

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE KANSAS CITY SOUTHERN RAILWAY NEAR BRUSHY,
OKLA., ON JANUARY 5, 1932.

February 17, 1932.

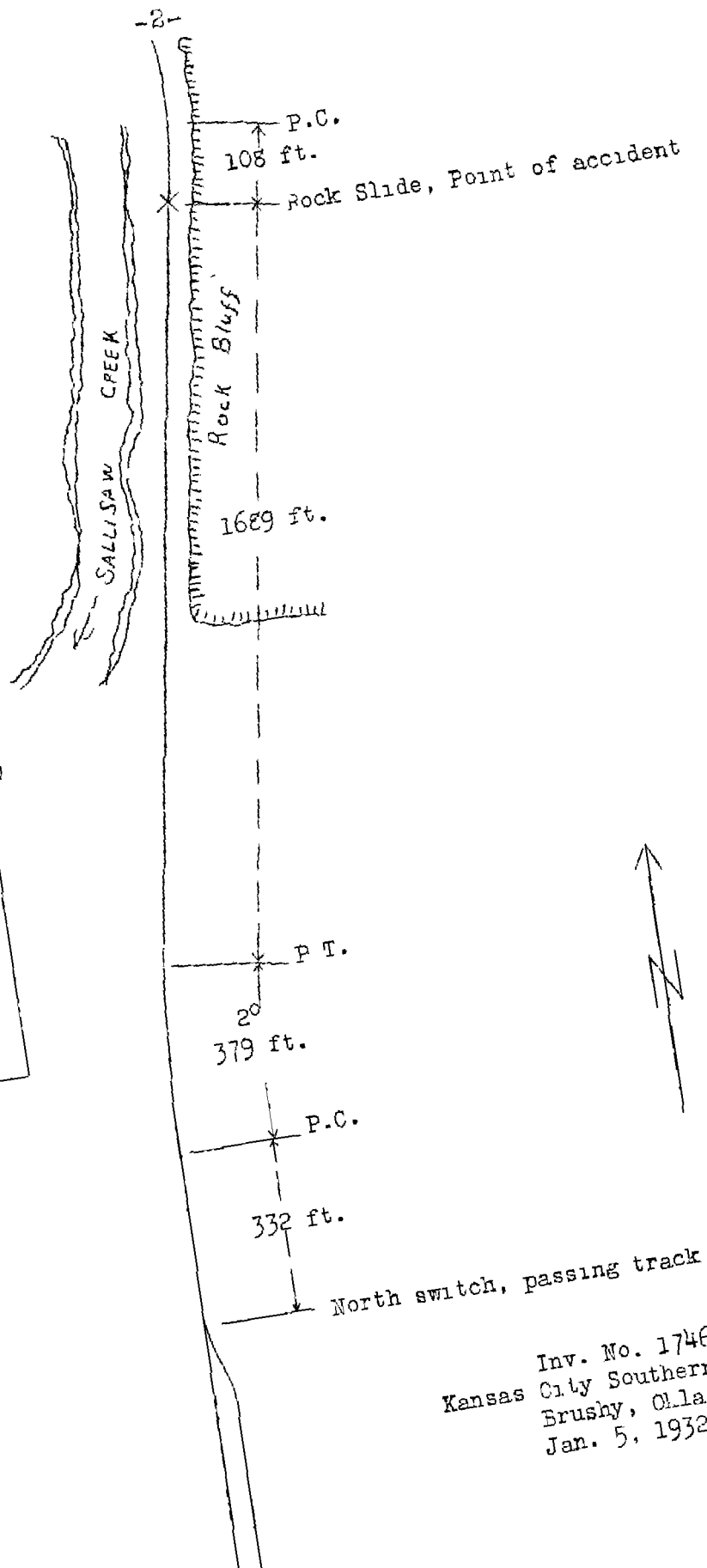
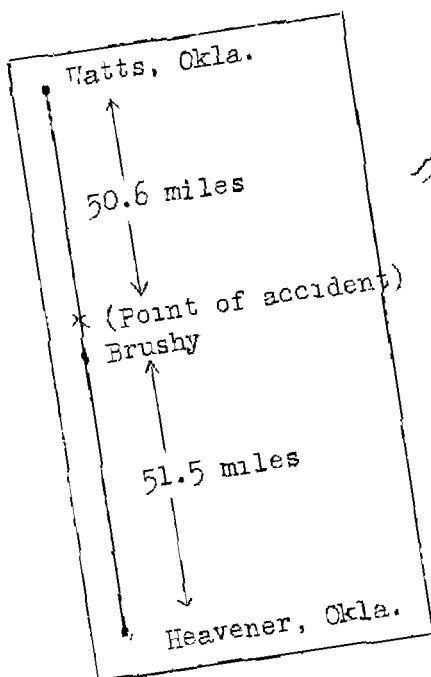
To the Commission:

On January 5, 1932, there was a derailment of a passenger train on the Kansas City Southern Railway near Brushy, Okla., which resulted in the death of 1 employee and the injury of 10 passengers, 1 baggage man and express messenger, 2 mail clerks, and 1 employee.

