U.S. Department
of Transportation
**Federal Railroad
Administration**

Certain Railroad Employee Fatalities Investigated by the Federal Railroad Administration Calendar Year 1985

Office of Safety

DOT/FRA/RRS

February 1987

ACCIDENTS REPORTS ACT - 45 USC 41

Section 41

"Neither the report required by Section 38 of this title nor any report of the investigation provided for in Section 40 of this title nor any part thereof shall be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report or investigation."

INTRODUCTION

This report presents the Federal Railroad Administration's findings in its investigation of 36 railroad employee fatalities suffered during 1985. Not included are the employee fatalities that occurred as a result of train derailments, collisions, or rail-highway crossing accidents; these are reported in the 1985 Summary of Accidents Investigated by the Federal Railroad Administration.

The purpose of this report is to direct public attention to hazards that exist in the day-to-day operation of railroads, to guide the overall Federal program to promote the safety of railroad employees, and to supply rail management, rail labor, and all other interested parties with information and analysis for use in training and other action to prevent similar accidents.

J. W. Walsh
Associate Administrator
for Safety

CAUSE DIGEST

SUMMARY OF ACCIDENTS INVESTIGATED
INVOLVING ONE OR MORE FATALITIES

RAILROAD	ACCIDENTS
ATK	3
ATSF	4
BO	3
CLSL	1
CNW	1
CO	1
CR	4
DRGW	1
LA	1
MP	6
NCYR	1
NW	2
SBD	3
SEPA	1
SP	3
UP	1

Accident Investigation Reports

REPORT: 1

RAILROAD: The Baltimore and Ohio Railroad Company (BO)

LOCATION: Piedmont, West Virginia

DATE, TIME: January 30, 1985, 4:30 a.m.

PROBABLE CAUSE: Loss of secure handhold and/or footing.

EMPLOYEE:		
	Occupation	Brakeman
	Age	36 years
	Length of Service	9 1/2 years
	Last Rules Training	May 21, 1984
	Last Safety Training	August 5, 1984
	Last Physical Examination	June 14, 1982

Circumstances Prior to the Accident

At the accident site, three parallel tangent tracks extend east and west and are designated as No. 1 main track, No. 2 main track, and the eastbound passing siding. The grade is 0.63-percent-descending eastward.

On the day of the accident, the brakeman was called at 12:30 a.m. to work as the front brakeman on Train BW99 operating between Cumberland, MD, and Grafton, WV. Other members of the crew included a conductor, a flagman, and an engineer. All had received their required off-duty period. BW99 consisted of 3 locomotives, 21 loads, and 36 empty cars.

At West Keyser, WV, a helper locomotive, with the short hood headed east, was attached to the front end of BW99 and became the controlling locomotive. The crew of the helper locomotive consisted of an engineer and a fireman.

BW99 left West Keyser at 3:35 a.m., and at about 3:57 a.m., it stopped just east of Rattail Road crossing (milepost 205.7) on the No. 1 main track. The crew intended to uncouple the train behind the first car, proceed west to Piedmont Yard (about 1 mile), pick up 9 cars, and shove the 10 cars back to the train on the No. 1 main track.

The helper engineer was operating the helper locomotive from his seat on the south side of the control compartment, and the helper fireman was in his seat on the north side of the control compartment. The BW99 engineer and the brakeman were in the control compartment of the second locomotive, and the conductor and flagman on BW99 remained in their caboose.

The Accident

After picking up the nine cars at Piedmont Yard, the crew stopped the train at Piedmont Road crossing to obtain permission to return east (about 3/4 mile) to the standing portion of BW99. After receiving permission, the brakeman radioed the helper engineer to "come east." The brakeman was last seen at the Piedmont Road crossing as he boarded the southeast side of an empty bulkhead flat, the tenth car.

According to the helper engineer, he made a 10-lb reduction in the train's brake pipe pressure because of the descending grade. He placed the throttle in idle when the train speed reached 10 mph. When the brakeman radioed to begin coupling five or six cars, the engineer applied the locomotive brakes and developed about 10 lbs of brake cylinder pressure. At that time, the speed of the train was about 8 mph. Shortly thereafter, the train stopped, and the engineer used the radio to ask the brakeman if the cars had been coupled. The brakeman radioed back that he had been "cut in two" and needed help.

The crew found the brakeman about 5 1/2 car lengths west of the standing train. He was lying face down on the ground, on the south side of the south rail of the No. 1 main track with his left arm and left leg against the south rail. His head was facing east. Five cars and the east truck of the sixth car had passed over him before the train stopped. The brakeman was transported by helicopter to Cumberland Memorial Hospital, where he died from multiple injuries at 8:08 a.m.

Post-accident Investigation

An inspection of the east end (A-end) of the tenth car, on which the brakeman rode, showed tread marks that coincided with the brakeman's boots on the south stirrup, the coupler operating lever, and across the end sill over the center sill at the coupler. There were indications where the R-4 and R-3 wheels had passed over the brakeman's body. No defects were noted during a post-accident inspection of this car.

The brakeman's radio and the locomotive radio were tested and found to be operating as intended. The speed tapes taken from three of the four locomotives corroborated that the speeds described by the helper engineer were accurate. An autopsy was performed, and other than the injuries sustained as a result of the accident, no significant physical irregularities were noted by the medical examiner. The toxicologist's tests for alcohol were negative. Blood tests indicated the presence of lidocaine (0.8 mg/L) which, according to the medical examiner's office, is a drug used in resuscitation.

Applicable Rules

Chessie System Railroads *
Operating Rules

2082. When on cabooses, cars, or locomotives, employees must exercise care to avoid injury from slack action or from sudden start or stop....

2017. ...Stepping on cut levers, couplers, or other movable parts is prohibited....

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* The Baltimore and Ohio Railroad Company is one of the Chessie System Railroads.

REPORT: 2

RAILROAD: The Atchison, Topeka and Santa Fe Railway Company (ATSF)

LOCATION: Medicine Lodge, Kansas

DATE, TIME: January 30, 1985, 11:10 p.m.

PROBABLE CAUSE: Loss of secure handhold and/or footing.

EMPLOYEE:

Occupation.	Brakeman
Age	35 years
Length of Service	12 years
Last Rules Training	June 6, 1984
Last Safety Training.	December 20, 1984
Last Physical Examination	December 30, 1983

Circumstances Prior to the Accident

An ATSF road-switcher crew in Medicine Lodge was assigned to transport gypsum ore from nearby mines to the National Gypsum Company's processing plant adjacent to the ATSF railyard.

The hopper cars loaded with gypsum ore are generally unloaded on private industry tracks 2325 and 2328. These two tracks are oriented east and west along the north side of the National Gypsum Company Mill building. Both tracks are tangent, practically level, and the track centers are approximately 12.1 feet apart. Track 2325 is nearest to the mill. Its track center is located about 9 feet from the north side of the building.

A 4-foot 6-inch concrete walkway runs along the north side of the building between the building and the south rail of Track 2325. The center of the walkway is about 2 1/2 inches lower than the outer edges to provide for drainage.

Open top, 100-ton hopper cars with two bottom hoppers are used to move the gypsum ore from the mine to the processing plant. Most of these cars are converted cement cars.

After the required off-duty period, the road-switcher crew consisting of a conductor, a rear brakeman, a front brakeman and an engineer went on duty at 1 p.m. With one diesel-electric locomotive and a train of empty ore cars, the crew went from Medicine Lodge to a gypsum mine near Sun City, KS, about 23

rail-miles. The empty ore cars were delivered to the mine, and the train returned to Medicine Lodge about 9:20 p.m. with 17 cars loaded with gypsum ore. The crew left the loaded ore cars on the main track and went to dinner.

Then, the crew proceeded to connect the locomotive they had been using to another diesel-electric locomotive for a multiple locomotive operation. (The second locomotive had been repaired while the train crew was at the gypsum mine.) The conductor went to the railroad depot to complete some paperwork.

The Accident

At about 11 p.m., the rear brakeman, the front brakeman, and the engineer began to remove the empty gypsum cars from tracks 2328 and 2325 before placing the loaded cars on the tracks. First, the crew coupled the locomotives onto the four empty hoppers on Track 2328 and removed the cars. The rear brakeman then coupled the four empty cars removed from Track 2328 to the three cars standing on Track 2325. The coupling was done with the aid of a two-way radio from a position alongside the mill building. At about 11:09 p.m. when the coupling was complete, the rear brakeman radioed the engineer to take the seven cars to the main track. At about the same time, he signaled this message by hand-held lantern to the front brakeman. In the seconds that followed, the rear brakeman either slipped, tripped, or fell face down between the moving sixth and seventh cars.

The leading wheel (L-1) of the seventh car, ATSF 180398, ran over the upper left portion of his chest and head. His body was dragged about 30 feet westward and deposited against the north wall of the mill building. He died almost instantly from severe traumatic injuries, and his body was discovered when the front brakeman returned to Track 2325 with the loaded cars. The wheel contact occurred 12.7 feet beyond a metal box (20 inches x 24 inches x 61 inches high) that protrudes from the mill building and restricts side clearance to 7 feet 3 inches. (Side clearance is the horizontal measurement from the center line of the track to the nearest obstruction.)

Post-accident Investigation

Test results were negative after all crew members were examined for the presence of drugs and alcohol.

Inspection of the freight cars revealed no defects or conditions that would have caused or contributed to the accident.

That evening the temperature ranged between 4° F and 6° F; it was snowing and strong northerly winds prevailed. Almost the entire length of the walkway between the mill building and Track 2325 was ice-covered.

A warning sign 198 feet ahead of the point of the switch to the mill building tracks reads: "Structure on this track will not clear man on the side of the car."

Since the accident occurred in darkness and without witnesses, it could not be determined if the rear brakeman had attempted to board the moving cars, had boarded the moving cars, or had slipped while walking on the ice-covered walkway.

Applicable Rules

The Atchison, Topeka and Santa Fe Railway Company - Rules - Operating Department

GENERAL RULES

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K. Employees must not be careless of the safety of themselves and others. They must remain alert and attentive and plan their work to avoid injury.

. . . . . .

ADDITIONAL GENERAL RULES

. . . . . .

759. There are overhead and side obstructions, also high voltage wires on or near the right of way which may be dangerous.

Employees must inform themselves as to location of such obstructions and wires, and use due care to avoid injury therefrom.

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REPORT: 3

RAILROAD: Consolidated Rail Corporation (Conrail)

LOCATION: Millbury, Ohio

DATE, TIME: April 8, 1985, 3:35 p.m.

PROBABLE CAUSE: Failure to clear for approaching train.

Possible contributing factors: failure of the foreman to hear the approaching train because of noise from a tamping machine; failure of the train crew to obey a 30-mph speed restriction; and falling snow which reduced visibility to about 300 yards.

EMPLOYEE:		
	Occupation.	Track foreman
	Age	36 years
	Length of Service	11 years
	Last Rules Training	March 26, 1985
	Last Safety Training.	March 26, 1985
	Last Physical Examination	March 22, 1985

Circumstances Prior to the Accident

In the accident area, milepost CP 281, two main tracks and a controlled siding extend east to west. From the east to the accident site, the track is tangent for 1,800 feet, and the grade is level. At the time of the accident, a heavy, wet snow was falling and reduced visibility to about 300 yards.

On April 8, 1985, at 7 a.m., Production Gang SE 362 began its tour of duty and proceeded to its work site at milepost CP 281. The gang was assigned to resurface two turnouts and 1,580 feet of Track No. 1 on Conrail's Toledo Division.

The Accident

At 3:35 p.m., the foreman of the gang was standing on the south platform of a torsion beam tamper, ME 5038, instructing the operator. When he was finished, the foreman dismounted the tamper on the south side and began walking eastward along the northern edge of the ties of Track No. 2 directly toward an oncoming train, Extra 3301 West, on Track No. 2. After proceeding with his head down for a short distance, the foreman was struck by the lead locomotive of the train. The foreman's body came to rest approximately 95 feet west of the point of impact.

Post-accident Investigation

Although a temporary speed restriction of 30 mph was in effect, a speed tape from the lead Locomotive CR 3301 indicated that Train Extra 3301 West was moving at approximately 45 mph at the time of the accident.

The only witnesses to the accident, the engineer and the head brakeman on the train, testified that the foreman dismounted the track machine to the south and began walking with his head down toward their train along the northern edge of the ties of Track No. 2. These two witnesses also stated that the locomotive air horn was sounded continuously up to the time of impact.

Applicable Rules

Conrail Safety Rules
Maintenance-of-Way Employees

WALKING

. . . . . .

3035. Expect equipment to move on any track, in either direction at any time. Therefore, employees must look in both directions before:

. . . . . .

(d) Getting on or off standing or moving equipment.

Consolidated Rail Corporation
Bulletin Order No. 2-780

Effective: 7:00 a.m. EST, Monday April 8, 1985

(a) CHICAGO LINE
CP 281
Temporary Speed Restriction
Trains and engines must not exceed 30 mph on No. 1 and 2 Tracks at CP 281, as indicated by Temporary Speed Signs between the hours of 7 a.m., 5:30 p.m., Monday, April 8, 1985, through Tuesday, April 10, 1985, account passing M of W work area.

REPORT: 4

RAILROAD: Norfolk and Western Railway Company (NW)

LOCATION: Fontaine, Virginia

DATE, TIME: April 8, 1985, 6:30 p.m.

PROBABLE CAUSE: A brakeman failed to remain clear of a gatepost during switching operations.

EMPLOYEE:

Occupation	Brakeman
Age	38 years
Length of Service	6 years
Last Rules Training	January 18, 1985
Last Safety Training	January 18, 1985
Last Physical Examination	May 15, 1978

Circumstances Prior to the Accident

The accident occurred on an industrial track leading to the Bassett Walker Knitting Company, whose property is protected by a chain link fence and a gate. The industrial track at the entrance to the property extends from north to south for 927 feet on the west side of the main track. From the north, there are in succession: from the point of a No. 10 switch, a tangent 93 feet; a 12 degree curve to the right for 217 feet; a tangent of 240 feet; a curve of 10 degrees to the left for 64 feet to the point of the accident and extending 189 feet beyond; and a tangent 120 feet to the end of track. The grade is 3.2-percent ascending.

At the point where the accident took place, the gatepost is 7 feet 8 inches from the center of the track, and there were no warning signs posted about the close clearance between the track and the gatepost.

After the required off-duty period, a switching crew reported at 12 noon to perform switching duties at the industrial siding. Three cars had to be switched, with the third car placed in the lead, and then the cars were to be set back for unloading.

