

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 3023
GREAT NORTHERN RAILWAY COMPANY
REPORT IN RE ACCIDENT
AT LUPFER, MONT., ON
SEPTEMBER 14, 1946

SUMMARY

Railroad: Great Northern

Date: September 14, 1946

Location: Lupfer, Mont.

Kind of accident: Head-end collision

Trains involved: Passenger : Freight

Train numbers: Passenger Extra : Second 446
1379

Engine numbers: 1379 : Diesel-electric
426

Consists: 6 cars : 93 cars, caboose

Estimated speeds: Standing : 40 m. p. h.

Operation: Timetable, train orders and
automatic block-signal system

Track: Single; tangent; 0.25 percent
descending grade eastward

Weather: Clear

Time: 9:29 p. m.

Casualties: 26 injured

Cause: Failure to obey meet order

Recommendation: That the Great Northern Railway
Company provide adequate protec-
tion for movement of trains which
enter a main track through a
spring switch.

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3023

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

GREAT NORTHERN RAILWAY COMPANY

October 22, 1946.

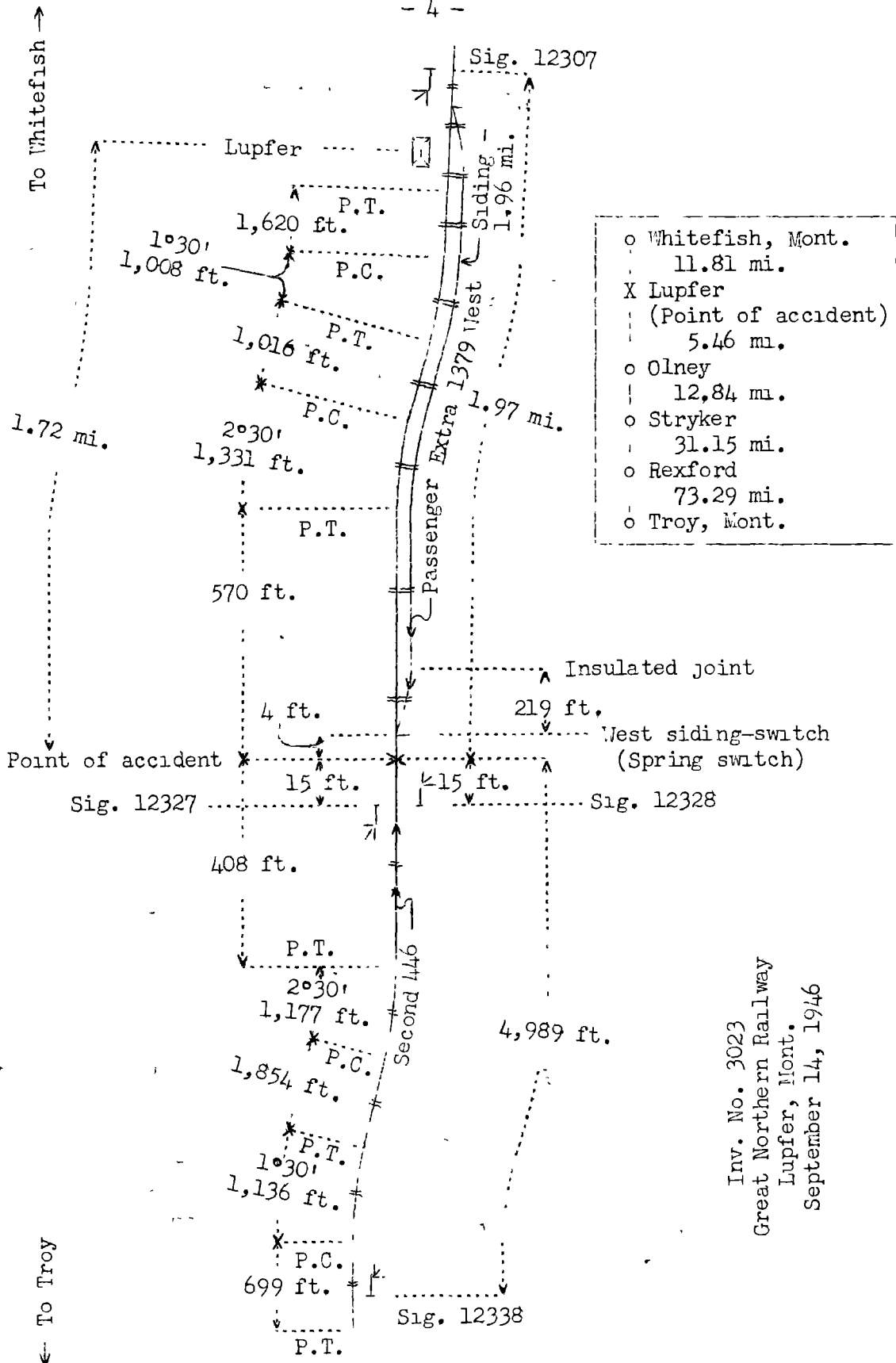
Accident at Lupfer, Mont., on September 14, 1946, caused
by failure to obey a meet order.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On September 14, 1946, there was a head-end collision between a passenger train and a freight train on the Great Northern Railway at Lupfer, Mont., which resulted in the injury of 22 passengers, 1 Pullman employee and 3 train-service employees. This accident was investigated in conjunction with a representative of the Board of Railroad Commissioners and Public Service Commission of Montana.

