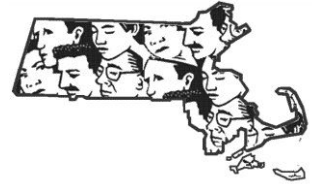


# MA FACE

## Occupational Fatality Report

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### Tow Truck Operator Fatally Injured When Struck by a Box Truck While Assisting a Motorist – Massachusetts

Release Date: January 4, 2017  
Investigation: # 15-MA-007-01

Massachusetts Department of Public Health  
Occupational Health Surveillance Program

#### SUMMARY

On February 11, 2015 a 22-year-old male tow truck operator (victim) employed by a motor vehicle service center was fatally injured while assisting a motorist with a flat tire on a highway. The victim positioned his flatbed tow truck on the highway shoulder in front of the car. While standing near the tow truck's driver side controls, the victim was struck by a passing box truck. A call was immediately placed for emergency medical services (EMS). EMS and state police arrived within minutes. The victim was pronounced dead at the incident location.

Contributing factors identified in this investigation were the narrow highway shoulder, the consequent need to work on the side of the tow truck closest to passing traffic, the motorist stopping on the narrow shoulder and not continuing to drive to a safer location to stop, and the box truck driver not moving over one lane or slowing down while passing a stopped recovery vehicle with lights flashing as required by Massachusetts state law.

The Massachusetts FACE Program concluded that to prevent similar occurrences in the future, employers should:

- **Consider the option of wireless controls for tow truck beds and winches;**
- **Ensure that employees use portable emergency warning devices to help alert approaching motorists of the stopped emergency vehicles ahead; and**
- **Provide Traffic Incident Management (TIM) training to all tow operators.**

Motorist experiencing vehicle problems while driving should:

- **Continue driving, if it is safe to do so, until a location is reached where the vehicle can be moved completely off of the roadway and away from traffic.**

Drivers of larger vehicles should:

- **Consider taking additional measures to warn motorists behind them of the situation ahead when adhering to Move Over laws.**



## **INTRODUCTION**

On February 12, 2015, the Massachusetts FACE Program was alerted by the local media that on the day before, a male tow truck operator had died from injuries sustained when he was struck by a passing truck. On May 7, 2015, a representative from the Massachusetts FACE Program traveled to the incident location and then met with the company owner to discuss the incident. The state police report, death certificate, company information, and the OSHA fatality and catastrophe report were reviewed during the course of the investigation.

## **EMPLOYER**

The employer was a towing service company that had been in business about 58 years. The current owner took over the company about 28 years ago. The company operated 24 hours a day, seven days a week and its main business was emergency recovery of vehicles. It also provided some vehicle mechanical repair and operated an impoundment yard. The company had approximately 25 employees. About five of these employees were office staff and the remaining 20 employees were tow operators. Tow operators were assigned to the same truck each shift, as long as the assigned truck was available.

There were two categories of tow operators: heavy duty and light duty tow operators. Heavy duty tow operators towed larger vehicles such as tractor trailers. Light duty tow operators towed cars and other small vehicles. The company owned six heavy duty trucks and 14 light duty trucks. It was estimated that the company performed 1,400 light duty tows per month and 275 heavy duty tows per month. Employees did not have union representation.

## **WRITTEN SAFETY PROGRAMS AND TRAINING**

At the time of the incident, the company had a safety and health program that included a truck checklist that tow operators were required to complete daily. The daily checklist helped to ensure trucks were not in use if they needed to be repaired. The company also had regularly scheduled preventive maintenance for the trucks that was performed in-house.

New employees were typically hired with previous experience. All employees were provided with four weeks of on-the-job training with experienced employees present or until proficiency was demonstrated. The employer reported that this training included using the flatbed controls on the side of the truck that is furthest away from traffic (field side). If this was not possible employees were trained to always face and keep an eye on traffic and how to use the truck for protection. In addition, the company would periodically send newer employees to a Massachusetts towing academy to become certified tow operators. The victim had been scheduled to attend the towing academy in the spring.

All heavy duty tow operators had valid state issued commercial driver's licenses (CDL). Light duty tow operators were not required by the state to have a CDL. The employer provided employees with items of American National Standards Institute's (ANSI) compliant high-visibility safety apparel. One was an ANSI Class 2 compliant vest and the other was an ANSI Class 3 compliant jacket.

## **VICTIM**

The victim was a 22-year-old male light duty tow operator. He had been a tow operator with the company for a few months, but had previous experience. The day of the incident, a Wednesday, the victim arrived to the company location on time to start his 8:00 a.m. work shift. The incident occurred at approximately 3:00 p.m., about seven hours into his shift.