The Accident

The crew had coupled the three covered hopper cars together and was beginning to move them northward. The front brakeman rode the trailing end of the second car, and the rear brakeman rode the trailing end of the third car. The train went about 2 car lengths when the front brakeman leaned back -- while holding

on to a side ladder -- to shout instructions to the rear brakeman for later switching moves. During this time, the front brakeman struck the gatepost, and it knocked him loose from the side of the car. The front brakemen fell under the moving train.

The rear brakeman saw the front brakeman fall and radioed the engineer to stop the train, but the wheels of the lead truck on the west rail had passed over the front brakeman causing fatal injuries.

Post-accident Investigation

The brakeman had worked the location on previous assignments and was familiar with the siding.

There were no close clearance signs posted or special instructions issued for the close clearance at this location. The industry owns and maintains the siding as per agreement with the NW, under which the railroad requires a sign for the close clearance. (A sign has since been erected.)

The equipment was inspected, and no exceptions were found.

Applicable Rules

Norfolk Southern Corporation
Operating Rules*

M. Some platforms, bridges and other structures, switch stands and tunnels will not clear a person on the top or side of a car or engine. Employees must become familiar with these and other places and protect themselves from injury. . . .

. . . . . .

GR-13. Employees must not:

(a) Ride on close-clearance side or on end of equipment moving adjacent to platform, building, or close-clearance structure, or stand between moving equipment and adjacent platform, building, or close-clearance structure.

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* Norfolk Southern Corporation Operating Rules apply to the Norfolk and Western Railway Company as one of its operating subsidiaries.

REPORT: 5

RAILROAD: Union Pacific Railroad (UP)

LOCATION: Altamont, Wyoming

DATE, TIME: April 9, 1985, 1 p.m.

PROBABLE CAUSE: An employee was thrown from a derailing track motor car.

EMPLOYEE:		
	Occupation.	Track Inspector
	Age	27 years
	Length of Service	6 years
	Last Rules Training	June 3, 1983
	Last Safety Training.	February 25, 1985
	Last Physical Examination	August 20, 1984

Circumstances Prior to the Accident

On the day of the accident, a track inspector was inspecting track between Carter, WY (milepost 875.4), and Evanston, WY (milepost 917.2), using a Fairmont MT 19A track motor car. After inspecting the main track westward from Carter to Evanston, he left Evanston about 12:25 p.m. to inspect the eastward main track on his return trip to Carter.

At the accident site, from the west, the track is tangent for 1 mile, followed by a curve of 1-degree 30-minutes left for 1,882 feet to the point of the accident and 1,419 feet beyond. Sight distance is 1,100 feet. The grade ascends eastward at a maximum of 0.82 percent from Evanston to the point of the accident. The terrain is mountainous. The weather was clear, and the temperature was 62° F. Method of operation is automatic block signal system.

The Accident

There were no witnesses to the accident; however, investigation indicates that at milepost 908.20 the track motor car derailed. The track inspector was thrown from the left side of the track motor car and fatally injured when his head struck a crosstie.

The engineer of a following train, Extra 3503 East, first saw the track motor car at a distance of approximately 1,100 feet. When about 500 away, he saw that the motor car had derailed but was not clear of the main track. He immediately made an emergency

application of the train's brakes. At a distance of approximately 200 feet, the train crew saw a body lying between the rails near the derailed track motor car. The front portion of the train passed over the body without making contact, but struck the motor car and propelled it 42 feet eastward where it stopped clear of the track structure.

When the train stopped, the track inspector's body was under the third car from the front.

The Uinta County Deputy Coroner pronounced the track inspector dead at the scene; the autopsy report states the cause of death as skull fracture.

Post-accident Investigation

Post-accident investigation revealed that a broken casing on a right-front component of the suspension system of the track motor car may have caused an unstable condition that allowed the right-front wheel to climb the outside rail of the curve and derail. From the point of derailment, the track motor car continued moving eastward a distance of approximately 123 feet and stopped upright to the south of the track structure.

As the track inspector was ejected from the track motor car, his head struck a crosstie 91 feet from the point of derailment. The body came to rest between the rails 32 feet 10 inches beyond.

Applicable Rules

UNION PACIFIC RAILROAD COMPANY
MAINTENANCE OF WAY AND SIGNAL RULES

. . . . . .

1511. Before track car is used, it must be thoroughly inspected daily for loose bolts, missing cotter keys, leaky gasoline tank and feed pipes, improper brake adjustment, improper wheel gage or any defect which might make it unsafe. . . .

REPORT: 6

RAILROAD: The Denver and Rio Grande Western Railroad Company (DRGW)

LOCATION: Mack, Colorado

DATE, TIME: April 13, 1985, 2:45 a.m.

PROBABLE CAUSE: Failure of an off-duty employee to clear for approaching train.

A probable contributing factor was the employee's impairment by alcohol.

EMPLOYEE:		
	Occupation	Track laborer
	Age	25 years
	Length of Service	5 years
	Last Rules Training	None
	Last Safety Training	April 1, 1985
	Last Physical Examination	March 13, 1981

Circumstances Prior to the Accident

About 5:30 p.m. on April 12, 1985, a laborer and another employee on an extra gang went by automobile to Grand Junction, CO (approximately 20 miles east of Mack), where they bought three video movies, two six-packs of beer, and a half pint of tequila. They returned to their camp site at about 6:30 p.m.

That evening another employee joined them in the camp car, and the three employees drank the beer and tequila while they watched the movies. During the showing of the last movie, the track laborer went to his assigned bunk car. Between 10 p.m. and 10:30 p.m., he returned to the camp car and invited the other employees to go with him to the Colorado Club, about one-half mile northwest of the camp site. When neither employee chose to join him, he left about 10:30 p.m., alone, destined for the Colorado Club.

About 2:45 a.m., April 13, Extra 3071 East moving at 50 mph approached a point about 3,400 feet east of the west switch at Mack. The conductor was seated on the left side of the front locomotive, and the engineer was seated on the right side at the controls of the front locomotive.

The Accident

Midway into a 1-degree 52-minute curve to the right in the direction of train movement, near milepost 469.3, the conductor

of Extra 3071 East observed an object lying near the north rail on the main track. He first assumed that the object was some foreign debris. As the train moved closer, the object was identified as a person.

The engineer made a service application of the train air brakes and came to a stop short of the east switch at Mack, and the dispatcher was informed. Permission was given to uncouple the locomotives and utilize the siding to return to the accident site. About 2:50 a.m., the dispatcher notified the Transportation Management Center (TMC) Supervisor in Denver of the radio transmission received from the conductor. The TMC Supervisor immediately notified the Mesa County Sheriff's Department and the Fruita, CO, Rescue Squad. About 2:55 a.m., the train crew arrived at the point where the conductor first observed the body. Within 10 to 15 minutes, the Fruita Police and the Fruita Rescue Squad arrived at the site. After an examination of the employee's body, he was pronounced dead at the scene.

Post-accident Investigation

Since there were no witnesses to the accident the final actions of the track laborer could not be determined.

In the accident area, from the west, there is a 1-degree 52-minute curve to the right for 1,604 feet to the point of the accident and 774 feet beyond. Also, there is a 0.28-percent-ascending grade. Sight distance was restricted to approximately 500 feet because of track curvature and darkness.

The locomotives were inspected to learn if the employee was struck by Extra 3071 East, and a further inspection of the train consist revealed markings on the bottom hopper doors of the fourth car (UMP 7071). These marks indicated that the employee had touched the moving train at this point.

It is not known how the employee came into contact with the fourth car in the train consist. It can only be presumed that he was aroused by the noise of the passing train and in his attempt to move from a position of lying on his back, he may have fallen into the path of the train.

A pathologist's report indicated that the employee's blood alcohol content was 0.379 percent.

Applicable Rules

Rio Grande -- Operating Rules
General Rules

M. . . .
Employees must expect the movement of trains, locomotives, cars or other equipment at any time, on any track, in either direction.

REPORT: 7

RAILROAD: Missouri Pacific Railroad Company (MP)

LOCATION: Hot Springs, Arkansas

DATE, TIME: April 1, 1985, 8:20 p.m.

PROBABLE CAUSE: Failure of a signal maintainer to yield the right-of-way at a railroad crossing on a public highway.

Contributing factors include his failure to carry a lighted lantern or flashlight or wear his reflectorized clothing.

EMPLOYEE:

Occupation	Signal maintainer
Age	42 years
Length of Service	13 years
Last Rules Training	April 1984
Last Safety Training	March 12, 1985
Last Physical Examination	February 10, 1972

Circumstances Prior to the Accident

At approximately 5:45 p.m., a signal maintainer was instructed by an MP dispatcher to test the highway crossing warning devices at U.S. Highway 270 in Hot Springs. (A rail-highway grade crossing accident had occurred about 2:20 p.m. on that day.) The signal maintainer had worked his normal 8-hour shift and had the required off-duty time.

The signal maintainer drove an MP truck from his home in Fort Smith, AR, 120 miles to the U.S. Highway 270 rail-highway crossing in Hot Springs. Arriving there about 8:15 p.m., he parked the truck on the north side of the 4-lane highway and on the east side of the railroad track (between the track and the signal case, facing away from and completely clear of the highway). He did not leave the truck lights on and did not open the signal case doors. He carried a track shunt wire to activate and test the flashing warning lights at the crossing and began walking across the highway toward the far south side.

The Accident

As the signal maintainer was approaching the dividing line between two eastbound lanes (just west of the track), he was struck by an eastbound motor vehicle, a 1975 Buick Skyhawk. Upon impact, the signal maintainer was thrown on the hood of the car

and the right rear portion of his head struck the lower right corner of the windshield. When the driver of the vehicle put on the brakes, the employee was hurled about 74 feet in the air and onto the pavement.

The signal maintainer was taken by ambulance to the hospital in Hot Springs, where it was determined that he had suffered severe injuries, including multiple skull fractures. He was listed in critical condition and placed on a life support system. At about 11 p.m., on April 3, he was pronounced dead.

Post-accident Investigation

The accident occurred on a heavily traveled 4-lane highway with a 40 mph speed limit. From an eastward approach, the highway ascends to within approximately 350 feet of the railroad crossing and from that point descends to the railroad crossing. The grade is sufficiently steep so that motor vehicles coming from the west cannot be seen from the railroad crossing, nor can the railroad crossing be seen by the drivers until they crest the hill within 350 feet of the crossing.

The driver was traveling eastbound in the south lane of the highway at an estimated speed of 35 mph and did not see the signal maintainer until it was too late. There was no light or reflection to warn of the signal maintainer's presence in the road. The signal maintainer's hard hat -- yellow with orange reflector shields on both sides and the rear -- was found in his truck. He was not wearing any type of reflecting clothing, nor carrying any type of flashlight or lantern.

The MP employee became a pedestrian under state law when he walked across the main 4-lane highway. He was not immediately visible, and the motor vehicle operator was unable to avoid hitting him. The operator was not charged with any violation of traffic laws. A witness in a second vehicle, directly behind the Buick, stated that he also did not see any person in the road until the man ahead of him swerved and hit the signal maintainer.

Applicable Rules

Arkansas Motor Vehicle and Traffic Laws.
Operation of Vehicles - Rules of the Road.
Chapter 8 - Section 75-628.

Pedestrian crossing at other than crosswalks - drivers to use care.

(a) Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway.

REPORT: 8

RAILROAD: Missouri Pacific Railroad Company (MP)

LOCATION: San Marcos, Texas

DATE, TIME: April 22, 1985, 2:45 p.m.

PROBABLE CAUSE: Failure to operate a motor car at a speed consistent with maintenance-of-way rule requirements.

EMPLOYEE:	Occupation	Trackman
	Age	59 years
	Length of Service	39 years
	Last Rules Training	March 1985
	Last Safety Training	April 16, 1985
	Last Physical Exaination	1983

Circumstances Prior to the Accident

On April 22, 1985, a maintenance-of-way crew consisting of a foreman and two trackmen were performing maintenance work via motor car from Austin to San Marcos.

At milepost 209.7 in San Marcos, two northbound trains passed the crew; the first northbound, a work train, took the siding at Centex to allow a freight train to proceed. After the freight train passed, the work train left the north siding switch at Centex, moved onto the main line, and proceeded northward.

For the return trip to headquarters in Austin, the track foreman received "track and time limits" in Centralized Traffic Control territory at San Marcos from 2:25 p.m. until 3:15 p.m. between North Goodwin, milepost 221.0, and South Kyle, milepost 201.7.

Then the track foreman operated Fairmont Model M-19 motor car north from San Marcos; he sat on the west side of the vehicle, the two trackmen were seated on the east side.

At about 2:45 p.m., the motor car was on mainline track traveling at about 20 mph as it approached the north end of the Centex siding switch.

The switch was lined for a mainline movement, and as the motor car made a trailing movement through the switch, the car derailed just north of the point of the switch. It marked the ties north of the switch, turned 180 degrees, and flipped over on its side, west of the track. The track foreman remained in the motor car, but the two trackmen were thrown. Immediately after the accident, the foreman asked the dispatcher to send emergency

assistance. The body of one trackman was lying between the two rails about 13 feet northeast of the motor car and 99 feet north of the point of the switch.

When an ambulance and other assistance arrived, one trackman was pronounced dead from massive head injuries. The foreman and other trackman were taken to Hays Memorial Hospital in San Marcos, where they were examined and released the same day.

Post-accident Investigation

In the accident area, from the south, there is a 380-foot, 3-degree curve to the left and tangent track for 2,192 feet to the point of the accident and 508 feet beyond. A 0.83-percent grade descends to the middle of the tangent at which point it changes to level and then to a 0.74-percent grade ascending near the accident scene.

Inspection of the motor car showed it was in good condition, having recently been reworked at the roadway machine shop and placed back in service about 2 weeks prior to the accident.

The turnout at the north end of Centex was a No. 16 remotely controlled switch with 136-lb track material and 30-foot switch points. This switch was properly lined for a mainline track movement. Further investigation showed that the motor car jumped the west stock rail 10 feet 3 inches behind the point of the switch and traveled on top of the rail for 20 feet 9 inches before it derailed to the west. It finally came to rest on its side after making a 180-degree turn and flipping over to the west side of the main line 86 feet north of the point of the switch.

Applicable Rules

Missouri Pacific Railroad Company
Rules and Regulations for the Maintenance of Way and Structures.

145. (a)...

(c) Operation Over Switches and Frogs.-Power must be shut off on motor car and speed reduced to one-half the maximum authorized speed when passing over any switch or frog.

