

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
ST. LOUIS-SAN FRANCISCO RAILWAY AT HEYBURN, OKLA.,
ON SEPTEMBER 1, 1917.

On September 1, 1917, there was a rear-end collision between 2 freight trains on the St. Louis-San Francisco Railway at Heyburn, Okla., which resulted in the death of 1 employee and injury to 4 employees. After investigation of this accident, the Chief of the Division of Safety reports as follows:

The Oklahoma Sub-division of the Southwestern Division, on which this accident occurred, is a single-track line extending from Sapulpa, Okla., to Oklahoma City, Okla., a distance of 105 miles. Train movements are governed by time-table and train orders transmitted by telephone; no block signal system is in use. Trains in the same direction are spaced five minutes apart at open offices and inferior trains are required to clear superior trains at meeting point 10 minutes. According to the time-table, the maximum speed allowed freight trains between Sapulpa and Oklahoma City is 35 miles per hour.

The collision occurred on a bridge, 135 feet in length and 15 feet high, located 43 feet east of the east passing track switch at Heyburn. Approaching this bridge from a point 3,165 feet east, there is a 2-degree 30-minute curve to the left 1,426 feet in length, followed by a tangent 846 feet in length and then there is a 4-degree curve to the right 893 feet to the point of accident. A westbound train when about 2,000 feet east of the point of collision has a clear view for 1,700 feet but after moving 800 feet farther west, the view becomes restricted to 990 feet by timber until within a short distance of the point of collision. The grade at the point of accident is slightly descending for westbound trains. The weather at the time was clear and it was moonlight.

Westbound freight train extra 1317, consisting of 31 loaded cars, 4 empty cars and a caboose, hauled by locomotive 1317, was in charge of Conductor Turner and Engineman Shoeley. This train was made up at Sapulpa and was destined for Oklahoma City, the crew having been called to leave Sapulpa at 5:05 p.m. However, due to various delays, they were unable to leave until 8:10 p.m. Extra 1317 met eastbound extra 1323 at Kellyville, 7.8 miles west of Sapulpa and presumably left that station at 8:40 p.m., arriving at Heyburn, a siding 4.3 miles west of Kellyville, at 8:52 p.m. Not having sufficient time in/ which

to make Bristow, 9.1 miles west of Heyburn, and clear eastbound passenger train No. 112 10 minutes, extra 1317 entered the siding at Heyburn for the purpose of meeting the passenger train there. While the locomotive was coupling on to some cars on this siding, the rear end of the train which was still on the main line was struck by westbound extra 1340.

Westbound freight train extra 1340 consisted of 26 loaded cars, 1 empty car and a caboose, hauled by locomotive 1340, and was in charge of Conductor Randall and Engineman Lewis. Locomotive 1340 was equipped with a 250 candle-power electric headlight, in good condition. The crew of this train was called to leave Sapulpa for Oklahoma City at 7.05 p.m. The dispatcher, however, was unable to move this train against opposing eastbound extra 1323 and instructed the crew to put their flagman on extra 1317 and follow them to Kellyville, where the meet between extra 1317 and extra 1323 had been previously arranged. Extra 1340 departed from Sapulpa at 8:15 p. m., 5 minutes behind extra 1317; at Kellyville it met eastbound extra 1323 and stopped to pick up the flagman of their crew who had been left there by extra 1317, and at Heyburn collided with the rear end of extra 1317 at 8:55 p. m.

The caboose of extra 1317 was badly broken up and came to rest to the right of the track on top of a bank at the east end of the bridge. The three cars ahead of the caboose were derailed but remained upright on the bridge and were badly damaged. Locomotive 1340 fell off the bridge to the right of the track, the tender separating from the engine. The three cars following locomotive 1340 fell off the bridge on the left side of the track, while the fourth car fell lengthwise on top of the over-turned engine and took fire therefrom. The two cars following were derailed and badly damaged, but remained upright on the track at the east end of the bridge. All of these cars and their contents, as well as the bridge, were destroyed by fire, the creek under the bridge being dry and no water available. An additional car was crushed in the middle of extra 1340, due to its being weak and old.

