

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2683
THE DENVER TRAMWAY CORPORATION
REPORT IN RE ACCIDENT
NEAR SWADLEY, COLO., ON
MARCH 1, 1943

SUMMARY

Railroad: Denver Tramway
Date: March 1, 1943
Location: Swadley, Colo.
Kind of accident: Head-end collision
Trains involved: Passenger : Freight
Train numbers: 125 : Extra 1110-1111
East
Engine numbers: Electric motor : Electric engines
car 07 1111-1110
Consist: Motor car : 14 cars, caboose
Estimated speed: 20 m. p. h. : 10-15 m. p. h.
Operation: Timetable and train orders
Track: Single; 3° curve; 1.5 percent
descending grade eastward
Weather: Snowing
Time: About 1:08 p. m.
Casualties: 2 killed, 1 injured
Cause: Accident caused by failure to obey
a rect order

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2683

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

THE DENVER TRAMWAY CORPORATION

April 20, 1943.

Accident near Swadley, Colo., on March 1, 1943, caused
by failure to obey a meet order.

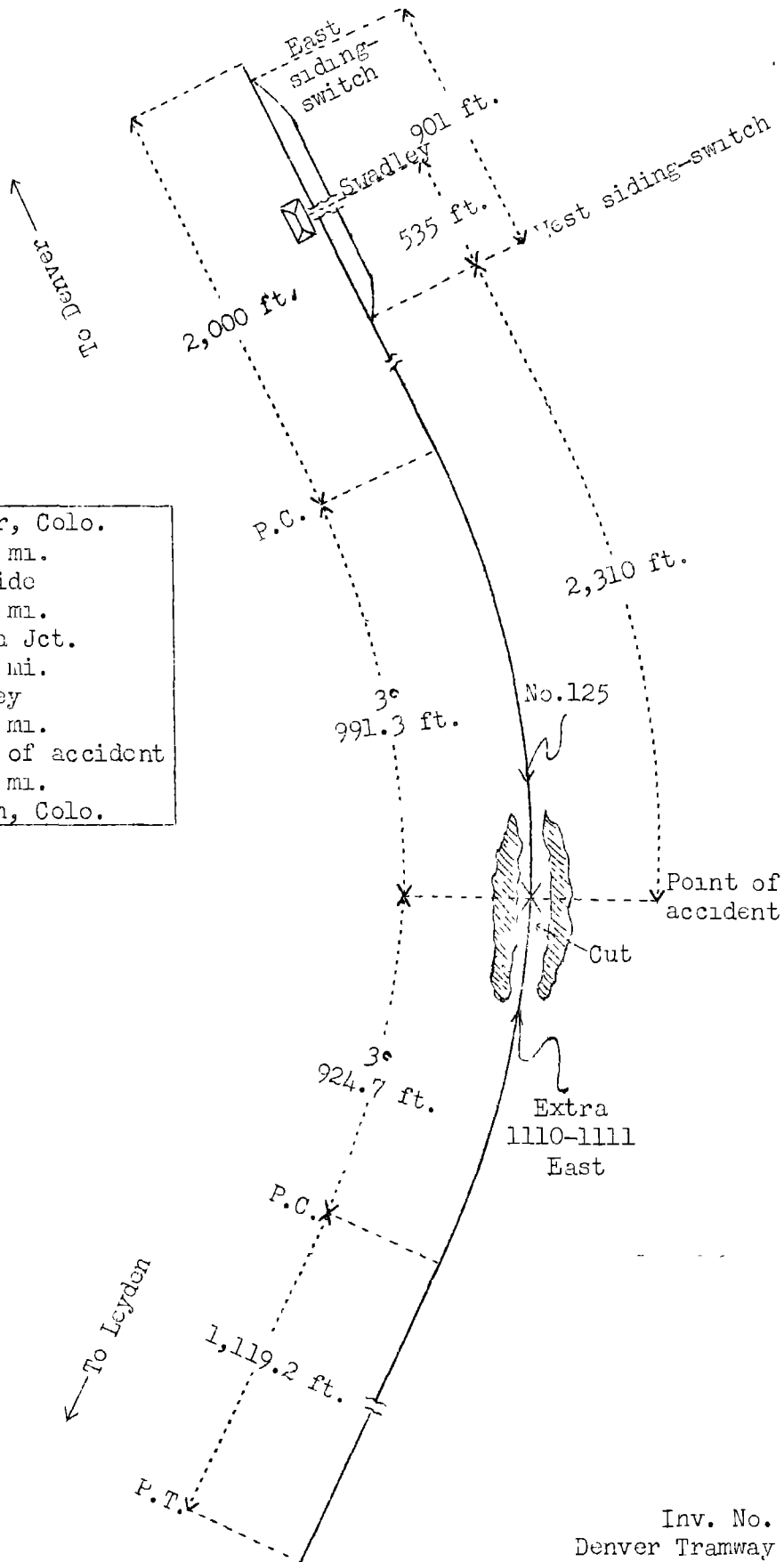
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On March 1, 1943, there was a head-end collision between a Denver Tramway Corporation passenger train and a Denver & Intermountain Railroad freight train on the line of the first-mentioned carrier near Swadley, Colo., which resulted in the death of one passenger and one employec, and the injury of one passenger. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Colorado.

