

**RAILROAD ACCIDENT INVESTIGATION**

**Report No 3844**

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CHICAGO, MILWAUKEE, ST PAUL AND PACIFIC RAILROAD COMPANY

ATKINS YARD, IOWA

APRIL 2, 1959

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**INTERSTATE COMMERCE COMMISSION**

**Washington**

## SUMMARY

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DATE	April 2, 1959
RAILROAD	Chicago, Milwaukee, St Paul and Pacific
LOCATION	Atkins Yard, Iowa
KIND OF ACCIDENT	Deraiment
TRAIN INVOLVED	Passenger
TRAIN NUMBER	20
LOCOMOTIVE NUMBER	Diesel-electric units 101C, 5B, and 18B
CONSIST	7 cars
SPEED	79 m p h
OPERATION	Signal indications
TRACK	Double, tangent, 0 30 percent ascending grade eastward
WEATHER	Cloudy
TIME	1 52 a m
CASUALTIES	12 injured
CAUSE	Broken rail

## INTERSTATE COMMERCE COMMISSION

REPORT NO 3844

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS UNDER  
THE ACCIDENT REPORTS ACT OF MAY 6, 1910

CHICAGO, MILWAUKEE, ST PAUL AND PACIFIC RAILROAD COMPANY

August 14, 1959

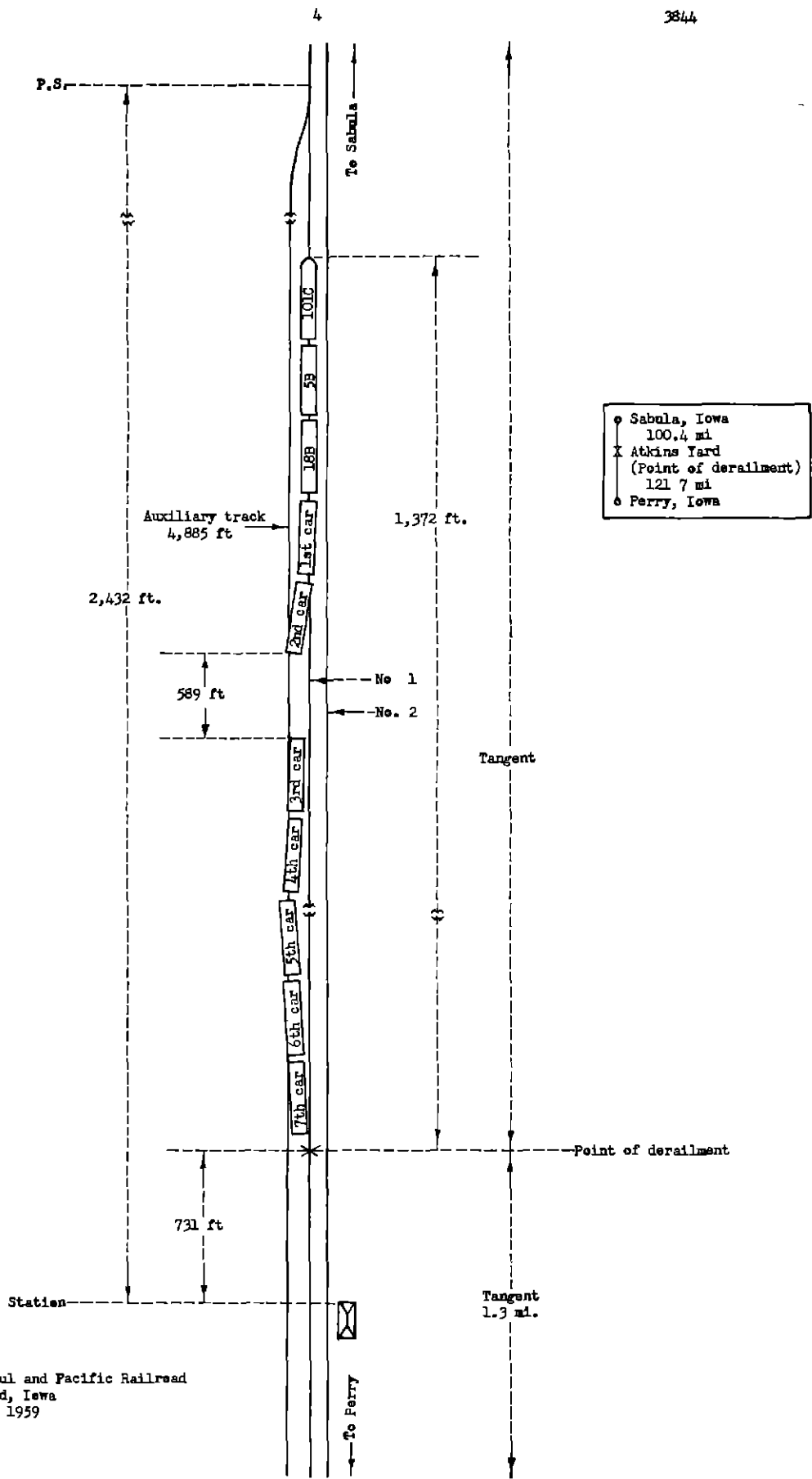
Accident at Atkins Yard, Iowa, on April 2, 1959, caused by a broken rail

