle with its emergency lights activated, carefully move into an open lane at least one lane away from the emergency vehicle. The operator of a vehicle traveling on a roadway which only has one lane of travel for each direction shall, upon approaching a stationary emergency vehicle with its emergency lights activated, slow down and pass with caution, allowing the emergency vehicle as much space as possible.

Semi-truck drivers, when stopped on the shoulder of a roadway, often have limited room to perform a task that may require them to stand near the fog line of an active traffic lane. Expanding the Move Over law to apply to semi-trucks stopped on the roadway shoulder may help to prevent future similar fatalities.

- Michigan Department of Transportation should consider retrofitting existing roadways, especially those roadways in highly traveled areas with rumble strips or rumble stripes along the roadway pavement edges to warn motorists when their vehicle is approaching the shoulder.

The Michigan Design Manual, Road Design Section 6.05.11 (revised 10-22-2014), Corrugations in Shoulders and Pavement define a rumble strip as “Corrugations (also known as rumble strips) provide a visual and audible warning to a driver that their vehicle is either straying off the road or is encroaching an oncoming lane of traffic.” The Federal Highway Administration defines a rumble stripe as “rumble strips painted with a retro-reflective coating to increase the visibility of the pavement edge at night and during inclement weather conditions.” In the incident area leading up to the decedent’s location, there were no rumble strips or stripes on the roadway edge to alert the oncoming driver through vibration or sound that his vehicle had left the roadway and to motivate him to correct his line of travel. MIFACE recommends that the Michigan Department of Transportation review high-speed expressways with shoulders meeting design requirements, and especially those expressways that are high density travel, for the presence of rumble strips/stripes and if none are found, schedule for the milling of such or the installment of raised elements to the shoulder. Although unknown if the driver would have responded to the noise and vibration a rumble strip would have produced, it was only when he was upon the trailer and decedent did he attempt an evasive maneuver and attempt to move the vehicle back to the travel lane.

ACKNOWLEDGEMENT

The MIFACE researcher would like to thank and acknowledge staff of the Michigan Center for Truck Safety for their review of and assistance in development of the this report, particularly in the development of the report recommendations. The Michigan Center for Truck Safety is a non-profit organization dedicated to improving highway safety on Michigan’s roadways, through comprehensive safety educational programs for Michigan’s trucking industry. More information

and the services offered by the Michigan Center for Truck Safety can be found on their website: <http://truckingsafety.org/>.

KEY WORDS: Truck Driver, Semi-Truck, Intrastate, Struck By, Rumble Strips, Rumble Stripes, Move Over Law, Transportation.

REFERENCES

- Michigan: Move Over Law. <http://www.moveovermichigan.com/the-law.html>
- Michigan Road Design Manual, Chapter 6, Surfacing and Shoulders. <http://mdotcf.state.mi.us/public/design/files/englishroadmanual/erdm06.pdf#page=116>
- *Proven Safety Countermeasures: Longitudinal Rumble Strips and Stripes on 2-Lane Roads*. US Department of Transportation, Federal Highway Administration. http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_008.pdf
- *Rumble Strips and Rumble Stripes – General Information*. US Department of Transportation, Federal Highway Administration. http://safety.fhwa.dot.gov/roadway_dept/pavement/rumble_strips/general-information.cfm
- *Rumble Strips and Rumble Stripes*. Technical Advisories Shoulder and Edge Line Rumble Strip, T 5040.39, Revision 1, November 7, 2011. http://safety.fhwa.dot.gov/roadway_dept/pavement/rumble_strips/t504039/

RESOURCES

- Trucking Injury Reduction Emphasis (TIRES), Washington State Department of Labor and Industries, Safety and Health Assessment and Research for Prevention (SHARP). <http://www.lni.wa.gov/Safety/Research/Trucking/>
- *Be Seen Be Safe* Tip Sheet, SHARP Program, Dept. of Labor & Industries PO Box 44330, Olympia, WA 98504-4330 Produced by the Trucking Injury Reduction Emphasis (TIRES), Publication No. 90-29-2009 <http://www.keeptruckingsafe.org/safetymaterials/90292009.pdf>
- *True Stories*, SHARP Program, Dept. of Labor & Industries PO Box 44330, Olympia, WA 98504-4330 Produced by the Trucking Injury Reduction Emphasis (TIRES), Publication No. 90-64-2011. <http://www.keeptruckingsafe.org/safetymaterials/90642011.pdf>
- Laredo Trucking Inc., Health and Safety Manual. <http://www.work-place-safety-info.com/support-files/laredo-trucking-safety-manual.pdf>
- OSHA Health and Safety Topics – Trucking Industry. https://www.osha.gov/SLTC/trucking_industry/index.html
- Federal Motor Carrier Safety Administration: Industry Best Practices. <https://www.fmcsa.dot.gov/safety/good-business/industry-best-practices>

- Trucking Industry: Examining Injuries for Prevention Washington State, 2006-2012. http://keeptruckingsafe.org/safetymaterials/2014_TruckingReport_Revised/901482014.pdf
- *Safety Training Resources for Heavy & Tractor Trailer Truck Drivers*. Texas Department of Insurance. <http://www.tdi.texas.gov/wc/safety/videoresources/targheavytruck.html>

MIFACE (Michigan Fatality Assessment and Control Evaluation), Michigan State University (MSU) Occupational & Environmental Medicine, 909 Fee Road, 117 West Fee Hall, East Lansing, Michigan 48824-1315; <http://www.oem.msu.edu>. This information is for educational purposes only. This MIFACE report becomes public property upon publication and may be printed verbatim with credit to MSU. Reprinting cannot be used to endorse or advertise a commercial product or company. All rights reserved. MSU is an affirmative-action, equal opportunity employer.

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