Before passing over a remotely controlled or interlocked switch or derail car must be stopped and then operated through at speed not to exceed four miles per hour (walking speed)....

REPORT: 9

RAILROAD: The Baltimore and Ohio Railroad Company (BO)

LOCATION: East Monroe, Ohio

DATE, TIME: April 25, 1985, 12:25 a.m.

PROBABLE CAUSE: Loss of secure handhold and/or footing.

EMPLOYEE:	Occupation	Brakeman
	Age	55 years
	Length of Service	31 years
	Last Rules Training	May 21, 1984
	Last Safety Training	March 30, 1985
	Last Physical Examination	October 1984

Circumstances Prior to the Accident

At 9 p.m., on April 24, 1985, after receiving the required off-duty period, a crew consisting of a conductor, a flagman, a brakeman, an engineer, and a fireman was called to operate Train Extra 4357 West. The train left Chillicothe, OH, at 9:40 p.m. and arrived in East Monroe at about 12:20 a.m. In this area, the main track from east to west is on a 0-degree 55-minute curve to the left and is parallel to a siding on the north side. The grade is 0.4-percent-descending westward, with the view obstructed by brush and darkness. The weather was dry and visibility was good.

The Accident

Upon arrival in East Monroe, the conductor uncoupled the cars, and the front brakeman lined the siding switch and derail. Then the front brakeman radioed the engineer to "bring them back," and his light disappeared from the engineer's view. The brakeman then told the engineer, by radio, "Three cars to tie." The movement coupled the cars together, and the engineer stopped the movement. In his next communication, the front brakeman called out, "Floyd, I'm hurt!"

The conductor found the front brakeman lying near the track and saw that his right leg had been run over by the first wheel of the leading truck on Car SBD 251216. The brakeman spoke to the conductor and told him, "I slipped."

The Leesburg Emergency Unit was called and arrived at 12:45 a.m. The brakeman was taken by ambulance to Greenfield Memorial Hospital approximately 10 miles from the accident site, but he was dead on arrival from loss of blood.

Post-accident Investigation

The brakeman's last words to the conductor were, "I slipped." There is no other evidence of the brakeman's actions at the time he was struck by the car. The brakeman could have been riding in the car or walking ahead of the cars being placed in the siding.

Applicable Rules

Chessie System Railroads*
Operating Rules

2045. Expect movement of equipment on any track, at any time, in either direction. Always look in both directions before crossing or getting close to any track. Crossing tracks immediately in front of moving trains, locomotives, or cars is prohibited. When crossing tracks near standing equipment, always allow sufficient room to avoid injury in case of sudden or unexpected movement.

2046. Employees on or about any tracks, whether in the open, in shops, on bridges, or in tunnels, must move to a place of safety upon the approach of rolling equipment on the track where they are working or on an adjacent track. Employees must always position themselves at a safe distance from moving equipment, and be alert for falling or protruding equipment.

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*The Baltimore and Ohio Railroad is one of the Chessie System Railroads

Report: 10

RAILROAD: Southern Pacific Transportation Company (SP)

LOCATION: Houston, Texas

DATE, TIME: April 26, 1985, 10:30 a.m.

PROBABLE CAUSE: Failure of a machinist to be alert for movement of a motor vehicle.

Contributing Factor: Failure of a truck driver to ascertain if the roadway was clear before setting his vehicle in motion.

EMPLOYEE:		
	Occupation	Machinist
	Age	59 years
	Length of Service	32 years, 7 months
	Last Rules Training	April 17, 1985
	Last Safety Training	April 17, 1985
	Last Physical Examination	No Record

Circumstances Prior to the Accident

The accident occurred on a roadway at the west end of the carrier's Englewood Yard, Houston, between the Rip Lead Track and the South Trimmer Pocket Track. The approximate site was about 99 feet east of the westend switch to the Rip Lead Track. The roadway surface at the site is gravel and slightly rough.

A machinist was working on a three-locomotive consist on the South Trimmer Pocket Track with the west end of the consist about 115 feet east of the westend switch to the Rip Lead Track.

A truck assigned to the carrier's Water Service Department was parked on the roadway opposite the east end of the center locomotive of the locomotive consist. A pickup truck assigned to the carrier's Locomotive Department was parked on the roadway about 70 feet east of the westend switch to the Rip Lead Track. Shortly before the accident, the pickup truck was moved west of the westend switch to the Rip Lead Track and parked on the north side of the track to allow the Water Service truck to exit.

The Accident

Witnesses stated that they saw the machinist dismount from the west end of the center locomotive and walk westward down the center of the roadway with his back toward the rear of the

Water Service truck. After the Locomotive Department's pickup truck was clear, the Water Service truck driver started to leave by backing westward over the roadway. The witnesses stated that they saw the truck overtaking the machinist, but believed that each was aware of the other's presence.

They further stated that the truck struck the machinist, knocking him down to the road surface, and passing over him with the rear portion of the truck. One witness (standing north of the accident site) started running toward the accident site, screaming at the driver to stop. The driver, noticing the witness, stopped the truck and then, thinking that he was about to run over or into something, pulled forward, again passing over the machinist.

The machinist was pronounced dead upon arrival at the emergency room of a Houston hospital.

Post-accident Investigation

The three locomotives in the consist were idling, adding to the noise level, and making it difficult to hear the truck in motion.

The Water Service truck, a 1984 Chevrolet crew-cab one-ton truck with a Koening-built utility bed, was equipped with a rearview mirror inside the cab and two side mirrors with spot mirrors mounted on the right and left front cab doors. The mirrors were in good condition and aligned for rear vision. Because of the height of the utility bed, rear vision through the mirrors was considerably restricted, especially directly behind and about 12 feet outward from the truck. The clearance from the lowest portion of the truck undercarriage to the ground surface was 7 3/8 inches.

The truck driver stated that because he was concerned about the nearness of the right side of the truck to the locomotives, he used the right-door mirror mainly while making his exit. He further stated that he was never conscious of the presence of the machinist.

The 26-year-old truck driver had 10 years' driving experience, a valid Texas commercial motor vehicle operator's license for the last 5 years, and a good driving record with the Texas Department of Public Safety.

The machinist's death was caused by multiple crushing internal injuries.

Applicable Rules

Southern Pacific Transportation Company

Safety Rules Governing Mechanical Department Employees

Rule 4031

Employees must look in both directions before crossing or fouling any track or roadway, be alert for movement of cars, trains, engines, fork lifts, cranes and other mobile equipment.

Safety Rules Governing Environmental Department Employees

M 243

No motor vehicles to be set in motion until it is known that the way is clear. Care must be exercised in parking and driving, either on or off the right-of-way, to avoid damage to equipment or injury to occupants. . . .

REPORT: 11

RAILROAD: Missouri Pacific Railroad Company (MP)

LOCATION: Kansas City, Kansas

DATE, TIME: April 30, 1985, 2 a.m.

PROBABLE CAUSE: Loss of secure handhold and/or footing while attempting to set a handbrake.

EMPLOYEE:		
	Occupation.	Switchman
	Age	40 years
	Length of Service	16 1/2 years
	Last Rules Training	March 8, 1982
	Last Safety Training	January 8, 1980
	Last Pysical Examination	March 19, 1981

Circumstances Prior to the Accident

After receiving the required off-duty period, a four-man MP switch crew consisting of a switch foreman, two switchmen, and an engineer went on duty at 11:59 p.m. on April 29, 1985, at Quindaro Yard in Kansas City.

It was misting rain; the ambient temperature was about 58° F; and the night was dark. Routine switching was performed by the switch crew with two diesel electric locomotives in multiple unit operation until about 2 a.m., when 23 cars were pulled from Track No. 17 for switching. The first 11 cars were switched onto various tracks without incident. Radios were used by crew members to communicate; the field switchman had a standard walkie-talkie mounted on a belt holster on his back. He was also carrying a switch lantern.

The Accident

The No. 18 switch was lined into Track No. 18 (also known as the scale track), which was clear of cars. The grade descends gradually from the lead track, and the track has a storage capacity of approximately 1,000 feet or 14 boxcars. The switch crew did not plan to use the scale.

According to the switch crew, the engineer operating the locomotives kicked three boxcars down the lead track. The field switchman mounted the point of the moving three-car cut to set a handbrake located at the top of Car MP 264760 as the second

switchman dismounted to line the switch back for the lead track and throw a switch for the movement of two cars onto Track No. 19. When the three cars on Track No. 18 had sufficiently cleared to allow an additional three cars to be switched onto Track No. 18, the second switchman radioed the field switchman to stop the cars. Although the field switchman did not respond by radio, the second switchman heard the ratchet noise as the field switchman was applying the handbrake. Two cars were switched onto Track No. 19, and three more cars were kicked to Track No. 18. The second switchman said he then noticed that the first three cars on Track No. 18 had rolled toward the far end of the track which, at the end, connects into the middle of Track No. 17. In order to prevent knocking cars onto Track No. 17, the second switchman said he set a low-mounted handbrake on the last car (MP 265804) in the cut and stopped the three cars just in the clear of the lead track. Then one car was switched to Track No. 16 and three cars to Track No. 20 before the switch foreman, the second switchman, and the engineer returned with the locomotives to couple the six cars on Track No. 18.

A coupling was made to the first three cars on Track No. 18. The switch foreman was riding the point position, and as the three men proceeded slightly further onto Track No. 18, the foreman discovered the body of the field switchman.

The accident occurred in darkness, without witnesses, approximately 570 feet beyond the No. 18 point of switch. Apparently, the field switchman fell from the high brake platform on Car MP 264760 while he was attempting to set the handbrake, and the three boxcars ran over him. He died almost instantly from severe traumatic injuries.

Post-accident Investigation

The three boxcars had rolled to the far end of Track No. 18 where Car MP 264760 lightly cornered a freight car on Track No. 17; the impact was minor.

The handbrake on Car MP 264760, an Ajax, No Spin, D-1600 Model, manufactured by Ellcon National, Inc., was partially applied. It was operational and functioned as intended.

An inspection of the side ladder, end ladder, handholds, and brake platform revealed no dirt or mud that could have contributed to the accident.

No blood or urine samples were taken for alcohol and drug tests; there was no autopsy; there was no evidence of drug or alcohol impairment.

Applicable Rules

MISSOURI PACIFIC RAILROAD COMPANY
SAFETY, RADIO AND
GENERAL RULES
FOR ALL EMPLOYEES

BRAKES

4063. HANDBRAKES: Employees operating handbrakes must note condition of pawl, ratchet, and brake wheel to detect any defects. They must have firm footing and handhold to prevent slipping, falling, strain, sprain, or other injuries.

Employees climbing on cars or applying handbrakes must maintain at least three-point contact with car. Three-point contact consists of both feet and one hand or both hands and one foot.

While applying or releasing handbrakes on cars, employees must have secure grasp on handhold at time other hand is being used to operate brake, must obtain firm footing, and are prohibited from placing feet in wheel or on lever or pawl of handbrakes.

. . . . . .

REPORT: 12

RAILROAD: Consolidated Rail Corporation (Conrail)

LOCATION: Toledo, Ohio

DATE, TIME: May 23, 1985, 10 a.m.

PROBABLE CAUSE: A decayed signal pole.

EMPLOYEE:

Occupation.	Lineman
Age	57 years
Length of Service	34 years
Last Rules Training	No record
Last Safety Training	April 24, 1984
Last Physical Examination	April 2, 1985

Circumstances Prior to the Accident

At milepost 52.5 on the Detroit line of the Toledo Division of Conrail, a railroad signal pole line runs parallel to a double main track east of the northward main track. The poles supporting the communication wires have two crossarms mounted near the top, and a signal cable 25 feet above the ground is secured to each pole with a bracket.

On the day of the accident, a signal supervisor was coordinating the actions of two linemen as they removed communication wires, crossarms, and signal cables from a pole line because of a scheduled industrial track relocation. The linemen were wearing pole climbers, a body belt, a safety strap, a hardhat, and line gloves, and were working on adjacent poles during the removal process. The supervisor was on the ground near the base of the defective pole and the second lineman was attaching a bracket on the next pole to the south.

The Accident

At approximately 10 a.m., the subject (first) lineman finished removing the signal cable from his pole and had leaned back into his safety belt. The supervisor noticed that the pole had broken at the base and was falling in a westwardly direction. The supervisor shouted, "It's broke, it's broke!" (At that time, the subject lineman was approximately 24 feet above the ground.) The subject lineman tried to reposition himself as the pole was falling; however, the pole rotated under the lineman's weight as it fell, pinning the subject lineman under it. The injured

lineman was transported to a nearby hospital where he was pronounced dead of his injuries at 10:40 a.m.

Post-accident Investigation

Inspection of the pole revealed that it was chestnut wood, dated 1929, and above ground level it measured 35 feet 10 inches in length and 15 inches in diameter. At ground level, it had decayed -- only 5 inches near the center showed no signs of decay.

It is concluded, therefore, that there was no inspection of the pole before the subject lineman climbed it. A proper inspection would have revealed its decayed condition.

Applicable Rules

Consolidated Rail Corporation
Safety Rules
Maintenance of Way Employee

3680. If there is any doubt as to whether a wood pole is safe to climb, test it as follows:

(a) The preferred test is by means of a pike pole 8 feet long applied to the pole 8 feet to 12 feet from the ground on the side which has no support from wires or messenger. Rock or sway the pole sufficiently to determine its condition.

(b) If pike pole is not available, remove the dirt from around the pole to at least 12 inches below the surface of the ground. Use a heavy screw driver or similar tool to prod the decayed wood from around this portion of the pole to determine the amount of sound wood remaining. Also sound the pole to the height of 4 feet with a hammer or other suitable object to determine the presence of hollow heart.

(c) Observe conditions and take necessary precautions in making the test where a broken pole would cause contact with other wires, interfere with railroad or street traffic or cause injury or damage to others.

REPORT: 13

RAILROAD: National Railroad Passenger Corporation (AMTRAK)

LOCATION: Eddystone, Pennsylvania

DATE, TIME: June 11, 1985, 5:35 a.m.

PROBABLE CAUSE: Failure to stay clear of moving equipment.

EMPLOYEE:	Occupation.	Conductor
	Age	51 years
	Length of Service	15 years
	Last Rules Training	January 21, 1985
	Last Safety Training	January 21, 1985
	Last Physical Examination	February 3, 1984

Circumstances Prior to the Accident

In the accident area, trains travel on four parallel main tracks extending north and south on a 0-degree 50-minute curve to the right. The grade is practically level. From the east, the tracks are designated Nos. 1, 2, 3, and 4. About 300 feet north of the accident site, Baldwin Lower No. 5 track turns out from the west side of No. 4 main track and extends northward. About 16 feet south of the accident, the main tracks run on a railroad bridge over Saville Avenue.