Engineman Shaeley of extra 1317, stated that as his train approached Heyburn he looked at his watch at which time it was 8:50 p. m. He decided that he did not have sufficient time in which to get into clear at Bristow, a station 9.1 miles west of Heyburn, for train No. 112 and therefor entered the siding at Heyburn. After getting the larger portion of the train

on to the siding he discovered that there were some cars there which would have to be moved and he proceeded to couple his locomotive on to them. After doing this the brakes on his train suddenly set and he started back to see what had happened and it was not until then that he knew that the collision had occurred. He stated that the delay in pulling into the passing track and coupling on to the standing cars was about 5 minutes and that the collision occurred at about 8:55 p. m.

Head Brakeman Smith, of extra 1317, stated that his train arrived at Heyburn at about 8:50 p. m. and as it slowed down, he got off the head end, ran to the switch, and opened it, the train entering the passing siding without stopping. After entering the siding the train stopped, the locomotive was coupled to some cars which had to be moved and then had proceeded to a second out of cars when the collision occurred. Brakeman Smith stated further that from the time the train started in on the siding until the rear end was struck was about 5 minutes and that it was 8:55 p.m. when the collision occurred.

Conductor Turner, of extra 1317, stated that his train left Kellyville at 8:40 p.m., at which time extra 1340 was in sight. He stated that he thought his train did not have sufficient time to go to Bristow for train No. 112 and told his flagman to watch out for extra 1340 and to drop a 10-minute fusee if the engineman sounded the meeting point whistle for Heyburn. When the engineman sounded the station whistle for Heyburn he sounded the meeting point signal and the conductor stated that the brakeman lighted a 10-minute fusee and that they both walked to the rear of the caboose and the brakeman dropped it off. Conductor Turner further stated that he watched this fusee burn until he rounded the curve and it disappeared out of his sight. While entering the siding, he again cautioned the flagman to look out for extra 1340 and the flagman then secured another fusee and started back. After the flagman had gone about 25 car lengths, the conductor looked back to see if extra 1340 was in sight and saw the electric headlight coming around the curve but thought the train was under control; a short time later he heard the locomotive of extra 1340 working steam and on looking back saw the headlight close by. The next thing he knew he was down in the bed of the creek and upon looking at his watch he found it to be 8:56 p.m. He said that after the accident he asked the head brakeman of extra 1340 if he did not see

the burning fusee and the brakeman told him that he did; in a few minutes, however, the engineer of extra 1340 said that he did not see the fusee and the head brakemen then also denied having seen it. Conductor Turner thought not more than three or four minutes elapsed between the time the fusee was thrown off and the time of the collision.

Rear Brakeman Dummitt, of extra 1317, stated that after leaving Kellyville he saw extra 1340 following them and estimated the distance they were apart of about 3 miles. When about $1\frac{1}{2}$ miles east of Heyburn the engineer of his train sounded the meeting-point whistle for that place and he threw off a 10-minute fusee. When the train had gone about 10 car lengths into the siding he heard extra 1340 coming and he then started back with a fusee to stop them. After getting about 20 car lengths from the caboose of his train and within about 5 car lengths of extra 1340, the engineer of that train answered his stop signal and applied the brakes. He estimated the speed of extra 1340 at the time that train passed him to be 35 miles an hour.

