INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

CHESAPEAKE & OHIO RAILWAY

O.X. CABIN, KY.

AUGUST 25, 1937.

INVESTIGATION NO. 2197

SUMMARY

Inv-2197

Railroad:	Chesapeake & Ohio
Date:	August 25, 1937.
Location:	O.X. Cabin, Ky.
Kind of accident:	Derailment
Train involved:	Mine run
Train number:	Extra 1105
Engine number:	1105
Consist:	23 cars and caboose
Speed:	30 m.p.h.
Track:	8° portion of compound curve; level.
Weather:	Light rain
Time:	12:45 a.m.
Casualties:	1 killed and 2 injured.
Cause:	Rock slide

September 25, 1937.

To the Commission:

On August 25, 1937, there was a derailment of a freight train on the Chesapeake & Ohio Railway near O.X. Cabin, Ky., which resulted in the death of one employee and the injury of two employees.

Location and method of operation

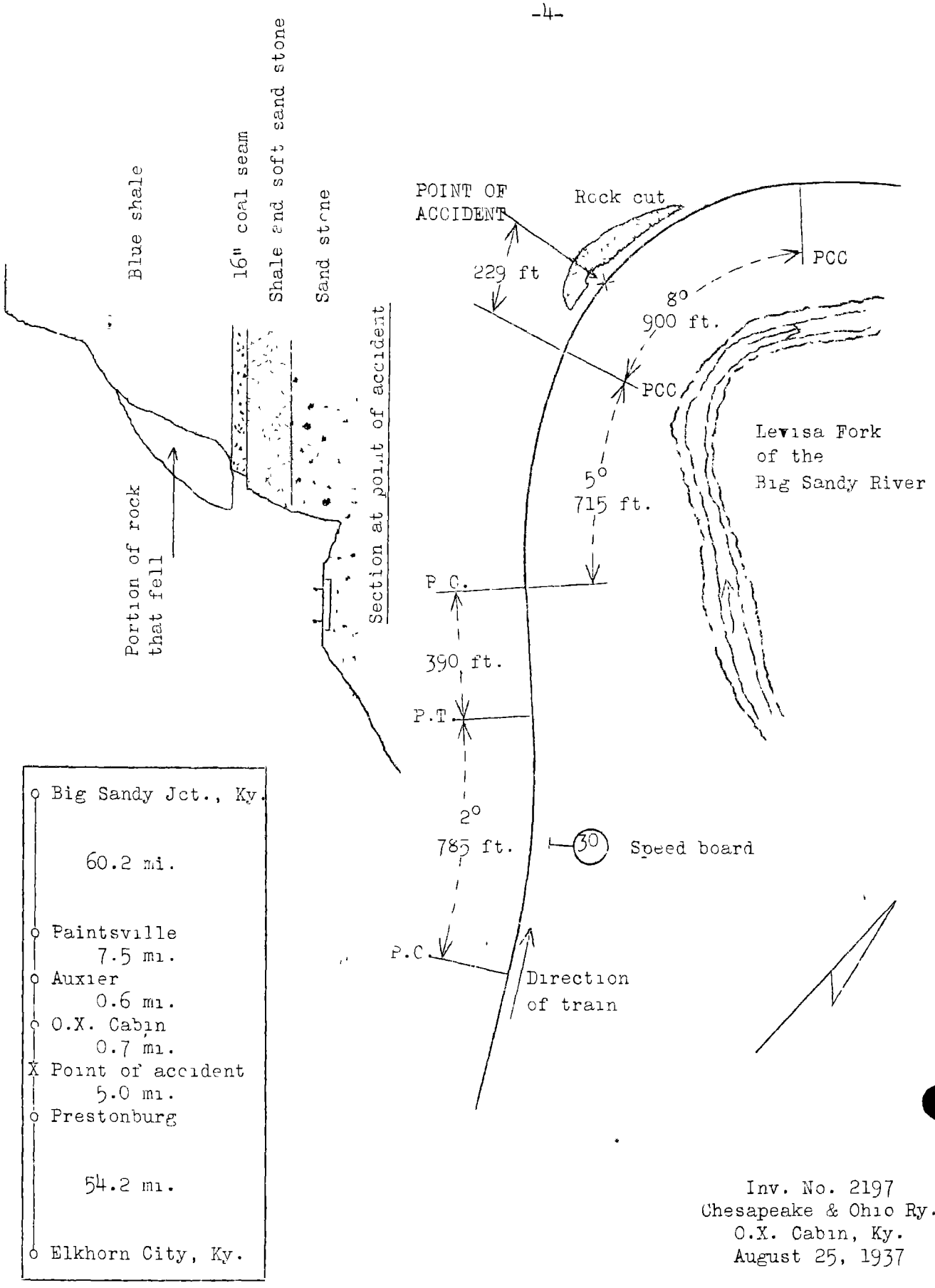
This accident occurred on the Big Sandy Sub-division of the Ashland Division, which extends between Elkhorn City and Big Sandy Jct., Ky., a distance of 128.2 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and a manual block system. The accident occurred at a point 0.78 mile east of O.X. Cabin; approaching this point from the east there is a 2° curve to the left 785 feet in length, tangent track for a distance of 390 feet, followed by a compound curve to the right consisting first of a 5° curve for a distance of 715 feet and an 8° curve for a distance of 900 feet, the accident occurring on this last-mentioned curve at a point 229 feet from its eastern end. The track is level. A speed board, restricting the speed of all trains to 30 miles per hour on the curve involved, is located 1,794 feet east of the point of accident.

