BUREAU OF SAFETY

REPORT NO. 1990

Railroad:	Texas and Pacific Railway	
Date:	June 14, 1935	
Location:	T.& P. Jct.,(Dallas) Texas	
Kind of accident:	Head-end collision	
Trains involved:	Freight	Passenger
Train numbers:	Extra 669	No. 1
Engine numbers:	669	907
Consist:	68 cars, caboose	10 cars
Speed:	2-4 m.p.h.	4-20 m.p.h.
Track:	Tangent; 0.9 percent grade	
Weather:	Partly cloudy	
Time:	11:56 a.m.	
Casualties:	6 injured	
Cause:	Failure of passenger engineman to obey stop indication of home signal.	

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE TEXAS AND PACIFIC RAILWAY AT T.& P. JCT., (DALLAS) TEX., ON JUNE 14, 1935.

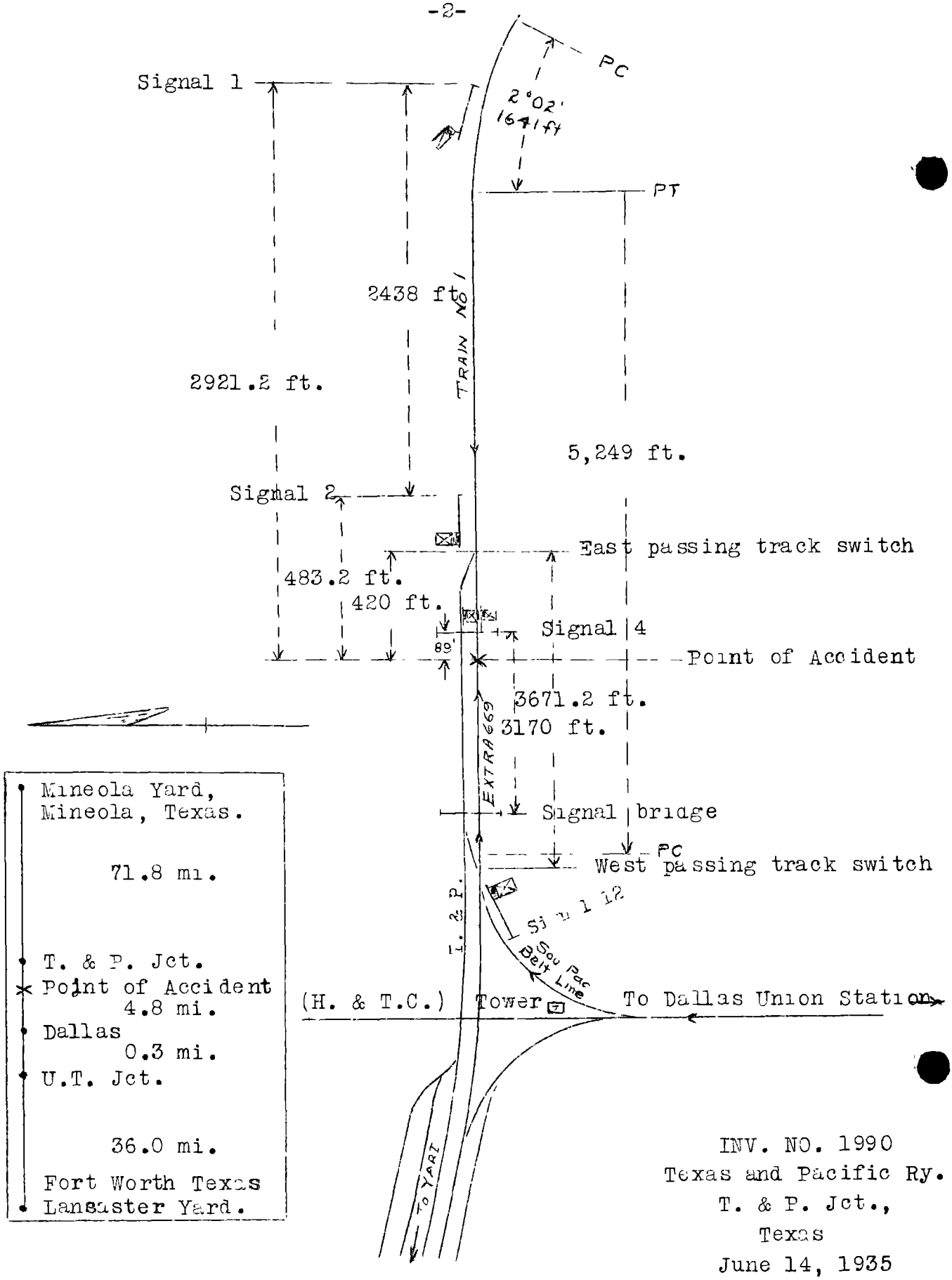
August 8, 1935.

