

**In re Investigation of an accident which  
occurred on the Wabash Railroad near  
Dillon, Ind., on January 31, 1917.**

March 6, 1917.

On January 31, 1917, there was a derailment of a passenger train on the Wabash Railroad near Dillon, Ind., resulting in the death of two employees and the injury of one passenger. After the investigation of this accident, the Chief of the Division of Safety reports as follows:

The section of the Wabash Railroad on which this accident occurred is a single track line. Train movements are governed by time-table and train orders, supplemented by a manual block signal system.

Eastbound passenger train No. 12, en route from Chicago, Ill., to Detroit, Mich., consisted of the following cars in the order named:

1 express car, of steel-underframe construction;	
1 express car, of wooden	"
1 baggage car, " "	"
1 coach, " all steel	"
1 chair car, " wooden	"
1 club car, " steel-underframe	"
3 Pullman sleeping cars, of all-steel	"

This train, hauled by locomotive 2034, and in charge of Conductor Carey and Engineman Norman, passed Magese, Ind., 62.5 miles east of Chicago, at 1.59 a. m., 16 minutes late, and at 2.10 a. m. was derailed at a point about 8 miles east of Magese and 1.1 miles west of Dillon, while traveling at a speed of about 45 miles an hour.

Approaching the point of accident from the west the track is tangent for 11 miles, continuing so for a distance of 4 miles east thereof. The track is laid with 80-pound rails, 33 feet in length, on an average of 21 hardwood ties to the rail; it is ballasted with gravel, and is laid on a fill of about 8 feet, at the foot of a descending grade of 0.46% for eastbound trains, about 1-1/2 miles in length.

After derailment the locomotive and two express cars went down the embankment to the north, the engine turning over on its left side; the tender buckled and came to rest on the north side of the locomotive; almost the full length of the first express car passed on the north side of the tender before coming to rest; the front end of the second express car rested against the rear end of the first car,

with its side against the engine and its rear end on the embankment. The third car went down the south side of the embankment, followed by the front end of the fourth car. The other five cars, with the exception of the two rear wheels of the rear truck of the last sleeping car, were also derailed, but remained upright on the fill. At the time of derailment it was snowing in flurries.

The engineman and fireman were killed in the accident.

The first marks of derailment found were flange marks on the ties just inside the south rail, beginning at a point 98 feet west of bridge 1611, a wooden trestle bridge 45 feet in length. Sixty-six feet beyond the point where the initial marks of derailment were found, the north rail turned over to the north. Flange marks were found on the web of this rail; and the following rails continued to turn over to the north for a distance of 160 feet, where a rail was found to have been broken. Beginning at this point the train ran astride the north rail for a distance of 60 feet, gradually leading off to the north until the front end of the train left the ties, finally going down the embankment, the locomotive coming to rest about 200 feet east of the point where the initial marks of derailment were found.

Conductor Carey stated that when the accident occurred he was riding in a rear seat of the sixth car in the train, and his first intimation of anything wrong was when he felt the brakes applying in emergency; the speed at the time was approximately 45 miles an hour, that being the maximum permissible speed for engines of the type of the one hauling his train. Conductor Carey further stated that he thought the accident was caused by a broken rail, as a 3-foot piece of rail, containing a scarcely noticeable flaw, was found after the accident and shown to him, and he supposed it was part of a rail that had broken and caused the derailment.

Brakeman Benson stated that he was riding in a rear seat of the rear sleeping car; that he did not feel any application of the brakes at the point of derailment, but did feel a jar that threw him out of his seat. He stated that he took his lanterns, got off and went forward several car lengths, and saw that the train was off the track; he then procured a fusee and went back to flag, continuing to Kingsbury, about 5.7 miles west. He stated that about half a car length from the rear of his train he found the south rail out of line, but did not see flange marks on the ties. He stated that that rail was so much out of line that when the relief train arrived it was not attempted to run over this piece of track.

