

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2800
THE CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC
RAILROAD COMPANY
REPORT IN RE ACCIDENT
AT ASPINWALL, IOWA, ON
MAY 30, 1944

SUMMARY

Railroad: Chicago, Milwaukee, St. Paul
and Pacific

Date: May 30, 1944

Location: Aspinwall, Iowa

Kind of accident: Head-end collision

Trains involved: Engine : Freight

Train number: : Extra 215 West

Engine numbers: 413 : 215

Consist: : 53 cars, caboose

Estimated speed: Practically stopped : 25 m. p. h.

Operation: Timetable, train orders and
automatic block-signal system

Track: Double; tangent; level

Weather: Clear

Time: 7:31 a. m.

Casualties: 4 injured

Cause: Failure to provide adequate
protection for engine during
switching movement

Recommendation: That the Chicago, Milwaukee,
St. Paul and Pacific Railroad
Company install electric
switch-locking at main-track
hand-operated switches in
automatic block-signal territory

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2800

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

THE CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC
RAILROAD COMPANY

August 24, 1944.

Accident at Aspinwall, Iowa, on May 30, 1944, caused by
failure to provide adequate protection for engine
during switching movement.

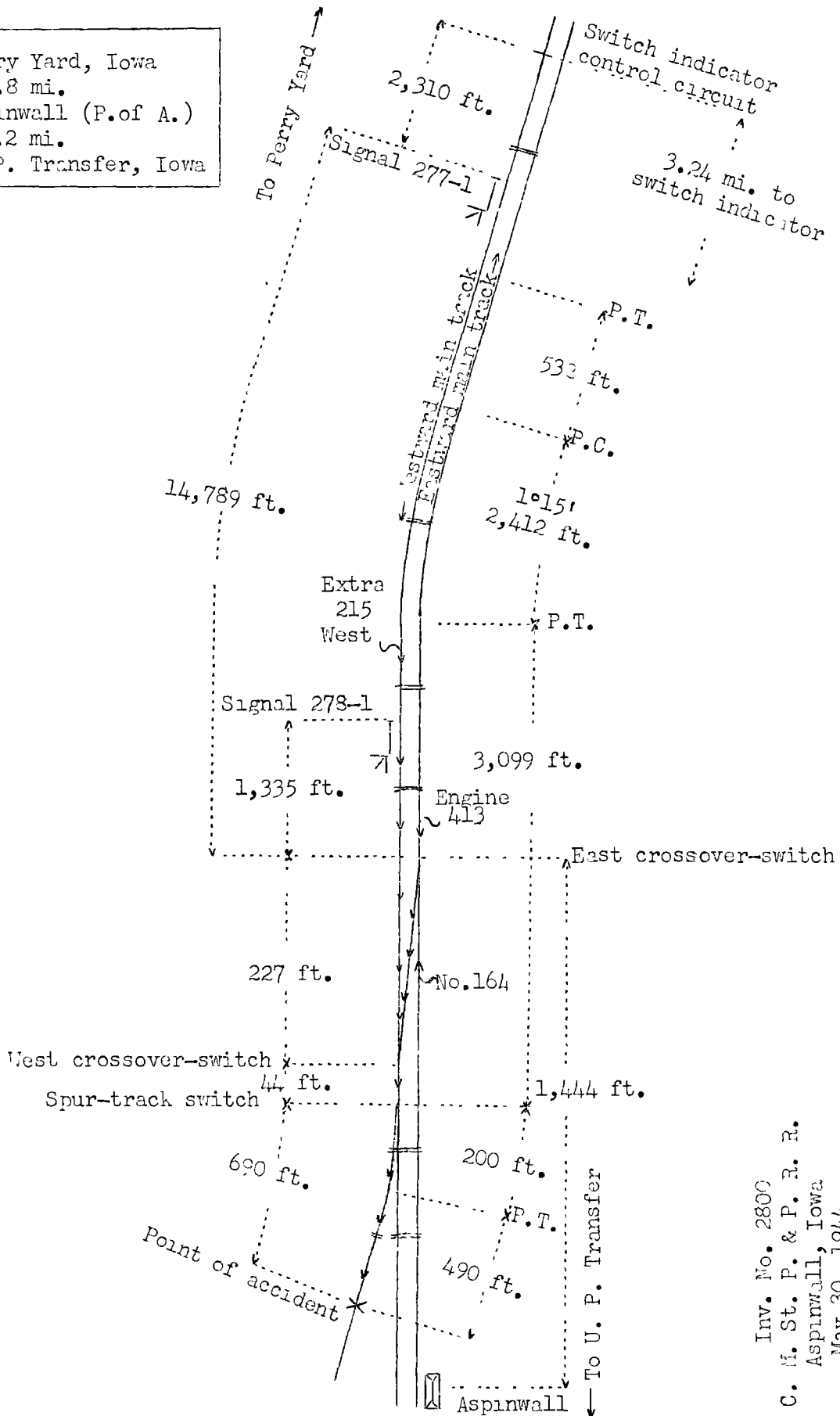
REPORT OF THE COMMISSION¹

PATTERSON, Chairman:

On May 30, 1944, there was a head-end collision between a freight train and an engine on the Chicago, Milwaukee, St. Paul and Pacific Railroad at Aspinwall, Iowa, which resulted in the injury of four employees. This accident was investigated in conjunction with a representative of the Iowa State Commerce Commission.