Location and method of operation

This accident occurred on the Third District of the Northern Division, extending between Heavener and Watts, Okla., a distance of 102.1 miles; in the vicinity of the point of accident this 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 a point approximately 2,400 feet north of the north switch of the passing track at Brushy; approaching this point from the south, beginning at the switch, the track is tangent for a distance of 332 feet and then there is a 2° curve to the right 379 feet in length, followed by 1,797 feet of tangent, the accident occurring on this tangent at a point 108 feet from its northern end. The grade for north-bound trains is 0.18 per cent ascending. The track is laid with 85-pound rails, 33 feet in length, with an average of about 20 treated hardwood ties to the rail-length, single-spiked, fully tie-plated, and ballasted with chatts and gravel to a depth of about 12 inches, six rail anchors per rail-length are used.

At the point of accident the track is laid along the side of a rock bluff which borders the east side of Sallisaw Creek. This bluff begins at a point about 1,725 feet north of the switch and extends northward a distance of about 1,600 feet; it has a maximum height of about 155 feet, being at its maximum at the point of accident, about 676 feet north of the south end of the bluff. The bluff is composed mostly of sandstone rock, with occasional strata of shale; the face of the bluff slopes gradually away from the track. In this vicinity the Sallisaw Creek parallels



Inv. No. 1746
Kansas City Southern Ry.,
Brushy, Okla.
Jan. 5, 1932

the track on the west, the track being laid about 40 feet from the bank of the stream and about 25 feet above the water level.

It was dark, misty and raining at the time of the accident, which occurred about 5.30 a.m.

Description

Northbound passenger train No. 16 consisted of 1 combination mail and baggage car, 2 coaches, and 2 Pullman sleeping cars, in the order named, hauled by engine 809, and was in charge of Conductor Myers and Engineman Benjamin. The first and fourth cars were of all-steel construction, while the remainder were of steel-underframe construction. This train left Sallisaw, the last open office, 4.7 miles south of Brushy, at 5.20 a.m., according to the train sheet, 19 minutes late, passed Brushy, and was derailed on encountering a rock slide while traveling at a speed estimated to have been between 30 and 35 miles per hour.

Engine 809, its tender, the first two cars and the forward truck of the third car were derailed to the left or west, and headed down the embankment; the engine and tender stopped partly submerged, in the creek, the engine being on its right side with its forward end 223 feet west of the rock slide. The tender was behind the engine and upright, while the first two cars were headed diagonally down the slope toward the engine and leaning to the left. The employee killed was the engineman, while the fireman was injured.

Summary of evidence

Fireman Hartman stated that before passing the siding at Brushy the engineman eased the throttle down to drifting position and the fireman reduced his firing accordingly, estimating the speed of his train at that time to have been 40 or 45 miles per hour. The headlight was burning brightly, but on account of weather conditions its intensity was diminished somewhat, being blurred by the water on the lens, and the view ahead through the rain, mist and darkness was therefore reduced. Fireman Hartman was sitting on his seat box, looking ahead through the open clear-vision window, and saw an object but at first did not know what it was; it came within range of the headlight when the engine was about 200 feet from it and he then saw that it was a rock slide on the track, about 6 feet in height. Fireman Hartman

immediately shouted a warning of danger, and he said the engineman must have seen the obstruction about the same time, as the air brakes were at once applied in emergency. Fireman Hartman stated that he had been working on this district since 1909, but to his knowledge no trouble had ever been experienced with rock slides at this location. The air brakes had been tested and worked properly in making various stops en route, and he was certain that the speed of the train was reduced as a result of the emergency application that was made immediately prior to the accident.