## **INCIDENT LOCATION**

The incident occurred on an interstate highway that was comprised of asphalt and primarily ran east and west in a relatively suburban area. At the location of the incident, the highway was relatively straight and was a six lane roadway, with three travel lanes and two shoulders in each direction. The speed limit for the highway was posted at 65 miles per hour (mph). The incident occurred on the eastbound side of the highway. The three eastbound travel lanes were approximately 12 feet wide and the travel lanes were separated by white dashed (skip) lines. The north side of left-hand travel lane was bordered by a paved shoulder with a painted solid yellow line separating the shoulder and the left travel lane.

The shoulder located at the south side of the right-hand eastbound travel lane, also paved, was separated from the travel line by a solid white line. Immediately inside the shoulder was a rumble strip that was approximately 16 inches wide and parallel to the solid white line. This shoulder was approximately 9 ½ feet wide, and on the south side of the shoulder was a metal guardrail. At the time of the incident, the shoulder was approximately 8 ½ feet wide due to accumulated snow on top of and around the guardrail.

## **EQUIPMENT**

The victim was driving his regularly assigned light duty tow truck. The six wheeled truck was manufactured in 2007 and was equipped with a two door day cab (non-sleeper cab) and a 21 foot flatbed. The truck had controls for the flatbed located on both sides of the truck. On top of the truck's cab there was a yellow light bar. The truck had two axles, six tires, and was approximately 35 feet long, 7 feet wide and 12 feet high.

The truck that struck the victim was a box truck that had been manufactured in 2014. The truck was equipped with a two door day cab. The truck had three axles, 10 tires, and was approximately 37 feet long, 7 feet wide and 12 feet high. The driver of this truck had a Commercial Driver's License.

## **INVESTIGATION**

The incident occurred on a Wednesday afternoon in February and the temperature was 21 degrees Fahrenheit with clear skies and no wind. In the three weeks leading up to the incident, the area had experienced multiple snow storms and blizzards and received approximately 60 inches of snow. This resulted in a snow bank located on the right side of the road that partially covered the guardrail and extended some into the paved shoulder.

The operator of a passenger motor vehicle stopped on the right shoulder due to a flat the right rear tire, positioning the car close to the guardrail. There were about 21 inches between the car

and the solid white painted line that separated the shoulder from the right travel lane. The car operator called for help and reported the flat tire and that the car did not have a spare tire. The victim was dispatched to assist the stranded motorist.

The victim drove his flatbed tow truck to the incident location and positioned his truck on the right shoulder about 12 feet in front of the car. The truck was slightly angled and the truck's left rear tire was about 10 inches inside the solid white painted line that separates the shoulder and the right travel lane. The left rear corner of the flatbed was only about 3 ½ inches inside the white painted line. The truck's flashing yellow warning lights were activated, including the light bar on top of the cab when the victim exited the truck's cab. After talking with the operator of the car, the victim who was wearing an ANSI Class 3 compliant jacket, prepared to load the car onto the flatbed. Due to the guardrail and the snow bank, the victim was unable to access the flatbed controls on the right side (passenger side) of the truck, which were furthest from moving traffic.

While standing on the left side of the truck, the victim lowered the flatbed down to the roadway as vehicles traveling on the interstate passed him. The truck driver that struck the victim reported that immediately before the incident, he had been traveling about 63 mph in the right hand travel lane behind another truck. The truck that was in front of him switched to the middle travel lane and it was at this point that he noticed the car and tow truck in the breakdown lane. The box truck driver then looked in the driver's side door mirror to see if he could also move over a lane and then he felt his truck strike something.

It appears that as the box truck driver was trying to assess if he could move over one lane, the box truck veered into the breakdown lane. Then the box truck struck the victim, who was still positioned on the left side of his tow truck, and also the tow truck. The victim was thrown forward 37 feet into the right hand travel lane. The box truck operator stopped the truck on the shoulder approximately 1,020 feet beyond the location of the impact. The operator of the car with the flat tire placed a call for emergency medical services (EMS) and then went to the edge of the right hand travel lane to direct traffic out of the travel lane where the victim was located. EMS arrived within minutes and the victim was pronounced dead at the incident location.

During the investigation it was observed that not too far beyond where the motorist had stopped on the shoulder was a highway exit. The motorist might have been able to cautiously drive to this exit and moved the car completely off the highway. Since the incident the company owner has added strobe lights in multiple locations to the company's tow trucks.

## **CONTRIBUTING FACTORS**

Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. The Massachusetts FACE team identified the following contributing factors in this incident.

- Narrow highway shoulder with guardrail
- Working/being positioned on the side of the tow truck closest to passing traffic
- Motorist not continuing to drive to a safer location to stop

- Box truck driver not moving over one lane and/or slowing down while passing a stopped recovery vehicle with lights flashing as required by Massachusetts state law.