¹Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Location of Accident and Method of Operation

This accident occurred on that part of the Kalispell Division extending between Whitefish and Troy, Mont., 134.55 miles, a single-track line in the vicinity of the point of accident, over which trains are operated by time-table, train orders and an automatic block-signal system. At Lupfer, 11.81 miles west of Whitefish, a siding 1.96 miles in length parallels the main track on the south. The west switch of this siding is a spring switch and is 1.72 miles west of the station. The accident occurred on the main track at a point 4 feet west of the west siding-switch. From the east there are, in succession, a tangent 1,620 feet in length, a 1°30' curve to the right 1,008 feet, a tangent 1,016 feet, a 2°30' curve to the left 1,331 feet and a tangent 570 feet to the point of accident. From the west there are, in succession, a tangent 699 feet in length, a 1°30' curve to the right 1,136 feet, a tangent 1,854 feet, a 2°30' curve to the left 1,177 feet and a tangent 408 feet to the point of accident. The grade is 0.25 percent descending eastward.

The automatic block-signal system consists of double-location signals near the ends of sidings and intermediate signals between stations. Signals 12307 and 12327, governing west-bound movements, are, respectively, 1.97 miles east and 15 feet west of the point of accident. Signals 12338 and 12328, governing east-bound movements, are, respectively, 4,989 feet and 15 feet west of the point of accident. These signals are of the one-arm, upper-quadrant, semaphore type, and are approach lighted. The involved night aspects and the corresponding indications and names of these signals are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
12307	Yellow	Proceed * * * prepared to stop at next signal. * * *	Approach signal.
12327 and 12328	Red, with number plate	Stop, then proceed at restricted speed. * * *	Stop and proceed signal.
12338	Green	Proceed * * *	Clear signal.

The track circuit of the fouling section of the turnout of the west siding-switch at Lupfer extends 219 feet east of the switch. The controlling circuits are so arranged that when the fouling section of the turnout of the west siding-switch is occupied, signal 12338 displays approach and signal 12328 displays stop-then-proceed-at-restricted-speed. When the track between the signal located immediately east of the east

siding-switch at Olney, 5.46 miles west of Lupfer, and signal 12327 is occupied, signal 12307 displays approach, and signal 12327 displays stop-then-proceed-at-restricted-speed.

Operating rules read in part as follows:

DEFINITIONS.

* * *

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

73. Extra trains are inferior to regular trains.

S-89 (A). * * *

At train order meeting points, the train holding the main track must stop clear of the switch used by the train to be met in going on siding unless the train to be met is clear of the main track and switch is properly lined.

204. * * *

* * *

Engineers must show train orders to firemen and when practicable to forward trainmen. Conductors must show train orders when practicable to trainmen.

FORMS OF TRAIN ORDERS.

* * *

S-A.

Fixing Meeting Points for Opposing Trains.

(1.) * * *

Psgr Extra 652 east meet Extra 231 west * * *
at B.

* * *

Trains receiving these orders will run with respect to each other to the designated points and there meet in the manner prescribed by the rules.

Extra Trains.

* * *

(4.) Eng 77 run extra leaving A on Thursday
Feb 17th as follows with right over * * *
Leave A 11 30 p m
C 12 25 a m
* * *

* * *

Trains over which the extra is thus given
right must clear the extra the same as an in-
ferior class train is required to clear a
first class train.

* * *

509 (B). When a train is stopped by a Stop
and proceed indication, it may proceed:

On any track signaled for traffic in both
directions, at restricted speed through the
entire block. Where the Stop and proceed sig-
nal is located at the leaving end of a siding,
the Stop-indication may be due to an opposing
train proceeding in the same block on an
Approach-signal indication and every precaution
consistent with train rights and the track ahead
should be taken before proceeding, to insure safe
movement through the block.