Conductor Myers, Brakeman Hudson and Train Porter Walker were riding back in the train, and all of them were unaware of anything wrong until the air brakes were applied in emergency just before the accident occurred, which they said reduced the speed somewhat before the rock slide was encountered. Conductor Myers estimated the speed to have been between 35 and 40 miles per hour just prior to the accident and thought that the air brakes had taken effect for a distance of 100 to 150 feet prior to striking the obstruction, while Brakeman Hudson thought that they had been applied for a distance of probably 300 to 400 feet. These employees had also been working over this district for many years, but to their knowledge no previous trouble had been experienced with rock slides in this vicinity. Train Porter Walker estimated the speed to have been about 30 miles per hour at the time of the accident.

Section Foreman Moore stated that he had been a section foreman on this railroad for about 15 years, and that he had been on this particular section for about 5 months. No trouble had been experienced with rock slides, nor had there been any storm of sufficient severity to warrant a special patrol of the track, which is required in the event of adverse weather conditions; there had been some showers during the two weeks prior to the accident, but no severe storms, nor had the water risen to any great extent in Sallisaw Creek, the rise being only 2 or 3 feet. On January 2, three days prior to the accident, he examined this hillside for indications of loose rock, but found none. No trouble was experienced with wash from the slope down in the track ditch, nor was there any indication of excessive wear on the side of the bluff. He would look for rocks to slip during freezing and thawing weather, but no such weather had occurred so far during the current season. During the 24 hours preceding the accident there had been a drizzling rain, not enough, however, to cause water to flow in the track ditches, and in his opinion the rain did not have very much, if

anything, to do with the rock slide. After the accident he inspected the track south of the slide, but found no indication of the engine having been derailed prior to the time it encountered the rock slide. While he did not know what caused the slide to give way, he did say that there was considerable vibration from passing trains with heavy engines.

Roadmaster Spyres, who had been in the service of the track department for about 34 years, and as road master for about 22 years, had been on this district for only about 1 year; he stated that on December 11, 1931, he made an inspection of the rock on this bluff, but found no condition that in his judgment required attention, and no trouble had been experienced with rock slides. On the day prior to the accident he passed the bluff twice, first in the morning while riding on a northbound passenger train and the next time on a southbound freight train, but noticed nothing unusual at that point on either trip. He arrived at the scene of the accident about three or three and one-half hours after its occurrence, but there was no indication of any heavy rain storm having occurred nor was there any water in the ditches or any wash from the bluff.

Roadmaster Anderson, who had jurisdiction on this district before Roadmaster Spyres, stated that he had made periodical inspections of the hillside where the accident occurred; no unusual condition had ever been found and there was no seepage of consequence after heavy rains, nor was any trouble experienced with rocks washing down the bluff. He had been roadmaster since October, 1913, and said that since that time there had never been a rock slide in this vicinity.

Division Engineer Lank stated that he had been on the Northern Division since 1919; during the past summer he made a personal inspection of the hillside, but there was no condition at the point where this rock slide occurred that appeared dangerous. On learning of the accident he proceeded to that point, arriving there about three or three and one-half hours after its occurrence, in company with the roadmaster. Division Engineer Lank examined the track, but found no indication that the engine had been derailed until it encountered the rock slide. He did not think it had rained hard enough to cause a piece of solid rock to give way, had the rock been supported on earth or soft material; then rainfall might have been a factor, but that such was not the case in this instance, the rock having been supported by another rock ledge under it. While vibration from passing trains might have had something to do with starting the rock slide, he thought that had that been the case the slide would have occurred while a train was passing.

Division Engineer Lank did not know what actually caused the rock slide, he said, however, that in order to prevent the recurrence of a similar accident he intended to have everything removed from the hillside that appeared to be loose or that had any tendency to fall.

Conclusions

This accident was caused by a rock slide.

The bottom part of the ledge of the rock slide started at a point about 32 feet above the track and the top of the slide was about 22 feet higher; the width of the slide was about 40 feet and the thickness about 4 or 5 feet, approximately 60 tons of rock being precipitated down the hillside and on the track and at the base of the bluff. It was evident that the breaks were new, and apparently they were not the result of water having washed over and loosened the slide. No trouble had been previously experienced in this vicinity on account of rock slides; frequent inspections had been made of this hillside, but nothing of consequence had ever been found in the way of loose dirt or insecure rock. There had been no unusual storm or any known adverse weather conditions such as to require special precautions in patrolling the track, nor was there any indication of heavy rain. The last train to pass this point prior to the accident was southbound passenger train No. 15, which was due at Brushy at 12.49 a.m.; the rock slide occurred sometime after that train passed, but it is not known exactly when or why it gave way. Although both the engineman and fireman appear to have been maintaining a proper lookout, they did not discover the dangerous condition of the track ahead until too late to prevent the accident.

All of the employees involved were experienced men and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND,

Director.