INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3223

THE PENNSYLVANIA RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT SOUTH FORK, PA., ON

DECEMBER 30, 1948

SUMMARY

Railroad:	Pennsylvania	
Date:	December 30, 1948	
Location:	South Fork, Pa.	
Kind of accident:	Rear-end collision	
Trains involved:	Passenger	: Freight
Train numbers:	72	: Extra 6444 East
Engine numbers:	Diesel-electric units 5853A and 5844B	: 6444, Diesel-electric units 9519A, 9519B and 9518A
Consists:	12 cars	: 84 cars, caboose
Speed:	Standing	: 12 m. p. h.
Operation:	Automatic block and cab-signal systems	
Tracks:	Four; 3°45' curve; 0.42 percent ascending grade eastward	
Weather:	Snowing	
Time:	10:35 a. m.	
Casualties:	66 injured	
Cause:	Failure to operate following train in accordance with signal indications	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3223

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

THE PENNSYLVANIA RAILROAD COMPANY

March 10, 1949

Accident at South Fork, Pa., on December 30, 1948, caused by failure to operate the following train in accordance with signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On December 30, 1948, there was a rear-end collision between a passenger train and a freight train on the Pennsylvania Railroad at South Fork, Pa., which resulted in the injury of 52 passengers, 2 Pullman employees, 11 dining-car employees and 1 railway-mail clerk. This accident was investigated in conjunction with a representative of the Pennsylvania Public Utility Commission.

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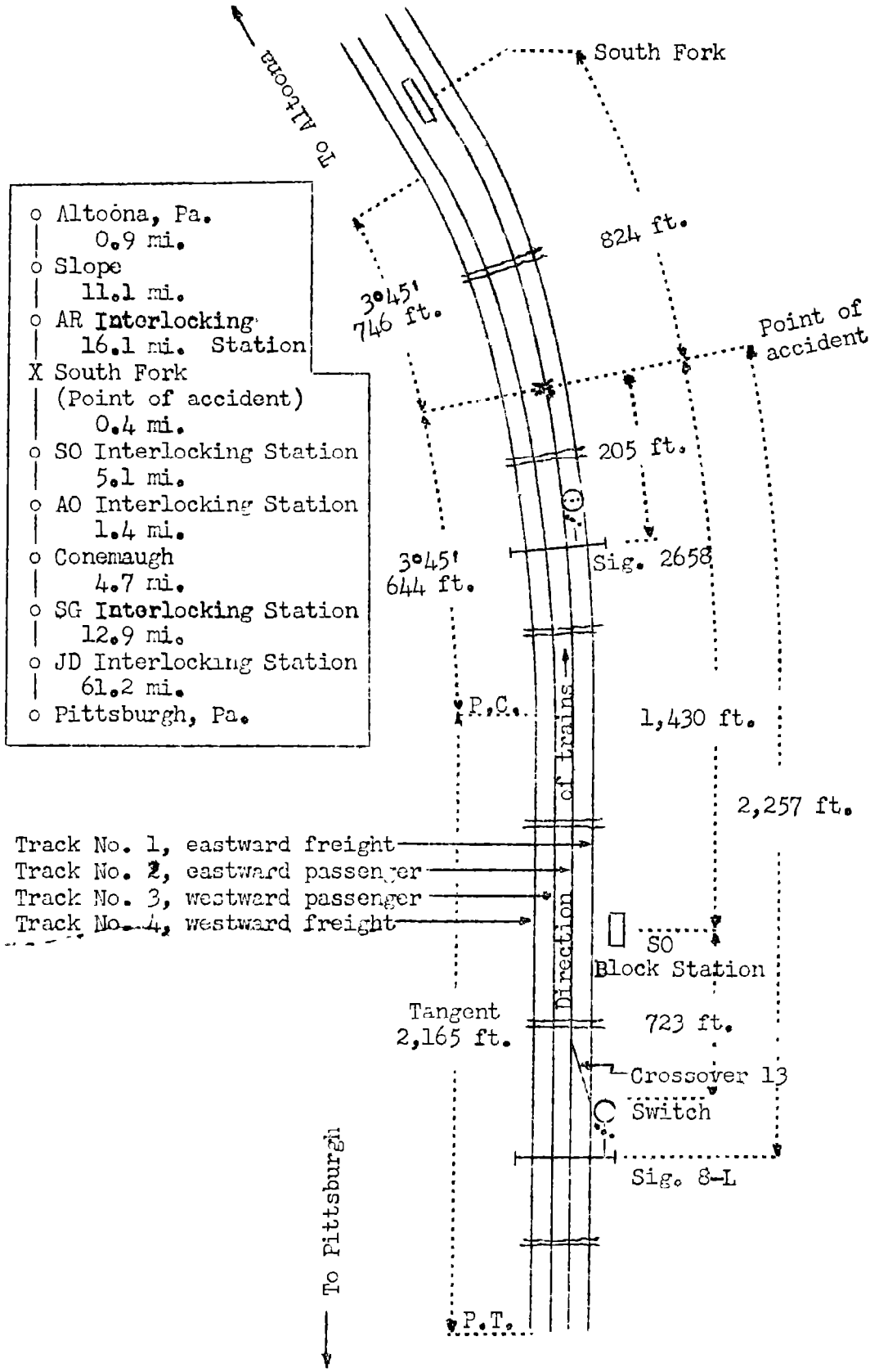
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3223
Pennsylvania Railroad
South Fork, Pa.
December 30, 1948