After completing required off-duty periods, a crew including a conductor, an assistant conductor, and an engineer was called for duty at 9 p.m. on June 10, 1985, at Amtrak's Race Street Yard Office in Philadelphia, PA. The crew was transported from the yard office and arrived in Eddystone where its train was standing on Baldwin Lower No. 5 track at 11:30 p.m.

From the south, the work train consisted of a controlling locomotive, a caboose, a second locomotive, 10 side-dump cars, and a second caboose. The controlling locomotive with its short hood facing south stood about 544 feet north of the point of the accident. After a train brake test was completed at about 12 midnight, the train remained there until about 4:45 a.m., when the crew uncoupled the controlling locomotive, the caboose, and the second locomotive from the 10 side-dump cars. As the crew awaited further instructions, the engineer was in his seat on the west side of the controlling locomotive, and the assistant conductor was inside the caboose behind the controlling locomotive.

The Accident

According to the engineer of the work train, the conductor walked southward on the west side of Baldwin Lower No. 5 track and continued southward on the west side of No. 4 main track. When the conductor reached a point 16 feet north of the Saville Avenue Railroad Bridge, he was struck by a locomotive of a passenger train moving southward on No. 4 main track. The engineer of the passenger train said he first saw the conductor when the passenger train was about 1 carlength north of the conductor, and he immediately sounded his locomotive whistle and placed the train brakes in emergency.

The conductor's body was discovered on Saville Avenue by the work train engineer. The conductor was pronounced dead by the medical examiner. Cause of death was listed as multiple impact injuries.

Post-accident Investigation

A post-accident investigation of the accident site disclosed no conditions that could have either caused or contributed to the accident and no reason for the conductor to have walked from the work train to the point of accident.

The passenger train was moving at 90 mph, and the sight distance for the passenger train engineer was restricted to 785 feet because the work train was standing on Baldwin Lower No. 5 track. Both engineers stated that immediately before impact the conductor turned in a counterclockwise direction, which placed his body even closer to the No. 4 main track.

Post-accident toxicological tests were negative, and there was no other evidence of drug or alcohol impairment.

Applicable Rules

National Railroad Passenger Corporation
Operating Rules and Instructions

5030 Walk on the Right-of-Way or walk or stand on the track only when required in the performance of duty. Walk clear of tracks when practicable.

5031 Expect equipment to move at anytime; therefore, look in both directions before:

(a) Fouling track.

5032 When walking or standing for any purpose:

(c) Maintain sufficient lookout in both directions to know of approaching equipment or close clearance.

REPORT: 14

RAILROAD: Seaboard System Railroad (SBD)

LOCATION: Greenwood, South Carolina

DATE, TIME: June 10, 1985, 1:30 p.m.

PROBABLE CAUSE: An employee failed to take proper safety precautions.

EMPLOYEE:		
	Occupation	Communication maintainer
	Age	29 years
	Length of Service	3 years 9 months
	Last Rules Training	March 1985
	Last Safety Training	May 1984
	Last Physical Examination	October 1981

Circumstances Prior to the Accident

As the carrier's communication maintainer and a private contractor were clearing storm damage from a railroad pole line, at milepost 433.5 at approximately 1 p.m., they saw a large limb in the line wires of the pole line. The contractor climbed a ladder into the tree and began cutting on the limb with a chainsaw. But, he came down when he heard limbs cracking above him on an adjacent tree. He told the communication maintainer that he did not feel comfortable in the tree. Then, the communication maintainer took a chainsaw, climbed the ladder to the tree, and continued cutting the same limb.

The Accident

Standing on a limb 4 inches in diameter approximately 20' above ground, the communication maintainer faced the broken limb. With his left hand extended to a 3-inch limb above his head, the maintainer held the chainsaw in his right hand as he continued cutting. He was in a semicrouched position, bent at the waist. The contractor heard a limb crack; he looked up and saw the maintainer stand straight up. Then the contractor moved toward the railroad track away from the tree. As he moved, he heard the chainsaw start and heard another crack. He turned and saw the maintainer fall from the tree. The maintainer landed on his shoulders and the back of his neck.

The contractor radioed railroad personnel who summoned medical assistance. Emergency medical personnel administered first aid and transported the victim, first to Greenwood Memorial Hospital, Greenwood, SC, then to Greenville Memorial Hospital,

Greenville, SC. The communication maintainer was pronounced dead at Greenville Memorial Hospital at 6:35 p.m.

Post-accident Investigation

The ground where the victim landed was composed primarily of small twigs and dead leaves.

The communication maintainer was issued a safety belt for this type of work but failed to use it while cutting the limb.

Applicable Rules

Seaboard System Railroad
Safety Rules for Communications
and Signals Department

89. Standing on anything which makes the position insecure is prohibited.

. . . . . .

Personal Protective Equipment

120. Protective equipment supplied to employees must be kept with them and used in the prescribed manner for the purpose intended. Such equipment must be kept in good condition and repair, and replaced if necessary.

. . . . . .

Pole Line Work

. . . . . .

684. Ladders, where practicable, must be used in trimming trees. When necessary to use tree climbers, extreme care must be exercised to prevent accidents.

REPORT: 15

RAILROAD: Missouri Pacific Railroad Company (MP)
National Railroad Passenger Corporation (Amtrak)

LOCATION: Moreau, Missouri

DATE, TIME: June 10, 1985, 12:12 p.m.

PROBABLE CAUSE: Maintenance-of-way foreman's failure to clear for an approaching train.

EMPLOYEE:		
	Occupation	Foreman
	Age	26 years
	Length of Service	9 years
	Last Rules Training	April 18, 1985
	Last Safety Training	April 18, 1985
	Last Physical Examination	June 16, 1976

Circumstances Prior to the Accident

The accident occurred on MP east-west double main track where maximum authorized speed is 65 mph for passenger trains. At the accident point from the west, there are, in succession: a tangent 1,000 feet long; a 1-degree 30-minute curve to the left 869 feet long; a 2-degree curve to the right, 818 feet long; and a tangent 313 feet to the point of accident and a considerable distance beyond. The railroad grade is level, with the Missouri River on the north and high bluff on the south. The initial sight distance between the control compartment of the locomotive involved in the accident (Amtrak Train No. 30) and the foreman was about 910 feet. The train was traveling at 45 mph at the time of the accident.

The Accident

Near Moreau, at milepost 124.4, an MP track crew was surfacing the north main track with a production tamper. That portion of the north main track was protected by track and time limits. On the south main track, there was a Form Y train order between milepost 124 and milepost 126 to protect the track crew from trains moving on that track. The foreman had cleared Amtrak Train No. 30 to move through the limits of the Form Y train order, between milepost 124 and milepost 126 at maximum speed, which was 45 mph to milepost 124.6 and then 65 mph to the point of accident and beyond. After being cleared at 12:04 p.m. Train No. 30 stopped at the Jefferson City, MO depot and departed at 12:10 p.m.

The track foreman used a radio inside the tamper to clear Amtrak Train No. 30, and then he stepped out of the tamper on the north side of the north main track.

As Amtrak Train No. 30 came out of the 2-degree curve to the right, 313 feet west of the point of accident, the fireman on the train saw a man kneeling along the south side of the tamper. He yelled to the engineer who applied the air brakes in a full service application and sounded the locomotive horn.

When the tamper operator first noticed the foreman between the two mains, the foreman was in a kneeling position close to the operating tamping tools of the tamper, pulling electrical cables attached to switch heaters. A few moments later the operator heard two short whistles from the locomotive and saw the foreman turn westward and cover his face with his arm. The foreman disappeared as Amtrak Train No. 30 passed on the south track. The foreman was struck by the locomotive. He was taken to a local hospital where he died 4 days later.

Post-accident Investigation

The foreman had cleared the train 8 minutes before the accident occurred. Thus, he knew the train was approaching when he moved between the two main tracks and pulled the electrical cables. The foreman was kneeling close to the operating tamping tools, and they were making a loud noise. The initial sight distance between the locomotive and the foreman was about 910 feet. As the train was traveling at a speed of 45 mph, it moved through the 910 feet of sight distance in about 14 seconds.

Applicable Rules

UNION PACIFIC SYSTEM*

Safety Radio and General Rules for all Employees

4039 Passing Trains:

. . . . . .

Employees must stand clear of all tracks when trains are approaching or passing in either direction. They must not stand on one track while trains are passing on the other.

Maintenance-of-Way Rules

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* Union Pacific System rules apply because the MP is part of that System.

REPORT: 16

RAILROAD: Southeastern Pennsylvania Transportation Authority (SEPTA)

LOCATION: Philadelphia, Pennsylvania

DATE, TIME: June 27, 1985, 3:10 p.m.

PROBABLE CAUSE: Conductor's failure to avoid a close clearance.

EMPLOYEE:		
	Occupation	Conductor
	Age	31 years
	Length of Service	9 1/2 months
	Last Rules Training	October 5, 1984
	Last Safety Training	October 5, 1984
	Last Physical Examination	August 2, 1984

Circumstances Prior to the Accident

Two parallel tangent tracks extend south to north in the accident area. From the west, they are designated as single main track and Fox Chase siding. The station platform is west of the main track, and the grade is 1.0-percent-ascending northward.

At the south end of the station platform, there is an elevated platform for the handicapped, the east side of which allows about only a 6-inch clearance to the west side of equipment positioned on the main track. There are no signs posted to warn of close clearance between the platform and the cars.

The Accident

On the day of the accident, a conductor was called for duty at 6:18 a.m., in Trenton, NJ, to work run No. 651. When the accident occurred, the conductor was working Train No. 834, consisting of four MU locomotives en route to Fox Chase Station, near Philadelphia.

Approximately 375 feet south of the Fox Chase Station, the engineer of No. 834 stopped the train because debris was on the railhead and because some vandals were throwing stones. After about a minute, the engineer moved the train northward into the station. As the train proceeded, the conductor positioned himself on the bottom step of the north end of the second car, MU No. 178.

When the train entered the station, the conductor's body struck the southeast corner of the elevated platform for the handicapped and then became wedged between the east side of the platform and the west side of the car.

As the train continued into the station, at about 6 mph, the conductor's body struck the left handhold and right door sill at the south end of MU No. 178 and then fell on top of the platform.

Post-accident Investigation

The conductor had a little more than 9 months of service and 3 weeks on the present assignment.

The conductor was taken to Jeanes Hospital in Philadelphia, by the Philadelphia Fire Department's Rescue Squad No. 12, but was pronounced dead upon arrival. Toxicological tests were negative for drugs or alcohol, nor was there any other evidence of drug or alcohol impairment.

Although there were no close-clearance signs posted near the platform for the handicapped, the following appears in SEPTA's Timetable Special Instructions for the Fox Chase Line: "Employees should take care at the following location where close-clearance exists between trains and partial high level platform: Fox Chase-Single Track-South End."

Applicable Rules

Southeastern Pennsylvania Transportation Authority

Safety Rules

Effective: July, 1978

ON OR ABOUT EQUIPMENT

1703. Do not stand, sit, walk or ride the following: g - On side of equipment in close clearance area.

1705. When riding on or getting on or off standing or moving equipment: d - Face equipment and the direction it is moving. Keep body as close as possible to the equipment.

REPORT: 17

RAILROAD: The Atchison, Topeka and Santa Fe Railway Company (ATSF)

LOCATION: New Gulf, Texas

DATE, TIME: July 2, 1985, 12:20 p.m.

PROBABLE CAUSE: Failure to secure safe footing and balance while dismounting a hi-rail pickup vehicle. A misting rain may have contributed.

EMPLOYEE:

Occupation	Industrial development manager
Age	61 years
Length of Service	37 years
Last Rules Training	No record
Last Safety Training	No record
Last Physical Examination	January 30, 1985

Circumstances Prior to the Accident

A hi-rail trip was conducted over a segment of track from Guy, TX (milepost 18) to New Gulf (milepost 6.6) on the Southern Division of the ATSF to determine the feasibility and cost of putting certain track back into service.

The hi-rail vehicle used on the trip was a 1982 Chevrolet, 1-ton, step-side pickup truck which was traveling at speeds from 5 to 15 mph in overcast rainy weather.

A railroad officer was driving the truck. In the cab with him were two potential shippers. The industrial development manager and two other carrier officials sat in the bed of the truck. The industrial development manager was seated either on the side railing or on a low wooden box near the rear of the bed of the truck.

After stopping a number of times to check track tie conditions and vegetation growing over the track structure, the truck was halted on the San Bernard River Bridge (milepost 10.3) so that the men could determine the structural condition of this steel truss, ballast-deck bridge.

The Accident

On the bridge, the hi-rail vehicle stopped at a setoff for motor cars located on the driver's side. Two of the railroad officials and the two shippers left the truck to check the bridge structure.

Because the weather was beginning to deteriorate and the rain was becoming harder, the industrial development manager, riding in the bed of the open pickup, was told to take shelter inside the cab. He stood up, moved forward towards the passenger side of the bed, and began dismounting over the side onto the truck step then onto the ballast deck of the bridge, when he lost his footing and his balance, and fell over the west side of the bridge, approximately 37 feet to the ground. Although he was breathing for about an hour after the fall, by the time medical assistance arrived, the manager had succumbed to his fatal injuries.

Post-accident Investigation

Bridge 10.3 over the San Bernard River is comprised of an 84.4-foot wooden ballast deck, a 151.1-foot steel truss ballast deck, and an 84.4-foot wooden ballast deck. The center of the 2-foot 15-inch motor car setoff is located 63.4 feet west of the east end of the bridge.

According to witnesses, the industrial development manager walked from the back of the bed of the truck to the passenger side and then climbed over the side, right leg followed by left leg. The distance from the top of the bed side to the bed step is 25 1/2 inches, and from the bed step to the ballast is 28 1/2 inches. Apparently, not realizing the additional height from the bed step to the ballast, he lost his footing and balance, with only 44 inches between the side of the pickup and edge of the bridge, and was unable to regain his balance.

An hour after the railroad officials notified them, Wharton fire department paramedics and a Lifeflight Helicopter responded to the accident, but the manager had already died at the scene from his chest injuries.

Applicable Rules

The Atchison, Topeka and Santa Fe Railway Company Safety Rules for Santa Fe Employees

3. Employees must not be careless of the safety of themselves and others. They must remain alert and attentive and plan their work to avoid injury.

