INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3337

SOUTHERN RAILWAY COMPANY

IN RE ACCIDENT

AT REMINGTON, VA., ON

JUNE 30, 1950

SUMMARY

Date:	June 30, 1950	
Railroad:	Southern	
Location:	Remington, Va.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 2953 South	: Extra 4235 South
Engine numbers:	C. & O. 2953	: Diesel-electric units 4235A, 4358B and 6118A
Consists:	58 cars, caboose	: 66 cars, caboose
Estimated speeds:	Standing	: 20 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system	
Tracks:	Double; tangent; 0.57 percent descending grade southward	
Weather:	Foggy	
Time:	6:27 a. m.	
Casualties:	3 injured	
Cause:	Failure to operate following train in accordance with signal indications	

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3337

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

SOUTHERN RAILWAY COMPANY

August 31, 1950

Accident at Remington, Va., on June 30, 1950, caused by failure to operate the following train in accordance with signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On June 30, 1950, there was a rear-end collision between two freight trains on the Southern Railway at Remington, Va., which resulted in the injury of three employees.

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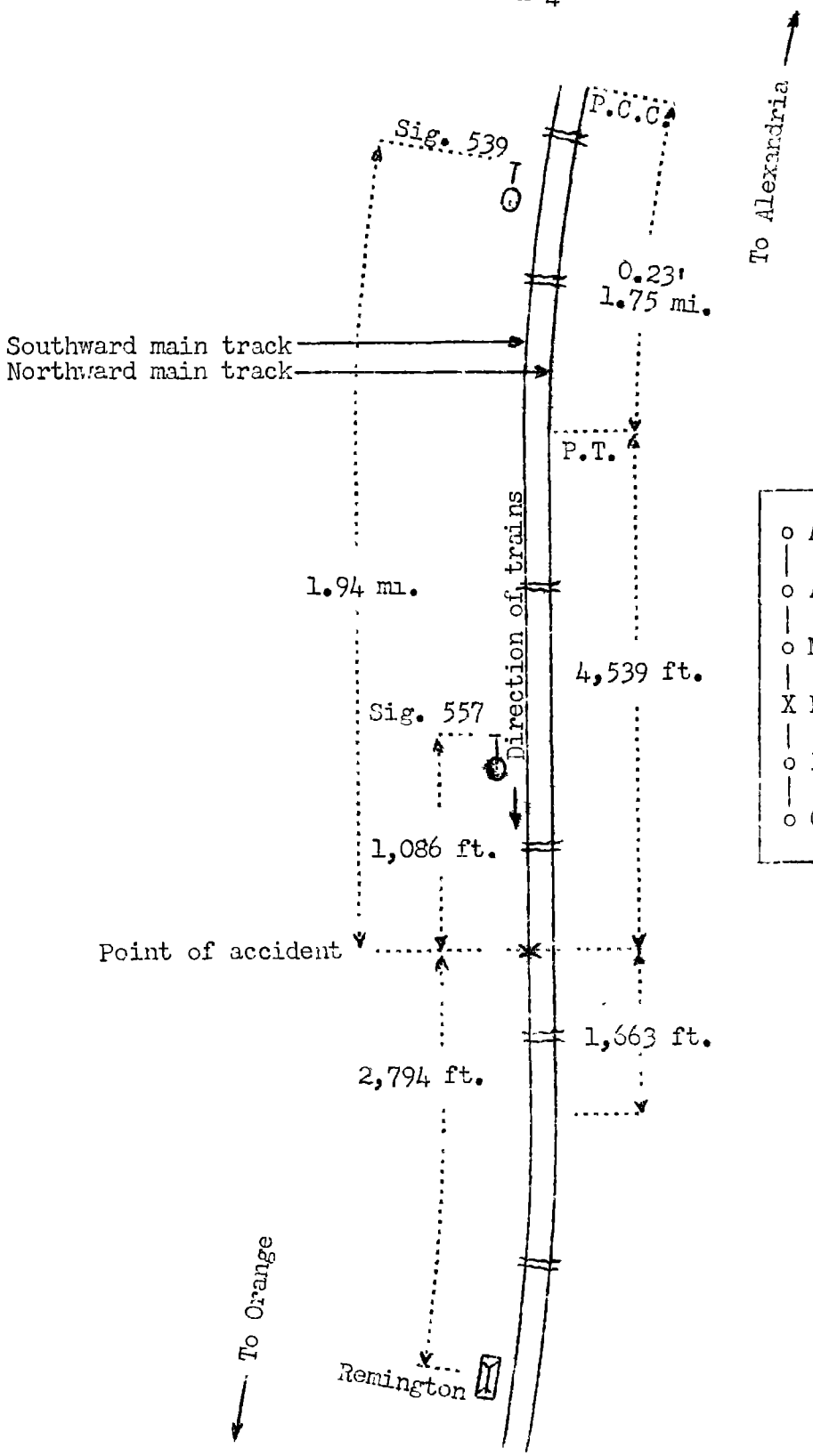
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Report No. 3337
Southern Railway
Remington, Va.
June 30, 1950