To the Commission:

On June 14, 1935, there was a head-end collision between a passenger train and a freight train on the Texas and Pacific Railway at T.& P.Jct. (Dallas) Tex., which resulted in the injury of six passengers.

Location and method of operation

This accident occurred on the Dallas Sub-division of the Fort Worth Division, extending between Lancaster Yard, Fort Worth, and Mineola Yard, Mineola, Tex., a distance of 112.9 miles; in the immediate vicinity of the point of accident this is a single-track line over which trains are operated by time table, train orders, and an automatic block-signal system. The accident occurred on main track within interlocking limits where movement of trains is governed by signal indications. A passing track, 3,671 feet in length parallels the main track on the north, the accident occurring at a point about 420 feet west of the east passing-track switch. A line of the Southern Pacific crosses the Texas and Pacific Railway at right angles and connections between these two lines are made through wye tracks of the Southern Pacific Belt Line, the east leg of the wye connecting with the main line of the Texas and Pacific Railway just west of the west passing-track switch. This Belt line extends between U.T. Jct. and T.& P. Jct., a distance of 5.1 miles, and trains of the Texas and Pacific Railway are operated over this belt line. Approaching the point of accident from the east, there is a 2° 02' curve to the left 1,641 feet in length, followed by tangent track for a distance of 5,249 feet, the accident occurring on this tangent at a point approximately 2,143 feet from its eastern end. The grade for west-bound trains is descending for more than 2 miles to the west switch of the passing track, varying from 0.65 to 1.4 percent, and is 0.9 percent at the point of accident. The maximum authorized speed for passenger trains is 65 miles per hour.



INV. NO. 1990
Texas and Pacific Ry.
T. & P. Jct.,
Texas
June 14, 1935

The signals and switches in this vicinity are controlled by an interlocking plant operated from Tower 119, which is located near the junction of the two legs of the wye at its southern end and east-bound T&P trains are routed over the eastern leg of the wye. Signals 1, 2 and 4, are located 2,921.2 feet, 483.2 feet and 89.2 feet, respectively, east of the point of accident. These signals are of the 3-position, upper-quadrant semaphore type, displaying red, yellow and green, for stop, caution and proceed, respectively. Signal 1 is an automatic signal and provides an approach indication for west-bound trains approaching the interlocking plant; it is normally in approach position and requires a train to "approach next signal prepared to stop"; signal 2 is a semi-automatic signal, located 63.2 feet east of the east passing-track switch, and governs movements via either the main track or the passing track, and signal 4, which is also a semi-automatic signal and is mounted on a signal bridge, governs the movement of east-bound trains leaving interlocking limits. There is an annunciator in tower 119 which is actuated when a west-bound train passes the west passing-track switch at Orphans Home, a distance of 8,512 feet east of home signal 2, and signal 4 if in proceed position also assumes stop position at that time.

The weather was partly cloudy at the time of the accident, which occurred about 11:56 a.m.

