BUREAU OF SAFETY

REPORT NO. 1954

Railroad:	Union Terminal Company
Date:	December 17, 1934
Location:	Dallas, Tex.
Kind of accident:	Rear-end collision
Trains involved:	Yard transfer and freight
Casualties:	2 employees injured
Cause:	Engineman failed to operate under proper control within yard limits.

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE TRACKS OF THE UNION TERMINAL COMPANY AT DALLAS, TEX., ON DECEMBER 17, 1934.

February 26, 1935.

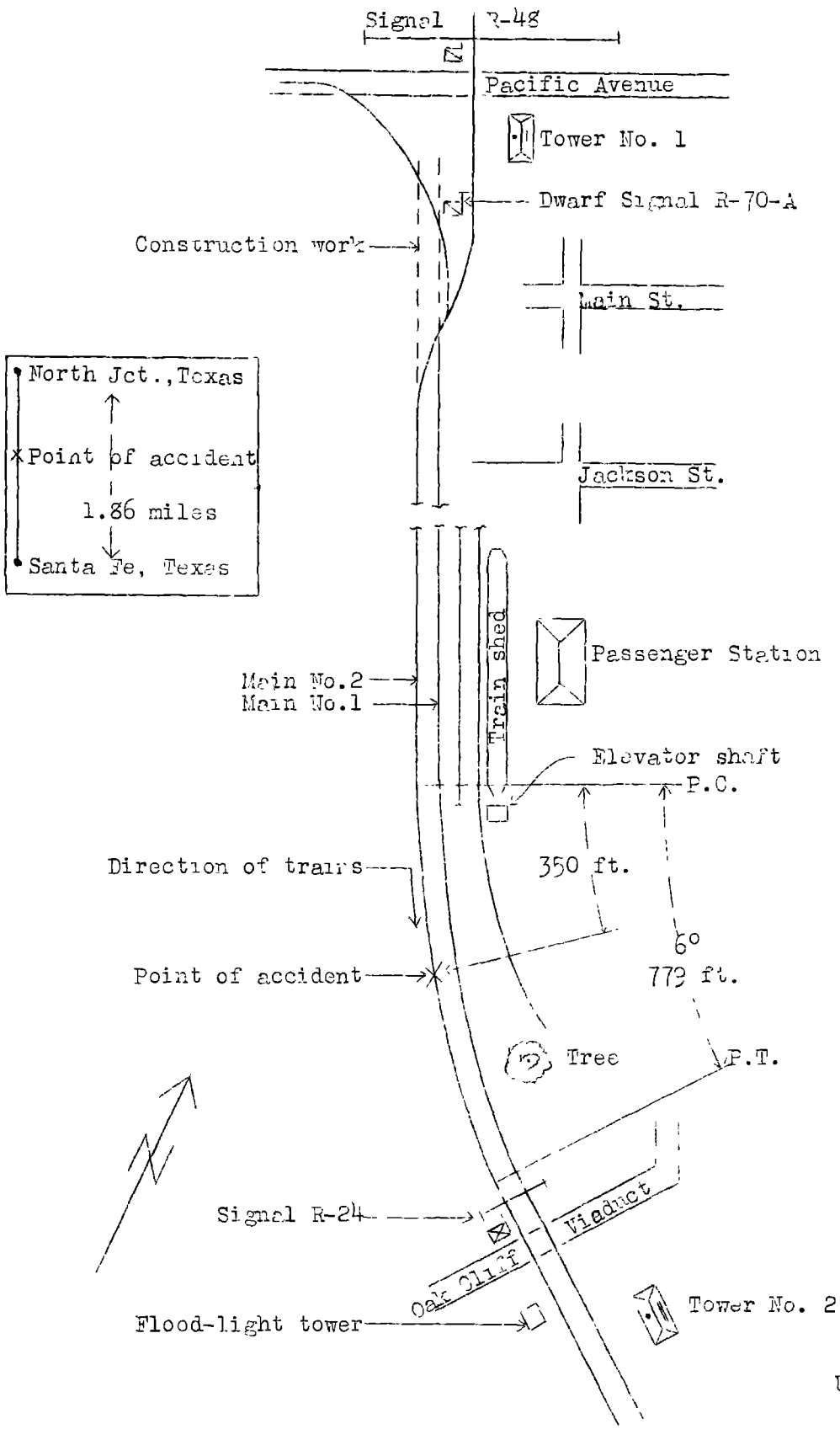
To the Commission:

