

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3556

NORTHERN PACIFIC RAILWAY COMPANY
AND
MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE
RAILROAD COMPANY

IN RE ACCIDENT

AT LUCCA, N. DAK., ON

AUGUST 16, 1950

SUMMARY

Date: August 16, 1950

Railroads: Northern Pacific : Minneapolis, St.
Paul & Sault
Ste. Marie

Location: Lucca, N. Dak.

Kind of accident: Side collision

Trains involved: Mixed : Freight

Train numbers: 137 : 90

Engine numbers: Diesel-electric : 1027, Diesel-
unit 803 electric units
210B and 210A

Consists: 8 cars, 2
caboose, coach : 103 cars, caboose

Estimated speeds: 7 m. p. h. : 28 m. p. h.

Operation: Timetable and train orders, each line

Tracks: Single; tangent; : Single; tangent;
0.5 percent 0.15 percent
ascending grade descending grade
westward eastward

Weather: Clear

Time: 10:25 a. m.

Casualties: 1 killed; 3 injured

Cause: Failure properly to control speed of
M. St. P. & S. C. M. train approaching
railroad crossing at grade

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3356

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

NORTHERN PACIFIC RAILWAY COMPANY
AND
MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE
RAILROAD COMPANY

October 20, 1950

Accident at Lucca, N. Dak., on August 16, 1950, caused
by failure properly to control the speed of the
Minneapolis, St. Paul & Sault Ste. Marie train
approaching a railroad crossing at grade.

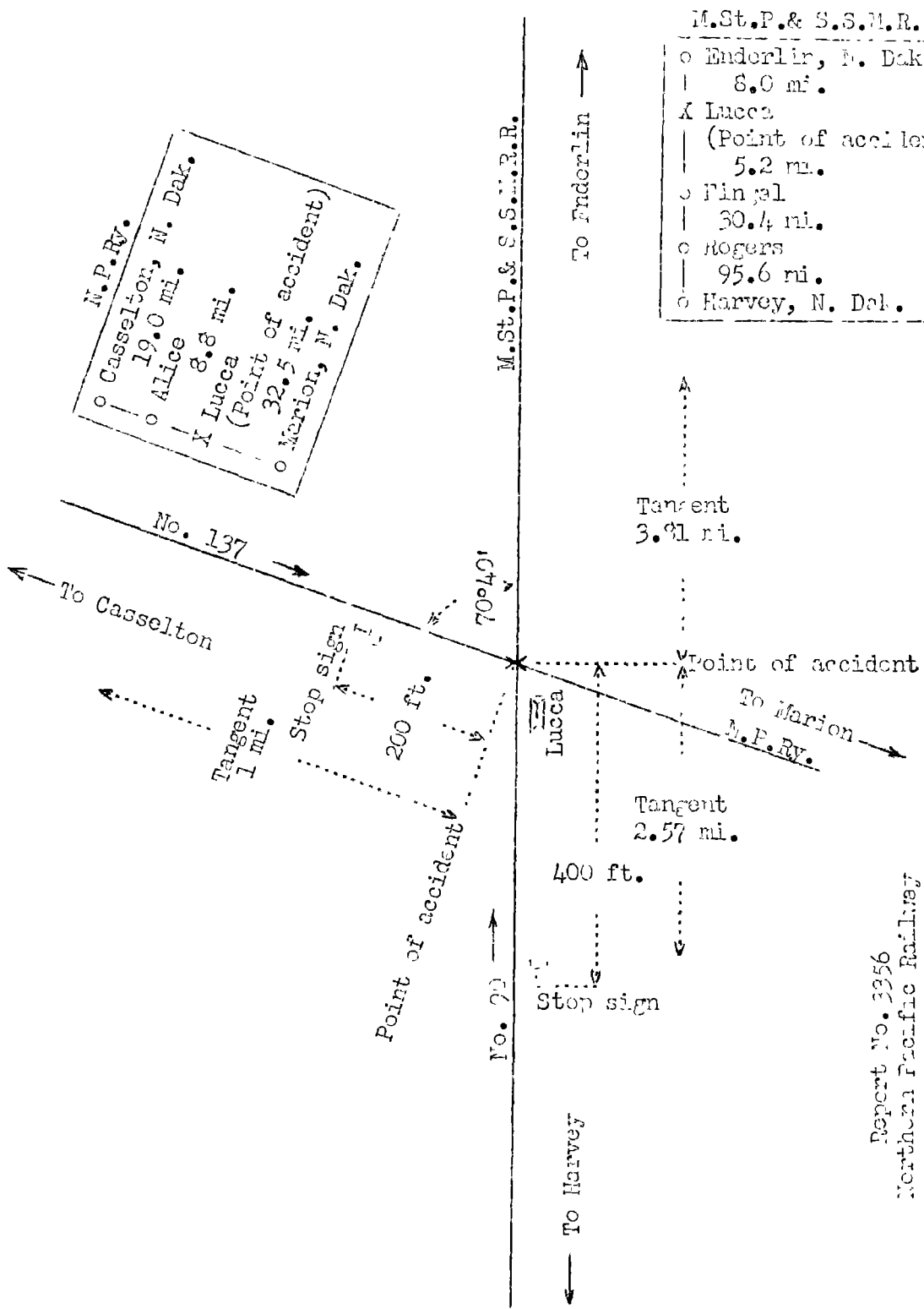
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On August 16, 1950, there was a side collision between
a mixed train on the Northern Pacific Railway and a freight
train on the Minneapolis, St. Paul & Sault Ste. Marie Railroad
at Lucca, N. Dak., which resulted in the death of one
passenger, and the injury of one passenger and two train-
service employees. This accident was investigated in
conjunction with representatives of the Public Service
Commission of North Dakota.