Description

Extra 669, an east-bound freight train, consisted of 63 cars and a caboose, hauled by engine 669, and was in charge of Conductor Huff and Engineman Reese. This train departed from Lancaster Yard, Fort Worth, at 9:45 a.m., and arrived at T.& P. Jct., at 11:52 a.m., according to the train sheet. In addition to the train orders received by the crew at tower 119, there was a message signed by the operator, reading:

> "No. 1 about on time. If you can get up there to back guess will have to head No. 1 in and let you pull up."

The route had been lined by the operator and Extra 669 proceeded around the east leg of the wye, entered the main track, and continued eastward on that track at a low rate of speed with the intention of clearing the interlocking signals and then backing into the yard to set out a car; while this movement was being made the train was struck by Train No. 1.

Train No. 1, a west-bound passenger train, consisted of 1 baggage car, 1 mail and baggage car, 1 chair car, 1 coach, 1 dining car, 4 Pullman sleeping cars, and 1 lounge car, all of steel construction, hauled by engine 907, and was in charge of Conductor Curtis and Engineman Leach. This train passed Forney, 16.3 miles east of T.& P. Jct., at 11:59 a.m., according to the train sheet, 7 minutes late, passed distant signal 1 displaying an approach indication, passed home signal 2 displaying a stop indication, and collided with Extra 669 while traveling at a speed variously estimated to have been between 4 and 20 miles per hour.

The engine truck of engine 907 was derailed, the pilots and pilot beams of both engines were knocked off, and the coupler of the first car in Train No. 1 was broken. None of the other equipment in either train was derailed or damaged.

Summary of evidence

Engineman Reese, of Extra 669, stated that on approaching the tower at T.& P. Jct. the train-order signal displayed a stop indication and the operator handed him train orders on a hoop, together with the message relative to Train No. 1. The route was clear for his train to proceed and on reaching the main track he observed signal 4, governing east-bound movements, also displaying a proceed indication. Due to the length of his train he was doubtful whether there would be room for it between the two signal bridges, and as he proceeded very slowly toward signal 4 its indication changed from proceed to stop and shortly afterwards he saw Train No. 1 approaching around the curve, at which time he was about 100 feet west of signal 4. It then became evident that Train No. 1 was approaching at a fairly high rate of speed and as it neared the switch he put his own engine in reverse and opened the throttle; he thought that his train probably was just getting started backward when the accident occurred. From the message received from the operator he had been under the impression that Train No. 1 would head in on the passing track; if such were the case, signal 2 would have displayed a caution indication but this signal displayed a stop indication. When Train No. 1 had about reached the switch the engineman of that train sounded three short blasts of the whistle, indicating that he was not going to get stopped and that Engineman Reese was to back up. Engineman Reese said the signals gave him the right to use the main track as far as signal 4 but that he would not have gone beyond that signal on the time of a first class train even if it had remained in proceed position and he added that in the past he had been routed on the main track against opposing passenger trains on several occasions while at other times he had been routed into the passing track.

Fireman Bright, of Extra 669, stated that the engineman reversed the engine and opened the throttle, but due to the slack running in, the train had not started backward when the collision occurred. Head Brakeman Russell thought the train was moving forward at not more than 2 miles per hour when the accident occurred. Conductor Huff stated that when the train stopped at the time of the accident they lacked a distance of about two car lengths from having the entire train between the two signal bridges, but the caboose was east of the passing track switch. Flagman Boyd thought the caboose was 15 feet clear of the switch.

