

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
LOUISVILLE & NASHVILLE RAILROAD AT EAST LOUISVILLE, KY.,
ON OCTOBER 28, 1919.

November 28, 1919.

On October 28, 1919, there was a derailment of a transfer train on the Louisville & Nashville Railroad at East Louisville, Ky., which resulted in the death of 1 employee and injury to 3 employees. After investigation of this accident, the Chief of the Bureau of Safety reports as follows:

The accident occurred at MN Tower, an interlocking plant, located in the East Louisville yard. At this point the main line is double-tracked and is paralleled by a running track known as track No. 1. Within the limits of the interlocking plant another double-track line known as the "Water Street Line", and sometimes as the "O. & O. Main", crosses track No. 1 at an angle of about 45 degrees and connects with the northbound and southbound main track. At the north end of the interlocking plant track No. 1, connects with two Big Four interchange tracks. It is necessary for a northbound transfer train en route to the Big Four interchange tracks to pass from the northbound to the southbound main track by means of a facing point switch and thence to track No. 1 through another facing point switch and across the Water Street Line to the point where track No. 1 connects with the interchange tracks. Movements of this kind are governed by a calling-on signal located on a high mast at the entrance to the interlocking plant. The accident under investigation occurred on track No. 1 a few feet north of its

intersection with the Water Street Line. At this point is the beginning of a 10-degree curve to the right, extending beyond the point where the accident occurred. The crossing of the southbound Water Street track had been damaged by a previous accident, making it necessary to remove the damaged frog, so that at the time of the accident only one track crossed track No. 1. Approaching the point of accident from the south on track No. 1, the grade varies from .37 per cent. to .95 per cent. for a distance of 1,550 feet, followed by 550 feet of level track; the grade is then .38 per cent. ascending for 700 feet and 1.07 per cent. ascending for 50 feet to the Water Street crossing, continuing at that per centage through the Big Four interchange tracks.

The track is laid with 80-pound rails 33 feet in length with 18 ties to the rail. The ballast consists principally of cinders. The drainage in the vicinity of the point of accident is very poor and water from a leaking main keeps the track soft at all times. Recent rains aggravated this condition and at the time of the accident water stood over the ties in many places. The crossing at the intersection of track No. 1 with the Water Street line is badly worn, and contains a bad break to which temporary repairs have been made. The alignment of the track is very poor, and in general the track within the limits of the interlocking plant is poorly maintained. On account of this condition of the track, an order has been issued restricting the speed of trains over the crossing to 8 miles an hour.

On the morning of the accident locomotive 639, in charge of Foreman Page and Engineman Grottenthaler, was hauling a cut of 18 loaded cars from South Louisville yard to the Big Four interchange at East Louisville, a distance of 3 miles. Ordinarily transfer trains are assisted to the Big Four interchange by helping locomotives but the crew in charge of this train attempted to make the movement without assistance in order more quickly to clear the main track for northbound passenger train No. 18, due to pass MN Tower at 8.17 a.m. The transfer train left South Louisville at 7.35 a.m. and on reaching the south end of the interlocking plant at MN Tower crossed from the northbound to the southbound main track, then crossed to track No. 1 and at 8.00 a.m., running at a speed variously estimated at from 6 to 20 miles an hour, was derailed at the intersection of track No. 1, with the Water Street Line. The weather at the time of the accident was clear.

Locomotive 639 and the first three cars in the train were derailed, the locomotive turning sidewise and the tender striking the side of the tender of locomotive 521, which was standing into clear in the yard 240 feet from the initial point of derailment. The locomotive of the transfer train then turned over on its right side. The three derailed cars remained upright and were only slightly damaged. Engineman Grottenthaler was killed in the accident, while the fireman and head brakeman of locomotive 639 and the engineman of locomotive 521 were injured.

