

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3420
ATLANTIC COAST LINE RAILROAD COMPANY
IN RE ACCIDENT
AT SCREVEN, GA., ON
NOVEMBER 27, 1950

SUMMARY

Date: November 27, 1950

Railroad: Atlantic Coast Line

Location: Screven, Ga.

Kind of accident: Head-end collision

Trains involved: Passenger : Freight

Train numbers: 231 : 202

Engine numbers: Diesel-electric : Diesel-electric
unit 511A units 317A,
309B and
373A

Consists: 9 cars : 122 cars,
caboose

Estimated speeds: 43 m. p. h. : 2 m. p. h.

Operation: Timetable and train orders

Track: Single; tangent; 0.34 percent
ascending grade southward

Weather: Clear

Time: 7:36 a. m.

Casualties: 141 injured

Cause: Not determined

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3420

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

ATLANTIC COAST LINE RAILROAD COMPANY

October 11, 1951

Accident at Screven, Ga., on November 27, 1950, cause not
determined.

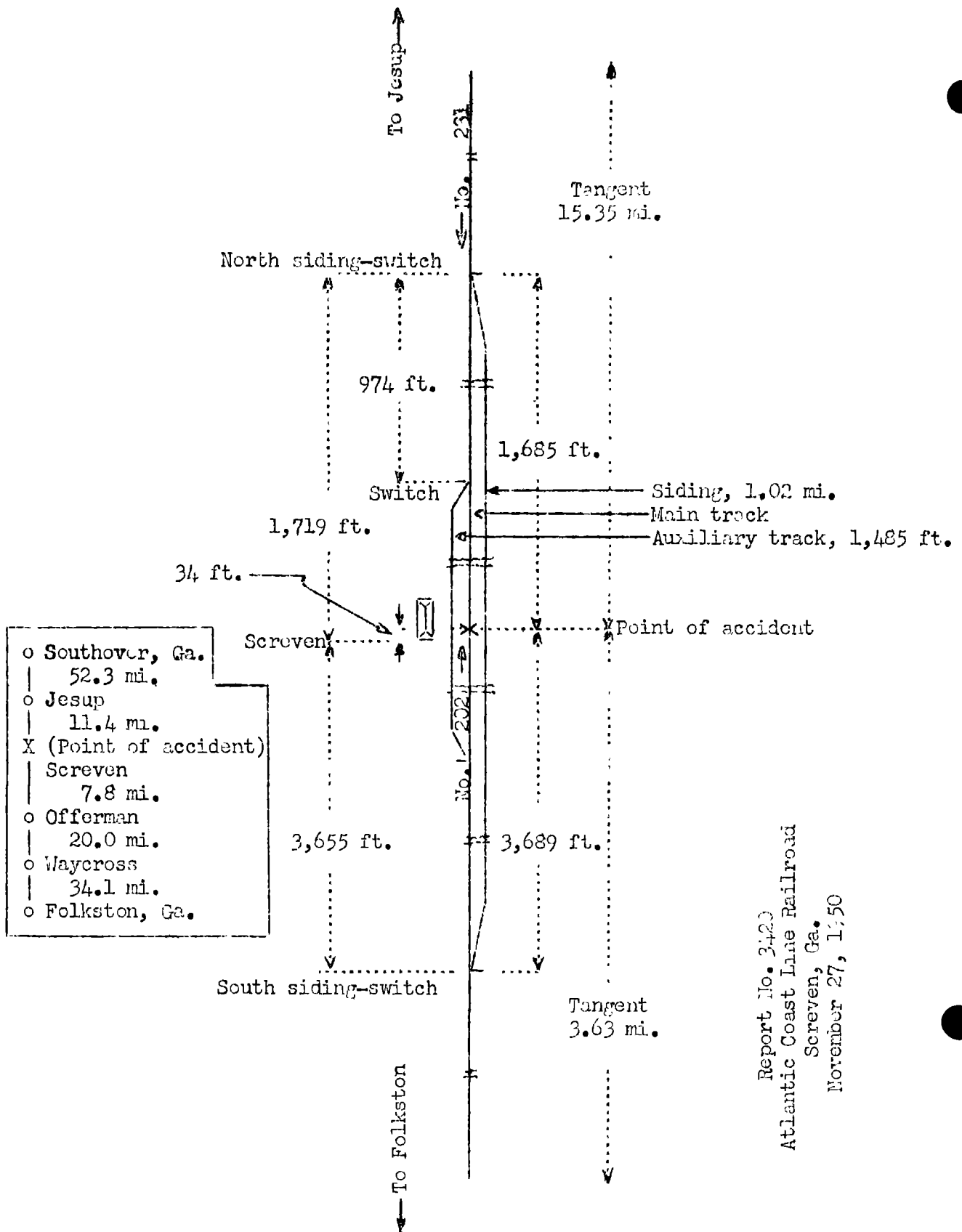
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On November 27, 1950, there was a head-end collision between a passenger train and a freight train on the Atlantic Coast Line Railroad at Screven, Ga., which resulted in the injury of 126 passengers, 10 Pullman employees and 5 train-service employees.

