

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
GULF, COLORADO AND SANTA FE RAILWAY NEAR NICHOLLS,  
TEXAS, ON AUGUST 10, 1920.

September 27, 1920.

On August 10, 1920, there was a rear-end collision between two freight trains on the Gulf, Colorado & Santa Fe Railway near Nicholls, Tex., which resulted in the death of 4 live-stock caretakers, and the injury of 3 ~~live-stock~~ caretakers and 3 employees. After investigation of this accident the Chief of the Bureau of Safety reports as follows:

The Lampasas District of the Southern Division, on which this accident occurred, is a single-track line extending between Temple and Brownwood, Tex., a distance of 134.3 miles, over which trains are operated by time-table and train orders transmitted by telephone, no block-signal system being in use. The accident occurred on Clear Creek Bridge about 122 feet from its southern end. This bridge is a 16-bent gravel-decked bridge 237 feet 9 inches in length, being 37 feet above the bed of the creek at its highest point. Approaching the point of accident from the south the track is tangent for a distance of 1,350 feet, followed by a 3-degree curve to the right 1,200 feet long, and 723 feet of tangent to the point of accident. The accident occurred on a slightly ascending grade just north of the center of a vertical curve at the foot of two heavy grades, being .4 per cent ascending at the point of accident. The view approaching the point of accident is restricted to about 1,100 feet on account of a cut 400 feet long, the northern end of which is about 770 feet south of the point of accident. The weather at the time of the accident was clear.

Northbound freight train extra 3145 consisted of 42 cars and a cabooso, hauled by engine 3145, and was in charge of Conductor Mershon and Engineman Caldwell. This train left Brownwood, the initial station, at 1.00 p. m., left Lampasas Junction about 9.00 p. m., stopped and took water at Lampasas River water tank, and at a point a short distance north of the station at Copperas Cove, the last open telegraph office south of the point of accident and 5.17 miles distant therefrom, the air hose on one of the cars near the head end of the train parted, causing an emergency application of the air brakes. After repairing the air hose, the train departed from Copperas Cove at about 10.17 p. m., and on arrival at Clear Creek Bridge at about 10.27 p. m., the air hose again parted, bringing the train to a stop with the cabooso near the middle of the bridge. While standing at this point the rear of this train was struck

by extra 3151.

Northbound freight train extra 3151 consisted of 33 cars and a caboose, hauled by engine 3151, and was in charge of Conductor Gardner and Engineman Swain. This train left Brownwood at 3.30 p.m., and on arrival at Lampasas Junction at about 7.50 p.m. was delayed at that point for over an hour on account of extra 3145 occupying the main track ahead of it. Extra 3151 also encountered a fusee when approaching Lampasas River water tank. After taking water at that point, extra 3151 proceeded, passed Copperas Cove at 10.23 p.m., about 6 minutes after the departure of extra 3145, without stopping, and at about 10.34 or 10.35 p.m. collided with the rear of extra 3145 while traveling at a speed estimated to have been between 15 and 20 miles an hour.

The caboose of extra 3145 was demolished and the two cars ahead of it were badly damaged; none of these cars were derailed. Engine 3151 stopped in an upright position on the rails about 45 feet north of the point of accident; its front end was considerably damaged. The first six cars of extra 3151 were derailed on the right side of the bridge, the first four being demolished.

Engineman Caldwell, of extra 3145, said he sounded a "train parted" signal, and then whistled out a flag before the train came to a full stop. Noticing the reflection of the headlight of an approaching train south of the curve approaching the bridge, and seeing a stationary light 3 or 4 car-lengths back from the rear of his train, he again whistled out a flag, and as he then saw the light moving back rapidly he concluded that it was the flagman. He thought at least 2 minutes elapsed before the flagman went back. When the headlight came in sight in the cut he saw the flagman waving a fusee and also saw fire flying from the wheels. His statements were practically corroborated by those of Fireman Thompson.

Conductor Mershon, of Extra 3145, stated that when his train approached Clear Creek Bridge he was sitting at his desk in the caboose, the flagman being seated in the cupola. As soon as the train stopped, the rear brakeman started back to flag, while the conductor walked toward the head end of the train to ascertain what was wrong. The conductor had gone about 4 car-lengths when the air brakes began to release, and on looking back he noticed the reflection of the headlight of extra 3151, and immediately went to the caboose and notified the caretakers who were in it to get off. He thought the flagman was back about 6 telegraph poles from the train when he lighted a fusee and began to flag extra 3151.

Flagman Beer, of extra 3145, stated that just as

soon as his train stopped he descended from the cupola of the caboose, procured red and white lanterns, torpedoes and fusees, and started running back to flag. He said he was at the south end of the bridge when he heard the engineman whistle out a flag, and had run back a distance of 6 telegraph poles, which is 915 feet, lighting a fusee as he ran, when he saw extra 3151 approaching. He did not hear the engineman of extra 3151 answer his stop signals, nor did he see any sparks flying from the wheels of the approaching train to indicate that the brakes were applied, although he said the speed of the train was reduced considerably by the time the accident occurred. Flagman Baer thought he had used 4 or 5 minutes in getting back to the point where he flagged extra 3151.

The investigation disclosed that when extra 3145 was taking water at Lampasas River water tank the only flag protection afforded was a fusee which had been thrown off approaching the water tank, while another fusee was on the rear of the caboose. When the train stopped near Copperas Cove to recouple the air hose which had parted, no flag protection was afforded, Conductor Hershon saying the flagman did not protect because the delay was not of more than 3, 4, or 5 minutes duration; Flagman Baer advanced the same reason and also said it was because he did not see the reflection of the headlight of the following train. Flagman Baer, who had had about 1 year's experience on this railroad, had not been examined on the rules. He said he flagged when he thought it necessary and thought his judgment as to when to flag took precedence over the rules. He considered that he had done his full duty at the point of accident in not getting back any farther in the period of about 4 minutes which he had at his disposal, after getting off the caboose, in which to flag extra 3151.

