

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

PENNSYLVANIA RAILROAD

NORTH JUDSON, IND.

NOVEMBER 29, 1936

INVESTIGATION NO. 2123

SUMMARY

Inv-2123

Railroad: Pennsylvania
Date: November 29, 1936
Location: North Judson, Ind.
Kind of accident: Derailment; wreckage struck train on adjoining track
Trains involved: Freight : Freight
Train numbers: IL-3 : NW-88
Engine numbers: 6979-6800 : 6817
Consist: 87 cars and 3 : 62 cars and
caboose caboose
Speed: 45-50 m. p. h. : 40-50 m. p. h.
Track: Tangent; practically level grade.
Weather: Clear
Time: 8:50 p. m.
Casualties: 1 killed
Cause: Broken journal, due to overheating

January 26, 1937

To the Commission:

On November 29, 1936, there was a derailment of a freight train on the Pennsylvania Railroad near North Judson, Ind., the wreckage of which struck a freight train moving in the opposite direction on an adjacent track, resulting in the death of one employee. The investigation of this accident was made in conjunction with a representative of the Public Service Commission of Indiana.

Location and method of operation

This accident occurred on that part of the Logansport Division extending between Bradford, Ohio, and Schererville, Ind., a distance of 199.6 miles; in the vicinity of the point of accident this is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The derailment occurred on the west-bound track at a point 1.7 miles east of the station at North Judson, the derailed cars striking the rear portion of a freight train moving in the opposite direction on the east-bound track. Approaching the point of accident from either direction the tracks are tangent for several miles. The grade is practically level at the point of accident. The maximum speed permitted for freight trains is 50 miles per hour.

The weather was clear at the time of the accident, which occurred about 8:50 p. m.

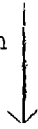
Description

Train IL-3, a west-bound freight train, consisted of 87 cars, 2 deadhead cabooses, and 1 service caboose, hauled by engines 6979 and 6800, and was in charge of Conductor Coats and Enginemen Clemans and Marsh. This train departed from Race (Logansport yard), 43.5 miles from North Judson, at 7:25 p. m., according to the train sheet, passed Kenneth, the last open office and 36.5 miles from North Judson, at 7:46 p. m., and when approaching North Judson at a speed estimated to have been between 45 and 50 miles per hour the eighty-fourth car was derailed to the left and struck the rear portion of Train NW-88 which was moving eastward on the adjacent track.

Train NW-88, an east-bound freight train, consisted of 62 cars and a caboose, hauled by engine 6817, and was in

o	Schererville, Ind.
	43.0 mi.
o	North Judson, Ind.
	1.7 mi.
X	Point of accident
	40.5 mi.
o	Logansport, Ind.
	114.4 mi.
o	Bradford, Ohio
	83.3 mi.
o	Columbus, Ohio

Direction of
East-bound Train
NW-88



Road

Public

← Point of derailment

Direction of
West-bound Train
IL-3



Inv. No. 2123
Pennsylvania R.R.
North Judson, Ind.
November 29, 1936.

charge of Conductor Robison and Engineman Hendee. This train passed North Judson at 8:47 p. m., according to the train sheet, and while traveling at a speed estimated to have been between 40 and 50 miles per hour its rear portion was struck by the derailed cars of Train IL-3.

The eighty-fourth car in Train IL-3 was derailed to the south, raked the sides of the two rear cars in Train NW-88, demolished the caboose of that train, and stopped in a badly damaged condition 421 feet beyond the point of derailment. The eighty-fifth to eighty-eighth cars, inclusive, were derailed and fouled the east-bound track; one pair of wheels of the eighty-ninth car was also derailed. The caboose of Train NW-88 stopped on its side with one end lying on the east-bound track just east of the rear end of Train IL-3, while the two rear cars of Train NW-88 were damaged but not derailed and stopped approximately 500 feet beyond the caboose. The employee killed was the flagman of Train NW-88.

