U.S. Department
of Transportation

**Federal Railroad
Administration**

Certain Fatalities Investigated By The Federal Railroad Administration Fourth Quarter 1987

Office of Safety
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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 represents the Federal Railroad Administration's findings in its investigation of nine railroad employee fatalities suffered during the fourth quarter of 1987. 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 1987 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

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CAUSE DIGEST

SUMMARY OF ACCIDENTS INVESTIGATED INVOLVING ONE OR MORE FATALITIES

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Accident Investigation Reports

REPORT: 27

RAILROAD: Consolidated Rail Corporation (Conrail)

LOCATION: Portland, New York

DATE, TIME: October 19, 1987, 10:15 a.m.

PROBABLE CAUSE: Failure of employee to remain clear of a truck that was backing up.

A contributing factor was the noise generated by a train and by machinery operating in the accident area, which drowned out the truck's alerter.

EMPLOYEE:

Occupation	Track Foreman
Age.	33 years old
Length of Service.	12 years
Last Rules Training.	April 1, 1987
Last Safety Training	September 15, 1987
Last Physical Examination. .	March 16, 1987

Circumstances Prior to the Incident

The crew of Maintenance of Way Unit SE-353, went on duty at Westfield, N.Y., at 7 a.m. on the day of the accident. The crew, including the track foreman, were transported in a company owned bus to a rail siding at milepost 49.7, in Portland, N.Y., where they took charge of on-track maintenance machinery. The machinery was operated onto No. 2 main track, and proceeded to milepost 50.2, where the crew began tamping and alignment of the track.

The railroad in this area is tangent, and the grade is level for several miles in either direction. An unpaved 15-foot wide service road is on either side of the double main track (Tracks No. 1 and 2). About 75-feet south of the right of way there is a parallel main line track operated by the Norfolk and Western Railway (NW).

The weather was clear and sunny with a temperature of about 65^0 F.

While the crew was working in a westerly direction, a breakdown

occurred requiring a stoppage for repairs. At approximately the same time, a Conrail fuel oil truck arrived from the west on the south service road. After fueling some of the track machinery, the truck was prevented from going any further to service the balance of the machinery, because of other vehicles parked in the roadway. To complete the fueling, the driver was required to back the truck westerly over the south service road to a highway grade crossing and then utilize the north service road.

The Accident

Just as the fuel oil truck began backing up, a NW on-track rotary brush cutter was operating on the NW track directly opposite the work site. The action of the brush cutter was causing debris to be thrown against the personnel and equipment of Unit SE-353. The maintenance of way crew took positions to shield themselves from the noise and debris being generated by the brush cutter. Simultaneously, the engines of the track machinery were running, and a freight train was proceeding east on No. 1 main track.

The track foreman was last observed at the south edge of the service road standing behind an instrument case containing signal equipment. Before backing up, the driver checked the rear, then proceeded utilizing his rear view mirrors for guidance. Apparently, the victim stepped backward from behind the signal instrument case into the path of the truck, where the witnesses saw the truck. The foreman was found lying in the road, after have been run over by the right wheels of the truck.

A Chautauqua county medical examiner arrived shortly thereafter and pronounced the man dead from a head injury.

Post-accident Investigation

No defective conditions were found on the fuel truck that would have contributed to the cause of the accident. It was equipped with a working alerter which is actuated when the truck is placed in reverse gear.

Results of toxicological testing performed on the remains of the deceased were negative.

Applicable Rules

No applicable carrier or Federal Railroad Administration rules.

REPORT: 28

RAILROAD: Burlington Northern Railroad Company

LOCATION: Portland, Oregon

DATE, TIME: November 4, 1987, 10:20 p.m.

