Inv-2363

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

GREAT NORTHERN RAILWAY

WALKER, MINN.

JUNE 6, 1939

INVESTIGATION NO. 2363

SUMMARY

Inv-2363

Railway:	Great Northern
Date:	June 6, 1939
Location:	Walker, Minn.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	105
Engine number:	932
Consist:	3 cars
Speed:	30 m.p.h.
Operation:	Timetable and train orders
Track:	Single; tangent; 0.60 percent descending westward
Weather:	Clear
Time:	About 7:28 a.m.
Casualties:	2 injured
Cause:	Failure of a truck bolster

July 26, 1939

To the Commission:

On June 6, 1939, there was a derailment of a passenger train on the Great Northern Railway near Walker, Minn., which resulted in the injury of one passenger and one express messenger.

Location and Method of Operation

This accident occurred on that part of the Mesabi Division designated as the Fifth Subdivision, which extends between Sauk Centre and Cass Lake, Minn., a distance of 140.40 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders, no block system being in use. The accident occurred on a 5-foot fill at a point about 1.75 miles east of the station at Walker. Approaching from the east there is a tangent 2,415 feet in length, followed by a 2° curve to the left 527 feet long. There are 120-foot easements at each end of this curve. The derailment occurred on the east easement at a point about 20 feet from its western end. The grade is 0.60 percent descending for west-bound trains.

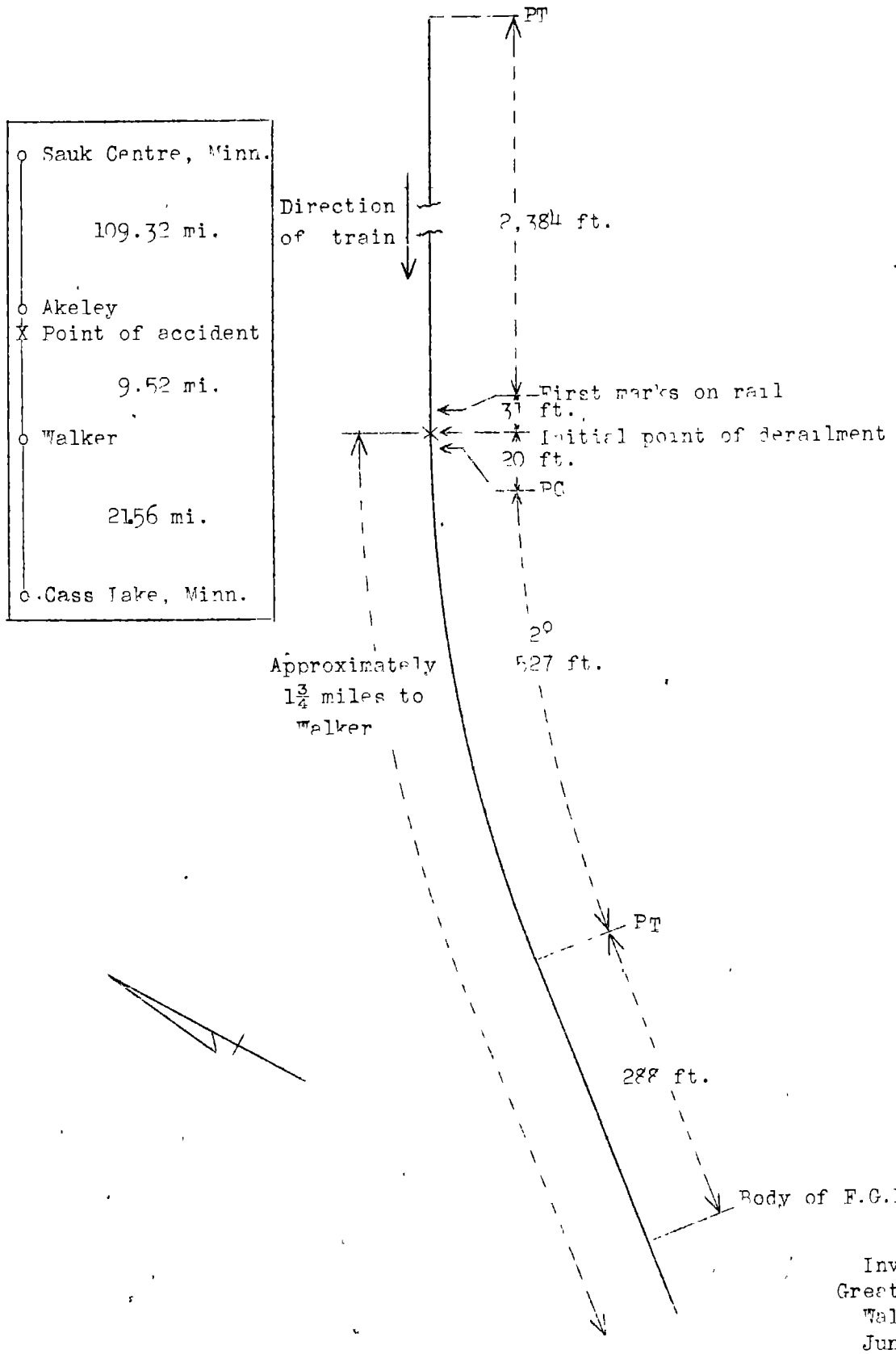
The track structure consists of 60-pound rail, 30 feet in length, laid on an average of 18 ties to the rail length; it is single-spiked, tieplated on curves, and ballasted with sand. The maintenance is fair.

