

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE
CHICAGO, ROCK ISLAND & PACIFIC RAILWAY

FLORIS, IA

FEBRUARY 16, 1936

INVESTIGATION NO. 2044

SUMMARY

Railroad: Chicago, Rock Island & Pacific.
Date: February 16, 1936.
Location: Floris, Ia.
Kind of accident: Derailment.
Train involved: Freight.
Train number: 2nd 990
Engine number: 5003
Consist: 34 cars and cabooses.
Speed: 25-35 m.p.h.
Track: 2^o curve. Grade 0.867 percent descending.
Weather: Clear.
Time: 3:10 p.m.
Casualties: 1 killed.
Cause: Broken journal.

Inv-2044

April 23, 1936.

To the Commission:

On February 16, 1936, there was a derailment of a freight train on the Chicago, Rock Island & Pacific Railway at Floris, Ia., which resulted in the death of 1 trespasser.

Location and method of operation

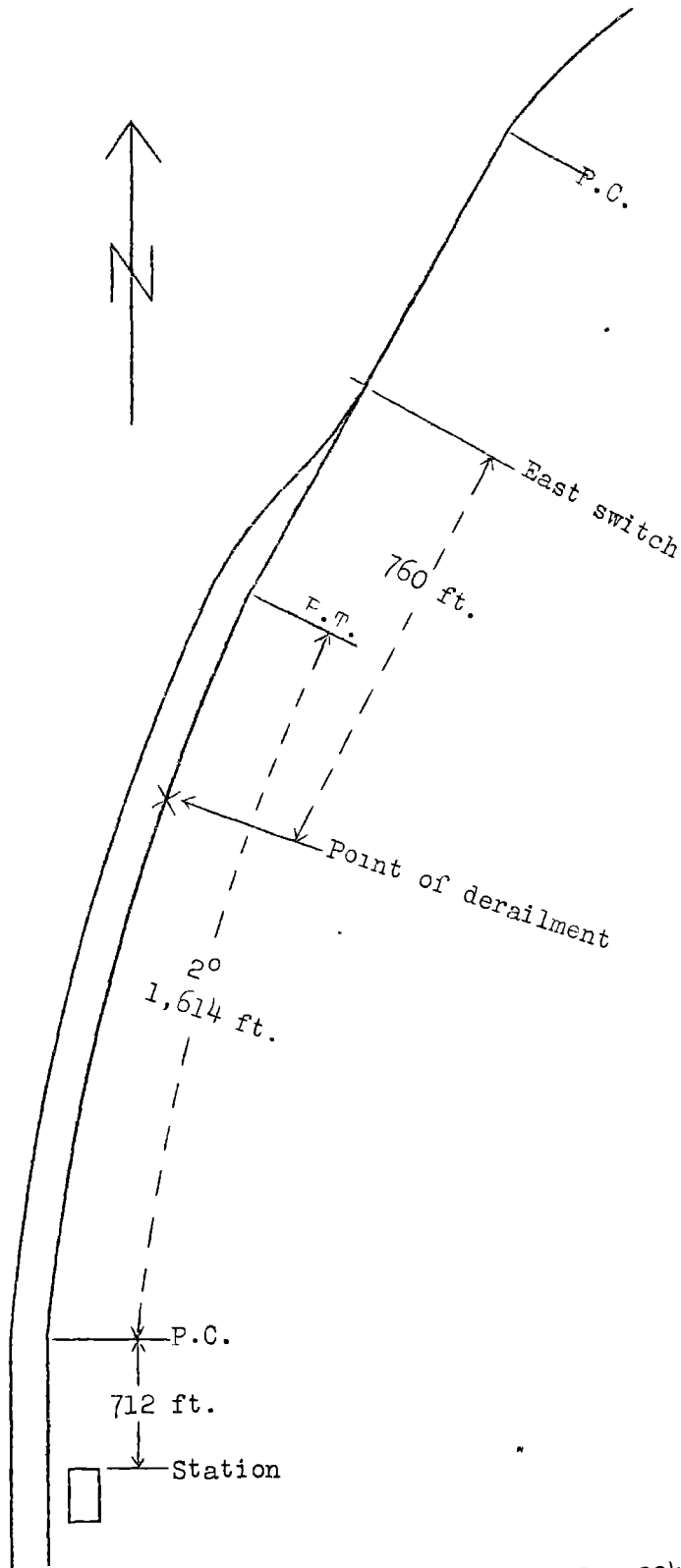
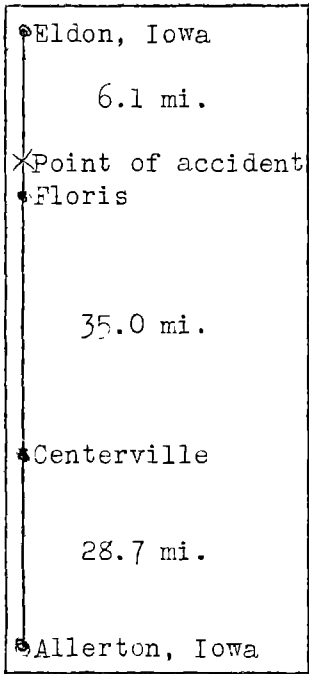
This accident occurred on Subdivision 28 of the Missouri Division, which extends between Trenton, Mo., and Eldon, Ia., a distance of 120.7 miles. In the vicinity of the point of the accident this is a single-track line over which trains are operated by time table, train orders and an automatic block-signal system. The accident occurred at a point 760 feet west of the east passing-track switch which is located 2,036 feet east of the station at Floris; approaching this point from the west the track is tangent for a distance of 8,208 feet, followed by a 2° curve to the right for a distance of 1,614 feet, the derailment occurring on this curve 450 feet from its eastern end. The grade at the point of accident is 0.867 percent descending for eastbound trains. The maximum authorized speed for freight trains on this subdivision is 50 miles per hour on tangents and 40 miles per hour on curves.