PROBABLE CAUSE: Homicide

EMPLOYEE: Occupation . . . . . Brakeman

Age. . . . . 40 years

Length of Service. . . . . 9 years

Last Rules Training. . . . . June 22, 1987

Last Safety Training . . . . October 7, 1987

Last Physical Examination. . September 20, 1984

Circumstances Prior to the Accident

A Burlington Northern Railroad Company switch crew consisting of an engineer, switch foreman, and two brakeman reported on duty at 3:55 p.m. on the day of the incident, at East St. Johns Depot in Portland, Oregon. The crew performed switching duties at East St. Johns and the other carrier and industry facilities in the North Portland area. At about 9:30 p.m., the crew had completed its switching duties, and the switch foreman and the subject brakeman were in the lunchroom area of the depot at East St. Johns completing paperwork associated with the assignment.

The Accident

While the brakeman was in the lunchroom, an assailant entered the room through the south door of the building. The assailant approached her, and an argument ensued. She fled to the women's locker room and was followed by the assailant. The switch foreman attempted to intervene. The assailant produced a pistol and ordered the switch foreman to leave, which he did. The assailant then fired a shot and wounded the brakeman. She ran from the building through the carman's office and out the west door. The assailant followed the employee outside the building and fired additional shots which struck her.

The police and a helicopter ambulance service were summoned to the scene. The assailant was arrested and the victim was transported to Emanuel Hospital. The victim was pronounced dead on arrival at 11:44 p.m.

Post-accident Investigation

The assailant knew the employee through an off-the-job relationship. An autopsy concluded that the employee died of gunshot wounds.

Applicable Rules

No applicable carrier or Federal Railroad Administration Rules.

REPORT: 29

RAILROAD: Burlington Northern Railroad

LOCATION: Cicero, Illinois

DATE, TIME: November 23, 1987, 12:30 a.m.

PROBABLE CAUSE: Failure of truck driver to properly couple his tractor to a trailer.

EMPLOYEE:

Occupation	Switchman Helper
Age.	39 years
Length of Service.	17 years
Last Rules Training.	April 2, 1986
Last Safety Training	May 15, 1987
Last Physical Examination. .	August 28, 1981

Circumstances Prior to the Accident

Job No. 351C

At approximately 11 p.m. on November 22, 1987, after receiving the required off duty rest period, a train crew consisting of a switch foreman, engineer and switchman helper reported for duty at the Burlington Northern's (BN) Trailer On Flat Car (TOFC) terminal, Cicero, Illinois, for Job No. 351C.

The crew proceeded to the Eastbound yardmaster's shanty where the switch foreman received instructions to pick up empty flatcar VTTX 301125 off the south ramp track. This car was recorded on the switch list as being the 13th car from the east end on the south ramp. The car was to be placed on the north ramp track.

As the locomotives started pulling the cars eastward the switch foreman walked west to within three cars of the switchman. Both men realized that only 12 flatcars were in the cut and it would be necessary to shove back westward to pick up the 13th car. The switchman mounted the 12th car to ride the cut back. The switchman directed the engineer, via radio, during the shove westward. The coupling was made to the 13th car and he instructed the engineer to pull ahead. This was the last communication between the engineer and the switchman.

Truck Driver

At approximately 12:10 a.m., a truck driver for a private company

driving a tractor entered the BN property to pick up a trailer. He had received information concerning the trailer number and commodity en route from the truck company dispatcher. The driver proceeded down the strip where he located the trailer parked south of and parallel to the south ramp track. Because the trailers were parked end to end he had to back in perpendicular to the trailer. As he started to shove back northward to couple to the trailer, the trailer began to tip, and the dolly legs collapsed. The trailer came to rest fouling the south ramp track.

The Accident

The locomotive started pulling the cars east on the south ramp track at approximately the same time the truck driver attempted to couple to the trailer.

The driver felt a vibration, looked in the side view mirror and saw the trailer teetering. He immediately pulled ahead, not realizing the train was striking the trailer until he dismounted from the tractor. The driver witnessed the trailer falling to the ground when the train cleared and heard someone moaning. He walked approximately 60 feet east, diagonally from the tractor and found the switchman lying on the ground, critically injured. The truck driver immediately went to the East Gate Building, and told them to call an ambulance.

