INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE CHICAGO, MILWAUKEE, ST.PAUL & PACIFIC RAILROAD NEAR IRON MOUNTAIN, MICH.,ON FEBRUARY 22, 1934.

April 27, 1934

To the Commission:

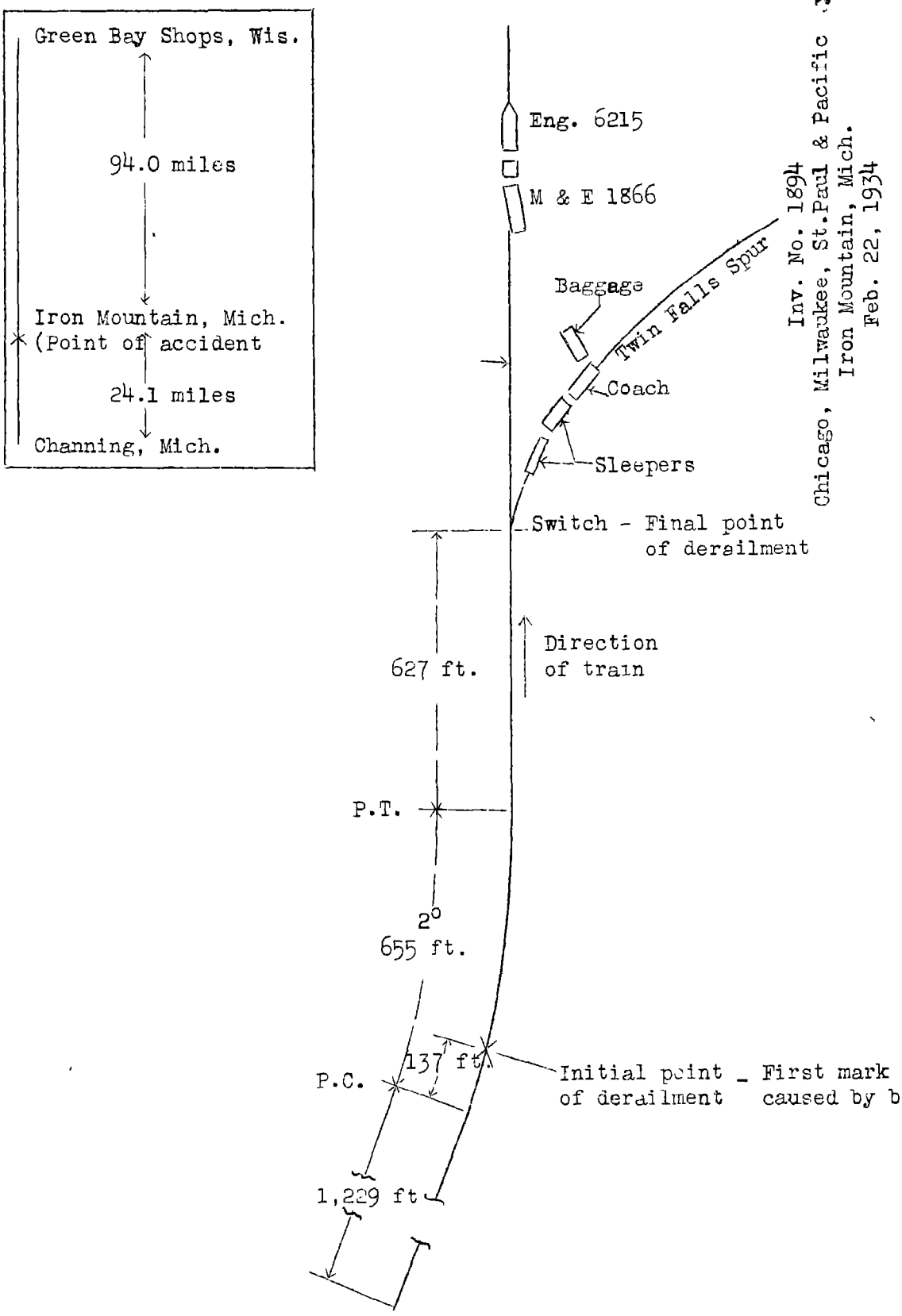
On February 22, 1934, there was a derailment of a passenger train on the Chicago, Milwaukee, St. Paul & Pacific Railroad near Iron Mountain, Mich., which resulted in the injury of 2 passengers, 2 mail clerks, 1 news agent and 1 employee.

Location and method of operation

This accident occurred on that part of the Superior Division extending between Channing, Mich., and Green Bay Shops, Wis., a distance of 118.1 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time table, train orders, and a manual block-signal system. The initial point of derailment was about 4 miles west of Iron Mountain, near a spur track known as Twin Falls spur; this spur track is 2,243 feet in length and leads off the main track toward the south, the switch being a facing-point switch for east-bound trains, and the initial point of derailment was 1,145 feet west of the switch. Approaching the initial point of derailment from the west, the track is tangent for a distance of 1,[illegible] feet and then there is a 3° curve to the left 655 feet in length, the first marks of derailment being on this curve at a point 137 feet from its western end; east of the curve the track is tangent a distance of 627 feet to the spur-track switch, where the final derailment took place, and for some distance beyond this point. The grade is 0.67 percent descending for east-bound trains.

The track is laid with 90-pound sawed rails, 30 feet 10 inches in length, with an average of 18 ties to the rail length, fully tieplated, single-spiked, and ballasted with sand and gravel to a depth of about 15 inches; the track is fairly well maintained.

The weather was clear and cold at the time of the accident, which occurred about 9:43 p.m.


