INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE CHESAPEAKE AND OHIO RAILWAY AT PAINTSVILLE, KY., ON JULY 7, 1934.

August 11, 1934.

To the Commission:

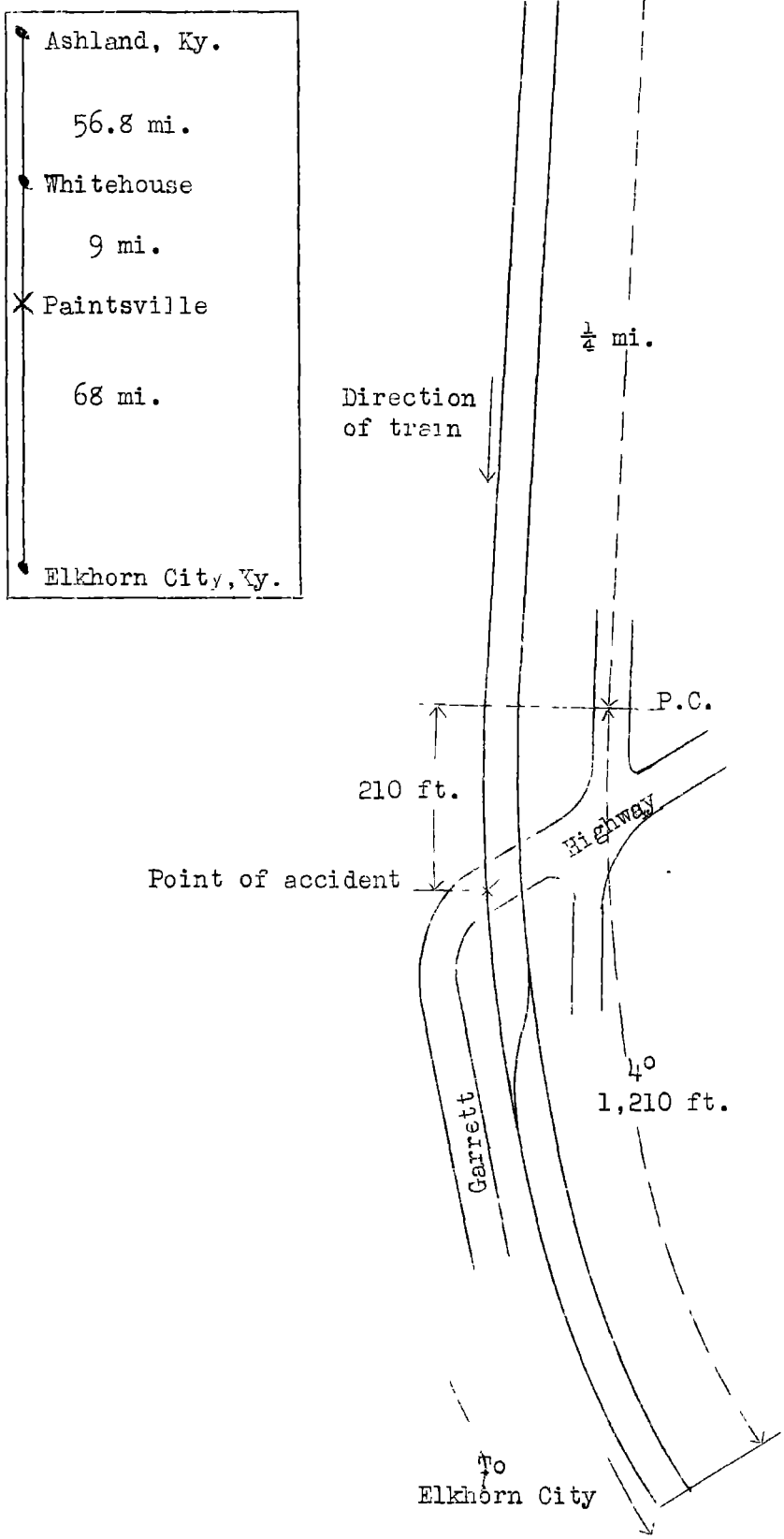
On July 7, 1934, there was a derailment of a passenger train on the Chesapeake and Ohio Railway at Paintsville, Ky., which resulted in the death of 1 employee and the injury of 1 employee.