The victim was initially transported by the Cicero Fire Department Ambulance from the accident scene to MacNeil Hospital, the closest hospital facility. He was later transferred to Loyola Hospital's Trauma Center. The victim died at 4:07 a.m., as a result of multiple trauma.

Post-accident Investigation^R

The accident occurred at a location that was well illuminated by overhead lighting. Evidence indicated that the switchman was riding the southwest side of the 12th car and jumped down or was forced down prior to the car reaching the corner of the trailer. The victim's lantern and radio were found on the southwest ledge of the 12th car by the switch foreman. BN officials found evidence of blood on the southwest wheel of the lead truck of the 13th car (VTTX 301125).

Scrape marks and pieces of insulation from the trailer were found on the second Locomotive BN 6150, and all 13 cars. The truck driver did not notice the train when he backed up to the trailer and was not aware switching operations were being conducted on the track.

The switch foreman made the cut on the 13th car to the north ramp track and was not aware anything was wrong until he noticed the

lantern and gloves on the 12th car of the cut. He immediately tried to contact the switchman on the radio. There was no reply and he proceeded to look for the switchman. He found him lying next to the south ramp track.

Results of toxicological testing performed on the remains of the deceased and of the surviving BN employees were negative.

Applicable Rules

The Burlington Northern Railroad Company General Code of Operating Rules:

71. Employees must:

. . .

e. Look in the direction equipment is moving to avoid striking structures or objects above or alongside track.

REPORT: 30

RAILROAD: Montana Rail Link (MRL)

LOCATION: Laurel, Montana

DATE, TIME: December 14, 1987, 8:20 a.m.

PROBABLE CAUSE: The employee failed to position himself in a safe location while assisting in freeing a stuck throttle and/or throttle cable of a rubber tired crane.

EMPLOYEE:

Occupation	Track Laborer
Age.	52 years
Length of Service.	Burlington Northern Railroad (BN) 13 years MRL - one month
Last Rules Training . . .	Not available
Last Safety Training . . .	March 26, 1986 (BN)
Last Physical Examination.	March 12, 1984 (BN)

Circumstances Prior to the Accident

On the day of the accident, a machine operator and two track laborers reported to work prior to 7:30 a.m. and were assigned by the foreman to stack rail at the Old Material Yard at Laurel, Montana. They were using a rubber tired Galion mobile crane, Model 150 - Series A, weighing 44,000 lbs; the tires were 4 feet 10 inches in height and about 9 feet center to center. The temperature was 15 degrees with the wind gusting out of the southwest at 10 to 12 mph. The sky was overcast.

The machine operator started the crane's diesel engine to allow it and the oil in the hydraulic system to reach operating temperature. After starting the engine, it was discovered that the speed of the engine could not be advanced above a slow idle, because of an apparent frozen throttle rod and/or throttle cable. The machine operator let the engine run at idle speed, anticipating that heat generated by the running engine might thaw the frozen throttle controls. After about ten minutes, the machine operator was able to move the throttle lever advancing the engine speed to an estimated 1,200 to 1,300 rpm, which was higher than desired. He then tried to reduce the engine speeds, but the throttle controls would not operate. He requested that the two laborers assist him in freeing the throttle controls.

One laborer was instructed to stand on the ground alongside the front of the crane and reach into the control compartment so that he could move the throttle lever when instructed to do so. The machine operator and the other laborer went to the rear of the crane on the opposite side to observe the throttle linkage at the engine as the throttle lever was operated. The time was approximately 8:20 a.m.