Section Foreman Shillinger, in charge of the section on which this accident occurred, stated that he passed over the track at the point of derailment, on a hand car, on

January 30th, and found no indication of the track being out of gauge, surface, or alignment. He stated that on January 30th his men had spiked both rails of the track into gauge, west of bridge 1611, for a total distance of about 1-1/2 rail lengths, the track having been found to have spread. He further stated that he reached the scene of accident several hours after it occurred, and he found that the track in the rear of the derailed train had spread. Two rails, one on each side of the track, in relatively alternate positions, were 1-1/4 inches out of line, this being the most that any rail was out of line within 100 feet of the rear of the train. He stated that he thought the spreading of the track was caused by the sudden stopping of the front part of the train; and that if the engine had dropped off the track west of bridge 1611, it would have cut through the ties on it and would ~~not~~ have been able to cross over it. He stated further that he thought the accident was caused by a broken rail; and that he had examined a broken rail found at the scene of derailment, and discovered a black streak in it. Section Foreman Whillinger stated that there are three men, beside himself, in his section gang; his section is six miles in length.

Track Supervisor Holland stated that he reached the scene of accident about 1-1/2 hours after its occurrence; that he examined the track west of the rear of the train, and about 60 feet therefrom he found a few places where the rails had been crowded outward; and that they were spiked into gauge so that an engine could be moved up to the rear of the train. Supervisor Holland stated that he thought the derailment was caused by a broken rail, because, upon examining the track and the derailed train on the morning of the accident, by the light of a lantern, at the place where the rail was broken he found that water, coal and slinders had been spilled, indicating that the engine had there dropped down on the ties; and furthermore, because the north rail was turned outward all the way from the break to the rear track of the rear sleeping car, while east of the break it was turned inward, the train having run astride it. He also stated that he did not think it would have been possible for the engine to have succeeded in crossing over bridge 1611 if it had been derailed and been running on the ties.

Engineer Maintenance of Way Charles stated that locomotive 2034 was a "2000-class" engine; that section men complain that that type of locomotive damages the track when used in passenger service; that he has ridden on such an engine and has found that they do not compare well with other engines; and that they lunge when the track is rough. He stated that the piece of rail described by Conductor Carey did not fit into the break in the rail.

Examination of the track showed that the ties for a distance of 200 feet west of the bridge were in very bad con-

dition. At the fourth joint, west of the bridge, it was necessary to spike the south rail inward 1-3/4 inches in order to establish the correct gauge, before a relief train could reach the rear of the derailed train; and at different places about that point, on both rails of the track, brace spiking was used to bring the track into gauge. About half a rail length west of the first marks of derailment, it was necessary to use shims under the south rail to raise low spots, the appearance of the shims indicating conclusively that they also had been placed there after the accident.

Locomotive 2034 is a Class G-1 locomotive, of the 2-6-2 type, having a total weight, engine and tender ready for service, of 358,900 pounds. Inspection revealed nothing about this locomotive to indicate that it was unsafe for service.

All of the employees involved stated their belief that the accident was caused by a broken rail. There may have been some reason for that belief, inasmuch as three broken rails were found after the derailment. The first one of these was only a 14-foot section of a rail; it was badly rusted and no marks of identification could be discovered. The investigation disclosed facts, however, from which it is evident that the derailment was due to bad track conditions. According to the statement of Engineer Maintenance of Way Charles, locomotives of the type of locomotive 2034 have a tendency to sway when the track is rough; and it is therefore believed that, when train No. 12 was approaching the point of accident, this locomotive, traveling as it was at its maximum permissible speed, struck the uneven spots in the track about half a rail length west of the initial point of derailment, causing it to sway; this in turn causing the track, on account of its weak condition, to spread sufficiently to allow the wheels on the south side of some part of the train to drop down inside the rail. That the track was in a weak condition is further evidenced by the fact that the rails on the north side of the track, beginning 66 feet east of the initial point of derailment, were turned outward for a distance of 180 feet to the point where the first broken rail was found, flange marks appearing on the webs of the overturned rails. It is believed that the broken rails were a result and not the cause of the derailment.

Owing to the fact that the engineer and fireman were killed in the derailment, it was impossible to determine what part of the train was first derailed.

Section Foreman Shillinger, who is responsible for the condition of the track where the accident occurred, has been employed as a section foreman by this railway for 26 years.

At the time of the derailment, the engine crew of train No. 12 had been on duty 3 hours and 18 minutes, after a period of 9 hours and 32 minutes off duty; and Conductor Carey and Brakeman Bensch had been on duty 3 hours and 10 minutes, after 15 hours and 10 minutes off duty.