

INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2457

THE ATLANTIC COAST LINE RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT LAKE ALFRED, FLA., ON

OCTOBER 30, 1940

SUMMARY

Railroad: Atlantic Coast Line
Date: October 30, 1940
Location: Lake Alfred, Fla.
Kind of accident: Derailment
Train involved: Passenger
Train number: 92
Engine number: 1605
Consist: 9 cars
Speed: 55-60 m. p. h.
Operation: Timetable and train orders
Track: Single; tangent; 1.06 percent
ascending grade northward
Weather: Clear
Time: About 2:55 p. m.
Casualties: 3 killed; 22 injured
Cause: Accident caused by train entering
open switch at high rate of speed

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2457

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

THE ATLANTIC COAST LINE RAILROAD COMPANY

January 3, 1941.

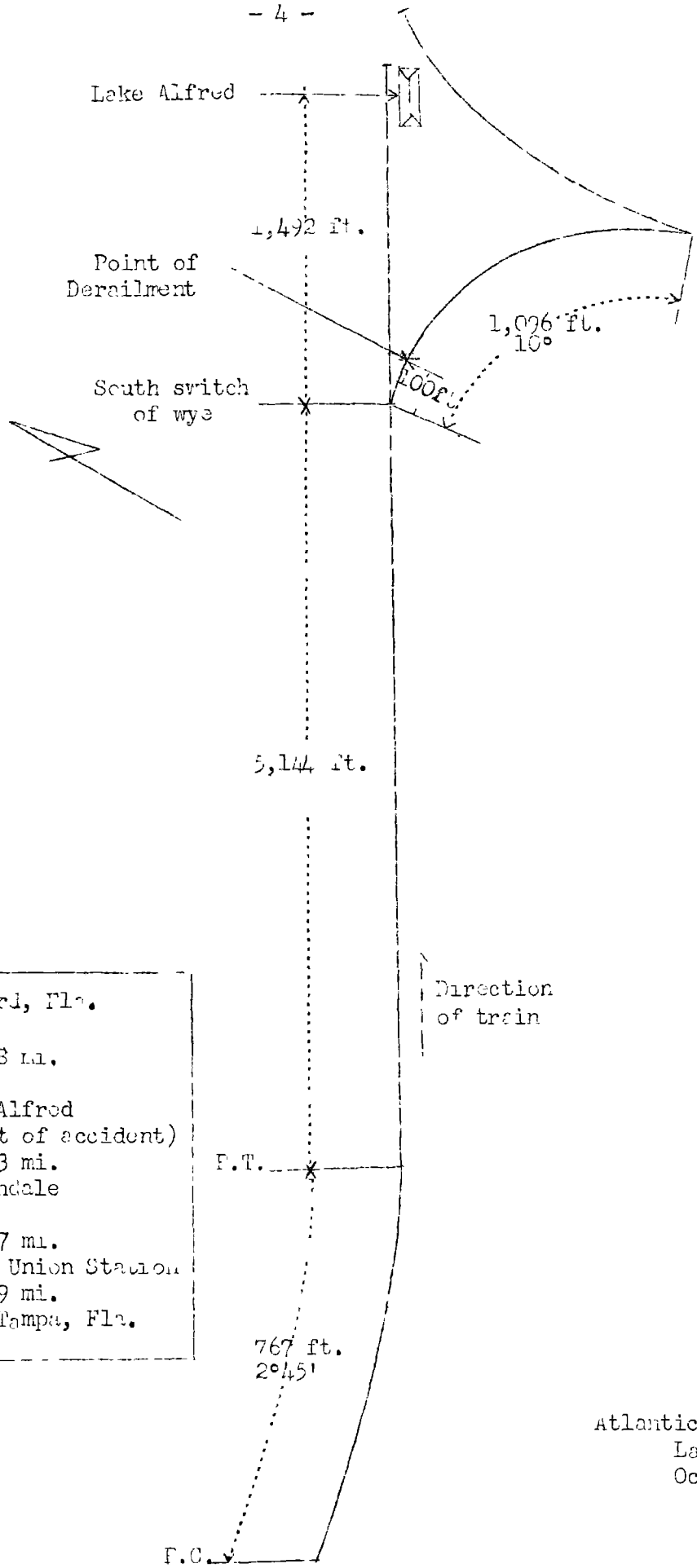
Accident at Lake Alfred, Fla., on October 30, 1940,
caused by train entering open switch at high
rate of speed.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On October 30, 1940, there was a derailment of a passenger train on the Atlantic Coast Line Railroad at Lake Alfred, Fla., which resulted in the death of 3 employees and the injury of 13 passengers, 3 railway mail clerks, 1 express messenger, 1 Pullman employee, 1 employee off duty, and 3 train-service employees.

