NATIONAL TRANSPORTATION SAFETY BOARD

Office of Railroad, Pipeline and Hazardous Materials Investigations

Human Performance and Survival Factors Division

October 07, 2015

HUMAN PERFORMANCE GROUP FACTUAL FINDINGS

A. ACCIDENT

Railroad employee fatality that occurred in Pine Bluff, AR at approximately 9:23 p.m. CDT[1] on April 3, 2015.

NTSB accident number: DCA-15-FR-007

B. HUMAN PERFORMANCE INVESTIGATION AND ABRIDGED FACTUAL REPORT

A human performance investigator was not dispatched to the on-scene investigation. However, a survival factors investigator was dispatched and formed the human performance group. A human performance investigator, identified below, subsequently was assigned to the accident on April 14, 2015. This report focuses on factual human performance findings of the investigation.

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[1] Unless otherwise indicated, all times are denoted in Central Daylight Time.

C. SUMMARY OF THE ACCIDENT

On April 3, 2015 at approximately 9:23 p.m. CDT in Pine Bluff, AR, a switch crew consisting of an operator and two ground persons employed by Railroad Switching Services (RSS) was shoving approximately 34 cars east from the switch lead into a track of the facility interchange yard, also known as a plant railroad yard. The switch crew was in the process of building an outbound block of cars, and was attempting to make a cut approximately 9 cars ahead of the locomotive. The operator received a radio command from the ground person to shove east three cars. The operator stopped after moving approximately three car lengths and after not receiving further radio commands from the ground person. The operator dismounted the locomotive and discovered one ground person fatally injured underneath the car where the cut was being made.

D. DETAILS OF THE ACCIDENT

1. Behavioral Factors

a. Employee time sheet information.

(1). The RSS operator of the switcher train. Time sheets provided by RRS disclosed the following information for the operator.

Date	on-duty	off-duty
March 20	6:00 am	4:00 pm
March 21	6:00 am	4:00 pm
March 22	6:00 am	4:00 pm
March 23	6:15 am	7:30 pm
March 24	6:00 am	5:45 pm
March 25	6:00 am	4:00 pm
March 26	6:00 am	4:00 pm
Off March 27 until April 1		
April 2	6:00 am	5:00 pm
April 3	5:00 pm	accident: (9:23 pm)

At the time of the accident, the operator had been on duty for almost four and one half hours.

(2) The RSS ground person (GP) of the switcher train.[2] Time sheets provided by RRS disclosed the following information for the GP.

Date	on-duty	off-duty
March 19	7:00 am	4:30 pm
March 20	6:00 am	4:00 pm
March 21	6:00 am	4:00 pm
March 22	6:00 am	4:00 pm
March 23	6:15 am	7:30 pm
March 24	6:00 am	6:30 pm
March 25	6:00 am	4:00 pm
Off March 26 and 27		
March 28	6:00 am	5:00 pm
March 29	6:00 am	4:00 pm
Off March 30 and 31		
April 2	6:00 am	5:10 pm
April 3	5:00 pm	accident: (9:23 pm)

At the time of the accident, the GP had been on duty for almost four and one half hours.

(3) The deceased RSS GP of the switcher train. Time sheets provided by RRS disclosed the following information for the GP.

Date	on-duty	off-duty
March 19	7:00 am	4:30 pm
March 20	6:00 am	4:00 pm
March 21	6:00 am	4:00 pm
March 22	6:00 am	4:00 pm
March 23	6:15 am	7:30 pm
March 24	6:00 am	6:30 pm
March 25	6:00 am	4:00 pm
Off March 26 and 27		
March 28	6:00 am	5:00 pm
March 29	6:00 am	4:00 pm
Off March 30 and 31		
April 2	6:00 am	5:10 pm
April 3	5:00 pm	accident: (9:23 pm)

At the time of the accident, the decreased GP had been on duty for almost four and one half hours.

[2] Investigation revealed that while this employee was part of the switching crew, he was approximately one mile away from the scene of the accident and had planned to reunite with the other GP and operator.

2. Medical Factors

a. *RSS medical records*. The investigation revealed that of the crew, only the operator of the switcher train had a company related medical record consisting of a pre-employment physical examination form, which included a pre-employment drug test. The NTSB Medical Officer will generate a separate report that will be placed in the For Official Use Only (FOUO) file for the accident.

b. *GP autopsy report*. The NTSB Medical Officer's report pertaining to the autopsy of the deceased GP will be placed in the FOUO file for the accident.

c. *Toxicology*. The NTSB Medical Officer's report pertaining to the toxicological results of the operator, GP and deceased GP will be placed in the FOUO file for the accident.

