

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
TRACKS OF THE PEORIA TERMINAL COMPANY NEAR BISMARCK
SIDING, ILL., ON FEBRUARY 20, 1929.

May 23, 1929.

To the Commission

On February 20, 1929, there was a derailment of a passenger train on the tracks of the Peoria Terminal Company near Bismark Siding, Ill., resulting in the death of 6 passengers and the injury of 91 passengers and 1 employee.

Location and method of operation

This accident occurred on that part of Sub-Division No. 1 extending between Western Avenue, Peoria, and Hollis, Ill., a distance of 6.1 miles, in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The accident occurred on a hillside fill at a point about 0.32 mile east of Bismark Siding, the fill is about 8 feet in height and on the north side of the track. Approaching from the west the track is tangent for a distance of 1,238 feet and the accident occurred on this tangent at a point about 138 feet from its eastern end, east of this tangent there is a 1° curve to the right 1,760 feet in length. The grade for eastbound trains is 0.427 per cent descending. The track was laid with 70-pound rails varying in length from a few feet to 60 feet, with about 35 ties to the longest rail-length, partly tie-plated, and was ballasted with cinders to a depth of from 20 to 24 inches. Various kinds and lengths of rail joints are used, the rail joints were originally placed opposite each other, however, the running of the track and change-outs to shorter lengths of rail necessitated the placing of some of the joints at irregular intervals.

The railroad was built as an electric line about 1899, and was acquired by the Peoria Terminal Company on May 1, 1927, freight trains of the Toledo, Peoria & Western Railroad operate over that section of track where the accident occurred and the heaviest engines passing over it are those of that railroad, of the 2-8-0

type, weighing, engine and tender, in working order, 314,500 pounds. The heaviest Peoria Terminal Company engine has a total weight, engine and tender, of 213,000 pounds. The only passenger train operating over this track is the one involved in this accident, which transports miners to the coal mines in the morning and returns them in the evening. On account of track conditions and comparatively heavy power, trains are restricted to a speed of 20 miles per hour.

The weather was clear and cold at the time of the accident, which occurred at about 6.43 a. r.

Description

Eastbound passenger train No. 1 consisted of eight coaches, all of wooden construction, hauled by CRI&P engine 2030, which was backing up, and was in charge of Conductor Hulting and Engineman Fisher. This train left Bismark Siding, the last open office, at 6.42 a. m., according to the train sheet, three minutes late, and was traveling at a speed estimated to have been between 12 and 20 miles per hour when the last six cars were derailed as a result of a defective piece of track.

All six cars were derailed to the north, the first four coming to rest on their left sides at the bottom of the fill, the fifth derailed car came to rest with its forward end extending down the embankment and its rear end coupled to the last car, which remained upright on the roadbed with its rear end a few feet east of the defective track involved. None of the coaches was telescoped or crushed, the damage to them being confined principally to their interiors.

Summary of evidence

Engineman Fisher stated that the speed of the train was about 10 or 12 miles per hour when approaching the curve located just beyond the tangent on which the accident occurred, he closed the throttle and permitted the engine to drift and was unaware of anything wrong until he happened to look back along the train and noticed two of the coaches buckling, he immediately moved the brake valve handle to the emergency position. Engineman Fisher said that he noticed nothing unusual when the engine passed over the section of track where the rear of the train derailed. Fireman Bowers gave testimony similar to that of Engineman Fisher, the fireman, thought, however, that the air brakes applied from the rear as a result of the

derailment before the engineman moved the brack valve handle to the emergency position.

The statements of Conductor Hulting and Brakemen Miller and Marsnall were to the effect that they knew of nothing wrong until the accident occurred. Subsequent to the accident a hurried inspection of the track disclosed that on the north side of the track a portion of the receiving end of a rail beyond the rail joint, was shattered, with some of the rail still left in the splice bars, no examination was made of the splice bars. These employees estimated the speed of the train at the time of the accident to have been from 12 to 15 miles per hour.

