

[FE-03-98](#) (document link)

**SUMMARY FOR FE-03-98:**  
**SELECTED AND POSSIBLE CONTRIBUTING FACTORS**

**SELECTED FACTORS**

**Railroad:** National Railroad Passenger Corporation (Amtrak)

**Location:** Harrison, New Jersey

**Region:** Region 1

**Month:** February

**Date:** 02/04/98

**Time:** Between 8:15 p.m. and 8:30 p.m., EST

**Data for Fatally Injured Employee(s)**

**Signal Trainee**

20 years old

Five months of service

Last rules training: September 1997

Last safety training: September 1997

Last physical: September 1997

**Data for All Employees (Craft, Positions, Activity)**

**Craft:** MOW

**Positions**

Signal Trainee

Signal Maintainer

Amtrak's Trouble Desk

Block Operator (in Hudson Tower)

Engineer of eastbound train

(one of four trains traveling eastbound between 8:18 pm and 8:46 pm, time frame of accident)

**Activity:** Activating switch heaters at Hudson Interlocking on the main line.

## **SUMMARY FOR FE-03-98 CONTINUED**

### **POSSIBLE CONTRIBUTING FACTORS**

#### **EVENT**

The Signal Trainee was fatally injured when struck by an eastbound train as he was crossing the main line tracks to reach the company truck.

#### **PCF No. 1**

Neither the Signal Trainee nor the Signal Maintainer had established on-track protection prior to work in the interlocking.

#### **PCF No. 2**

Visibility was poor due to wind-driven rain. Also, looking west from the site of the accident, there were many bright external lights that were difficult to distinguish from the train's headlights.

#### **PCF No. 3**

The Signal Trainee was inexperienced with only five months on the railroad and only one month's exposure to high speed trains, as the first four months had been spent in Penn Station, New York, where track speed was only 10 mph.

#### **PCF No. 4**

The Signal Trainee did not receive training at this new location on the physical characteristics of track.

**REPORT:** FE-03-98

**RAILROAD:** National Railroad Passenger Corporation (Amtrak)

**LOCATION:** Harrison, New Jersey

**DATE & TIME:** Feb. 4, 1998, Between 8:15 p.m and 8:30 p.m. EST

**PROBABLE CAUSE:** The Signal Trainee was struck by a moving train while fouling the main track within interlocking limits.

**EMPLOYEE:**

Occupation:	Signal Trainee
Age:	20 Years
Length of Service:	Five Months
Last Rules Training:	Sept. 11, 1997
Last Safety Training:	Sept. 17, 1997
Last Physical Examination:	Sept. 8, 1997

### **CIRCUMSTANCES PRIOR TO THE ACCIDENT**

On the day of the accident, the Trainee reported for his assigned shift at 3 p.m. at Hudson Interlocking. The Signal Maintainer, who was instructing the Trainee, reported for duty at Swift Interlocking, approximately two miles away. The Signal Maintainer called the Trainee and instructed him to drive the company truck and meet him at Swift.

The east-end limits of Hudson Interlocking were near milepost 7.3 of Amtrak's Northeast Corridor main line in Harrison, New Jersey. At this location, the railroad comprised three east/west orientated (and timetable direction) tracks identified from north to south as Tracks Nos. 1, 2, and 3. Amtrak intercity passenger trains and New Jersey Transit (NJT) commuter trains operated over this high traffic density railroad. Tracks Nos. 2 and 3 were predominately used by trains traveling to and from New York City's Penn Station. Track No. 1 was predominately used by train traffic to and from Hoboken, NJ. Trains operating over this railroad were governed by NORAC operating rules, and the method of operation was controlled by Automatic Block Signals supplemented by a Cab Signal System. The maximum authorized timetable speed was 70 mph.

The Signal Maintainer and Trainee worked at Swift until approximately 7 p.m. They were instructed by Amtrak's Trouble Desk to turn on the switch heaters at Hudson Interlocking. The Signal Maintainer told the Trainee to take the company truck to Hudson Tower and meet him there. The Signal Maintainer drove his privately owned vehicle and parked it at Hudson Tower. They then

traveled by company truck to the east end of Hudson Interlocking. At approximately 8 p.m., they parked the truck on the north side of the right-of-way and climbed up the railroad embankment to track level.

The embankment at this location was approximately 20 feet high. The switch heater control boxes were located adjacently to the Port Authority Trans Hudson (PATH) third rail on the north and south sides of Amtrak's trackage. After turning on the heaters for Power Operated Switches Nos. 65 and 61, they continued walking west. The Signal Maintainer instructed the Trainee to return to the truck and to pick him up at the west end of Hudson Interlocking. The Trainee left to get the truck while the Signal Maintainer continued walking westward to turn on the remaining switch heaters. The Trainee had to walk eastward and cross over the main line tracks to reach the truck. The Signal Maintainer completed the ignition of the remaining switch heaters at approximately 8:40 p.m.

Weather at the time of the accident was rainy and cold, with an approximate temperature of 35° F. Visibility was reported to be poor due to the wind-driven rain.