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.

- Denver, Colo. 4.76 mi.
- Lakeside 2.29 mi.
- Arvada Jct. 1.23 mi.
- Swadley 0.44 mi.
- ✕ Point of accident 5.78 mi.
- Leyden, Colo.



Inv. No. 2683
 Denver Tramway Corporation
 Swadley, Colo.
 March 1, 1943

Location of Accident and Method of Operation

This accident occurred on that part of the Denver-Leyden Division which extends between Denver and Leyden, Colo., 14.5 miles. The line is equipped with an overhead catenary system for the electric propulsion of trains. Freight trains of the Denver and Intermountain Railroad and passenger trains of the Denver Tramway Corporation operate over this line on a trackage agreement. In the vicinity of the point of accident this is a single-track line arranged to handle both standard and narrow gage cars, over which trains are operated by timetable and train orders. There is no block system in use. At Swadley a siding 901 feet in length parallels the main track on the south. The west switch of this siding is 535 feet west of the station. The accident occurred on the main track at a point 2,310 feet west of the west siding-switch. Approaching from the east there is a tangent more than 2,000 feet in length, which is followed by a 3° curve to the right 991.3 feet to the point of accident and 924.7 feet beyond. Approaching from the west there is a tangent 1,119.2 feet in length, which is followed by the curve on which the accident occurred. Throughout a considerable distance immediately east and west of the point of accident, the grade for east-bound trains is 1.5 percent descending. The accident occurred in a cut, the walls of which rise to a maximum height of about 20 feet.

Operating rules read in part as follows:

107 (a) No car or train will leave any initial station, a siding, or enter the main line without orders from the Dispatcher. * * *

(b) When any train reaches a meeting point and finds that train or trains to be met have not arrived, the motorman shall immediately call the Dispatcher for orders.
* * *

In the vicinity of the point of accident the maximum authorized speed for all trains is 20 miles per hour.

Description of Accident

Extra 1110-1111 East, an east-bound freight train, consisted of electric engines 1111 and 1110, coupled and in the charge of one motorman, 14 loaded cars and a caboose, in the order named. At Leyden, 6.22 miles west of Swadley, the con-

ductor copied train order No. 53, which read in part as follows:

Extra Frt Engine 1110-1111
Exe. East Ley. to Lake. Report
Arvada Meet Train No. 125 Motor
07 at Swadley

12:52 p. m.

This train departed from Leyden at 12:52 p. m., according to the dispatcher's record of movement of trains, and while moving at an estimated speed of 10 to 15 miles per hour it collided with No. 125 at a point 0.43 mile west of the west siding-switch at Swadley. The brakes had been tested and had functioned properly en route.

No. 125, a west-bound first-class passenger train, consisted of electric motor car 07 and was in the charge of a motorman only. This train departed from Denver, 3.28 miles east of Swadley, at 12:30 p. m., according to the dispatcher's record of movement of trains, on time. At Lakeside, 3.52 miles east of Swadley, the motorman copied train order No. 53, which read in part as follows:

* * *

Number 125 Motor 07 Schedule
Meet Train No. Exe-East 1110-1111
at Swadley

12:54 p. m.