Location of Accident and Method of Operation

This accident occurred on that part of the Pittsburgh Division extending between Pittsburgh and Slope, near Altoona, Pa., 112.9 miles, a four-track line in the vicinity of the point of accident. The main tracks from south to north are designated as No. 1, eastward freight; No. 2, eastward passenger; No. 3, westward passenger; and No. 4, westward freight. Trains moving with the current of traffic on tracks Nos. 1, 2 and 4, and in either direction on track No. 3, are operated by automatic block-signal and cab-signal indications. The accident occurred 85.57 miles east of Pittsburgh on track No. 2, at a point 1,430 feet east of SO interlocking station and 824 feet west of South Fork. Crossover 13 connects tracks Nos. 1 and 2, and its west switch is 723 feet west of SO interlocking station.

From the west there are, in succession, a tangent 2,165 feet in length and a 3°45' curve to the left 644 feet to the point of accident and 746 feet eastward. The grade is 0.42 percent ascending eastward 2,824 feet to the point of accident and 226 feet beyond.

A trainphone communication system is in use on the line on which this accident occurred. This system is designed for communication between stations and trains.

Interlocking signal 8-L, controlled from SO interlocking, and automatic signal 2658, governing east-bound movements on track No. 2, are, respectively, 2,257 feet and 205 feet west of the point of accident. These signals are of the 2-unit position-light type and are mounted on signal bridges. Signal 8-L displays five aspects, signal 2658 displays three aspects and each signal is continuously lighted. The cab signals are of the four-indication position-light type. The involved aspects and corresponding indications, names and rule number are as follows:

Signal	Aspect	Indication	Name	Rule number
8-L and 2658	Three amber lights in horizontal position over three amber lights in diagonal position to the left	Proceed at Restricted speed.	Restricting.	290

Cab signal	Two lights in diagonal position to the left	Proceed at Restricted speed.	Restricting	290

The controlling circuits of the wayside and cab signals are so arranged that when an east-bound train is occupying track No. 2 in the block of signal 2658, and the route is lined for movement from track No. 1 to track No. 2 through crossover 13, signal 2658, signal 8-L, and the cab signal of a following train will indicate Restricting.

This carrier's operating rules read in part as follows:

DEFINITIONS

* * *

Restricted Speed--Not exceeding 15 miles per hour prepared to stop short of train, obstruction or switch not properly lined and to look out for broken rail.

16. Communicating Signals

Note--The signals prescribed are illustrated by "o" for short sounds; * * *

SOUND	INDICATION
(a) o o	When standing--start.
(b) o o	When running--stop at once.
* * *	* * *

Use of Signals

35. The following signals will be used by flagmen:

Day signals--A red flag, torpedoes and fusees.
* * *

Observation of Trains for Defects

76a. Engine and train crews as frequently as opportunity permits must observe engines and cars in their train, moving and standing, to detect any conditions that might interfere with the safe movement of trains.

Movement of Trains

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 fusees.

When recalled and safety to the train will permit, he may return.

When conditions require, he will leave the torpedoes and a lighted fusee.

* * *

Note--When trains are operating under Automatic Block System Rules, the requirements of Rule 99, in so far as protecting against following trains is concerned, will have been complied with when full protection is afforded against trains moving at Restricted speed.

Automatic Block System

* * *

501a. Interlocking home signals governing the use of routes leading to a block will in addition govern the use of the block in direction for which traffic has been established for a train to the next block signal.

514. When cab signal indication changes to Restricting, a train or engine must reduce speed at once to not exceeding Restricted speed.

Supplemental instructions to operating, signal and interlocking rules read in part as follows:

Use of Signals

* * *

4045. * * * all members of engine and train crews must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

In the vicinity of the point of accident the maximum authorized speed was 70 miles per hour for the passenger train and 45 miles per hour for the freight train. Eastbound trains on tracks Nos. 1 and 2 between AO and AR, located, respectively, 5.5 miles east and 16.1 miles west of the point of accident, are restricted to a speed of 10 miles per hour when cab signal or fixed signal indicates Restricting.

Description of Accident

No. 72, an east-bound first-class passenger train, consisted of Diesel-electric units 5853A and 5844B, coupled in multiple-unit control, four mail cars, two parlor cars, one dining car, four coaches, and one parlor car, in the order named. All cars were of all-steel construction. This train, moving on track No. 2, passed SO interlocking, the last open station, at 10:28 a. m., 12 minutes late, and stopped with the rear end 205 feet east of signal 2656, which is located at the eastern limits of SO interlocking. About 4 minutes later it was struck by Extra 6444 East.

