

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

---

INVESTIGATION NO. 3204  
ATLANTIC COAST LINE RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
AT MANGO, FLA., ON  
SEPTEMBER 23, 1948

---

SUMMARY

---

Railroad: Atlantic Coast Line  
Date: September 23, 1948  
Location: Mango, Fla.  
Kind of accident: Head-end collision  
Trains involved: Passenger : Freight  
Train numbers: 76 : Extra 1605  
South  
Engine numbers: Diesel-electric : 1605  
units 529 and  
755  
Consists: 9 cars : 43 cars, caboose  
Speed: 60 m. p. h. : Standing  
Operation: Timetable and train orders  
Track: Single; tangent; 0.24 percent  
ascending grade northward  
Weather: Clear  
Time: 10:33 p. m.  
Casualties: 2 killed; 24 injured  
Cause: Open switch

INTERSTATE COMMERCE COMMISSION

---

INVESTIGATION NO. 3204

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

ATLANTIC COAST LINE RAILROAD COMPANY

---

November 22, 1948

---

Accident at Mango, Fla., on September 23, 1948, caused  
by an open switch.

---

REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

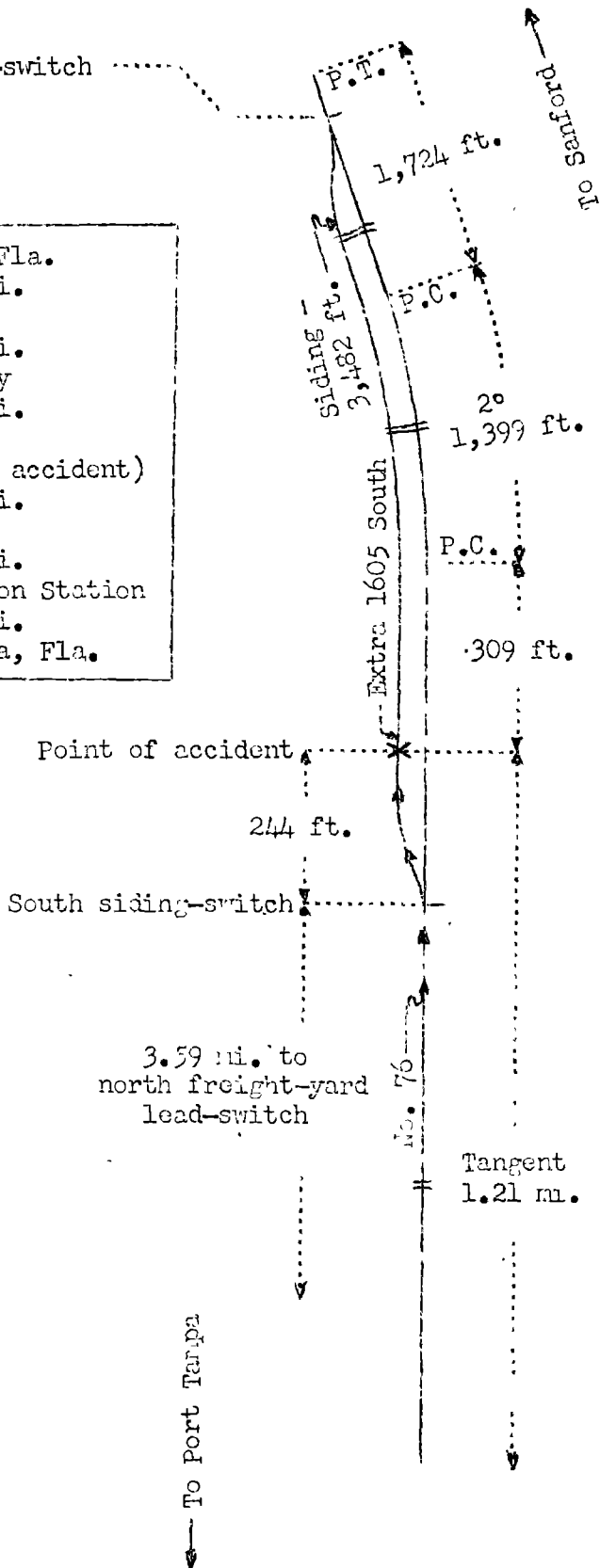
On September 23, 1948, there was a head-end collision between a passenger train and a freight train on the Atlantic Coast Line Railroad at Mango, Fla., which resulted in the death of two employees, and the injury of six passengers, three railway mail-clerks, four Pullman employees, two express messengers, one Union News employee, five train-service employees on duty, and three train-service employees off duty. This accident was investigated in conjunction with a representative of the Florida Railroad and Public Utilities Commission.

---

<sup>1</sup>  
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.