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Under authority of section 17 (2) of the Interstate Com-
merce Act the above-entitled proceeding was referred by the
Commission to Commissioner Patterson for consideration and
disposition.



M.St.P. & S.S.M.R.R.	
o	Enderlin, N. Dak.
	8.0 mi.
X	Lucca
	(Point of accident)
	5.2 mi.
o	Fingal
	30.4 mi.
o	Rogers
	95.6 mi.
o	Harvey, N. Dak.

N.P. Ry.	
o	Casselton, N. Dak.
	19.0 mi.
o	Alice
	8.8 mi.
X	Lucca
	(Point of accident)
	32.5 mi.
o	Marion, N. Dak.

Report No. 3356
 Northern Pacific Railway
 and
 Minneapolis, St. Paul & Sault Ste. Marie Railroad
 Lucca, N. Dak.
 August 16, 1950

Location of Accident and Method of Operation

This accident occurred at the intersection of the Northern Pacific Railway and the Minneapolis, St. Paul & Sault Ste. Marie Railroad at Lucca, N. Dak. The crossing is located on that part of the Fargo Division of the N.P. extending between Casselton and Marion, N. Dak., 60.3 miles, and on that part of the Minnesota Division of the M.St.P.& S.S.M. extending between Harvey and Enderlin, N. Dak., 139.2 miles. The crossing is 27.8 miles west of Casselton and 131.2 miles east of Harvey. The station at Lucca is located in the northwest angle of the crossing and is used by both lines. In the vicinity of the point of accident both are single-track lines, over which trains are operated by timetable and train orders. There is no block system in use on the N.P., but a manual-block system for following movements only is used on the M.St.P.& S.S.M. The N.P. track extends southwest and northeast. The M.St.P.& S.S.M. track extends southeast and northwest and intersects the N.P. track at an angle of $70^{\circ}40'$. Timetable directions on both lines are east and west and are used in this report. The N.P. track is tangent throughout a distance of more than 1 mile immediately east of the crossing and a considerable distance westward. From the east the grade is 0.4 percent ascending throughout a distance of 1,000 feet and then 0.5 percent ascending 465 feet to the crossing. From the west on the M.St.P.& S.S.M. the track is tangent a distance of 2.57 miles to the crossing and 3.81 miles eastward. Throughout a distance of 2 miles immediately west of the crossing the grade varies between 0.64 percent descending and level to a point 1,517 feet west of the crossing, then it is 0.45 percent ascending 1,200 feet and 0.15 percent descending 517 feet to the crossing.