Engineman Leach, of Train No. 1, stated that the brakes on his train had been properly tested at Texarkana, their initial terminal, and functioned properly. Practically all stops en route were made from low speed, there being one point where he ran by about one car length; tests of the brakes were made at two points where cars were picked up or set out. He received clear signals until he approached T.& P. Jct., and the train was traveling at a speed of 60 or 65 miles per hour; his view of the distant signal for T.& P. Jct. was obscured, but the fireman called its caution indication when about 9 pole lengths from it. He said he made a service reduction of 10 or 15 pounds but the brakes did not seem to hold and on passing the distant signal he placed the brake valve in emergency position, not having released the brakes after the service application. He saw and called the red indication of the home signal; on passing that signal the speed was about 10 or 12 miles per hour, and it was further reduced to 4 or 5 miles per hour at the time of the accident. He had opened the sanders but there was very little sand running as the pipes were partly stopped up. He stated that the reason he was unable to stop his train was because the brakes did not hold which might have been due to the condition of the rail; while he had not passed through any rain en route, there had been some moisture as the grass was wet. He also stated that there had been occasions when he had headed in on the passing track at T.& P. Jct., but he had never before found a freight train occupying the main track without securing advance notice, and there have been times when the distant signal displayed a caution indication and the home signal a proceed indication.

Fireman Johnson, of Train No. 1, stated on passing the west switch at Orphan's Home the train was traveling at a speed of 55 or 60 miles per hour. He called the caution indication of the distant signal when about 9 pole lengths east of the signal and the engineman then made a service

application of the air brakes; the speed was reduced but he was unable to estimate its reduction. When the train came around the curve to the straight track he saw the home signal displaying a stop indication and also saw the freight train on the main track; he immediately called the stop indication and the engineman then applied the air brakes in emergency.

Conductor Curtis, of Train No. 1, stated that he felt the service application which he thought was made when the distant signal was seen, the speed was reduced but he did not feel an emergency application and it did not seem to him that the engineman was going to stop or was trying to stop. He estimated the speed of his train at the time of the accident to have been about 10 miles per hour.

Baggageman Feeny, of Train No.1, noticed that the speed was being reduced slightly, but he did not notice an emergency application. He thought the speed was 8 or 10 miles per hour at the time of the accident. Flagman Haden, who was in the next to the last car in the train, felt a service application of the brakes as the train came around the curve and after passing the distant signal; he estimated the speed to have been about 20 miles per hour at the time of the accident.

Operator Canafax, on duty at Tower 119, stated that he knew Train No. 1 would be a few minutes late and when the operator at tower 118, from which movements over the Belt line are governed, called and told him that Extra 669 was approaching, he asked him about putting it on the siding at that point, but was advised that the route had already been lined for the extra and that it was approaching. Operator Canafax then figured that it would be the quickest way to run the extra up the main track and head the passenger train in on the passing track, if necessary; he stated that is the customary way to handle these movements, although he does not put a freight train on the main track when on short time of passenger trains. He cleared the route for the extra train, and also cleared signal 4 so that the extra could pull by that signal if the length of the train necessitated in order to make the back-up movement into the yard; he knew that as soon as No.1 entered the block signal 4 would automatically go to stop position. After giving the train orders to the engineman of Extra 669 he returned to the tower, at which time the annunciator indicating the approach of No. 1 had not started to sound; he remained there until the caboose got close and as the annunciator still had not started to sound he decided to let the signals stand; if he had lined the switch for No. 1 to

enter the siding he would have taken signal No. 4 away from the extra and he decided to wait and see whether the extra could get between the signals; if not he would head No. 1 in the passing track and then let the extra pull up to clear the switch. When he again returned to the tower after the caboose of Extra 669 had passed, the annunciator bell was ringing, indicating that Train No. 1 had entered the block. In order then to have lined the route through the passing track for Train No. 1 it would have been necessary to operate the time release on the east passing track switch. He stated that he depended on signal 2 to stop Train No.1. Operator Canafax also stated that he could have held the extra train back at signals 14 or 18 until the arrival of Train No. 1 on the passing track or on the main line clear of the east end of the passing track and then headed the extra through the passing track, but this would have meant delay to both trains. This plan had been tried and it was found hard to pull these heavy trains into clear after stopping them. While he was not sure the rules gave him the right to clear signal 4 for an east-bound train on the time of a superior west-bound train, preparatory to backing into the Dallas yard, it was the usual procedure.