¹Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Chairman Patterson for consideration and disposition.

o	Perry Yard, Iowa
	53.8 mi.
X	Aspinwall (P. of A.)
	68.2 mi.
o	U. P. Transfer, Iowa



Inv. No. 2800
 C. M. St. P. & P. R. R.
 Aspinwall, Iowa
 May 30, 1944

Location of Accident and Method of Operation

This accident occurred on that part of the Iowa Division designated as the Third Subdivision and extending westward from Perry Yard to U. P. Transfer, Iowa, 122 miles. In the vicinity of the point of accident this was a double-track line over which trains moving with the current of traffic were operated by timetable, train orders and an automatic block-signal system. At Aspinwall, 53.8 miles west of Perry Yard, the east switch of a trailing-point crossover 227 feet long, which connected the main tracks, was 1,444 feet east of the station. A spur track about 1,600 feet in length was on the north side of the westward main track. The spur-track switch was 44 feet west of the west switch of the crossover, and was facing-point for west-bound movements. The accident occurred on the spur track 690 feet west of the switch. The engine moved through the crossover from the eastward to the westward main track and entered the spur track, and the freight train entered the spur track from the westward main track. From the east on the westward main track there were, in succession, a tangent 532 feet, a 1°15' curve to the left 2,412 feet and a tangent 3,099 feet to the spur-track switch. Entry to the spur track was made through a No. 11 turnout about 200 feet in length, then the spur track was tangent 490 feet to the point of accident. The grade for west-bound movements on the main tracks was, successively, 0.45 percent descending 3,300 feet, 0.50 percent descending 2,500 feet, then there was a vertical curve 759 feet to the spur-track switch. The grade for west-bound movements on the spur track was 2.0 percent descending 600 feet, then it was level 90 feet to the point of accident and some distance beyond.

The switch-stand for the spur-track switch was on the north side of the westward main track, and was of the hand-throw, intermediate-stand type. The switch-stand was provided with an oil lamp and an oval target, 10 inches long and 6 inches wide, having a red center on a white background. When the switch was lined normally a green light was displayed. When the switch was lined for entry to the spur track the target and a red light were displayed.

Automatic signals 277-1 and 278-1, which governed west-bound movements on the westward main track, were, respectively, 14,789 feet and 1,335 feet east of the east switch of the crossover. These signals were of the one-arm, three-position, upper-quadrant, semaphore type, and were continuously lighted. The day aspects and corresponding indications and names of these signals were as follows:

<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
Vertical	Proceed.	Clear signal.
45 degrees	Proceed preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach signal.
Horizontal, with number plate	Stop, then proceed at restricted speed.	Stop and proceed signal.

The controlling track circuit was so arranged that when either switch of the crossover was lined for movement through the crossover, or when the spur-track switch was lined for entry to the spur-track, signal 277-1 would display proceed-preparing-to-stop-at-next-signal, and signal 278-1 would display stop-then-proceed-at-restricted-speed.

A switch indicator at the east end of the crossover was of the semaphore type, and its control circuit extended to a point 2,310 feet east of signal 277-1.

DEFINITIONS.

* * *

Medium Speed.--A speed not exceeding thirty (30) miles per hour.

* * *

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

Operating rules read in part as follows:

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fuseses. * * *

* * *

The front of the train must be protected in the same way when necessary by the forward brakeman, fireman, or other competent employe.

* * *

D-152. When a train crosses over to, or obstructs another track, unless otherwise provided, it must first be protected as prescribed by Rule 99 in both directions on that track.

512. Where switch indicators are used, the indications displayed do not relieve enginemen and trainmen from protecting their train as required by the rules.

The maximum authorized speed for freight trains was 60 miles per hour.

Description of Accident

No. 164, an east-bound second-class freight train, consisting of engine 413, 44 cars and a caboose, stopped on the eastward main track at Aspinwall about 7:23 a. m. About 8 minutes later, after the engine had moved westward through the crossover to the westward main track, entered the spur track, and had practically stopped 690 feet west of the spur-track switch, it was struck by Extra 215 West.

Extra 215 West, a west-bound freight train, consisting of engine 215, 53 cars and a caboose, passed signal 277-1, which displayed proceed, passed signal 278-1, which displayed stop-then-proceed-at-restricted-speed, entered the spur track, and while moving at an estimated speed of 25 miles per hour it struck engine 413.

The engines of both trains and fourteen cars of Extra 215 West were derailed and damaged.

It was clear at the time of the accident, which occurred about 7:31 a. m.

The fireman of engine 413, and the engineer, the fireman and the front brakeman of Extra 215 West were injured.

Engine 215 was equipped with 8-ET brake equipment. Of the cars of Extra 215, 26 cars were provided with AB-type and 27 cars and the caboose were provided with K-type brake equipment. There was no condition found that would prevent proper application of the brakes.