The track is laid with 130-pound rails, 39 feet in length, with 22 treated hardwood ties and six rail anchors to the rail length, double-spiked, and fully tie-plated. The track is ballasted with gravel to a depth of 24 inches and is well maintained. In the immediate vicinity of the point of accident the track is laid in a hillside cut of sandstone and shale formation, 355 feet in length at grade, with a nearly vertical wall 50 feet in height on the south, and the Levisa Fork of the Big Sandy River lying about 45 feet below and 110 feet north of the track, the toe of the slope being about 60 feet from the track.

There was a light rain at the time of the accident, which occurred at 12:45 a.m.

Description

Extra 1105, a west-bound mine run, consisted of 23 cars and a caboose, hauled by engine 1105, of the 2-8-2 type, and was in charge of Conductor Caine and Engineman Burke. This train was on its return trip to Painteville, 8.1 miles west of O.X. Cabin; it passed Prestonburg, 5.7 miles from O.X. Cabin, at 12:25 a.m., according to the train sheet, and was derailed upon striking a



Inv. No. 2197
Chesapeake & Ohio Ry.
O.X. Cabin, Ky.
August 25, 1937

rock slide while traveling at a speed estimated to have been about 30 miles per hour.

The engine plowed through the slide and rolled down the fill about 229 feet beyond, making 1½ turns, and stopped on its right side at the bottom of the fill; the tender remained coupled to the engine. The first four cars stopped down the embankment in various positions, the engine, tender and four cars being badly damaged; the next three cars were derailed and slightly damaged but remained in general line with the track; none of the remaining portion of the train was derailed or damaged. The employee killed was the engineman and those injured were the fireman and head brakeman.

Summary of evidence

Head Brakeman Sherman stated that he was on the fireman's side of the cab as the train rounded the curve on which the accident occurred at a speed of about 30 miles per hour. The engineman applied the air brakes in emergency, then moved to the left side, and the engine struck the slide. Brakeman Sherman stated that the rays of the headlight were shining on the hillside but neither he nor the fireman saw the slide.

Conductor Caine stated that he was seated in the north side of the caboose near the door when the air brakes were applied in emergency at which time the speed was about 30 miles per hour. He immediately went to the caboose platform and from the reflection of the headlight, saw the train strike the slide and the engine go down the bank. He did not think that the speed had been reduced to any extent at the time of the accident. The air brakes had been functioning properly en route and the caboose gauge registered 70 pounds pressure. While there was a drizzling rain, there was no fog and the headlight was burning brightly; due to the curvature, he did not think that the rays of the headlight would reveal the slide at a distance greater than 6 or 8 car lengths.

