

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE INTERNATIONAL-GREAT NORTHERN RAILROAD AT
GRAPELAND, TEXAS, ON AUGUST 15, 1924.

September 29, 1924.

To the Commission:

On August 15, 1924, there was a derailment of a passenger train on the International-Great Northern Railroad at Grapeland, Texas, which resulted in the death of one employee and the injury of two passengers, one express messenger and one employee.

Location and method of operation

This accident occurred on the Palestine Sub-division of the Gulf Division extending between Palestine and Sellers, Texas, a distance of 138.7 miles, which is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The accident occurred at Hunts Spur switch, located about 3,000 feet north of the station at Grapeland, this is a facing-point switch for south-bound trains and leads off the main track through a No. 10 turnout to a spur track located on the east side of the main track. The switch stand is of the Elliott high stand type and is located on the fireman's side. It is equipped with a target 15½ inches square which is invisible except when the switch is open when its broad side is toward an approaching train. *north* Approaching the point of accident ~~from the south~~ the track is tangent for 2,094 feet, while the grade for 5,000 feet varies from 0.10 to 1 per cent descending, being 1 per cent at the switch. The track is laid on a slight fill with 75-pound rails, 30 feet in length, single-spiked and tie-plated, and with about 17 ties to the rail length, ballasted with about 12 inches of gravel, and is well maintained. The weather was clear at the time of the accident, which occurred about 3.50 a.m.

Description

Southbound passenger train No. 5 consisted of one mail car, one combination baggage and express car, one coach, one chair car and one Pullman sleeping car, in the order named, all of steel under-frame construction, hauled by engine 351 and was in charge of Conductor Crutchfield and Engineman Cook. This train left Palestine, the last open office, 24.5 miles from Grapeland, at 3.08 a.m., three hours and seven minutes late, departed from Salmon, a flag station, 6.3 miles from Grapeland, and was derailed at the switch at Hurts Spur while traveling at a speed estimated to have been from 30 to 45 miles an hour.

The engine, the first three cars and the forward truck of the fourth car were derailed, the engine derailed to the left and came in contact with a box car standing on the spur track and came to rest on its right side, with its ends reversed, a distance of 278 feet south of the switch and was badly damaged. The tender came to rest bottom up on the west side of the main track 361 feet from the switch. The cars in the train remained upright, the head end of the first car being 388 feet from the switch. The employee killed was the engineman.

Summary of Evidence.

The first mark of derailment was a flange mark on the outside of the base of the east rail at a point 19 feet 3 inches south of the point of the switch. A corresponding mark appeared on the gauge side of the base of the west rail at a point 23 feet 8 inches from the point of the switch. These flange marks gradually diverged to the left until at a point 33 feet 6 inches from the switch they appeared on the ties. From this latter point the marks on the ties diverged to the left, the engine apparently going astride the east rail of the main track and west rail of the spur track until at a point 118 feet from the switch a rail joint on the west rail of the spur track was broken, the engine wheels on the left side apparently crossing this rail at that point. From this point the main track was demolished for a distance of 272 feet.

Conductor Crutchfield said that a test of the air brakes was made at Palestine and they seemed to work properly. The station stops at Elkhart and Salmon were made in the usual manner and with no untoward incident. His first intimation of the accident was when he felt the shock of the derailment, at which time the speed of the train was about 30 miles an hour, and he did not recall having heard the air brakes apply in emergency prior to the accident. Conductor Crutchfield said he made an inspection of the switch after the accident and found the switch set for the main track and locked, the switch point fitting snugly against the rail, and the switch light burning and showing a green indication. He also said that the connecting rod of the switch had been disconnected from one head rod and lay on the headblock. The statements of Porter Hollis corroborated those of Conductor Crutchfield, Brakeman Flourney also estimated the speed of the train at the time of the accident to have been about 30 miles an hour.

Fireman Deason said that the engine seemed to ride a little more roughly than usual over frogs and switches although Engineman Cook, who made an inspection of the engine at Elkhart, did not say anything as to its condition. Approaching Hunts Spur switch the headlight was burning brightly and he saw the green indication of the switch light but he could not see the position of the switch points, at this time the speed was about 40 or 45 miles an hour. Fireman Deason further said that the engineman shut off steam for the station stop when about two pole lengths from the switch and as the switch was reached the derailment occurred and it was his opinion that the pony truck was first to derail. Fireman Deason was not certain that an emergency air-brake application was made.