4. Employees are not required to incur risks and are directed to exercise proper care and judgment to protect themselves and others.

REPORT: 18

RAILROAD: The Atchison, Topeka and Santa Fe Railway Company (ATSF)

LOCATION: Cleburne, Texas

DATE, TIME: July 13, 1985, 9:30 p.m.

PROBABLE CAUSE: Failure to clear for moving equipment.

EMPLOYEE:	Occupation	Switchman
	Age	31 years
	Length of Service	11 years
	Last Rules Training	October 15, 1984
	Last Safety Training.	April 30, 1985
	Last Physical Examination	May 9, 1981

Circumstances Prior to the Accident

On the night of the accident, a switchman, who had had at least 8 hours off duty, went on duty at 8:30 p.m. to relieve another employee who went home sick. The switchman was told to work on Switch Yard Job YCL 202, a regular 3:00 p.m. to 11:00 p.m. assignment. The job consisted of using Locomotive ATSF 2229 to switch a cut of 15 cars on the South Lead Track of Cleburne Yard. The crew had already begun switching and had kicked two cars to Track No. 2101, one car to Track No. 2109, two cars to Track No. 2101, and one car to Track No. 2103.

The switchman was the field man on this job and was working in the yard tracks off the lead. His duties were to keep the knuckles open and, when one car did not roll to another car and make a coupling, to climb on the car and set a hand brake to keep the car from rolling back into the south lead track and the cut of cars that the other crew members were handling. The switchman was last seen standing between tracks 2101 and 2102 watching the last two cars of the cut rolling to a coupling on Track No. 2101.

The Accident

The switchman was struck by an empty hopper car, the north car in a four-car cut that had been kicked onto Track No. 2102. Later, one other car was put onto the same track, which also passed over his body.

His body was found at 9:30 p.m. between the rails of Track No. 2102, about 6 carlengths north of the south lead track. The switchman's lantern was found south of the body. He was pronounced dead at the scene.

Post-accident Investigation

There were no eyewitnesses to the accident, but the switchman was last seen watching the last two cars slowly roll to a coupling on Track No. 2101. He had a switch list of the cut of cars the crew was handling and he knew he had to watch the car going into Track No. 2103 and the four cars going into Track No. 2102. Something must have distracted his attention, however, because he was fouling Track No. 2102 when the four cars were kicked into this track.

Toxicological tests for drugs or alcohol were negative, and there was no other evidence of alcohol or drug impairment.

Applicable Rules

The Atchison, Topeka and Santa Fe Rules
Operating Department General Rules

M. Employees must expect the movement of trains, engines or cars at any time, on any track, in either direction.

Movement of Trains and Engines

112(A). Employees performing switching must do so efficiently and in a manner which will avoid personal injury, or damage to contents of cars, equipment, structures, or other property.

The Atchison, Topeka and Santa Fe Railway Company
Safety Rules for Santa Fe Employees

On or About Tracks, Engines, Cars and Moving Equipment

38. Employees must expect the movement of trains, engines, cars or other equipment at any time, on any track, in either direction. Do not rely on others to give warning of moving equipment, except where designated lookouts are provided.

39. Do not cross tracks closely in front of moving equipment.

REPORT: 19

RAILROAD: Missouri Pacific Railroad Company (MP)

LOCATION: Pacific, Missouri

DATE, TIME: July 17, 1985, 9:35 a.m.

PROBABLE CAUSE: A truck owned by the railroad was struck by an opposing automobile traveling in the wrong lane.

EMPLOYEE:

Occupation	Trackman
Age	47 years
Length of Service	16 years, 10 mon
Last Rules Training	June 26, 1985
Last Safety Training	June 26, 1985
Last Physical Examination	September 1968

Circumstances Prior to the Accident

On the day of the accident, two trackmen who went on duty at 7:30 a.m., in Washington, MO, were traveling in an MP-owned 1984 Chevrolet hi-rail pickup truck to a work assignment in Pacific, about 18 miles to the east. The trackmen were wearing seat belts, as required by company safety rule (No. 4154). Approaching the point of accident, the hi-rail vehicle was traveling eastward at about 50 mph behind a tractor-trailer truck moving at about the same speed, in the normal eastward lane of Highway 100. A 1974 Chevrolet Nova automobile with one occupant was approaching in the normal westward lane at an undetermined speed. The location was 0.6 mile west of the intersection of Highway 100 and State Road AT, about 5 miles west of Pacific.

The Accident

At about 9:35 a.m., the westbound Chevrolet Nova suddenly veered 3 feet 8 inches inside the eastward lane, where it struck the driver's side of the tractor-trailer cab. Its left front wheel made solid contact with the left rear wheel of the tractor. Then the car swung around toward the southeast, missing the trailer, but striking the left front of the hi-rail truck at a point 5 feet 6 inches inside the eastward lane. The hi-rail truck was hurled into a ditch on the south side of the highway, landing on its right side. Its ruptured gas tank caught fire. The trackman who had been driving the hi-rail truck was able to escape, although he had sustained a fractured pelvis from the collision. He returned to the truck, pulled the other trackman from the flames, and suffered burns over 18 percent of his body. The

trackman who had been a passenger, in the hi-rail truck died in St. John's Mercy Medical Center, Creve Coeur, MO, from burns over 90 percent of his body. The driver remained in the hospital burn unit for several weeks.

The driver of the automobile was pronounced dead at the scene, his vehicle destroyed.

The uninjured tractor-trailer driver told authorities that there was no prior indication of an impending accident, and he was only able to initiate a swerve to the right before the collision. The driver of the hi-rail truck told authorities that he was unable to avoid the out-of-control automobile.

Post-accident Investigation

In the accident area, Highway 100 is a two-lane road, 24 feet wide, concrete, with hard-surface shoulders about 10 feet wide on each side, all in good condition. Maximum authorized speed is 55 mph. The terrain is open, with unrestricted visibility. From the west, the highway is straight and practically level nearly to the point of accident, with a moderate ascending grade beyond. The weather was clear and dry, with the temperature in the 70's.

The 38-year-old hi-rail truck driver, with 14 years 10 months railroad service, possessed a valid Missouri chauffeur license.

The 21-year-old automobile driver had a valid Missouri operator's license.

Inspection of the highway environs showed nothing that might be considered contributory. Since the automobile was destroyed, nothing could be determined regarding possible mechanical malfunction.

Applicable Rules

None.

REPORT: 20

RAILROAD: The Baltimore and Ohio Railroad Company (BO)

LOCATION: Glenwood, Indiana

DATE, TIME: July 22, 1985, 11:45 a.m.

PROBABLE CAUSE: Shooting by juvenile.

EMPLOYEE:	Occupation	Brakeman
	Age	31 years
	Length of Service	9 years
	Last Rules Training	June 13, 1984
	Last Safety Training	June 13, 1984
	Last Physical Examination	November 8, 1982

Circumstances Prior to the Accident

On the day of the accident, freight train Extra 3695 West, with Locomotive 3695 and 30 cars, was moving west on the main track in the Hamilton Subdivision. The train approached a farm crossing at a speed estimated to be 10 mph.

The approximately 10-foot-wide farm crossing is used to connect fields on the north and south of the railroad right-of-way. In June, the fields were planted in corn with the nearest row about 50 feet south of the track. At this point, a view of the track to the east is unrestricted. There is a telephone pole line between the track and the field, and the terrain is flat.

The Accident

Train Extra 3695 West had stopped at 11:30 a.m. in Glenwood, IN, to set off two cars at the Farm Bureau Cooperative Grain Elevator, milepost 77. The work was completed, and the train departed at 11:43 a.m.

The front brakeman was seated on the south side of the locomotive. The engineer was operating the locomotive, and the conductor and flagman were in the caboose.

In the vicinity of milepost 77.2, about 1,350 feet west of milepost 77, the front brakeman leaned out the locomotive cab window and apparently was preparing to speak to some individuals standing at the farm crossing. (Maintenance-of-way employees were working throughout the area, and it is assumed the brakeman thought these individuals were maintenance-of-way employees.)

Then the engineer saw the brakeman slump back in his seat, with blood running from his forehead. The train was stopped at 11:45 a.m., at milepost 77.3. The brakeman had been shot in the right temple.

The engineer radioed maintenance-of-way personnel who were at the coop elevator. They, in turn, contacted the Emergency Medical Technicians, one of whom worked at the coop elevator. The locomotive was cut off the train and used to transport the brakeman to Rush County Road 725, 2,560 feet west of the point of accident. The victim was removed from the locomotive at 12:03 p.m. and taken by ambulance to Methodist Hospital in Indianapolis.

Post-accident Investigation

The flagman saw the brakeman's assailants and gave chase through the cornfield. He was able to attract the attention of the sheriff's deputies who had arrived on the scene. The deputies tracked the youths to their residence in Glenwood. They had changed their clothes and buried the rifle in a mud puddle.

The youths were brothers, ages 13 and 16. When interrogated, they claimed to be shooting at birds on the pole line. The 13-year-old admitted to firing the fatal shot. Investigation showed that the fatal shot was made at a distance of about 40 feet with a 22-caliber rifle firing hollow point bullets.

The brakeman was struck by one slug, which penetrated the right temple, but did not exit. Medical evidence indicated he was brain dead immediately, but the victim was pronounced clinically dead at 10:15 a.m., July 23, 1985. Because of the ages of the youths, they will be charged as delinquents, under the Indiana Juvenile Justice System.

Locomotive 3695 was inspected, the cab windows were glazed in compliance with 49 CFR Part 223.

Applicable Rules

None.

REPORT: 21

RAILROAD: Norfolk and Western Railway Company (NW)

LOCATION: Urbana, Illinois

DATE, TIME: July 26, 1985, 9:24 a.m.

PROBABLE CAUSE: An overturned tractor.

EMPLOYEE:	Occupation	Machine Operator
	Age	26 years
	Length of Service	8 years
	Last Rules Training	January 23, 1985
	Last Safety Training.	August 31, 1984
	Last Physical Examination	August 6, 1984

Circumstances Prior to the Accident

In Urbana, near milepost 335.8, on the day of the accident, a maintenance-of-way crew consisting of a machine operator, an equipment repairman, and a laborer was attempting to move a rail by pulling it with a chain attached to a self-propelled pneumatic-tired tractor.

The Accident

According to witnesses, the tractor was moving slowly and pulling the weight of the rail easily when its front wheels began to rise off the ground and the tractor tipped over backwards.

While the machine operator was pinned beneath the tractor and the steering wheel, gasoline from the tractor's storage tank began to pour on the ground and onto the operator. The hot engine ignited the leaking gasoline instantaneously. Attempts by the equipment repairman and the laborer to put the fire out and free the machine operator were unsuccessful. The machine operator was fatally burned and pronounced dead at the scene by the Champaign County Coroner.

Post-accident Investigation

The rail had been pulled approximately 40 feet when the end of the rail came into contact with the end of another rail protruding from the ballast section of the track. This resulted in placing a much greater load on the power axle forcing it in a downward direction and causing the front of the tractor to rise and flip over.

Applicable Rules

Norfolk and Western Railway Company
Maintenance-of-Way Standard Procedure
No. 18-Instruction for Operation of Pneumatic Tired Tractors.

. . . . . .

3. Pulling a load, attached to the axle or to the drawbar, that has been raised too high, or has too short a hitch, may cause the tractor to tip backwards. With the hitch the proper length, if the tractor starts to tip backwards, the hitch will lower rapidly and reduce the overturning force. If the hitch is too high, the force is increased. If the hitch is too short, the force may not reduce rapidly enough to prevent tipping.

4. Plan the job well ahead of time and watch for hazards....

REPORT: 22

RAILROAD: Louisiana and Arkansas Railway Company (LA)

LOCATION: Kraft, Louisiana

DATE, TIME: July 31, 1985, 2 p.m.

PROBABLE CAUSE: Failure to properly support equipment during rerailing operation.

EMPLOYEE:	Occupation	Carman
	Age	46 years
	Length of Service	21 years
	Last Rules Training	None required
	Last Safety Training	July 31, 1985
	Last Physical Examination	February 23, 1971

Circumstances Prior to the Accident

Early on the morning of the accident, two boxcars derailed at the end of Track No. 4, at the Williamette Mill on the Red River Mill Division, milepost 617.5. The first car, KCS 751472, had been completely detrucked and shoved onto the loading dock. The second car, KCS 754676, was still upright with one set of trucks from the first car forced underneath it. A carrier official and two carmen arrived on the scene later that morning, and with the help of a boom truck and jacks, they separated the two cars, removed one set of trucks, and were recentering the original trucks under the "B" end of the second car, KCS 754676.

The carmen were using a 62 1/2-ton hydraulic jack under the "B" end coupler, and standard 2x12x36 and 1x6 oak blocking material to raise and lower the car. The brakes of the car were inoperative, and two sets of wheels on the west side of the "A" end of the car were chocked with standard chocks while the work was underway.

After the car was lowered to within 2 inches of the truck bolster, it was found that the car would have to be moved slightly to the west to match up the centerplates. The truck boom was used against the side of the car; the car was moved; and the centerplates matched. However, the move tilted the jack, so the car was lowered to reset the jack.

The Accident

The jack was reset on the 2x12x36 blocking under the "B" end coupler, with a 1x6 block between the head of the jack and the coupler. The car was raised for the final move to insert the centerplate pin and connect the centerplates. At this point, the jack was fully extended its 18-inch length.

The carman with the centerpin in his hand crawled underneath the end of the car on the west side, leaning over the axle of the leading wheels to insert the centerpin. He stated that the trucks would have to be moved forward by about half an inch to enable him to insert the pin. The official was holding the truck wheels next to the carman on the west side, and the other carman was at the jack controls about 10 feet away also on the west side.

As the second carman approached to help the official roll the trucks forward, the jack suddenly kicked out toward the end of the car to the east. The car fell on the first carman beneath the car, pinning the right upper chest portion of his body between the axle and return spring draft assembly, and killing him instantly.

The car was immediately jacked up and the body of the carman removed. The employee was taken by ambulance to the Natchitoches Parish Hospital where he was pronounced dead on arrival.

Post-accident Investigation

An inspection of the jack revealed no defects.

The Natchitoches Parish Coroner stated that the carman died instantly as a result of crushing injuries to the chest.

The ground at the accident site consists of soft, wet sand and clay built up between the rails to a height of approximately 6 inches between the rails. The employee used a shovel to level the ground before placing the jack. If extra blocking material had been placed under the jack, it would have stabilized the jack more effectively.