The Accident

The machine operator instructed the laborer at the front of the crane to move the throttle rod. He stood beside the crane so that he could reach the throttle lever, which positioned him between and in line with the two wheels on the north side of the machine. As he reached into the cab, the crane jerked backward in an unanticipated reverse movement. The machine operator and the second laborer, who were standing together at the rear of the crane by the engine, were able to safely move from the path of the moving crane. The second laborer then climbed into the control compartment of the moving crane, placed the forward/reverse lever in a neutral position, and stopped the engine. The machine operator ran to the front of the crane and found the injured laborer, on the opposite side, lying on the ground. The second laborer got off the crane and drove the company truck to the section headquarters to call for an ambulance. The machine operator, in the interim, stopped a passing truck, assisted in loading the injured laborer onto the truck, and proceeded to the Laurel Medical Center. The laborer was pronounced dead on arrival by a doctor at the medical center.

Post-accident Investigation

Post accident investigation indicated that the laborer assigned to move the throttle lever mistakenly moved the forward/reverse lever to the reverse position while standing on the ground, resulting in a reverse movement of the crane. The laborer was run over by the right front wheel of the crane as it moved approximately 18 feet before it stopped.

The Occupational Safety and Health Administration made an investigation of this accident which resulted in citations against MRL for failure to perform maintenance in conformity with the manufacturer's recommendations and practices specified by the American National Standards Institute, failure to adequately train employees, and failure to have an operator's manual available at the worksite.

Applicable Rules

RULES OF THE
MAINTENANCE OF WAY

917. PREVENT UNINTENTIONAL MOVEMENT: When leaving or before working on work equipment that might accidently be released, or moved, operator must secure safety links in position or properly block equipment.

Occupational Safety and Health Administration Regulations

Title 29, Code of Federal Regulations, 1910.178(1):

Operator training. Only trained and authorized operators shall be permitted to operate a powered industrial truck. Methods shall be devised to train operators in the safe operation of powered trucks.

Occupational Safety and Health Act of 1970, Section 5(a)(1); Title 29, U.S. Code, Section 654(a)(1):

(a) Each employer -

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees; * * *

REPORT: 31

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

LOCATION: Lupton, Arizona

DATE, TIME: December 16, 1987, 4:45 p.m.

PROBABLE CAUSE: Failure to provide a lookout.

EMPLOYEE:

Occupation	Signal Maintainer
Age	30 years
Length of Service	3 years, 7 months
Last Rules Training	October 8, 1987
Last Safety Meeting	October 8, 1987
Last Physical Examination	April 19, 1984

Circumstances Prior to the Accident

The accident occurred at Lupton, Arizona, 353 feet west of milepost 180 on the south rail of the north main track. In the accident area there are two main tracks having an automatic block signal system arranged for movement with the current of traffic, with eastward movements on the north track and westward movements on the south track.

After receiving proper off-duty periods, a signal maintainer and a signalman reported on duty at Gallup, New Mexico at 7:30 a.m. on the day of the accident. The two men were assigned to complete the installation of signal protection on a temporary crossover at Lupton, Arizona. Arriving at Lupton at about 8:20 a.m. by carrier vehicle, the two employees trenched wires to the switch circuit controllers and track rails of the crossover. At about 1 p.m. an assistant signal supervisor arrived to place the crossover signal protection in service.

At about 4:30 p.m. the signal maintainer instructed the signalman to drill holes in the web of the rails to accommodate track circuit shunt and fouling wires. The signal maintainer commenced grinding the outside ball of the crossover stock rail, to brighten the metal for application of rail head bonds, using a portable Model SL-6 grinder. The grinder noise level was intense.

At 4:45 p.m. an eastbound work train, Extra 3669 East, pushing seven gondola cars, a crane car and a caboose at the front of the

train, approached Lupton, Arizona on the north track. The locomotive engineer stated that the train was operating at a speed of 39 mph and he was seated at the controls on the right side of the cab. The conductor stated that he was seated at the desk in the caboose. The brakeman stated he was seated in the cupola on the right side and the crane operator was seated in the cupola on the left side. The crane operator stated that he could observe workmen on the track east of the rail-highway grade crossing and informed the brakeman of his observation. The brakeman immediately went to the front caboose platform and commenced sounding the caboose whistle and shouted to warn the workmen. The conductor ordered the brakeman to initiate an emergency application of the train brakes. The crane operator operated the emergency brake valve in the cupola and shouted warnings to the workmen. The engineer placed the automatic brake valve handle in the emergency position.