On December 17, 1934, there was a rear-end collision between a Texas & Pacific Railway freight transfer and a St. Louis, San Francisco & Texas Railway freight train on the tracks of the Union Terminal Company at Dallas, Tex., which resulted in the injury of 2 employees.

Location and method of operation

The tracks of the Union Terminal Company extend from North Junction to Santa Fe Junction, a distance of 1.86 miles, and serve several different railroads; all of the tracks are within yard limits, and trains are operated by time table and interlocking signals. Beginning 1,409 feet north of the point of accident there is a double-track freight line, extending generally north and south, the tracks being known as main No. 1 and main No. 2, the latter track paralleling the former on the west; there are several passenger tracks between these freight tracks and the station. The accident occurred on main track No. 2 at a point 846 feet south of the center line of the passenger station; approaching this point from the north, the track is tangent for a distance of 1,059 feet, followed by a 6° curve to the left 779 feet in length, the accident occurring on this curve at a point 350 feet from its northern end. The grade at the point of accident is 0.28 percent descending for south-bound trains.

Tower 1 is located east of the tracks and immediately south of Pacific Avenue, while Tower 2 is located 3,035 feet farther south, on the same side of the tracks. The signals involved are signals R-48 and dwarf signal R-70-A, located 2,376 and 1,933 feet, respectively, north of the point of accident, and signal R-24, located 469 feet south of the point of accident and 335 feet north of Tower 2. Signal R-48 is mounted on a signal bridge and both this signal and dwarf signal R-70-A are 2-position, upper-quadrant signals, displaying either stop or caution; signal R-24, mounted on a signal bridge, is a 3-position, upper-quadrant signal, displaying stop, caution or proceed indications. All signals except dwarf signals are semiautomatic; signal R-48



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and dwarf signal R-70-A are operated from Tower 1, while signal R-24 is operated from Tower 2. Signal R-48 governs movements either into the station or as far as dwarf signal R-70-A, which in turn governs movements as far as signal R-24.

Work of constructing an underpass at Main Street, located two city blocks south of Pacific Avenue, near signal R-48, was in progress and on December 8, 1934, General Order No. 44 was issued, limiting the speed of freight train to 8 miles per hour between Pacific Avenue and Jackson Street, a distance of four city blocks. Under rules and regulations contained in the time table, the speed of trains is limited to 6 miles per hour between Towers 1 and 2, and there also is a requirement to look out carefully for trains and to be prepared to stop in the distance the track is seen to be clear.

Tests conducted under favorable conditions and before it became necessary for all lights to be turned on, showed that with a car standing at the point of accident it was impossible to tell which track it was occupying until it was only 560 feet distant. The day indication of signal R-24 could be seen by the fireman of a south-bound train when 442 feet from the point of accident but the night indication could not be seen plainly until less than 300 feet from the point of accident.

Day was breaking and it was misting at the time of the accident, which occurred about 7:03 a.m.

Description

The freight transfer of the Texas & Pacific Railway, hereinafter referred to as the T&P, was south-bound and consisted of seven empty box cars, hauled by T&P yard engine 475, in charge of Engine Foreman Burdett and Engineman Ridgely. This train left Tower 1 on main No. 2 at 6:54 a.m., according to the towerman's daily train-report sheet, and stopped at signal R-24, which was displaying a stop indication. While standing at this point its rear end was struck by Extra 706 of the St. Louis, San Francisco & Texas, hereinafter referred to as the StLSF&T.