Discussion

The investigation disclosed that the conductor of No. 164 instructed the members of his crew that their engine would move from the eastward to the westward main track at Aspinwall and perform switching on the westward main track and the spur track, and that flag protection was necessary for the movement.

When No. 164 stopped at Aspinwall, about 7:23 a. m., it fouled the east crossover-switch and stopped with the gangway of the engine about opposite the switch indicator. The rear brakeman, who had been on the engine, observed that the indicator was clear, then crossed over through the train and opened the west crossover switch. The switch indicator at the west crossover switch was controlled only by the circuits on the eastward track, and a period of approximately two minutes elapsed between the time he observed the indicator at the east crossover switch and the time he opened the west crossover switch. He then crossed back to the other side of the train and after the engine had moved the train westward a sufficient distance to clear the crossover switch he uncoupled the engine. Then the engine moved forward to a point east of the crossover, the front brakeman lined the east crossover-switch for the crossover movement, and proceeded eastward to provide flag protection, and the crossover movement was started about six minutes after the train first stopped at Aspinwall. The brakeman thought the crossover movement would not be started until after he had reached a point where he could furnish adequate flag protection. About 7:31 a. m., after the engine had moved through the crossover and had entered the spur track, it was struck by Extra 215 West.

When Extra 215 West was approaching Aspinwall it was moving at a speed of about 55 miles per hour. Signal 277-1 displayed proceed, and Extra 215 passed that signal after the rear brakeman of No. 164 had observed the switch indicator and before he opened the west crossover-switch. Because of track curvature in a cut, the view of signal 278-1 was obstructed until a point approximately 2,300 feet east of the signal was reached. Soon after the engine emerged from the cut the fireman observed signal 278-1 displaying stop, and called the indication to the engineer. The engineer stated that he immediately made a service brake-pipe reduction, but he was not certain as to the amount of reduction. When his engine was just west of signal 278-1, located 1,606 feet east of the spur-track switch, he saw engine 413 in the vicinity of that switch, and he moved the brake valve to emergency position, closed the throttle, placed the reverse lever in position for backward movement and then opened the throttle. Immediately afterward he placed the reverse lever in position for forward movement to avoid the

sliding of the driving wheels. The flagman of No. 164 had reached a point variously estimated as from 500 to 1,100 feet east of the east crossover-switch. According to his statement, he had not proceeded as far as signal 278-1 when the engine of Extra 215 passed him. He stated that at that time the engine was still working steam and the brakes had not been applied. The front brakeman said that after the accident he entered the engine cab and found the engine still working steam and the driving wheels moving in forward motion. All the employees on Extra 215 were in agreement that the brakes on their train had been properly tested and had functioned properly where used en route. The fireman, front brakeman, conductor, and flagman said that an emergency application was made prior to the accident, but none of them gave definite information as to the time or location when this was done. The engineer was not certain that emergency operation of the brakes was obtained.

In a subsequent test, as a result of an emergency application of the brakes made 1,144 feet east of signal 278-1, a similar tonnage train was stopped from a speed of 52 miles per hour 462 feet east of the spur-track switch or 1,152 feet east of the point of accident. According to the speed indicator tape, the engine of Extra 215 passed Manning, 4.1 miles east of Aspinwall, at a speed of 61 miles per hour, passed signal 277-1 at a speed of 53 miles per hour, passed signal 278-1 at a speed of 50 miles per hour, entered the spur track at a speed of 45 miles per hour, and was moving at a speed of approximately 25 miles per hour when the collision occurred. It is evident that action to stop Extra 215 was not effective until the engine was in the vicinity of the spur-track switch. If effective action to stop Extra 215 had been taken when the stop-and-proceed indication displayed by signal 278-1 was visible to the fireman, a distance of approximately 4,300 feet east of the point where the collision occurred, the accident could have been averted.

Under the rules, the members of the crew of No. 164 were required to provide flag protection for their engine before it was moved through the crossover and while it was engaged in switching on the westward main track, and they so understood. However, flag protection was not provided until the engine moved through the crossover to the westward main track, then the flagman proceeded eastward to furnish protection. He said he had reached a point about 300 feet east of the crossover when he saw Extra 215 approaching, then he displayed a lighted red fusee. The conductor was in the vicinity of the station, and the enginemen and the front brakeman were on the engine when they first observed Extra 215 closely approaching immediately prior to the collision.

If the switches of the crossover at Aspinwall had been equipped with electric switch-locking, it would not have been possible to operate the switches to permit a movement through the crossover when a train was closely approaching, as in this case, and the accident would not have occurred.

Cause

It is found that this accident was caused by failure to provide adequate protection for an engine during switching movement.

Recommendation

It is recommended that the Chicago, Milwaukee, St. Paul and Pacific Railroad Company install electric switch-locking at main-track hand-operated switches in automatic block-signal territory.

Dated at Washington, D. C., this twenty-fourth day of August, 1944.

By the Commission, Chairman Patterson.

(SEAL)

W. P. BARTEL,
Secretary.