Summary of evidence

Conductor Coats, of Train IL-3, stated that the air brakes were tested at Logansport, and when the train stopped at Boone for water he inspected the south side of the rear 25 cars and noted nothing wrong. He watched the train on all curves, and could see both sides of the train at several points. After passing Denham, 5.8 miles east of North Judson, he smelled the odor of hot iron which he called to the attention of the flagman, and the flagman said that he could see something burning ahead; fusees were then lighted as a signal to the engineman and about a minute or two later the derailment occurred. Conductor Coats was on the platform at the time and he estimated the speed of his train to have been 45 miles per hour at the time of the accident. After reporting the accident he found a journal broken on the forward axle, front truck, left side of the seventh car from the rear, N&W hopper car 6518 and he could place his hand on the stub of the journal.

Flagman Lowden, of Train IL-3, stated that after the conductor called his attention to the burning odor he looked ahead and thought he could see a small blaze about 4 or 5 car lengths ahead. He then lighted fusees and they had been burning about 1 or 1½ minutes when the accident occurred. About 20 or 25 minutes after the accident he placed his hand on the stub of the broken journal and it was not warm.

Engineman Clemans, Fireman Davis and Head Brakeman Baker, of Train IL-3, stated that they looked back along the train at

points en route; they did not see a lighted fusee just prior to the accident. The train was traveling at a speed of between 40 and 50 miles per hour when the air brakes were applied in emergency. Engineman Clemens stated that the last point at which he could see the marker light was at Winamac, 14.7 miles from North Judson. Head Brakeman Baker stated that he also felt of the broken journal about 35 or 40 minutes after the accident and while it was warm he could hold his hand on the stub and the waste was not burned. The statements of the engine crew of the second engine in this train brought out nothing additional of importance.

Fireman Sines and Head Brakeman Reed, of Train NW-88, stated that they were on their respective seats on the engine as they passed Train IL-3 and they saw a blaze indicating a hot box on one of the cars of that train, about 4 or 6 car lengths from the rear caboose. Brakeman Reed began giving stop signals with a lantern and as he did so he saw a fusee burning on the rear platform. Fireman Sines said that he also saw the burning fusee. Engineman Hendee of Train NW-88 stated that he saw the journal blazing on one of the rear cars but did not see the fusee. He was operating his train at a speed of 45 or 50 miles per hour when he felt a jerk and his train stopped within 10 or 20 car lengths.

Conductor Robison, of Train NW-88, stated that when the accident occurred he was standing on the rear platform of his caboose inspecting the west-bound train as it passed. After the accident he examined the broken journal and as the stub remaining on the axle was red hot, he was of the opinion that the accident was due to a burned off journal.

Joint Car Inspectors Katz and Morris, employed at Columbus, stated that at 1:10 p.m. on November 28, 1936, they inspected, for the Pennsylvania Railroad, all of the cars arriving in N&W Extra 2045, including N&W car 6518. All journal box lids were raised and the journals given careful inspection; there were no indications of overheating or other defects.

Car Inspector Mills, at Logansport, stated that at 7 a.m. November 29, he inspected the cars arriving in Extra 6812, which included N&W car 6518. His inspection was made on the south side of the train and included safety appliances, draft gears, trucks and journal boxes. Any journal boxes bearing evidence of heating were opened and examined; if no indication of heating was found the lids were not opened. He did not remember whether the journal box lids were raised on N&W car 6518. Car Inspector Shoff stated that he inspected the north side of this train, and no exceptions were taken to car 6518.

Car Inspectors Harrell and Barnett, at Logansport, stated that they made the out-bound inspection and brake test on Train IL-3 before its departure from that point and nothing wrong was noted.

Division Engineer Swensen stated that in his inspection of the track after the accident, he found the first marks of derailment to be on the ties of the west-bound track about 100 feet east of a highway crossing, and from this point westward the ties on the outside of the south rail were badly broken. This track was practically destroyed for 8 rail lengths and the east-bound track was badly torn up for about 6 rail lengths and pushed out of line as much as 8 feet. The marks on the ties indicated that they were caused by a broken truck or axle, and further investigation revealed a broken journal on the south wheel of the west axle of N&W car 6518.