¹Under 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.



- o Sanford, Fla.
- 67.8 mi.
- o Lake Alfred (Point of accident)
- 4.3 mi.
- o Auburndale
- 41.7 mi.
- o Tampa Union Station
- 9.9 mi.
- o Port Tampa, Fla.

Inr-2457
 Atlantic Coast Line Railroad
 Lake Alfred, Fla.
 October 30, 1940.

Location and Method of Operation

This accident occurred on that part of the Tampa District which extends between Sanford and Fort Tampa, Fla., a distance of 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 Lake Alfred a wye lies to the east of the main track, the south leg of which is 1,093 feet long and entry to which is made through a No. 10 turnout located 1,492 feet south of the station. The turnout is provided with a No. 10, 100-pound, spring-type frog having a foot-plate 4 feet long; a 100-pound guard rail, 11 feet long, is provided. The switch points are 15 feet long and are connected by two switch rods. The derailment occurred on this turnout at a point about 100 feet east of the switch points. As the point of accident is approached from the south on the main track there is a 2°45' curve to the left 767 feet in length, which is followed by a tangent extending 5,144 feet to the south switch of the wye and a considerable distance beyond. At the point where the accident occurred the grade for north-bound trains is 1.06 percent ascending. Beginning at a point about 100 feet east of the switch the south leg of the wye has a curvature of 10° and a superelevation of 2 inches.

The main-track structure consists of 100-pound rail, 39 feet in length, laid on an average of 23 treated ties to the rail length; it is single-spiked, fully tie-plated, ballasted to a depth of 12 inches, and is well maintained. The wye-track structure consists of 85-pound rail, 33 feet in length, laid on an average of 18 ties to the rail length; it is single-spiked on the inside and double-spiked on the outside of the rails, fully tieplated, ballasted with cinders to a depth of 3 inches, and is well maintained.

The switch-stand involved is of the Ramapo No. 17 high-stand type, is hand operated, and is located 6 feet east of the east rail of the main track. It is equipped with two targets and a switch lamp. When the switch is lined for the main track a green circular target, 15 inches in diameter, is displayed and when the switch is lined for the south leg of the wye a red, arrow-shape target, 15 inches wide by 22 inches long, is displayed; the centers of these targets are 5 feet above the head-block. The centers of the lenses of the lamp are 6 feet 8-1/2 inches above the head-block. A switch lock is provided.

During a period of several hours prior to the time of the accident, a ballast-trimming outfit was being used by track forces in the vicinity of the point where the accident occurred. This outfit consists of a motor mounted on a push-car which hauls another push-car on which is installed the trimming outfit. This equipment consists of two windlasses, one on each side, to which are attached cables which in turn are attached to spreaders. The spreaders have teeth 3 inches long and are raised and lowered by laborers operating the windlasses. One laborer is assigned to only one windlass. At times two or three motor-cars are used to haul the ballast-trimming car.

Rule 1084 of the Rules and Regulations of the Operating Department reads as follows:

SECTION FOREMEN

1084. They must not permit their switch keys to pass out of their possession, and must personally attend to the opening and closing of all switches.

The maximum authorized speed for passenger trains on the main track is 70 miles per hour.

The weather was clear at the time of the accident, which occurred about 2:55 p. m.

Description

No. 92, a north-bound passenger train, with Conductor Overstreet and Engineman Grayam in charge, consisted of engine 1605, of the 4-6-2 type, one express car, one mail-baggage car, one express car, three coaches, one Pullman sleeping car, one dining car and one Pullman sleeping car, in the order named; all cars were of steel construction. This train departed from Tampa Union Station, 46 miles south of Lake Alfred, at 1:50 p. m., according to the train sheet, on time, passed Auburndale, 4.3 miles south of Lake Alfred, at 2:51 p. m., on time, and, when approaching Lake Alfred and while moving at a speed estimated to have been 55 or 60 miles per hour, entered the switch at the south leg of the wye and was derailed.

Engine 1605 was derailed to the left and stopped on its left side 407 feet beyond the switch point at an angle of 45 degrees to the main track. The cab was badly crushed, the main and the side rods were bent, the engine truck and the trailing truck were broken and the connections to the water column were broken off. The tender was derailed and stopped on its left

side back of the engine and parallel to the main track; both tender-trucks and the tender frame were broken. The first car was derailed and stopped upright between the main track and the south leg of the wye, 67 feet from the main track and parallel to it. The second and third cars were derailed and stopped upright across the main track. The fourth car was derailed and stopped on its side south of the main track. The fifth car was derailed and stopped south of the main track leaning at an angle of 45 degrees. The sixth car was derailed but remained upright and in line with the track. The first six cars were considerably damaged. The front truck of the seventh car was derailed; this car and the two rear cars were only slightly damaged.

