Inv-2200

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

CHICAGO, BURLINGTON & QUINCY RAILROAD

WENDEL, ILL.

SEPTEMBER 24, 1937

INVESTIGATION NO. 2200

SUMMARY

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Railroad:	Chicago, Burlington & Quincy
Date:	September 24, 1937
Location:	Wendel, Ill.
Kind of accident:	Derailment
Train involved:	Freight
Train number:	Extra 5614
Engine number:	5614
Consist:	56 cars, caboose
Speed:	10-15 m.p.h.
Track:	Tangent; 0.842 percent descending for west-bound trains for a distance of 3,400 feet to within 600 feet of point of accident, where it is then 0.125 percent ascending.
Weather:	Rain
Time:	1:45 p.m.
Casualties:	4 injured.
Cause:	Draw bar pulled out due to broken coupler yoke.

Inv-2200

October 16, 1937.

To the Commission:

On September 24, 1937, there was a derailment of a freight train on the Chicago, Burlington & Quincy Railroad at Wendel, Ill., which resulted in the injury of four trespassers.

Location and method of operation

This accident occurred on the Mendota and Denrock Subdivision of the Aurora Division which extends between Mendota and Denrock, Ill., a distance of 48.64 miles.This is a single-track line over which trains are operated by timetable, train orders and a manual block-signal system. At Wendel a spur track, 866 feet in length, parallels the main track on the north and has a facing-point switch for west-bound trains. The accident occurred at a point 164 feet east of this switch. Approaching this point from the east the track is tangent for a distance of 3,826 feet, and this tangent extends for some distance beyond the point of accident. The grade for west-bound trains is 0.842 percent descending for a distance of 3,400 feet to within 600 feet of the point of accident; it then is 0.125 percent ascending to and beyond the point of accident.

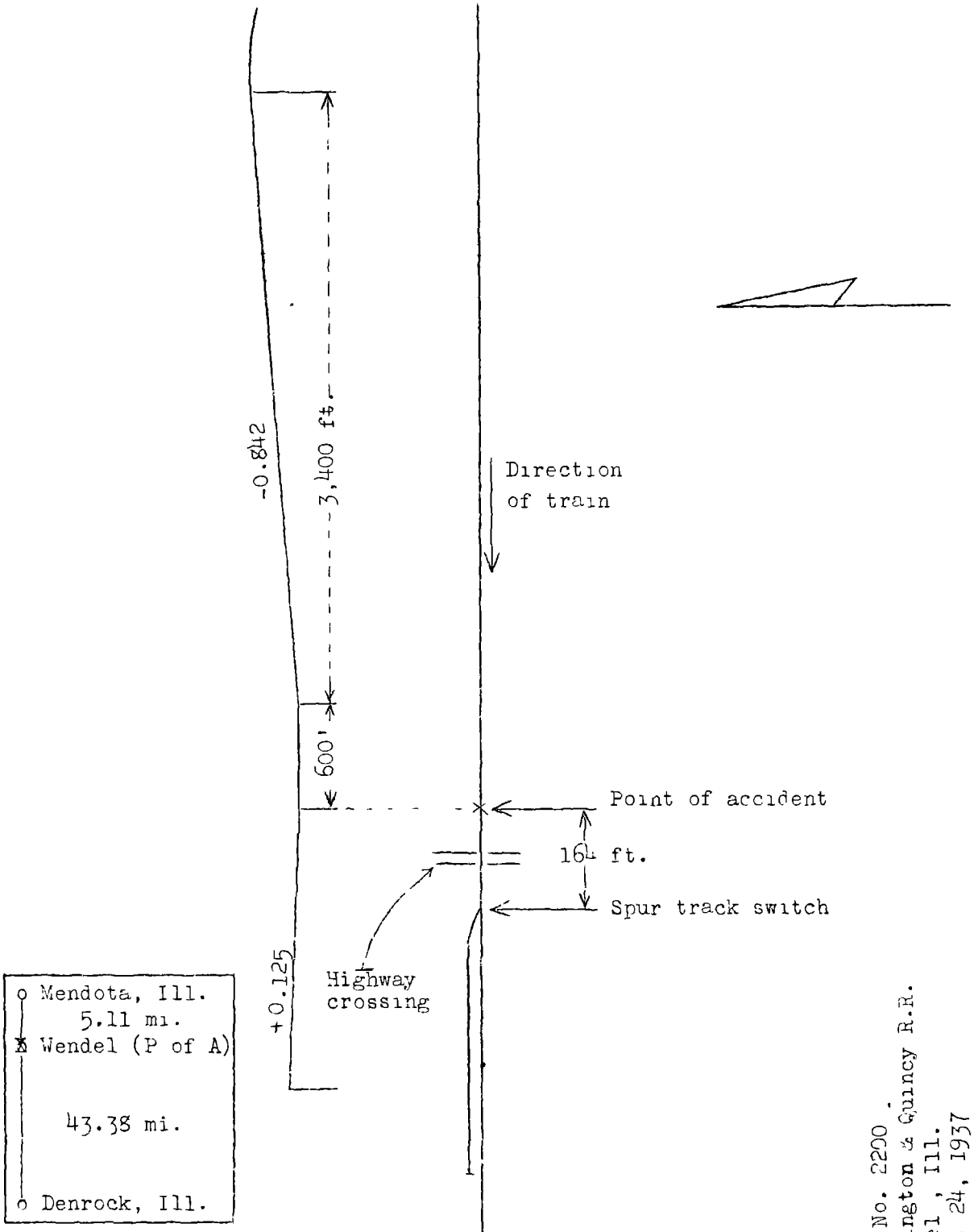
The track is laid with 85-pound rails, 30.5 feet in length, single-spiked, fully tie-plated and ballasted with cinders to a depth of from 12 to 15 inches. The track is well maintained.