## **CAUSE OF DEATH**

The medical examiner listed the cause of death as multiple traumatic injuries.

## **RECOMMENDATIONS/DISCUSSION**

### **Recommendation #1: Employers should consider the option of wireless controls for tow truck beds and winches.**

**Discussion:** The flatbed tow truck involved in the incident was equipped with tow equipment control levers for the flatbed tow truck on both the driver's and passenger's sides of the truck. In this incident, the control levers being used at the time of the incident were the control levers located on the driver's side of the truck, which was the side closest to oncoming traffic. The victim was using these controls due to a guardrail and an accumulation of snow making the controls on the passenger side of the truck inaccessible. The employer had a policy that when possible employees use the control levers located on the side of the truck that are the farthest from approaching traffic. But, as in this incident, these control are not always accessible.

To help ensure tow truck operators have the ability to stay clear from motor vehicle traffic, employers should consider adding wireless controls for tow truck beds and winches, both to new purchases and retrofitting existing trucks. Wireless controls options include having a designated remote for each truck and/or using a smartphone to access the wireless controls.<sup>1</sup> This technology can help limit the amount of time an operator is positioned immediately next to passing vehicles.

### **Recommendation # 2: Employers should ensure that employees use portable emergency warning devices to help alert approaching motorists of the stopped emergency vehicles ahead.**

**Discussion:** Placement of portable emergency warning devices while stopped to assist motorists will help alert approaching motorists that there is a situation ahead. The company owner reported that the tow truck operator had the truck's yellow light bar on at the time of the incident, but no portable emergency warning devices were being used.

The Federal Motor Carrier Safety Administration requires that, when commercial motor vehicles are stopped in traveled portion of highways or the shoulder of highways, the driver of the stopped commercial motor vehicle shall immediately activate the vehicle's hazard warning signal flashers and keep them on until placement of the portable emergency warning devices are complete. The following placement of warning devices should be followed when commercial motor vehicles are stopped:<sup>2</sup>

- On two-lane roads with traffic in both directions, or on undivided highways, warning devices should be placed in the center of the lane or shoulder occupied by the commercial

motor vehicle and at 10 feet and 100 feet in both directions from the commercial motor vehicle.

- Within 500 feet of a curve, crest of a hill or other object that is obstructing approaching motorists' view, the warning device should be placed to provide ample warning to approaching motorists between 100 feet to 500 feet from the stopped commercial motor vehicle.
- On divided or one-way roads, warning devices should be placed in the center of the lane or shoulder occupied by the commercial motor vehicle and at 10 feet, 100 feet, and 200 feet from the rear of the commercial motor vehicle.

Portable emergency warning devices should be used by tow operators while stopped in the traveled portion of highways or the shoulders of highways. The use of portable emergency warning devices, such as traffic cones, will provide approaching motorists advanced notice that there is a roadway incident ahead, which will help protect the worker. Once the disabled vehicle has been picked up or loaded onto the tow truck and tow truck and has reentered the roadway, the tow operator should turn off all emergency lights. Using emergency lights only during an emergency response, including the short time before and after the response, and not when the tow truck is operating normally on the roadway will help ensure that motorists do not become habituated to emergency lights.

**Recommendation #3: Employers should provide Traffic Incident Management (TIM) training to all tow operators.**

**Discussion:** The U.S. Department of Transportation Federal Highway Administration has developed a Traffic Incident Management program. Traffic Incident Management (TIM) is a planned and coordinated process to detect, respond to, and remove traffic incidents and restore traffic capacity as safely and quickly as possible. This coordinated process involves a number of public and private sector partners working together effectively to reduce the duration and impacts of traffic incidents and improves the safety of motorists, crash victims and emergency responders.<sup>3,4</sup> The Massachusetts Department of Transportation (MassDOT) has developed a Massachusetts specific TIM process and corresponding training that is based on the national process and training. MassDOT has been offering TIM training throughout the commonwealth. The three main objectives of the training are: responder safety; safe, quick clearance; and prompt, reliable, interoperable communications.

MassDOT also has community service programs that provide aid and rapid response to stranded motorist along Massachusetts highways. Two of these programs assist motorists on local highways and tunnels. A third program, the Emergency Service Patrol (ESP), assists stranded motorists on the Massachusetts Turnpike, the roadway where the incident occurred. MassDOT requires TIM training for the highway assistant operators in each of these programs. ESP does not provide vehicle towing. Vehicle towing on the Turnpike is provided through companies that have been awarded an Emergency Towing Service contract with MassDOT. MassDOT requires all companies awarded the Turnpike tow contract to provide tow operators with TIM training.