Roadmaster Gates, of the Peoria, Hanna City & Western Railroad, who was riding in the last car as a passenger, stated that shortly after the accident he examined the broken rail involved and also the angle bars. In his opinion the first break occurred inside the angle bars, saying that there was a "Dutchman" in between the angle bars and bolted thereto, this was made of 70-pound rail, was about 5 inches in length, and had been inserted to fill out space between this rail and the adjacent rail. He thought the speed was about 20 miles per hour when the accident occurred, and that the third car was the first one to be derailed although there were no flange marks on the ties to indicate that either the third or fourth cars had been derailed prior to reaching the point where they turned over.

Section Foreman De Rose stated that he had worked for the Peoria Terminal Company as a section foreman since 1907, but that on the section where the accident occurred he had relieved the regular foreman, who was sick, for only one day. While he had not passed over the section of track on the day prior to the accident he said that the track walker had been given the usual instructions to walk along and inspect the rail on one side of the track on the outbound journey and to inspect the opposite rail on the inbound journey. Section Foreman De Rose arrived at the scene of the accident shortly after its occurrence and saw the broken rail involved. Measurement of the rail disclosed that it had been a 25-foot rail, of this length, 21 feet remained intact while the remainder was broken into small pieces, all of which showed fresh breaks, they were scattered over the track and he had difficulty in keeping the miners from carrying them away. There were two pieces of the broken rail in the angle bars, one at the top and the other at the bottom. The joint was a six-hole joint, fully bolted and spiked to two good ties. The inside angle bar was broken, apparently a fresh break, while the outside bar was in good condition. Section Foreman De Rose stated that he had experienced considerable trouble with broken rails, especially in cold weather, averaging about one a week.

Track Walker Farano stated that he patrols the track every day and that he last passed over the section where the accident occurred at about 9 a.m. on the out-bound journey and at about 1.30 p.m. on the inbound journey, this being on the day before the accident, but noticed nothing wrong.

Roadmaster O'Brien arrived at the scene of the accident about $1\frac{1}{4}$ hours after its occurrence, he stated that the rail was broken into about 15 pieces, none of which showed old flaws or breaks. All of the six bolts in the angle bars were intact and this joint was still spiked to the ties, the bolts were new and were used again when the rail was changed. Roadmaster O'Brien was of the opinion that the break in the angle bar was caused by one of two trains which passed over it before the miners' train, but that it had nothing to do with the derailment, which he thought was the result of a broken rail. He thought that a section foreman or track walker could have detected the defect in the angle bar during the course of usual inspection.

Car Foreman Lafeber arrived at the scene of the accident within two hours after its occurrence and his inspection of the equipment disclosed no defects about the wheels, trucks or other parts of the cars which could have contributed to the accident.

The evidence indicated that this accident was caused by a defective piece of track, in which a broken section of rail and splice bar were involved, which were examined by Mr. James E. Howard, Engineer-Physicist, whose remarks upon them immediately follow:

Remarks of the Engineer-Physicist.

The derailment of train No. 1 is attributed to a defective piece of track, in which a broken section of rail and splice bar were involved. The defect appeared to have been of long standing, and according to testimony was in evidence before the derailment.

The examination of the splice bars and fragments of the broken rail showed a battered condition of the upper fishing surfaces of the splice bars, about 6 inches long, under the receiving end of the broken rail. The inner splice bar was broken about midway its length, the fracture originating at the upper inside corner. The upper edge of this bar was in a particularly bruised condition, and no doubt the result of exposure to the passage of many trains.

The immediate receiving end of the broken rail was missing. The recovered fragments fitted indentations of the splice bars, indicating the missing fragment was about 5 inches long. The recovered fragment of the head showed a line of fracture in the fillet and about the bolt holes of the web. This line of fracture was of earlier origin, and no doubt in existence before the derailment. The receiving end of this fragment showed a fractured surface in the head, in a plane oblique to the running surface. This end fracture of the head represented a fracture ante-dating the derailment.

The portion of the rail immediately beyond the splice bars was broken into a number of short pieces, all of which represented secondary features.

In the testimony it was asserted that a short section of rail, 5 inches long, had been inserted in the track between the broken rail and the rail next preceding. This piece was referred to in shop parlance as a "Dutchman".

The evidence of the pieces of the rail and splice bars leads to no such conclusion. They indicate the prior existence of a defective joint, which had been allowed to exist for a considerable period of time.

Respectfully submitted,

W. P. BORLAND,

Director.