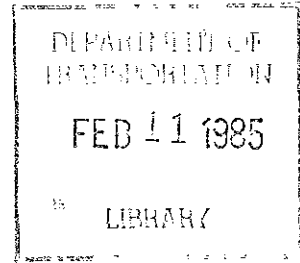


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Railroad accident investigation reports

REPORT NO. 79-6
NATIONAL RAILROAD PASSENGER CORPORATION
(AMTRAK)
ATCHISON, TOPEKA AND SANTA FE
RAILWAY COMPANY
PICO RIVERA, CALIFORNIA
APRIL 6, 1978



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
Office of Safety

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RAILROAD ACCIDENT INVESTIGATION

REPORT, NO. 79-6, 79-7.

NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)

ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY

PICO RIVERA, CALIFORNIA

APRIL 6, 1978

FEB 11 1985

FEDERAL RAILROAD ADMINISTRATION

OFFICE OF SAFETY.

WASHINGTON, D. C. 20590

FEDERAL RAILROAD ADMINISTRATION
OFFICE OF SAFETY

RAILROAD ACCIDENT INVESTIGATION
ACCIDENT REPORT NO. 79-6

NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)
ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY
PICO RIVERA, CALIFORNIA
APRIL 6, 1978

Synopsis

At 9:45 p.m., April 6, 1978, 13 passengers, one Amtrak employee and four Atchison, Topeka and Santa Fe employees were injured when an Amtrak passenger train struck a railroad flat car at Pico Rivera, California. The accident occurred in rainy weather.

Cause

The collision was caused by the failure of the engineer to control the speed of the train in accordance with signal indication and visibility conditions. A contributing cause was a trailer train flat car fouling the north main track.

Railroad Operation and Physical Characteristics

The accident occurred on that part of the railroad extending from San Diego to Los Angeles, California, a distance of 133.5 miles. This is a double track line over which trains operate by signal indications of a traffic control system. From the north, these tracks are designated as north track and south track, respectively.

A yard lead track diverges northward from the north track at Pico Rivera, and the lead connects the north track to three yard tracks. The three yard tracks at Pico Rivera parallel the two main tracks and they are designated as No. 1, No. 2 and No. 3, respectively, from the north track.

In the accident area, from the east there are in succession, a $1^{\circ}30'$ curve to the right of 1,742 feet, a tangent 4,499 feet, a 1° curve to the left 1,769 feet to the collision point and 200 feet westward. The grade for westbound trains approaching the collision point is 0.5 percent ascending.

Authorized Speed

The maximum authorized speed for passenger trains in the accident area is 60 MPH.

Signal

Signal 2L at D. T. Junction, 2.15 miles east of the collision point, governs westward movements on the north main track. This is a searchlight type, continuously lighted, bridge signal. Applicable aspect, name and indication are:

<u>Aspect</u>	<u>Name</u>	<u>Indication</u>
Flashing Red	Restricting	Proceed at Restricted Speed

Signal 2L is controlled from a traffic control machine located in the Division Office Building at Los Angeles (Hobart), California. The circuits are so arranged that a flashing red aspect can be displayed by Signal 2L for following movements on the north main track.

Atchison, Topeka and Santa Fe Operating Rules

118.(b) It must be known that engines or cars standing on siding or other tracks are clear of main track and that nothing protrudes there from. They must be left clear of all other tracks if possible to do so.

316. Train, engines or cars standing on other than main tracks must be left clear of the main track circuit.

Restricted Speed - A speed that will permit stopping within half the range of vision, but not exceeding 20 miles per hour.

Sight Distance

Because of track curvature, darkness and rain, the view between a flat car standing at the collision point and an approaching westbound train is restricted to approximately 500 feet.



Westward view taken 500 feet from point of collision.

Circumstances Prior to the Accident

Train 3412-1

The crew of this train, referred to as the "10th Rivera Switch," went on duty at Pico Rivera, California, at 11:00 a.m. on the day of the accident. The crew worked at Pico Rivera and their duties included placing freight cars on various tracks within the yard. Track No. 2 at Pico Rivera was occupied by four freight cars when this crew went on duty.

During the day of the accident, a total of 37 more cars were added to the track. Each movement to the track was made from the east end, and no one checked the clearance at the west end of the track after each move.

The "10th Rivera Switch" crew made other switching moves after placing the cars in track No. 2, and the crew went off duty at 11:00 p.m. on the day of the accident.