The placing of trestle stands under the car or the placing of blocking material between the truck bolster and car body, while the employee was beneath the car, could have insured the safety of the carman when the jack failed.

Applicable Rules

Kansas City Southern Lines, General and Safety Rules for Employees

. . . . . .

281. Employees must take the following precautions before and when using jacks:

(a) Insure that there is sufficient footing for its use.

(b) See that blocking used under jack is of sufficient size.

(c) Make certain that jack is properly placed.

(d) Do not jack metal against metal.

(e) Proper handle must be used. Handle must be fully inserted in socket for use and removed from socket when operation is completed.

(f) Air jacks and air hoses must be in serviceable condition before use.

282. Block wheels before jacking up end of car, engine, crane or other wheeled equipment. After jacking up, place trestle stands or blocks beneath the equipment under which work is to be done when possible to do so.

REPORT: 23

RAILROAD: Seaboard System Railroad

LOCATION: Iron City, Georgia

DATE, TIME: July 22, 1985, 8:30 a.m.

PROBABLE CAUSE: A pickup truck struck an employee in a company vehicle.

EMPLOYEE:	Occupation	Master mechanic
	Age	55 years
	Length of Service	35 years
	Last Rules Training	No record
	Last Safety Training	No record
	Last Physical Examination	No record

Circumstances Prior to the Accident

The accident occurred 0.3 mile west of Iron City, on US 84, a two-lane, blacktop highway. It was daylight, the road was dry, and the weather clear. The highway at the accident scene was curved and level.

Sometime between 3 and 3:30 a.m., a master mechanic left Birmingham, AL driving a company owned Ford LTD sedan to attend a staff meeting in Jacksonville, FL.

The Accident

At approximately 8:25 a.m., while traveling east on US Highway 84, the master mechanic encountered a pickup truck traveling west. The pickup truck ran off the road for 125 feet, and the driver lost control of the vehicle. The vehicle then returned to the roadway for 133 feet and skidded sideways into the path of the employee's vehicle. Death appears to have been instantaneous.

Post-accident Investigation

The left front of the employee's vehicle was struck by the left side of the pickup truck. At the point of impact, the left front tire of the employee's vehicle was 5 feet south of the center line in the eastbound lane.

Applicable Rules

None.

REPORT: 24

RAILROAD: Columbia and Silver Creek Railroad

LOCATION: Silver Creek, Mississippi

DATE, TIME: July 11, 1985, 12:20 p.m.

PROBABLE CAUSE: Accidental drowning during lunch period.

EMPLOYEE:

Occupation.	Track laborer
Age	21 years
Length of Service	7 1/2 months
Last Rule Training	November 26, 1984
Last Safety Training	July 8, 1985
Last Physical Examination	November 26, 1984

Circumstances Prior to the Accident

The accident occurred in Silver Creek, a stream 1.6 miles south of Silver Creek, MS, near milepost 118.5. About 450 feet east of the track, the stream is about 25 feet wide at the accident site. That day the temperature was 93° F, and the skies were partly cloudy.

A track laborer belonged to a section gang consisting of a supervisor and six other track laborers. At 7 a.m., the section gang began working with a tamper and continued until a lunch break at 12 noon. Three of the laborers then walked about 450 feet to Silver Creek to go swimming; their supervisor had left the site on company business.

At about 12:10 p.m., after eating his lunch, the subject track laborer and the two remaining laborers followed the first group to the stream. After deciding to join the other swimmers, the subject laborer took off his shoes, removed his belongings, and dived into the stream. His momentum carried him across the 25-foot stream where he could stand up in water below his knees. He remained in the shallow area until it was time to return to work.

The Accident

When he was unable to recross the stream (presumably, because he could not swim well), he was assisted by another laborer who held his arm. As they reached a point where the first laborer apparently could not touch bottom, he panicked and pulled the second laborer under water. The other two laborers in the stream tried to help and were also pulled under. The third time the first laborer went under, he did not reappear. Help was

summoned, but the first track laborer had drowned. His body was recovered at 1:27 p.m.

Post-accident Investigation

Witnesses said that the first track laborer feared the water and was not a good swimmer.

For that day, the U.S. Weather Bureau recorded a temperature of 93° F, at Monticello, MS, 10 miles west of the accident site.

Applicable Rules

None.

REPORT: 25

RAILROAD: Southern Pacific Transportation Company

LOCATION: Davenport, California

DATE, TIME: August 21, 1985, 3:20 p.m.

PROBABLE CAUSE: Failure to take safety precautions during rerailing operations.

EMPLOYEE:		
	Occupation	Carman
	Age	43 years
	Length of Service	17 years
	Last Rules Training	No record
	Last Safety Training	June 25, 1985
	Last Physical Examination	May 3, 1985

Circumstances Prior to the Accident

On August 16, 1985, a northbound freight train, called the Santa Cruz Local, departed Santa Cruz, CA, with two locomotives and 23 cars en route to the Lone Star Cement Plant, in Davenport.

At 12:25 p.m., five cars derailed at milepost 88.25. From north to south, the cars were: (1) SP 490485 car on side; (2) SP 490395 car on side; (3) SP 490353 car upright; (4) SP 490495 car at a 45-degree angle; and (5) ACFX 44697 car upright. All but the last car contained crushed gypsum rock ladings. Because two of these cars were turned on their sides, the carrier's mechanical department was unable to rerail the cars until August 20, 1985.

On August 21, 1985, after the five cars had been rerailed, a train crew moved them 2.8 miles to Davenport where the cars were left on a track in the Lone Star Cement Plant yard.

The crew then used two locomotives to couple to the south end of the five rerailed cars. The cars were then moved onto Track No. 793, a level spur that leads into the plant. During this movement, wheels L1, L2, R1, and R2 of covered hopper SP 490485 derailed on a righthand curve. The track is tangent at the location where the car stopped.

The Accident

On August 21, 1985, a mechanical department crew was sent from Watsonville, CA, to Davenport to rerail SP 490485. The crew brought a Cline truck No. W-747 (rerail truck) to use during the rerailing operation. The car foreman positioned the Cline truck at the south "B" end of the derailed car, with the Cline truck wheels straddling the rail. A cable sling was attached to the Cline truck boom with the collar of the sling placed around the coupler shank on the "B" end of the car. The truck was secured to the carbody by attaching chains around the axle and attaching the hook end of the chains to the center sill of the car. As the car was raised, the left chain came off the axle. This required the car to be lowered for chain reattachment.

After the chain was reattached, the car was raised again and the wheels were aligned with the rails. Before the car could be lowered, the car foreman, who was directing the operation, saw a carman standing next to the west side of the car and instructed the carman to leave that area. The carman attempted to move; however, he slipped and fell on leaves and grass in the walkway. The car foreman, who was in line of sight with the carman and the crane operator, heard a metallic noise coming from the "A" end of the car. Then the car foreman saw the car turn over and pin the carman beneath it.

Post-accident Investigation

Even though the rerailing operation conformed to carrier practice, the rerailing crew failed to inspect the lading in SP 490485 before attempting to raise the car. After the accident, an inspection revealed that the lading in covered hopper cars SP 490395 and SP 490495 had shifted to the west side of both cars during the August 16 derailment. Since SP 490485 turned over on its west side, it is believed that the shifted lading caused the car to turn over.

Applicable Rules

Southern Pacific Transportation Company
Safety Rules Governing Mechanical Department
Employees:

4082: Crane operators must not move loads unless they are sure that all persons are in the clear. Employees must not go under load. Move or work under boom only when necessary.

4087: Keep hands, feet and all other parts of the body in a position where they cannot be struck by, caught under, or between materials, tools, or equipment.

REPORT: 26

RAILROAD: National Railroad Passenger Corporation (Amtrak)

LOCATION: Chicago, Illinois

DATE, TIME: August 26, 1985, 4:25 p.m.

PROBABLE CAUSE: Shooting by fellow employee on extended medical leave.

EMPLOYEE:	Occupation	Supervisor, Baggage and Claims
	Age	54 years
	Length of Service	28 years
	Last Rules Training	Not subject to Rules Training
	Last Safety Training	March 20, 1985
	Last Physical Examination	February 6, 1984

Circumstances Prior to the Accident

At approximately 3 p.m. on August 26, 1985, a Special Officer (police), on extended medical leave, left Hinsdale Hospital where he had been a patient without being discharged.

At 3:36 p.m. the Officer boarded Burlington Northern Suburban Train No. 1254 at the Highland Station in Hinsdale en route to Chicago Union Station, where the officer had worked.

After arriving at Union Station, the Special Officer met the Supervisor of Baggage and Claims at 4:20 p.m., and both men entered the Amtrak Lounge where they met the Amtrak Station Manager and proceeded towards the employees lunchroom at the rear of the lounge.

At 4:25 p.m., after accusing the Supervisor of trying to poison him, the Special Officer pulled a .357 caliber service revolver from behind his back, and aimed it at the Supervisor.

The Accident

The Special Officer fired a shot at the Supervisor striking him in the right side of the chest. The Supervisor fled to the rear exit door to the south cab drive with the Special Officer in pursuit. Approximately 30 feet beyond the rear exit, the Special Officer grabbed the Supervisor, raised his revolver and fired twice, grazing the right side of the Supervisor's head, forcing the Supervisor to the ground, where he died.

Without hesitation, the Special Officer placed the revolver in his left hand, raised it to the left side of his head and fired, seriously wounding himself. He was pronounced dead on arrival at Carbine Hospital.

The Supervisor of Baggage and Claims was pronounced dead at the scene by an on-duty Conrail doctor.

Post-accident Investigation

Investigation revealed that upon his arrival at Union Station, the Special Officer went immediately to his gun locker and retrieved his service revolver, a Ruger Security Six .357 Magnum. He then confronted the Supervisor and shot him without provocation.

According to his mother, the Special Officer had been in physical pain (non-work related) for a long time. As a result, he was depressed and worried that he would not be permitted to return to his job. However, she also said that he had lately seemed in good spirits and much improved. His former wife concurred in this opinion.

Applicable Rules

None.

REPORT: 27

RAILROAD: Chicago and North Western Transportation Company (CNW)

LOCATION: Boone, Iowa

DATE, TIME: September 18, 1985, 11:30 a.m.

CAUSE: Failure to shore or brace during trench excavation.

EMPLOYEE:

Occupation	Rodman
Age	39 years
Length of Service	13 years
Last Rules Training	Not required
Last Safety Training	August 13, 1985
Last Physical Examination	No record

Circumstances Prior to the Accident

A two-man survey crew arrived at a turntable pit in the train yard in Boone, at 8:30 a.m. on the day of the accident. A private contractor had used a backhoe to excavate a trench that ranged 4 to 7 feet in width and was approximately 8 feet deep from the turntable pit to a manhole 205 feet to the west. The trench was located between a concrete footing on the north and a concrete foundation on the south, a distance of 21 feet 6 inches westward. The footing on the north side of the trench was 29 feet 6 inches long, 2 feet wide, and 4 feet deep.

The survey crew established a grade for a gravity-flow drainage pipe being installed from the turntable pit to the manhole. Each piece of iron pipe was 8 inches in diameter and 20 feet long, and a grade was established for each 20-foot section of pipe. The drainage pipe had been installed to within 6 feet of the manhole.

The Accident

The rodman stood in the trench while waiting to take a grade reading at the bottom of the manhole. More soil had to be removed from the manhole pit. The rodman walked approximately 21 feet eastward and remained standing in the trench while the excavation continued.

At 11:30 a.m., 29 feet 6 inches of concrete footing located on the north side of the trench collapsed and crushed the rodman against the face of the foundation on the south side of the trench. The rodman was pronounced dead at the scene.

Post-accident Investigation

The concrete footing broke into three pieces when it collapsed into the trench. A 12-foot 1-inch piece of footing crushed the rodman. The soil below the base of the collapsed footing had been neither shored nor braced. The Occupational Safety and Health Administration of the Iowa Bureau of Labor issued citations against the CNW for failure to insure the stability of the walls (IAC, section 26.651(n)) and shore the trench walls (IAC, section 26.652(c)) violations of the Iowa Occupational Safety and Health Act.

Applicable Rules

None.

REPORT: 28

RAILROAD: The Atchison, Topeka and Santa Fe Railway Company (ATSF)

LOCATION: Galveston, Texas

DATE, TIME: October 4, 1985, approximately 1:30 a.m.

PROBABLE CAUSE: Employee failed to control a company pickup truck.

EMPLOYEE:

Occupation	Signal Maintainer
Age	37 years
Length of Service	11 years, 10 months
Last Rules Training	July 21, 1975
Last Safety Training	September 30, 1985
Last Physical Examination	May 2, 1985

Circumstances Prior to the Accident

The Atchison, Topeka and Santa Fe Railway Company, Southern Division, dispatcher called out a signal maintainer about 10:45 p.m., October 3, 1985, to repair a dark signal, which was reported by an eastbound train leaving Galveston Island. The signal maintainer drove onto the the Old Galveston Causeway from the mainland side and arrived at the lift bridge tower about 11:30 p.m. The operator lowered the bridge about 11:45 p.m., so the maintainer could drive across and repair the dark signal. Before leaving the bridge tower, the maintainer told the operator to leave the lift bridge down for about 15 minutes so that he could return without delay.

About 12:10 a.m., October 4, 1985, the bridge operator called the signal maintainer on the company radio to inform him that the bridge had to be raised for water traffic, but the signal maintainer did not respond.

The Accident

The signal maintainer repaired the eastbound signal on Galveston Island and, subsequently, was returning westward on the causeway's brick surface, towards the lift bridge. Markings found on the road indicated the left wheels of the vehicle had apparently run over a 5-inch concrete curb at the end of the causeway bridge, causing the vehicle to swerve towards the right. The vehicle then traveled over a 6-inch concrete curb through a weeded area between the road and the track, across the ballast shoulder, and over the main line rails. The vehicle, with the signal maintainer in it fell approximately 10 feet over the north

side of the railroad bridge into Galveston Bay, where the signal maintainer drowned.

Post-accident Investigation

The brick-surfaced Old Galveston Causeway is about 35 feet south of the center of the main line. Approaching the causeway bridge from the east at milepost 4.71, the road curves towards the railroad track and narrows from about 50 to 20 feet.

