INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3052

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT WAUBAY, S. DAK., ON

DECEMBER 23, 1946

SUMMARY

Railroad:	Chicago, Milwaukee, St. Paul and Pacific	
Date:	December 23, 1946	
Location:	Waubay, S. Dak.	
Kind of accident:	Head-end collision	
Trains involved:	Passenger	: Freight
Train numbers:	Second 16	: 263
Engine numbers:	146	: 227
Consists:	14 cars	: 55 cars, caboose
Speeds:	Standing	: 28 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system	
Track:	Single; tangent; 0.50 percent descending grade westward	
Weather:	Clear	
Time:	8:10 p. m.	
Casualties:	127 injured	
Cause:	Failure properly to control speed of train in accordance with signal indications and approaching meeting point	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3052

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

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

January 31, 1947

Accident at Waubay, S. Dak., on December 23, 1946, caused by failure properly to control speed of train in accordance with signal indications and approaching a meeting point.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On December 23, 1946, there was a head-end collision between a passenger train and a freight train on the Chicago, Milwaukee, St. Paul and Pacific Railroad at Waubay, S. Dak., which resulted in the injury of 110 passengers, 1 person carried under contract, 3 Pullman employees, 10 dining-car employees and 3 train-service employees. This accident was investigated in conjunction with a representative of the South Dakota Public Utilities Commission.

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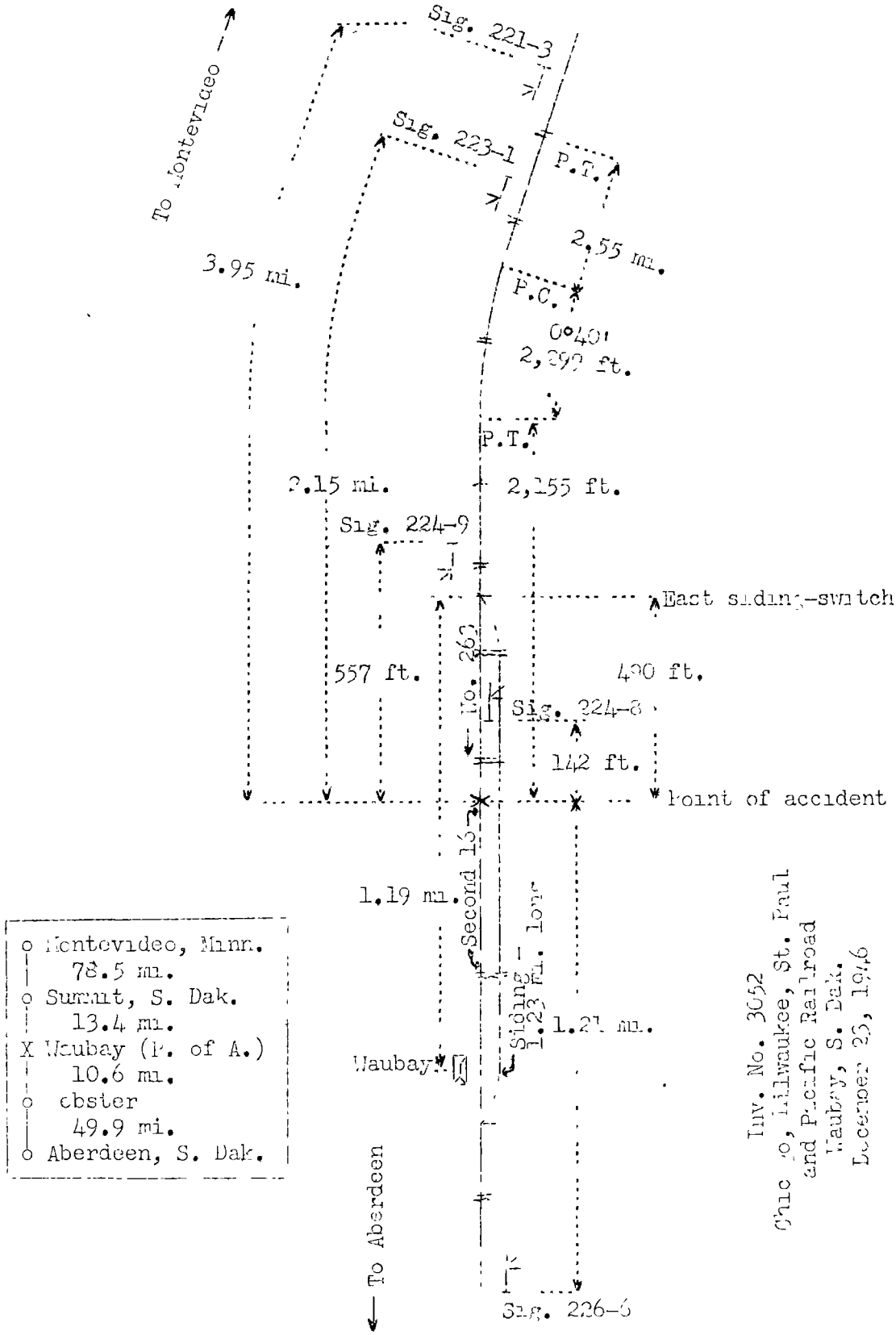
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3052
Chicago, Milwaukee, St. Paul and Pacific Railroad
Waubay, S. Dak.
December 25, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Hastings and Dakota Division extending between Aberdeen, S. Dak., and Montevideo, Minn., 152.4 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and an automatic block-signal system. At Waubay, 60.5 miles east of Aberdeen, a siding 1.23 miles in length parallels the main track on the south. The east switch of the siding is 1.19 miles east of the station. The accident occurred on the main track 490 feet west of the east siding-switch. From the east there are, in succession, a tangent 2.55 miles in length, a 0°40' curve to the left 2,299 feet and a tangent 2,153 feet to the point of accident and a considerable distance westward. The grade for west-bound trains varies between 0.14 percent and 0.50 percent descending throughout a distance of 1.32 miles immediately east of the point of accident, where it is 0.50 percent descending.

