# A switchman for a railcar manufacturer died when he was caught between a pole and the railcar he was riding on.

**Investigation # 99TX05801**
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## SUMMARY

On January 4, 1999, a 32-year-old male switchman died when he was caught between a railcar and a pole. The switchman was riding on the side of the lead railcar being pushed by a trac-mobile toward other railcars on the track. He was responsible for telling the operator of the trac-mobile how close they were to the other railcars. The victim was riding on the ladder of the lead railcar. Company policy was to walk alongside the railcars and not ride them. Poles had been placed in-between sets of tracks which were used for fall protection by workers when they were working on top of the railcars. Since it was dark and there was no lighting, the victim did not see one of the poles. There was a 7½ inch clearance between the pole and the railcar. The victim was caught between the pole and the railcar.

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

**** install adequate lighting in the area designated as the no ride area.***

**** install concrete walkways between the sets of railroad tracks in the area designated as the no ride area.***

## INTRODUCTION

On January 4, 1999, a 32 year-old, male switchman died when he was caught between a pole and a railcar. The TX FACE program officer was made aware of the incident by the regional OSHA office on January 13, 1999. A visit to the site was made on January 27, 1999. The health and safety representative was interviewed. Pictures of the area were taken.

The employer was a railcar manufacturer. The company employed 650 workers, six of whom performed the same duties as the victim. The employer had been in business for 65 years. There were three other workers at the site when the incident occurred. The victim had been employed with the company for two weeks and was trained to perform the task.

The employer's safety program was managed by a full-time health and safety director. A written safety program was in place. It included written procedures which covered the victim's task. Safety meetings were conducted for five minutes before each shift by supervisors and once a month by the health and safety manager. In addition, a safety steering committee met once a month.

New hire training was conducted and consisted of assigning the new employee to an experienced worker who was responsible for training. The health and safety manager also conducted one-on-one training in which he covered the employer's written safety policies and job-specific safety policies. Refresher training, along with task-specific training was included in the safety program. Training was conducted in the classroom and on the job at the job site. The company conducted pre-employment physicals and drug screening.

**INVESTIGATION**

The employer was a railcar manufacturer. Within the facility were several sets of railroad tracks used to move and store tank cars that were manufactured for customers. The employer used a

trac-mobile, a vehicle that was designed to travel both on a paved surface and railroad tracks, to move the tank cars.

The victim was a switchman whose responsibility was to work in coordination with the trac-mobile operator to move tank cars from the paint building to the outside touch up area and then to the storage location. Another locomotive then comes and transfers the tank cars to the customer.

Two sets of tracks next to the paint building were used for touch-up purposes. Between these two sets of tracks were several poles that had been installed as part of the fall protection system. Fall protection was required because workers were exposed to at least a 15-foot fall while performing touch-up work on top of the tank cars. Each pole had an arm that extended out and over the tank cars. A cable was attached to each pole for workers, who wore full body harnesses, to connect to while they were on top of the tank cars.

The victim had been instructed that the area where the poles were located was considered a "no-ride" area. The employer designated this area as "no-ride" because the clearance between the tank cars and poles was very limited. It was possible, however, to stand on the metal ladder on the side of a tank car and squeeze by the first two poles. The third pole, though, had only a 7½ inch clearance between the pole and the tank car. In other areas where there are no poles it is acceptable to ride on the side of the tank cars. Written procedures described how the switchman was to stand on the tank car's metal ladder.

The victim and coworkers reported for work at 5:00 a.m. and were instructed at that time what was needed to be accomplished. This particular task -- guiding the trac-mobile operator in moving tank cars from the touch-up area to the storage area -- was the first one the crews were going to perform.

When tank cars are moved, they are first connected together and then transferred to the appropriate track. The maximum speed, as in this case, is described as a "fast walk." For this task, the victim was responsible for advising the trac-mobile operator how close they were getting to the other tank cars so the trac-mobile operator could slow down as needed. The trac-mobile operator could not see the victim, so all communication was accomplished by two-way radio.

