

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3519
SOUTHERN RAILWAY COMPANY
IN RE ACCIDENT
AT MANASSAS, VA., ON
JUNE 3, 1953.

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SUMMARY

Date: June 3, 1953

Railroad: Southern

Location: Manassas, Va.

Kind of accident: Rear-end collision

Trains involved: Freight : Passenger

Train numbers: 98 : 30

Engine numbers: C. & O. Diesel- : Diesel-electric
electric units units 2915 and
5806, 5848 and 2916
5858

Consists: 74 cars, caboose : 13 cars

Estimated speeds: Standing : 20 M.P.H

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

Tracks: Double; 0°24' curve; 0.223 percent
ascending grade northward

Weather: Clear

Time: 5.25 a.m.

Casualties: 2 killed; 42 injured

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

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3519

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

SOUTHERN RAILWAY COMPANY

July 2, 1953

Accident at Manassas, Va., on June 3, 1953, caused by
failure to operate the following train in accordance
with signal indications.

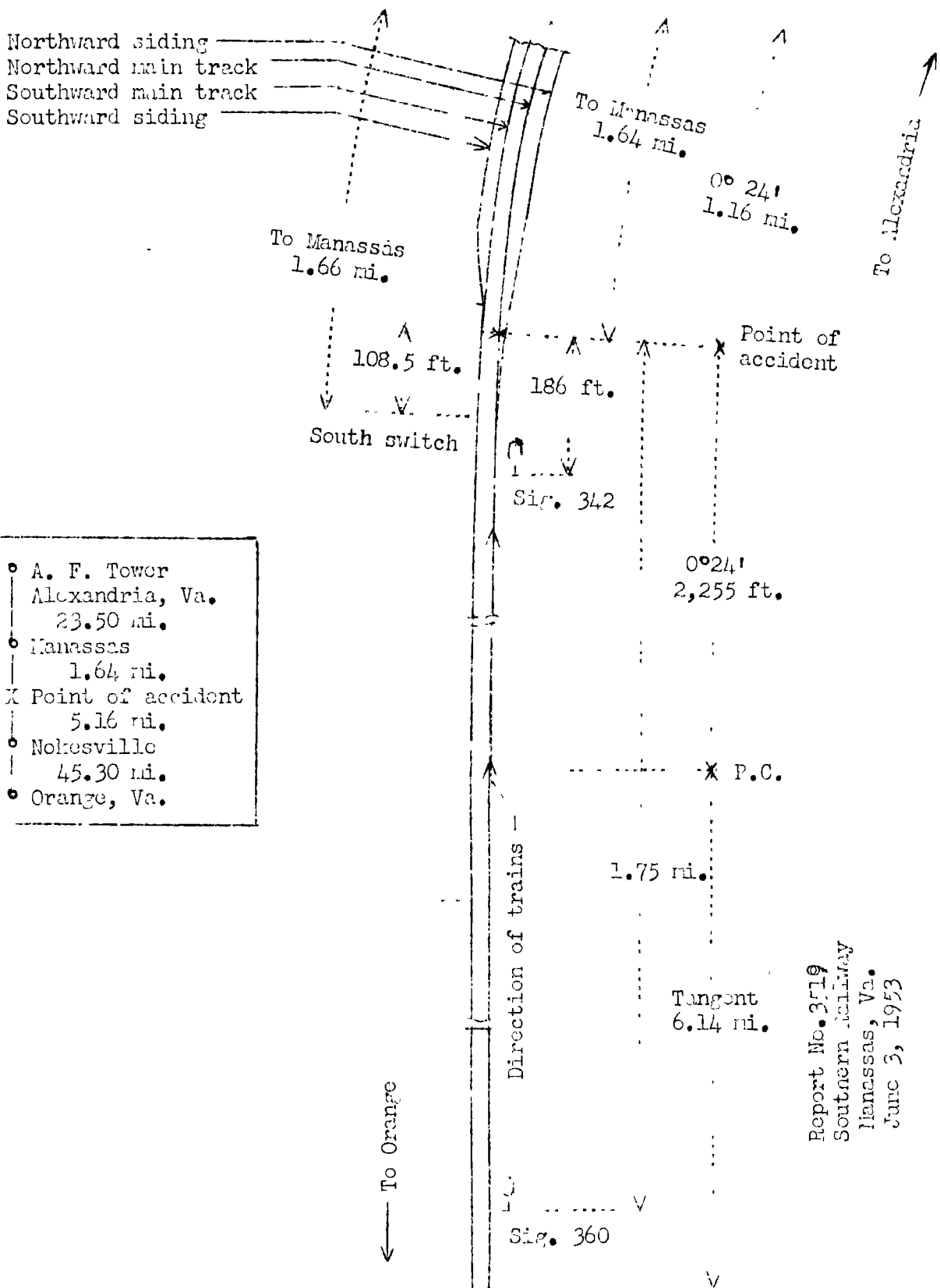
REPORT OF THE COMMISSION ¹

PATTERSON, Commissioner:

On June 3, 1953, there was a rear-end collision between a freight train and a passenger train on the Southern Railway at Manassas, Va., which resulted in the death of 2 train-service employees, and the injury of 40 passengers, 1 person carried under contract and 1 railway-mail clerk.