Extra 6444 East, an east-bound freight train, consisted of engine 6444, 84 cars and a caboose. This train entered the Pittsburgh Division at JD interlocking, 24.5 miles west of South Fork, at 8:17 a. m. At Conemaugh, 17.6 miles east of JD tower, a helper engine consisting of Diesel-electric units 9519A, 9519B and 9518A, coupled in multiple-unit control, was coupled to the caboose of Extra 6444 East. The brakes of all units were then arranged to be under the control of the engineer of the first engine. After an air brake test was completed, this train proceeded eastward and it stopped at 10:28 a. m. on track No. 1 at signal 8-L, which indicated Stop. Soon afterward No. 72 passed on track No. 2. Then the route was lined for movement of Extra 6444 East from track No. 1 through an interlocked crossover to track No. 2, and, when signal 8-L indicated Restricting, this train proceeded eastward to track No. 2, passed signal 2653, which indicated Restricting, and while moving at an estimated speed of 12 miles per hour it struck the rear of No. 72.

The rear car of No. 72 was slightly damaged. The front end of engine 6444 was slightly damaged. There was no derailment and no damage to the track.

It was snowing at the time of the accident, which occurred at 10:33 a. m.

Discussion

The eleventh car of No. 72, coach 4399, was equipped with an automatic hot-journal-alarm system, which, when actuated, sounds the communicating whistle and illuminates a red indication light inside the coach. This system operates on a time cycle. The signal is on 3 seconds, off 6 seconds, on 3 seconds and off 48 seconds, and this cycle is repeated until the system is shut off. This system was not functioning properly, and the engineer made two unscheduled stops in response to the communicating signal whistle which was actuated by the hot-journal-alarm system. After each stop he received a proceed signal from a member of the train crew. When No. 72 was in the vicinity of AO Tower, 5.5 miles west of South Fork, the brakeman informed the conductor that the red light of the hot journal-alarm system was illuminated. This was an indication of an overheated journal on that car. After the accident occurred inspection disclosed that a wire attached to a journal-box switch was broken, and this condition caused intermittent operation of the system. Between AO Tower and South Fork the conductor transmitted stop signals three times to the engineer on the communicating signal system. He obtained no response to any of these signals and, when in the vicinity of SO Tower, he opened the emergency valve, which action brought the train to a stop about 10:29 a. m. The rear end of the rear car was 205 feet east of signal 2658, the eastern limits of SO interlocking. At 10:30 a. m. the rear end was struck by Extra 6444 East.

Extra 6444 East stopped at 10:28 a. m. on track No. 1 and west of signal 8-L, which was indicating Stop. Immediately afterward No. 72 passed on track No. 2. About 1 minute later signal 8-L indicated Restricting. The engineer sounded the engine whistle to recall the flagman from the west and the engineer on the helper engine at the rear of the train sounded almost immediately a proceed signal on the pneumatic horn. The operator at SO Tower instructed the engineer of the helper engine by trainphone that the route was lined for their movement. Engine 6444 was not equipped with trainphone apparatus. This train proceeded eastward, moved from track No. 1 through crossover 13 to track No. 2 where the engineer closed the throttle and made a brake application by use of the independent brake valve. The enginemen of the first engine were in their respective stations on the engine and were maintaining a lookout ahead. The cab-signal system functioned properly and the movement east of signal 8-L was being made under a Restricting indication. The engineer said it was snowing, and visibility was restricted to about 1,000 feet.

Because of track curvature the engineer was relying on the fireman to inform him of conditions ahead. The fireman said that when the engine was about 120 feet west of signal 2658 he informed the engineer that this signal indicated Restricting, and immediately thereafter he called a warning to the engineer that there was a passenger train ahead. The engineer placed the automatic brake valve in the emergency position, but the distance was insufficient to stop short of the preceding train. The engineer of Extra 6444 East said he thought the speed of his train did not exceed 10 miles per hour and that he was operating under control. The engineer of the helper engine and an assistant road foreman of engines who was on the helper engine said that Extra 6444 East attained a maximum speed of 15 miles per hour after it passed signal 8-L, and that it maintained this speed, as indicated by the speedometer, until the brakes were applied in emergency.

The flagman of No. 72 said that when his train stopped he walked about 100 feet west of the rear of his train, then he was recalled by a hand signal from the conductor. He was on the rear platform of the last car when he observed Extra 6444 East approaching at a distance of about 1,000 feet. He ran toward the approaching train and gave stop signals with a red flag, but the stop signals were not acknowledged. Under the flagging rule of this railroad, full protection in automatic block-signal territory consists of providing flag protection a distance sufficient only for stopping a following train which is moving at restricted speed. In this territory a train moving under a Restricting indication must not exceed a speed of 10 miles per hour, and the train must be so operated that it can be stopped short of a preceding train or obstruction.

Cause

It is found that this accident was caused by failure to operate the following train in accordance with signal indications.

Dated at Washington, D. C., this tenth day of March, 1949.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.