The automatic block-signal system is arranged on the absolute-permissive principle, and consists of double-location signals near the ends of sidings and intermediate signals between stations. Signals 226-6 and 224-8, governing east-bound movements, are, respectively, 1.21 miles west and 142 feet east of the point of accident. Signals 221-3, 223-1 and 224-9, governing west-bound movements, are, respectively, 3.95 miles, 2.15 miles and 557 feet east of the point of accident. These signals are of the one-arm, three-position, upper-quadrant, semaphore type, and the involved night aspects and the corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
226-6	Green	Proceed.	Clear signal.
224-8	Red	Stop. See Rule 509 (A).	Stop signal.
221-3) 223-1)	Yellow	Proceed prepared to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach signal.
224-9	Red, with number plate	Stop, then proceed at restricted speed. See Rules 509 (B) * * *	Stop and proceed signal.

The controlling circuits are so arranged that, when the main track between the siding switches at Waubay is occupied, signals 221-3 and 223-1 display proceed-prepared-to-stop-at-next-signal and signal 224-9 displays stop-then-proceed-at-restricted-speed. When the main track between signal 221-3 and signal 223-1 is occupied, signal 226-6 displays proceed-prepared-to-stop-at-next-signal and signal 224-8 displays stop.

Operating rules read in part as follows:

DEFINITIONS.

* * *

Medium Speed.--A speed not exceeding thirty (30) miles per hour.

* * *

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

34. All members of train and engine crews must, when practicable, communicate to each other by its name, the indication of each signal affecting the movement of their train or engine.

S-72. Trains of the first class are superior to those of the second; * * *

* * *

S-89. At meeting points, the inferior train must take the siding * * *

The inferior train must pull into the siding when practicable. * * *

204. * * *

* * *

Engineers must show train orders to fireman 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) No 1 meet No 2 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.

509 (A). When a train is stopped by a Stop-indication, * * * it must stay until authorized to proceed, * * *

* * *

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. * * *

* * *

The maximum authorized speed for passenger trains is 70 miles per hour and for freight trains, 55 miles per hour.

Description of Accident

At Webster, 10.6 miles west of Waubay, the crew of Second 16, an east-bound first-class passenger train, received copies of train order No. 44 reading as follows:

Second 16 eng 146 meet No 263 eng
227 at Waubay

Second 16 consisted of engine 146, two express cars, one tourist sleeping car, two dormitory cars, one tourist sleeping car, six coaches, one dining car and one tourist sleeping car, in the order named. The second car was of steel-underframe

construction, and the remainder of the cars were of all-steel construction. This train departed from Webster, the last open office, at 7 54 p. m., 3 hours 5 minutes late, passed signal 226-6, which displayed proceed, and stopped on the main track between the siding switches at Waubay about 8:08 p. m., with the engine standing 142 feet west of signal 224-8, which displayed stop. About 2 minutes later, Second 16 was struck by No. 263.