It was raining at the time of the accident, which occurred at 1:45 p.m.

Description

Extra 5614, a west-bound freight train, consisted of 56 cars and a caboose, hauled by engine 5614, and was in charge of Conductor Price and Engineman Bailey. At Mendota, 5.26 miles from Wendel, the crew received, among others, train order 904, form 19, directing them not to exceed 10 miles an hour over broken frog at Wendel. This train departed from Mendota at 1:32 p.m., according to the train sheet, and was derailed at Wendel while traveling at a speed estimated to have been between 10 and 15 miles per hour.

The train broke in two between the seventeenth and eighteenth cars; the eighteenth, nineteenth and twentieth cars were derailed. The eighteenth car stopped south of and parallel with the track,



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188 feet beyond the point of derailment; the nineteenth car stopped in front of the eighteenth car and the twentieth car stopped at right angles to the track across the spur track a short distance beyond the other derailed cars.

Summary of evidence

Engineman Bailey stated that before leaving Clyde, their initial terminal, a test was made of the air brakes, and a test was also made of the air brakes on the cars picked up en route and in each case the brakes worked satisfactorily. He went over the top of the hill east of Wendel at a speed of about 15 or 18 miles per hour; he then eased off on the throttle and bunched the slack with the independent brake, working a very light drifting throttle, and had reduced the speed to about 10 or 12 miles per hour to comply with the slow order over the frog of the spur track, when the air brakes were applied in emergency due to a break-in-two. As he was looking back at the time and saw the cars being derailed, he kept the head portion of the train moving so that when it stopped there was a gap of about 8 or 10 car lengths between it and the derailed cars. On going back to the scene of derailment he found that a draw bar had been pulled out of the eighteenth car. The draw bar was lying south of the track near a road crossing just east of the spur track switch; there appeared to be an old break on one side of the yoke.

Fireman Owens estimated the speed of the train at 10 or 15 miles per hour at the time of the accident.

Conductor Price stated that there was no rough handling of the train at any time, and the car on which the draw bar was pulled out, C.& N.W. 54909, was in the train leaving Clyde. A running inspection was given the train at Mendota. After the accident he examined the draw bar but as it was covered with mud he was unable to say whether the break was old or new.

Brakemen Kenyon and Anderson made an inspection of the train at Mendota, but no particular attention was given to the draw bars. Brakeman Anderson made an examination of the broken yoke of the draw bar after the accident and it appeared to him to be a new break.