This train departed from Lakeside at 12:54 p. m., on time, passed the west siding-switch at Swadley, where it was required to wait unless Extra 1110-1111 East was into clear, and while moving at an estimated speed of 20 miles per hour it collided with Extra 1110-1111 East.

From an engine moving in either direction, in the vicinity of the point of accident, the view of a train approaching from the opposite direction is restricted to approximately 650 feet, because of embankments adjacent to the track and track curvature.

The force of the impact moved No. 125 backward about 110 feet. Motor car 07 was demolished. The front end of engine 1111 was considerably damaged and the front truck was demolished.

It was snowing at the time of the accident, which occurred about 1:03 p. m.

The employee killed was the motorman of No. 125.

Data

During the 50-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 23.8 trains.

Mechanical Data

According to data furnished by the carrier, motor car 07 was designed for one-man operation and was rebuilt by the Denver Tramway Corporation in 1924. It was of steel-underframe construction and had a wooden superstructure covered by 20-gage steel sheathing. The floor, 1-1/8-inch fir, was secured to wooden cross members which were attached to the steel underframe. A steel bumper provided with an anti-creep device was attached to the steel underframe at the front of the car. The roof was constructed of wood covered with canvas. The car was 44 feet in length, weighed 43,800 pounds, had seating capacity for 55 persons, was powered with four 50-horsepower motors, and was provided with a safety-control feature actuated by release of pressure on the controller and the foot pedal.

Discussion

Under the rules governing operation on this line, no train can leave an initial station or a siding, or enter the main track unless authorized by train order. The motorman of the first train reaching a meeting point designated by train order must immediately call the dispatcher by telephone.

At Loyden, 6.22 miles west of Swadley, the crew of Extra 1110-1111 received train order no. 52, which established a meeting point at Swadley between Extra 1110-1111 East and No. 125, a first-class schedule, and all members of the crew understood the provision of the meet order. This train departed from Loyden about 12:52 p. m. and as it was approaching Swadley the motorman and the front brakeman were maintaining a lookout ahead. The speed was about 15 miles per hour, the motorman made a service application of the brakes, and the speed was reduced to about 10 miles per hour. As this train was moving through a cut on a curve to the left the members of the crew saw No. 125 approaching at a distance of about 600 feet. The motorman immediately moved the brake valve to emergency position but the distance was not sufficient to stop short of the opposing train. The motorman of Extra

1110-1111 said that at the time of the collision the speed of his train was about 10 miles per hour, and the speed of No. 125 was 20 miles per hour. The first the conductor knew of anything being wrong was when the collision occurred.

The motorman of No. 125 copied train order No. 53 at Lakeside, 5.52 miles east of Swadley, repeated the order to the dispatcher, and it was made complete at 12:54 p. m. According to the statement of a passenger who was seated in the second seat to the rear of the motorman, No. 125 did not stop at Swadley. According to the timetable, No. 125 was due to leave Swadley at 1:09 p. m. As this train was approaching the point where the accident occurred, the speed was about 20 miles per hour, the maximum permitted in that territory, and the motorman was alert and maintaining a lookout ahead. The passenger's first view of Extra 1110-1111 was at a distance of only 300 feet, because of snow falling and the curve. The motorman took some action to reduce the speed but it was not appreciably reduced at the time of the collision, which occurred about 1:09 p. m., or 1 minute before No. 125 was due to leave Swadley. Under the rules, No. 125 was required not to pass the clearance point at the west siding-switch at Swadley if Extra 1110-1111 was not into clear at that point. The motorman of No. 125 was the only employe on the motor car and, since he was killed in the accident, it could not be learned why he failed to stop at Swadley. Only 14 minutes had elapsed from the time he copied train order No. 53 to the time the accident occurred. The controller of motor car 07 was found in open position; however, the safety-control feature was so arranged that power could be shut off and the brakes applied in emergency by removal of pressure from the controller handle and the diaphragm foot pedal.

If the block system had been in use on this line, the motorman of No. 125 would have received additional information to call his attention to the authority granted to the opposing train, and this accident would have been prevented.

Cause

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

Dated at Washington, D. C., this twentieth day of April, 1945.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.