At Summit, 13.4 miles east of Waubay, the crew of No. 263, a west-bound second-class freight train, received copies of train order No. 44. This train, consisting of engine 227, 55 cars and a caboose, departed from Summit, the last open office, at 7:55 p. m., 2 hours 10 minutes late, passed signals 221-3 and 223-1, which displayed proceed-prepared-to-stop-at-next-signal, passed signal 224-9, which displayed stop-then-proceed-at-restricted-speed, passed the east siding-switch at Waubay, where it was required to enter the siding to meet Second 16, and while moving at a speed of 28 miles per hour it collided with Second 16 at a point 490 feet west of the east siding-switch.

The force of the impact moved Second 16 westward about 100 feet. The engines of both trains were derailed and badly damaged, but remained upright and practically in line with the track. The first car and the front truck of the second car of Second 16, and the first eight cars of No. 263 were derailed and damaged.

The engineer, the assistant conductor and the baggageman of Second 16 were injured.

The weather was clear at the time of the accident, which occurred about 8:10 p. m.

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 24.36 trains.

Engine 227, of No. 263, is provided with two 8-1/2-inch cross-compound air compressors and No. 8-ET brake equipment. Approximately 75 percent of the cars of No. 263 were equipped with AB-type brakes.

Discussion

The crew of each train held copies of train order No. 44, which established Waubay as the meeting point between Second 16, an east-bound first-class train, and No. 263, a west-bound second-class train. No. 263 was inferior by class

and, under the rules, this train was required to enter the siding at Waubay at the east switch, and to remain clear of the main track until Second 16 had been met.

In compliance with the meet order Second 16 stopped about 6:08 p. m. on the main track with the front of the engine 430 feet west of the east siding-switch and 142 feet west of signal 224-8, which displayed stop. The headlight of the engine of Second 16 was lighted brightly. About 2 minutes later Second 16 was struck by No. 263. When the collision occurred the fireman of Second 16 was proceeding eastward to line the east siding-switch for No. 263 to enter the siding, and he was in the immediate vicinity of the switch when the engine of No. 263 passed him.

As No. 263 was approaching Waubay the speed was 50 miles per hour, as indicated by the tape of the speed recorder with which the engine is equipped. The headlight was lighted brightly. The enginemen and the front brakeman were maintaining a lookout ahead. The conductor and the flagman were in the caboose. These employees had received train order No. 44 about 30 minutes prior to the time the accident occurred. They understood that their train was required to enter the siding at Waubay at the east switch to meet Second 16. The enginemen said they observed the yellow aspects displayed by signals 221-3 and 223-1, located, respectively, 3.84 and 2.04 miles east of signal 224-9, and they called the indications. They understood that the yellow aspects displayed by signals 221-3 and 223-1 required the speed of their train to be reduced immediately and to be not in excess of 30 miles per hour, and their train to be operated so that it could be stopped short of a signal displaying a stop-then-proceed-at-restricted-speed indication. The engineer said that when his engine was in the immediate vicinity of signal 223-1 he made a service-brake-pipe reduction. When the engine reached a point on the west end of the curve to the left, about 1,300 feet east of the east siding-switch, the fireman observed the red aspect displayed by signal 224-9, and called the indication. Then the engineer placed the throttle lever in closed position. The fireman said that, immediately after the throttle was closed, smoke trailing on the left side of the engine obscured his view of the aspect displayed by signal 224-9, and he thought the aspect changed from red to yellow and called that indication. Then the engineer moved the brake valve to release position. The enginemen overlooked the provisions of the train order until the engine entered tangent track and the engineer saw the red aspect displayed by signal 224-9 and the reflection of the headlight of the engine of Second 16. He immediately moved the brake valve to emergency

position in an attempt to stop short of the signal. However, the speed was 28 miles per hour when the collision occurred. The front brakeman was an inexperienced employee, and he said he did not see the aspects displayed by the signals involved. The conductor and the flagman said they thought the speed of their train was being controlled so that it could be stopped short of the east siding-switch, until they saw the reflection of the headlight of the engine of Second 16 when their engine was about 1,200 feet east of the east siding-switch. Then the conductor opened the air valve on the caboose, but at that moment the brakes became applied in emergency as a result of the action taken by the engineer. The brakes of No. 263 had been tested and had functioned properly en route.

Cause

It is found that this accident was caused by failure properly to control speed of train in accordance with signal indications and approaching a meeting point.

Dated at Washington, D. C., this thirty-first day of January, 1947.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.