On the south side, at the end of the bridge, there is a concrete curb, 5 inches high, 8 feet wide and 15 feet 10 inches long. About 30 feet of bridge railing is missing from above the curb. Evidence strongly suggests that as the signal maintainer's vehicle was traveling westward, the left front wheel struck the south side curb, causing the vehicle to swerve sharply to the right (north), over the railroad tracks, and into Galveston Bay. Galveston police divers, assisted by the Coast Guard, found the vehicle containing the signal maintainer's body in about 12 feet of water. The truck and body were removed from the bay at 7 p.m. on October 7, 1985, about 66 hours after the accident. The driver's seatbelt was unfastened when the vehicle was located. The autopsy report stated the cause of death was asphyxiation by drowning, at approximately 1:30 a.m.

The signal maintainer's service was within the limits of the emergency provision of the Hours of Service Act.

Applicable Rules

The Atchison, Topeka and Santa Fe Railway Company Safety Rules for Santa Fe Employees

Rules Maintenance-of-Way and Structures
Operation of Highway Motor Vehicles

1299. Safety - Motor vehicles must be operated in a safe manner regardless of the urgency or importance of the trip.

1300. Speed - . . .

They must be driven with added caution around curves, over tops of hills, at night, and at any time when visibility is limited by weather, darkness, turns in the road, or breaks in grade. All traffic laws must be observed.

REPORT: 29

RAILROAD: Consolidated Rail Corporation (Conrail)

LOCATION: Moline, Michigan

DATE, TIME: December 11, 1985, 1:51 p.m.

PROBABLE CAUSE: Failure to stop a maintenance-of-way machine short of standing equipment.

EMPLOYEE:		
	Occupation	Inspect-and-Repa Foreman
	Age	45 years
	Length of Service	12 years
	Last Rules Training	April 23, 1985
	Last Safety Training	December 11, 19
	Last Physical Examination	April 13, 1983

Circumstances Prior to the Accident

On December 11, 1985, at approximately 7:15 a.m., a Conrail equipment supervisor asked a mechanic to operate Ballast Regulator BR 1153 from Grand Rapids, to Wayland, MI, for loading. An inspect-and-repair foreman (track inspector) was provided to pilot the ballast regulator to Wayland using Hi-rail Vehicle 9109. Both vehicles left Grand Rapids at an unknown hour and proceeded south, with Hi-rail Vehicle 9109 in the lead.

Hi-rail Vehicle 9109 was moving on the main track at about 10 mph when the vehicles approached milepost 86.01 in Moline. The day was cloudy with wet rail conditions. In Moline, 12th Street parallels the railroad track on the east from milepost 87 southward to a point 294 feet north of milepost 86.0, where it crosses the main track at a 45-degree angle to the right. Beyond the railroad crossing, 12th Street angles to the left approximately 45 degrees and again parallels the main track southward. The terrain is flat, and the track has a 0.56-percent-descending grade from north to south.

The Accident

When both vehicles arrived in Moline, the vehicles stopped in front of the Moline siding switch to allow Diesel Electric Crane 3042 onto the siding. After the crane was secured on the siding, the crane's operator and the conductor pilot got into the hi-rail vehicle, which continued going south. As the vehicles approached

milepost 86.01, 57 feet north of milepost 86, a track foreman was seen opening a culvert for drainage. Then, Hi-Rail Vehicle 9109 came to a halt, and the inspect-and-repair foreman stepped in front of the hi-rail vehicle from east to west. As the foreman began walking, the ballast regulator struck the Hi-Rail vehicle in the rear. In turn, the hi-rail vehicle struck the inspect-and-repair foreman knocking him to the ground between both rails and dragging him approximately 64 feet.

The accident occurred at approximately 1:51 p.m.; a farmer who witnessed the accident summoned the Michigan State Police and an ambulance. However, the victim was pronounced dead by the Allegany County Medical Examiner at 2:25 p.m. December 11, 1985.

Post-accident Investigation

Inspection of Hi-Rail Vehicle 9109 showed that all its lights including the oscillating light were working as intended. Damage to this vehicle included: the displacement of the hi-rail rear attachment; a smashed and punctured gasoline tank; and a partially broken rear window.

Inspection of Ballast Regulator BR 1153 showed no apparent damage; lights and brakes were working as intended, and windows were clear. Although both the hi-rail vehicle and the ballast regulator were equipped with working radios, there was no communication between the two.

The mechanic who operated the ballast regulator was given a breathalyzer test by the Michigan State Police, which proved to be negative.

Also, in the course of the investigation, it was learned that the operator of the ballast regulator would have had to turn his head 130 degrees to the left in order to see any traffic approaching the crossing at 12th Street, thus missing the traffic in front of him.

Applicable Rules

Consolidated Rail Corporation Safety Rules For Maintenance of Way Employees, Effective June 1, 1981

. . . . . .

3321 - Operate equipment, machinery, car, truck or trailer on track at not exceeding the speed indicated below. (If the track on which the equipment is being operated is restricted by Timetable or Train Order, such equipment must not be operated in excess of the speed so specified):

(n) Running on rail that is "wet", covered with grease, ice, snow or leaves. (5 mph)

3322 - Precautions indicated opposite the following situations must be observed before operating equipment, car, truck or trailer over highway grade crossing:

(a) All Crossing: Approach prepared to stop, sound warning, and proceed over crossing after making sure there is time to do so safely.

. . . . . .

REPORT: 30

RAILROAD: Southern Pacific Transportation Company (SP)

LOCATION: Tolleson, Arizona

DATE, TIME: December 14, 1985, 6:57 a.m.

PROBABLE CAUSE: A track foreman failed to provide flag protection at a rail-highway crossing.

EMPLOYEE:		
	Occupation	Track foreman
	Age	60 years
	Length of Service	35 years
	Last Rules Training	October 1985
	Last Safety Training	June 1985
	Last Physical Examination	July 1950

Circumstances Prior to the Accident

On the evening of December 13, an SP track foreman was contacted by a roadmaster who told the foreman to patrol the track and search for broken rail and pull-aparts from Buckeye to Phoenix, AR. At approximately 4 a.m. the following day, the track foreman obtained a lineup of those trains operating between Wellton (milepost 770.0) and Cashion (milepost 893.0), and the foreman and trackman helper drove from Phoenix to Buckeye (milepost 875.7). At approximately 5 a.m., they placed a model MT 1983-2 track car on the track and began the track inspection eastward toward Phoenix. The foreman was operating the track car. The weather was clear and cool.

Between milepost 893.0 and milepost 914.4, the main track is located within yard limits, and all traffic is controlled by a yardmaster in Phoenix. At Cashion, the foreman radioed the Phoenix yardmaster and received authority to continue the track inspection to Tolleson, milepost 895.7. As the inspection moved eastward, the track car approached the 99th Avenue rail-highway crossing, DOT No. 741802-V (milepost 894.8), at an estimated speed of between 22 and 27 mph.

In the accident area, the track is tangent with a 0.3-percent-grade ascending eastward through the intersection. The thoroughfare, 99th Avenue, is tangent and practically level through the 90-degree intersection. The crossing is equipped with automatic flashing lights, bells, and gates, however, the track car was insulated and was not capable of activating. The thoroughfare, a high-density, 4-lane roadway, is maintained with a bituminous surface and a Goodyear Rubber track crossing.

During that time, a 1982 Chevrolet Blazer automobile, traveling south on 99th Avenue, a four-lane thoroughfare, passed two other vehicles also traveling south in the outside lane and returned to the outside lane on the approach to the rail-highway crossing. As the auto approached the crossing at about 52 mph, the driver said he saw an obstruction approximately 10 feet in front of his vehicle.

The Accident

The track car was 3 feet into the 99th Avenue rail-highway crossing, when it was struck on the operator's side by the Chevy Blazer. The track car derailed, made a 360-degree turn, and stopped in the outside, south lane of 99th Avenue -- 175.8 feet south of the point of impact. The foreman was thrown from the track and landed 142.0 feet south, beyond the point of impact, at the edge of the pavement. The helper remained in the track car, lying across the control panel, seriously injured.

After the crash, the Blazer continued to a point 308.9 feet beyond the track. The uninjured driver called for help on his CB radio, and went to the helper, who was seriously injured in the track car, until medical help arrived.

The Tolleson Police Department and the Fire Department, including medical assistance, arrived at the scene at approximately 7:04 a.m. The foreman was taken by air ambulance to West Alley Hospital where he was pronounced dead on arrival.

Post-accident Investigation

The 1984 Fairmont track car was equipped with a headlight and a taillight. The light switch was found in the "On" position. The throttle handle was broken off in the fully "Open" position. The track car was insulated and by design would not activate the crossing signals.

The Chevrolet's brakes and lights were functioning properly, with lights in the "On" position at the time of the accident.

Applicable Rules

> Southern Pacific Company - Rules and Regulations for the Maintenance-of-Way and Structures
>
> 965. SWITCHES, HIGHWAY CROSSINGS AND RAILROAD CROSSINGS: Operators must use extreme caution when running over switches, frogs, derails and crossings and must flag over crossings where traffic is dense. Highway traffic has the right of way.

. . . . . .

REPORT: 31

RAILROAD: Missouri Pacific Railroad Company

LOCATION: Longview, Texas

DATE, TIME: December 20, 1985, 5 a.m.

PROBABLE CAUSE: Two accidental drownings, one of which involved a failed rescue attempt.

EMPLOYEES:	Occupations	Brakeman	Engineer
	Ages	41 years	39 years
	Lengths of Service	11 years	16 years
	Last Rules Training	April 12, 1985	March 13, 1985
	Last Safety Training	No record	No record
	Last Physical Examination	April 14, 1974	October 18, 197

Circumstances Prior to the Accident

At 10:35 p.m. December 19, 1985, the crew of Yard Switch Job No. YR065 was instructed to haul 37 cars to the Texas Eastman Company, where they were to perform interplant switching. The crew consisted of two brakemen, an engineer, and a conductor.

The weather was clear and dark with limited visibility; the temperature about 28 degrees F. with a moderate frost.

The crew took time to eat between 3:30 a.m. and 5 a.m., and shortly thereafter boarded the locomotive consist and moved eastward to the Texas Eastman Company's "C" Yard. After coupling to a 10-car block, the crew moved westward toward the plant's "A" Yard. The first brakeman "victim" was in the controlling locomotive, with the engineer, the second brakeman, and the conductor were on the west end of the lead car. After the lead car passed the switch to the "A" Yard lead track, the conductor dismounted on the south side, and the second brakeman dismounted on the north side. The movement was stopped, and the car was uncoupled and left on the main track. Since the remaining nine cars were to go into the "A" Yard, the conductor walked westward on the "A" Yard lead track, and the second brakeman signaled the engineer to pull eastward. Once the cars were clear of the "A" Yard lead switch, the movement was stopped by the second brakeman who then walked to the "A" Yard lead track switch and aligned it for the "A" Yard lead track.

The Accident

After aligning the lead switch, the second brakeman looked eastward toward the controlling locomotive to ascertain if the first brakeman accompanying the engineer had dismounted the locomotive on the north side to pass signals to the engineer and protect the lead switch. The second brakeman then signaled the engineer to shove westward down the "A" Yard lead track, and he walked beside the cars.

The conductor walked westward on the lead track, aligning switches and protecting the westward move. (The lead track angles away from the main track, so the second brakeman walking next to the cars lost sight of the first brakeman who had dismounted the locomotive.) About two cars had passed the "A" Yard lead switch, when the westward movement stopped.

The second brakeman then heard a cry for help. He walked back to the "A" Yard lead switch realizing the other brakeman was in trouble. Reaching the switch, he could still hear cries for help and water splashing. Realizing that the first brakeman was in the cooling water reservoir of the plant, adjacent to the north side of the main track, he started moving toward the area. Shortly thereafter, he saw the engineer hurry to the scene and jump into the reservoir to rescue the second brakeman. When he reached the scene, he saw the engineer and brakeman struggling in the water. The second brakeman took off his coveralls to use them as a safety line in an effort to reach the two struggling employees. Both disappeared under the water.

The engineer's body was recovered at 8:58 a.m.; the brakeman's body was recovered at 9:12 a.m., on December 20, 1985.

Post-accident Investigation

An autopsy performed on the brakeman revealed no cuts or bruises.

A 4-foot passageway bordering the main track on the north side where the brakeman dismounted has a wooden safety railing parallel to the passageway. The walking surface is flat rock, 1/2 to 1 inch. There were no obstructions in the general area.

Between the safety railing and the reservoir water line, the concrete bank slopes sharply. The bank surface accumulated scattered plastic pellets, making footing difficult. The brakeman's cap was found on the bank between the safety railing and the water line.

The only witness who could explain why the brakeman went into the water was the engineer, who drowned in a rescue attempt. The last words of the engineer were for the brakeman not to panic, he would save him.

The accident area is illuminated by three overhead lights on the south side of the main track. On the day of the accident, two of these lights were inoperative.

Applicable Rules

Missouri Pacific Railroad Company
Safety, Radio and General Rules for all employees.

4018(B). Employees must avoid objects, obstructions, holes an openings and be alert for underfoot conditions that may contribute to tripping, slipping or falling.

REPORT: 32

RAILROAD: Consolidated Rail Corporation (Conrail)

LOCATION: Conway, Pennsylvania

DATE, TIME: December 28, 1985, 8:45 a.m.

PROBABLE CAUSE: Failure to keep clear of a platform while riding on a locomotive.

EMPLOYEE:	Occupation.	General Foreman
	Age	60 years
	Length of Service	39 years
	Last Rules Training	Not applicable
	Last Safety Training	Not applicable
	Last Physical Examination	November 15, 1978

Circumstances Prior to the Accident

The Conrail enginehouse shop in Conway, PA, is level, with diverging tangent tracks leading westward from a turntable to inspection and repair track stalls within the enginehouse.

At the entrance to each stall are two wooden doors, each 18 feet high and 7 feet one-half inch wide. Opening outward from the center, the doors are secured in an "open" position by chain-tie backs attached to metal pegs near the bottom of the doors. The minimum opening is 12 feet 1 inch; the maximum is 15 feet 1 inch.

On the day of the accident, the Pittsburgh weather bureau reported a temperature of 11° F., with 14-mph wind gusts.

The Accident

At about 6 a.m. on December 28, 1985, a general foreman reported for duty at Conway Diesel Shop. At about 6:30 a.m. he discussed his duties and went to assist a locomotive gang foreman in moving and turning locomotives CR 8223 and CR 8246 in the No. 20 stall at the Conway Enginehouse.

Locomotive CR 8223 was the east unit of the consist. The front ends of both locomotives faced westward. On arrival at No. 20 stall, the general foreman opened the enginehouse doors and secured them, lined the turntable, and signaled the gang foreman

(who was operating the locomotives from CR 8246) to proceed out of the shop toward the turntable.