Location and method of operation

This accident occurred on the Big Sandy Sub-Division of the Ashland Division, which extends between Ashland and Elkhorn City, Ky., a distance of 133.8 miles; in the vicinity of the point of accident this is a double-track line over which trains are operated by time table, train orders, and a manual block-signal system. The accident occurred at a highway crossing located approximately one-half mile west of the station at Paintsville; approaching this point from the west, the track is tangent for a distance of about one-fourth mile, followed by a 4° curve to the left 1,210 feet in length, including spirals, the accident occuring on this curve at a point about 210 feet from its western end. The grade is level at the point of accident.

The track is laid with 100-pound rails, 39 feet in length, with an average of 24 treated oak ties to the rail length, fully tieplated, single-spiked, ballasted with stone, and well maintained. The highway involved, known as Garrett Highway, crosses the tracks at a sharp angle and makes an abrupt turn to the east on the south side of the tracks, paralleling them for a short distance. The crossing is about 30 feet wide and at the time of the accident consisted of a covering of small limestone chips over ballast, level with the running surface of the rails, with nothing to bind it.

The weather was clear at the time of the accident, which occurred about 9:55 a.m.




Inv. No. 1919
Chesapeake & Ohio Ry.
Paintsville, Ky.
July 7, 1934

## Description

East-bound passenger Train No. 36 consisted of 2 mail and express cars, 1 combination baggage and passenger car, and 2 coaches, all of steel construction, hauled by engine 444, and was in charge of Conductor Goodin and Engineman McDonie. This train departed from Ashland, its initial terminal, 65.8 miles west of Paintsville, at 7:15 a.m., left Whitehouse, 9 miles from Paintsville, at 9:37 a.m., 17 minutes late, and was derailed at Paintsville while traveling at a speed estimated to have been between 30 and 35 miles per hour.

The engine, tender and the forward truck of the first car were derailed but remained coupled; the engine stopped on its left side and practically at right angles to the track with its rear end on the roadbed and its forward end down a fill on the south side of the track. The tender was diagonally across the track and was leaning towards the left, and the first car was upright and stopped practically in line with the track. The engine was considerably damaged and the tender and first car sustained slight damage. The employee killed was the fireman and the employee injured was the engineman.

## Summary of evidence

Engineman McDonie stated that the brakes were tested before leaving Ashland and functioned properly en route. He noticed no rough riding or unusual motion of the engine, and at Louisa, 35 miles from Paintsville, he inspected the engine but saw no defects. The train approached the point of accident at a speed of about 30 miles per hour, working a light throttle; he was looking ahead through the front window but did not see anything out of the ordinary. When the engine encountered the crossing he observed ballast being thrown from under the engine truck and he immediately applied the brakes in emergency, the engine being derailed shortly afterwards and then overturned. On account of his position on the outside of the curve the view of the crossing is somewhat limited; had he been leaning out of the side window and looking down he might have seen ballast on the rails but he does not make it a practice to look out that way on account of mail cranes in that locality. He was the regular engineman of this train and on previous trips he had not seen dust flying from ballast while passing over this crossing.

Conductor Goodin stated that there was nothing unusual about the operation of the train during the trip until the brakes were applied in emergency. He estimated the speed at the time of the accident at 30 miles per hour and noted the time of its occurrence at 9:55 a.m. About five minutes later he examined the crossing; it was filled with loose ballast and there was evidence of crushed stone on the rail and he concluded that loose pieces of ballast on the rail caused the derailment.

Brakeman Castle was in the baggage compartment of the third car when the accident occurred. Just after the engine passed over the crossing he looked ahead from the left side door, and observing that the engine was not riding smoothly he started towards the emergency valve on the opposite side of the car intending to stop the train, but the brakes were applied before he reached it. He immediately returned to the door and the engine was then lunging badly although the train did not stop suddenly. He also examined the crossing and noticed considerable crushed stone on the south rail, a mark in the crossing material near the east side, followed by the mark of a wheel on the ties. It was his opinion that stone on the rail caused the accident.