The Accident

The signal maintainer continued grinding the rail as he stood astride the south rails of the north main track and crossover stock rail, bending over, facing the east with his back to the train. The signalman stated he was kneeling between the main track rails facing south operating a portable power drill. He stated he observed the approaching caboose and men on the caboose platform who were yelling and screaming. He stated he quickly removed the drill from the rail and ran to the south across the crossover rails as the caboose came closer to the signal maintainer. He said he observed the caboose step strike the signal maintainer.

The assistant signal supervisor stated he was working at an instrument case north of the north track when he heard shouting. He could not observe the train because his view was blocked by his vehicle. He said he started toward the tracks and observed the caboose just as it struck the signal maintainer.

The signal maintainer was dragged and propelled by the impact of the caboose along the north rail of the crossover. He came to rest at a point 90 feet east of the point of accident, lying between the crossover rails.

The assistant signal supervisor stated he went to the signal maintainer to ascertain his condition and to render possible aid. He stated that the signal maintainer was unconscious.

The signal maintainer was transported by ambulance to Rehoboth McKinley Christian Hospital at Gallup, New Mexico, where he was admitted at 6 p.m. with multiple injuries. He died at 8 p.m., approximately two hours after the accident.

Post-accident Investigation

Inspection of caboose 999094 disclosed that the uncoupling lever bracket weld was broken and the bracket bent downward by the force of impact with the signal maintainer.

An SL6 grinder was operated to determine the extent of the noise level generated by the device. When operated at the normal rate of speed used for grinding, a loud whistle sounded within 10 feet of the operator could not be heard by the operator, because of the loud noise level of the device.

Visibility to the west from the point of accident was not restricted. The track is tangent for a distance of 1.5 miles, and the grade is 0.06-percent ascending eastward.

Results of toxicological testing performed on the remains of the deceased were negative.

Applicable Rules

RULES

MAINTENANCE OF WAY
AND STRUCTURES

664: Whenever necessary to do work on or above the track, and full protection is not otherwise provided, a sharp lookout must be kept at all times. When the view is obstructed or hearing impaired by any condition, employe in charge will assign one or more lookouts to insure the safety of the men. Employe in charge and lookouts will wear police whistles outside their clothing and will use them to provide additional warning.

REPORT: 32

RAILROAD: Southern Railway Company

LOCATION: Duluth, Georgia

DATE, TIME: December 20, 1987, 10:45 p.m.

PROBABLE CAUSE: Carrier's vehicle collided at night with a disabled truck that had not displayed any lights.

EMPLOYEE:		
	Occupation	Superintendent of Scales
	Age.	51 years
	Length of Service.	18 years
	Last Rules Training.	April 30, 1987
	Last Safety Training	November 14, 1987
	Last Physical Examination. .	February 10, 1987

Circumstances Prior to the Accident

The Superintendent of Scales had worked in Atlanta, Georgia, his headquarters, during the first part of the week. On Thursday, December 17, 1987, he went to Virginia to work on a scale. He elected to take Friday as a vacation day. He spent Friday, Saturday and Sunday in Roanoke, Virginia, where he had previously lived. On Sunday, evening he was returning to his headquarters at Atlanta, Georgia.

At the point of the accident, three miles east of Duluth, Georgia, the southbound interstate highway (I-85) is five lanes wide with a 12 foot paved shoulder. The road is tangent and the grade is descending. The blacktop pavement was dry, and the area was unlighted. The maximum authorized speed is 55 mph.

A moving van type truck had stalled in the center lane of the highway. The driver and two passengers went to the median wall for safety.

Accident

At approximately 10:45 p.m., the company owned station wagon that the Superintendent of Scales was driving collided with the rear of the stalled truck going almost completely under the truck.