The weather was clear at the time of the accident, which occurred about 3.05 p.m.

Description

Train 2nd No. 990, an east-bound freight train, consisted of 54 cars and a caboose, hauled by engine 5003, and was in charge of Conductor Williams and Engineman Lierley. This train departed from Allerton, Ia., 63.7 miles west of Floris, at 11:50 a.m., according to the train sheet, and stopped at Centerville, 35 miles west of Floris, for coal, water, inspection of train, and to set out cars. The train left Centerville at 2 p.m., passed Belknap, the last open office, 6.9 miles west of Floris, at 2:55 p.m., and was derailed after passing the station at Floris while traveling at a speed estimated to have been between 25 and 35 miles per hour.

The engine and the first five cars were not derailed, but the sixth car, R.I. gondola 185444, loaded with coal, stopped on its right side to the south of and clear of the track at a point 900 feet east of the first marks of derailment; the trucks of this car, with the center pins sheared off, were about 60 feet west of



Inv. No. 2044
Chicago, Rock Island & Pacific Ry.
Floris, Iowa
Feb. 16, 1936

the body of the car, clear of the track, and plowed into the ground at the bottom of the embankment. The following 17 cars were derailed and stopped in various positions east of the sixth car within a space of 360 feet. The twenty-fourth and twenty-fifth cars, both derailed, stopped on the roadbed near the sixth car, and the balance of the train remained on the track.

Summary of evidence

Conductor Williams said that several cars were picked up at Allerton and that after the train reached Centerville one of these cars was set out on account of a hot journal, Head Brakeman Flesher saying that this car was directly behind the car involved in the accident. The head brakeman and Rear Brakeman Wolfe examined the other cars in the train and felt all of the journal boxes with bare hands. On leaving Centerville the conductor and the flagman rode in the caboose cupola, watching the train as it rounded all curves en route, and they said they did not see any indication of hot boxes or other trouble, while the head brakeman, riding on the engine, and also Engineman Lierley, watched the train at different points but saw nothing wrong, although the men on the engine said their views was obscured by smoke from the engine and also by snow being blown around as the result of the motion of the train. Engineman Lierley said the maximum speed of his train after leaving Centerville was not over 50 or 55 miles per hour and that it was about 30 or 35 miles per hour when the accident occurred. Engineman Lierley, Head Brakeman Flesher and Conductor Williams subsequently made an examination of the derailed equipment and found a truck with a broken journal, the head brakeman saying that the packing was on fire; the journal was warm, according to Conductor Williams, but not red, and Engineman Lierley said that when he threw snow on it the snow melted but did not turn into steam. It also appeared from the conductor's statements that considerable difficulty had been experienced on previous trips as the result of the packing rolling and pushing up the lids on journal boxes.

Master Mechanic Cole and General Car Inspector Price, in a joint report, identified the broken journal as being on the right end of the front axle of the lead truck of the sixth car in the train, and were of the opinion that the cause of the heating of this journal, which later was broken under heat, was the fact that the packing became frozen and rolled out of the box, to the extent that about seven-eighths of it was missing, resulting in insufficient lubrication.