The employees killed were the engineman, the fireman and a student fireman who was on the engine, and the employees injured were the conductor, the baggagemaster and a dining-car employee.

Summary of Evidence

Conductor Overstreet stated that at Tampa the air brakes were tested and they functioned properly en route. As his train approached the point where the accident occurred he was in the fourth car and the speed was 55 or 60 miles per hour. He said the first intimation he had of anything being wrong was when the brakes were applied in emergency. He did not know whether the brakes were applied prior to the derailment or as a result of it. The train stopped within a distance of 8 or 10 car lengths. He did not examine the equipment or the track to determine the cause of the accident, which occurred about 2:55 p. m.

Baggagemaster Wilcox stated that as his train approached the point where the accident occurred he was in the fourth car; he was opening the vestibule door to observe the position of the train-order signal at Lake Alfred when the derailment occurred. Subsequent to the accident he talked to the foreman of the section at Lake Alfred, who informed him that he had lined the switch for his track motor-car to enter the wye and had instructed a laborer to close the switch and to lock it. The baggagemaster inspected the switch and found it lined for the wye and the switch lock on the base of the switch-stand. The switch target indicated that the switch was lined for the wye.

Train Porter Jones stated that as his train was approaching Lake Alfred he heard the whistle signal sounded for the station and opened the rear vestibule door of the fourth car to observe the train-order signal; it displayed proceed for his

train. He had just closed the door when the accident occurred. He said the brakes were not applied prior to the time of the derailment. The weather was clear and visibility was unrestricted.

Flagman Middleton stated that he was in the rear car when the accident occurred. The rear car stopped near the switch involved, and after the accident he observed that the switch target indicated the switch was lined for the wye.

Engineman Rogers, who was deadheading on No. 92, stated that at Tampa he talked with Engineman Grayam, who appeared normal. Engineman Rogers said that the train was approaching Lake Alfred at a speed of about 60 miles per hour. Subsequent to the accident he observed that the switch target involved displayed a red aspect for the main track.

Engineman Boring, who was deadheading on No. 92, stated that after the accident occurred he assisted in rescuing Engineman Grayam, who told him that the accident was caused by the switch being open. Later, Engineman Boring inspected engine 1605 and found the throttle closed, the automatic and the independent brake valves in running position, and the reverse lever in position for forward motion.

Section Foreman Mathews, who was in charge of the section on which the accident occurred, stated that his gang consisted of himself and four laborers. About 2:45 p. m. he himself lined the switch involved for a motor-car, a ballast-trimming machine mounted on a push car, and a motor-car, coupled, to move from the main track to the south leg of the wye; in addition, he was operating the front motor-car. Because of difficulty encountered in moving the ballast-trimming machine through a turnout without derailing it, he instructed one laborer, who had not worked more than 2 weeks, to line and to lock the switch for the main track after the equipment was clear of the main track; two of the laborers were attending the windlasses, and the fourth was operating the rear motor-car. The section foreman said that he was occupied in moving the equipment throughout the south leg of the wye, a distance of about 1,000 feet, and that he did not again think of the switch until after he was informed of the accident. He understood that section foremen must personally attend to the opening and the closing of switches; however, in this instance his attention was distracted from that duty because of operating the motor-car and supervising the handling of the ballast-trimming machines. Several days prior to the day of the accident he had instructed the same section laborer to close and to lock a switch and, on this occasion, the laborer

had done so properly. The section foreman said that when switch targets need painting it is his duty to report such condition to his superiors; however, in his opinion the red aspect of the switch target involved could be seen plainly a distance of 1/2 mile. It is customary practice to call the attention of the men on his force to the position in which a switch is left after it has been used; in this instance he failed to do so. He said that during the past 3 months he has been suffering from a nervous ailment but it was not serious enough to prevent him from working.

Section Laborer Britt stated that he had been employed just 1 week prior to the day of the accident and that he had no previous railroad experience. He had never operated a switch and he did not know how to operate one. He said that he did not hear the section foreman instruct him to close the switch involved.

Section Laborer Baker and Section Laborer Bellamy, who were attending the windlasses, stated that Section Foreman Mathews lined the switch involved for their machine to enter the wye track. They did not hear the section foreman instruct anyone to close the switch.