Engineer Lewis, of extra 1340, stated that he left Sepulpa at 8:02 p.m., 5 or 6 minutes behind extra 1317, and came to a stop at Kellyville to pick up his flagman, who had been left there by that train. He did not see extra 1317 when at Kellyville and thought because of the stop which it was necessary for him to make that extra 1317 must have left 8 or 10 minutes ahead of him. He stated that he believed extra 1317 would go to Bristow for train No. 112 and he was trying to following them to the same meeting point. He admitted that he was on very short time and said that if he found that he could not make Bristow after trying the grade about 2 miles west of Heyburn, he intended to flag back to Heyburn. He further stated that when approaching Heyburn and when within 10 or 20 car lengths of the caboose of extra 1317 he saw the lights on the rear end and immediately after a fusee. At that time his train was running at a speed of 35 miles an hour and he applied the air brakes in emergency; he stated that he saw no other fusee between Kellyville and Heyburn. Engineer Lewis also stated that he looked at his watch when at the whistling board one mile east of Heyburn and it was then 8.51 p. m., and that when he looked at it again, immediately after the accident, it

was 8:52½ p. m. He stated further that he had a good engine, a light running train and the brakes were in good condition.

Fireman Dixon, of extra 1340, stated that he did not see anything of extra 1317 from the time he left Sapulpa until the collision occurred. He said that they were delayed about 2 minutes at Kellyville on account of having to stop to pick up their flagman. He looked at his watch at the whistling board, one mile east of Heyburn, at 8:51 p.m. and between the whistling board and the point of accident he was busy putting in a fire and did not see the fusee claimed to have been dropped off by the crew of extra 1317; neither did he see the flagman of extra 1317 prior to the collision. Immediately after the collision his watch showed the time to be 8:53 p. m. He stated further that he understood that it was the intention of the crew of his train to go to Bristow for train No. 112 if possible, and if it was found that it could not be done, they would flag back to Heyburn.

Head Brakeman Tombs, of extra 1340, stated that this was his second trip and that he rode on extra 1317 from Sapulpa to Kellyville in order to flag one bound extra 1323 at that point and that when he got off at Kellyville his train was close behind extra 1317. He stated that he rode on locomotive 1340 from Kellyville to the point of accident but did not see the flagman of extra 1317 until after he jumped from the locomotive just prior to the collision. He said the speed of the train at the time the engineman first applied the brakes was 35 miles an hour and that at the time of collision it was about 15 or 20 miles per hour. He further stated that the only fusee which he saw was after the accident, this fusee being five or six car lengths from the point where the locomotive struck the caboose.

Conductor Randall, of extra 1340, stated that they picked up their flagman at Kellyville, stopping there for about 5 minutes. He supposed that extra 1317 would go to Bristow for train No. 112, while he intended to have his train pull up and back in at the west switch of the passing track at ~~the west switch of the passing track at~~ Heyburn and there wait for train No. 112. He estimated the speed of his train approaching the point of accident to be about 30 miles an hour and said that the accident occurred at 8:55 p.m. After the accident he saw the burning fusee about 22 car lengths from the point of collision and saw Flagman Tummitt about

15 car lengths from the point of collision, or about midway the length of extra 1340.

Rear Brakeman Hendrigan, of extra 1340, stated that he went back to flag immediately after the accident but saw no fusee on his way.

Conductor Monoberts, of extra 1323, the train that these extras met at Kellyville, stated that while he did not notice the exact time at which extra 1317 left Kellyville, he heard that extra whistle for Heyburn before extra 1340 passed. When extra 1340 passed he looked at his watch and it was then 8:45 p.m. and in his opinion 7 or 8 minutes elapsed between the departure of these two trains.

Rear Brakeman Edins, of extra 1323, stated that as nearly as he could remember extra 1317 stopped at Kellyville at 8:35 p. m. and set off Flagman Toombs and that it was about 8:43 or 8:45 p. m. before extra 1340 left that station.

After the accident and before the main track had been cleared, the remnant of a burned fusee was found at a point 3,415 feet east of the point of collision. A new fusee cap was found about 150 feet further east, indicating that the fusee had been thrown from a westbound train. Further inquiry developed the fact that no other fusee had been burned in this locality between the time of the accident and the discovery of the remnant of the burned fusee and it is believed that this is the fusee Conductor Turner and Brakeman Dummitt claimed to have thrown off extra 1317.