Master Mechanic Vinsant stated that after the accident engine 907 was taken to the Dallas roundhouse coupled to engine 669, with the brake valve cut out, and the brakes were tested with the brake valve on engine 669 and found to apply and release properly. Engine 907 is equipped with a vent valve which was not plugged and showed no indication of having been plugged recently. The first car in Train No. 1 was set out and another engine coupled to the head end of this train, and the brakes were tested and found to be functioning properly. A check of the speed recorder tape on engine 907 showed a steep decline in the speed line and starting at this point the speed of Train No. 1 was reduced from 65 miles per hour to approximately 18 miles per hour within a distance of about 1,300 feet and the train stopped within the next 500 feet.

Road Foreman of Engines Harris stated that if the brakes were working properly on Train No. 1 the engineman had ample warning and opportunity to stop his train short of the home signal at T.& P. Jct., and he was of the opinion from the evidence brought out that the brakes on this train were working properly.

Signal Engineer Weatherby stated that the movement made by Extra 669 was right and proper and could have been made safely had the signals been observed; he did not consider it a hazardous move to route a train on the main track against an opposing train as was done in this case. If the freight train had been moved into the passing track with the rear end fouling

the main track, Train No. 1 would have had a greater distance in which to stop, although he stated that with the engineman failing to stop at signal 3 he probably would not have stopped at signal 6, the following signal.

Signal Supervisor Belvin stated that after the accident he checked all signals involved and found them working correctly.

Several days following the occurrence of the accident tests were made of the brake equipment on engine 907 and nothing wrong was developed when making either a service or an emergency application.

Discussion

According to the evidence, Train No.1 overran the stop signal a distance of 483 feet and collided with the opposing train while running at a rate of speed variously estimated at 4 to 20 miles per hour. Approaching the point of accident caution and stop signal indications were displayed for this train and were seen and called by the engine crew; Engineman Leach said the reason for his failure to stop for the stop signal was because the brakes did not hold properly. Both Engineman Leach and Fireman Johnson said a service application was made as soon as the distant signal was seen to be displaying a caution indication, followed by an emergency application which was made, according to the engineman, about the time of passing the distant signal; however, the fireman said the emergency application was not made until after passing the distant signal and entering the tangent track when the home signal, at stop, and the opposing train came into view; members of the train crew did not notice an emergency application of the brakes prior to the accident, although the conductor said there was a service application when approaching the distant signal and the flagman noticed it after passing the distant signal. Inspection, tests and operation of the brakes on this train both prior and subsequent to the accident indicated that the brake equipment was in proper operating condition; the speed recorder chart also showed that the brakes were effective as speed was reduced from 65 to 13 miles per hour in approximately 1,500 feet. Furthermore, the speed recorder chart indicated that the brakes were not applied until the train was approximately 1,800 feet from the point of accident, whereas signal 1 which was displaying a caution indication is located more than 2,900 feet east of the point of accident. It is therefore apparent that Engineman Leach did not begin braking soon enough to bring his train under proper control when approaching interlocking limits and to comply with the restrictive signal indications which were displayed for his train.

In this connection the indication which was displayed by Signal 1, as shown by the T.& P. rule book is:

"Approach next signal prepared to stop."

The corresponding approach indication of the standard Code of the Association of American Railroads is:

"Prepare to stop at next signal. Train exceeding medium speed must at once reduce to that speed."

In previous reports this Bureau has repeatedly recommended the principle of requiring a definite speed reduction for high-speed trains at approach or caution signals, and on many roads the approach indication as now used on the Texas & Pacific has been revised to conform to the present standard code. This question was discussed at length in the report upon the collision at Camp Douglas, Wis., on February 28, 1931.

Conclusions

This accident was caused by the failure of Engineman Leach of Train No. 1 properly to control the speed of his train when approaching interlocking limits and to obey the stop indication of home signal 2.

Recommendation

It is recommended that the Texas & Pacific Railway Company give consideration to a revision of its rule covering the approach signal indication so as to require a definite speed reduction when that indication is received by a train running at high speed.

Respectfully submitted,

W.J. PATTERSON,

Director.