REPORT OF THE COMMISSION<sup>1</sup>*FREAS, Commissioner*

On April 2, 1959, at Atkins Yard, Iowa, there was a derailment of a passenger train on the Chicago, Milwaukee, St Paul and Pacific Railroad, which resulted in the injury of 9 passengers and 3 train-service employees

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<sup>1</sup>Under authority of section 17 (2) of the *Interstate Commerce Act* the above-entitled proceeding was referred by the Commission to Commissioner Freas for consideration and disposition



Chicago, Milwaukee, St Paul and Pacific Railroad  
Atkins Yard, Iowa  
April 2, 1959

### Location of Accident and Method of Operation

This accident occurred on that part of the Iowa Division extending between Perry and Sabula, Iowa, 222.1 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated in either direction on either track by signal indications. From the north, the main tracks are designated as No. 1 and No. 2. At Atkins Yard, 121.7 miles east of Perry, an auxiliary track 4,885 feet in length parallels track No. 1 on the north. The east switch of the auxiliary track is trailing-point for eastbound movements on track No. 1 and is 2,432 feet east of the station.

The derailment occurred on track No. 1 at a point 731 feet east of the station at Atkins Yard. From the west, the main tracks are tangent throughout a distance of 1.3 miles to the point of accident and for a considerable distance eastward. The grade in this vicinity is 0.30 percent ascending eastward.

The structure of track No. 1 in the vicinity of the point of accident consists of 112-pound rail, 39 feet in length, laid new in 1940 on an average of 24 treated ties to the rail length. It is fully tieplated with double-shoulder tie plates, spiked with 2 rail-holding spikes and 2 plate-holding spikes per tie plate, and is provided with 6-hole 36-inch joint bars and an average of 14 rail anchors per rail. It is ballasted with processed gravel to a depth of 18 inches below the bottoms of the ties and has a ballast section in accordance with the specifications of the carrier.

The maximum authorized speed for passenger trains in the vicinity of the point of accident is 79 miles per hour.

### Description of Accident

No. 20, an eastbound first-class passenger train, consisted of diesel-electric units 101C, 5B, and 18B, coupled in multiple-unit control, 1 mail car, 3 baggage cars, 1 sleeping car, and 2 coaches, in the order named. The cars were of all-steel construction. The 5th, 6th and 7th cars were equipped with tightlock couplers. This train departed from Perry at 11:05 p. m., on time, passed Atkins Yard, the last open office, at 1:52 a. m., 8 minutes late, and while moving at a speed of about 79 miles per hour, as indicated by the tape of the speed-recording device, the rear truck of the 2nd diesel-electric unit, both trucks of the 3rd diesel-electric unit, and the 1st to the 7th cars inclusive, were derailed at a point 731 feet east of the station at Atkins Yard.