The direct cause of this accident was the failure of Engineman Lewis of extra 1340 to observe and obey the burning fusee which was thrown from the rear of extra 1317 about 3,400 feet east of the place of accident, as well as his failure to operate his train under control approaching Heyburn, knowing that extra 1317 was but immediately ahead and that his train would not be able to reach Bristol in time to clear train No. 112 as required by the rules. Why Fireman Dixon failed to see the burning fusee can probably be explained by the fact that he was busy putting in a fire but why Engineman Lewis or Brakeman Toombs failed to see it cannot be explained.

Notwithstanding the fact that all of the employees claimed to have standard watches, their testimony as to

the time of the collision is conflicting and indefinite. If Enginemen Lewis' statements are correct that he passed the whistling board at 8.51 a.m. and that his watch showed the time to be 8.52½ p.m. immediately after the accident, it is obvious that he must have been running his train at a considerably higher rate of speed than 35 miles an hour, the maximum allowed for freight trains. Conductor Randall is also at fault, in that he allowed the engineman to exceed the speed limit. He knew that he was in the vicinity of Heyburn and knew that extra 1317 was immediately ahead and that there was not sufficient time within which to make Bristow for train No. 112. Had he been awake to the responsibility resting upon him, he would have applied the brakes from the rear when the train did not slow down approaching Heyburn.

A contributing cause of this accident was the failure of Flagman Dummitt to take additional precaution in protecting his train. Rule 99 of the St. Louis-San Francisco Railway Company reads in part as follows:

"Flagman must not wait for train to come to a full stop, but must get off as soon as he can do so with safety."

According to Flagman Dummitt's own statement he did not start back to protect his train when it first started in on the siding at Heyburn, but waited until the train had moved forward about 10 or more car lengths. The head brakeman had gotten off of the locomotive, had run forward and opened the switch to permit the train to enter this siding and there is no reason why Flagman Dummitt could not have gotten off of the rear end of the train at the same time and proceeded back for the purpose of further protecting it, instead of relying upon the burning fusee. The conductor had cautioned him on two occasions to look out for the extra which he knew was following closely and proper consideration for the safety of his train should have prompted the flagman to make further effort to signal and stop the following train. Had he done so there is no reason why he should not have gotten further back and had his signal been observed the accident might have been averted.

In previous accident reports attention has been called to the inadequacy of certain standard code rules. Rule 91 of the St. Louis-San Francisco Railway Company which is the same as the corresponding standard code rule, reads as follows:

"Unless some form of block signal is used, trains in the same direction must keep at least five minutes apart except when closing up at stations."

This rule provides proper spacing of trains only in the vicinity of open stations. Should these open stations be far apart a fast train could easily overtake a slow train, while should a train be required to stop, as in this instance when extra 1317 stopped to take the siding at Hayburn, it might be impossible for the flagman to go back the necessary distance properly to protect his train.

The time-table rules permit passenger trains to run 50 miles an hour and freight trains 25 miles an hour between Sapulpa and Oklahoma City and during the night open stations are from 16 to 30 miles apart. In the absence of some adequate form of block signal system providing a space interval between trains, the time interval of five minutes provided by rule 91 is not sufficient protection, and in order to insure greater safety the rule should be changed so as to provide a greater time interval between trains running in the same direction.

Engineman Lewis entered the service of the St. Louis-San Francisco Railway as fireman in October, 1908 and was promoted to engineman in March, 1917. Conductor Randall entered the service as brakeman in May, 1907 and was relieved in January, 1908 on account of a reduction in the force; he was re-employed as brakeman in May, 1908 and promoted to conductor in September, 1915.

At the time of the accident the crew of extra 1340 had been on duty about 1 hour and 50 minutes, prior to which the engineman had been off duty about 16 hours and the conductor about 8 hours and 35 minutes. The crew of extra 1317 had been on duty 3 hours and 10 minutes prior to which the conductor and rear brakeman had been off duty about 17 hours.