

Paramedic Dies in West Virginia Following a Fall From a Bridge

SUMMARY

On November 15, 1997, a 34-year-old male paramedic (victim) died when he fell approximately 300 feet from a bridge to the rocks below. The victim and a co-worker were part of a two-man ambulance crew that had responded to motor vehicle crashes on an ice covered bridge at approximately 8:24 p.m. The victim was standing in front of a disabled vehicle and was talking with the driver when another vehicle traveling toward them spun out-of-control. The driver looked at the approaching vehicle and when she looked back toward where they were standing, the paramedic was not in sight. The co-worker, who had returned to the ambulance to locate chemical flares, searched for the victim with fire department and law enforcement personnel. Using search lights they located the victim on the rocks beneath the bridge. The injuries from the fall were immediately fatal, therefore no emergency first aid or CPR was administered. The victim was transported to a local hospital where he was officially pronounced dead at 10:36 p.m. Time of death was ascertained to be 8:30 p.m. The WV FACE Investigator concluded that, to reduce the likelihood of similar occurrences, employers should:

- *develop, implement and enforce a comprehensive safety program that includes, but is not limited to, a thorough hazard analysis and utilization of controls specific to the job and employee training to recognize and abate or avoid unsafe conditions applicable to their work.*

INTRODUCTION

On November 19, 1997, the WV FACE Program was notified through a newspaper clipping service that a worker had died in West Virginia following a fall from a bridge. The WV FACE Program Investigator traveled to the site of the fatal fall on November 21, 1997 and conducted an investigation of the incident. The state trooper, who had investigated the scene, and a representative of the ambulance company were interviewed. The death certificate was obtained and photographs were taken of the bridge.

The employer in this incident was an ambulance company that had been in operation for 27 years and employed 136 workers. The ambulance station to which the victim was assigned had 24 workers. The company has a safety and health program, an employee handbook, and requires emergency services workers to maintain certification. There is no clear procedure or training in recognition of hazards that may be present in uncontrolled traffic situations. The victim had worked for the employer for eight years and had been active in emergency services for over 16 years. He had received extensive training in the performance of emergency medical services and held valid and current certification required for his paramedic position. The victim and his co-worker were approximately half through a 24-hour shift when the incident occurred. A series of 24-hour work shifts followed by a series of days off is a common staffing pattern among companies that offer emergency services. This was the first fatality that the company had experienced.

INVESTIGATION

On the day of the incident, the victim and a co-worker had begun their routine 24-hour shift at 7:30 a.m. During the course of the day, the weather deteriorated and snow and sleet began to fall by late afternoon causing icy conditions on bridges in the area. Earlier in the evening, the victim and his co-worker had responded to motor vehicle incidents caused by icy road conditions on two other bridges located in the general vicinity. They were returning to the station when they saw vehicles spinning out-of-control on the bridge they were crossing. They crossed the two lane northbound span of the bridge, circled back using the southbound span, and stopped the ambulance approximately ten to twelve feet in front of a stranded vehicle located at the midpoint and in the right berm on the northbound span. Flashers and loading lights were on when both men exited the ambulance. The victim proceeded to check the status of motorists while the co-worker returned to the ambulance to obtain chemical flares and to radio a warning to another ambulance traveling toward the bridge.

The bridge on which the incident occurred is approximately three-tenths of a mile long and 46 feet wide and spans a gorge 300 feet deep. There are two northbound traffic lanes which measure 22 feet 11 inches, a 11.5 foot shoulder each side of the double lanes, and a 32 inch high cement wall extends the entire length of each side of the bridge span. There is a reflector placed at the midpoint of each sidewall and at each end of the bridge. The cement sidewalls of the bridge are wider on the bottom, and this contour directs any impact force from a vehicle back into the traffic lane. The speed limit is posted at 65 miles per hour. There are yellow diamond-shaped caution signs located two-tenths of a mile before the southspan and five-tenths of a mile before the northspan of the bridge; each caution sign reads "Watch for Ice on Bridge." When approaching from the north, one observes the diamond caution sign, the road curves, and the bridge is lost to view for a few moments. Once a vehicle rounds the curve, the bridge once again comes into view. The police report indicates that the bridge and the sidewalls were covered with ice on the night of the incident and due to heavy cloud cover and an icy rain, visibility was described as poor. Figure 1, which is not drawn to scale, provides a sketch of the bridge and the approximate location of the vehicles and the victim at the time of the incident.

