

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3641
THE PENNSYLVANIA RAILROAD COMPANY
IN RE ACCIDENT
NEAR BUCYRUS, OHIO, ON
JULY 11, 1955

SUMMARY

Date: July 11, 1955

Railroad: Pennsylvania

Location: Bucyrus, Ohio

Kind of accident: Rear-end collision

Trains involved: Freight : Freight

Train numbers: Extra 9848 West : Extra 5752 West

Engine numbers: Diesel-electric units 9848A and 9858A : Diesel-electric units 5752B and 5752A

Consists: 70 cars, caboose : Caboose

Estimated speeds: 7 m. p. h. : 30 m. p. h.

Operation: Signal indications

Tracks: Three; tangent; 0.16 percent descending grade westward

Weather: Clear

Time: 10:40 a. m.

Casualties: 7 injured

Cause: Failure to operate following train in accordance with signal indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3641

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

THE PENNSYLVANIA RAILROAD COMPANY

August 29, 1955

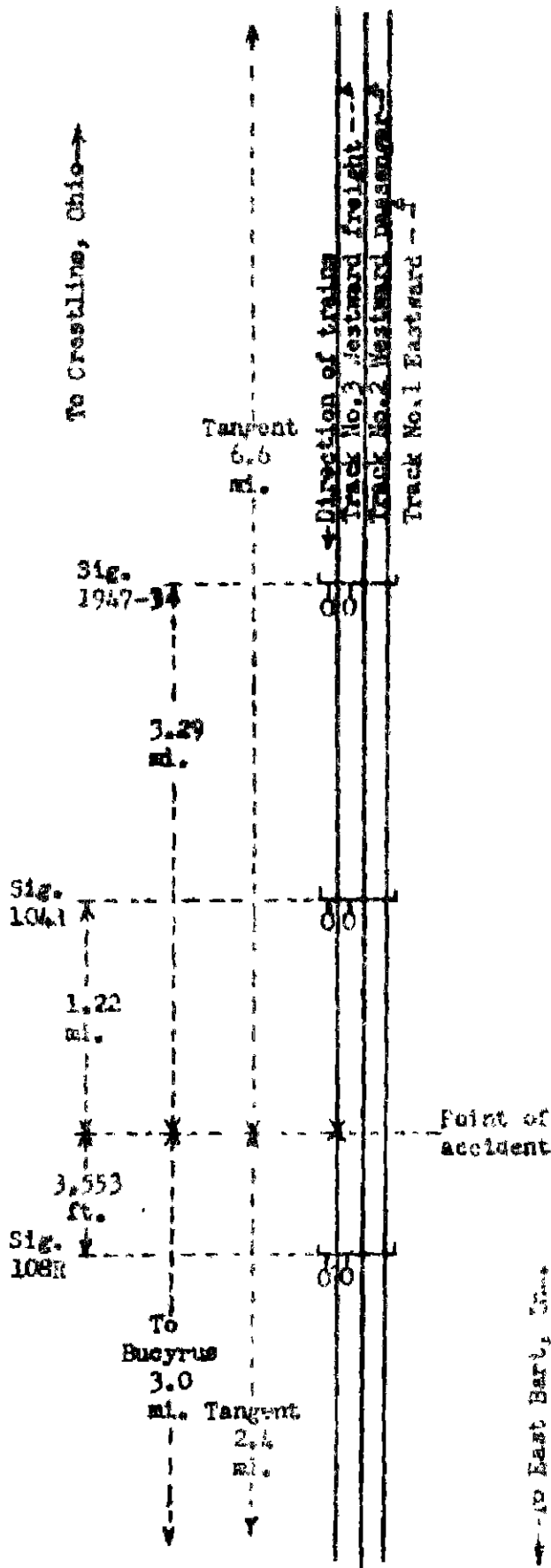
Accident near Bucyrus, Ohio, on July 11, 1955, caused
by failure to operate the following train in
accordance with signal indications.

REPORT OF THE COMMISSION¹

CLARKE, Commissioner:

On July 11, 1955, there was a rear-end collision
between two freight trains on the Pennsylvania Railroad
near Bucyrus, Ohio, which resulted in the injury of seven
train-service employees.

¹
Under authority of section 17 (2) of the Interstate Com-
merce Act the above-entitled proceeding was referred by the
Commission to Commissioner Clarke for consideration and
disposition.



- Division Post 1.7 mi.
- Crestline, Ohio 2.5 mi.
- West Yard 7.0 mi.
- Point of accident 3.0 mi.
- Bucyrus, Ohio 32.5 mi.
- Division Post 0.1 mi.
- East Bart, Ind. 0.1 mi.