Examination by the Commission's inspectors revealed that the left No. 4 journal on N&W 6518 had broken off, and a section measuring 8 inches in length had dropped in the journal box, leaving a 3-inch stub in the wheel and permitting the journal box to drop to the ground. The brass had evidently settled at an angle such as to wear this stub in a conical shape to within 1 inch of the throat, the point of the cone being $2\frac{1}{2}$ inches in diameter. The 1-inch portion of the journal between the throat and the base of the cone measured $5\frac{7}{8}$ inches in diameter. Examination of the broken 8-inch portion disclosed a second fracture, approximately 1 inch deep, extending around the circumference of the journal and located from $6\frac{7}{8}$ to $6\frac{9}{16}$ inches from the inside of the collar; there were also 8 longitudinal fractures connecting the original break with this circumferential fracture. The journal between the collar and the fracture measured $5\frac{7}{8}$ inches in diameter and the core was approximately $3\frac{3}{4}$ inches in diameter and showed no evidence of twisting or of having been recently overheated.

The truck frame was spread and the sand-board connection on the right side was torn loose but the brake hangers and brake beams were still connected and there was no indication that there was any defect in the truck, wheels or foundation brake rigging, which could have contributed to the accident.

Car N&W 6518 was an all-steel hopper, equipped with Andrews cast steel truck frames, pressed steel journal boxes with $1\frac{1}{4}$ by 17 inch box bolts, 35-inch wrought-steel wheels, and 6 by 11 inch journals. The stencilling on the car showed: date built, 11-22; capacity, 140,000 pounds; light weight, 48,400 pounds; load limit 161,600 pounds; air brake cleaned

by N&W at B L, 10-30-36; journal boxes repacked by N&W at B L 10-30-36.

This car was loaded at Gary, W. Va., on November 26, 1936, with 158,100 pounds of coal and was delivered to the Pennsylvania Railroad, at the Joyce Avenue Yard of the N. & W. Ry. at Columbus, Ohio, at 1:10 p.m. November 28, and left this point in a Pennsylvania train at 8 p.m. the same day. It arrived at Logansport yard at 7:45 a.m. November 29 and left there in Train IL-3 at 7:25 p.m. on the same date.

The 8 inch portion of the broken journal was sent to the Engineer of Tests, Pennsylvania Railroad, for examination and his report states: "The character of the fracture and the surface of the journal indicate that the failure was directly due to service overheating, which is further substantiated by a light etched longitudinal section. The structure of the entire journal portion shows the heat effect, with the original grain structure appearing in the collar. The material is not of the best, being high in slag. This, however, had no influence on the failure."

Discussion

The investigation developed that the journal on the south side of the front axle of the lead truck of N&W hopper car 6518, the seventh car from the rear end, was broken off, due to overheating. The journal boxes had been repacked October 30, 1936, and when the car was given class A inspection of the day prior to the accident nothing wrong was found. The car, loaded with coal, was then moved to Logansport, a distance of 197.7 miles, where it was again inspected and no exceptions were taken. After leaving Logansport, 42.2 miles from North Judson, the south side of the rear portion of the train was inspected by the conductor, when the train stopped at Boone for water, at which time nothing wrong was noted. Just prior to the accident, however, the conductor smelled the odor of hot iron and the flagman stated that he saw fire on one of the cars ahead, while the crew of the train on the adjacent track saw a blaze coming from one of the cars near the rear end. After the fire was seen by the flagman he lighted a fusee in an attempt to signal the engineman, but the accident occurred immediately afterward.

The failure of this journal was a result of overheating. While there are conflicting statements as to the temperature of the journal soon after the accident, the fact that the waste in the journal box bore but slight evidence of fire

would indicate that the overheating had occurred at some previous time; the time and cause of overheating were not determined.

Conclusion

This accident was caused by a broken journal, due to overheating.

Respectfully submitted,

W. J. PATTERSON,

Director.