

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2952
LOUISVILLE AND NASHVILLE RAILROAD COMPANY
REPORT IN RE ACCIDENT
AT CHATSWORTH, GA., ON
DECEMBER 4, 1945

SUMMARY

Railroad: Louisville and Nashville
Date: December 4, 1945
Location: Chatsworth, Ga.
Kind of accident: Derailment
Train involved: Passenger
Train number: 32
Engine number: 417
Consist: 10 cars
Estimated speed: 58 m. p. h.
Operation: Timetable, train orders and
automatic block-signal system
Track: Single; tangent; 0.62 percent
ascending grade northward
Weather: Cloudy
Time: 11:05 a. m.
Casualties: 35 injured
Cause: Defective switch frog

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2952

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

LOUISVILLE AND NASHVILLE RAILROAD COMPANY

January 14, 1946.

Accident at Chatsworth, Ga., on December 4, 1945, caused
by a defective switch frog.

REPORT OF THE COMMISSION¹

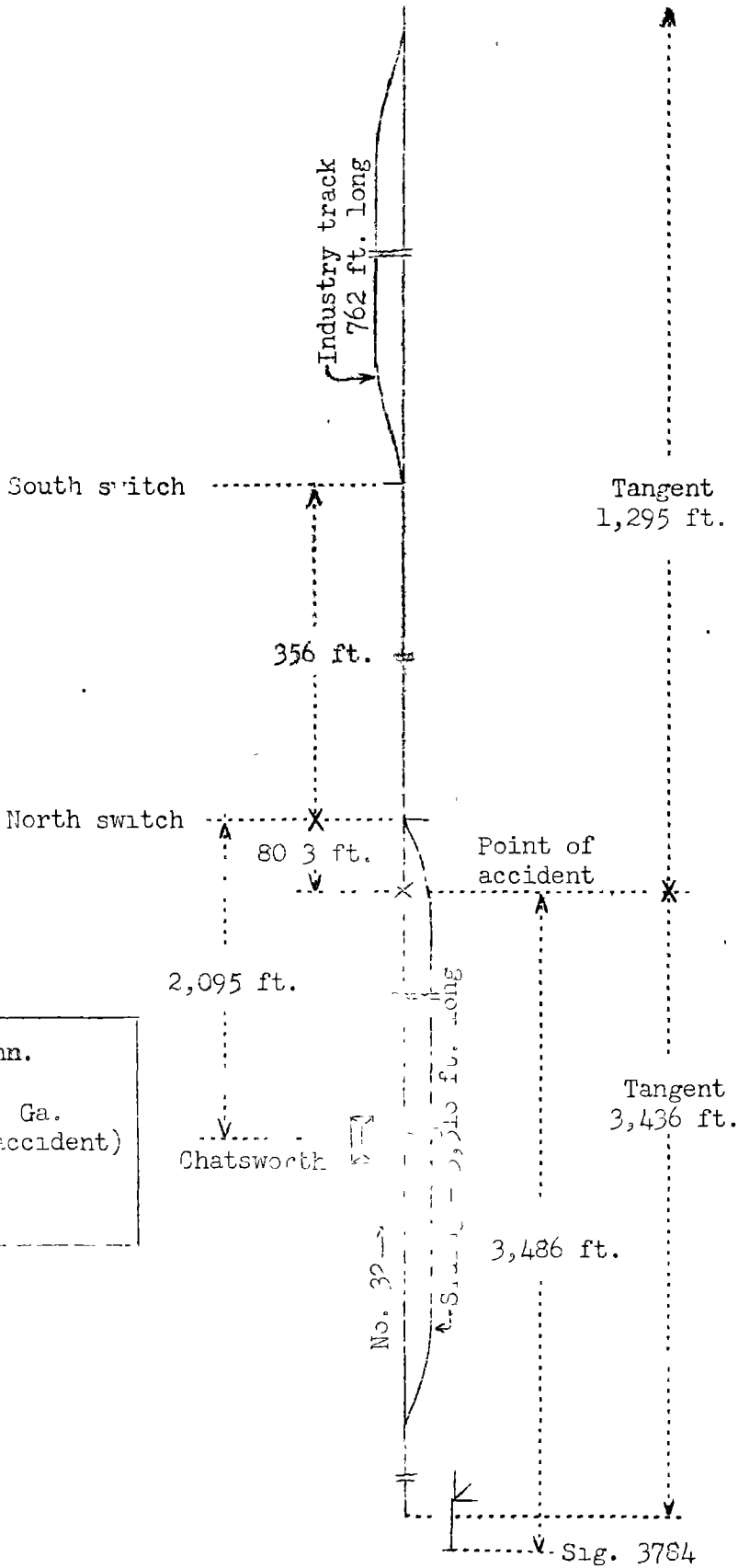
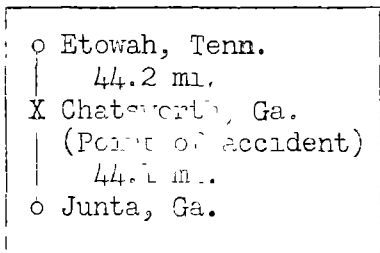
PATTERSON, Commissioner:

On December 4, 1945, there was a derailment of a passenger train on the Louisville and Nashville Railroad at Chatsworth, Ga., which resulted in the injury of 35 passengers.

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.

To Etowah →

← To Junta



Inv. No. 2952
 Louisville and Nashville Railroad
 Chattanooga, Ga.
 December 4, 1945

Location of Accident and Method of Operation

This accident occurred on that part of the Knoxville and Atlanta Division extending between Junta, Ga., and Etowah, Tenn., 88.3 miles, a single-track line over which trains are operated by timetable, train orders and an automatic block-signal system. At Chatsworth, 44.1 miles north of Junta, a siding 3,516 feet in length parallels the main track on the east. The north switch of this siding is 2,095 feet north of the station. An industry track 762 feet in length parallels the main track on the west. The south switch of this track is 356 feet north of the north siding-switch. The accident occurred on the main track 2,015 feet north of the station, at the frog of the north siding-switch, and the general derailment occurred at the south industry-track switch. The main track is tangent throughout a distance of 3,436 feet south of the point of accident and 1,295 feet northward. The grade is 0.62 percent ascending northward.

The structure at the north siding-switch consists of a No. 10 turnout, a No. 10 spring-rail frog, the angle of which is 5°43'29", 100-pound rails and switch-points, and two 11-foot guard rails. The ends of the guard rails are flared, and each guard rail has one clamp. The frog is 16.5 feet long, and its point is toward the north. For through movements on the main track a 2-inch flangeway between a rigid wing rail and the frog-point is provided. The spring wing rail is adjusted so as to provide a 1-3/4-inch flangeway for movements to and from the siding through this switch. The spring wing rail is 12 feet 2-1/2 inches long, and is held in normal position by two coil springs encased in malleable iron housings. The housings are held in position by two adjustable nuts on the threaded ends of a 1-1/8-inch rod, which extends through the web of the spring wing rail and the rigid wing rail at a point 7 inches north of the point of the frog. The frog was laid new in 1939, and is provided with metal foot guards and 11 tie plates, each of which is secured to the frog by one 3/4-inch counter-sunk rivet and fully spiked to the ties. To prevent excessive vertical and horizontal movement of the spring wing rail, base-stop No. 1 is provided at the frog-point, and hold-down No. 1, base-stop No. 2, hold-down No. 2 and base-stop No. 3 are provided at points, respectively, 1 foot 5-1/2 inches, 3 feet 5 inches, 4 feet 11 inches and 6 feet 5-1/2 inches south of the frog-point.

Automatic signal 3784, governing north-bound movements, is 3,486 feet south of the point of accident.

Rules of the maintenance-of-way department read in part as follows:

247. Supervision of Switches.--Foremen must examine main track switches at least once a week,
* * *

The maximum authorized speed for the train involved was 60 miles per hour.

Description of Accident

No. 32, a north-bound first-class passenger train, consisted of engine 417, two express cars, four coaches, one dining car and three Pullman sleeping cars, in the order named. The first car was of steel-underframe construction, and the remainder were of all-steel construction. This train passed signal 3784, which displayed proceed, passed the station at Chatsworth at 11:04 a. m., 7 minutes late, and while moving at an estimated speed of 58 miles per hour the tender of the engine and the first seven cars were derailed.