(1) The RSS operator of the switcher train. Post-accident toxicological testing was performed for the operator. Substances screened for included cannabinoids, cocaine, opiates, amphetamines, methamphetamines, phencyclidine, opiates, marijuana metabolites and cocaine metabolites. The results were positive for the presence of amphetamines and methamphetamines, and negative for the other tested substances. Copies of the final toxicological testing results will be placed in the FOUO docket maintained by the NTSB.

A summary of toxicological test results is shown below.

Position	Specimen obtained	Time/date collected	Results
Operator	urine	12:20 am/ 4-4-15	positive

(2) The RSS GP of the switcher train. Post-accident toxicological testing was performed for the GP. Substances screened for included cannabinoids, cocaine, opiates, amphetamines, methamphetamines, phencyclidine, opiates, marijuana metabolites and cocaine metabolites. The results were negative for all tested substances. Copies of the final toxicological testing results will be placed in the FOUO docket maintained by the NTSB.

A summary of toxicological test results is shown below.

Position	Specimen obtained	Time/date collected	Results
GP	urine	12:25 am/ 4-4-15	negative

3. Operational Factors

a. *Training.*

(1). The RSS operator of the switcher train. Although requested of RSS, investigation disclosed that any training records or documents were unable to be located.

(2). The RSS GP of the switcher train. RSS provided training records for the GP that disclosed he successfully completed various training courses related to railroad switching operations.

(3). The RSS deceased GP of the switcher train. RSS provided training records for the GP that disclosed he successfully completed various training courses related to railroad switching operations.

b. *Experience.*

(1) The RSS operator of the switcher train. RSS records revealed that the operator was hired on March 20, 2015.

Disciplinary action. RSS files disclosed no record of any disciplinary action pertaining to the operator.

(2) The RSS GP of the switcher train. RSS records revealed that the GP was hired on March 1, 2015.

Disciplinary action. RSS files disclosed no record of any disciplinary action pertaining to the GP.

(3) The RSS deceased GP of the switcher train. RSS records disclosed that the deceased GP was hired on March 1, 2015.

Disciplinary action. RSS files disclosed no record of any disciplinary action pertaining to the GP.

4. Plant railroads

The accident occurred within the confines of property that under FRA regulations was considered as a "plant railroad." Pursuant to 49 CFR 209, Appendix A, FRA defines plant railroads as "railroads whose entire operations are confined to an industrial installation."

a. Background

FRA's regulations exclude railroads whose entire operations are confined to an industrial installation (i.e., "plant railroads"), such as those in steel mills that do not exceed the plant's boundaries. Other regulations (e.g., 49 C.F.R. §214.3, railroad workplace safety) exclude not only

plant railroads, but also any railroad that is not operated as a part, or over the lines of, the general railroad system of transportation. By "general railroad system of transportation," FRA refers to the network of standard gage track over which goods may be transported throughout the Nation and passengers may travel between cities and within metropolitan and suburban areas. Much of this network is interconnected, so that a rail vehicle may travel across the Nation without leaving the system. However, mere physical connection to the system does not bring trackage within the FRA's jurisdiction. For example, trackage within an industrial installation that is connected to the network only by a switch for the receipt of shipments over the system is not considered to be part of the general railroad system of transportation. Even where a railroad operates outside the general system, other railroads that are part of that system may have occasion to enter the railroad's property (e.g., a major railroad goes into a chemical or auto plant to pick up or set out cars.) In such cases, the railroad that is part of the general system remains part of the system while inside the installation; therefore, all of its activities are covered by FRA's regulations during that period. The plant railroad itself, however, does not get swept into the general system by virtue of the other railroad's activity, except to the extent it is liable, as the track owner, for the condition of its track over which the other railroad operates during its incursion into the plant. Of course, in the opposite situation, where the plant railroad itself operates on the general system, it becomes a railroad with respect to those particular operations, during which its equipment, crew, and practices would be subject to FRA's regulations.

In some cases, the plant railroad leases track immediately adjacent to its plant from the general system railroad. Assuming such a lease provides for, and actual practice entails, the exclusive use of that trackage by the plant railroad and the general system railroad for purposes of moving only cars shipped to or from the plant, the lease would remove the plant railroad's operations on that trackage from the general system for purposes of FRA's regulations, as it would make that trackage part and parcel of the industrial installation.

b. OSHA jurisdiction pertaining to safety in plant railroads

The mission of the Occupational Safety and Health Administration (OSHA) is to assure safe and healthful working conditions for employees by establishing and enforcing standards and by providing training, outreach, education and assistance. OSHA requires reports on accidents which happen to employees which do not fall under the jurisdiction of other agencies, including the FRA.