On the night of the incident, the victim was wearing company-issued clothing which included a light blue shirt, navy pants and jacket. Two safety vests with reflector tape were available in the ambulance, however neither the victim nor his co-worker were wearing the vests. According to the company representative, emergency service workers were advised by the company to wear the safety vests when conditions dictate, but there is no written policy, procedure or training regarding the conditions under which vests are to be worn. The co-worker and bystanders were in the process of locating and setting out flares when a motorist in Vehicle #3 spun out-of-control on the bridge. The victim was standing on the left side of the road in front of Vehicle #2 and near the sidewall of the bridge. The motorist he had been talking with looked away at Vehicle #3 spinning out-of-control and when she looked back, the victim was not in sight. She reported the paramedic missing to his co-worker who searched the bridge for the victim and unable to locate him, requested assistance from fire department and police personnel who were on the scene. Just minutes following the reported disappearance of the victim from the bridge, police and fire department personnel using searchlights located the victim on the rocks approximately 300 feet below the middle of the bridge.

It is important to note that bridges in West Virginia are not uniform in design. For example, one of the bridges the victim and co-worker had been on earlier in the evening has a 32 inch high cement barrier between the two southbound and the two northbound lanes. There is no opening to ground in the middle

between the two sets of lanes. Toppling or falling over the inside cement barrier would not have exposed the emergency worker to a fall from elevation.

The cement barrier sidewalls forming the outside walls of the single span bridge posed a fall hazard. The bridge where the incident occurred had four sidewalls (there is an opening between the spans), each with a 300-foot fall hazard. Information available suggests that the paramedic either fell or leaped over the cement side barrier to avoid an oncoming motor vehicle.

The EMS and fire department personnel used an access road to recover the victim's body. No emergency care was given as the injuries were immediately fatal. The victim was transported by ambulance to a local hospital where he was pronounced dead. Time of injury and time of death were documented as 8:30 p.m.

CAUSE OF DEATH

The medical examiner's report listed the cause of death as multiple injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should develop, implement and enforce a comprehensive safety program that includes, but is not limited to, a thorough hazard analysis and utilization of controls specific to the job and employee training to recognize and abate or avoid unsafe conditions applicable to their work.

Discussion: The victim in this incident had extensive experience in the provision of emergency medical services. The company had a written safety and health program, but the program did not cover traffic control and employee safety procedures for use on roadways/bridges. The employee handbook section on field safety did not address hazards involved with rescue calls performed on hazardous roadways. The handbook states that fire departments are to analyze, stabilize, and secure hazardous scenes prior to entry by EMS providers. If a hazardous scene is not defined, emergency rescue personnel may not be clear as to the conditions under which they must wait for the fire department to secure the scene prior to assisting motorists. Emergency medical service personnel go through many required re-certification courses. In the required Basic Trauma Life Support course, site safety is discussed with regard to the safety of everyone on the scene; however, it does not focus on worker safety. Employers should expand written safety programs, employee handbooks and employee training to include specific procedures to address workplace hazards, such as, but not limited to, traffic control, poor weather conditions, poor visibility (seeing and being seen), and fall hazard recognition. Employers should consider making reflective vests or use of reflective tape on jackets/trousers/shoes part of the standard uniform of emergency medical service providers. At a minimum, the conditions under which reflective vests are to be worn should be written and communicated to all field employees. A more complete safety evaluation of the scene, traffic control, and greater visibility of emergency service workers may have prevented this incident.

REFERENCES:

1. Paramedic Emergency Care, Second Edition, Chapter 10, Brady, Englewood Cliffs, NJ 07632.
2. Basic Trauma Life Support, Third Edition, Chapter 2, Brady, Englewood Cliffs, NJ 07632.

FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The WVU Center for Rural Emergency Medicine, through a contract with the West Virginia Department of Health and Human Resources, conducts investigations on the causes of work-related fatalities within the state. The goal of this program is to prevent future fatal work-place injuries. West Virginia FACE intends to achieve this goal by identifying and studying the risk factors that contribute to workplace fatalities, by recommending intervention strategies, and by disseminating prevention information to employers, employees, trade associations, unions, equipment manufacturers, students, teachers, and others with an interest in workplace safety.

Please use information listed on the Contact Sheet on the NIOSH FACE website to contact [In-house FACE program personnel](#) regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.