The maximum authorized speed for passenger trains is 35 miles per hour.

The weather was clear at the time of the accident, which occurred about 7:28 a.m.

Description

No. 105, a first-class west-bound passenger train, consisted of two refrigerator cars, one baggage car, one baggage-mail-express car, and one coach, in the order named, all of wood construction, except the first and the second cars, which were of steel underframe construction, hauled by engine 932, and was in charge of Conductor Kirk and Engineman Creasy. This train departed from Sauk Centre, 118.84 miles east of Walker, at 2:30 a.m., according to the train sheet, on time, left Akeley, the last open office, 9.52 miles east of Walker, at 7:10 a.m., 23 minutes late, and was derailed while moving at a speed estimated to have been 30 miles per hour.



Inv. No. 2363
Great Northern Ry.
Walker, Minn.
June 6, 1939

The engine and the tender stopped with the pilot of the locomotive approximately 948 feet west of the initial point of derailment. The first car, F.G.E.X. 21171, was derailed and badly damaged, and, with its trucks detached, stopped in line with the track and about 12 feet to the rear of the tender. The second car, somewhat damaged, stopped at an angle of 45 degrees to the track with its front end south thereof. The third car, which was damaged, stopped at an angle of 45 degrees to the track with the forward end north of the track. The leading truck of the fourth car was derailed and this car sustained slight damage. The track was damaged a distance of approximately 750 feet.

Summary of Evidence

Engineman Creasy stated that prior to departure from Sauk Centre an air-brake test was made and the brakes functioned properly en route. He was running about 25 minutes late on schedule but was not endeavoring to make up time. The weather was clear and he observed no unusual condition about the train until the engine was on the curve, when he felt a slight pull in the train and, looking back, he saw dirt flying from under the cars. After stopping, he found that the trucks of the first car, F.G.E.X. 21171, were missing. This car was loaded with merchandise. He said that he observed no condition of the track which might have caused the derailment.

The statement of Fireman Schurman corroborated that of the engineman.

Conductor Kirk stated that approaching the point of accident he was in the west end of the fifth car. He estimated that the speed of the train was about 50 miles per hour. The first indication of the accident he had was when he observed the brakes becoming applied in emergency. After making an examination of some of the trucks it was his opinion that the derailment was caused by some defective part of the equipment.

The statements of Brakemen DeBill and Heald corroborated that of the conductor.

The statements of Mail Clerk McNelly and Express Messenger Bischoff agreed with those of the engineman and the conductor.

Track Inspector Johnson inspected the track in this vicinity at 7:35 a.m., June 5, and found no irregular condition.

Section Foreman Dickenson stated that he passed over this track about 9 p.m., June 5, and observed nothing unusual. He

arrived at the scene of the accident at 8:15 a.m., and found no condition about the track which might have caused the derailment.

District Roadmaster Enger arrived at the point of accident at 9:20 a.m., and found the condition of the track to be as stated by the track inspector and the section foreman.

