INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ST. LOUIS-SAN FRANCISCO RAILWAY NEAR KELLYVILLE, OKLA., ON FEBRUARY 15, 1925.

April 25, 1925.

To the Commission.

On February 15, 1925, there was a derailment of a freight train on the St. Louis-San Francisco Railway near Kellyville, Okla., which resulted in the death of two employees and the injury of one employee.

Location and method of operation

This accident occurred on the Oklahoma Subdivision of the Southwestern Division, extending between Sapulpa and Oklahoma City, Okla., a distance of 104.2 miles, this being a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The point of accident was at a spur-track switch located about 1 mile west of the west switch at Kellyville Approaching the spur-track switch from the west the track is tangent for a distance of about 4,800 feet, while the grade is practically level. The spur-track switch is a facing-point switch for eastbound trains and leads to the left from the main track. The switch stand was on the engineman's side.

The weather was clear at the time of the accident, which occurred at about 3.02 a.m.

Description

Eastbound second-class freight train No. 434 consisted of 63 cars and a caboose, hauled by engine 4103, and was in charge of Conductor Haynes and Engineman Pruitt. It left Bristow, the last open office, 13.4 miles from Kellyville, at 2.38 a.m., according to the train sheet, 53 minutes late, and was derailed at the spur-track switch near Kellyville while traveling at a speed estimated to have been about 35 miles an hour.

The engine was derailed to the left and came to rest on its left side between the main track and the spur track with its head end about 275 feet beyond the point of the switch, the first 30 cars and the forward truck of the 31st car were derailed, the first 18 being piled within a distance less than 150 feet. The wreckage caught fire and the cars were destroyed while the engine and tender were badly damaged. The main track was destroyed for a distance of about 190 feet and the spur track for a distance of about 210 feet. The employees killed were the fireman and head brakeman.

Summary of evidence

Examination of the switch immediately after the occurrence of the accident showed that the switch stand had been torn loose from the head-block ties, apparently by a section of pipe projecting from a westbound train, the switch stand being found beside the track at a point 42 feet west of the switch with marks on it indicating that it had been struck a heavy blow by some object. The switch lamp was 58 feet west of the switch; a small piece broken off from the switch stand was 80 feet from the switch, while the section of pipe which had torn the switch loose and then had fallen from the car in which it was being transported was found 88 feet west of the switch. This section of pipe was about 19 feet in length and 6 inches in diameter.

Engineman Pruitt said he was operating the train at a speed of 35 miles an hour, or a little more, that he did not see that the switch stand and light were not in the usual location, and that he did not notice the position of the switch points, his first intimation of anything wrong being when the engine was derailed. He thought he shut off steam and applied the air brakes but was not positive about it. Engineman Pruitt further stated that the headlight was an average headlight, that it was burning at the time of the accident, and that there was nothing to obstruct his view of the track ahead.

Conductor Haynes who was riding in the caboose, said his first knowledge of anything wrong was when the train was brought to a stop. On reaching the switch he found that the switch points were lined for the spur track while the switch stand was missing, and he afterwards discovered it west of the switch, with the section of pipe nearby. The statements of Flagman McGovern brought out no additional facts of importance.

Section Foreman Staigers said that on his arrival at the scene at about 4.30 a.m. he found the switch stand torn from the head block ties as previously described. The lug holding the connecting rod had been broken and the switch points at that time were about half open. He did not find any wheel marks on the ties west of the switch except those made in pulling a derailed car back from the fire. Section foreman Staigers later made an examination of the west passing-track switch at Kellyville and found the switch lamp about 30 or 40 feet west of the stand with a dent in it which appeared to have been made by something projecting from a westbound train.

Roadmaster Shubert said one end of the section of pipe had a mark on it indicating that it had struck the switch target and had torn the switch from the headblock ties, allowing the switch points to open. The switch lock was still locked and was fastened in its proper position on the stand. He also noted that the switch stand at the west switch at Kellyville had been struck in a similar manner and stated that not only had the switch lamp been torn off but that the stand itself had been bent toward the west a distance of about 8 inches.

Division Engineer Busch said his examination showed that the switch stand had been fastened firmly to the headblock ties, that the breaks in the metal of the stand were fresh and showed no flaws or defects of any kind, and that the lug fastening the connecting rod to the stand was broken, this being the means of allowing the switch points to move. Mr. Busch also stated that there were no marks of any kind on the points indicating that they might have been struck by the engine or derailed cars of train No. 434.

