

MIFACE INVESTIGATION REPORT: #05MI026

SUBJECT: Tow Truck Operator Pinned Under Sport Utility Vehicle When Working Under It

Summary

On March 18, 2005, a 34-year-old male tow truck driver was killed when the sport utility vehicle (SUV) he was preparing to tow fell on top of him. This was his third run of the day. The SUV had sustained front-end damage when it left the roadway and struck a tree in a residential yard. Both the front tires were flat and the passenger's front tire had separated from the rim. The decedent arrived and pulled the SUV onto the roadway with his tow truck. He repositioned the tow truck to the front of the vehicle. The decedent lowered the truck boom and attached the chains. It is unknown how the decedent placed the chains under the SUV. He did not utilize wood blocks to chock the SUV's rear tires or secondary jack to support the SUV, both of which were available on the wrecker. He told police that he was going to perform a wheel lift, although based on the description of the lift in the police report he performed a sling lift. It does not appear he used the wheel lift arm to lift the disabled vehicle or to provide a backup means of support for the raised vehicle. The wheel lift arm was at ground level when the incident occurred. After attaching the chains and raising the vehicle, the decedent positioned himself on his back, approximately mid-chest under the SUV, apparently to either free the transmission or the transfer case so that the rear wheels would rotate when in tow. When he popped the transmission, the vehicle lurched and fell, landing on the decedent across his neck and chest. 9-1-1 was called. Emergency responders declared the decedent dead at the scene.



Figure 1. Position of truck and vehicle at the time of incident

RECOMMENDATIONS

- Towing and recovery industry employers should instruct and ensure employees use a secondary means of support when placing any part of their body under a raised vehicle.
- Tow truck operators should review the Automobile Association of America (AAA) Towing and Service Manual, AAA towing service bulletins, or the vehicle owner's manual prior to towing the vehicle to determine the proper towing method.

Key Words: Machine, Tow Truck, Asphyxia

- Towing and recovery industry employers should consider equipping each wheel lift tow truck with dollies if a flatbed tow vehicle is not available.
- Tow truck operators who may be/are under the influence of drugs (illegal, prescription or over-the-counter) and/or alcohol that may place them at a risk of injury should not operate vehicles or machinery since their ability to recognize and respond appropriately to hazardous situations can be impaired.
- Towing and recovery industry employers should ensure that a copy of MIOSHA General Industry Safety Standard, Part 72, Automotive Service Operations is available to all employees if applicable to the operation.

INTRODUCTION

On March 18, 2005, a 34-year-old male tow truck driver was killed when he was crushed under a SUV that he was preparing to tow. On March 18, 2005 MIFACE investigators were informed by the Michigan Occupational Safety and Health Administration (MIOSHA) personnel who had received a report on their 24-hour-a-day hotline that a work-related fatal injury had occurred on March 18, 2005. On June 2, 2005, MIFACE interviewed the co-owner of the tow truck company. During the course of writing the report, the police report and pictures, medical examiner's report and MIOSHA file and citations were reviewed. Although not used in this report, the company co-owner permitted MIFACE to take pictures of the vehicle that was used by the decedent during the tow truck incident. The pictures used in this report are courtesy of the responding police department. MIFACE altered the pictures to preserve the employer's anonymity and the decedent's position next to the SUV.

The employer provided roadside service and vehicle recovery and towing. The company was a designated AAA responder, and had been in business for about seven years. The company also operated a salvage yard on its premises. The company employed 20 individuals, of which 15 had the same job title as the decedent, tow truck driver. The decedent had been employed full time with this company for seven years. Tow truck drivers worked eight-hour shifts. Company drivers were paid by how many calls they turned in a shift. They were not paid hourly. The company had an employee handbook, but there were no written safety procedures or rules in place for the specific task being performed by the decedent. The company owner had primary responsibility for safety. His knowledge of safety was based on on-the-job experience. The company did not have a Health & Safety Committee on site and they did not have a written disciplinary policy for health and safety violations. The company relied upon the AAA Vehicle Towing Guidelines to provide guidance for towing different types of vehicles. On-the-job health and safety training was provided by the employer. Employee attendance at training sessions was recorded and maintained. The owner stated that all employees came together on a monthly basis and talked about the unique things that had happened to them in the field, including health and safety issues they encountered.

MIOSHA General Industry Safety and Health Division personnel issued the two Serious and two Other-than Serious citations to the employer at the conclusion of their investigation.

SERIOUS:

- GENERAL PROVISIONS, PART 1, RULE 34(12). The employer did not prohibit the

employee from placing his body beneath equipment such as vehicles, machines, or materials supported by any single supporting means such as a jack, overhead hoist or chain fall, unless safety stands, blocks, or other support system capable of supporting the total imposed weight is used to protect the employee in case of failure of the supporting system.

- SLINGS, PART 49, RULE 4911(b). The employer did not prohibit shortening of a sling with knots.