A stop sign governing west-bound movements on the N.P. is located 200 feet east of the crossing, and a stop sign governing east-bound movements on the M.St.P.& S.S.M. is located 400 feet west of the crossing.

The Consolidated Code of Operating Rules, in effect on both lines, read in part as follows:

98. Trains must approach * * * railroad crossings at grade, * * * prepared to stop, unless * * * track is clear. Where required by rule or law, trains must stop.

98 (A). Unless otherwise provided, at a railroad crossing at grade not protected by signals, train or engine must make the required stop. A lookout must be maintained for conflicting movements and unless there is a clear view of at least two hundred feet of the other track on each side of the crossing from the point where the stop is made, the movement must be made at restricted speed. * * *

* * *

The maximum authorized speed for freight trains on the M. St. P. & S. S. M. is 45 miles per hour.

Description of Accident

No. 137, a west-bound second-class N.P. mixed train, consisted of Diesel-electric unit 803, 8 cars, 2 cabooses and an all-steel combination mail-baggage-passenger car, in the order named. This train departed from Alice, the last open office, 8.8 miles east of Lucca, at 9:59 a. m., 26 minutes late, and stopped with the front end of the engine about 50 feet east of the stop sign located 200 feet east of the crossing at Lucca. It then proceeded, and, while moving over the crossing at an estimated speed of 7 miles per hour, the right side of the rear car was struck by M. St. P. & S. S. M. No. 90.

No. 90, an east-bound second-class M. St. P. & S. S. M. freight train, consisted of steam engine 1027 and Diesel-electric units 210B and 210A, coupled in multiple-unit control, 103 cars and a caboose. This train departed from Rogers, 35.6 miles west of Lucca, at 9:22 a. m., 2 hours 15 minutes late, passed Fingal, 5.2 miles west of Lucca, at 10:21 a. m., 2 hours 11 minutes late, passed the stop sign located 400 feet west of the crossing at Lucca, and while moving at a speed of 28 miles per hour it struck the rear car of N.P. No. 137.

Engine 1027 was derailed to the south, and stopped on its right side and parallel to the track, with the front end 168 feet east of the crossing and 10 feet south of the track. The tender stopped at right angles to the track and opposite the cab of the engine. The first Diesel-electric unit stopped upright, across the track and at right angles to it. The second Diesel-electric unit stopped upright and parallel to the first unit. The first nine cars and the front truck of the tenth car were derailed. Engine 1027 and the two Diesel-electric units were badly damaged. Eight cars were destroyed and one car was badly damaged. The rear car

of N.P. No. 137 was struck near its front end, and stopped on its left side and parallel to the M.St.P. & S.S.M. track, with the front end about 100 feet east of the crossing and 20 feet north of the M.St.P. & S.S.M. track. It was considerably damaged.

Both firemen of No. 90 were injured.

The weather was clear at the time of the accident, which occurred about 10:25 a. m.

During the 30-day period preceding the day of the accident, the average daily movement over the crossing was 2.03 trains on the N.P. and 9.53 trains on the M.St.P. & S.S.M.

Discussion

Under the rules, trains approaching the crossing at Lucca must stop short of their respective stop signs. No. 137 stopped about 50 feet east of the stop sign governing west-bound movements on the N.P. track at Lucca. It then proceeded toward the crossing at an estimated speed of 5 miles per hour, and was preparing to stop at the station. When the engine was about 150 feet east of the crossing the enginemen saw No. 90 approaching the crossing at a distance of about 1/2 mile. After the engine passed over the crossing, their view of the M.St.P. & S.S.M. track west of the crossing was obscured by the station building until the engine was about 175 feet west of the crossing. When the engine passed the station building the enginemen heard a series of short whistle signals from the engine of No. 90, and observed that train approaching at a distance of about 1,500 feet west of the crossing. They also observed the agent at Lucca, who was on the station platform giving proceed signals. When it became apparent that No. 90 would not be stopped short of the crossing, the speed of No. 137 was increased in an attempt to clear the crossing, but the last car was struck by No. 90.