The car involved is a drop-bottom gondola, built in 1925, equipped with Andrews cast steel truck side frames, with 5½ by 10-inch journals. The stencilled capacity is 115,000 pounds, with a

load limit of 121,000 pounds, and the car had been loaded with coal and weighed at the mine at Williamson, Ia., on February 15, 1936, the weight of the contents being 114,200 pounds. The car had been on the repair track at Silvis Shop on January 24, 1935, and, according to information furnished by General Car Inspector Price, the boxes had been repacked on that date, while a record of inspection made of the car at Des Moines, Ia., a few days prior to the accident indicated that nothing wrong was found; in addition, Conductor Molan, who handled this car from Melcher, Ia., to Allerton, a distance of 39.9 miles, on the day of the accident, stated that no trouble of any kind was experienced. This car had been continuously in regular service for the 30-day period prior to the accident, and had made several movements under load, the last previous loading having been from Williamson to Des Moines on February 3 and 4, after which the car was returned empty to the mines at Williamson on February 11, being loaded on February 15 with the load which it was carrying at the time of the accident.

The Commission's inspectors found that the first marks of derailment were about 760 feet west of the east switch, and they consisted of scuffing marks on the ties outside of the south rail. These marks were more pronounced eastward from the point where they first appeared, and indicated that the journal box, or some part of the truck, was gouging the ties. About 100 feet west of the east switch the ends of the ties outside of the south rail were marked to a considerable extent and some of them broken. At this point there was a distinct mark on the ball of the south rail indicating that a wheel flange had passed over it and dropped off on the outside, while there were corresponding wheel marks on the ties on the inside of the north rail. The wheel marks on the ties continued from this point to the west end of the wing rail of the frog, where a very noticeable mark or abrasion was found which indicated that a wheel on the north side, or some part of the truck, had come in contact with the end of the wing rail; this mark then led off to the southward and the wheels left the ends of the ties. The shoulder of the embankment was considerably plowed up by the truck in question as it continued diagonally down the embankment to the point where it stopped, partially embedded in the ground.

An inspection of the derailed equipment by the Commission's inspectors showed that the journal on the south side of the forward axle of the leading truck of R. I. gondola 185444 had been broken off, apparently due to being overheated. The stub of the journal was about 3 3/8 inches in length from the dust guard seat and 5 1/2 inches in diameter near the back fillet, but had been cut and ground down until it was conical in shape, tapering toward the outer end, and this reduced section at the end was somewhat ragged

in appearance, showing a distinct twist. The detached portion of this same journal was $5\frac{1}{4}$ inches in diameter, and was broken off approximately 6 inches from the collar, the break being somewhat irregular. The cross-section of the broken end disclosed a fracture extending between $1\frac{1}{2}$ and $1\frac{3}{8}$ inches inward from the surface of the journal toward the center; the remainder of the metal, especially near the center, indicated that this end of the journal had been torn and twisted off, the twist in the fibre of the metal corresponding with the central section of the stub end of the axle. The packing in the three other journal boxes of this same truck was of sufficient quantity and in good condition.

Discussion

The investigation developed that the journal on the south side of the front axle of the leading truck of R.I. gondola 185444, the sixth car in the train, was broken off due to its having been overheated. The journal boxes had been repacked on January 24, 1935, and no exceptions were taken when the car was inspected a few days prior to the accident. The car had been in regular service, and was loaded on February 15 with the lading which it was carrying at the time of the accident, which weighed less than the load limit of the car. This loaded car then moved from Melcher to Allerton, a distance of 39.9 miles, on the day of the accident, without any trouble being experienced, after which it was picked up by Train 2nd No. 990 for the movement out of Allerton.

It further appeared from the evidence that the movement of this car from Allerton to Centerville, a distance of 28.7 miles, was made without heating of the journals, that the train was inspected by the trainmen while it was standing on the siding at Centerville and the journal boxes of this particular car tested with bare hands, and that there was no evidence of heating at that time. It also was shown by the evidence that the car directly behind it was found to have a hot box and was set out at Centerville, which verifies the fact that attention was being given to the possibility of the journals becoming heated; in addition, members of the crew watched the train on the various curves between Centerville and the point of accident, but no indications of heated journals were noted during this movement of 35 miles. The condition of the journal, however, left no doubt as to the fact that it had been overheated, probably as a result of the freezing and rolling of the packing, causing a deficiency of lubrication.

Conclusion

This accident was caused by a broken journal, due to its having been overheated.

Respectfully submitted,

W. J. PATTERSON

Director.