### **THE ACCIDENT**

When the Signal Maintainer arrived at the pre-arranged meeting point, the Trainee was not there. The Signal Maintainer radioed the Block Operator in Hudson Tower to ask if he had seen the Trainee. The Block Operator informed the Signal Maintainer that he had not spoken with or seen the Trainee recently. The Signal Maintainer then walked approximately one-half mile eastward to his vehicle at Hudson Tower and drove to where the company truck was still parked. Not finding the Trainee at the truck, he climbed up the embankment and discovered the body of the Trainee lying on the north rail of Track No. 1. He notified Hudson Tower at 9:15 p.m., and emergency responders were summoned.

The Feb. 4, 1998 autopsy report completed by the New Jersey Medical Examiner indicated the cause of death as "Multiple Fractures and Internal Injuries" and the manner of death as "Accidental."

### **POST-ACCIDENT INVESTIGATION**

Evidence at the scene indicated that the Trainee was struck by a fast moving train traveling eastbound on Track No. 2. The impact propelled the body approximately 100 feet to the southeast. A broken flashlight, work gloves, knit cap, and hard hat were found at the scene at various locations between the estimated point of impact on Track No. 2 and the location where the body was found on Track No. 1.

The investigation did not identify any witnesses to the accident. Crew members of trains operating through the area during the approximate time of the accident reported nothing unusual. The Engineer of one eastbound train reported seeing the Signal Maintainer at the west end of Hudson Interlocking at approximately 8:46 p.m. He did not report seeing the Trainee. Inspection of equipment operating eastbound during the approximate time of the accident revealed nothing to indicate which train may have struck the Trainee. Crew members on PATH trains were solicited for information, but no unusual observations were reported.

The question of compliance with Roadway Worker Protection (RWP) requirements while performing work in an interlocking were studied. The Maintainer stated that they had completed a job briefing in the company vehicle prior to entering the track area. However, there was no written evidence, and none was required, to support this briefing. In addition, the Maintainer and Trainee did not establish on-track protection while work was being performed in the interlocking.

The investigation revealed that four trains traveled eastbound on Track No. 2 between the hours of 8:18 p.m. (the approximate time the Maintainer and Trainee parted company) and 8:46 p.m. The 8:46 p.m. time was used as a cutoff because the Engineer reported seeing the Maintainer at the west end of the interlocking, but indicated he did not see the Trainee. It appears that the Trainee had already been struck by this time. In addition, the Maintainer stated that the Trainee had no work to perform other than going to the truck. Therefore, considering the weather conditions, it was extremely improbable that the Trainee would stay on the tracks any longer than absolutely necessary. Therefore, since the Maintainer and Trainee parted company at approximately 8:18 p.m., it was believed that the Trainee was struck shortly thereafter by an eastbound train. This conclusion was based on the physical evidence discovered at the scene. The Trainee's broken flashlight was found in the gage of Track No. 1 directly across from the location on Track No. 2 where it appears he was struck. His body was propelled in a southeasterly direction until landing on the north rail of Track No. 1. Work gloves, knit cap, hard hat, and work boots were all found at the scene, indicating the direction of travel. The Trainee was also wearing a reflectorized vest for visibility. N.J. Transit and Amtrak officials held eastbound trains in Penn Station to inspect them for physical evidence to determine which train had struck the Trainee. Due to the rainy weather conditions, there was no evidence found on the rolling stock. Statements were taken from the Engineers and crew members of trains that had passed Hudson Interlocking at the approximate time of the accident. There were no exceptions taken by anyone, and no one reported seeing the Trainee. Eastbound PATH train crew members were solicited for information, but nothing unusual was reported. Investigators concluded that the Maintainer was the last person to see the Trainee alive and also the person to find the body about one hour later.

Extenuating circumstances may have contributed to the fatal injuries suffered by the Signal Trainee. Visibility was poor due to the weather conditions. Also, looking west from the site of the accident, there were many bright external lights that could have been mistaken for a train headlight. Additionally, the Trainee had only five months service time on the railroad, four of which was spent at Penn Station, New York, where the track speed was approximately 10 miles per hour. He had been working on the main line for three weeks at the time of the accident; the track speed through Hudson Interlocking was 70 mph. The Trainee had completed RWP and other safety-related classes at the time he was hired in September 1997, which qualified him as a Watchman following just 60 days on the job. However, his inexperience with high speed trains and lack of training on the physical characteristics of track at his new location were severe safety impediments.

FRA Post-Accident Toxicological Tests were performed on the Trainee. The results were negative.

## APPLICABLE RULES

### **Amtrak Safety Rules**

Safety Rule 4127 of Amtrak's "Safety Rules and Instructions" for Maintenance-of-Way Employees stipulates procedures for walking on tracks and clearing the tracks for approaching trains.

### **Federal Regulation**

49 CFR §214.313

Responsibility of Individual Roadway Workers.

- (a) Each roadway worker is responsible for following the on-track safety rules of the railroad upon which the roadway worker is located.
- (b) A roadway worker shall not foul a track except when necessary for the performance of duty.
- (c) Each roadway worker is responsible to ascertain that on-track safety is being provided before fouling a track.
- (d) Each roadway worker may refuse any directive to violate an on-track safety rule, and shall inform the employer in accordance with §214.311 whenever the roadway worker makes a good faith determination that on-track safety provisions to be applied at the job location do not comply with the rules of the operating railroad.