No. 90 departed from Harvey at 4:45 a. m. The train was stopped at Carrington, Bordulec, and Kansal, located, respectively, 88.1, 78.5, and 68.5 miles west of Lucca. At Wimbledon, 49.7 miles west of Lucca, 5 cars were detached and placed on an auxiliary track. The train was stopped at Rogers, 35.6 miles west of Lucca, where a helper engine was coupled ahead of the Diesel-electric units. The brakes functioned properly at each location where the train was stopped. After the train was stopped at Rogers, the engineer did not release

the brakes but closed the double-heading cock on the first Diesel-electric unit. Helper engine 1027 then was coupled ahead of the Diesel-electric units, and the brakes of the train were released by the engineer of the helper engine. Before the train departed from Rogers the gage in the caboose indicated a pressure of 65 pounds. A brake application was effective in reducing the speed of the train in the vicinity of Valley City, 21.9 miles west of Lucca, to comply with a speed restriction. When No. 90 was about 1-1/4 miles west of Lucca the speed was 51 miles per hour, and the throttle of each engine was closed on the descending grade. The enginemen of the helper engine were maintaining a lookout ahead from their respective positions in the cab of the engine. The regularly assigned engineer, the fireman, and the front brakeman were in the control compartment of the first Diesel-electric unit. The conductor, the swing brakeman and the flagman were in the caboose. The engineer of the helper engine, who was in control of the brakes, said a brake-pipe reduction of about 10 pounds was made more than one mile west of the crossing. A further reduction of about 10 pounds was made about 4,000 feet west of the crossing. The engineer said that when the engine was about 2,500 feet west of the crossing he became apprehensive that the train would not be stopped short of the crossing and moved the brake-valve handle to the emergency position. However, there was only a slight exhaust and the emergency application was not effective. The engineer of the first engine sounded engine whistle warning signals until immediately before the collision occurred. The engineer of the second engine said he saw the N.P. train on the crossing at a distance of about 1,500 feet. He said he lapped the brake valve, opened the double-heading cock and moved the brake-valve handle to the emergency position, but there was no exhaust.

The swing brakeman and the flagman were in the cupola of the caboose as No. 90 was approaching Lucca. Both said that the brake-pipe pressure was about 65 pounds before the first reduction of 10 to 15 pounds was made about 1 mile west of the crossing. They said they thought the usual stop was being made for the crossing, and that the gage in the caboose indicated a brake-pipe pressure of 40 pounds after the train stopped. The conductor said an emergency application was not made, but he did not observe the gage either before the first brake-pipe reduction was made or after the train stopped. He said he observed while walking with the swing brakeman from the caboose to the crossing a few minutes after the accident occurred that the brakes were applied. The swing brakeman said he did not observe either the brakes or the angle cocks while he was proceeding to the crossing.

After the accident occurred, the throttle of engine 1027 was found in closed position, the reverse lever was in position for forward motion at 40 percent cut-off, the sander valve was in closed position, the handle of the automatic brake-valve was in emergency position, and the double-heading cock was open. The independent brake-valve handle was held in full release position by a wire loop around the brake-valve handle. This prevented the engine brakes from becoming applied. The throttle of the first Diesel-electric unit was closed, the reverse lever was in position for forward motion, the independent brake valve was in release position, the sander valve was open, the automatic brake valve was in running position, and the double-heading cock was closed. An inspection of the air-brake equipment of No. 90 was made about 3-1/2 hours after the accident occurred, and all angle cocks except the one on the rear end of the caboose were open. Of the 103 cars of No. 90, 53 cars were equipped with K-type brakes, 1 with a Universal-type brake and the other 50 cars and the caboose with AB-type brakes. A test was made of the brakes of 94 undamaged cars coupled in the same relative positions as they were when the accident occurred. The test disclosed that 1 AB-type brake was cut out, 2 K-type brakes were inoperative, and the piston travel on 2 cars and the caboose was excessive.

Examination of the tape of the speed-recording device which was removed from the first Diesel-electric unit of No. 90 disclosed that the speed of No. 90 began to be decreased from a speed of 51 miles per hour at a point about 4,000 feet west of the crossing, and was 28 miles per hour when the collision occurred.

Cause

It is found that this accident was caused by failure properly to control the speed of the Minneapolis, St. Paul & Sault Ste. Marie train approaching a railroad crossing at grade.

Dated at Washington, D. C., this twentieth day of October, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.