It is not known when the victim mounted the tank car. He radioed to the trac-mobile operator to "bring them [the railcars] my way." This was the standard communication phrase used by workers to tell the trac-mobile operator which way to push/pull the tank cars. It was the last radio transmission heard from the victim.

The trac-mobile operator radioed to the victim, requesting an update on how close they were to the other tank cars. Moments later the lead railcar, on which the victim had been standing, struck the other tank cars. This was the first indication that something was wrong.

Coworkers immediately began searching for the victim. The area had some lighting, however, the tank cars created shadows, and coworkers could not see the victim lying between the sets of railroad tracks. They went into the paint building immediately adjacent to the tracks thinking he might have gone to the restroom. When they could not find him in the building, they came back out and walked down the area where the poles were located and found the victim lying between the sets of tracks next to the third pole, unconscious.

The victim's hard hat was pushed in at the back of the skull approximately two inches and the bill had been turned up. The victim's eye protection was broken where the right lense and nose piece connect and there was yellow paint from the poles on the lense and nose piece.

Emergency Medical Services (EMS) were immediately called while coworkers performed CPR. The victim was transported to a local hospital emergency room where he was pronounced dead by the medical examiner at 9:15 a.m.

**CAUSE OF DEATH**

The medical examiner determined the cause of the death to be blunt force trauma of head and chest due to impact with a fixed object.

**RECOMMENDATIONS/DISCUSSION**

***Recommendation #1 - The schedule for new hires should restrict them to activities during daylight hours until procedures are learned and proficiency is verified.***

Discussion: Since 1993 the average percent distribution of fatal occupational injuries for employees with up to one year's experience on a job has been about 33%. As depicted in the

chart below, the one year length of service is the highest rate as compared to employees with 2 to 5 years (26%), 6 to 10 years (15%) and more than 10 years (27%).[1] Employees can be considered new hires for at least one year and the amount of training a person receives is inversely correlated to the likelihood of accident frequency. Also, the employee reported to work at 5:00am which means he probably had to get up to prepare for work around 4:00am. No one knows how well or long he slept that night before the incident to know how alert he was. Research has shown that between midnight and 6:00am individuals are more likely to make errors though they may have had seven or eight hours of sleep.[2] It has been predicted that a significant number of injury incidents will occur during the early morning hours involving one or more employees with under two years experience.[3] Until an employee is comfortable with his duties, has been trained in the safe and proper way to conduct those duties, and performance has been observed as satisfactory, it is best not to place that employee in conditions that will place other stresses on accomplishing the work. Nighttime or early morning work because of reduced visibility and physiological stressors are such conditions.

***Recommendation #2 - Employers should install adequate lighting in the area designated as the no ride area.***

Discussion: Although company policy stipulated that employees were not supposed to ride on tank cars in this area, the victim may have been able to see the pole if there had been more lighting and gotten down off the ladder. Tank cars parked in the area where the poles are located created shadows. The shadows made it difficult to see the poles, even though they were painted yellow. Additional lighting on the poles would help workers recognize the no-ride area. It would also help workers identify any tripping hazards that may have been created by equipment or parts left out on the ground. Reflectors or some type of reflective material on the poles would also enhance the visibility of the poles under low light conditions.

***Recommendation #3 - Employers should install concrete walkways between the sets of railroad tracks in the area designated as the no-ride area.***

Discussion: The area between the sets of railroad tracks where workers must walk was covered with an inch to 1½ crushed rock. It is more difficult to walk on this type of uneven surface versus a smooth surface. Since workers had to walk at a pace described as a "fast walk," there may have been a temptation to ride on the tank car, dismount when approaching a pole, then ride on the ladder again. If a smooth surface is available for workers to walk on, then a fast walk becomes much easier and the temptation to ride is reduced if not eliminated.

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1. Texas Workers' Compensation commission, Division of Workers' Health and Safety, Safety Information Systems in cooperation with U.S. Department of Labor Bureau of Labor Statistics, **Fatal Occupational Injuries in Texas 1997,** September, 1997.**Fatal Occupational Injuries in Texas 1997,**

2. Petersen, Dan, **Human Error Reduction and Safety Management,** Van Nostrand Reinhold, 1996, pg. 152.

3. Ibid, pg. 153.