North siding-switch

|   |                     |                     |
|---|---------------------|---------------------|
| o | Sanford, Fla.       | 86.8 mi.            |
| o | Winston             | 6.4 mi.             |
| o | Plant City          | 11.7 mi.            |
| X | Mango               | (Point of accident) |
|   |                     | 5.7 mi.             |
| o | Uceta               | 3.2 mi.             |
| o | Tampa Union Station | 9.9 mi.             |
| o | Port Tampa, Fla.    |                     |



Inv. No. 3204  
 Atlantic Coast Line Railroad  
 Mango, Fla.  
 September 23, 1948

Location of Accident and Method of Operation

This accident occurred on that part of the Southern Division extending between Port Tampa and Sanford, Fla., 123.7 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 Mango, 18.8 miles north of Port Tampa, a siding 3,482 feet in length parallels the main track on the west. The accident occurred on the siding at a point 244 feet north of the south siding-switch. From the south on the main track there is a tangent 1.21 miles to the point of accident and 309 feet northward. From the north there are, in succession, a tangent 1,724 feet in length, a 2° curve to the right 1,399 feet, and the tangent on which the accident occurred. The grade is 0.24 percent ascending northward. The alinement and grade of the siding correspond with those of the main track.

The south turnout of the siding is provided with a No. 10 spring-rail frog. The switch is provided with a standard hand-throw intermediate-type switch-stand, located 8 feet 6 inches east of the centerline of the main track. This switch-stand is equipped with a green disc target, 15 inches in diameter, and a red arrow-shape target, 15 inches wide and 20 inches long. The centers of the targets are 5 feet 1-1/2 inches above the tops of the ties. Each target is equipped with a reflector disc 3 inches in diameter and of the same color as the target. When the switch is lined for movements on the main track the green target is displayed at right angles to the track. When the switch is lined for entry to the siding the red target is displayed at right angles to the track.

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

14. Engine Whistle Signals

Note: The signals prescribed are illustrated by "o" for short sounds; "\_\_\_" for longer sounds. \* \* \*

| Sound               | Indication   |
|---------------------|--|
| * * *               |  |
| (d) ___ ___ ___ ___ | Flagman may return from * * * south, as prescribed by Rule 99. |
| * * *               |  |

17. The headlight will be displayed to the front of every train by night. It must be concealed when a train turns out to meet another and has stopped clear of main track, \* \* \*

35. The following signals will be used by flagmen:

\* \* \*

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

87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of opposing regular trains not less than five minutes unless otherwise provided, \* \* \*

88. \* \* \*

\* \* \*

Trains must pull into the siding when practicable; if necessary to back in, the train must first be protected as prescribed by Rule 99, \* \* \*

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagmen's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees.

\* \* \*

The front of the train must be protected in the same way when necessary by the Fireman.

\* \* \*

104 (a). When a train backs in on a siding to be met or passed by another train, the engineer, when his engine is "Clear," must see that the switch is properly set for the main track.

\* \* \*

FORMS OF TRAIN ORDERS

\* \* \*

D-E .

TIME ORDERS

\* \* \*

- (3.) Nos 1 and 3 wait at
  - N until 9 59 a m
  - P until 10 30 a m
  - R until 10 55 a m, etc.

The train, or trains, named must not pass the designated points before the times given. Other trains receiving the order are required to run with respect to the time specified at the designated points or any intermediate station where schedule time is earlier than the time specified in the order as before required to run with respect to the schedule time of the train, or trains, named.

The maximum authorized speed is 60 miles per hour for passenger trains and 45 miles per hour for freight trains.

Description of Accident

At Winston, 18.1 miles north of Mango, the crew of Extra 1605 South received copies of train order No. 164 reading as follows:

No 76 wait at  
North Freight Yard Lead Switch Uceta  
until 1028 pm

Extra 1605 South, a south-bound freight train, consisting of engine 1605, 43 cars and a caboose, departed from Winston at 9:29 p. m., and departed from Plant City, the last open office, 11.7 miles north of Mango, at 9:58 p. m. This train was stopped on the main track about 10:18 p. m., with the caboose about 1,400 feet south of the south siding-switch at Mango. After the brakes were released, this train was backed into the siding and, after it had been standing there a period of between one and two minutes clear of the main track, the engine was struck by No. 76.

No. 76, a north-bound first-class passenger train, consisted of Diesel-electric units 529 and 755, coupled in

multiple-unit control, one express car, two mail cars, one baggage car, two coaches, one sleeping car and two express cars, in the order named. The first and the last cars were of steel-underframe construction with wooden superstructure, and the remainder of the cars were of all-steel construction. This train departed from Tampa Union Station, 8.9 miles south of Mango, at 10:15 p. m., on time, passed the north freight-yard lead-switch at Uceta, 3.59 miles south of Mango, at 10:29 p. m., and while moving at an estimated speed of 60 miles per hour it entered the south turnout of the siding at Mango and struck Extra 1605 South.