Car Foreman Fonfara, located at Superior, Wis., stated that on June 9 he examined the lead truck of F.G.E.X. 21171, which was a Bettendorf type of truck with cast-steel bolster. He found that the bolster had been welded on top of the right end at four places between the center-plate and the side-bearing; this bolster had failed at three of these welds. As there was no indication that the bolster had been annealed after having been welded it was his opinion that the welding had not been done properly. He found no marks or stampings on the bolster, as required by the rules when such material is welded, but he thought that this welding had been done recently. He said that the center-plate appeared to be the wrong type for this car as four new rivet holes had been burned in it to match the holes in the bolster. There were eight holes in the center-plate but there were only four rivets. The rivets, which were sheared off, appeared to be new.

Superintendent Kelsey stated that on June 9, he, the car foreman, and the master mechanic inspected the lead truck of F.G.E.X. 21171. He said that several of the welds in the right end of the bolster had given way permitting the bolster to sag, and throwing the weight on the right side-bearing and on the left edge of the center-plate. The side-bearing and the left side of the center-plate showed signs of heavy wear. There was no evidence of any pressure on the left side-bearing. It was his opinion that this pressure caused the truck to bind, resulting in the wheels being thrown out of alignment, and this in turn caused the leading wheel to mount the left rail.

Observations of Commission's Inspectors

The Commission's inspectors inspected the track and found it to be in fair condition. At a point 10 feet east of the point of derailment flange marks appeared on top of the ball of the left rail, beginning at the gage side and extending diagonally across the rail. The left wheels dropped to the outside of the rail and ran on the ties a distance of 51 feet, following which the truck turned sidewise and skidded along the rail and ties a distance of 510 feet. At this point the rail turned over and the general derailment occurred.

F.G.E.X. 21171 was a refrigerator car, built in April 1903 and rebuilt in October 1924. The truck under the forward or "B" end was a Bettendorf type, A.A.R. type 29, marked "F.G.E. S-155, 30 ton," and was equipped with 4-1/8 by 8-inch journals. The bolster was of cast steel, cast January 1905, and was an L.& N. pattern No. G-5422. The center-plates were marked "S-32." This bolster showed that four fractures located on top of the right end and at the four corners of the hold between the center-plate and the side-bearing had been welded recently. Three of the welds were 3/8 by 3 inches and the other one was 3/8 by 5 inches. Because of the thin layer of metal apparently the welds did not penetrate the body of the bolster. The center-plate was of a design different from the original, and, to apply the new plate, four additional rivet holes had been burned in it to match the holes in the bolster. This work, which appeared to be crude workmanship, had been done recently as the rivets were new and not corroded. This car was in the W.F.E.X. shops at St. Paul, Minn., on March 26, 1939, and according to the shop superintendent's records, in addition to other repairs, truck center-plates were riveted on the "A" and the "B" ends of the car.

Discussion

The evidence was to the effect that the first car in the train, F.G.E.X. 21171, a refrigerator car loaded with merchandise, was the first car to become derailed. The leading left wheel mounted the ball of the left rail and ran a distance of 10 feet before it dropped off, after which it ran on the ties a distance of 51 feet. The truck then turned sidewise and skidded along the rail and the ties a distance of 510 feet. The condition of the track had no bearing on the accident and the train was not exceeding the authorized speed. An examination of the bolster of the truck under the forward or "B" end disclosed that four fractures located on the top of the right end and at the four corners of the hole between the center-plate and the side-bearing had been welded recently. These welds consisted of only a thin layer of metal which did not penetrate the body of the bolster, and it was evident that the bolster had not been annealed after having been welded. Three of these welds gave way, which permitted the bolster to sag, and threw the weight on the right side-bearing and on the left edge of the center-plate. These parts showed indications of heavy wear, and there was no evidence of any pressure on the left side-bearing. Apparently the fracture caused the truck to bind on the right side-bearing which in turn threw the wheels out of alinement and caused the lead wheel to mount the left rail. An examination of the center-plate on this bolster disclosed that it was of design different from the original application.

Conclusion

This accident was caused by the failure of a truck bolster, because of improper welding.

Respectfully submitted,

W. J. PATTERSON

Director.