Extra 706, a south-bound StLSF&T freight train, consisted of 4 loaded and 2 empty freight cars and a caboose, hauled by engine 706, and was in charge of Conductor Rogers and Engineman Wyatt. This train passed signal R-48, which was displaying a caution indication, passed Tower 1 on main No. 2 at 7:02 a.m., according to the towerman's report sheet, passed signal R-70-A, which was displaying a caution indication, and collided with

the rear of the T&P transfer while traveling at a speed variously estimated to have been between 2 and 20 miles per hour.

The T&P transfer was driven forward about 20 feet and four of the cars in the train were more or less damaged, but only the rear truck of the last car and the forward truck of the fifth car were derailed. The front end of Engine 706 was damaged slightly, and the engine truck was derailed. The employees injured were the StLSF&T conductor and a T&P switchman.

Summary of evidence

Engine Foreman Burdett, of T&P engine 475, stated that he was on the rear footboard of the engine and after the stop was made at signal R-24 he started to walk to Tower 2 in order to ascertain the reason for the delay. On glancing back, however, he saw the following train approaching, assumed that it was on main No. 1 and that his own train was being held in order to permit it to go, and therefore he returned to his engine. The accident occurred immediately afterwards, 3 or 4 minutes after his own train stopped at the signal. Foreman Burdett further stated that under the rules flag protection in the terminal was not required except against first-class trains, which do not ordinarily use these freight tracks; there was nothing unusual about the movement being made, and it was customary in this location for the towerman to permit two movements in a block at the same time. The statements of the engine crew brought out nothing additional.

Switchman Wood stated that he rode on top of the rear car until the stop was made at signal R-24, and then walked over the tops of the cars toward the engine and got off. On looking back he saw the headlight of the approaching train but thought it was on the other track; at that time it was about 100 feet north of the transfer and was traveling between 15 and 20 miles per hour. Switchman Wood also said that it was customary for a man to ride the rear car, although the rules did not require that such action be taken nor did they require flag protection.

Engineman Wyatt, of Extra 706, stated that caution indications were displayed by signals R-48 and R-70-A and that he complied with the slow order of 8 miles per hour, reducing speed while moving under the bridge between Tower 1 and Jackson Street and then increasing speed slightly when leaving Jackson Street, permitting the engine to drift on the descending grade, but at no time was the speed in excess of 10 miles per hour. On reaching the curve involved and when about five or six car lengths from the rear of the transfer, the fireman held out his hand as if to give an "easy" signal. The speed at this time was about 10 miles per hour and the engineman immediately began making an air-brake application, but the fireman then shouted to apply

the brakes in emergency and the engineman endeavored to do so; however, he was unable to move the brake-valve handle into emergency position, and his train collided with the transfer while traveling at a speed of about 2 miles per hour. After the accident it was discovered that the brake valve was defective, the quadrant being worn to such an extent that the latch would not permit the handle to pass by the service position into emergency position, the shoulder preventing it. Engineman Wyatt said that so far as the air brakes themselves were concerned, they had been tested and worked properly at all points en route from Sherman to Dallas, a distance of 75 miles, and that prior to the accident he had not had occasion to make an emergency application. He thought a full service effect was obtained just prior to the accident and that had he been able to make an emergency application he could have stopped in time to avert the accident. He did not test the brake-valve by making an emergency application before leaving the terminal at Sherman and at the time of the accident he made no attempt to apply the independent brake or to reverse the engine; the rail was wet and slippery and he opened the sanders, but after the accident he could find only a small amount of sand on the rails; the sand supply was not exhausted but it did not come out very well. Engineman Wyatt had been running in this territory for many years, knew that flag protection against second-class and inferior trains was not required, and said he was familiar with the rules of the Union Terminal Company although he had not been examined on those rules; his answers to questions, however, indicated that he did not have a correct understanding of time-table rule 5 which restricted the speed of all trains to 6 miles per hour between Towers 1 and 2, for he said he thought this restriction applied to the passenger tracks and not to the double-track freight line. In spite of this misunderstanding, however, he thoroughly understood that he was required to move under control prepared to stop short of any obstruction and he considered that he was complying with the rules in this respect, saying that the accident was caused, first, by the fact that he was not warned of the presence of the transfer ahead in time to stop, although the fireman and the head brakeman appeared to be maintaining a proper lookout, and, secondly, the fact that he was unable to move the brake-valve handle into emergency position after he had been warned.

