

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3720

THE ATCHISON, TOPEKA AND SANTA FE
RAILWAY COMPANY

AND

CHICAGO, ROCK ISLAND AND PACIFIC
RAILROAD COMPANY

IN RE ACCIDENT

AT PRINCEVILLE, ILL., ON

NOVEMBER 2, 1956

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SUMMARY

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Date: November 2, 1956

Railroads: Atchison, Topeka and Santa Fe : Chicago, Rock Island and Pacific

Location: Princeville, Ill.

Kind of accident: Side collision

Trains involved: Freight : Maintenance-of-way service train

Train numbers: Extra 158 East : Work Extra 1268

Locomotive numbers: Diesel-electric units 158, 158A, and 158B : Diesel-electric unit 1268

Consists: 93 cars, caboose : 12 cars, caboose

Speeds: 43 m. p. h. : 1-2 m. p. h.

Operation: Interlocking

Tracks: Double; tangent; 0.22 percent ascending grade eastward : Single; tangent; 0.80 percent descending grade westward

Weather: Clear

Time: 9:47 a. m.

Casualties: 4 injured

Cause: Failure to operate Chicago, Rock Island and Pacific train in accordance with signal indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3720

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

THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY
AND
CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD COMPANY

January 4, 1957

Accident at Princeville, Ill., on November 2, 1956, caused
by failure to operate the Chicago, Rock Island and
Pacific train in accordance with signal indications.

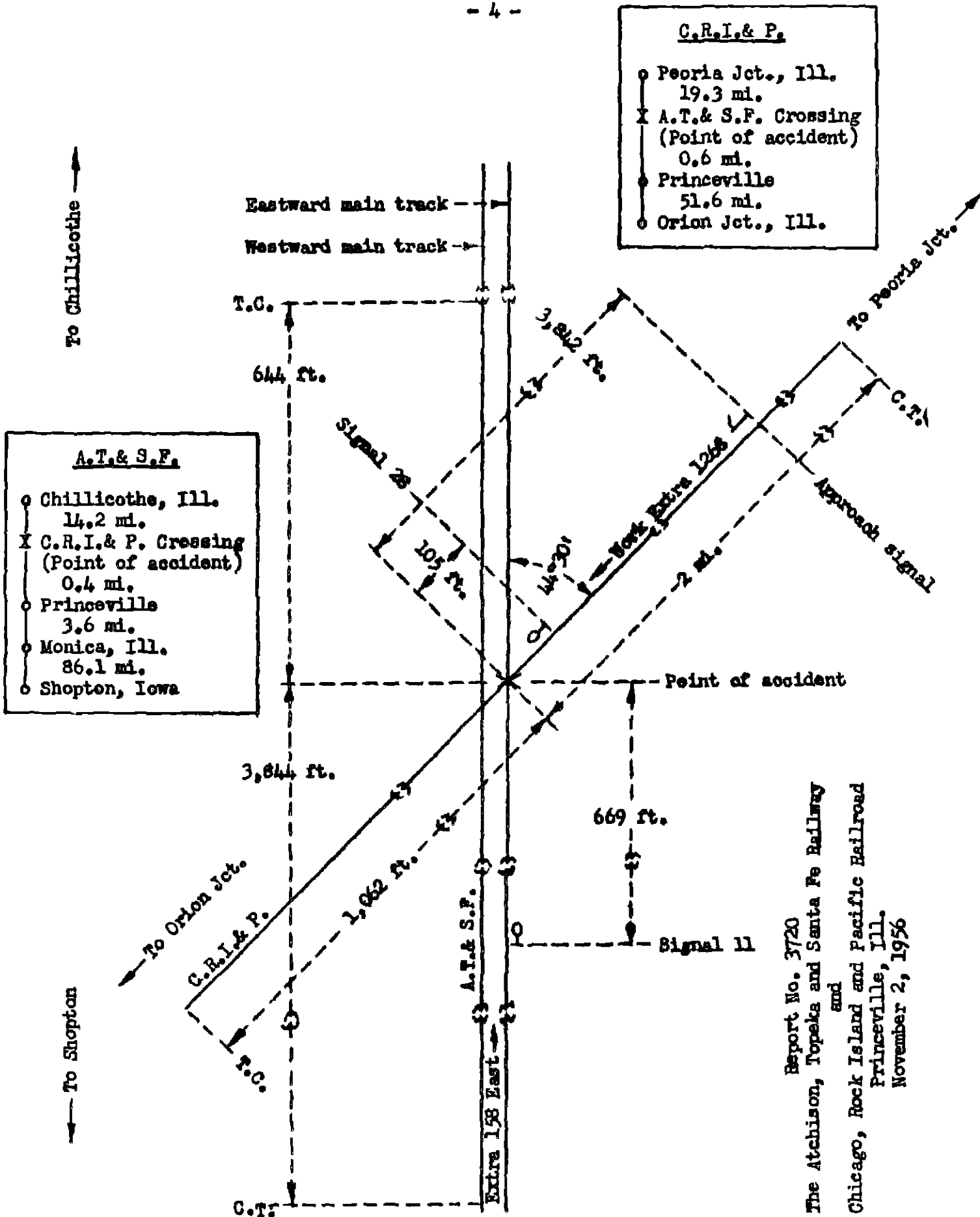
REPORT OF THE COMMISSION¹

TUGGLE, Commissioner:

On November 2, 1956, there was a side collision between a freight train on the Atchison, Topeka and Santa Fe Railway and a maintenance-of-way service train on the Chicago, Rock Island and Pacific Railroad at Princeville, Ill., which resulted in the injury of four train-service employees. This accident was investigated in conjunction with a representative of the Illinois Commerce Commission.

