

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3511
ATLANTIC COAST LINE RAILROAD COMPANY
IN RE ACCIDENT
AT FLEMING, GA., ON
JANUARY 17, 1953

SUMMARY

Date: January 17, 1953

Railroad: Atlantic Coast Line

Location: Fleming, Ga.

Kind of accident: Rear-end collision

Trains involved: Freight : Passenger

Train numbers: Extra 6237 North 8

Engine numbers: Southern Diesel- Diesel-electric
electric unit units 500, 546,
6237 and 521

Consists: 55 cars, caboose : 19 cars

Speeds: Standing : 56 m. p. h.

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

Tracks: Double, tangent, level

Weather: Foggy

Time: About 2 51 a. m.

Casualties: 2 killed, 85 injured

Cause: Failure to operate train No. 8 in
accordance with signal indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3511

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

ATLANTIC COAST LINE RAILROAD COMPANY

April 28, 1953

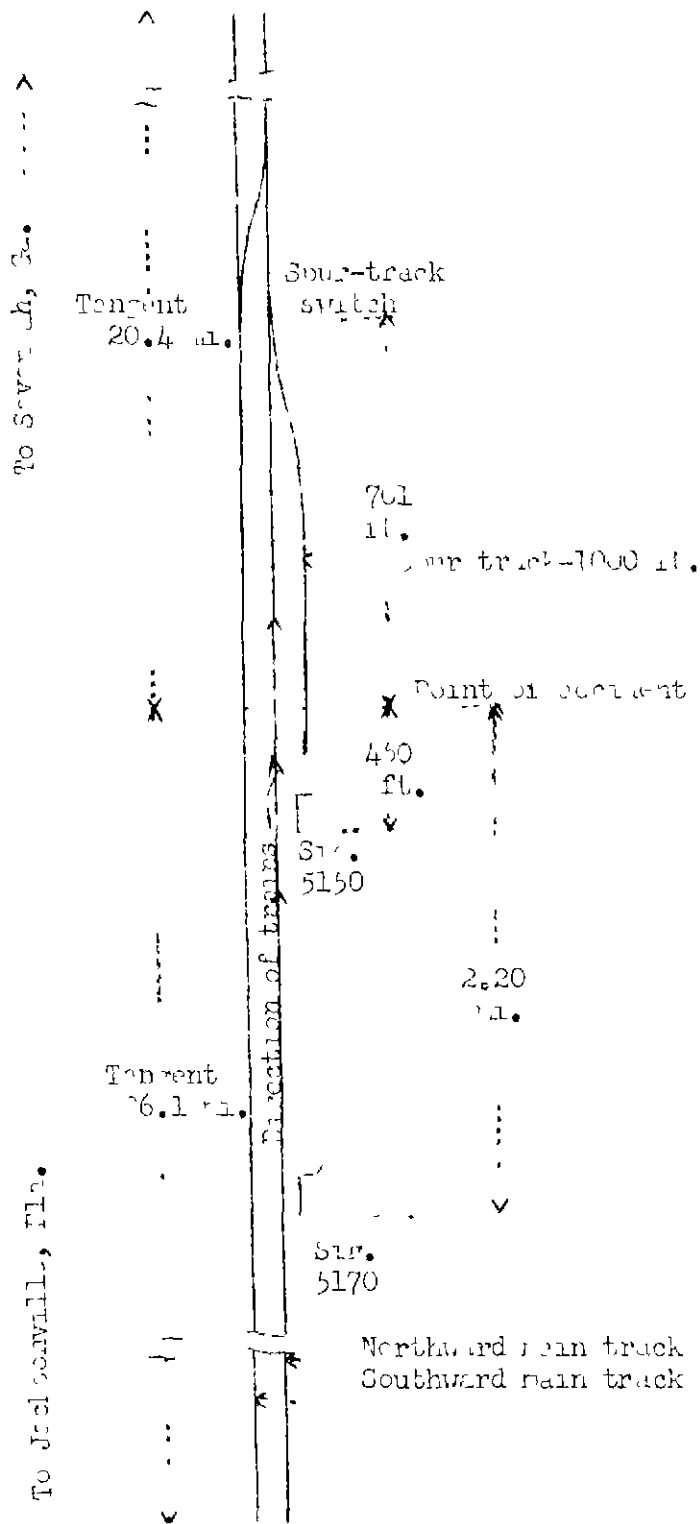
Accident at Fleming, Ga., on January 17, 1953, caused by
failure to operate train No. 8 in accordance with
signal indications.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On January 17, 1953, there was a rear-end collision between a freight train and a passenger train on the Atlantic Coast Line Railroad at Fleming, Ga., which resulted in the death of 2 train-service employees, and the injury of 81 passengers, 1 coach attendant, 2 dining-car employees, and 1 train-service employee.

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.