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. 3420
Atlantic Coast Line Railroad
Screven, Ga.
November 27, 1950

Location of Accident and Method of Operation

This accident occurred on that part of the Southern Division extending between Jesup and Folkston, Ga., via Waycross, Ga., 73.3 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. At Screven, 11.4 miles south of Jesup, a siding 1.02 miles in length parallels the main track on the east. The north and the south switches of this siding are, respectively, 1,719 feet north and 3,655 feet south of the station. An auxiliary track 1,485 feet in length parallels the main track on the west. The north switch of the auxiliary track is 974 feet south of the north siding-switch. The accident occurred on the main track 11.4 miles south of Jesup and 1,635 feet south of the north siding-switch at Screven. From the north the track is tangent throughout a distance of 15.35 miles to the point of accident and 3.63 miles southward. The grade for south-bound trains is an average of 0.59 percent descending 3,600 feet, 0.38 percent ascending 1,300 feet and 0.34 percent ascending 726 feet to the point of accident and 274 feet southward.

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

14. ENGINE HORN OR WHISTLE SIGNALS

NOTE.--The signals prescribed are illustrated by "o" for short sounds; "—" for longer sounds. * * *

SOUND	INDICATION
* * *	
(n) — — o	Approaching meeting or waiting points. See Rule S-90.
* * *	

16. COMMUNICATING SIGNALS

NOTE.--The signals prescribed are illustrated by
"o" for short sounds; "—" for longer
sounds.

SOUND

INDICATION

* * *

(1) — — o

Approaching meeting or
waiting points. See Rule
S-90.

S-71. A train is superior to another train by right,
class or direction.

Right is conferred by train order; class and
direction by time-table.

* * *

Direction is superior as between trains of the
same class.

S-72. Trains in the direction specified by the
time-table are superior to trains of the same class
in the opposite direction.

S-89. At meeting points the inferior train must
take siding * * *

* * *

S-90. The engineman of each train will give
signal 14 (n) at least two miles before reaching
a meeting or waiting point.

On trains equipped with communicating system,
the conductor must give signal 16 (1), or oral
advice, to the engineman after passing the last
station, but not less than two miles preceding
a meeting or waiting point. The engineman will
reply immediately with signal 14 (n).

Should engineman fail to give signal 14 (n), or fail to prepare to stop short of fouling point, the conductor must stop the train.

FORMS OF TRAIN ORDERS

S-A.

Filing Meeting Points for Opposing Trains

(1.) No 2 Eng 500 meet No 1 Eng 505 at B.

* * *

Trains receiving these orders will run with respect to each other to the designated points and there meet in the manner prescribed by the rules.

Timetable special instructions read in part as follows:

Northbound * * * trains are superior to trains of the same class in opposite direction, except such trains as may be otherwise specified * * *

In the vicinity of the point of accident the maximum authorized speed was 59 miles per hour for the passenger train, and 49 miles per hour for the freight train.

Description of Accident

No. 231, a south-bound third-class passenger train, consisted of Diesel-electric unit 511A, three tourist sleeping cars, three sleeping cars, one kitchen car and two sleeping cars, in the order named. At Jesup, the last open office, the crew received copies of train order No. 41 reading in part as follows:

No 202 Eng 317 meet No 231 Eng 511
at Screven * * *

This train departed from Jesup at 7:22 a. m., 8 hours 5 minutes late, passed the north siding-switch at Screven, where it was required to enter the siding to meet No. 202, and while moving at a speed of 45 miles per hour, it collided with No. 202 at a point 1,635 feet south of the north siding-switch.