OTHER-THAN-SERIOUS:

- INSPECTIONS AND INVESTIGATIONS, CITATIONS AND PROPOSED PENALTIES, PART 13, RULE 1311(1). The employer did not post the Michigan Occupational Safety and Health Act (MIOSHA) Notice (Poster) in each establishment in a central and conspicuous location with respect to all affected employees to inform employees of the protections and obligations provided for in the Act.
- AUTOMOTIVE SERVICE OPERATIONS, PART 72, RULE 7211(d). The employer did not have a copy of the Automotive Service Operations standard available for employee review.

INVESTIGATION

The decedent's work shift began at 8:00 a.m. Although the tow truck was not "officially" assigned to the decedent, he usually drove this tow truck. The tow truck was equipped with wood blocks and a secondary jack. It had been snowing that morning but was not raining or snowing at the time of the decedent's death. Ice was not present on the road surface. The straight two-lane, asphalt roadway had a slight incline with no shoulder or curb. A state police dispatcher notified the company for whom the decedent worked that a SUV had left the roadway, hit a tree in a yard sustaining significant front-end damage as well as deflated front tires, and that the vehicle needed to be recovered.



Figure 2. Position of SUV/Truck after being winched from yard

Police cars were positioned behind the tow truck and the accident vehicle to stop traffic. The decedent arrived on-scene at approximately 9:20 a.m. It was his third run of the day. The decedent removed the vehicle from the yard/tree by winching it out from the rear onto the street. The SUV was in Park when in the yard at the tree. After the decedent winched the SUV onto the street, the decedent disengaged the tow truck from the rear of the vehicle and repositioned the back of tow truck to the front of the damaged vehicle.

The company owner stated that the normal procedure would have been to winch the car out of the yard, position the vehicles and then chock the tires (front or rear depending upon the towing procedure). Apparently, the decedent decided to haul the damaged SUV to the repair destination by lifting the front end and using the rear tires to tow. The keys to the SUV were on the dash, although it is unknown whether the keys would have been effective in permitting the movement of the gearshift from Park to Neutral. There was a switch on the dash panel for the transfer case.

According to the police report, the police officer asked the decedent if he was going to do a dolly lift on the vehicle. The decedent said no, he was going to do a wheel lift. It appears the decedent activated the boom and extended the boom so that he could use the slings and chains. As described in the police report, the decedent secured one chain to the front left of the vehicle and another chain to the front right of the vehicle. The ends of the chains were attached to stationary hooks on the boom of the truck. It is unknown if the decedent wrapped the chains in an appropriate manner on the SUV's undercarriage. The decedent did not use the wood blocks on the tow truck to chock the SUV's rear tires. The decedent then lifted the front of the vehicle.

The decedent took a floor mat from the tow truck to lie on while he was under the SUV. He did not provide a means of secondary support, such as a jack stand or set the wheel lift device under the vehicle after lifting the front of the vehicle before placing himself under the vehicle. Placing his waist and upper torso just behind the driver's side front axle, and using a screwdriver from his truck, it appears he attempted to release the transmission linkage. The decedent was presumably attempting to either free the transmission or the transfer case. As the decedent attempted to free the transmission or transfer case, the SUV lurched forward and fell onto



Figure 3. Position of stinger and chains during rescue. Picture taken after decedent pulled from under the vehicle.



Figure 4. Chains wrapped around undercarriage. Picture taken after decedent pulled from under the vehicle.

him. Witnesses described hearing a “loud noise” and then the vehicle fell.

One of the responding police officers noticed that the chain attached to the driver’s side of the accident vehicle gave way when the vehicle fell onto the decedent. Another police officer ran to the controls of the tow truck and raised the boom of the wrecker in an attempt to raise the vehicle; this was unsuccessful. The officer then extended the wheel lift device under the vehicle to attempt to raise the vehicle. Again, the SUV could not be lifted, because the front of the SUV was too low to the ground and there was not enough clearance to place the wheel lift between the body of the vehicle and the ground. In a third attempt to lift the vehicle, the officers tried to place a portable hydraulic jack from the patrol car under the driver’s side of the vehicle to raise it, but the vehicle was too close to the ground to get a jack under it. Another police officer tried to raise the SUV by attaching a J-hook chain from the boom to the front driver’s side. When the boom was raised, the vehicle began to slide back instead of raise up, so the lifting operation was stopped.

Upon arrival of the local fire department, fire department personnel placed air bags under the vehicle and attempted to raise it. The vehicle was finally raised using spreaders. The decedent was pulled from underneath the vehicle and was declared dead at the scene.

MIOSHA found that one of the chains on the tow truck had a knot in it. It is unknown whether the knot was a result of rescue attempts or was present prior to the incident.

CAUSE OF DEATH:

As stated by the Medical Examiner on the death certificate, the cause of death was asphyxia by compression. Toxicology found the presence of active and inactive cannabis metabolites in the decedent’s blood.

RECOMMENDATIONS/DISCUSSION

- Towing and recovery industry employers should instruct and ensure employees use a secondary means of support when placing any part of their body under a raised vehicle.