Wrecking Foreman Testin stated that he examined the draw bar that was pulled out of the "A" or west end of C.& N.W. car 54909 and found that the yoke was broken in two places at each bend of the back end, these breaks appearing to be entirely new. The two parts of the yoke which remained riveted to the

shank were bent upward, apparently caused by the butt end of the coupler striking the track. There were no marks on the coupler head or knuckle; the end sill just above the coupler shank was bulged outward 2½ inches, indicating that the carrier iron was intact at the time the draw bar was pulled out. However, the Waugh draft gear with which this car was equipped is so constructed that the pan would support the draw bar even if the carrier iron was removed from the car, and this pan was in good condition after the accident. There was no free slack in the draft gears. C.& N.W. car 54909, a steel flat car of 100,000 pounds capacity, is 45 feet in length and was built in 1912; it is equipped with Andrews trucks, Waugh draft gears and Sharon couplers at both ends. The couplers had 5 by 5 inch shanks and 6¼ inch butts with 9¼ inch heads. The yokes were 1 by 5 inch wrought iron. The A.A.R. standards require the yokes of couplers to be 1¼ by 5 inches, but it is not the practice to remove a yoke due to its being undersized. Under the A.A.R. interchange rules there is no penalty against a car owner for not having a standard yoke, and there is no rule compelling the carriers to apply A.A.R. standard yokes unless they are defective. In his experience he has found that when coupler yokes are removed on account of breakage they are generally undersized yokes not in accordance with the A.A.R. standards.

Car Inspectors Radovich and Dopierala made an inspection of C.& N.W. car 54909 on its arrival in Clyde Yard, Chicago, on September 23, and before its departure on September 24, and found it in good condition.

Engineer of Tests Zeleny made a laboratory test of the coupler yoke that failed; he found it to have been made of 1 by 5 inch mild steel material which now measures as low as 7/8 inch in thickness, due to reduction resulting from bending, wear and corrosion. Both fractures were entirely new but had a fiery appearance indicating that the steel had been overheated.

Observations by Inspectors

Inspection of the track disclosed a mark on a tie in the middle of the track about 164 feet east of the spur track switch, which appeared to have been made by the draw bar that was pulled out. Similar marks were found on several succeeding ties and one tie was broken about 6 inches from the south rail. A mark on the top of the south rail at the highway crossing located about 113 feet west of the first tie mark appeared to have been made by a flange passing over the rail.

Discussion

The investigation developed that as the train passed over the hill east of Wendel the engineman partly closed the throttle and bunched the slack in the train with the independent brake valve, reducing the speed to about 10 or 12 miles per hour when the head end reached a point where the grade changes from descending to ascending. When the position of the train was such that about 32 cars were on a slightly ascending grade and about 25 cars were on a much heavier grade descending a break-in-two occurred between the seventeenth and eighteenth cars, due to a draw bar being pulled out of the west end of the eighteenth car. The yoke of the coupler was broken at each bend at the back end, and examination made by the engineer of tests showed that the breaks were entirely new and had a fiery appearance indicating that the steel had been overheated. His report further states that the yoke was made of 1 by 5 inch steel but due to bending, wear and corrosion the thickness has been reduced to as low as 7/8 inch. The recommended practice of the Association of American Railroads, adopted in 1911, relative to coupler yokes is that they should be of $1\frac{1}{4}$ by 5-inch material. C.& N.W. car 54909 was built in 1912, and it appears that the A.A.R. Rule was not complied with at the time this car was built and it has remained in service for 25 years with undersized coupler yokes. According to the statement of Wrecking Foreman Testin, many of the coupler yokes removed on account of breakage are undersized. Under the present practice, however, car owners cannot be penalized for failure to comply with the rule and are not compelled to use material of the size recommended by the A.A.R.

The fact that the first marks of derailment appeared east of the switch eliminates the broken frog from consideration as a possible cause of this accident.

Conclusion

This accident was caused by a draw bar being pulled out of the front end of the eighteenth car, due to a broken coupler yoke.

Respectfully submitted,

W. J. PATTERSON,

Director.