Section Foreman Glenn said he received orders to change the switch stand at Hunts Spur switch from the west to the east side of the track and he went to that point with his section gang and made the change on August 9. He said the spikes holding the switch stand to the head block ties were first removed and the stand moved around until the connecting rod could be disconnected from the head rod. The head block ties were then shifted to the east side of the track, the connecting rod connected to the head rod and the switch stand then spiked to the head block ties. Foreman Glenn said that he and Sectionman B. Smith did the work of changing the switch and after the work had been completed he tested the switch and found it

to be in good order, the switch points fitting the rails properly, but although the stand had been spiked solidly he was able to snake the stand slightly. He made an inspection of the switch on August 13 and found it to be in good condition. After the accident, in company with Assistant Chief Engineer Bond, he examined the switch and found that the connecting rod had been turned around, while one end of it was disconnected from the head rod and lay on the head block, the other end still being attached to the switch stand. Foreman Glenn said that this was the first switch that he had installed since he had been a section foreman although he had done such work as a track laborer. He was of the opinion that some one changed the connecting rod after the switch had been changed.

Sectionman B. Smith said he helped pull the spikes in the head block before moving the switch stand and then helped disconnect the connecting rod from the head rod by turning the switch stand around. After moving the switch stand to the east side of the track he and Foreman Glenn connected the connecting rod to the switch stand and then connected it to the head rod and it was only necessary to shift the stand on the head block to make the connection with the head rod. Sectionman Jackson said he also helped Foreman Glenn connect the connecting rod to the switch stand and that it slipped on easily. He did not recall whether the rod was first connected to the switch stand or to the head rod but was able to recall that the end of the connecting rod with a safety lug on it was connected to the head rod. Sectionman C. Smith said that while the switch was being changed he was engaged in building an embankment on the east side of the track upon which the head block ties were to be placed. While he was so engaged the connecting rod was being put in place and he heard Foreman Glenn remark that the connecting rod was not properly connected and that he then connected the rod himself. Sectionman C. Smith did not know which end of the connecting rod was attached to the switch stand but said there was no difficulty experienced in making the connection. Sectionmen Potts and Davis said they were out flagging while the switch was being changed and knew nothing about the manner in which the work was done.

Roadmaster Sparks said he instructed Foreman Glenn to change the switch at Hunts Spur from the west to the east side of the track in order to comply with standard requirements. The work was done on August 9 and on August 14 he passed over the switch on a motor car and noticed nothing wrong. He arrived at the scene of the accident about three hours after its occurrence and made an inspection of the switch and stand. The switch was closed for the main track but the connecting rod was disconnected from the head rod and lay on the head block tie, while the end of the rod attached to the switch stand bore

marks indicating it had been driven into the switch stand. The spikes holding the switch stand were somewhat loose, as was the stand itself. Roadmaster Sparks said that the ends of the connecting rod were reversed, the end that should have been connected to the head rod being connected to the switch stand, and he further said that with the rod connected in this way the operation of the stand would not be affected but that the rod could be lifted off or jarred off the head rod.

Assistant Chief Engineer Bond and Superintendent Heafer, who were passengers on the train, inspected the switch after the accident and corroborated the statements of Roadmaster Sparks. Assistant Chief Engineer Bond said that the rear truck of the last car in the train was just clear of the switch points. The switch point next to the stock rail was bruised at the point and he was of the opinion that the switch points were open and were thrown back against the main track rail by the wheels of the train after the engine had passed over them. There were no indications that the switch had been tampered with and Assistant Chief Engineer Bond further expressed the opinion that the connecting rod was improperly connected when the switch was changed. Superintendent Heafer made an inspection of the track for some distance north of the switch and said he found no indications that there had been any dragging equipment or defective track conditions.

According to the train sheet the last train to use this switch was train No. 32, a local freight train, on the day prior to the accident. Brakeman Millican of that train said he operated the switch several times during switching movements at the spur track at which time the switch seemed to be in good working order. The switch points lined up properly, the target was in proper position and the switch was left locked. One southbound and two northbound trains had passed over the switch subsequent to the time the switch was handled by Brakeman Millican and prior to the derailment.

Engine 351 is an oil-burning engine of the 4-6-0 type with a total loaded weight, engine and tender, of 343,000 pounds. An inspection of the engine subsequent to the derailment disclosed no defects that could have contributed to the occurrence of this accident..

Conclusions

This accident was caused by an open switch due to the connecting rod becoming disconnected from the head rod.

The evidence is to the effect that the connecting rod was found disconnected from the head rod, the connecting rod having been improperly applied, while there was no evidence that the switch had been tampered with, and it is believed that vibration together with the fact that the the switch stand was loose on the head block ties caused the switch points to open, resulting in the derailment.

Section Foreman Glenn is 22 years of age and has been a section foreman for 2 years, prior to which he had been a track laborer for 3 years.

None of the employees involved had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND,

Director.