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Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Tuggle for consideration and disposition.



Report No. 3720
 The Atchison, Topeka and Santa Fe Railway
 and
 Chicago, Rock Island and Pacific Railroad
 Princeville, Ill.
 November 2, 1956

Location of Accident and Method of Operation

This accident occurred at the intersection of the Atchison, Topeka and Santa Fe Railway and the Chicago, Rock Island and Pacific Railroad at Princeville, Ill. The accident occurred on that part of the Illinois Division of the A.T. & S.F. extending between Shopton, Iowa, and Chillicothe, Ill., 104.3 miles, and on that part of the Rock Island Division of the C.R.I. & P. extending between Peoria Jct. and Orion Jct., Ill., 71.5 miles. The intersection is 90.1 miles east of Shopton and 0.4 mile east of the A.T. & S.F. station at Princeville, and 19.3 miles west of Peoria Jct. and 0.6 mile east of the C.R.I. & P. station at Princeville. The lines intersect at an angle of $44^{\circ}34'$. West-bound C.R.I. & P. trains by timetable direction move toward the northwest by compass direction. Timetable directions are used in this report. In the vicinity of the point of accident the A.T. & S.F. is a double-track line, over which trains moving in either direction on either track are operated by automatic cab-signal indications supplemented by an automatic train-control system. There are no wayside signals except at interlockings. From south to north the main tracks are designated as eastward main track and westward main track. The tracks are tangent throughout a distance of 3,844 feet immediately west of the point of accident and 644 feet eastward. The grade is 0.22 percent ascending eastward at the point of accident. In the vicinity of the point of accident the C.R.I. & P. is a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. The track is tangent throughout a distance of over 2 miles immediately east of the point of accident and 1,062 feet westward. The grade for west-bound trains is, successively, an average of 0.61 percent descending 1,900 feet, level 400 feet, an average of 0.76 percent ascending 1,800 feet, level 200 feet, and an average of 0.62 percent descending 1,828 feet to the point of accident. It is 0.80 percent descending throughout a distance of 228 feet immediately east of the point of accident.

Movements over the crossing are governed by interlocking signals. Automatic signal 11, governing east-bound movements on the eastward main track of the A.T. & S.F., is located 669 feet west of the crossing. An inoperative approach signal and semi-automatic signal 28, governing west-bound movements on the C.R.I. & P., are located, respectively, 3,842 feet and 105 feet east of the crossing. The approach signal is of the one-arm semaphore type. The arm is fixed at an angle of 45 degrees in the lower quadrant.

Signals 11 and 28 are of the color-light type and are continuously lighted. The aspects applicable to this investigation and the corresponding indications and names are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
11	Green	Proceed.	Clear
Approach signal	Diagonal	Proceed, immediately reducing to 30 MPH, or slower if necessary, prepared to stop before leading wheels pass the next signal.	Approach
28	Red	Stop.	Stop

The signals governing A.T.& S.F. movements over the crossing normally indicate Proceed in the established direction of traffic. Signal 28 normally indicates Stop. To make a west-bound C.R.I.& P. movement through the interlocking, a member of the crew must push a button located in a box on the mast of signal 28. If no train is occupying the approach circuits or the tracks within interlocking limits on the A.T.& S.F., the indications of the signals governing A.T.& S.F. movements through the interlocking will then change to Stop, and the indication of signal 28 will change to Proceed.

The maximum authorized speed for the A.T.& S.F. train was 60 miles per hour. The maximum authorized speed for the C.R.I.& P. train was 30 miles per hour east of the crossing at Princeville and 20 miles per hour over the crossing.

Description of Accident

Extra 158 East, an east-bound A.T.& S.F. freight train, consisted of Diesel-electric units 158, 158A, and 158B, coupled in multiple-unit control, 93 cars, and a caboose. This train passed Monica, Ill., 4 miles west of the crossing at Princeville and the last open office, at 9:42 a. m. It passed signal 11, which indicated Proceed, and while moving on the eastward main track at a speed of 43 miles per hour, as indicated by the tape of the speed-recording device, the fifteenth car was struck by Work Extra 1268 at the crossing at Princeville.

Work Extra 1268, a west-bound C.R.I. & P. maintenance-of-way service train, consisted of Diesel-electric unit 1268, 12 cars, and a caboose. This train departed from Peoria, 1.2 miles east of Peoria Jct. and the last open office, at 8:50 a. m. It passed the approach signal east of Princeville, which indicated Approach, passed signal 28, which indicated Stop, and while moving at a speed of 1 or 2 miles per hour it struck the fifteenth car of Extra 158 East.