No. 202, a north-bound third-class freight train, consisted of Diesel-electric units 317A, 309B and 373A, coupled in multiple-unit control, 122 cars and a caboose. This train departed from Waycross, 27.8 miles south of Screven, at 6:25 a. m., 10 minutes late. At Offerman, the last open office, 7.8 miles south of the point of accident, the crew received copies of train order No. 41. This train passed Offerman at 7:23 a. m., 25 minutes late, and while moving at an estimated speed of 2 miles per hour it collided with No. 231.

No. 231 stopped with the front of the Diesel-electric unit 90 feet south of the point of accident. The front end of the unit was raised off its truck and stopped against the first Diesel-electric unit of the opposing train. The front of the unit was crushed inward. The rear end of the unit was crushed inward a distance of about 15 inches by the first car. The Diesel-electric unit was badly damaged. The first car stopped against the rear end of the Diesel-electric unit. The vestibule at the front end of the car was forced back a distance of 8 feet. The front truck was derailed and stopped under the center of the car. No other equipment of this train was derailed. Oil from the Diesel-electric unit became ignited and fire further damaged the Diesel-electric unit and destroyed the first two cars and the station at Screven. The other cars were slightly damaged. The first two Diesel-electric units of No. 202 were derailed and stopped in line with the track. A separation occurred between the second and the third units. The third unit was derailed and overturned across the siding at an angle of about 45 degrees to the main track. The top of the rear end of this unit was 29 feet east of the center-line of the main track. The first unit was badly damaged and the second and the third units were considerably damaged. The first two cars were demolished.

The engineer, the fireman, the conductor, the flagman and the brakeman of No. 231 were injured.

The weather was clear at the time of the accident, which occurred at 7:36 a. m.

The brake equipment of Diesel-electric unit 511A was of the HSC type with MS-40 automatic brake valve and S-40 independent brake valve. A safety-control feature actuated by a foot pedal was provided. If pressure on this pedal was released a service application would result, unless a brake application of predetermined brake-cylinder pressure had been made or the handle of the automatic brake valve was depressed. Automatic sanding of the rails during an emergency

application of the brakes was provided. The angle cock at the rear of Diesel-electric unit 511A was of the double-locking type. The angle cock was open when the handle was in line with the brake pipe. All of the cars of No. 231 except the kitchen car were equipped with universal valves and clasp type brakes. The kitchen car was equipped with double AB brake equipment and clasp type brakes.

Discussion

On the line on which this accident occurred, north-bound trains are superior to trains of the same class in the opposite direction. Enginemen of each train approaching a meeting point are required to sound the meeting-point signal at least 2 miles before reaching the meeting point. At a meeting point the inferior train must take the siding and must pull into the siding when practicable.

As No. 202 was approaching the point where the accident occurred the speed was about 5 miles per hour. The enginemen and the front brakeman were maintaining a lookout ahead from the control compartment of the first Diesel-electric unit. The conductor and the flagman were in the caboose. The engineer said that when No. 231 was approaching he observed a man on the side of the Diesel-electric unit and assumed that he intended to alight and then operate the siding-switch for that train to enter the siding. When he observed that the Diesel-electric unit of No. 231 was passing the north siding-switch, he saw someone jumping from the locomotive, and warned the fireman and the brakeman that he thought a collision would occur. He could not determine whether the brakes of the approaching train were applied, but he observed blue dust around the Diesel-electric unit of No. 231 as it approached. The fireman said that he also called a warning after No. 231 passed the siding-switch. The front brakeman said that he observed smoke or dust coming from under the Diesel-electric unit of No. 231 as the train was approaching. He also observed that members of the crew of No. 231 were jumping after the engine of that train had passed the north siding-switch. The members of the crew of No. 202 on the Diesel-electric unit alighted a few seconds before the collision occurred. The front brakeman, who was the last to leave the Diesel-electric unit, alighted an instant before the accident occurred.