Diesel-electric units 529 and 755 and engine 1605 were derailed, but they stopped upright and in line with the track. Engine 1605 was forced northward 240 feet and was practically demolished. The front end of the boiler telescoped the first Diesel-electric unit a distance of 20 feet. The front truck of the first unit was pushed backward a distance of 12 feet. The first unit was badly damaged. The second unit stopped behind the first unit and was badly damaged. The first four cars of No. 76 were derailed. The first, second and third cars were badly damaged. The tender of engine 1605 stopped on its right side and west of the siding. The frame was broken and the cistern was destroyed. The first and second cars were derailed and stopped west of the siding. The third and fourth cars were derailed and stopped upright and in line with the track. The first five cars were badly damaged.

The engineer of No. 76, and the electrical supervisor, who was riding in the control compartment of the first Diesel-electric unit, were killed. The fireman, the conductor, the baggageman and the train porter of No. 76, and the fireman of Extra 1605 South were injured.

The weather was clear at the time of the accident, which occurred at 10:33 p. m.

#### Discussion

The crews of both trains held copies of train order No. 164, which required No. 76 to wait at the north freight-yard lead-switch at Uceta until 10:28 p. m. Under the rules, Extra 1605 South was required to be into clear at the north freight-yard lead-track at Uceta not later than 10:23 p. m., if it proceeded to that station to meet No. 76, or to provide protection. All members of the crew of Extra 1605 South so understood.



Extra 1605 South approached Mango at an estimated speed of 45 miles per hour. When the caboose was in the immediate vicinity of the north siding-switch, it became apparent to the conductor and the flagman, who were in the caboose, that the engineer intended to proceed to the north freight-yard lead-track at Uceta to meet No. 76. They observed the time as 10:18 p. m., and were of the opinion that insufficient time remained for their train to be into clear at 10:23 p. m. at the north freight-yard lead-track at Uceta, 5.59 miles south of the south siding-switch at Mango. The flagman then opened the conductor's valve in the caboose, and the train stopped with the rear end about 1,400 feet south of the south siding-switch. After the brakes were released, a back-up movement was started, and the front brakeman alighted from the engine and proceeded southward to provide flag protection against No. 76. He had a red lantern, a white lantern, and fuses in his possession, but did not have torpedoes. Before the train stopped, the flagman alighted from the caboose a short distance south of the south siding-switch, and immediately proceeded northward. He lined the switch for entry to the siding and when the back-up movement entered the siding, he boarded the caboose. He and the conductor rode the caboose into the siding. The flagman remained in the vicinity of the caboose until the accident occurred. The conductor said that he remained in the caboose to operate the back-up valve in case some train was entering the siding at the north switch, and that the flagman was required to be at the rear to provide flag protection toward the north until his train was into clear. When the front of the train was into clear on the siding, the engineer extinguished the headlight and sounded the whistle signal to recall the front brakeman from the south. After the front brakeman had been recalled, he proceeded northward to a highway-grade crossing located about one mile south of the south siding-switch, from which point he observed that the headlight of engine 1605 was extinguished. He did not light a fusee. As No. 76 approached, the front brakeman concealed the lighted red lantern and gave a proceed signal with the white lantern. The fireman of Extra 1605 South said that when the train stopped on the siding he observed from the left side of the engine that the south siding-switch was open, but he expected some other member of the crew to operate the switch to its normal position. After waiting about one minute, he called the engineer's attention to the open switch, then alighted from the engine, and proceeded toward the switch, but No. 76 entered the turnout before the fireman reached the switch. The engineer said that he crossed

to the left side of the engine, observed that the switch was open, then moved the headlight switch to position for bright illumination, and alighted from the engine. He said that he was not aware that the switch remained open until the fireman called attention to it. After the engineer extinguished the headlight the position of the switch could not be determined because the reflector-type discs require exterior illumination to display night aspects.

No. 76 approached the waiting point at Uceta at an estimated speed of 15 miles per hour and passed that point at 10:29 p. m. The engineer, the fireman, and the electrical supervisor were in the control compartment of the first Diesel-electric unit. The conventional headlight and the oscillating signal light were lighted brightly. The brakes of this train had been tested and had functioned properly. The members of the train crew were in various locations throughout the train. After the train passed the north freight-yard lead-track switch at Uceta, the speed was increased to about 60 miles per hour. Soon afterward the protective ground relay alarm sounded, which indicated an engine failure in the second unit. The fireman proceeded to this unit to make repairs. He observed that the throttle of the second unit was in position 8, the fully open position. About one minute before the collision occurred the throttle was reduced by the engineer from position 8 to position 6. The fireman reset the ground relay and was preparing to restore the engine in question to operation when the brakes were applied in emergency, and the collision occurred a few seconds later. The flagman was riding in the vestibule of the last car and said that when the brakes were applied in emergency he looked forward and saw the engine of his train enter the turnout. The engineer, who was killed in the accident, was the only member of the crew of No. 76 in position to observe the headlight of Extra 1605 South and the position of the switch. The electrical supervisor, who also was killed in the accident, was in the control compartment of the first Diesel-electric unit when the accident occurred.

Cause

It is found that this accident was caused by an open switch.

Dated at Washington, D. C., this twenty-second day of November, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.