- Savannah, Ga.
- 11.2 mi.
- Burroughs
- 8.3 mi.
- Daniel
- 4.6 mi.
- Fleming
- (Point of accident)
- 14.0 mi.
- Waltherville
- 7.7 mi.
- Ludwick
- 6.4 mi.
- Docturborn
- .5 mi.
- Jasper, Ga.
- 25.2 mi.
- Jacksonville, Fla.

Report No. 2511
 Atlantic Coast Line Railroad
 Fleming, Ga.
 January 17, 1933

Location of Accident and Method of Operation

This accident occurred on that part of the Southern Division extending between Jacksonville, Fla., and Savannah, Ga., 151.9 miles. Trains of the Southern Railway regularly are operated over this portion of the Atlantic Coast Line. In the vicinity of the point of accident this is 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. At Fleming, Ga., 127.8 miles north of Jacksonville, a spur track 1,000 feet in length parallels the northward main track on the east. The switch is trailing-point for north-bound movements. The accident occurred on the northward main track at a point 701 feet south of the spur-track switch. The main tracks are tangent throughout a distance of 26.1 miles immediately south of the point of accident and 20.4 miles northward. The grade is practically level throughout a distance of several miles on each side of the point of accident.

Automatic signals 5170 and 5150, governing north-bound movements on the northward main track, are located, respectively, 2.20 miles and 450 feet south of the point of accident. These signals are of the upper-quadrant semaphore type, and each signal displays three aspects. They are approach lighted. The approach-lighting circuits extend about 1 mile in approach of each signal. Aspects applicable to this investigation and the corresponding indications and names are as follows:

<u>Signal</u>	<u>Day Aspect</u>	<u>Night Aspect</u>	<u>Indication</u>	<u>Name</u>
5170	Diagonal over number plate	Yellow	Proceed prepar- ing to stop at next signal. Train exceed- ing medium speed must at once reduce to that speed.	Approach.
5150	Horizontal over num- ber plate	Red	Stop; then proceed at restricted speed.	Stop and Proceed.

The controlling circuits are so arranged that when the block of signal 5170 is unoccupied and the block of signal 5150 is occupied, signal 5170 indicates Approach and signal 5150 indicates Stop and Proceed.

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

DEFINITIONS

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or switch not properly lined and to look out for broken rail, but not exceeding 20 miles per hour.

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

11. A fusee burning red on or near the track of an approaching train must not be passed until burned out, except in territory governed by block signals where train must stop, and then proceed at restricted speed to the next block signal.

15. The explosion of two torpedoes is a signal to reduce speed and look out for a train ahead or obstruction.
* * *

34. 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.

35. The following signals will be used by flagmen:

* * *

Night signals--A red light,
A white light,
Torpedoes and
Fusees.

73. Extra trains are inferior to regular trains.

86. An inferior train must clear the time of a first-class train * * * in the same direction not less than five minutes, but 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, except where automatic block system is in effect.

98. * * *

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 speeds are 79 miles per hour for passenger trains and 60 miles per hour for freight trains.

Description of Accident

Extra 6237 North, a north-bound Southern freight train, consisted of Southern Diesel-electric unit 6237, 56 cars, and a caboose. This train passed Doctortown, 28.1 miles south of Fleming and the last open office, at 1.38 a. m. and stopped at Fleming about 2.20 a. m., with the rear end of the train opposite signal 5150. It then moved northward and stopped a second time with the rear end 450 feet north of signal 5150. About 2:51 a. m. the rear end was struck by No. 8.

No. 8, a north-bound first-class Atlantic Coast Line passenger train, consisted of Diesel-electric units 500, 546, and 521, coupled in multiple-unit control, two sleeping cars, one baggage-dormitory car, eight coaches, one tavern car, one dining car, and six sleeping cars, in the order named. The first, second, fourth, twelfth, and the fourteenth to the nineteenth cars, inclusive, were of conventional all-steel construction. The other cars were of lightweight steel construction and were equipped with tightlock couplers. This train departed from Jacksonville at 1 06 a. m., 26 minutes late, passed Doctortown at 2:50 a. m., 24 minutes late, passed signal 5170, which should have indicated Approach, passed the flagman of Extra 6237 North, passed signal 5150, which indicated Stop and Proceed, and while moving at a speed of 56 miles per hour it struck the rear end of Extra 6237 North.