Foreman Page, of locomotive 639, stated that approaching

MN Tower the engineman sounded the whistle for the interlocking signal, which was then in the stop position, and the foreman stated that he himself stepped over to the left side of the locomotive in order to signal to the operator in the tower to give the train a proceed signal so it could get out of the way of train No. 18, a following passenger train. He said that the engineman remarked to him, "We are going to stick No. 18 here", at the same time closing the throttle. At this time the locomotive was rolling badly. The interlocking signal then cleared and the engineman opened the throttle again. Foreman Page said that when crossing over to track No. 1 the locomotive rocked very badly and when they reached the Water Street intersection he knew something was wrong. About 75 feet north of the intersection, Stone Street crosses track No. 1, and as the locomotive passed over this street crossing he noticed the footboard tearing up the rock and gravel of the street; realizing then that the engine was derailed, he jumped; he said that the engine was not going fast enough to throw him to the ground. To the best of his knowledge the engineman made no attempt to stop the train. A stop had been made before leaving South Louisville, but no application of the air brakes had been made en route, and he did not know whether or not the air brakes had been tested before starting. Foreman Page further stated that he knew of no mechanical defects on the locomotive which might have caused the accident, although he had observed a wobbling motion of the locomotive all night, which was worse than he had ever noticed on any other locomotive.

Fireman Fain, of locomotive 639, stated that the train entered the interlocking plant at a speed of 7 or 8 miles an hour, and that its rate of speed was not more than 8 or 9 miles an hour at the time of the derailment. He was putting in a fire just before the derailment occurred and observed no extra rocking motion. He further stated that his engineman closed the throttle at about the time the locomotive was derailed but he was uncertain as to whether or not the air brakes were applied. He thought the accident was caused by rough track through the crossovers.

Switchman Heaton, of locomotive 639, stated that at the time of the accident he was on the rear car of the out, the first he knew of the accident being the sudden stop. Seeing a cloud of steam he got off, opened an angle cock and set 4 or 5 hand brakes. He did not know whether or not the air brakes were applied before the accident occurred, although the speed of the train was slightly checked approaching the interlocking signal. He estimated the speed to have been about 8 or 10 miles an hour. The air brakes applied and released properly, when tested at South Louisville.

Engineman Honaker stated that he arrived upon the scene about 10 minutes after the accident occurred. At that time the reverse lever was in the forward position, the throttle was open and the wheels were still revolving. He closed the water glass but was unable to close the throttle on account of its being wedged in open position.

Operator Rucker at MN Tower stated that on the morning of

the accident he came on duty at about 7.55 a.m. and was told by the third triek operator that there was a Big Four out coming into East Louisville. He lined up the switches for the movement and cleared the interlocking signal when the train was about 30 feet from it. Just after the locomotive crossed the Water Street crossing he noticed that it was derailed. He estimated the speed of the train at the time at about 20 miles an hour and said it was going faster than cuts usually run in this vicinity. Operator Rucker further stated that he had observed switching locomotives passing over the crossing and had noticed that they rocked a great deal, but on this occasion locomotive 639 rocked more than usual at that point. Traffic here was very heavy, there being about 150 movements in an eight-hour shift.

Signal Maintainer Leet stated that at the time the train passed through the interlocking plant he was talking with the operator and either he or the operator remarked that the train was going "mighty fast". He estimated the speed at the time of derailment at 18 or 19 miles an hour and said the speed was too high considering the condition of the track. After the accident he examined the track but could find no cause for the derailment had ordinary speed been maintained. He stated that the first mark of derailment was on the rail about 15 feet north of the frogs in the crossing. This crossing was badly worn, and for sometime they had been waiting for new material.

Track Supervisor Handley stated that while he was checking tools in the tool-house close to the point of accident, he heard someone outside make some remark about the speed of the transfer train. Immediately afterwards he heard someone cry "Look out". Supervisor Handley stated that he then ran to get out of the way of the derailed locomotive and after running 10 or 15 feet turned to look back and saw the locomotive plowing sidewise, knocking down everything in its way, and headed directly towards him. He then ran a little farther and looked back again in time to see the locomotive turn over, the wheels still turning. He could not estimate the speed of the train at the time of the derailment. After the accident he made an examination of the track and while the track was weak and worn, it was not spread and he thought its condition was the same as had existed for a long time. He further stated that on account of the poor drainage and dense traffic, the crossing requires considerable attention.

Roadmaster Johnston stated that he reached the scene of the accident about 40 minutes after its occurrence. It was his belief that the accident was due to high speed on the curve and that at the point where the accident occurred it is practically impossible to keep the proper super-elevation in the curve. He also said the crossing had been in use six years, was very badly worn and was broken inside the splice of one of the frogs. The drainage is poor and the dense traffic allows little chance to work on the crossing.

He stated further that even in dry weather water frequently stands over the crossing on account of a leaking water main in the vicinity. He said that a requisition for a new crossing had been placed in March, and that they were trying to hurry its delivery. Roadmaster Eohnston further stated that he had recommended the speed restriction of 8 miles an hour, which was in effect at the time of the accident.

