

INTERSTATE COMMERCE COMMISSION

WASHINGTON

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INVESTIGATION NO. 2654

THE FORT WORTH & DENVER CITY RAILWAY COMPANY

REPORT IN RE ACCIDENT

NEAR CAREY, TEXAS, ON

NOVEMBER 28, 1942

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SUMMARY

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Railroad: Fort Worth & Denver City  
Date: November 28, 1942  
Location: Carey, Texas  
Kind of accident: Head-end collision  
Trains involved: Passenger : Freight  
Train numbers: 101 : Extra 405 North  
Engine numbers: Gas-electric M-20 : 405  
Consist: Motor-car, coach : 6 cars, caboose  
Speed: 50 m. p. h. : 30 m. p. n.  
Operation: Timetable and train orders  
Track: Single; tangent; level  
Weather: Clear  
Time: 12:30 p. m.  
Casualties: 3 killed; 63 injured  
Cause: Accident caused by an inferior train occupying the main track on the time of an opposing superior train  
Recommendation: That the Fort Worth & Denver City Railway Company establish an adequate block-signal system on the line involved in this accident, and convert power units for use of fuel less inflammable than gasoline

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2654

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

THE FORT WORTH & DENVER CITY RAILWAY COMPANY

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January 25, 1943.

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Accident near Carey, Texas, on November 28, 1942, caused  
by an inferior train occupying the main track on the  
time of an opposing superior train.

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REPORT OF THE COMMISSION

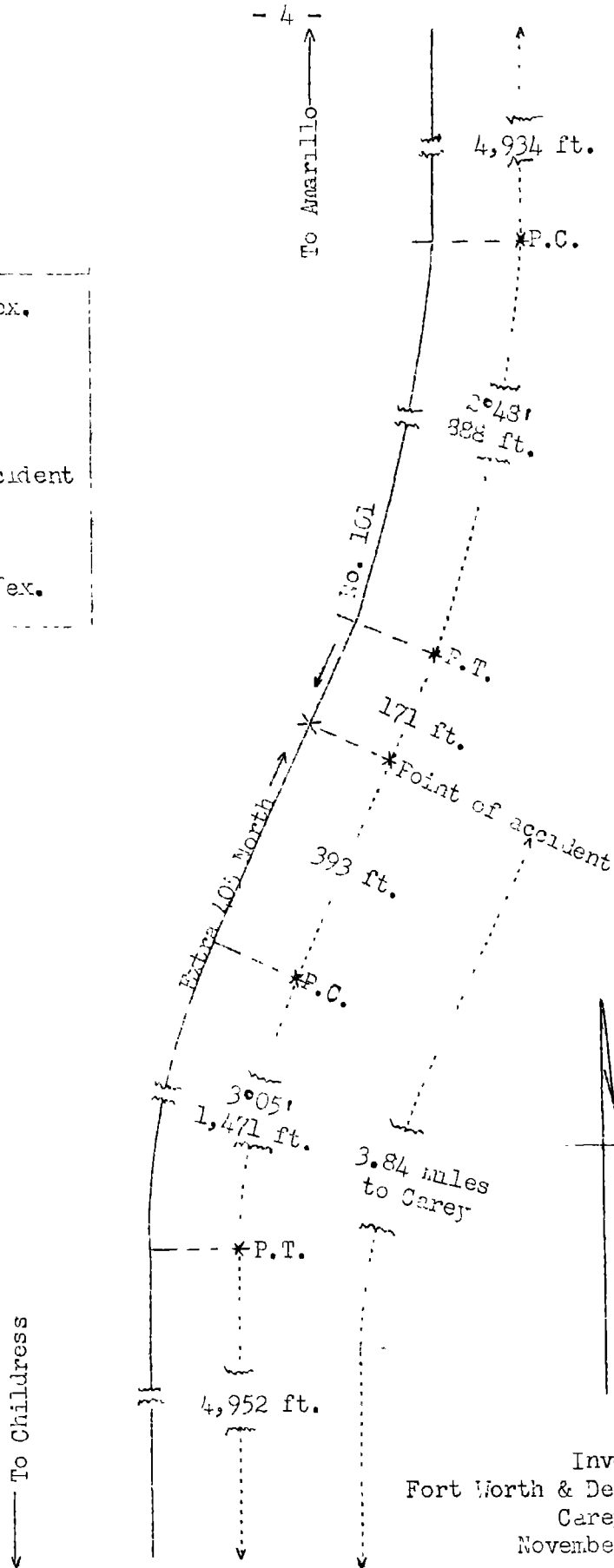
PATTERSON, Commissioner:

On November 28, 1942, there was a head-end collision between a passenger train and a freight train on the Fort Worth & Denver City Railway near Carey, Texas, which resulted in the death of 1 passenger, 1 railway-mail clerk and 1 employee, and the injury of 57 passengers and 6 employees.