The front wheels of the rear truck of the tender of the engine were derailed at the frog of the north siding-switch. These wheels continued in line with the track 356 feet to the south industry-track switch, where the general derailment occurred. The engine and the tender, remaining coupled, became separated from the first car and stopped with the front of the engine 1,625 feet north of the point of derailment. The rear truck of the tender was torn loose, and stopped east of the track and 1,166 feet north of the point of derailment. The derailed cars stopped practically upright and in line with the main track. The left sides of the third to the sixth cars, inclusive, struck the sides of two box cars that were on the industry track. This equipment was considerably damaged.

It was cloudy at the time of the accident, which occurred about 11:05 a. m.

Engine 417 is of the 4-8-2 type. The total weight in working order is 337,730 pounds, distributed as follows: Engine truck, 57,280 pounds; driving wheels, 226,910 pounds; and trailer truck, 53,540 pounds. The specified diameters of the engine-truck wheels, the driving wheels and the trailer-truck wheels are, respectively, 33, 70 and 43 inches. The rigid wheel-base of the engine is 18 feet 3 inches long. The total length of the engine and tender is 86 feet 9-5/8 inches. The tender is rectangular in shape, and its capacity is 10,000 gallons of water and 19 tons of coal. The weight of the tender loaded is 196,000 pounds. The estimated load of the tender at the time of the accident was 13 tons of coal and 5,000 gallons of water. The tender trucks are of the 4-wheel swing-bolster type. The wheels are 36 inches in diameter. The spring arrangement consists of eight coil springs and one elliptic spring on each side of each truck. The last Class 5 repairs to the engine were completed April 16, 1945. The accumulated mileage since that date was 47,423 miles.

Discussion

No. 32 was moving on tangent track at an estimated speed of 58 miles per hour, in territory where the maximum authorized speed was 60 miles per hour, when the front wheels of the rear tender-truck were derailed at the frog of the north siding-switch at Chatsworth. These wheels continued in line with the track 356 feet to the facing-point turnout of the industry track-switch, where the general derailment occurred. There was no defective condition of the engine or tender prior to the

accident, and there was no indication of dragging equipment or of any obstruction having been on the track.

The first the enginemen were aware of anything being wrong was when the engine was about 80 feet north of the north siding-switch, and they observed an unusual movement of the tender. The engineer immediately moved the brake valve to emergency position, but the general derailment occurred before the train could be stopped. The members of the train crew were in various locations throughout the cars of the train. They were not aware of anything being wrong until the derailment occurred.

Examination of the frog of the north siding-switch disclosed that base-stops No. 1 and No. 3 and the cuff of hold-down No. 1 were broken off, and the cuff and the stop-bar of hold-down No. 2 were missing. The break in base-stop No. 3 was new, but about 75 percent of the break in the cuff of hold-down No. 1 and about 80 percent of the break of base-stop No. 1 were old fractures. The gage side of the wing rail bore heavy batter marks. The outer side of the rim of the right front wheel of the rear tender truck bore marks indicating that this wheel dropped into the throat of the frog at a point about 9 inches north of the frog-point.

The track supervisor and the section foreman said that about 15 days prior to the present accident a car of a freight train, moving northward from the siding to the main track through the north switch, was derailed. Soon afterward they examined the frog and observed that the cuff and the stop-bar of hold-down No. 2 were missing. They thought the missing parts would not cause the frog to be unsafe for use. At that time the track supervisor ordered a new frog to replace the frog involved. However, no action was taken to restrict the speed of trains over the defective frog.

The missing cuff and stop-bar of hold-down No. 2 permitted excessive lateral and vertical movement of the spring rail, and this action in turn caused the partial fractures in the cuff of hold-down No. 1 and base-stop No. 1. The complete failure at these fractures and the new break in base-stop No. 3 occurred when the wheels of the engine of No. 32 were moving over the frog, then the spring wing rail shifted outward far enough for a wheel to drop into the throat of the frog.

Cause

It is found that this accident was caused by a defective switch frog.

Dated at Washington, D. C., this fourteenth day of January, 1946.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.