The station wagon caught fire and the employee died instantly as a result of the collision.

Post-accident Investigation

Police investigation determined that the lights of the truck were not turned on. The estimated speed of the station wagon was 55 mph. There were no skid marks. Passengers in the truck stated that the driver of the truck had been drinking beer and smoking marijuana. Police investigation uncovered that the truck driver's license had been suspended due to "Habitual Violation".

Applicable Rules

None.

REPORT: 33

RAILROAD: Southern Railway Company

LOCATION: Charlotte, North Carolina

DATE, TIME: December 21, 1987, 3:30 p.m.

PROBABLE CAUSE: The accident was caused by the loss of a secure handhold and/or footing.

EMPLOYEE:		
	Occupation	Ballast Regulator Operator
	Age.	56 years
	Length of service	13 years
	Last Rules Training.	April 22, 1986
	Last Safety Training	December 21, 1987
	Last Physical Examination. .	December 10, 1974

Circumstances Prior to the Accident

Track maintenance gang SM-555 reported for duty at 7 a.m. the day of the accident. The gang was engaged in the surfacing of an industrial track known as the Observer Lead in Charlotte, North Carolina. At 3:30 p.m. the foreman in charge of the work gang made the decision to relieve part of the gang and keep the other part working. In order to achieve, this a switching move had to be made. The foreman ordered all seven machines to move north on the Observer Lead. The four lead machines, a plate broom (which is used to sweep ballast) being shoved by a ballast regulator, another ballast regulator, and a track-lining machine were to pull north of a facing point switch to a track known as the Crooked Track and then stop. The following three machines, two tampers and a jack tamper, were to go into the Crooked Track, where their operators were to be relieved. The four lead machines were then to return south and resume working.

The weather at the time was rain and fog.

The Accident

The switch leading from the Observer Lead to the Crooked Track was lined to the Crooked Track. The ballast regulator operator stopped his machine and dismounted on the east side. He then walked 43 feet northward and operated the switch stand located on the east side of the track. At this time the ballast regulator

was stopped on a 28-foot 6-inch ballast-deck trestle. This trestle is over an abandoned section of the former Piedmont and Northern Railroad.

After lining the switch for the Observer Lead at 3:40 p.m., the ballast regulator operator returned to his machine, again walking on the east side, and started to climb back onto the machine. Due to the configuration of the ballast regulator, the operators of the two closest machines could not clearly see what caused the victim to fall, but did see him fall about 23 feet from the trestle onto the abandoned roadway below. They immediately dismounted their machines and ran down the embankment to the victim. Upon noting the severity of the injuries the track-lining machine operator ran back up the embankment and had an ambulance ordered.

The victim was given cardiopulmonary resuscitation on the scene by Charlotte Emergency Medical personnel and rushed to Charlotte Memorial Hospital, where he was pronounced dead at 4:30 p.m.

Post-accident Investigation

Post-accident investigations revealed that the distance from the east rail to the eastern edge of the trestle is 6 feet 2 inches. The distance on the west side is 23 feet 8 inches. The ballast sloped downward at about a 30 degree angle between the end of the ties and the edge of the trestle. The ballast regulator operator dismounted and attempted to remount on the east side. The two witnesses stated their machines were directly in line behind the victim's and, at the time of the accident, the following three machines were moving slowly toward them. They estimated the closest of these three machines was 500 feet behind them. None of the operators of these three machines knew what had occurred until they arrived at the scene.

After the accident the ballast regulator and the victim's shoes and gloves were examined for substances which could have caused him to slip; nothing slippery was found which would have caused or contributed to the cause of the accident. The ballast regulator was not designed with handholds for mounting or dismounting.

The North Carolina Medical Examiner's results of toxicological testing of the deceased for alcohol were negative.