Extra 5629 West

This westbound freight train, consisting of four diesel-electric locomotive units and a caboose, departed San Bernardino, California, at 6:00 p.m. on the day of the accident after having the prescribed brake test. This train referred to as the "Rivera Turn," was operated from San Bernardino to Pico Rivera and return.

The train arrived at Pico Rivera at 8:25 p.m. The train crew coupled the caboose to the west end of the cars on track No. 1, and the locomotive was coupled to the east end of the track. The consist of this track was to be the eastbound train for this crew's return trip to San Bernardino. As the locomotive charged the train brake system, an air leak was detected on one of the cars in the train. The engineer of the "Rivera Turn" pulled the entire train eastward. The defective car was switched out of track No. 1 and placed on track No. 2. All of the cars in track No. 2 were shoved westward to make room for the defective car.

After the bad order car was removed from the train, an air brake test was made and the "Rivera Turn" departed Pico Rivera at 9:20 p.m.

Amtrak Train No. 79

This westbound passenger train consisted of one diesel-electric locomotive unit (F-40-PH) and three coaches. It departed San Diego, California, at 7:30 p.m. on the day of the accident after having the prescribed brake test. Approaching Santa Fe Springs, the train encountered a yellow signal. The engineer contacted the Hobart T.C.S. operator by radio and requested that the signals be aligned for the movement of No. 79. The train was proceeding at 40 MPH as a second yellow signal was passed at Los Nietos, California. The next signal, located at D.T. Junction was red. The engineer was preparing to stop the train when the red signal changed to a flashing red. He released the train brakes and allowed the train to move into the block of the signal.

The train proceeded through a curve to the right, passing the yard office at Pico Rivera. The engineer conversed by radio with the Hobart T.C.S. operator in regard to the flashing red signal.

It was dark and raining; the locomotive windshield wipers were operating to provide a clearer view ahead. The locomotive headlight illuminated the freight cars in the yard tracks at Pico Rivera as the train moved on a curve to the left. As the train approached the middle of the curve, the engineer observed that the signal at Bandini, California, was cleared for train No. 79.

The Accident

As train No. 79 approached the west end of Pico Rivera Yard, the conductor and front brakeman were located in the first coach. The flagman was located in the third coach. The fireman and the engineer were seated at their respective locations in the cab of the locomotive.

The engineer stated that he began to accelerate the train after observing that the next signal was clear. Immediately afterwards, he saw a trailer train flat car extending out of one of the yard tracks and fouling the north main track. The engineer yelled a warning and placed the train air brakes in emergency application. He also stood up to clear the locomotive control stand. The fireman observed the impending collision and immediately positioned himself on the floor of the locomotive for protection.

Before the train's speed was materially reduced, the right corner of the locomotive struck the flat car at a point 52 feet 8 inches from the west end of the car. The locomotive raked along the remaining length of the flat car, forcing the flat car off the rails to the north. The collision derailed the locomotive to the south. The force of the locomotive overturned the south rail which resulted in the derailment of the entire train. The locomotive traveled 203.7 feet after it derailed, and it came to rest against the south girder of the north main track bridge over the Rio Hondo River. (see photos)

Casualties and Damages

The engineer received multiple contusions and a laceration on his face. The fireman sustained a lumbar strain. The conductor and flagman sustained slight injuries consisting of contusions and strains. An Amtrak attendant sustained moderate injuries including contusions, abrasions and a cervical lumbar strain. Thirteen passengers received a variety of injuries including whiplash, a fractured nose, cervical strains, contusions and lacerations.

The collision forced the flat car to the north and the locomotive to the south. The locomotive struck the bridge and pushed the bridge 27 inches off of it's end bearings. The locomotive and the coaches were substantially damaged but remained upright. One end of the flat car was derailed and damaged slightly. The estimated cost of damage was as follows: railroad equipment \$200,000, track \$2,500 and bridge \$75,000.

Findings

1. The locomotive of train No. 79 was examined after the collision and a portion of the speed recorder tape was missing. During a hearing conducted by the carrier, the engineer of No. 79 admitted that he removed a portion of the speed recorder tape from the locomotive. He also admitted to operating train No. 79 in excess of the 20 MPH restriction imposed by the flashing red signal at D. T. Junction. The speed recorder tape indicated that the train was moving at 28 MPH when the collision occurred.