Brakeman White stated that his first intimation of anything wrong was when the brakes were applied in emergency, at which time he thought the speed to be about 30 miles per hour. As soon as the train stopped he went back to flag, walking between the rails, and did not see any marks indicating that anything had been dragging.

Section Foreman Allen, on whose section the accident occurred, arrived at the scene of accident about 10 minutes after its occurrence and observed signs of chips or stone mashed on the rail as though wheels had passed over them, and as he did not examine the equipment he knew of nothing else that could have caused the accident. He said the track in that vicinity had recently been raised about 4 inches, necessitating removal of the original crossing, and the crossing was replaced with ballast covered with about 2 inches of limestone chips which made the surface practically even with the tops of the rails; this material was then tamped. It was intended to put binding material over these chips, but when ready to pour this material, on June 25, it was found unfit for use. The supervisor instructed him to leave the crossing in that condition and have the trackwalker keep it surfaced while patrolling the track. He instructed the trackwalker accordingly, and he had not reported finding any rock on the rails although on July 5 he reported holes in the crossing. Foreman Allen further stated that he examined this

crossing four times on June 26, again on June 30 and passed over it on a motor car on July 1. On the day of the accident his crew was not working and he was patrolling the track himself, but had not reached the crossing before the derailment occurred.

Trackwalker Burt Allen stated that he patrolled the track from the time the crossing was installed on June 25 until June 29 when he was promoted. He had received instructions from the foreman to watch the crossing carefully and if it became dangerous to report the matter to him. About two days after the crossing was renewed he told the foreman that the material was loose and that rocks were being thrown on the rails by automobiles. He and the foreman passed over this crossing in an automobile later the same day and when he mentioned its condition the foreman remarked there was nothing that could be done until the material was received to finish the crossing.

Trackwalker Gilbert Allen stated that he patrolled the track since July 1, with instructions from the foreman to watch Garrett crossing and keep it smooth. On July 3 he found about a double-handful of gravel on the south rail and he reported the matter to the foreman; this was the only time he found it necessary to remove gravel from the rails.

Supervisor of Track Barrick stated that the crew on the section on which the accident occurred works only five days per week and it is the duty of the foreman to patrol the track on the days they are not working, which was the case on the day of the accident. He arrived at the scene of accident about 1:45 p.m., and examined the equipment but did not find any defects that he thought might have caused the accident. He inspected the track for a distance of about 1 mile west of the crossing and observed marks on the gauge side of the rail and angle bars which indicated that something had been dragging; however, these marks appeared to have been made a few days previously. Measurements taken of the gauge, line and elevation disclosed nothing that could have contributed to the accident. When he examined the crossing there were chips on the high rail that had been deposited by vehicles passing over the crossing, but he thought this condition was aggravated considerably at that time due to the rear end of the train still blocking part of the crossing and the unusual number of automobiles using the crossing by reason of persons visiting the scene of accident. The chips composing the top layer of the crossing were from 3/8 to 3/4 inch in size and the ballast underneath ranged from 1 to 2½ inches. At the

time of his inspection automobiles had cut into the crossing sufficiently to churn some of the larger material to the top. From the marks on the track it was his opinion that the accident was caused by a pile of chips on the high rail derailing one pair of engine truck wheels which traveled in this position until they encountered the frog of a trailing-point crossover switch 200 feet east of the crossing where the truck probably turned, resulting in the final derailment. He was present on June 25 when the section foreman was trying to mix the top dressing and upon examination he found it so decomposed that it was useless; he instructed the foreman to maintain the crossing in that condition until he could get in contact with the salesman, who informed him on July 2 that the material had been frozen. At the time he issued these instructions to the foreman the crossing was well tamped and he did not think there was any possibility of chips getting on the rails. The foreman made no subsequent complaint; he passed over the crossing on a motor car on July 3 and there was no indication that the chips were piling up or being displaced.

