

HE
1780
A319
CV.7J

no. 301-350

U.S. Interstate Commerce Commission
Railroad accident investigation
report CV.7J no. 301-350

REV. 301.

NOVEMBER 6, 1915.

**IN RE INVESTIGATION OF ACCIDENT WHICH OCCURRED ON
THE UNION PACIFIC RAILROAD NEAR RANDOLPH, KANSAS,
OCTOBER 16, 1915.**

On October 16, 1915, there was a derailment of a motor passenger train on the Union Pacific Railroad near Randolph, Kansas, which resulted in the death of 11 passengers and the injury of 41 passengers and 3 employees. After investigation of this accident, the Chief of the Division of Safety reports as follows:

This accident occurred on the Manhattan Branch of the Kansas Division, a single-track line operated by timetable and train orders. The track is laid with 60-pound rails, 30 feet in length, with about 16 or 17 ties under each rail, and has a dirt roadbed. The derailment occurred at the western end of a bridge spanning Fancy Creek, one-third of a mile east of Randolph. The track on each side of the bridge is on a tangent for a considerable distance. The bridge spanning this creek is a single-span, steel truss bridge, 100 feet in length. The approach to the bridge on the western side is a dirt fill of sandy loam about 10 feet in depth, 350 feet long and 16 feet wide at the top. Fancy Creek runs from east to west nearly parallel with the track of the railroad for a short distance, and then makes an abrupt turn to the right at nearly right angles and goes under the bridge, emptying into the Big Blue River, which is about 300 feet north of the track of the railroad at this point.

Westbound train No. 379, a motor passenger train, consisted of motor passenger car 13 and trailer 4, in the order named, the trailer being a combination mail and baggage car. This train was in charge of Conductor Knittle and Motorman Warren. It left Manhattan at 7:00 a. m., on time, and at about 7:30 a. m. was derailed at the western end of the bridge, while traveling at a speed of between 20 and 25 miles an hour.

The investigation developed that during the night there had been a very heavy rainfall in the territory drained by Fancy Creek and its tributaries, the amount of rain which fell in some places being as much as 5 inches in about 18 hours. This caused a rapid rise in the water in Fancy Creek, resulting in the washing away and undermining of the western bank of the creek, beginning at a point about 200 feet south of the bridge and including about 50 feet of the western approach to the same, leaving the ties and rails, together with some of the top of the fill, suspended in the air, preventing the motorman from seeing the danger in time to avert the accident. The track gave way at this point under the weight of the passenger car, which plunged into the creek, its forward end coming to rest on the bottom, with the rear end leaning against the western pier. The combination car did not leave the bridge.

Motorman Warren stated that he had not noticed any high water in any of the creeks until reaching the point where

Fancy Creek ran parallel with the railroad track, a short distance east of the bridge. He then saw that the water in the creek was four or six feet higher than usual, but did not see anything wrong as his train neared the bridge. The rails and ties west of the bridge were in place and there was nothing indicating that the approach had been undermined. He stated that when the accident occurred the train was drifting, the current having been shut off just before they reached the bridge. He also stated that he did not have time to apply the air brakes.

The statements of both Motorman Warren and Conductor Knittle indicated that although there had been rain at Manhattan during the night, they had not thought it sufficient to result in danger. Conductor Knittle stated that he knew nothing of the derailment, his first knowledge of anything wrong being when the car went into the water. At this time he was standing on the bottom step comparing the rainfall with what it had been in Manhattan. He stated that it did not look to him as if there had been as much rain at Randolph as at Manhattan.

Section Foreman Well stated that he passed over the bridge the evening before the accident, at which time the water in the creek was low. There was rain during the night, but nothing excessive. When starting out in the morning, he went to the western end of his section, as he considered that to be the most dangerous part of it. It never occurred to him to go to the bridge over Fancy Creek, as there had never been

any trouble at that point in the eleven years he had been on the section. He further stated that in June, 1915, the water had reached the bottom of the bridge, while in 1908 the water was over the track. At neither of these times had any trouble been occasioned and he had never seen any indication of the creek cutting away the bank. He further stated that there were 10 bridges on his section and that he considered the bridge over Fancy Creek to be the safest of any of them.

Bridge Supervisor Jungling stated that all bridges were inspected semi-annually, this inspection embracing the masonry abutments for the detection of cracks, settlements, etc., and also embracing the steel work, ties and approaches. The bridge over Fancy Creek was inspected in the first part of October and, with the exception of a few ties which needed replacing, it was found to be in perfect condition.

G. W. Edsien, Assistant Engineer of Maintenance, stated that at the inspection of the bridge made in the first part of October, the only note made by him concerning it dealt with some riprap work which was to be looked into the coming year. He stated that while there were no indications of any danger, yet as a result of this inspection it had been decided that consideration be given to the putting in of some riprap should the occasion warrant it. The existing conditions did not appear to need attention immediately and no recommendation to that effect was made. He also stated that this riprap work would probably have been done within 50 feet or so of the bridge.

as it was not the policy of the railroad to do work of this character off the right of way, unless it was considered that there was great danger of the banks being cut away at a greater distance than 50 feet from the track.

R. L. Huntley, Chief Engineer, stated that the abutments and sub-structure of the bridge had been in place for 30 years. A great deal of high water had been experienced in this interval, particularly in 1903, when the eastern approach was washed away. After the floods of this year, very careful inspections were made of all the territory affected and there were no indications that there was anything the matter with the bridge spanning Fancy Creek, or that any alterations or changes were needed. He stated that high water had been experienced at different times since 1903 and that inspections after these floods had failed to disclose anything wrong. Engineer Huntley further stated that in his opinion the very heavy rainfall in the territory drained by Fancy Creek resulted in a rush of water which struck the western bank just above the bridge with enough force to wash it away. The water was then deflected at right angles to the approach on the western end of the bridge and resulted in the formation of an eddy, which caused the embankment on the south side of the track to slip. The statement of the chief engineer would seem to be supported by the fact that the water did not work its way through the approach, a part of the approach on the north side of the track still being intact.

From the statements of the roadmaster and section

foreman, it appeared that it was customary to have a section-man patrol the track whenever there was excessive rain and that in this case there had been no unusual rain in this immediate vicinity and no patrol was made during the night.

The agent at Manhattan stated that there had been 1-1/2 inches of rain at that point in the 24 hours ending at 7:00 a.m., October 16th, while at Clay Center, near the head waters of Fancy Creek, 2 inches of rain had fallen within the 24 hours ending at 7:00 a.m., October 16th. Information was also received by the agent at Randolph that at Otter Creek, 6 or 7 miles from Randolph, 5 inches of rain fell from noon of the 15th until the morning of the 16th.

The last train to pass over this bridge previous to the accident was a freight train which passed at about 9:30 p.m. the night before. The crew of this train stated that they did not notice any high water in the creek at that time.

This accident was caused by the washing away and undermining of the western bank of Fancy Creek, beginning at a point about 200 feet from the bridge and extending to and including about 50 feet of the western approach to the bridge.

The investigation indicated that this was caused by a rapid rise in the water in Fancy Creek, due to excessive rainfall in the territory drained by this creek. The bridge and its approaches had been inspected recently and everything found to be in first-class condition, the undermining of the western approach having been due to conditions which could not have been anticipated.