Tow operators have crucial roles in clearing traffic causing roadway incidents; therefore all employers who provide tow services anywhere in Massachusetts should providing tow operators with the TIM training. MassDOT continues to provide TIM training to which companies can send their tow operators for free. Tow operators who have been provided the TIM training will be able to use knowledge from the training to help evaluate all of the locations to which they are dispatched, including the locations where they are the only responders. The TIM training will help tow operators keep not only themselves safe but also the passing motorists and the motorists they are assisting.

**Recommendation #4: Motorists experiencing vehicle problems while driving should continue driving, if it is safe to do so, until a location is reached where the vehicle can be moved completely off of the roadway and away from traffic.**

**Discussion:** In this incident, the motorist had a flat tire and stopped on the narrow shoulder of an interstate with high posted speed limits. In many situations, stopping on a highway shoulder is not a safe option. If struck by a vehicle while stopped along a high speed roadway, there is a good chance the passing vehicle will be traveling at a high rate of speed at the time of impact. In addition, driving on the shoulder is permitted on some Massachusetts and other states' highways, therefore stopping on roadway shoulders should be avoided if there is another option.

If a flat tire occurs while driving on a highway with a narrow shoulder consideration should be given to continuing to drive to a nearby location where the car can be removed completely from the roadway.<sup>5</sup> If it is safe to continue driving, first turn on the vehicle's hazard lights, get to the right lane and/or the shoulder, slow down and continue driving to a safe location. Some good options include rest areas, exits, service plazas, and even large grassy areas along the highway or other areas as long as the vehicle can be moved completely away from traffic. While driving to a safe location, continue to monitor the vehicle and stop if needed. In this incident, the next exit was not far down the highway from where the motorist stopped. If the motorist had continued driving to that exit, the chance of this type of incident occurring would have been minimized. Driving on a flat tire might result in additional damage to the tire, however very often the tire will need to be replaced even if the vehicle is stopped immediately.

**Recommendation #5: Drivers of larger vehicles should consider taking additional measures to warn motorists behind them of the situation ahead when adhering to "Move Over" laws.**

**Discussion:** All 50 states now have some form of a Move Over law that all drivers must comply with. These laws aims to keep police, firefighters, paramedics, tow truck drivers, and all roadside emergency and maintenance professionals safer on the job. The Massachusetts Move Over law requires drivers approaching a stationary emergency, maintenance, or recovery vehicle with flashing lights to move to the next adjacent lane if it is safe to do so; if changing lanes is not an option, then motorists must reduce their speed. Failure to comply could result in a fine of up to \$100.<sup>6</sup>

While driving behind a larger vehicle, it can be difficult to see what is occurring on the roadway ahead. In this incident, the driver of the truck that struck the tow truck operator stated that, while traveling in the right lane, he did not see the victim or his tow truck until the truck in front of him moved to the left by one travel lane at the last moment. It is unknown exactly when the truck in front of him first noticed the tow truck on the side of the highway. When possible, motorist should not wait until the last minute to move over.

To help ensure motorists behind are aware of vehicles stopped along roadway, all drivers, should immediately take action when traveling in a lane adjacent to emergency or maintenance vehicles. This includes immediately turning on the vehicle's directional and then changing lanes when it is safe to do so. Timely awareness of hazards ahead can be especially challenging for those following behind larger vehicles. Drivers of larger vehicles should therefore take additional measures to warn those following. If not able to move over one lane, then in addition to slowing down, the driver of a larger vehicle should immediately warn the drivers behind by flashing the vehicle's brake lights or turning on the vehicle's hazards. This will provide advanced warning to the motorists behind that there is something occurring on the roadway ahead of them.

The Commercial Driver's License Manual has some useful information on how to inform other motorists what you are about to do in the Communicating section of the manual.<sup>7</sup> This includes:

- Signal Your Intentions: "Other drivers can't know what you are going to do until you tell them." When changing lanes it is ideal to give other motorists plenty of advanced notice that you will be changing lanes by signaling early by using the vehicle's turn signal.
- Slowing Down: "Warn drivers behind you when you see you'll need to slow down. A few light taps on the brake pedal – enough to flash the brake lights – should warn following drivers. Use the four-way emergency flashers for times when you are driving very slow or are stopped."
- Trouble Ahead: "The size of your vehicle may make it hard for drivers behind you to see hazards ahead. If you see a hazard that will require slowing down, warn the drivers behind by flashing your brake lights."

The information in the Commercial Driver's Manual and information on the Move Over laws and should be included in the employers' safe driving policies and training.

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**Figure 1 – Incident location and surrounding area**



**Figure 2 – Similar flatbed tow truck as the one involved in the incident**

