

A rear load helper, for a refuse collection company in Texas, died when he was crushed by the rear wheels of a refuse collection vehicle.

Investigation # 98TX11201

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SUMMARY:

On March 2, 1998, a 62-year-old rear load helper (the victim) died when he was crushed by the rear wheels of a refuse collection vehicle. The victim and the driver of the vehicle had been picking up trash along their assigned route. On the particular street where the incident occurred, there were only four locations where trash had to be picked up. The driver backed down the street as he was originally trained to do. One of these locations had an excessive amount of trash. The driver decided to reposition the vehicle so the rear of the vehicle was as close to the pile as possible. The driver watched the victim step down from the vehicle from in his right side mirror. The driver pulled forward to the right, then backed up. As the driver backed the vehicle, the right rear wheels rolled over and crushed the victim. The driver was unaware of the victim's location and the back-up alarm had been disconnected. The victim was pronounced dead at the scene.

The TX FACE investigator concluded that to reduce the likelihood of similar occurrences, employers should:

- * monitor employees' operation of vehicles and take appropriate action to ensure proper operation of vehicles or equipment which includes safe backing practices*

- * develop a system of successively heavier penalties for violation of safe work practices*

- * train drivers and collectors (rear-load helpers) on the procedures outlined in the NIOSH Alert, Preventing Worker Injuries and Deaths From Moving Refuse Collection Vehicles and also include the National Solid Waste Management Association (NSWMA) manual of Recommended Safety Practices (NSWMA 1988).*

INTRODUCTION

On March 2, 1998, a 62-year-old rear load helper (the victim) died when he was crushed by the rear wheels of a refuse collection vehicle. The TX FACE program officer was made aware of the fatality by the OSHA area office on March 11, 1998. On August 18, 1998, the TX FACE program officer visited the job site and met with the safety manager. The police department and EMS were contacted. The justice of the peace was also contacted. An autopsy report was not prepared.

The employer is a refuse collection company employing approximately 168 employees, four of whom are permanent and 5-10 of whom are temporary employees who work in the same occupation as the victim. The company has been in business at its present location for 25 years. Only one other employee (the driver) was at the site at the time the incident occurred.

The safety program was managed by a designated safety director. There was a written safety program which described specific operating procedures for the driver and rear load helper. Safety meetings were conducted on a weekly basis.

The employer conducted pre-employment physicals and drug screening in hiring new workers. New hire training was conducted and included safety program requirements. Specific task training was conducted on the job. Training was conducted in the classroom and at the job site.

The victim had been employed for nine years and five months as a rear load helper. He was trained in the task in which he was engaged at the time of the incident. The vehicle operator had been employed for nine months. He had a Commercial Drivers license (CDL) which was required by the Department of Transportation before a refuse collection vehicle can be operated. The driver had also completed training on how to drive the route to which he was assigned.

INVESTIGATION

On the day of the incident, the vehicle operator drove the refuse collection vehicle to the victim's residence to pick him up. They then proceeded to their assigned route. When they reached the street where the incident occurred, the driver backed his vehicle down the street. The driver was either shown this way of approaching this street or decided to back down the street on his own. (One possible explanation for backing down the street was that there were only four stops to make and the truck would be facing in the direction required to continue with the route once the four pick-ups were made. This was not a dead-end street.)

After picking up refuse from two houses, the driver proceeded up to the next house. This third stop had more than the usual amount of refuse to pick up. The driver decided to reposition the vehicle at approximately a 45 degree angle to the curb so the rear loading area of the truck was closer to the refuse.

The driver observed the victim in his right side mirror as he dismounted the right rear step. He then pulled forward and backed the vehicle so it would be closer to the refuse. The driver then got out to assist the victim in loading the refuse. When the driver reached the rear of the vehicle he did not see the victim. He loaded a bag of trash and then walked around to the right side of the vehicle. He observed the victim lying down between the rear dual tires of the vehicle.

Shortly thereafter, the justice of the peace arrived at the scene and pronounced the victim dead at 10:10 a.m.

Vehicle Condition Report

Prior to departing on their assigned routes, vehicle operators are required to fill out a vehicle condition report (VCR). The report includes a place to note any deficiencies in safety equipment and safety systems. The coding system for deficiencies includes (02) backsafe system and (03) backup horn. The VCR has places to identify deficiencies prior to leaving (outbound checks) and upon returning (inbound checks). It also contains a place for the driver to sign, maintenance personnel signature, once work has been completed, and a driver review once work has been completed by maintenance. The VCR for the vehicle involved on the day of the incident was not

available.

A vehicle repair order, for the vehicle involved, indicated the wiring to the backup alarm and lights had been repaired on 3/3/98 after the vehicle was returned to the shop following the incident. There was no documentation indicating the alarm was faulty prior to departing the day of the incident. According to the OSHA investigation, the alarm had been disconnected. Company officials stated it was not uncommon for employees to disconnect the back up alarms.