The train stopped with the locomotive 1,372 feet east of the point of derailment. The derailed equipment stopped upright on or near the structures of track No. 1 and the auxiliary track as shown in the sketch. Separations occurred between the 2nd and 3rd cars and between the 4th and 5th cars. The 2nd and 3rd diesel-electric units were slightly damaged, and the derailed cars were somewhat damaged.

The conductor, the train-baggage man, and the flagman were injured.

The weather was cloudy at the time of the accident, which occurred about 1:52 a. m.

### Discussion

As No. 20 was approaching the point where the accident occurred the speed was about 79 miles per hour. The engineers were in the control compartment at the front of the locomotive. The conductor was in the 6th car, and the front brakeman and the flagman were in the 7th car. The brakes of the train had been tested and had functioned properly when used en route. The headlight was lighted.

The members of the crew said that before the accident occurred the locomotive and the cars were riding smoothly, and that there was no indication of defective track or train equipment. As the train approached an eastward automatic signal located 1.6 miles west of the point of accident, the engineer observed that the signal indicated Proceed. Shortly after entering the block of this signal, the brakes of the train became applied in emergency as a result of the derailment. The engineer said that he had assumed the brakes had been applied by a member of the train crew, and that he had not realized the train was derailed until after it stopped.

Examination of the train equipment after the derailment occurred disclosed no condition which could have caused or contributed to the cause of the accident.

Examination of track No. 1 at the point of derailment disclosed that a rail in the south side of the track was broken vertically throughout the entire cross section 26 inches from the receiving end of the rail. From the vertical break, a horizontal web fracture extended through the bolt holes to the west end of the rail. The portion of the rail above the horizontal fracture was displaced. The surfaces of the vertical and horizontal breaks did not show any indication of progressive fractures. Batter marks were found on the west end of the remaining portion of the head of the broken rail and on the east end of the adjacent rail to the west. The 26-inch piece of broken rail was considerably pitted on both sides, where the web had been in contact with the joint bars, and there was a vertical separation, or piping, in the web throughout the length of this piece of rail. Marks on the track structure indicated that the derailment occurred immediately after the 26-inch broken piece of rail was displaced. The north rail of track No. 1 was turned outward throughout a distance of 156 feet west of the broken rail, and track No. 1 was destroyed throughout a distance of 1,004 feet east of the break in the south rail.

The broken rail was manufactured by the Illinois Steel Company in 1940 and bore Heat No. BN-56018B. Laboratory tests of this rail after the accident occurred disclosed that the pipe in the web of the 26-inch broken piece extended to a height of  $1 \frac{25}{32}$  inches, and that the pipe probably existed in the ingot from which the rail was rolled. There was slight oxidation in the pipe and indications that some small areas had welded during the rolling process. The tests revealed no evidence of progressive fractures. The thickness of the web had been reduced as much as  $\frac{5}{32}$  inch by pitting in the area where the web was in contact with the joint bars. The physical and chemical properties of the rail conformed to the specifications of the carrier.

An official of the carrier said that a rail-defect detector car was operated over this section of track No. 1 on February 4, 1959, and that the rail ends were tested on June 23, 1958. He said that these tests did not disclose any defective rail conditions in the vicinity of the point of accident. An inspection of this section of track was made several days before the accident occurred, and cross levels showed a number of irregularities in the track surface that were apparently caused by seasonal weather conditions. The carrier issued an order restricting the speed of trains over this section of track until repairs were made. The track was resurfaced, and the speed restriction was annulled on April 1, 1959. Track No. 1 was last inspected by an official of the carrier on March 30, 1959, and by a section foreman on the day before the accident. Neither inspection disclosed any defective condition of the rails.

### Cause

This accident was caused by a broken rail.

Dated at Washington, D C , this fourteenth  
day of August, 1959

By the Commission, Commissioner Freas

(SEAL)

HAROLD D McCOY,

Secretary