Division Engineer Mumford stated that this crossing is 30 feet in width, on about a 10-degree angle; on the north side the highway leads directly away from the railroad, and on the south side it makes an abrupt turn at the ends of the ties. He arrived at the scene of accident at 1:45 p.m., and found the crossing material in the west-bound track and between the tracks tamped down smooth, but it was very loose and a considerable amount had been pushed upon the south rail of the east-bound track, at which point automobiles start making the turn in the highway. There was an impression in the material on the inside of the north rail near the east side of the crossing and from that point to the frog of the crossover the marks on the ties had the appearance of having been made by only one pair of wheels; when the left wheel of the engine truck engaged the lead rail of the crossover it veered the truck to the south until it ran the engine off the track. He said that the emulsified oil crossing material was received in November, 1933, but on account of the limestone quarries being closed it was decided not to renew the crossing until the spring or summer of 1934. When the supervisor told him that the oil was spoiled he did not mention the fact that the crossing was then being renewed. He rode over this crossing on Train No. 36 on July 5 and 6 and noticed nothing unusual.

General Foreman Huntley stated that engine 444 was in Huntington shops in September, 1933, for Class 3 repairs and since that time it has made about 36,000 miles. He examined the work reports for the 10-day period prior to the accident and did not find any defect that could have contributed to the accident. The statements of Machinists Donta

and Crawford were to the effect that they inspected engine 444 before its departure on Train No. 36 on the day of the accident and no defects were noted that could have caused its derailment.

Master Mechanic McKee stated that when he reached the scene of accident all of the equipment remained where it stopped after being derailed, except the tender which had been moved to clear the west-bound track. He inspected the engine and tender and found all flanges in good condition, the brake rigging was intact except one broken rod, the engine truck was detached and the female casting had about 8 inches broken out, and the trailer was broken in several places. All of these fractures were new and he was satisfied that they were caused by the accident; he found no defects that would have contributed to the derailment. The engine truck was placed back under the engine when it was rerailed, but the trailer truck was removed before the engine was moved from the scene of accident.

An inspection of the track was made by the Commission's inspectors on July 10, after the equipment had been removed, and the surface, alignment and gauge west of the crossing were in good condition. The first mark of derailment was a light flange mark on a tie 19 feet eastward from the center of the crossing and 10 inches from the gauge side of the north rail. These marks continued, except at intervals of one or two ties, until they reached the crossover 200 feet eastward while corresponding marks were on the tie plates south of the south rail, all very light and scarcely visible at places. From the frog of the crossover the marks followed along the south side of the turnout rail and the ends of the ties on the south side of the track were broken, while from this point to where the engine stopped the track was badly damaged. The marks from the crossing to the crossover had the appearance of having been made by one pair of wheels. Observations of vehicular traffic as it moved over the south side of the crossing, where there is an abrupt turn in the highway to the east, disclosed that the wheels of automobiles churned up the crossing material and deposited it on the south rail. The inspectors also inspected the engine at the shops and found parts of the running gear broken, but it was their opinion that this damage was a result of the accident.

Engine 444 is of the 4-6-2 type and has a driving wheel base of 12 feet 8 inches with a total wheel base of 32 feet 8 inches; total weight engine and tender, loaded, 408,700 pounds.

## Conclusions

This accident was caused by crossing material on the rails at a highway grade crossing.

The crossing had been recently renewed, but was left uncompleted for a considerable period. Observations made subsequent to the accident revealed that due to the sharp turn in the highway immediately south of the track automobiles churned up the crossing material and deposited portions of it on the south rail. After the accident crushed stone was found on this rail and showed evidence of having been run over by the wheels of a train, while from the marks on the track it appeared that the leading pair of engine truck wheels were derailed to the right when they encountered some of this material on the south rail and then followed the rails closely until they reached the crossover east of the crossing where the truck slued further to the right, resulting in the final derailment. In view of the temporary condition of the crossing and instructions given by the supervisor, together with the information given him by the trackwalker, the section foreman should have taken steps to insure that the crossing was maintained in such condition that trains could pass over it safely.

Respectfully submitted,

W. J. Patterson,

Director.