Several VCR's were reviewed on other vehicles. Most were not completely filled out.

Company operating procedures

The operating procedures for helpers included the following information:

- NEVER ride while vehicle is being backed up. It is the helper's responsibility to dismount and guide the driver and;
- Driver is NEVER to move the vehicle unless helper is seen.

Supplemental work rules for drivers and helpers

The supplemental work rules for drivers and helpers included the following information as it applies to backing a vehicle:

- Avoid backing situations where possible. Plan routes to keep backing to a minimum.
- At the beginning of each work day, a driver must check to see that mirrors, cameras and sensors are adjusted properly, and that backup alarms and backup lights are working.
- In a two or more person operation, the driver must use the helper to guide in backing. A driver must not back up unless all helpers are located and safely away from the vehicle. If a helper should disappear from view, the driver must stop the truck immediately and not resume backing until the helper is located and safely away from the vehicle.
- Drivers should back out of traffic rather than back into it. For example, back into dead end streets and drive out. Be sure mirrors, cameras and sensors are adjusted properly.
- Helper should maintain eye contact with the driver.

Training

Drivers are trained by other drivers, who rely on their memory, on how to drive the different routes. The driver stated to company officials that backing down the street at this part of the route was what he was instructed to do.

CAUSE OF DEATH

The justice of the peace stated the cause of death was from skull fracture and massive brain injury.

RECOMMENDATIONS/DISCUSSION

Recommendation #1 - Employers should monitor employee's operation of vehicles and take appropriate action to ensure proper operation of vehicles or equipment which includes safe backing practices.

Discussion: In this situation, backing down the street where the incident occurred was not acceptable. The street did not have a dead-end but was too narrow to make a U-turn. The incident may have been prevented had the employer observed the vehicle operations along this route.

The employer should increase the frequency of observations of workers while on their assigned routes. Stops where backing is more likely to occur should be targeted. As they monitor their areas, they must be ready to change part of an operation or the entire operation if they perceive the immediate need for corrective action. They also must identify unsafe behavior such as improper operation of vehicles or equipment, disabling safety devices or not following other company safety procedures. In addition, the proper filling out of vehicle condition reports should be emphasized to ensure proper maintenance of the vehicles, including safety features.

Recommendation #2 - Employers should develop a system of successively heavier penalties for violation of safe work practices.

Discussion: In this incident, the back up alarm had been disconnected. Had the alarm worked, the rear-load helper would have been warned the truck was backing. He would have been able to move clear of the backing vehicle.

Employers must send a clear message to everyone, employees and supervisors, that all safety regulations and instructions are expected to be followed. Specifically, disconnecting safety devices or not properly documenting vehicle inspections is a violation of the company safety policy.

Safety regulations must be taken just as seriously as any other company directive. The message should also include the fact safety measures, written or unwritten, are part of the requirements for performing jobs. As a last resort, employers should use a system of successively heavier penalties for violation of safe work practices. For example, the first clear and deliberate violation, such as disconnecting safety devices, may bring an official reprimand; the second, a short layoff; the third dismissal (Grimaldi, Simonds, 1989).

Recommendation #3 - Employers should train drivers and collectors (rear-load helpers) on the procedures outlined in the NIOSH Alert, Preventing Worker Injuries and Deaths From Moving Refuse Collection Vehicles and also include the National Solid Waste Management Association (NSWMA) manual of Recommended Safety Practices (NSWMA 1988).

Discussion: The Manual of Recommended Safety Practices by NSWMA contains detailed

procedures for backing safely, acting as a spotter during backing, and working around mobile equipment. These procedures include the following:

- Maintaining visual contact between the driver and workers on foot when working close to the vehicle and when backing.
- Checking both side mirrors repeatedly when backing.
- Using a reliable spotter positioned to see both the driver and any blind spots behind the vehicle when backing.
- Using standard hand signals when backing.
- Stopping the truck if the spotter must change positions.
- Immediately stopping the maneuver if visual contact with the spotter is lost.
- Remaining clear of the rear of the vehicle when the back-up lights are on or the alarm is sounding.

The NIOSH Alert also includes case reports and recommendations employers can use in their safety programs.

REFERENCES

1. ANSI [1992]. American national standard for mobile refuse collection and compaction equipment-safety requirements. New York, NY: American National Standards Institute, ANSI Z245.1-1992
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3. NSWMA [1988]. Manual of recommended safety practices. Part 4, Mobile waste collection, processing and transportation section. Washington, DC: National Solid Waste Management Association.
4. Grimaldi, J.V., Simonds, R.H. Safety Management, 5th ed. Homewood, IL: Irwin 1989