Engineman Swain, of extra 3151, stated that his train left Lampasas River water tank 12 minutes behind extra 3145. Approaching the point of accident he noticed Flagman Baer standing in a ditch on the right hand side of the track near the north end of the cut, giving stop signals with a fusee and saw the markers on the rear of extra 3145 at about the same time. He applied the air brakes in emergency, answered the flagman's signal, called to the fireman, and jumped. He stated that he was then about 1,300 feet from the rear of extra 3145. He estimated the speed of his train approaching the point of accident as between 25 and 30 miles an hour, but said that the speed was considerably reduced when the accident occurred. The statements of the fireman and head brakeman added nothing to those of the engineman.

Tests made after the accident showed that the view of the rear end of extra 3145 had by the engineman of extra

3151, was limited by the cut to 1,122 feet, while the flagman, if on the right side of the track, 915 feet from the caboose, was visible a distance of 380 feet. If the flagman had gone back a little more than 200 feet south of the point actually reached by him, he would have been visible to the engineman of extra 3151 a distance of nearly 2,400 feet and to the fireman a distance of about 2,900 feet, thus giving extra 3151 a distance of about 3,500 feet in which to stop. A flagman at an ordinary trot covered in 1 minute and 42 seconds the distance of 915 feet covered by Flagman Baer, while in 2 minutes he reached a point where he was visible to an approaching train, nearly 2,400 feet. These tests also showed that the flagman could not have been back more than 915 feet, or 6 telegraph poles, as stated by him, or he would have been out of the sight of his own engine crew, the members of which said they could see him all of the time in which he was flagging extra 3151. A test was also made with a train made up as nearly as possible like extra 3151, handled by an engine of the same class, and operated as nearly as possible in the same manner, for the purpose of determining the distance in which it could be stopped with an emergency application of the air brakes, which was made while traveling at a speed of 25 or 30 miles an hour as soon as the flagman, 915 feet from the point of accident, was seen; the train ran a distance of 1,993 feet, or 703 feet beyond the point of accident.

This accident was caused by the failure of extra 3145 to be furnished with proper flag protection, for which Flagman Baer and Conductor Merton are responsible.

Rule 99, of the Rules and Regulations of the Operating Department of this railroad, reads in part as follows:

"When a train stops or is delayed under circumstances in which it may be overtaken by another train, the flagman must go back immediately with stop signals a sufficient distance to insure full protection.

"The general rule for protecting a train or obstruction by flag requires the flagman to proceed back rapidly with danger signals for a distance of one-half to one mile (18 or 35 telegraph poles), the distance increasing for descending grades and weather conditions, and until he can have an unobstructed view of an approaching train for at least one-quarter of a mile beyond, where he must remain until called by the whistle of his engine...."

While the statements of the various employees were

conflicting as to the time extra 3145 stopped at the point of accident, and also as to the time the accident occurred, according to the conductor and flagman they had about 5 minutes in which to provide proper protection. Conductor Mershon and Flagman Baer knew that extra 3151 was behind them at Lampasas Junction for over an hour, and that it was approaching Lampasas River water tank as their train was leaving that point. Under these circumstances, and particularly in view of the heavy descending grade approaching the point of accident, and the obstructed view, Flagman Baer should have made an unusual effort to go back as far as possible in the time at his disposal. Had he done so, or even had he gone back an additional distance of about 200 feet, he would have been visible to the approaching engine crew about half a mile. In this event the accident probably would not have occurred. Conductor Mershon, being thoroughly familiar with the existing conditions, should have seen to it that his flagman proceeded back immediately and with sufficient haste to enable him to reach a point where his stop signals could be seen in time to prevent the collision.

That neither of these employees had any regard for a proper observance of the rules, or any realization of the importance of their duties under the rules, is evidenced by the fact that while taking water at one point the only protection afforded was by fuses, while no protection of any kind was afforded when stopping at another point on account of a parted air hose. Both conductor and flagman said that their train did not stop long enough to require flag protection, their statements indicating that a flagman does not need to go back to flag in case of a stop of less than 5 minutes' duration. Such an interpretation of the flagging rule of this railroad, coupled with the fact that the flagman and head brakeman of extra 3145 had never been examined on the rules, and also that the flagman thought his judgment as to when to flag took precedence over the rules, indicates the absence of any efficient method of instruction and supervision. Immediate steps should be taken to establish an efficient system of examination and instructions of the employees of this road and for exercising proper supervision over them in the performance of their duties.

Rule 91 of this railroad requires in part that freight trains in the same direction keep 5 minutes apart, but there is nothing in the rules requiring operators at open telephone offices to maintain the proper time interval, apparently the observance of the rule by the crew of a train when leaving a station is the only way in which the requirements of the rule are carried out. In the absence of a block-signal system, which will provide a definite space interval between trains, provision should be made for a greater time interval between freight trains following one another, and for the proper maintenance of such interval at all open tele-

phone offices.

Conductor Mershon was employed as brakeman in 1906, and promoted to conductor in 1913; his record was good. Brakeman Baer was employed as a brakeman in August, 1919; his record was good. At the time of the accident the crew of extra 3145 had been on duty 10 hours and 30 minutes, after off-duty periods of about 8 hours and 30 minutes, while the crew of extra 3151 had been on duty 7 hours and 30 minutes after having been off duty approximately 8 hours and 30 minutes.