Part 1, General Provisions, Rule 34, of the General Industry Safety Standards states: “An employee shall not place his/her body beneath equipment, such as vehicles, machines, or materials, supported only by a jack, overhead hoist, chain fall, or any other temporary single supporting means, unless safety stands, blocks or other support system capable of supporting the total imposed weight is used to protect the employee in case of failure of the supporting system.” The decedent relied upon the tow chains to hold the vehicle in position when he placed his torso under the vehicle to “pop” the transmission. When the chains failed to secure the vehicle in a raised position, there was not a secondary means to prevent the vehicle from falling onto him. It is important to note that when a secondary means of support is used on a vehicle, it must be placed under factory-approved points on the vehicle, as per the vehicle’s instruction manual. Secondary supports such as safety stands or jack stands should always be used in pairs. When raising the front or rear of a vehicle the stands should not be placed so that the vehicle tilts up only on one corner.

Blocking or chocking wheels is not a “means of support” and will not protect an individual under a raised vehicle, but blocking/chocking the wheels does prevent the tires from rolling. It is best to use two blocks/chocks on the weighted axle (the axle at the opposite end of the vehicle from the end that is raised) since the weighted axle keeps the tire on the ground against the block/chock.

- Tow truck operators should review the AAA Towing and Service Manual, AAA towing service bulletins, and/or vehicle owner’s manual prior to towing the vehicle to determine the proper towing method.

The AAA Towing and Service Manual provides detailed towing instructions for most domestic and foreign cars, light trucks, motorcycles and vans. The manual includes towing, tie-down and jumpstarting procedures, as well as curb and axle weights for each vehicle. Independent contractors that are not under contract with AAA to provide roadside assistance should consider obtaining this manual. Two- and four-wheel drive vehicles require different towing techniques. It is important that the tow operator consult the AAA manual and, if the car is not listed in the manual, the vehicle owner’s manual to determine proper towing procedures. Damage to the vehicle, such as damage to the transmission or differential can result when improper towing occurs.

- Towing and recovery industry employers should consider equipping each tow truck with dollies if a flatbed tow vehicle is not available.

Flatbed tow trucks, also called rollback tow trucks, contain a large empty bed in the back of the truck. Using hydraulics, this bed can be inclined in order to form the shape of a ramp. The vehicle can then be either driven onto the flatbed, or a winch can be used to drag it into place. After the vehicle is in place, hydraulics are used to level out the flatbed in order to haul the vehicle. Flatbed tow trucks do not place pressure on the vehicle or drag it for a period of time. Rather, all of the stress is placed on the tow truck.

MIFACE spoke with local tow truck operators and towing and recovery industry employers. Both groups suggested that employers should equip a tow truck with tow dollies. Tow dollies are recommended to prevent transmission damage to the towed vehicle. By placing a front wheel drive vehicle on a dolly a lube pump or other device to make the vehicle towable is not needed. Tow dollies are useful for vehicles when it is not desirable or possible to tow with four wheels down. When towing a four-wheel drive vehicle using a wheel-lift towing device, tow dollies should be used under the opposite end of the vehicle.

- Tow truck operators who may be/are under the influence of drugs (illegal, prescription or over-the-counter) and/or alcohol that may place them at a risk of injury should not operate vehicles or machinery since their ability to recognize and respond appropriately to hazardous situations can be impaired.

Although it cannot be determined if the deceased was under the influence of cannabis, many studies have concluded that cannabis use reduces coordination, impairs balance, perception, judgment, memory and learning. Cannabis use can also interfere with the ability to perform simple or complex

tasks and slows a user's reflexes. Many drugs, such as prescription or over-the-counter medications, alcohol, or other illegal substances may also affect an individual's performance, reaction time and judgment. Individuals should not engage in hazardous activities such as operation of automobiles or dangerous machinery while under the influence of alcohol or illegal drugs or taking medications that may put them at risk of injury. Additionally, employers should evaluate workers if they appear visibly impaired prior to allowing them to perform their duties.

- Towing and recovery industry employers should ensure that a copy of MIOSHA General Industry Safety Standard, Part 72, Automotive Service Operations is available to all employees if applicable to the operation.

Part 72 sets forth rules for the safe maintenance and operation of equipment in, around, and about places of employment where vehicles or tire and wheel assemblies are serviced, repaired and salvaged. Excluded from the scope of this standard are manufacturing, research and development facilities. Rule 7211(c) states that employers must maintain a copy of Part 72 for their employees' review.

RESOURCES

MIOSHA standards cited in this report may be found at and downloaded from the MIOSHA, Michigan Department of Labor and Economic Growth (DLEG) website at: www.michigan.gov/mioshastandards. MIOSHA standards are available for a fee by writing to: Michigan Department of Labor and Economic Growth, MIOSHA Standards Section, P.O. Box 30643, Lansing, Michigan 48909-8143 or calling (517) 322-1845.

- DLEG MIOSHA General Industry Safety Standards, Part 1. General Rules
- DLEG MIOSHA General Industry Safety Standards, Part 72, Automotive Service Operations
- Automobile Association of America (AAA) Towing and Service Manual

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MIFACE

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