Section Laborer Williams stated that Section Foreman Mathews lined the switch involved for their equipment to enter the wye track. Laborer Williams was operating the rear motor-car during the time the equipment was passing over the switch involved. He understood the importance of seeing that a switch is properly lined after it has been used, and was accustomed to calling its position to the section foreman; in this instance he knew that the switch was improperly lined but thought that it was left open for a movement back to the main track, therefore, he did not say anything about it. He heard the station whistle-signal sounded by No. 92 as it approached and he realized that an accident was imminent; however, he did not warn the section foreman nor attempt to close the switch. He did not hear the section foreman instruct any member of the force to line the switch for the main track.

General Roadmaster Chandler stated that he arrived at the scene of the accident about 2:30 p. m. The engine was derailed to the left at a point about 100 feet east of the switch point of the south wye-switch where the superelevation of the wye track began. Section Foreman Mathews had been instructed concerning the proper method of handling switches. The requirements of Rule 1084 were that section foremen were personally responsible for the opening and the closing of switches and that no excuse could be accepted for non-compliance with this rule.

According to data furnished by the carrier, Section Foreman Mathews was employed as a section laborer on August 3, 1921 and was promoted to section foreman on February 16, 1924. Of the four laborers, one had 18 years service; one, 3 years; one, 2 months; and one, 1 week. A traffic check in this territory shows an average of approximately 16 trains per day during the 30-day period prior to the accident, and an increase of 50 to 60 percent is anticipated during the winter season because of tourist traffic and fruit and vegetable shipments.

Observations of the Commission's Inspectors

The Commission's inspectors found no defective condition of the track or of the equipment involved that would have contributed to the cause of the accident; there was no indication of equipment having been damaged. The switch target involved could be seen from the right side of a north-bound engine a distance of 955 feet; however, the indication of the target could not be distinguished a distance of more than 450 feet.

Discussion

According to the evidence, the section foreman had lined the switch of the south leg of the wye at Lake Alfred for a motor-car, a ballast-trimming car, and a motor-car, coupled, to enter the wye. After entry to the wye the equipment proceeded about 1,000 feet but the switch was not closed and locked for the main track. No. 92 approached the point where the accident occurred at an estimated speed of 55 or 60 miles per hour, entered the open switch to the wye and was derailed on the No. 10 turnout to the right at a point about 100 feet beyond the switch points. There was no defect disclosed in the track or the equipment that would have contributed to the cause of the derailment. Since the engine stopped on its left side, since the derailment occurred near the point where the curvature changed from $7^{\circ}50'$ to 10° and where there was no superelevation, and since according to A. R. E. A. tables the overturning speed in this case is about 60 miles per hour, it appears that the train was being operated at overturning speed on the wye track at this point when the derailment occurred.

Under the rules, section foremen must open and close all switches used by them and at all times they must retain possession of their switch keys. The testimony disclosed no controversy concerning the person who opened the switch but there was considerable discrepancy concerning the failure to close the switch. The section foreman stated that he instructed a laborer to close the switch because the section foreman was devoting

his attention to moving the ballast machine through the turnout and to operating the front motor-car; however, the four laborers stated that they did not hear the section foreman instruct any one of them to close the switch. One laborer knew the switch was open, heard the station whistle-signal sounded by No. 92, and was aware an accident was imminent, but he did not warn his section foreman or anyone else. Had the section foreman or any member of his force been alert this accident would not have occurred.

The evidence disclosed that the aspects of the switch target involved were plainly visible from the right side of a north-bound engine a distance of only 450 feet. Of the three persons on the engine, apparently none of them saw the open switch until the engine had practically reached the switch, as the evidence indicated there was no application of the air brakes made prior to the derailment. Why they did not observe the red aspect of the switch target at a greater distance could not be determined, as all employees on the engine were killed in the accident. However, even if the engineman had taken action to stop his train the instant it was possible to see the red aspect of the switch-stand, it is not probable that the speed would have been reduced enough throughout the distance of 450 feet to avert the accident, especially if the train involved was being operated at the maximum authorized speed of 70 miles per hour. Undoubtedly this accident would have been averted if an automatic block-signal system had been in use in this territory, because the crew would have received warning by restrictive signal indications that an abnormal condition existed, since the switch had been open during a period of about 10 minutes before the accident occurred.

Cause

It is found that this accident was caused by the train entering an open switch at a high rate of speed.

Dated at Washington, D. C., this third day of January, 1941.

By the Commission, Commissioner Patterson.

W. F. BARTEL,

Secretary.