Extra 6237 North was moved forward about 50 feet by the force of the impact. The caboose and the rear six cars were destroyed, and one car which was standing on the spur track was extensively damaged. The Diesel-electric units and the first five cars of No. 8 were derailed. The first Diesel-electric unit stopped on its right side, about 56 feet west of the northward main track and approximately parallel to it. The rear end

was toward the north and 342 feet north of the point of accident. No other unit of the train overturned. The second Diesel-electric unit stopped with the front end on the track structure of the northward main track and 338 feet north of the point of accident. The rear end was toward the southeast at an angle of about 30 degrees to the track. The third unit stopped with the front end 20 feet west of the northward main track and 350 feet north of the point of accident, and the rear end about 15 feet east of the northward main track. The first car stopped at right angles to the tracks and against the rear end of the third Diesel-electric unit. The second car stopped with the front end near the front end of the first Diesel-electric unit and the rear end between the northward main track and the spur track. The other derailed cars stopped approximately in line with the track. The Diesel-electric units and the first four cars were badly damaged. The fifth car was slightly damaged.

The engineer and the fireman of No. 8 were killed. The conductor of Extra 6237 North was injured.

The weather was foggy at the time of the accident, which occurred about 2:51 a. m.

The first Diesel-electric unit of No. 8 was provided with D-22 brake equipment. The regulating devices were adjusted to provide main reservoir pressure of 140 pounds and brake-pipe pressure of 108 pounds. An emergency valve was provided on the fireman's side of the control compartment.

Discussion

As Extra 6237 North was approaching Fleming the engineer and the front brakeman were in the control compartment of the locomotive. The conductor and the flagman were in the caboose. The members of the crew said that the weather was foggy and that the fog was much more dense in some localities than in others. This train met a south-bound train moving on the southward main track a short distance south of Fleming. The crew of the south-bound train gave signals indicating that they had detected a defective condition on the train of Extra 6237 North. The flagman of Extra 6237 North immediately threw off a lighted red fusee, and the conductor applied the brakes of the train by use of the conductor's valve. When the train stopped, these employees observed that there was an overheated journal on the eighth car ahead of the caboose. The conductor instructed the flagman to go back and stop No. 8, and to instruct the engineer of No. 8 that after the car was set off

Extra 6237 North would proceed to Daniel, 4.6 miles north of Fleming, and let No. 8 pass at that point. At the same time he gave signals with a fusee for the engineer to move the train forward a short distance so that the car could be set off at the spur track. The flagman immediately proceeded southward. He said that when he reached a point a short distance south of signal 5150 he could see in the reflection of the light from the conductor's fusee that the semaphore arm was in horizontal position. At this time the caboose had passed the signal and the light in the signal had become extinguished. The flagman proceeded southward to a point about 1.1 miles south of signal 5150. After he placed two torpedoes and a lighted 10-minute red fusee, he returned to a point about 450 feet north of the torpedoes to await the approach of No. 8. About 10 minutes later he heard the sound of the Diesel engines of No. 8 and also the sound of a grade-crossing whistle signal sounded by the engineer of that train. He immediately lighted a red fusee and gave stop signals, and continued to give stop signals until the train passed. He said that the engineer of No. 8 did not acknowledge his signals, but as the train passed he observed that sparks were flying from the wheels and brake shoes. This indicated that the brakes were applied. He heard the explosion of the torpedoes, but, because of fog, he did not know whether the fusee which he left in the vicinity of the torpedoes continued to burn until No. 8 passed. The engineer of Extra 6237 North said that when his train first stopped at Fleming he could see signals given with a fusee from the vicinity of the caboose. A short time later the fog became more dense and, because a fusee near the car which was being set off was not visible from the locomotive, it became necessary for the front brakeman to relay the conductor's signals to the engineer. Just before the collision occurred the train had been coupled together and the brakes had been released. At this time fusees near the rear end of the train were not visible from the locomotive. The conductor and the front brakeman heard the sound of the torpedoes exploded by No. 8. After the accident occurred evidence was found which indicated that torpedoes had recently been exploded at points 6,202 feet and 6,222 feet south of the point of accident, the approximate locations at which the flagman stated he had placed torpedoes.

As No. 8 was approaching Fleming the speed was about 96 miles per hour. The engineers were on the locomotive, and the members of the train crew were in various locations throughout the train. Both the headlight and the oscillating signal light were lighted brightly. The brakes of the train had been