* * *

513. Unless otherwise provided, before a
train or engine enters on or fouls a main track,
* * * it must wait three minutes after any bolt-
locked switch, derail or other switch connected
with the movement has been operated to affect
the signal indications. * * *

520. Spring switches permit trailing point
movements through the switch without hand oper-
ating the switch. * * *

The maximum authorized speed for passenger trains is
55 miles per hour and for freight trains, 45 miles per hour.

Description of Accident

At Whitefish the crew of Passenger Extra 1379 West, a west-bound passenger train, received copies of train orders Nos. 457, 467 and 468 reading in part as follows:

Order No. 457

Eng 1379 run Psgr Extra leaving Whitefish
* * * on Saturday Sept 14th as follows
with right over all trains except first class

Leave Whitefish eight forty five 845 p. m.

* * *

Leave Lupfer nine naught two 902 p. m.

* * *

Order No. 467

No 28 Eng 1531 meet
Psgr Extra 1379 West at
Lupfer

Order No. 468

Psgr Exa 1379 West
Meet Second 446 Eng 426
at Olney
Psgr Extra 1379 West
take siding

Passenger Extra 1379 West consisted of engine 1379, one passenger box-car, two tourist sleeping cars, one troop dining car and two tourist sleeping cars, in the order named. All cars were of steel construction. This train departed from Whitefish, the last open office, at 9 p. m., passed signal 12307, which displayed approach, and entered the siding at Lupfer at the east switch about 9:20 p. m. About 9 minutes later, after No. 28, an east-bound first-class train, had been met in compliance with train order No. 467, Passenger Extra 1379 West entered the main track at the west siding-switch and had just stopped with the front of the engine 4 feet west of the west siding-switch and 15 feet east of signal 12327, which displayed stop-then-proceed-at-restricted-speed, when the engine was struck by Second 446.

At Rexford, 49.45 miles west of Lupfer, the crew of Second 446, an east-bound second-class freight train, received copies of train order No. 457, and at Stryker, 18.3 miles west of Lupfer, the crew received copies of train order No. 468. Second 446, consisting of Diesel-electric engine 426, of the 4-unit type, 33 cars and a caboose, departed from Stryker at 9:05 p. m., passed Olney, the last open office, at 9:19 p. m.,

where it was required to wait unless Passenger Extra 1379 West was into clear on the siding, passed signal 12338, which displayed proceed, passed signal 12328, which displayed stop-then-proceed-at-restricted-speed, and while moving at an estimated speed of 40 miles per hour it collided with Passenger Extra 1379 West at a point 15 feet east of signal 12328.

The force of the impact moved Passenger Extra 1379 West backward 200 feet. The engines of both trains, the first 2 cars of Passenger Extra 1379 and the first 16 cars of Second 446 were derailed and damaged.

The weather was clear at the time of the accident, which occurred about 9:29 p. m.

The engineer, the fireman and the front brakeman of Second 446 were injured.

Discussion

The crew of each train held copies of train order No. 457, which gave Passenger Extra 1379 West right over all trains except first-class trains between Whitefish and Troy, and copies of train order No. 468, which established Olney as the meeting point between Passenger Extra 1379 West and Second 446, an east-bound second-class train. Train order No. 468 included the instruction that Passenger Extra 1379 West would take siding at the meeting point. Under the rules, Second 446 was required to stop clear of the east siding-switch at Olney unless Passenger Extra 1379 West was into clear on the siding. Second 446 passed Olney and collided with Passenger Extra 1379 West at a point 3.74 miles east of Olney and 4 feet west of the west siding-switch at Lupfer.

Passenger Extra 1379 West entered the siding at Lupfer to meet No. 28, an east-bound first-class train. Soon after No. 28 passed the west siding-switch, the enginemen of Passenger Extra 1379 West observed that signal 12327, located 19 feet west of the west siding-switch, was displaying stop-then-proceed-at-restricted-speed. Passenger Extra 1379 West stopped with the engine standing immediately east of the east end of the track circuit of the fouling section of the turnout of the west siding-switch, and the enginemen again read their train orders. Since no train order had been issued restricting the authority of Passenger Extra 1379 West to proceed from Lupfer and since the restrictive indication displayed by signal 12327 permitted this train, after stopping short of the signal, to proceed prepared to stop short of a train or an obstruction, the train proceeded and had just entered the fouling section of the turnout when the fireman saw Second 446 approaching a few hundred feet distant, and called a warning to the engineer. The engineer immediately moved the brake valve

to emergency position, and Passenger Extra 1379 West had just stopped with the front of the engine standing about 4 feet west of the west siding-switch and 15 feet east of signal 12327 when the collision occurred. The enginemen thought that the restrictive indication displayed by signal 12327 was caused by a broken rail until they saw the approaching train.