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<sup>1</sup>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.

- o Amarillo, Tex. 84.90 mi.
- o Memphis 14.10 mi.
- o Estelline 4.86 mi.
- X Point of accident 3.84 mi.
- o Carey 7.80 mi.
- o Childress, Tex.



Inv-2654  
 Fort Worth & Denver City Railway  
 Carey, Tex.  
 November 28, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the railroad which extends between Amarillo and Childress, Texas, a distance of 115.5 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. There is no block system in use. The accident occurred at a point 3.84 miles north of the station at Carey. Approaching from the north there are, in succession, a tangent 4,934 feet in length, a 2°48' curve to the right 898 feet, and a tangent 171 feet to the point of accident and 393 feet beyond. Approaching from the south there are, in succession, a tangent 4,952 feet in length, a 3°05' curve to the right 1,471 feet, and the tangent on which the accident occurred. The grade for south-bound trains varies between 1.05 and 1.16 percent ascending a distance of 2,100 feet and then is level 390 feet to the point of accident. The grade for north-bound trains is 0.13 percent ascending a distance of 1,000 feet and then is level 310 feet to the point of accident. Between points 1,100 feet and 100 feet north of the point where the accident occurred the track is laid in a hillside cut, the west wall of which rises to a maximum height of 12 feet.

Operating rules read in part as follows:

S-87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of opposing regular trains not less than five minutes \* \* \*.

In the vicinity of the point of accident, the maximum authorized speed for passenger trains is 55 miles per hour, and for freight trains, 35 miles per hour.

Description of Accident

No. 101, a south-bound first-class passenger train, consisted of gas-electric motor-car M-20 and one coach, in the order named. This train departed from Estelline, 4.86 miles north of the point of accident and the last open office, at 12:21 p. m., according to the dispatcher's record of movement of trains, on time, and while moving at an estimated speed of 50 miles per hour it collided with Extra 405 North. The brakes of No. 101 had been tested and had functioned properly en route.

Extra 405 North, a north-bound freight train, consisted of engine 405, 5 loaded cars, 1 empty car and a caboose. At Childress, 11.64 miles south of the point of accident, a terminal air-brake test was made and the brakes functioned properly. The crew received, among others, copies of train order No. 59, Form 19, reading as follows:

NO 7 WAIT AT MEMPHIS UNTIL  
105 PM FOR EXTRA 405 NORTH

This train departed from Childress, the last open office, at 11:15 a. m., according to the dispatcher's record of movement of trains, passed Carey, 3.84 miles south of the point of accident, at 12:25 p. m., according to statements of the crew, and while moving at an estimated speed of 30 miles per hour it collided with No. 101.

Because of the hillside cut and track curvature in the vicinity of the point of accident, from an engine moving in either direction the view of a train approaching from the opposite direction is restricted to a distance of 650 feet.

The force of the impact moved No. 101 backward 105 feet. Motor-car M-20 was derailed but remained upright and in line with the track. The rear end was telescoped by the coach a distance of 12 feet, and the front end was demolished a distance of 15 feet. The engine was torn loose from its base and shoved into the mail compartment. The fuel tanks were ruptured, gasoline became ignited and the motor-car and coach were destroyed. The engine-truck wheels and the Nos. 1 and 2 pairs of driving wheels of engine 405 were derailed. The front end of the engine was demolished. The first car and the front truck of the second car were derailed.

It was clear at the time of the accident, which occurred at 12:30 p. m.

The employee killed was the baggageman of No. 101. The employees injured were the engineer and the conductor of No. 101, and the engineer, the fireman, the conductor, the front brakeman and the flagman of Extra 405 North.

#### Data

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 14.6 trains.

#### Mechanical Data

According to data furnished by the railroad, gas-electric motor-car M-20 was built in 1930 by the Pullman-Standard Car Company. It was of conventional, all-steel, plate, girder, post and sill construction, and was designed for a buffing strength in conformity with Post Office Department specifications. The car was 75 feet in length, weighed 141,600 pounds, and was divided into an engine compartment, a mail compartment and a baggage compartment. The partition between the engine compartment and the mail compartment was about 1 inch thick and was covered by No. 20 gage corrugated steel. The floors of the mail and the baggage compartments were of two courses of wood on top of No. 22 gage floor plates. The bottom and top courses were, respectively, 11/16 inch and 13/16 inch thick. The engine compartment was floored with pine 2-1/2 inches thick, which was covered with steel and secured to the floor plates by 5/8-inch bolts. The car was powered by a 400-horsepower gasoline motor, the base of which was fastened to the floor by eighteen 1-inch steel bolts.