Middle Brakeman Stapleton, who was in the caboose, stated that on approaching the speed board the engineman made a service application of the air brakes, reducing the speed from 35 to 30 miles per hour, and about 30 or 40 seconds after the brakes had been released an emergency application was made. Brakeman Stapleton and Flagman Auxier were unable to state whether or not the speed had been reduced at the time of the accident.

Section Foreman Carter arrived at the scene about 2 hours after the occurrence of the accident. He thought that about 100

tons of rock had fallen; the slide extended about 45 feet along the track on the south side but did not cover the north rail. Most of the rocks were large, some measuring 15 by 3 by 5 feet. The track was in good condition and bore no marks east of the slide. On the previous morning a light rain had been falling up to 9:30 a.m. He patrolled his entire section, which included about 7 miles of main track, observing track conditions, and he stopped in the cut in question, on his trip westward, to drain the surface water just east of where the slide occurred. On his return eastward he again stopped and drained another little pocket of water at about 12:10 p.m.; in his opinion this water had no bearing on the slide and there was no indication at that time of anything moving or falling. There had been very little rain for the past thirty or forty days, the first occurring on the morning prior to the day of the accident and this was only a light rain. He had been in charge of this section for nine years and with the exception of a small dirt slide that fell at this point after a heavy rainfall in January 1937, he had never experienced a slide in this vicinity. His entire section is patrolled each work day by either himself or a trackwalker.

Division Engineer Nuckols stated that the formation of the wall of this cut, which is 14 feet from the center of the track, consists of a 5-foot seam of soft sand stone near the bottom, a layer of shale and soft sand stone, and a 16-inch seam of coal located 12 feet above the track. Above this, about 32 feet of blue, hard shale or slate is separated by mud cracks into layers varying from 4 to 8 feet in thickness. A portion of this upper stratum, just above the coal seam, fell and covered the south rail to a depth of 3 feet. There was about 100 cubic yards of fallen material which probably weighed between 125 and 150 tons and consisted of a slab from 15 to 18 feet high, 35 to 40 feet long and 4 to 6 feet wide at the center, tapering off to a feather edge at the top and each end; the inner side was concave horizontally but less so vertically. From the appearance of this concave surface, a small mud seam varying in width to a maximum of one-half inch and which could not have been detected by surface inspection, had covered practically the entire area behind the slab. The bottom of the slab had originally projected beyond the coal seam with an overhang of about 2 feet. When it fell it broke into large pieces, some of which weighed as much as 8 or 10 tons; not more than 20 or 30 percent of the slide consisted of small material or dirt.

Observation of the cut by the Commission's inspectors revealed nothing in addition to that stated by Division Engineer Nuckols. The cavity from which the rock fell was bowl-like in shape, the fallen portion having been separated from the other rock by a very thin mud seam, and it did not appear that danger

of a slide at this location could have been detected by an ordinary inspection.

Discussion

A slide consisting of from 125 to 150 tons of blue shale fell from an almost vertical rock cut, filled the space between the face of the cut and the center of the track, a distance of about 14 feet, and covered the south rail to a depth of about 3 feet. The greater part of the rock was in large rectangular pieces weighing as much as 8 or 10 tons. The break occurred at a point about 12 feet above the track level and extended upward about 15 feet, the rock having projected about 2 feet beyond a coal seam 16 inches in thickness. Evidently, from the appearance of the concave surface, a small mud seam, which could not be detected from surface inspection, covered practically the entire area behind this rock. This volume of rock had rested in a vertical position in its bowl-like cavity for many years and through long rainy periods. With the exception of a small dirt slide which fell from the top of this cut following a long rainy spell in January of this year, no similar trouble had been experienced. There had been very little rain for the past month and only a light rain had fallen on the morning prior to the accident, and a light rain was falling at the time of the accident. No reason can be assigned for the occurrence of the slide at this time.

Conclusion

This accident was caused by a rock slide.

Respectfully submitted,

W. J. PATTERSON,

Director.