

Construction Flagger Struck and Killed in Two-Lane Highway Work Zone

Incident Number: 14KY002



Photo courtesy of Kentucky OSHA

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Kentucky Fatality Assessment and Control Evaluation (FACE) Program
Incident Number: 14KY002
Release Date: May 23, 2014
Subject: Construction Flagger Struck and Killed in Work Zone

Summary

On a clear, cold, Monday, January 20, 2014, a 36-year-old married flagger entered a two-lane highway with his back toward oncoming traffic and was struck by a 2010 red Toyota Corolla, driven by a 53 year-old motorist. The seven-man crew had finished setting up a construction zone on a two-lane highway to repair damaged guardrails along the westbound side of the roadway. The crew had placed alert signs in each direction of travel in preparation to stop all traffic prior to completely closing the westbound lane and had just dropped off the victim, who was designated as the flagger for the eastbound traffic. Traffic flow was to be coordinated with flaggers by two-way radios. Witnesses stated that the victim walked out into the eastbound lane with his back to oncoming traffic while facing the other flagger and the lane of traffic he stepped into had not yet been stopped. The victim was struck from behind by a passenger vehicle traveling approximately 55 mph. Police interviews with the driver stated that his vision was obscured due to the glare of the sun through his windshield and he did not see the victim.

Recommendation No. 1: Flaggers should never enter the roadway before traffic has been stopped and never turn their backs towards oncoming traffic.

Recommendation No. 2: Operators of motor vehicles should always adhere to roadway warning signage by slowing down and paying close attention while in a work zone area.

Recommendation No. 3: Employers should train employees quarterly to keep flagging safety policies and procedures fresh in their minds while working in highway situations.

Recommendation No. 4: Companies should set up traffic control in accordance with the MUTCD.

Introduction

Monday, January 20, 2014, the Kentucky Fatality Assessment and Control Evaluation program was notified by a local news channel of a fatality involving a flagger and a motor vehicle. The local news reported the flagger was struck from behind by a motorist while trying to direct traffic to one lane in order to repair guardrails in the area. The local news reported the victim, a 36 year old father of 4 girls, died in transport to the local hospital of multiple injuries.

Employer

The employer is a highway construction contractor specializing in the installation and maintenance of highway signs, guard rails, and cable barrier systems. The company was established in 1962 and has 40 employees.

Written Safety Programs and Training

The Manual on Uniform Traffic Control Devices (MUTCD) requires all flaggers to be trained in safe temporary control practices. The Vice President of the company stated he trains all of the employees and he holds certifications from one of the University's College of Engineering in the area of work zone traffic control. His training includes "Work Zone Traffic Control Technician," "Work Zone Traffic Control Supervisor", and "Work Zone Traffic Control Supervisor Requalification" as of April 24, 2013. Two other managers also hold certifications from the College of Engineering as well. The Vice President stated he personally trained the victim utilizing a power point presentation, a written exam and an observed flagging demonstration on October 5, 2012. The power point presentation was produced by the Kentucky Transportation Center. The written exam was in a multiple choice format consisting of 49 questions on various flagger topics. The Vice President stated that any missed questions on the written tests were reviewed with employees so that they were clear on the correct answers. A tool box training was also given on April 23, 2013 as refresher training on flagman signals. The flagging demonstration covers the trainee's ability to stop and release traffic with a paddle as well as how to stop and release traffic with a flag. Employees confirmed that all employees are trained the same way when hired.

Other safety programs such as Personal Protective Equipment (PPE) use were also on file. The company provided all policies and procedures to each employee upon hire as well as a Flagger Handbook and a safety handbook.

The company required their employees to wear a hi-vis fluorescent yellow coat class 3 level 2 during daytime flagging operations per MUTCD.

Victim

The victim was a 36 year old father of four daughters, one just a few days old when he was killed. The victim hired on with the company on October 5, 2012. He had prior construction experience with another company but had no prior flagger duties.

Incident Scene

The incident scene was a two-lane highway in the eastbound lane. The roadway was straight and dry with a speed limit of 55 m.p.h.

Weather

On the day of the fatal incident, Monday, January 20, 2014, the temperature was 37.9 degrees Fahrenheit with sunny skies and clear, dry roadways.

Investigation

On Monday, January 20, 2014, a cold, clear, sunny winter day, a 36-year-old married father of a 10-day-old newborn entered the roadway with his back toward oncoming traffic and was struck by a 2010 red Toyota Corolla, driven by a 53 year-old motorist. The seven-man crew had finished setting up a construction zone on a two-lane highway, and the crew was there to repair damaged guardrails along the westbound side of the roadway. The crew did not use construction

barrels that are included in the MUTCD set up. However, the crew had placed alert signs in each direction of travel in preparation to stop all traffic prior to completely closing the westbound lane, and the crew had just dropped off the victim who was designated as the flagger for the eastbound traffic. Traffic flow was to be coordinated with flaggers by two way radios. The westbound flagger halted traffic in preparation of beginning the one-way-only traffic through the work zone. The westbound flagger attempted to contact the victim (east bound flagger) but received no reply. Witnesses stated the victim walked out into the eastbound lane with his back to oncoming traffic while facing the other flagger and the lane of traffic he stepped into had not yet been stopped. The victim was struck from behind by the vehicle traveling approximately 55 mph.