Fuel was supplied from three tanks having a total capacity of 460 gallons. Two tanks, oval in shape, 8 feet 4 inches long, 2 feet 10 inches wide and 16-1/2 inches high, were located beneath the floor, one on each side and about 18 inches inward from the sides of the car. The front ends were 19 feet 3 inches from the front end of the motor-car. A smaller tank, 8 feet long, 14 inches wide and 11 inches high, was located between the other two tanks. The metal of the three tanks was about 1/8 inch thick. The car was provided with AML brake equipment having a safety-control feature actuated by release of pressure on either the brake-valve handle or a foot pedal. The control station was located in the engine compartment to the right of the engine.

### Discussion

The rules governing operation on the line involved provide that an inferior train must keep out of the way of opposing superior trains, and extra trains must clear the time of opposing regular trains not less than 5 minutes or provide flag protection. All surviving employees of both crews understood these requirements.

No. 101, a south-bound first-class train, was due to leave Estelline, 8.7 miles north of Carey, at 12:21 p. m., and Carey at 12:34 p. m. As it was approaching the point where the accident occurred the speed was about 55 miles per hour, the controller was open, and the engineer, who was alone in the engine compartment, was maintaining a lookout ahead. No train order restricting the movement of this train had been issued. The first the engineer was aware of anything being wrong was when he observed Extra 405 North at a distance of about 650 feet. He immediately closed the controller and applied the brakes in emergency by removing his foot from the safety-control pedal; however, the distance was insufficient to stop short of the opposing train. The first the conductor knew of anything being wrong was when the collision occurred. The brakes of this train had been tested and had functioned properly at all points where used en route.

As Extra 405 North was approaching the point where the accident occurred, the speed was about 35 miles per hour, the throttle was in drifting position and the enginemen were maintaining a lookout ahead. The front brakeman was stationed on the deck of the engine. Brake-pipe pressure of 75 pounds was being maintained. The engineer said the first he was aware of anything being wrong was when he saw No. 101 approaching. He immediately moved the brake valve to emergency position, closed the throttle and moved the reverse lever to position for backward motion, but the distance was not sufficient to stop short of the opposing train. The remainder of the crew said the first they were aware of No. 101 was when the brakes were applied in emergency.

Under the rules, Extra 405 was required to be into clear at Estelline not later than 12:16 p. m., if it proceeded to that point for No. 101. Extra 405 passed Carey, the first station

south of the point of accident, at 12:25 p. m., and collided with No. 101 about 5 minutes later. There is no siding between Carey and Estelline. All members of the crew said they forgot the schedule of No. 101. The engineer said that because of receiving an order directing No. 7, another south-bound first-class train, to wait at Memphis, 14.1 miles north of Estelline, until 1:05 p. m. for his train, he was concentrating on clearing that schedule, and forgot No. 101.

The investigation disclosed that about 150 gallons of gasoline remained in the fuel tanks of the motor-car at the time of the collision. In previous reports the Commission has directed attention to the hazards to passengers when there is a large quantity of gasoline on a car carrying passengers, and the disastrous consequences when gasoline becomes ignited as a result of an accident of this character. In two such accidents during the past 2-1/2 years, 44 persons were killed and 22 injured, and most of these casualties were caused by burning gasoline. In the present case it appears that the three fatalities resulted directly from the collision, and fortunately all other persons escaped from the motor-car and coach before they were destroyed by fire. However, had any person been trapped in either the motor-car or the coach, death would have resulted from fire and gases. Although several officials of this carrier stated that it would be safer to use fuel less volatile than gasoline, no plans had been made to convert the power unit on this motor-car to a type using other fuel. In view of the hazards involved in the use of gasoline on equipment of this character, conversion to a type of equipment using other fuel should be promptly effected.

On the line involved in this accident trains are operated by timetable and train orders only. If an adequate block-signal system had been in use on the line involved, the accident would not have occurred.

#### Cause

It is found that this accident was caused by an inferior train occupying the main track on the time of an opposing superior train.

#### Recommendation

It is recommended that the Fort Worth & Denver City Railway Company establish an adequate block-signal system on the line involved in this accident, and convert power units for use of fuel less inflammable than gasoline.

Dated at Washington, D. C., this twenty-fifth day of January, 1943.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,  
Secretary.