2. Train No. 79 received two yellow aspects and one red aspect from signals prior to the collision at Pico Rivera. The engineer at No. 79 and the traffic control operator discussed the signal indications by radio. The operator contacted the trainmaster at Pico Rivera and advised him that the north track showed occupancy. The trainmaster examined the switches at the east end of the yard, but he did not check the switches at the west end.

3. Train No. 79 struck a trailer train flat car (ITTX 930974) which was extending out of the west end of yard track No. 2 and fouling the north track. Extra 5629 coupled a caboose to the west end of yard track No. 1 at 8:25 p.m. on the day of the accident. The caboose could not have been coupled to track No. 1 unless track No. 2 was in the clear at that time. Cars were added to track No. 2 after the crew of Extra 5629 coupled the caboose to track No. 1.

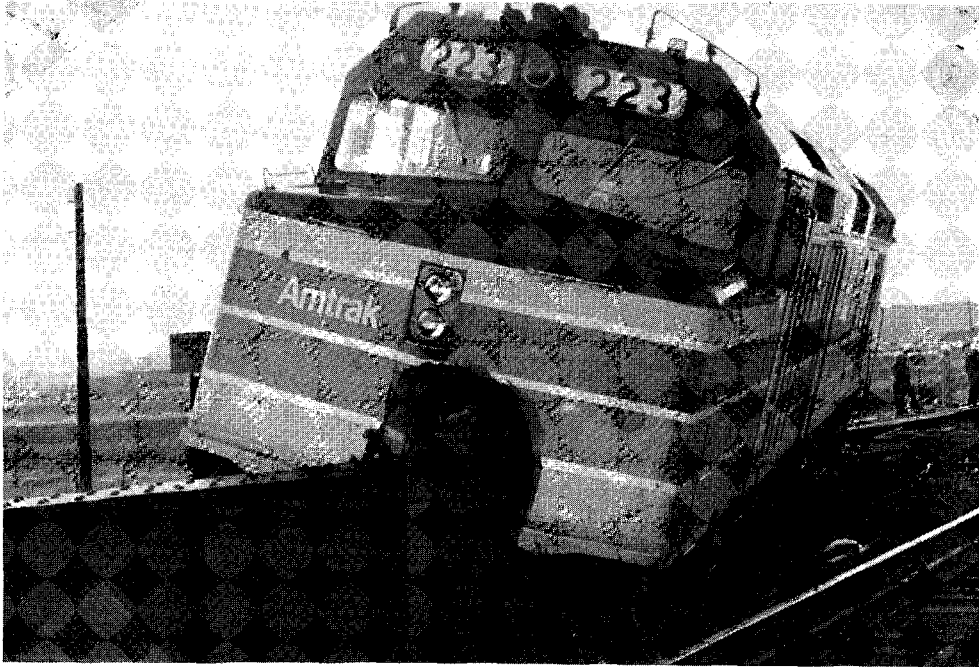
4. The "10th Rivera Switch" crew was switching cars into track No. 2 as the crew of Extra 5629 prepared the consist of track No. 1 for departure. Track No. 2 measures 3,213.9 feet from the inside switch at the east end to the clear point at the west end. The track contained 41 cars after the "10th Rivera Switch" crew completed their assigned switching duties. The cars, coupled, measured 3,343.08 feet in length. The cars on track No. 2 were pushed westward again, when the crew of Extra 5629 removed a defective car from the train's consist and placed it in the clear at the east end of track No. 2.

5. The clearance at the west end of the yard was not examined during the switching operations by yard crews, nor was the clearance checked when Extra 5629 placed the defective car in the track. When the operator at Hobart informed the trainmaster at Pico Rivera of the track occupancy condition, the trainmaster checked the switches at the east end of the yard only. If he had examined the switches at the west end, he would have observed that the cars were extending out of track No. 2 and fouling the north main track.

6. The collision was caused by the failure of the engineer to control the speed of the train in accordance with signal indication and visibility conditions. A contributing cause of the accident was the fouling of the north track by a trailer train flat car which was extending out of the west end of yard track No. 2.

Dated at Washington, D. C., this
1st Day of October 1979
By the Federal Railroad Administration

J. W. Walsh
Chairman
Railroad Safety Board



Front of locomotive No. 223 struck the east end of the Rio Hondo River bridge.



Close up view of damage to front of locomotive caused by striking the Rio Hondo Bridge.