Applicable Rules

Norfolk Southern Corporation
Operating Rules

816. On-track equipment must be operated with caution when moving over * * * bridges, * * * .

REPORT: 34

RAILROAD: The Atchison, Topeka and Santa Fe Railway Company

LOCATION: Cleburne, Texas

DATE, TIME: December 23, 1987, approximately 9:55 a.m.

PROBABLE CAUSE: Misjudgment of space available for forklift operation.

EMPLOYEE:

Occupation	Gang Leader
Age	57 years
Length of Service.	36 years
Last Rules Training. . . .	None
Last Safety Training . . .	December 21, 1987
Last Physical Examination.	April 6, 1961

Circumstances Prior to the Accident

About 7 a.m. December 23, 1987, the Purchasing Materials Department gang leader and another employee were engaged in operating forklifts to move pallets of filter housings. The pallets had previously been placed parallel to the edge of the west dock of Warehouse Building No. 222 by the Mechanical Department. The forklift operated by the gang leader was shuttling back and forth from the west dock through the warehouse building, picking up the pallets and leaving them on the east dock for the other forklift operator to load in a boxcar adjacent to that location. The forklift operated by the gang leader was a 6,000 lb. capacity Toyota which was placed new in service in September 1987.

The Accident

There were no witnesses to the accident. However, it is evident that the gang leader, while operating his forklift, was attempting to position the pallet openings so he could get the forks underneath the pallet and lift it. There was insufficient space on the dock to get in position to lift the pallet without turning it. The pallet was set parallel to the dock's edge, the height of which is approximately 3 1/2 to 4 feet above ground level, and width of which is approximately 12 feet, measuring from the outside wall of the building to the edge of the dock. While the gang leader was attempting to turn the pallet, the left rear wheel of the forklift dropped off the dock, resulting in the

forklift falling from the dock to the ground. The gang leader, who was not wearing his seatbelt, fell from the machine in a face-down position, with his head turned to one side. The headguard of the forklift apparently struck the gang leader on the back, pinning him to the ground.

The other forklift operator became concerned when the gang leader did not return. In checking, he discovered the accident and drove his forklift off the ramp at the north end of the dock, returning to lift the weight of the forklift off the gang leader. Another employee, who was trained as an Emergency Medical Technician, was called to the scene, and he could find no pulse. He and two other employees who had also just arrived at the scene of the accident, pulled the victim out from underneath the forklift. Then the ambulance arrived and CPR was administered. The victim was transported to Harris Hospital, Fort Worth, Texas by CareFlite at approximately 10:20 a.m., where the attending physician advised he had been killed instantly.

Post-accident Investigation

The forklift is a Toyota, Model 0-2-SFD30, Serial No. SFD30-10832, Capacity Lift 6,000 lbs., approximate weight 9,493 lbs., placed in service new September 21, 1987, and was last serviced December 10, 1987.

The forklift was impounded by the railroad and was checked by the manufacturer's representative DARR Equipment Company, Fort Worth, Texas, for defects and damage. According to Darr, there were no defects found that might have contributed to the accident.

This forklift is one of five used by ATSF Purchasing and Materials Department at Cleburne, Texas, and the only one equipped with a seat-belt on the operator's seat.

At the time of the accident the weather was overcast, but the dock was dry.

Applicable Rules

US Occupational Safety and Health Administration

Title 29, Code of Federal Regulations

Section 1910.178 - Powered industrial trucks.

. . .

(m)(6) A safe distance shall be maintained from the edge of ramps or platforms while on

any elevated dock, or platform or freight car. * * *

. . . . .

REPORT: 35

RAILROAD: Long Island Rail Road

LOCATION: New York, Borough of Queens, New York

DATE, TIME: December 29, 1987, 7:18 a.m.

PROBABLE CAUSE: Failure to clear all main tracks upon approach of trains.

A contributing factor was the failure to provide, during snow conditions, either absolute use of the track or a watchman.