At Jesup the crew of No. 231 received copies of train order No. 41, which established Screven as the meeting point between No. 231 and No. 202. No. 231 arrived at Jesup at 7:10 a. m., entered the siding to meet a north-bound train, and departed from the siding at 7:22 a. m. The brakes of the train were not used while the train was leaving the siding. As No. 231 was approaching Screven the speed was 63 miles per hour. The engineer, the fireman and the front brakeman were in the control compartment of the locomotive and the conductor and the flagman were in the rear car. The engineer said that the members of the crew on the locomotive had discussed train order No. 41, and all understood that their train was required to take siding at Screven for No. 202. He first observed No. 202 when his train was more than 3 miles north of the north siding-switch at Screven. Soon afterward a warning bell in the control compartment sounded and the fireman proceeded to the engine compartment to determine the cause. When the train was about 2.3 miles north of the north siding-switch at Screven the meeting-point signal was sounded on the communicating signal system, and it was promptly acknowledged on the pneumatic horn by the engineer. When the train was about 1.5 miles north of the north siding-switch, the engineer made a brake-pipe reduction of about 8 pounds in first service position and simultaneously held the independent brake valve in position to prevent the automatic application of the brakes from becoming effective on the locomotive. He said there was no deceleration of the train after the initial brake-pipe reduction, and he at once made a second brake-pipe reduction and permitted the brakes of the locomotive to apply automatically with this reduction. He then became concerned because he felt only the retardation from the brakes on the locomotive, and made a further brake-pipe reduction. When the train failed to decelerate properly after a service application of three brake-pipe reductions he placed the brake valve in emergency position, and then warned the front brakeman that the brakes were not functioning properly. He said that there was a normal exhaust at the brake valve after each reduction. He then released the locomotive brakes by use of the independent brake valve and then released the foot pedal of the safety-control, but there was no appreciable increase in the rate of deceleration. The independent brake then was re-applied. He sounded the alarm bell several times to summon the fireman and then instructed the front brakeman to warn the fireman that the brakes were ineffective and that both he and the fireman should prepare to alight from the train. The front

brakeman then left the operating compartment to convey the instructions to the fireman. The engineer remained in the operating compartment until the train was closely approaching the north siding-switch, then he climbed down the steps on the side of the locomotive and gave hand signals from that location to warn the members of the crew of No. 202. He alighted about 500 feet north of the point of accident a few seconds before the collision occurred. Because of injuries, the engineer was not questioned until about 7 months after the accident occurred.

The fireman said that he left the operating compartment when the train was about 3-1/2 miles north of the north siding-switch at Screven. An inspection disclosed that the alarm had been actuated by the failure of the steam generator, which he restored to normal operation. Before he could return to the operating compartment the alarm bell was sounded several times in rapid succession to summon him, then the front brakeman entered the engine compartment and advised him that the brakes of the train were ineffective. The fireman then proceeded to the front vestibule of the first car and alighted from the bottom step about 1,400 feet north of the point of accident. The speed of the train at that time was about 53 miles per hour. The front brakeman said that after the fireman left the operating compartment he heard the exhaust from the brake valve. Soon afterward the engineer warned him that the brakes were not functioning properly. He then observed that the brake valve was in emergency position and that the engineer had released the foot pedal of the safety-control. The train was closely approaching the station-one-mile sign when he left the operating compartment. After he informed the fireman of the ineffective brakes, he followed the fireman to the vestibule at the front end of the first car. Before he alighted he observed from the steps of the first car that the engineer had climbed down the steps of the locomotive and was giving hand signals from that location. The front brakeman alighted about 1,000 feet north of the point of accident. The conductor said that he heard a signal sounded by the horn of the Diesel-electric unit in response to the meeting-point communicating signal. When the train was about one mile north of the north siding-switch, he felt a service application of the brakes. As the train proceeded without material reduction of speed, he became doubtful that it would be stopped short of the switch, and he opened the valve of the back-up hose. He estimated that at that time the rear of the train was about 2,300 feet north of the north siding-switch. He said that there was very little exhaust from the valve, and that the speed of the train was not

appreciably reduced after he took this action. The flagman said he felt a service application of the brakes when the train was slightly more than one mile north of the north siding-switch. He said that when the conductor opened the valve of the back-up hose there was a very small exhaust of air.