Fireman Vaughn, of Extra 706, stated that he was not paying much attention to the speed or to the presence of a train ahead, but was watching for signal R-24, located on the signal bridge above the tracks and considerably higher than the cars. His view

across the inside of the curve was interfered with by cars standing on a spur opposite the station and by a cottonwood tree growing on the inside of the curve, as well as by the glare from floodlights mounted on a high tower south of signal R-34; he first saw the cars in the transfer when they were about 8 or 10 car lengths distant, at which time the speed of his train was about 12 miles per hour, and he gave the engineman an "easy signal", as at that time he could not tell definitely what track the cars were occupying. After moving another car length he saw that they were on main No. 2 and shouted a warning of danger; the engineman immediately applied the brakes, the collision occurring while the train still was traveling at a speed of about 8 miles per hour. The headlight on his engine was burning, but on account of the curve he was able to see the standing cars before the rays from the headlight shown upon them.

Head Brakeman Boone, of Extra 706, stated that he was in the gangway, looking out on the fireman's side; after passing the point where the construction work was in progress the speed was increased slightly and when about 10 or 12 car lengths from the transfer, at which time the speed was 10 or 12 miles per hour, he saw the cars and warned the engineman, about the time that the fireman warned him.

Conductor Rogers and Brakeman Jefferson were in the caboose and were not aware of anything wrong until the accident occurred. The conductor said that he was not paying much attention to the speed but thought it was about the same as usual, estimating that his train passed Tower 1 about 6 or 8 miles per hour, and while he did not notice it being materially increased after that time, he fixed it as somewhere around 10 miles per hour when the accident occurred. Conductor Rogers also said that no flag protection was required to be afforded by the transfer under the existing conditions and that freight trains were required to move under control, prepared to stop short of a train or obstruction. Neither he nor brakeman Jefferson, who estimated the speed to have been about 10 or 12 miles per hour at the time of the accident, noticed any application of the brakes prior to the accident.

Towerman Walther, on duty at Tower 1 at the time of the accident, stated that under the interlocking rules it was permissible to let two trains in a block at the same time. The standard electric clock in his tower does not register the seconds, and the minute hand jumps a full minute at a time, consequently the daily records in the tower vary to some extent from the actual arriving and departing times as shown on the train-report sheets. Towerman Walther thought the majority

of trains obeyed the speed restrictions, while Towerman Scirratt, of Tower 2, who had just been relieved and was leaving the office when the accident occurred, said trains usually traveled about 12 or 15 miles per hour and Towerman Thurman, on duty at Tower 2 at the time of the accident, stated that most of the trains traveled about 8 or 10 miles per hour.

Acting Roundhouse Foreman Johnson, of the Gulf, Colorado & Santa Fe Railway, stated that after the accident he was requested by Engineman Wyatt to examine the brake-valve handle on engine 706. He pulled on the handle as hard as he could but it would not go into emergency position; therefore he obtained a wrench and file and pried under the latch on the quadrant with the file and by so doing he was able to get the handle into emergency position. Examination showed that there was a burr or shoulder on the quadrant and the latch of the brake-valve handle was worn, by rounding off the end of the latch and rounding out the notch in the quadrant he was able to move the handle freely to emergency position. Machinist Melton, of the Union Terminal Company, examined the brake valve before the engine was moved from the station and said the handle could be driven into emergency position but could not be pulled to that position; the latch was worn to a bevel edge, the spring tension causing the latch to wear on the quadrant.

Locomotive Inspector Miller, of the StLSF&T at Sherman, stated that he tested engine 706 before it departed on the trip in question and at that time, after making a full service application, he moved the brake valve from full service to emergency position, by giving it a quick jerk, and immediately moved it to full release; his purpose in moving the handle in this manner was to avoid blowing out the train line and jamming the brakes hard. He did not notice any worn parts on the brake valve or handle, or any defects in the air-brake equipment.