Extra 158 East stopped with the locomotive approximately 2,600 feet east of the crossing. The fifteenth car was knocked off center but was not derailed. The sixteenth to the forty-third cars, inclusive, were derailed and stopped in various positions on or near the tracks. The thirty-fourth to the forty-fifth cars were somewhat damaged, and the other derailed cars were badly damaged. The locomotive of Work Extra 1268 was overturned and stopped on its right side in the southeast angle of the intersection. It was badly damaged. The front truck and the front wheels of the rear truck of the first car in this train were derailed, and the car was slightly damaged.

The conductor of Extra 158 East, and the engineer, the fireman, and the front brakeman of Work Extra 1268 were injured.

The weather was clear at the time of the accident, which occurred at 9:47 a. m.

The locomotive of Work Extra 1268 was of the road-switcher type. It was equipped with 6-B1 brake equipment. The regulatory devices were adjusted to maintain main reservoir pressure of 130 to 140 pounds and brake-pipe pressure of 80 pounds.

Discussion

As Extra 158 East was approaching the point where the accident occurred the enginemen and the front brakeman were in the control compartment at the front of the locomotive. The conductor and the flagman were in the caboose. The cab signal and signal 11 each indicated Proceed. The engineer said that when his locomotive reached a point a short distance west of the crossing he saw Work Extra 1268 approaching. He said that the train was moving slowly and it appeared that it would stop short of the crossing.

At the time the accident occurred the train of Work Extra 1268 consisted of 12 carloads of gravel ballast and a caboose, 1,058 tons. The train originated at Peoria. Before departure from Peoria a brake test was made by observing that the brakes at the rear end of the train applied and released properly. A car-to-car inspection of the brakes of the entire train was not made. The engineer took no exception to the operation of the brakes as the train moved between Peoria and the approach signal east of Princeville. As this train was approaching Princeville the engineer and the front brakeman were in the control compartment of the locomotive. The conductor and the flagman were in the cupola of the caboose. The engineer said he placed the throttle in idle position before the train passed the approach signal, and as the train was passing the signal he made a brake-pipe reduction of 8 to 10 pounds. He did not permit the brakes on the locomotive to apply. At this time the speed of the train was 26 miles per hour, as indicated by the speed-indicating device. A short time later he made a second brake-pipe reduction of 8 to 10 pounds. He said that the brake application did not appear to retard the speed properly, and he then increased the brake-pipe reduction to a total of 30 pounds and allowed the brakes of the locomotive to apply. As the train approached signal 28 he became concerned because it appeared that the train might not stop short of the signal, and he said that when the locomotive reached a point about 500 feet east of the signal he placed the brake valve in emergency position. He said that the locomotive passed the signal at a speed of 4 or 5 miles per hour and was about to stop when it struck the side of Extra 158 East. The fireman and the front brakeman said that until the locomotive was closely approaching signal 28 they took no exception to the manner in which the train was handled. When they became aware that the locomotive would not stop short of the signal they saw that the engineer had already placed the brake valve in emergency position. The conductor and the flagman said that the brakes were applied in the vicinity of the approach signal. They said that the speed was reduced from about 25 miles per hour to about 10 miles per hour, and that the brakes were then released. They said that the train continued to move at a speed of about 10 miles per hour, and until it was closely approaching signal 28 they thought that it would be stopped at the signal. The conductor said that when the locomotive was in the immediate vicinity of the signal he observed that the gauge in the caboose indicated brake-pipe pressure of 80 pounds. He then opened the conductor's valve. He said that there was an exhaust from the valve but he did not notice its length or intensity.

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A trainmaster inspected the equipment of Work Extra 1268 a short time after the accident occurred and found the brakes applied on all units of the train. After the cars were removed to Peoria it was found that the piston travel on one of the cars and the caboose was 10-1/2 inches, on seven cars it was between 9 and 10 inches, and on the other cars it was between 7 and 9 inches. The locomotive was removed to the shops at Peoria, broken pipes in the air-brake system were plugged, and the main reservoir pipe was charged from an outside source. It was found that the controlling apparatus of the air-brake system functioned properly.

At the time the accident occurred the engineer of Work Extra 1268 had had approximately 8 months experience as an engineer, and he was making his first trip as an engineer over the line on which the accident occurred. He has previously worked in this territory as a fireman, but he had not made a trip over this line during a period of about 10 years. The fireman had been employed in this capacity during a period of approximately 4 months, and neither he nor the front brakeman had made a sufficient number of trips over this line to become thoroughly familiar with the physical characteristics.

Cause

This accident was caused by failure to operate the Chicago, Rock Island and Pacific train in accordance with signal indications.

Dated at Washington, D. C., this fourth day of January, 1957.

By the Commission, Commissioner Tuggle.

(SEAL)

HAROLD D. McCOY,

Secretary.