EMPLOYEE:

Occupation	Signal Maintainer
Age	30 years
Length of Service	7 years
Last Rules Training	February 5, 1986
Last Safety Training	February 5, 1986
Last Physical Examination	September 24, 1980

Circumstances Prior to the Accident

The accident site is within the limits of Queens Interlocking at Main Line Milepost 13.5. Queens Interlocking consists of four parallel tangent tracks that extend east to west in a geographical direction. The tracks are designated from North to South as Nos. 3 and 1 for westward traffic, and Nos. 2 and 4 for eastward traffic. In addition, there are various interlocking crossovers.

It had started to snow when the signal maintainer reported for snow duty at 3:50 a.m., at his headquarters, Queens Tower. Before his call for snow duty, the signal maintainer had received his required off-duty period. His responsibilities were to check and inspect all switches at Belle Rose and Queens Interlocking. At about 6:28 a.m., he advised Signal Control that he had found one defective switch heater at Belle Rose and two switch heaters at Queens where the ballast heater fuses had blown. He was then advised to repair the ballast heaters at Queens. Since the signal maintainer only had one fuse, he consulted with the tower operator as to which switch he should repair. The tower operator advised him to work on the east crossover switch No. 27 located on main Track No. 1. Earlier and prior to departing the tower, the signal maintainer gave the operator a radio handset to be used for communication if necessary.

The Accident

At approximately 7:00 a.m., the snow had accumulated to a depth of two inches. The signal maintainer was walking eastward en route to the east crossover switch No. 27. The engineer of westward train No. 1205, operating on main track No. 3 with his headlight on, at about 65 mph, stated that he observed the signal maintainer within the area of main track No. 3 about 800 feet ahead of his train. He sounded his horn in the prescribed manner and the signal maintainer acknowledged that he saw the train by moving southward to the center of main track No. 1. Shortly thereafter, the engineer of westward train No. 605, operating on main track No. 1 at about 55 mph, reported that his train may have struck a person within Queens Interlocking. He was not certain of the accident due to his visibility being restricted by blowing snow from a westward train travelling on main track No. 3. The locomotive headlight on train No. 605 was on medium.

Post-accident Investigation

Train No. 605 consisted of Locomotive No. 271 and nine commuter coaches. Train No. 1205 consisted of 12 Locomotives (multiple electric units). Investigation developed that the left front portion of Locomotive No. 271 struck the signal maintainer. The point of impact was within the vicinity of east crossover switch No. 27. The defective ballast heater was not an integral component in the operation of the switch, therefore, it was not necessary for the signal maintainer to request protection against train movements.

Results of toxicological tests performed on the deceased and surviving crewmembers were negative with the exception of those performed on the engineer of Train 605. The carboxylic acid metabolite of delta-9-tetrahydrocannabinol was detected in the blood at a concentration of 4 ng/ml, and in the urine at 28 ng/ml. No other drugs or alcohol were identified.

The condition of the engineer of Train 605 did not appear to be a contributing factor in the cause of this accident.

Applicable Rules

Long Island Rail Road company safety rules for Engineering Department employees.

Protection against being struck or run over by train.

3205. Performing regular work on track when view of approaching train is obscured by fog, snow storm of other weather condition, is prohibited. For emergency work which must be performed by a gang under such conditions, absolute use of the track must be secured and the track protected. Absolute use of the track is not required when men are assigned to snow duty but ample gang watchman protection must be provided, the gang watchmen to stand clear of all tracks when possible.

3208. When working alone on track:

(a) Assume a position and perform work in such a manner that will permit making frequent observations in both directions to see on which tracks trains approach. Trains must be expected to run in either direction on any track.

(b) Upon the approach of a train on any main track, clear the train-occupied track and the near adjacent track, preferably clear of all main tracks.

When not clear of all tracks, stand erect and maintain lookout in both directions to see on which tracks other trains approach, in order to clear if necessary, to prevent being trapped. WHERE VIEW IS RESTRICTED, CLEAR ALL MAIN TRACKS ON APPROACH OF A TRAIN ON ANY MAIN TRACK.