Report No. 3047
 Pennsylvania Railroad
 Near Bucyrus, Ohio
 July 11, 1955

Location of Accident and Method of Operation

This accident occurred on that part of the Fort Wayne Division extending between Division Post, near Crestline, Ohio, and Division Post, near East Hart, Ind., 246.7 miles. In the vicinity of the point of accident this is a three-track line. The main tracks from south to north are designated as No. 1, eastward; No. 2, westward passenger; and No. 3, westward freight. On track No. 1 trains moving with the current of traffic are governed by signal indications. On tracks Nos. 2 and 3 trains moving in either direction are governed by signal indications. The accident occurred on track No. 3 at a point 9.5 miles west of Crestline and 3.9 miles east of the station at Bucyrus. The tracks are tangent throughout a distance of 6.6 miles immediately east of the point of accident and 2.4 miles westward. Throughout a distance of more than 1 mile immediately east of the point of accident the grade averages 0.13 percent descending westward, and it is 0.16 percent descending westward at that point.

Automatic signal 1947-3 and semi-automatic signals 104R and 108R, governing west-bound movements on track No. 3, are located, respectively, 3.29 miles east, 1.22 miles east, and 3,553 feet west of the point of accident. These signals are of the position-light type and are continuously lighted. 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>
1947-3	Three amber lights in diagonal position to the right	Proceed prepared to stop at next signal. Train exceeding Medium speed must at once reduce to that speed.	Approach.
104R	Three amber lights in horizontal position over one amber light	Stop, then proceed at Restricted speed.	Stop-and-proceed.

104R Three amber lights Stop. Stop-signal.
 in horizontal
 position

These signals form part of a traffic-control system. The control machine is located at Crestline. The controlling circuits are so arranged that when a west-bound train passes signal 104R while the indication of the signal is less restrictive than Stop, the indication will change to Stop. If the code is then transmitted to cause the signal to display an aspect to proceed before the train clears the block of the signal, the indication will change from Stop to Stop-then-proceed-at-restricted-speed. When the block of signal 1947-3 is unoccupied and signal 104R indicates either Stop or Stop-then-proceed-at-restricted-speed, signal 1947-3 indicates Proceed-prepared-to-stop-at-next-signal.

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

DEFINITIONS

Medium Speed--Not exceeding one-half the speed authorized for passenger trains but not exceeding 30 miles per hour.

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.

34. Immediately upon seeing a fixed signal all members of engine and train crew must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

35. The following signals will be used by flagmen:
Day signals--A red flag, torpedoes and fuseses.

* * *

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 fuses.

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

* * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. * * *

* * *

Note--When trains are operating under automatic block signal system rules, the requirements of Rule 99, in so far as protection against following trains is concerned, will have been complied with when full protection is afforded against trains moving at Restricted speed.

The maximum authorized speeds are 50 miles per hour for freight trains and 30 miles per hour for Diesel-electric locomotives consisting of more than one unit when operated from the rear unit.

Description of Accident

Extra 9848 West, a west-bound freight train, consisted of Diesel-electric units 9848A and 9858A, coupled in multiple-unit control, 71 cars, and a caboose. This train departed from West Yard, 2.5 miles west of Crestline, at 5:40 a. m. It passed signal 1947-3, which indicated Proceed, passed signal 104R, which indicated Proceed-prepared-to-stop-at-next-signal, and stopped on track No. 3

at signal 108R about 9:50 a. m. The rear end was approximately 1.14 miles west of signal 104R. Six cars were set off and five cars were added to the front end of the train. The train departed from this point about 10:37 a. m. Several minutes later, after the train had moved about 400 feet and was moving at a speed of about 7 miles per hour, the rear end was struck by Extra 5752 West.

Extra 5752 West, a west-bound freight train, consisted of Diesel-electric units 5752B and 5752A, coupled in multiple-unit control, and a caboose. The locomotive was headed eastward. This train departed from West Yard at 10:30 a. m. It passed signal 1947-3, which indicated Proceed-prepared-to-stop-at-next-signal, passed signal 104R, which indicated Stop-then-proceed-at-restricted-speed, and while moving on track No. 3 at an estimated speed of 30 miles per hour it struck the rear end of Extra 9848 West.

The caboose, the rear three cars, and the east truck of the fourth rear car of Extra 9848 West, and the first Diesel-electric unit of Extra 5752 West were derailed. Extra 5752 West stopped with the west end of the locomotive 262 feet west of the point of collision. The caboose and the rear two cars of Extra 9848 West were demolished, and the third and fourth rear cars were somewhat damaged. The west end of the first Diesel-electric unit of Extra 5752 West was badly damaged.

The conductor and the flagman of Extra 9848 West and the engineer, the fireman, the conductor, the front brakeman, and the flagman of Extra 5752 West were injured.

The weather was clear at the time of the accident, which occurred about 10:40 a. m.

Diesel-electric unit 5752B is a booster, or "B", unit and is not equipped with a control compartment. However, inside the door at the end there is an emergency brake valve and a valve for sounding the communicating signal whistle in the control compartment of the locomotive.

Diesel-electric unit 5752A is a lead, or "A", unit. It is equipped with a safety-control feature actuated by a pedal. At the time of the accident the control compartment was at the east end. The total length of the two units coupled is 139 feet 2 inches.

The caboose of Extra 9848 West was of all-steel construction.