The crew of Second 446 received copies of train order No. 468 at Stryker, 12.84 miles west of Olney, about 25 minutes before their train passed Olney and about 35 minutes prior to the time the accident occurred. A few minutes before this train order was sent to the operator at Stryker for delivery to Second 446, the conductor of that train communicated by telephone with the train dispatcher and requested the train dispatcher to issue a train order establishing Lupfer as the meeting point between Second 446 and Passenger Extra 1379 West. The dispatcher said that he informed the conductor of Second 446 that, for operating reasons, he would not issue such an order but would issue an order establishing Olney as the meeting point between the trains in question. The conductor said that he did not hear the train dispatcher make this statement. Soon after the conversation, the dispatcher issued train order No. 468 and the operator at Stryker delivered copies of the order to the conductor of Second 446. Although the conductor was near the operator when the order was being repeated, he did not hear the operator pronounce the word "Olney" and then spell it. The conductor said that he misread the order and, until after the collision occurred, he thought the order established Lupfer as the meeting point. The flagman of Second 446 delivered copies of the order to the engineer. The flagman said that he did not read the order, but heard some one say that Second 446 was to meet Passenger Extra 1379 West at Lupfer. When he delivered the order to his engineer, he told the engineer that the meeting point was Lupfer. The front brakeman was on the engine, but he did not read the order or discuss it with the enginemen. The fireman said that he read the train order soon after it was delivered to the engineer and that he and the engineer thought it established Lupfer as the meeting point. Signal 12338, located 4,974 feet west of signal 12328, displayed proceed for Second 446, and this train was moving at a speed of about 45 miles per hour when the fireman saw the stop-then-proceed-at-restricted-speed indication displayed by signal 12328 and the reflection of the headlight of Passenger Extra 1379 West a few hundred feet distant. Then the fireman called a warning to the engineer, who immediately moved the brake valve to emergency position. The speed of Second 446 was about 40 miles per hour when the collision occurred. The engineer of Second 446 was so seriously injured in the accident that he could not be questioned during the investigation.

When the train order establishing Olney as the meeting point between the trains involved was issued and up to the time the accident occurred, the operator at Olney was on duty. The rules of this carrier require that when practicable, except in automatic block-signal territory, train orders must be addressed to the operator at the meeting or waiting point. Since this was in automatic block-signal territory, the train order establishing Olney as the meeting point between Passenger Extra 1379 West and Second 446 was not sent to the operator at Olney. If this exception had not been in the rules, the dispatcher would have been required to issue the meet order to the operator at Olney, who would be required to deliver copies of the order to Second 446, and thereby the accident might have been averted. The operator at Olney reported to the train dispatcher the time that Second 446 passed that station. The train dispatcher said that when the operator at Olney reported Second 446 he thought that the conductor of that train had instructed a member of his crew to proceed from Stryker to Lupfer on the engine of No. 28 and to hold Passenger Extra 1379 West at Lupfer until Second 446 arrived at that station, regardless of the requirements of train order No. 468.

Second 446 had passed signal 12338, located approximately 1 mile west of the insulated joint at the clearance point of the west siding-switch, before Passenger Extra 1379 West fouled the track circuit of the turnout. The operating rules of this carrier provide that in automatic block-signal territory after the trainman operates the bolt-lock at bolt-locked switches or the switch at non-bolt-locked switches, three minutes must elapse before a train or an engine may foul the main track. This procedure would have resulted in an approach indication being displayed by signal 12338 for Second 446. However, in the case of the switch involved in this accident, this provision was not applicable as it was a spring switch. There was no signal to govern movements from siding to main track, and Passenger Extra 1379 West was authorized to proceed to signal 12327, which movement did not actuate any eastward automatic signal until the engine of this train reached a point 238 feet east of signal 12327. Under the arrangement of signal circuits, if Passenger Extra 1379 West had not entered the siding at Lupfer, this train would have actuated eastward automatic signals in time to give sufficient warning to the crew of Second 446 to prevent the accident. If the west siding-switch at Lupfer had been provided with adequate safeguards to prevent a train or engine from entering or fouling the main track in front of an approaching train this accident could have been averted.

Cause

It is found that this accident was caused by failure to obey a meet order.

Recommendation

It is recommended that the Great Northern Railway Company provide adequate protection for the movement of trains which enter a main track through a spring switch.

Dated at Washington, D. C., this twenty-second day of October, 1946.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.