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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 Patterson for consideration and disposition.



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|---|-------------------|-----------------|-----------|
| ○ | A. F. Tower | Alexandria, Va. | 23.50 mi. |
| ○ | Manassas | | 1.64 mi. |
| X | Point of accident | | 5.16 mi. |
| ○ | Nokesville | | 45.30 mi. |
| ○ | Orange, Va. | | |

Report No. 3719
 Southern Railway
 Manassas, Va.
 June 3, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the Washington Division extending between Orange and A. F. Tower, Alexandria, 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 main tracks from east to west are designated as northward main and southward main. Within yard limits at Manassas, 52.1 miles north of Orange, a siding parallels the northward main track on the east. The south switch of this siding is 1.66 miles south of the station. The accident occurred on the northward main track near the south switch of the siding, 50.46 miles north of Orange and 1.64 miles south of the station at Manassas. From the south on the northward main track there are, in succession, a tangent 6.14 miles in length, and a compound curve to the right, having a maximum curvature of 0°24', 2,255 feet to the point of accident and 1.16 miles northward. The grade for northbound trains varies between 0.076 and 1.01 percent ascending throughout a distance of 3,200 feet immediately south of the point of accident and is 0.223 percent ascending at that point.

Automatic block signals 360 and 342, governing northbound movements on the northward main track, are located, respectively, 1.75 miles and 186 feet south 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:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
360	Yellow	PROCEED, PREPARING TO STOP AT NEXT SIGNAL. TRAIN EXCEEDING MEDIUM SPEED MUST AT ONCE REDUCE TO THAT SPEED	APPROACH SIGNAL
342	Red over yellow disc with letter "G" in black	(For heavy passenger and tonnage freight trains) PROCEED AT RESTRICTED SPEED	GRADE SIGNAL
		(For trains other than heavy passenger and tonnage freight trains) STOP; THEN PROCEED AT RESTRICTED SPEED	STOP AND PROCEED SIGNAL

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The controlling circuits of these signals are so arranged that, when the block of signal 342 is occupied, signal 360 indicates Approach and signal 342 indicates Proceed at Restricted Speed for heavy passenger and tonnage freight trains, or Stop and Proceed for trains other than heavy passenger and tonnage freight trains.

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.

34. The following signals will be used by flagmen:

Day Signals (A red flag,
(Torpedoes and
(Fuses.

* * *

86. Unless otherwise provided, an inferior train must be clear at the time a first class train in the same direction is due to leave the next station in the rear where time is shown.

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. * * *

* * *

The maximum authorized speed for the passenger train was 75 miles per hour.

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Description of Accident

No. 98, a north-bound second-class C. & O. freight train, consisted of Diesel-electric units 5806, 5848 and 5858, coupled in multiple-unit control, 74 cars and a caboose. This train departed from Orange, the last open office, at 3.40 a. m., 40 minutes late, passed signal 360, which indicated Approach, and stopped at signal 342, which indicated Stop and Proceed. It then proceeded and stopped on the northward main track within yard limits at Manassas about 5.12 a. m., with the front end of the locomotive near the rear end of a preceding freight train and the rear end of the caboose 108.5 feet north of the south siding-switch. About 13 minutes later the rear end was struck by No. 30.

No. 30, a north-bound first-class passenger train, consisted of Diesel-electric units 2915 and 2916, coupled in multiple-unit control, one express-refrigerator car, one express car, one mail car, four express cars, three coaches, one dining car and two sleeping cars, in the order named. The first car was of steel-underframe construction, and the other cars were of conventional all-steel construction. This train departed from Orange at 4.24 a. m., 10 minutes late, passed signals 360 and 342, and while moving at an estimated speed of 20 miles per hour it struck the rear end of No. 98

The caboose and the rear truck of the seventy-fourth car of No. 98 were derailed. The caboose was destroyed and the seventy-fourth car was badly damaged. As a result of the impact of the collision, the underframe of the caboose overrode the underframe at the front end of the first Diesel-electric unit of No. 30 and telescoped the control compartment. The control compartment was demolished and the unit was otherwise badly damaged. This unit stopped with the front end on the southward main track and about 45 feet north of the point of accident, and the rear end on the track structure of the northward main track. All wheels except the front wheels of the rear truck of this unit were derailed. No other equipment of either train was derailed.

The engineer and the fireman of No. 30 were killed.

The weather was clear at the time of the accident, which occurred about 5.25 a. m.