Location of Accident and Method of Operation

This accident occurred on that part of the Washington Division extending between A. F. Tower, Alexandria, and Orange, Va., 75.6 miles, a double-track line, over which trains moving with the current of traffic are operated by timetable, train orders and an automatic block-signal system. Trains of the Chesapeake and Ohio Railway, hereafter referred to as the C.& O., regularly are operated over this portion of the Southern Railway. The accident occurred on the southward main track at a point 46.67 miles south of A.F. Tower and 2,794 feet north of the station at Remington. From the north there is a compound curve to the left, having a maximum curvature of 0°23', 1.75 miles in length, then a tangent 4,539 feet to the point of accident and 1,663 feet southward. The grade for south-bound trains varies between 0.57 percent and 1.07 percent descending throughout a distance of 1.37 miles immediately north of the point of accident, and is 0.57 percent descending at that point.

Automatic block signals 539 and 557, governing south-bound movements on the southward main track, are located, respectively, 1.94 miles and 1,086 feet north of the point of accident. These signals are of the color-light type and are continuously lighted. Each signal displays three aspects. The aspects applicable to this investigation and their corresponding indications and names are as follows:

Aspect	Indication	Name
Red	STOP: THEN PROCEED AT RESTRICTED SPEED	STOP AND PROCEED SIGNAL
Yellow	PROCEED, PREPARING TO STOP AT NEXT SIGNAL. TRAIN EXCEEDING MEDIUM SPEED MUST AT ONCE REDUCE TO THAT SPEED	APPROACH SIGNAL
Green	PROCEED	CLEAR SIGNAL

The controlling circuits of these signals are so arranged that, when the block of signal 557 is occupied, signal 539 indicates Approach and signal 557 indicates Stop and Proceed.

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

DEFINITIONS

Medium Speed.--One-half authorized speed, at point involved, but not exceeding 30 miles per hour.

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

11. A train finding a fusee burning on or near its track must stop and extinguish the fusee, and then proceed with caution prepared to stop short of train or obstruction.

* * *

34. The following signals will be used by flagmen:

Day signals (A red flag,
(Torpedoes and
(Fusees.

* * *

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 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. By night, or by day, when the view is obscured, lighted fusees must be thrown off at proper intervals.

* * *

The maximum authorized speeds were 40 miles per hour for the first train and 60 miles per hour for the second train.

Description of Accident

Extra 2953 South, a south-bound C.& O. freight train, consisted of engine C.& O. 2953, 58 cars and a caboose. This train departed from Manassas, the last open office, 23.17 miles north of the point where the accident occurred, at 5:48 a. m., and stopped about 6:23 a. m., with the caboose standing 2,794 feet north of the station at Remington and 1,086 feet south of signal 557. About 4 minutes later the rear end was struck by Extra 4235 South.

Extra 4235 South, a south-bound Southern freight train, consisted of Diesel-electric units 4235A, 4358B and 6118A, coupled in multiple-unit control, 66 cars and a caboose. This train departed from Manassas about 5:55 a. m., passed signal 539, passed signal 557, which indicated Stop and Proceed, and while moving at an estimated speed of 20 miles per hour it struck the rear end of Extra 2953 South.

The caboose and the rear six cars of Extra 2953 South were derailed. The caboose and the rear five cars were badly damaged, and the sixth car from the caboose was somewhat damaged. The Diesel-electric units and the first six cars of Extra 4235 South were derailed. The first Diesel-electric unit stopped with the front end 279 feet south of the point of accident and about 6 feet east of the center-line of the track. It was somewhat damaged. The second and third Diesel-electric units stopped in line with the track and were slightly damaged. The first four cars were somewhat damaged.

It was foggy at the time of the accident, which occurred at 6:27 a. m.

The engineer, the fireman, and the conductor of Extra 4235 South were injured.

Discussion

The rules governing operation on this line provide that 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, and, when necessary, must display lighted fusees. If a train passes a signal indicating Approach, the speed must immediately be reduced to not exceeding one-half the authorized speed but not more than 30 miles per hour and, in addition, be so controlled that the train can be stopped short of the

next signal. A train must stop at a signal indicating Stop and Proceed, then it may proceed, but the speed must be so controlled that the train can be stopped short of a preceding train.