Police interviews with the driver stated that his vision was obscured due to the glare of the sun through his windshield and he did not see the victim. There were three advanced orange flags warning drivers to “be prepared to stop”, and “one lane road just 1500 feet ahead” while the third showed a depiction of a flagger. The victim was also wearing a hi-vis jacket with a class 3 level 2 rating that complies with ANSI/ISEA 107-2010. This jacket was suitable for daytime flagging operations as per the Manual on Uniform Traffic Control Devices (herein after MUTCD). The driver did not slow down or adhere to the signage. The signs were 4 feet by 4 feet in dimension which exceeds the MUTCD requirements and placed mere inches from the roadway. All signs were spaced 528 feet or greater and exceeded MUTCD requirements. The flagger also had a “stop”- “slow” paddle that measured 24 inches by 24 inches as required by MUTCD. The driver did not apply his brakes until after striking the victim. 911 was called at 9:07 a.m. and arrived on scene at 9:19 a.m. The victim succumbed to his injuries while being transported via ambulance to the nearest hospital. Time at hospital was 9:37 a.m.

Cause of Death

The cause of death was from blunt impacts of the head, trunk and extremities with multiple skeletal and visceral injuries (traumatic subarachnoid hemorrhage and spinal cord injury).

Recommendations/Discussions

Recommendation No. 1: Flaggers should never enter the roadway before traffic has been stopped and never their back toward oncoming traffic.

One of the cardinal rules of a flagger is to stand at the shoulder of the road, next to the lane of traffic being controlled. A flagger should never stand in the lane being used by traffic and never turn his/her back on the traffic, but should look the drivers in the face to get their attention. Employers need to ensure this is a main training focus for those who are directing and stopping traffic.

Recommendation No. 2: Operators of motor vehicles should always adhere to roadway warning signage by slowing down and paying close attention while in a work zone area.

According to the National Highway Traffic Safety Administration (NHTSA), in 2012, 609 people died in highway work-zone crashes. This statistics included workers as well as motorists. Speeding was a factor in 35% of all fatal work-zone crashes in 2012. While fines have doubled in work zones for speeding, there are still fatalities occurring. The American Association of

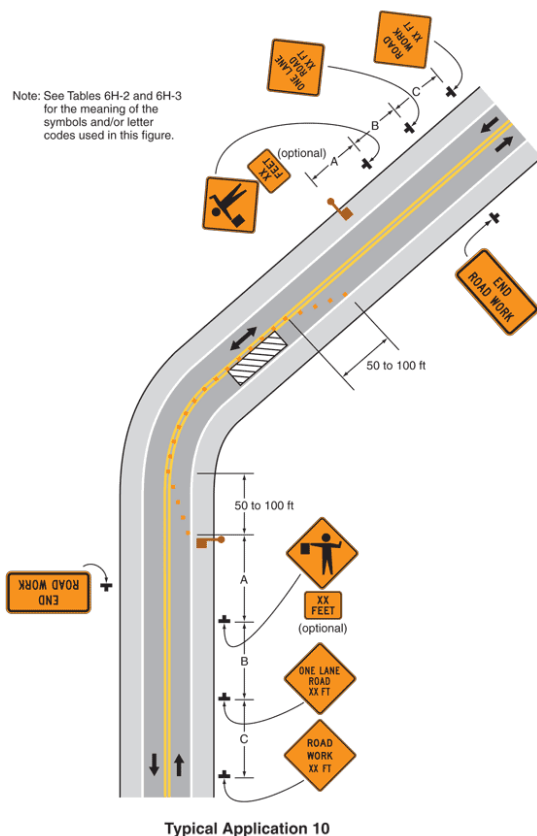
State Highway and Transportation Officials, the Federal Highway Administration and the American Traffic and Safety Services Association have joined to promote work zone safety. Since then, state DOTs and transportation groups join the campaign each April to reduce fatalities and promote safer driving practices.

Recommendation No. 3: Companies should train their employees quarterly to keep flagging policies and procedures fresh in their minds while working in highway situations.

The Centers for Disease Control and Prevention (CDC) conducted a study that said three workers are killed every day and more than a thousand each year while driving, riding in and working around motor vehicles in traffic. In order to reduce these fatalities, employers should train their employees on a quarterly basis to keep safety rules and policies fresh in their minds while working in these dangerous highway situations. When employees are reminded more often, they are less likely to forget the safety measures in place to protect them while working.

Recommendation No 4. Companies should set up traffic control in accordance with the MUTCD.

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)



Option:

1. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).
2. The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short-duration operations.
3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

4. *The buffer space should be extended so that the two-way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.*

Standard:

5. **At night, flagger stations shall be illuminated, except in emergencies.**

Guidance:

6. *When used, the BE PREPARED TO STOP sign should be located between the Flagger sign and the ONE LANE ROAD sign.*
7. *When a grade crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the grade crossing, the TTC zone should be extended so that the transition area precedes the grade crossing.*
8. *When a grade crossing equipped with active warning devices exists within the activity area, provisions should be made for keeping flaggers informed as to the activation status of these warning devices.*
9. *When a grade crossing exists within the activity area, drivers operating on the left-hand side of the normal center line should be provided with comparable warning devices as for drivers operating on the right-hand side of the normal center line.*
10. *Early coordination with the Railroad Company or light rail transit agency should occur before work starts.*

Option:

11. A flagger or a uniformed law enforcement officer may be used at the grade crossing to minimize the probability that vehicles are stopped within 15 feet of the grade crossing, measured from both sides of the outside rails.

Keywords

Flagger
Highway worker
Construction worker
Road Crew Worker
Highway work zone
Road Traffic Control
Directing Traffic

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