Examination of the equipment of No. 231 after the accident disclosed that the brake valve was in emergency position and the throttle was in idling position. The brake pipe was broken at the rear of the locomotive and the angle cock with the matching portion of the broken brake pipe was found under the rear end of the first car. The angle cock was fully closed and the handle was latched in the closed position. The thumb latch was inoperative. The handle was slightly bent and there was a mark about 1 inch long and 1/8 inch deep on the left side of the handle. A road foreman of engines said that about 2 hours after the accident occurred an engine was coupled to the rear car and the rear 7 cars were detached. Because of broken brake pipes on the third and the seventh cars the brakes on the 7 cars could not be released, and the 2 cars were by-passed by use of the signal line. Then the brakes of the other cars applied and released properly. These cars were moved to Waycross about 2:50 p. m. where the damaged brake equipment was repaired, and all cars were dispatched from that point about 6:30 p. m. The air hose of the first and second cars were destroyed by fire and the brakes of these cars were not tested. The engineer said that after the accident the brakes on the first 2 cars were not applied. The road foreman of engines said that about 1 hour after the accident occurred the brakes on these cars were applied. All of the control portions of the air-brake equipment on the locomotive, except the foot pedal which was broken, were removed for test, and found to be in good condition.

The brake pipe leakage was estimated by the engineer to have been about 4 pounds per minute when the brakes were tested at Southover, 52.3 miles north of Jesup. The engineer said that at frequent intervals en route he had observed that the air-brake gauges indicated the prescribed pressures, and he thought there was normal exhaust from the brake valve during the brake-pipe reductions made while the train was approaching Screven. He said that a considerable amount of moisture was discharged from the brake valve when brake-pipe reductions were made after the train departed from Southover. The temperature at Waycross as reported to the dispatcher prior to the accident was 38 degrees at midnight and 32 degrees at 6 a. m. The engineer stated that at Jesup there was ice

on the engine. After the train was stopped at Jesup, the brakes, except the engine brake, were released. This action required communication through the brake pipe from the locomotive to the rear car. Evidently the angle cock at the rear of the locomotive was open at that time. None of the members of the crew observed any other person in the vicinity of the locomotive at Jesup.

Examination of the tape of the speed-recording device of Diesel-electric unit 511A disclosed that the brakes of No. 231 functioned to control the speed of the train at several points north of Jesup and to stop the train at Jesup. In each instance a service application of the brakes was made. After the train departed from Jesup the speed was increased to 60 miles per hour within a distance of about 1.5 miles, and to 68 miles per hour about 5 miles southward. At a point 1.5 miles north of the north siding-switch the speed was 63 miles per hour. The speed was increased to 64 miles per hour in a distance of about 2,100 feet on a descending grade that averaged 0.37 percent. At a point about 5,000 feet north of the north siding-switch, where the grade was 0.75 percent descending, the speed was decreased to 63 miles per hour in 600 feet. Within the next 1,600 feet, on an ascending grade of 0.47 percent, the speed was further decreased to about 58 miles per hour. From that point to the north siding-switch, a distance of about 2,700 feet and on a descending grade that averaged 0.50 percent, the speed was reduced to about 55 miles per hour. Between the north siding-switch and the point of accident, a distance of 1,685 feet and on an ascending grade that averaged 0.41 percent, the speed was reduced to 43 miles per hour.

If the air-brake system was functioning properly the operation of the brake valve as stated by the engineer should have been adequate to control the speed of the train approaching the meeting point. In addition, the conductor and the flagman both said that throughout a distance of approximately 1/2 mile north of the point of accident the valve of the back-up hose at the rear of the train was open, and this likewise should have been sufficient to stop the train short of the opposing train. Although some braking action was obtained, the speed was not being properly controlled and the fireman and the front brakeman jumped from the train at a speed of about 50 miles per hour, and at a sufficient distance from the point of collision in which to stop the train with an emergency application of the brakes.

About an hour after the accident occurred the brakes of No. 231 were found to be applied, and about 2 hours after the accident the brakes were still applied. The brake equipment of the fifth and seventh cars, which was damaged as a result of the accident, was by-passed by the use of the signal line, and the brakes of the other 5 cars then applied and released properly. No other test of the air-brake equipment of these cars was made. The first 2 cars of No. 231 were damaged by fire as a result of the accident, and later were destroyed, and no test of the air-brake equipment of these cars was made. The locomotive was badly damaged in the collision and was further damaged by fire. Only the air-brake controlling apparatus was tested. It operated properly. The angle cock at the rear of the locomotive apparently was closed as a result of the accident. From the tests of the air brake equipment of No. 231 which were made after the accident it cannot be determined why the speed of the train was not properly controlled.

Cause

From the information developed in this investigation it is not possible to determine the cause of this accident.

Dated at Washington, D. C., this eleventh day of October, 1951.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.