As Extra 2953 South was approaching the point where the accident occurred the enginemen and the front brakeman were on the engine, and the conductor and the flagman were in the caboose. The enginemen said that, because of the fog, the aspects of signals 539 and 557 were not visible at distances greater than about 800 feet. Each of these signals indicated Proceed as the train approached. The conductor and the flagman said that each signal indicated Stop and Proceed when the rear of the train passed the signals. The speed of the train was reduced as it approached Remington, and both the conductor and the flagman said that a lighted red fusee was thrown off on the west side of the southward main track at a point about 900 feet north of signal 557. When the train stopped at Remington, where the tender was to be supplied with water, they observed the lighted fusee from the rear of the train. The conductor then proceeded southward to inspect the rear portion of the train, and the flagman proceeded northward with flagging equipment to provide protection. A short time after the train stopped they heard the sound of the Diesel-electric units of Extra 4235 South, and they said that soon afterward they observed that train approaching at a distance of 3,000 to 3,500 feet. The flagman continued northward and gave stop signals with a lighted fusee. The signals were not acknowledged by the engineer of Extra 4235 South. The flagman said he had reached a point about 700 feet north of the rear of his train when the front end of Extra 4235 South passed. The flagman said that after the collision occurred he proceeded northward along the west side of the train of Extra 4235 South and observed that the fusee which was thrown off north of signal 557 remained lighted several minutes after the train stopped.

As Extra 4235 South was approaching the point where the accident occurred the speed was about 45 miles per hour. The headlight was lighted. The engineer and the fireman were maintaining a lookout ahead from their positions in the control compartment at the front of the first Diesel-electric unit, the conductor and the front brakeman were in the control compartment at the rear of the third Diesel-electric unit, and the flagman was in the caboose. The brakes of this train had been tested and functioned properly when used en route. The enginemen said that signal 539 indicated Proceed. They said that the aspect of the signal was somewhat obscured by fog but it was clearly visible throughout a distance of several hundred feet. They said they did not observe a fusee between signal 539 and signal 557, and, because of the fog,

they could not determine the aspect of signal 557 until the front of their train was within about 750 feet of the signal. When they observed that the signal indicated Stop and Proceed, the engineer immediately initiated an emergency brake application. The enginemen then observed the stop signals being given by the flagman of Extra 2953 South from a point south of signal 557, but the engineer did not acknowledge the signals. Both the engineer and the fireman alighted from the engine before the collision occurred. They estimated that the speed of the train was reduced to about 20 miles per hour when the collision occurred. The conductor and the front brakeman said they did not observe the aspect of signal 539 or signal 557 or the stop signals given by the flagman. They did not observe a fusee north of signal 557, but they said that after the train stopped they alighted on the east side of the train and they did not think a fusee on the west side of the train would have been visible to them. The flagman of Extra 4235 South did not observe the aspect of signal 539, and he was unaware of anything being wrong until the brakes were applied in emergency.

In the vicinity of the point of accident this line is signaled for movements with the current of traffic only. Polarized alternating-current track circuits are used. There are no line control circuits used in this system, and only two relays at each signal are required. The track relay at signal 539 controls both the green and the yellow aspects of the signal, and the second, or Z, relay, energized only when the track relay is energized, controls the red aspect when the relay is in the de-energized position. The Z relay also is used as a pole changer to reverse the polarity of the track circuit current for the circuit comprising the block in approach to signal 539. When signal 557, the next signal south of signal 539, indicates either Proceed or Approach, and the block of signal 539 is unoccupied, the track circuit current energizing the track relay at signal 539 is of such polarity that the contacts controlling the green aspect are closed in normal position and the signal indicates Proceed. When signal 557 indicates Stop and Proceed, and the block of signal 539 is unoccupied, the polarity of the track circuit current is reversed and the contacts of the track relay controlling the yellow aspect of signal 539 are closed in the reversed position and the signal indicates Approach. When the block of signal 539 is occupied, both the track relay and the Z relay are de-energized and the signal indicates Stop and Proceed.

The signal maintainer and the signal supervisor arrived at the scene of the accident about 8:15 a. m. They said that immediately after they arrived at the scene of the accident they installed a portable telephone for communication with the train dispatcher. The signal maintainer proceeded northward to signal 539, which indicated Stop and Proceed. He then proceeded to the next signal north of signal 539, which indicated Approach. He said that he did not repair or adjust any part of the signal system. When Extra 4235 South was moved northward from the block of signal 539, two brakemen were riding near the south end of the train when it passed the signal. Each of these employees and the signal supervisor who was in that vicinity said that after the south end of the train passed the signal it indicated Approach. The signal maintainer and the signal supervisor said that no repairs to or adjustments of the signal system were made.

Tests of the signal system were begun about 3 hours after the accident occurred by forces of the carrier's signal department. The cases housing the relays and other apparatus were locked. The operating characteristics of all relays were within the limits within which they were designed to operate and all relays were sealed. There was no condition found which could cause an improper aspect to be displayed either by signal 557 or signal 539.

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 thirty-first day of August, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.