The OSHA accident database (https://www.osha.gov/pls/imis/accidentsearch.html) contains 11 keywords which relate to railroads: hopper car, locomotive, rail, railroad, railroad car, railroad tank car, railroad track, railway circuit, train, tank car, and flatbed rail car. Using these keywords, a total of 1,996 OSHA database entries were found from 1984 to 2013. These accident reports were sorted into three categories: plant railroads, not plant railroads, and could not be determined.

The plant railroads category contained 695 hits where an employee of an industrial company was hurt while working around railroad tracks or equipment. The "not plant railroads" category contained 346 accidents, and the "could not be determined" category contained 955 hits.

5. Personal Electronic Devices (PEDs)

The Vehicle Recorder Division (VRD) of the NTSB examined six cellular telephone numbers that were affiliated with the three employees involved in the accident. Records disclosed no activity for the deceased GP just before or at the time of the accident, but activity for the operator and other GP before, near and after the time of the accident. The complete VRD report is located in the public docket.

6. Interviews.

In concert with the party representative from the FRA, the Human Performance group conducted interviews of the operator and GP in Pine Bluff, AR on April 10, 2015. Summaries of the interviews with the operator and GP follow. Complete transcripts of these interviews are located in the public docket.

A. The RSS operator of the switcher train. The operator was asked about the activities of the crew on the day of the accident. He responded that they initially switched cars in the warehouse, and then proceeded to the classification yard to assemble loaded cars for outbound moves. He continued that when they arrived at the yard deceased GP was with him in the locomotive cab and that the third GP left to go to the restroom.

The operator said he and the GP began setting out cars, and that the GP was behind him. He recalled they were about halfway through their moves, and at some point the GP notified him via radio that a distance of three cars remained to come to a stop. The operator said he repeated three cars, and then heard static over the radio. He said he called the GP again to ask him what he had said, but received no response. The operator said that he kept calling the GP on the radio, then leaned out of the cab window and called for him, both to no avail. He said that at that point he grabbed a flashlight and hard hat, dismounted the locomotive, walked towards the rear of the train about six or seven car lengths at which point he saw a hard hat and blood. The operator recalled he immediately began to run and yell and located the GP perhaps one car back from where he observed the hard hat and blood. The operator said he then sent a text message to the site leader to call 911 and to proceed to the yard. The operator stated the site leader responded with a text, subsequently arrived, and was followed by the arrival of police and paramedics. He said he was then transported by the site leader to a nearby mill.

The operator described the yard at night as “spooky,” and said a lot of broken ties and debris were present around it.

When asked about the quality of his rest prior to reporting for duty, the operator reported, “It was a good sleep. I was well rested.” Additionally, he was asked to provide his understanding of the company’s drug and alcohol policy, to which he responded, “It’s zero tolerance.”

B. The RSS GP of the switcher train. The GP was asked about the activities of the crew on the day of the accident. He recalled that his crew got a late start that evening, and that they switched the warehouse first. Once completed, he said he informed the deceased GP he was going to the restroom, and that both he and the operator proceeded to the yard to continue work. He added he planned to meet them there later.

The GP said he used the restroom and then received a text message from the site leader

inquiring as to his location. He responded he was proceeding to the yard. The site leader then requested that the operator had requested he come to the yard now. The GP said that he arrived at the yard he saw the operator crying and who said that the GP was dead. The GP said he then went over and observed the deceased GP. He and the operator then called 911, that paramedics subsequently arrived, and that he completed a report of some kind He was then transported to a hospital emergency room for a drug screen and subsequently taken home.

The GP stated that for the previous six or seven months employees had asked that the yard lights be fixed because it was so dark. He added he was concerned about tripping, "…on all kinds of stuff in the dark." The GP speculated that the deceased GP fell because of inadequate lighting, and added, "there's so much broken crossties out there you can trip over."

When questioned about use of cellular telephones, the GP responded they were prohibited with the exception of the crew phone. Likewise, when asked about the company's drug and alcohol policy, the GP said there were once monthly or so random tests, plus testing anytime there was an incident, such as equipment hitting a bumper or running through a door. When asked about his rest, the GP said that he obtains eight to ten hours of sleep per day and that he liked working the night shift.

Compiled by: _____ Date: October 07, 2015
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