Discussion

When Extra 9848 West stopped at signal 108R, the engineer, the conductor, and the front brakeman were on the locomotive. The flagman was in the caboose. The flagman said that after the train stopped he proceeded to a point about 500 feet east of the caboose and placed torpedoes on the rail. After cars were added to the front end the train was held for some time at signal 108R. During this time the conductor proceeded to the rear end. The flagman said that when he observed the conductor approaching he assumed that the train would soon proceed. He removed the torpedoes from the rail and met the conductor a short distance east of the caboose. The conductor handed him the waybills for the train and took his flagging equipment. The flagman then entered the caboose. He said that it was customary in similar circumstances for him to list the waybills and for the conductor to assume the duties of flagman while the train was standing, and he assumed that the conductor did so on this occasion. He did not see the conductor after he entered the caboose. He said that several minutes later he heard the conductor enter the caboose, but at this time he was engaged in listing the waybills. And he did not know whether the conductor entered before or after the train began to move. He was not aware of the approach of Extra 5752 West before the collision occurred. The conductor was so seriously injured in the accident that he could not be questioned during this investigation.

At the time the accident occurred the crew of Extra 5752 West was en route from West Yard to Bucyrus to handle an east-bound train from the latter point. The locomotive was moving backward so that it would be headed in the proper direction for the east-bound trip. The engineers were in the control compartment at the east end of the locomotive, and the members of the train crew were in the caboose. Although there is a communicating signal valve and an emergency brake valve inside the door on the west end of "B" unit 5752B, no employee was riding in that unit. The engineer said that there was a considerable amount of smoke in the exhaust from the Diesel engines. A wind was blowing from the north, and after leaving West Yard he found that smoke and fumes from the exhaust were trailing along the south side of the control compartment to the extent that it was difficult for him to maintain a lookout in the direction of movement and to see the signals governing west-bound movements on track No. 3. Because of these conditions he directed the fireman to call the signals to him and told the fireman that he would watch for north-bound highway traffic at the rail-highway grade crossings en route. After this arrangement was made he did not see any of the signals which the train passed. He said that the fireman called each signal as indicating Proceed. He did not see Extra 9848 West before the collision occurred. The fireman said he was aware that the engineer was depending upon him to call the signals, and he said that each signal which the train passed after entering track No. 3 indicated Proceed. He did not see the rear end of Extra 9848 West before the collision occurred. He said that at this time he was watching for signal 106R and he thought he may not have been leaning out far enough to see the caboose ahead. In this vicinity the signals are mounted on signal bridges and are to the right of the track over which they govern. The employees in the caboose did not observe the aspects of any of the signals after the train departed from West Yard. The members of the crew estimated that the speed was about 30 miles per hour when the accident occurred.

The signal maintainer from Crestline arrived at the scene of the accident about 30 minutes after the accident occurred. He found that signal 1947-3 indicated Proceed-prepared-to-stop-at-next-signal and signal 104R indicated Stop. He then directed the operator of the traffic-control machine to transmit the code to cause signal 104R to display an aspect to proceed. When this was done the indication of the signal changed from Stop to Stop-then-proceed-at-restricted-speed, the proper indication while the block of the signal was occupied. Signal 1947-3 continued to indicate Proceed-prepared-to-stop-at-next-signal. Inspection and tests of the signal system were begun about 8 hours after the accident occurred. No condition was found which would have caused an improper operation of the signal system. Each change of aspect of signals 1947-3 and 104R was recorded during a period of 48 hours beginning about 6 hours after the accident occurred. At no time during this period did the signals function other than as intended. From the results of these tests and observations it appears that the fireman of Extra 5752 West was mistaken as to the aspects of these signals at the time his train passed them.

On July 14, 1955, observations were made to determine the distance at which signals 1947-3 and 104R were visible from an approaching west-bound locomotive. A Diesel-electric locomotive consisting of an "A" unit and a "B" unit were used during these observations. The control compartment was at the east end of the locomotive. The weather conditions were similar to those which prevailed at the time of the accident. When the observations were made a caboose and several cars were standing on track No. 3 at the point where the accident occurred, signal 1947-3 indicated Proceed-prepared-to-stop-at-next-signal, and signal 104R indicated Stop-then-proceed-at-restricted-speed. It was found that the aspect of signal 1947-3 became visible from both sides of the control compartment of the locomotive at a distance of 3,662 feet. After the locomotive passed a point 1,037 feet east of the signal the engineer's view of the signal became obstructed by the end of the "B" unit. The indication of signal 104R became visible from both sides of the control compartment at a distance of 3,738 feet, and from

this point the cars on track No. 3 were visible in the distance beyond the signal. When the locomotive reached a point 1,428 feet east of the signal the engineer's view of the signal became obstructed by the "B" unit. From this point the cars standing at the point of accident were visible from both sides of the control compartment. The locomotive was then moved to signal 104R. It was found that at this location it was necessary to lean out the windows farther than at previous locations in order to see the cars standing at the point of accident.

Cause

This accident was caused by failure to operate the following train in accordance with signal indications.

Dated at Washington, D. C., this twenty-ninth day of August, 1955.

By the Commission, Commissioner Clarke.

(SEAL)

HAROLD D. McCOY,
Secretary.