Yardmaster Hund of East Louisville stated that the Water Street crossing is not in good condition but is safe for a speed of 8 miles an hour, to which speed trains are restricted. Judging from the position and condition of the locomotive after the accident he thought excessive speed was the cause of the accident. He thought there would be about 100 movements over the crossing in a period of 24 hours.

Assistant Yardmaster Eohnson stated that on the morning of the accident locomotive 639 passed the yard office at East Louisville at a speed of 15 or 20 miles an hour, his attention being attracted to the train because of the fact that it was traveling at a much higher rate of speed than is usual. He thought the speed of the train was checked but very little if any before the derailment occurred, and was of the opinion that excessive speed was the cause of its derailment, although he did not examine the track closely. A great deal of trouble had been caused by derailments of engines of this class. He further stated that Engiheman Grottenthaler was a very fast runner.

An examination of the track after the derailment showed a flange mark on the 17th tie north of the Water Street Line crossing. This mark was $6\frac{1}{2}$ inches inside of the east rail, and similar marks of increasing prominence appeared on each succeeding tie as far as the Stone Street crossing. On the west side of the track the first indication of the derailment was a flange mark on top of the rail about 18 inches south of the first flange mark found on the other side of the track. The mark on the west rail was 4 feet 6 inches in length and gradually diverged to the west or outside. Beyond the mark on the rail, each spike on the outside of the rail was dented as far as the Stone Street crossing. At the point of derailment the gauge was $1/8$ inch wide, while 20 feet south of that point the gauge was $7/8$ inch wide. Thirty feet farther south it was $\frac{1}{2}$ inch narrow.

Locomotive 639 was a six-wheel switcher, with a total weight, engine and tender of 202,000 pounds. Careful examination of the locomotive failed to disclose anything which might have contributed to the derailment.

This accident was caused by the failure of Engineman Grottenthaler and Foreman Page to obey the speed restriction in force in operating their train over this crossing.

Bulletin Board Order No. 541, dated June 24, 1919, and in effect at the time of the accident reads as follows:

All Concerned

Crossing interchange with main tracks to Water Street at MN Junction badly worn - has poor alignment. Not safe for high speed. Until further notice do not exceed a speed of eight (8) miles an hour over this crossing.

(Signed) W. O. Dilley,
Superintendent.

Undoubtedly the movement of the train at an excessive rate of speed over the two crossovers, a worn crossing and a section of poorly maintained track caused the locomotive to rock to such an extent that the left front driving wheel mounted the rail and then dropped off to the outside. Despite the fact that the track through the interlocking plant is in bad condition, this movement might have been made safely had the prescribed speed restrictions been observed.

The testimony of the crew of locomotive 639 as to the speed of the train at the time of the accident is in conflict with that of other witnesses. However, the fact that a helper was not being used on this transfer and a high rate of speed through the interlocking plant consequently was necessary in order to gain sufficient momentum to reach the interchange tracks, support the estimates of eyewitnesses that the train was moving from 15 to 20 miles an hour when derailed, especially when the proximity of a following passenger train had been the subject of conversation between Engineman Grottenthaler and Foreman Page, and that they were attempting to clear the main tracks to permit the passenger train to pass without delay.

While a speed restriction of 8 miles an hour has been in

effect on the Water Street crossing for over four months, the officials of the railroad cannot evade the responsibility for their failure properly to maintain the tracks. The density of traffic at this busy point requires track maintenance of a high degree and every effort should be made to keep this crossing in as good condition as possible pending the delivery of the new crossing.

Engineman Grottenthaler entered the service of the Louisville & Nashville Railroad Company as a clerk in January, 1903, was made caller in December, 1904, and fireman in April, 1907. In August, 1917, he was examined for the position of engineman and in September of the same year was dismissed from the service. He was reinstated in November, 1917, as a yard engineman in the Louisville terminal. At the time of the accident his record was clear. Foreman Page entered the service as switchman in April, 1917, and was promoted to foreman in April, 1918. His record shows that in April, 1919, he was given a 30 days suspension for responsibility in connection with a side collision with a cut of cars. With this exception his record was clear.

At the time of the accident the crew of locomotive 639 had been on duty 8 hours after an off-duty period of 15 hours.

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