Conclusions

This accident was caused by a combination of several factors, as follows: failure of StLSF&T Extra 706 to be operated under proper control within yard limits; the failure of the fireman and head brakeman to maintain a proper lookout, and the defective condition of the brake valve which prevented the engineman from making an emergency application of the brakes.

Under the rules no flag protection against freight trains is required in this territory and all trains are required to be operated under control, looking out carefully for trains occupying tracks and being prepared to stop in the distance the track is

seen to be clear. A slow order had been issued limiting the speed to 8 miles per hour between Pacific Avenue and Jackson Street, north of the point of accident, within which limits work of constructing an underpass was in progress, while under the rules contained in the time table, the speed of trains between Towers 1 and 2 was limited to 6 miles per hour. Engineman Wyatt had not been examined on the Union Terminal rules and said he did not understand that the 6-miles-per-hour speed restriction applied to the double-track freight line over which he was operating, but there is no question as to his understanding that he was running under signal indications which told him there was a train ahead and that he should be under control prepared to stop within range of vision; he said his failure was because of the fact that he was not warned in time to stop from his speed of about 10 miles per hour, coupled with the fact that he was unable to move the brake-valve handle into emergency position because of its defective condition. While the engineman thought the fireman and head brakeman were maintaining a proper lookout, it appeared from the fireman's statements that he was looking for the indication of the signal beyond the point where the cars were standing, while the head brakeman said he saw the cars when they were 10 or 12 car lengths distant, both he and the fireman apparently warning the engineman at about the same time; the engineman, however, said he was not warned until the distance between the two trains was only 5 or 6 car lengths. While under these circumstances it is impossible to point definitely to any one factor as being the sole cause of the accident, it is believed that even had the warning been given when the standing cars were only 5 or 6 car lengths distant, as stated by the engineman, he should have been able to stop with a full service application of the brakes had he been operating his train under proper control.

Examination of the brake-valve after the accident showed that because of the defective condition of the latch the handle could not be pulled into the service position although by a quick operation it could be moved into that position. Engineman Wyatt had not detected this condition prior to the time of the accident while the inspector who examined the engine prior to its departure on this trip said he moved the handle from service to emergency position by means of a quick jerk and then back to full release, and that he did not notice anything wrong; in other words, in his test he happened to follow the only method by which the handle could be moved to emergency position. Rule 106 of the Federal rules and instructions for the inspection and testing of steam locomotives specifically requires in part that before each trip it must be known that the brake valve works properly in all positions; the tests which were made at Sherman, the initial terminal, were not adequate to discover the defective condition which afterwards became apparent.

Engineman Wyatt did not appear to have a correct understanding of the speed limit rules of the Union Terminal Company and had never been examined upon those rules. It further appears under the Union Terminal rules that the rules of the various tenant lines apply in terminal territory when not in conflict with the rules of the Terminal company; such an arrangement, in case there is no rule of the Terminal company applicable to a particular situation, results in the employees of one tenant line being governed by the rule of their own railroad while the employees of another line may be following an entirely different rule. For example, rule 93 of the Rock Island requires in part as follows: "By night or in stormy or foggy weather proper lights must be displayed on all trains, cars or engines obstructing main tracks within yard limits", while it does not appear that the T&P has any such requirement. Careful attention should be given to this question for the purpose of seeing to it that one specific rule is laid down to be followed in every case by the employees of all the tenant lines and that those employees are instructed upon such rules and understand them thoroughly.

The investigation further developed that not only was the view approaching signal R-24 considerably obscured, but the light giving night indications was not properly focused, while other conditions, such as flood lights and cars on tracks on the inside of the curve, were such that men on the left side of an engine in trying to locate the signal and its indication might for the time being overlook cars on the track immediately ahead of them. Since this accident, however, the light giving the night indications of signal R-24 has been so arranged to become visible as soon as the signal location itself comes within range of vision.

Respectfully submitted,

W. J. PATTERSON

Director.