tested at Jacksonville, and the members of the train crew said that apparently the brakes functioned properly when used en route. These employees said that they noticed nothing unusual in the handling of the train until the brakes were applied as the train approached Fleming. They thought the collision occurred about 30 seconds after the brakes became applied. Both the engineer and the fireman died as a result of injuries incurred in the accident, and neither of them made a statement regarding the accident. Apparently these employees were alert, as the grade-crossing whistle signal was sounded when the train was approaching Fleming. According to the tape of the speed recording device the speed of No. 8 was reduced, in compliance with speed restrictions, from 83 to 21 miles per hour as the train approached Josup, 32.6 miles south of Fleming, from 65 to 27 miles per hour as the train approached Doctortown, and from 74 to 65 miles per hour as the train approached Ludowici, 21.7 miles south of Fleming. After the train passed Ludowici the speed was gradually increased to about 80 miles per hour, and after it passed Walthourville, 14 miles south of Fleming, the speed was increased to a maximum of 96 miles per hour, 17 miles per hour above the maximum authorized speed. A speed of 95 to 96 miles per hour then was maintained until an emergency application of the brakes became effective at a point about 3,000 feet south of the point of accident. The speed had been reduced from 96 to 56 miles per hour when the collision occurred. The crew of a south-bound train which met No. 8 a short distance north of Ludowici said that the engineer of No. 8 dimmed his headlight when he observed the approach of their train. Although several seconds elapsed between the time the torpedoes were exploded and the time the brakes were applied, the fact that the brakes were applied in emergency indicates that the engineer heard the explosion of the torpedoes or observed the fusee signals of the flagman. The enginemen of Extra 6237 North and the enginemen of the south-bound train which met No. 8 north of Ludowici said that because of fog between Josup and Fleming the aspects of a number of signals were not visible at distances greater than 200 to 700 feet. No. 8 passed signal 5170 while moving at a speed of about 96 miles per hour, or 140.8 feet per second, and it is possible that neither of the enginemen saw the aspect of the signal.

After the accident occurred, and while the rear cars of No. 8 remained in the block of signal 5170, signals 5170 and 5150 each indicated Stop and Proceed. After the cars were removed from the block of signal 5170, signal 5170 indicated Approach and signal 5150 indicated Stop and Proceed. Inspection and tests of the signal system after the accident occurred disclosed no defective condition. After the track was repaired the signal system was tested and was found to function properly.

The brakes of the cars which were not derailed and the undamaged portions of the brake equipment of the derailed cars and the Diesel-electric units of No. 8 were tested after the accident occurred. No defective condition was found.

The investigation disclosed that when the accident occurred the crew of Extra 6237 North held copies of train order No. 2, which directed No. 8 to wait at Jesup until 2 20 a. m., Walthourville until 2 37 a. m., and Daniel until 2 50 a. m. The crew of No. 8 did not have copies of this order. When the order was issued, it was addressed to the crews of both trains at Jesup. After the train dispatcher found that No. 8 would pass Jesup several minutes later than the time specified in the order and, in his judgment, could not pass any of the stations named before the times specified, he issued an order to the operator at Jesup annulling order No. 2, so that it would not be necessary for the operator to deliver copies to the crew of No. 8. The accident occurred after the time specified for No. 8 to wait at Walthourville, and, under these circumstances, the fact that the crew of No. 8 did not receive copies of the order had no bearing on the accident.

The investigation disclosed that prior to the occurrence of this accident No. 8 had been operated a distance of 10 miles at a speed of about 96 miles per hour, according to the speed recorder tape. A check of speed recorder tapes and the dispatcher's records on the movement of trains operated between Jesup and Savannah from December 1, 1952, to February 23, 1953, disclosed that 507 passenger trains exceeded a speed of 90 miles per hour for distances varying from 5 to 42 miles, and 47 of these at times exceeded a speed of 100 miles per hour. In one case a train was operated at a speed of 108 miles per hour for 10 miles, and 100 miles per hour for 25 miles. In another case a train was operated at a speed of 99 miles per hour for 42 miles. The carrier has authorized the installation of an automatic train-stop system on its line between Florence, S. C., and Jacksonville, Fla., 383 miles. As of February 23, 1953, this system had been installed from Florence to Mt. Holly, 79 miles, and it was estimated that the installation to Jacksonville would be completed by the latter part of 1957.

More than 25 percent of the passenger trains operated between Jesup and Savannah from December 1, 1952, to February 23, 1953, exceeded the maximum authorized speed of 79 miles per hour fixed by the carrier. According to provisions of the Commission's order of June 17, 1947, lines on which trains are operated at 80 or more miles per hour must be equipped with an automatic train-stop or train-control system or automatic continuously controlled cab-signal system. The period within

which such installations were required to be made expired on December 31, 1952, unless an extension of time was granted. The carrier in this case had not requested relief nor has relief been granted, and only 20 percent of the territory between Florence and Jacksonville had been equipped with the specified systems at the time of the expiration date. In compliance with the Commission's order the rules of the Atlantic Coast Line prescribe a maximum speed limit of 70 miles per hour in the non-equipped territory involved. However, this investigation disclosed that it is common practice for several trains to be operated daily for considerable distances at speeds materially exceeding the authorized maximum limit, and thus not in conformity with the Commission's order of June 17, 1947. In the present case if train No. 8 had been operated in accordance with the authorized maximum speed limit this accident might have been averted, or its disastrous consequences materially reduced.

Cause

It is found that this accident was caused by failure to operate train No. 8 in accordance with signal indications.

Dated at Washington, D. C., this twenty-eighth day of April, 1953.

By the Commission, Commissioner Patterson.

(SEAL)

GEORGE W. LAIRD,
Acting Secretary.