The last train to pass the switch was westbound freight train No. 433, which passed Kellyville at 12.03 a.m., moving at a speed estimated by the engineman to have been about 30 or 35 miles an hour. The ninth car in the train was a low-side gondola loaded with 166 sections of pipe of the same kind and size as the section of pipe found at the point of accident. This car was set out at Warwick, 57.2 miles west of Kellyville, and placed on the Fort Smith & Western connection and a check of the contents of this car at that point showed that one section of pipe was missing.

Examination of the car and its lading by General Foreman Crews showed that there were four oak stakes on each side of the car extending 36 inches above the sides, while the load in the center of the car was about 10 or 13 inches above the tops of the stakes. The stakes on the opposite sides of the car were tied together with wire extending over the top of the pipe from one side of the car to the other. At the time of this inspection all the stakes were in place and were generally projecting straight upward from the sides of the car except the stake which would have been at the left forward corner of the load as the car stood in train No. 433, this particular stake was leaning back toward the rear of the car at an angle of about 25°. Mr. Crews stated that the wires tying together the stakes on this end of the car were broken and that the load had spread and also had shifted toward the ends of the cars, one section of pipe at this particular end of the car being found with one end resting on the floor of the car and the other end on top of the load. The stake which was leaning back toward the rear of the car was marked indicating that a section of pipe had moved pasted it and that a joint coupling on the pipe had knocked a splinter off the stake as the pipe fell from the car. The top of the left side of the car also showed where a section of pipe had slid over it, the mark on the side being about 3 feet in length.

Under the A. R. A loading rules governing the loading in gondola cars of pipe less than 13 inches in diameter and less than 23 feet in length it is required that where the load extends more than 3 feet and not more than 5 feet above the side of the car, the stakes, in addition to being wired together at the tops, should also be wired together at a point not more than 18 inches above the sides of the car. In this particular case the last-mentioned wiring was not used, and while Mr. Crews stated that this was a technical violation of the loading rules he did not think it had anything to do with the shifting of the lading, which he considered tohave been due to the fact that the number of sections of pipe to each tier did not quite fill all the space between the stakes and that the spreading of the lading at the end of the car allowed the forward end of the section of pipe involved in the accident to drop down, elevating the opposite end and finally resulting in its shifting off the balance of the lading and falling from the car.

Conductor Moody, of train No 433, said that when checking the train before departing from Sapulpa he had noticed that one section of pipe on the top tier had shifted and that its forward end was down on the floor of the car while the other end was still under the wire which

was holding the stakes, he did not, however, consider it unsafe to handle. On arriving at a station beyond Kellyville a special officer who was riding the train mentioned something about the lading having shifted and the two of them then examined it and still did not think it was unsafe. Conductor Moody said he again noticed the condition of the car when it was set out at Warwick and it appeared to him to be in the same condition as when leaving Sapulpa. Conductor Moody further stated that cars in which pipe has shifted from its original position frequently are sent out of terminals, but he did not think such loads were unsafe as long as one end of the pipe is down in the car and the opposite end is not higher than the roof of a box car.

Operator Murphy, on duty at Kellyville, said he was on the station platform when train No. 433 passed that point. On account of the darkness and the fact that there were no station lights he could not see clearly but he said it seemed to him that something was projecting from a coal car located near the middle of the train.

Examination of engine 4103 failed to disclose anything which could have contributed to the derailment. Further examination of the section of pipe showed that there was a mark and also some red paint on one end of it, and the indications were that this end of the pipe had struck the switch target squarely, cutting into the edge of the switch target a distance of about 2-1/2 inches.

CONCLUSIONS

This accident was caused by a cocked switch, resulting from the fact that the switch had been damaged by a section of pipe projecting from a car in the last train which passed the point of accident prior to its occurence.

Train No. 433 had passed the point of accident aoout 3 hours previously and the evidence indicated that some of the lading of pipe in the ninth car in the train had shifted, resulting in a section of pipe projecting from the side of the car far enough to damage the switch stand at the west passing-track switch at Kellyville and to tear out the switch stand at the spur at which the derailment of train No. 434 afterwards occurred. The tearing out of this switch stand resulted in damage to the switch which allowed the switch points to be loose and they were undoubtedly open or partly open when train No. 434 approached, resulting in the derailment of that train.

The employees involved were experienced men. At the time of the accident they had been on duty about 6 hours after 23 hours or more off duty.

Respectfully submitted,

W. P. BORLAND,

Director.