After turning the locomotives, the general foreman mounted the right (south) rear step of locomotive CR 8223. (Locomotive CR 8223 was the leading locomotive on the return westward movement to the enginehouse.) The general foreman signaled the gang foreman to proceed west into the enginehouse to No. 20 stall. Then the general foreman climbed the first step of the south corner of locomotive CR 8223 and rode into the enginehouse. As the east end cab of locomotive CR 8223 went through the enginehouse doors, a strong gust of wind blew the south door into the right side bay window of locomotive CR 8223, shearing off the bay window. The locomotives were moving 1-2 mph.

According to witnesses, the general foreman was facing westward towards the direction of the locomotive movement; immediately after the door hit the bay window, the general foreman turned back to look eastward towards the door. He also leaned backwards while he held onto the side handrail of locomotive CR 8223 (looking eastward). His body hit the fixed work platform pushing him from the step -- pinning and rolling his body between locomotive CR 8223 and the platform about 35 1/2 feet until the locomotives halted. The space between the side of Locomotive CR 8223 and the work platform is 6 3/4 inches. The general foreman remained pinned in this position until he was freed.

A Beaver County paramedic unit transported him to the Beaver County Medical Center, where he was pronounced dead on arrival at 10:15 a.m.

Post-accident Investigation

The enginehouse shop manager said that on the morning of the accident the general foreman appeared to be in a normal mental and physical state. The enginehouse machinist declared that he observed the general foreman riding on the locomotive's rear bottom step, facing west coming into Stall 20. After the bay window on locomotive CR 8223 hit the side of the enginehouse door, the general foreman leaned back and looked eastward toward the broken bay window. The broken window probably distracted the general foreman, and he did not realize how close he was to the end of the repair platform.

Applicable Rules

Consolidated Rail Corporation - Safety Rules
Maintenance of Equipment Employees

. . . . . .

4243. While getting on or off, working inside or under locomotive, observe overhead and side clearance, and confine movement to

space available to prevent striking head or other part of body.

. . . . . .

REPORT: 33

RAILROAD: Nash County Railroad (NCYR)

LOCATION: Rocky Mount, North Carolina

DATE, TIME: December 20, 1985, 9:35 a.m.

PROBABLE CAUSE: A brakeman failed to maintain a proper lookout.

EMPLOYEE:

Occupation	Brakeman
Age	30 years
Length of Service	2 weeks
Last Rules Training	December 5, 1985
Last Safety Training	December 5, 1985
Last Physical Examination	December 5, 1985

Circumstances Prior to the Accident

A Nash County Railroad crew reported for duty at 8:30 a.m., after having completed the required off-duty period. The crew consisted of a conductor-engineer and two brakemen. The crew spent the first hour servicing two locomotives while awaiting delivery of freight cars from the Seaboard System. After the two brakemen finished watering the uncoupled locomotives at 9:30 a.m., they carried the water hoses back to the storage area in the freight office. The conductor-engineer, the supervisor of the crew, told the two brakemen to couple the locomotives after they had watered them.

The two brakemen, upon leaving the freight office, walked across the trailer ramp platform toward the parked locomotives. The ramp platform is adjacent to the freight office and is situated between the freight office and the subject locomotives. Separating the ramp platform and the locomotives is an unpaved area approximately 12 feet in width. The first brakeman jumped to the ground from the ramp. Just before jumping from the ramp to the ground, the first brakeman told the second brakeman that a trailer was backing up the ramp to be loaded on the flatbed cars positioned against the platform. The second brakeman (the victim) positioned himself on the ramp so the conductor-engineer situated on the right (or east) side of the south locomotive could see him as the coupling was made. The first brakeman walked toward the north locomotive to facilitate the coupling.

The Accident

After taking three or four steps, the first brakeman looked back over his right shoulder toward the platform. The trailer, traveling at 3 to 4 mph at that point was 3 to 4 feet from the second brakeman, who was looking south in an apparent attempt to attract the attention of the conductor-engineer. The first brakeman shouted a warning just before the trailer struck the victim. The victim was knocked down by the trailer. The east (or right) rear tandem wheels passed over him and the second set of wheels was positioned on top of the body before the first brakeman could get the driver to stop. The first brakeman told the driver to pull ahead as he had just struck the victim. The driver then pulled the vehicle forward causing the rear tandem wheels to pass over the victim again.

The conductor-engineer, whose attention had been drawn by the shouting, ran to the Seaboard System freight office and called the emergency forces who responded immediately. The first paramedics on the scene stated the victim died shortly after their arrival.

Post-accident Investigation

An investigation showed a tractor-trailer driver positioning himself to back up the ramp onto the trailer platform has extremely limited vision through the side mirrors of the tractor. A simulation of the accident revealed that at a distance of 160 feet the tractor-trailer driver loses sight of the spot on which the victim was standing. The surviving brakeman stated the rear of the trailer was approximately 100 feet from the victim when he jumped from the ramp to the ground. The simulation also demonstrated that while the two locomotives are running, a person standing in the same place as the victim cannot hear a trailer backing up the ramp. Witnesses also stated that although the victim was wearing a Navy watch cap, his ears were uncovered.

Applicable Rules

None.

REPORT: 34

RAILROAD: Chicago and North Western Transportation Company (C&NW)

LOCATION: Racine, Wisconsin

DATE, TIME: November 8, 1985, 7:40 p.m.

PROBABLE CAUSE: Highway accident.
Contributing cause: Impairment of the (non-employee) driver.

EMPLOYEE:

Occupation	Signal maintainer
Age	28 years
Length of Service	5 yrs., 6 mos.
Last Rules Training	June 18, 1980
Last Safety Training	June 18, 1980
Last Physical Examination	April 14, 1980

Circumstances Prior to the Accident

After the required off-duty period, a signal maintainer had gone on duty at 3 p.m. on the day of the accident. The maintainer was responding to a call about a malfunctioning road-crossing gate, at 13th Street, in Racine, WI. Driving a railroad-owned pickup truck equipped with two 30-gallon gas tanks, each of which was nearly full, the signal maintainer was traveling north on Racine Street, a 4-lane undivided roadway.

The Accident

As the pickup truck moved north, a southbound automobile crossed the center line of Racine Street moving at a high speed. The automobile struck the pickup truck head-on, propelling it 43 feet backwards. Then the pickup truck burst into flames, and the signal maintainer, who apparently was unconscious, was unable to leave the vehicle. When the police arrived, he was still in the truck, but the pickup was engulfed in flames with heat too intense to attempt a rescue.

Eye witnesses on the scene identified the automobile as the same one involved in a hit-and-run accident which occurred a few minutes earlier on 14th Street. The same car had also struck a parked car on 12th Street and Highland Avenue shortly before the collision with the pickup truck.

Post-accident Investigation

Blood and urine samples taken from the signal maintainer's body for toxicological tests proved negative for drugs and alcohol. The autopsy report stated that the signal maintainer's death was caused by cardial tamponade due to a rupture of the heart. The report also indicated that burns covered over 50 percent of the body.

The driver of the automobile was charged with various felony traffic violations, including homicide by intoxicated use of a vehicle.

Applicable Rules

None.

REPORT: 35

RAILROAD: Seaboard System Railroad, Inc.

LOCATION: Palm Beach County, Florida

DATE, TIME: November 26, 1985, 2:55 p.m.

PROBABLE CAUSE: Failure of the employee to control the speed of his highway vehicle.

EMPLOYEE:		
	Occupation	Assistant to Superintendent-Mine Services
	Age	34 years
	Length of Service	11 years
	Last Rules Training	Not required
	Last Safety Training.	Not required
	Last Physical Examination	August 2, 1974

Circumstances Prior to the Accident

U. S. Highway 27, in Palm Beach County is a 2-lane, 22-foot-wide, blacktop road, with a posted speed limit if 55 mph, tangent and practically level for a considerable distance both to the north and south of the accident site. A private road intersects the highway at a point 17.3 miles south of South Bay, FL., in the accident area, and there is a "No Passing" zone for both northbound and southbound traffic.

The Accident

At about 1:30 p.m., an assistant to the Superintendent-Mine Services and two assistant engineers, one of whom was driving, left Miami for Tampa, FL., in a company-owned Chevrolet Suburban vehicle. As their vehicle approached the intersection of Highway 27 and the private road, it was traveling in the northbound lane. A tractor-trailer truck was completing a right-hand turn (eastward) into the private road and approximately 6 feet of the trailer extended into the northbound lane.

The assistant engineer noticed that the tractor semi-trailer truck in front of him was signaling to make a right turn, he applied his brakes and reduced his speed. The driver of the semi-trailer truck made the right turn and reduced his speed. When the assistant-engineer saw that the rear of the trailer was extending approximately 6 feet into the northbound lane he attempted to swerve to the left to avoid colliding with the trailer. He was unable to do so, because of the traffic in the southbound lane. The right side of the company vehicle, collided with the rear end of the trailer. (at its right-front door post). The company vehicle rotated 180 degrees clockwise, and the passenger side sideswiped the driver's side of another approaching southbound tractor semi-trailer. When the company vehicle finally came to rest 85 feet away from the initial collision point, it was facing northward.

The assistant to the Superintendent-Mine Services, who had been sleeping in the front seat on the passenger side, was pronounced dead at the scene from injuries received in the accident. The driver of the company vehicle was also also injured. The second assistant engineer was unhurt.

Post-accident Investigation

The assistant engineer, who had been driving the company vehicle, stated that he expected the truck in front of him to be completely clear of the northbound lane before his car reached the point of collision. Traffic charges were pending against the driver of the company vehicle. It could not be determined whether seat belts were in use.

Applicable Rules

None.

REPORT: 36

RAILROAD: The Chesapeake and Ohio Railway Company

LOCATION: Wharton, West Virginia

DATE, TIME: September 28, 1985, 9:15 a.m.

PROBABLE CAUSE: Loss of secure handhold and/or footing.

EMPLOYEE:

Occupation	Brakeman
Age	50 years
Length of Service	15 years
Last Rules Training	May 15, 1984
Last Safety Training	July 30, 1985
Last Physical Examination	April 4, 1984

Circumstances Prior to the Accident

In the accident area, the tracks, as designated in the timetable, run east and west. From south to north, they are: the main line, No. 1 track, crossover track, and No. 3 track. These tracks are part of a coal preparation plant yard. The accident occurred on No. 1 track in Wharton, at a point about 3,617 feet east of milepost 18 on the Barrett Subdivision. At this point, the grade (proceeding westward on No. 1 track) descends to 0.33 percent and lies in the spiral of a 5-degree 30-minute curve to the right.

The crew of Extra 4385 East, consisting of an engineer, a conductor, a head brakeman, and a rear brakeman, went on duty at 6:30 a.m. at Danville, WV, after having completed the required off-duty period. Upon completion of the train air brake test, the train departed at 7:30 a.m.

The Accident

At 8:55 a.m., upon its arrival in Wharton with 101 empty coal cars, the crew proceeded to place the 101 cars as instructed. The rear brakeman positioned himself to observe the westward shoving movement of the rear 24 cars on track No. 3 and radioed the engineer that track No. 3 was full.

The head brakeman uncoupled the rear 24 cars on track No. 3 and then instructed the engineer to pull the remaining 77 cars eastward to clear track No. 1 switch. The rear brakeman was last seen on the north side of track No. 1 about 20 feet west of the "Shake Out Building" by the front brakeman and the tipple boss while they were about 1,100 feet east of that point on the south side of the main track.

As the shove proceeded westward onto track No. 1, the head brakeman and tipple boss's view of the rear brakeman became obscured by the empty cars. As westward movement continued, the tipple boss asked that the speed be reduced to allow the mine clerk time to record the car numbers. The head brakeman radioed this instruction to the engineer, who initiated a light application of the locomotive's independent brake. This was almost immediately followed by a slight run out of slack, a garbled radio transmission, and two cries for help heard on the radio. The time was 9:15 a.m.

The tipple boss, the head brakeman and the conductor ran to where they had last seen the rear brakeman. They found him lying within the gage of the crossover track, bleeding profusely from the right thigh. The tipple boss attempted to control the bleeding until the ambulance arrived--at about 9:43 a.m. The rear brakeman remained conscious and said, "Why did you jerk me off?"

En route to Boone Memorial Hospital, the brakeman suffered respiratory arrest and was pronounced dead at about 10:40 a.m. at the hospital.

Post-accident Investigation

As there were no witnesses who observed the accident, the final actions of the rear brakeman remain unknown.

The condition of the area underfoot was a mixture of coal bits, crushed stone and dirt ballast. Although adjacent tracks were dry, the north side of No. 3 track (which adjoined a hillside) was intermittently damp and muddy from water runoff.

An inspection of the accident scene and the equipment involved did not reveal which car went over the brakeman's leg. Although a mark was seen on the B-L uncoupling lever of the lead car in the shove, it was impossible to conclude positively that it was made by the foot of the deceased. The leading car of the shove, DEEX 9037, was closely inspected, and no deviations from the applicable equipment regulations were observed. A single car test was performed on this car, and no exceptions were taken.

The inspection records for the two locomotives in the consist, both pre- and post-accident, did not reveal any exceptions. The speed recorders on both locomotives were checked and calibrated. The speed of the shove at the time of the accident was shown as 6 mph; the speed permitted by the carrier for unsignaled yard tracks is that which permits stopping within one-half the range of vision.

There was no evidence that track conditions were a causal factor.

An autopsy performed by the State medical examiner personnel in Charleston, WV, determined the cause of death as excessive blood loss due to a severe laceration of the right leg. The medical examiner stated that the leg had nearly been severed by the wheel of a railroad car.

Applicable Rules

GENERAL RULES

(CHESAPEAKE AND OHIO RAILWAY COMPANY SAFETY RULES)

ON OR ABOUT TRACKS

44. Employees on or about tracks must always be alert to keep out of danger, exercising care to avoid injury to themselves and others. * * *

ON LOCOMOTIVES AND CARS

82. When on cabooses, cars, or locomotives, employees must exercise care to avoid injury from slack action or from sudden start or stop. In cabooses or locomotives, they must remain seated when duties permit, and wear seat belts when provided.

87. Riding on cars, or steps and platforms of locomotives or cabooses without a secure hold is prohibited. Standing on top of any car near the end or sides, except when necessary while the car is undergoing repairs is prohibited.

U.S. Department
of Transportation

**Federal Railroad
Administration**

400 Seventh St., S.W.
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