The first Diesel-electric unit of No. 30 was of the 0-6-6-0 type and was provided with 24RL brake equipment. The regulating devices were adjusted to provide main reservoir pressure of 140 pounds and brake-pipe pressure of 90 pounds. An emergency brake valve was provided on the fireman's side of the control compartment.

Discussion

The operating rules of this carrier require that an inferior train must be clear at the time a first-class train in the same direction is due to leave the next station in the rear where time is shown. 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 fuses. When a train passes a signal indicating Approach, the speed must be immediately reduced to not exceeding one-half the authorized speed but not more than 30 miles per hour, and in addition, must be so controlled that the train can be stopped short of the next signal. A heavy passenger train may pass a grade signal displaying a red aspect but the speed must be so controlled that the train can be stopped short of a preceding train.

When No. 98 stopped at signal 342 about 4.55 a. m., the flagman proceeded southward a short distance, placed a torpedo on the rail and a lighted 10-minute fusee in the end of a tie of the northward main track, and returned to the caboose. The engineer said that his train proceeded on the main track at Manassas ahead of No. 30 because he thought he would have sufficient time to be into clear at a station north of Manassas. However, No. 98 was delayed at Manassas by the preceding north-bound freight train, because of a broken coupler knuckle. When No. 98 stopped at Manassas about 5.12 a. m., the engineer sounded the engine-whistle signal for the flagman to protect the rear of the train. The conductor and the flagman, who were in the caboose, consulted their timetables to ascertain the time No. 30 was due to pass Nokesville, 6.8 miles south of Manassas, the next station in the rear where time was shown. No. 30 was due to pass Nokesville at 5.20 a. m. The flagman proceeded southward about 5.15 a. m. to provide flag protection. His flagging equipment consisted of a red flag, torpedoes and red fusees. He said that when he reached a point about 1,000 feet from the rear of his caboose he observed No. 30 approaching at a distance

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of about 2,800 feet. He immediately lighted a fusee and gave stop signals. The flagman's signals were acknowledged by the proper whistle signal. The flagman said that he continued to give stop signals until No. 30 passed him. However, the speed of the train was not reduced and he received no further acknowledgment of his stop signals. The flagman said that the sounds of the Diesel engines indicated that the engines were working under load when No. 30 passed him. He observed that the engineer was in his proper position in the control compartment of the first Diesel-electric unit of No. 30 but he did not observe the fireman. He did not hear the explosion of the torpedo he had placed on the northward main track when No. 98 stopped at signal 342.

As No. 30 was approaching the point where the accident occurred the enginemen were on the locomotive and the members of the train crew were in various locations in the cars of the train. The brakes of this train had been tested at Monroe, 80.4 miles south of Orange, and had functioned properly when used en route. Surviving members of the crew had noticed nothing unusual in the handling of the train prior to the time the accident occurred. They said that there was no application of the brakes of their train before the accident occurred. They estimated that the speed of their train approaching signal 342 was from 30 to 35 miles per hour. The conductor of No. 98 said he was on the rear platform of the caboose as No. 30 was approaching, and when that train passed his flagman and he saw it was not going to stop he got off. He estimated that the speed of No. 30 was 20 miles per hour when the collision occurred.

The Diesel-electric units of Extra 4223 South, a south-bound freight train, were standing on the southward main track about 110 feet north of the rear end of the caboose of No. 98 when the collision occurred. The engineer of Extra 4223 South said he observed that No. 30 was not reducing speed approaching the point of accident. He immediately sounded warning blasts on the pneumatic horn. He said that the engineer of No. 30 did not acknowledge the warning signals.

Although no surviving members of the crew of No. 30 saw the aspects displayed by signals 360 and 342, they were observed to be functioning properly after the accident occurred. These signals displayed proper aspects under similar conditions of track occupancy for the preceding train, and they functioned properly when tested after the

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accident occurred. Under the conditions existing, the aspect displayed by signal 360 required that the speed of No. 30 be reduced at once to medium speed and to be so controlled that the train could be stopped before passing signal 342. The aspect of signal 342 required that the speed of a train passing without stopping be so controlled that it could be stopped short of a preceding train. No. 30 was considered to be a heavy passenger train and therefore the grade-signal provision at signal 342 applied for the movement of this train. The engineer and the fireman of No. 30 were killed and it could not be determined why the speed of the train was not controlled in accordance with the signal indications.

The brake equipment of the first Diesel-electric unit of No. 30 was damaged in the collision to the extent that it could not be tested and the position of the control levers at the time the accident occurred could not be determined. The fireman's emergency brake valve was damaged to the extent that it could not be determined whether any attempt had been made to operate it before the accident occurred. The air brakes of the second Diesel-electric unit and the cars of No. 30 were tested after the accident occurred and functioned properly except on the fourth car. Inspection of that car disclosed that the brake-cylinder pipe was broken. The break was new and apparently occurred as a result of the collision.

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 second day of July, 1953.

By the Commission, Commissioner Patterson.

GEORGE W. LAIRD,
Acting Secretary.

(SEAL)