Green Bay Shops, Wis.
94.0 miles
Iron Mountain, Mich.
(Point of accident
24.1 miles
Channing, Mich.
Eng. 6215
M & E 1866
Baggage
Twin Falls Spur
Coach
Sleepers
Switch - Final point of derailment
Direction of train
627 ft.
P.T.
2°
655 ft.
P.C.
137 ft.
Initial point of derailment
First mark on ground caused by broken wheel
1,229 ft
Inv. No. 1894
Chicago, Milwaukee, St.Paul & Pacific R.R.
Iron Mountain, Mich.
Feb. 22, 1934

Description

East-bound passenger Train No. 2 consisted of 1 mail and express car, 1 baggage car, 1 coach and 2 Pullman sleeping cars, in the order named, all of steel construction, hauled by engine 6315, and was in charge of Conductor Melville and Engineman Bartlett. This train left Channing, 24.1 miles west of Iron Mountain, at 9:10 p.m., according to the train sheet, on time, and was approaching Twin Falls spur at a speed estimated to have been about 40 miles per hour when the first car became partly derailed on account of a broken wheel, the final derailment taking place at the switch.

Engine 6215 and its tender were not derailed; the engine stopped on the main track with the rear end of the tender 790 feet east of the switch. The first car was derailed but remained coupled to the tender, with its rear end about 10 feet south of the track. The second car stopped upright within the angle formed by the main track and spur track, with the rear truck torn from the car. As a result of the derailment the switch was damaged and the last three cars followed the spur track, but remained practically upright; of these three cars the coach and the first sleeping car were torn from their trucks, while the forward truck of the rear sleeping car was derailed. The employee injured was the baggageman.

Summary of evidence

Engineman Bartlett stated that while rounding a curve located about 1½ miles west of Twin Falls spur he looked back along the train but noticed nothing out of the ordinary. The speed was about 40 miles per hour and the first he knew of anything wrong was when the air brakes were applied in emergency, whereupon he placed the brake valve in emergency position and on looking back saw that the first car was derailed. There had been nothing unusual in the handling of the train and the brakes had functioned properly at all times. After the train stopped, Engineman Bartlett, Fireman Lorang and Conductor Melville went back to the switch and found the switch point open, the head rod broken and wheel marks in the snow west of the switch, indicating that some part of the train had been derailed before reaching the switch. They did not learn what caused the accident until informed later by Flagman Clark that he had found a piece of wheel flange while on his way back to flag. Flagman Clark stated that as he went back to flag immediately after the accident he noticed marks on the ties between the rails and found a piece of wheel flange about 7 inches in length on the curve where the car was derailed.

General Car Foreman Palmer arrived at the scene of the accident about 9 hours after its occurrence. Inspection of the track disclosed a wheel mark on a rail on the south side of the track about $\frac{1}{4}$ mile west of the switch; the indications were that the lead pair of wheels of the rear truck of the first car in the train, mail and express car 1866, had become derailed and then continued on the ties to the spur-track switch, where it broke the switch rod and caused the switch to open under the train, permitting the rear cars to follow the spur track. Examination of the lead wheel of the rear truck on the right side showed the entire flange to be missing. He walked back a distance of about 6 miles but failed to find other evidence or the rest of the broken wheel. The wheel that failed was a 36-inch rolled-steel wheel made by the Standard Steel Works on May 9, 1929, and was applied second-hand to mail and express car 1866 on November 28, 1933. The broken wheel showed old flaws below the surface of the tread, one about 14 inches long and one about 10 inches long at the point where the flange broke off, the defect being of such a character that Car Foreman Palmer said it would not have been possible to detect it during the course of ordinary inspection.

Roadmaster Samuel examined the track for a distance of $8\frac{1}{2}$ miles west of the switch but found no rails damaged sufficiently to justify removal from the track and there were no marks caused by a broken tread more than $\frac{1}{2}$ mile from the switch; these marks consisted of slight dents on the ball of the rail, about $\frac{1}{2}$ inch long, apparently caused by rough edges on the defective wheel. The roadmaster was unable to find any other parts of the flange.

Inspection of the track by the Commission's inspectors disclosed occasional slight dents in the head of the south rail for a distance of approximately $\frac{1}{2}$ mile west of the initial point of derailment; these marks were about $\frac{1}{2}$ inch long and apparently were made by the broken flange or by small particles of the flange being run over by the wheel tread. Two pieces of the broken flange were found just west of the initial point of derailment; they measured $51\frac{1}{4}$ inches and $8\frac{1}{2}$ inches in length and had from $1\frac{1}{2}$ to $1\frac{3}{4}$ inches of the tread of the wheel attached to each piece and there was only about $3\frac{1}{2}$ to $3\frac{3}{4}$ inches of the tread left on the wheel, the entire circumference of the wheel having been broken off evenly. There was no visible evidence of a fissure or crack in the tread of the wheel, but on the inside of the wheel there were two crescent shaped spots of a bluish color 3 inches apart, one spot being 10 inches and the

other 14 inches long, and each being 2½ inches deep at its maximum depth; these spots extended to within ½ inch of the face of the tread of the wheel. The brake shoe of this wheel showed evidence of having been heated at some time but none of the other shoes on this truck showed any sign of having been heated or any evidence of heat.

Conclusions

This accident was caused by a broken wheel.

After the accident the entire flange was missing from the right lead wheel of the rear truck of the first car in the train and the greater portion of the tread also was missing. The indications were that this pair of wheels became derailed 1,145 feet west of Twin Falls spur-track switch and then continued on the ties until the switch was encountered, breaking the switch rod; this caused the switch to open and permitted the rear cars to follow the spur track while the engine, tender and first car continued on the main track. It was evident that the wheel was defective, but the reason for the existence of the defective condition was not definitely determined.

Respectfully submitted,

W. J. PATTERSON,

Director.