

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3380
THE PENNSYLVANIA RAILROAD COMPANY
IN RE ACCIDENT
AT FIDLER, PA., ON
DECEMBER 11, 1950

SUMMARY

Date: December 11, 1950
Railroad: Pennsylvania
Location: Fidler, Pa.
Kind of accident: Derailment
Train involved: Passenger
Train number: 581
Engine number: 3674
Consist: 8 cars
Estimated speed: 65 m. p. h.
Operation: Timetable, train orders and
automatic block-signal system
Tracks: Double; tangent; level
Weather: Snowing
Time: 1:37 a. m.
Casualties: 40 injured
Cause: Rock slide

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3380

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE PENNSYLVANIA RAILROAD COMPANY

January 30, 1951

Accident at Fidler, Pa., on December 11, 1950, caused
by a rock slide.

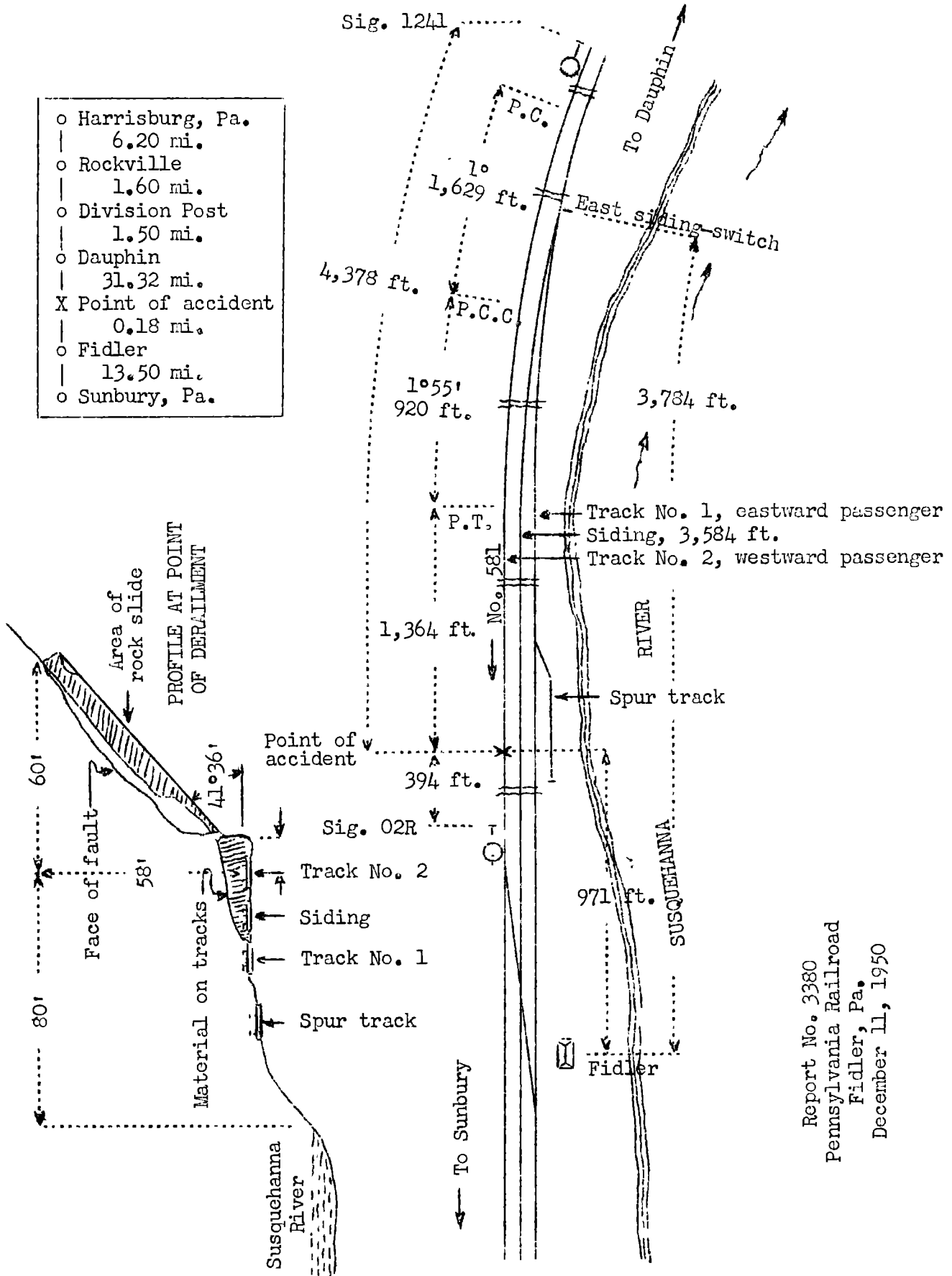
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On December 11, 1950, there was a derailment of a passenger train on the Pennsylvania Railroad at Fidler, Pa., which resulted in the injury of 29 passengers, 2 Pullman employees, 4 train-service employees on duty and 6 employees off duty. This accident was investigated in conjunction with a representative of the Pennsylvania Public Utility Commission.

¹ Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.

- o Harrisburg, Pa.
| 6.20 mi.
- o Rockville
| 1.60 mi.
- o Division Post
| 1.50 mi.
- o Dauphin
| 31.32 mi.
- X Point of accident
| 0.18 mi.
- o Fidler
| 13.50 mi.
- o Sunbury, Pa.



Report No. 3380
 Pennsylvania Railroad
 Fidler, Pa.
 December 11, 1950

Location of Accident and Method of Operation

This accident occurred on that part of the Susquehanna Division extending between Division Post, near Dauphin, and Sunbury, Pa., 46.5 miles. In the vicinity of the point of accident this is a double-track line, over which trains are operated by timetable, train orders and an automatic block-signal system. From south to north the main tracks are designated as No. 1 and No. 2. At Fidler, 33 miles west of Division Post, near Dauphin, a siding 3,584 feet in length is located between the two main tracks. The east siding-switch is 5,784 feet east of the station at Fidler. The accident occurred on track No. 2 at a point 32.82 miles west of Division Post, near Dauphin, and 971 feet east of the station at Fidler. From the east there are, in succession, a 1° curve to the left 1,629 feet in length, a $1^{\circ}55'$ curve to the left 920 feet, and a tangent 1,364 feet to the point of accident and a considerable distance westward. The grade at the point of accident is level.

The track structure consists of 130-pound rail, 39 feet in length, laid new in 1930 on an average of 22 treated ties to the rail length. It is fully tieplated with double-shoulder tieplates, spiked with 2 rail-holding and 2 anchor spikes per tieplate, and is provided with 6-hole standard joint bars and 6 rail anchors per rail. The track is ballasted with crushed stone to a depth of 27 inches below the bottoms of the ties.

This line follows the general course of the north bank of the Susquehanna River. In the vicinity of the point of accident the roadbed is laid along the base of a cliff which rises to a maximum height of about 150 feet above the level of the track. At the point where the accident occurred the north ditch line is 11 feet north of the center-line of track No. 2, and the rock wall rises almost vertically to a height of 9 feet and then slopes northward at an angle of about 41 degrees. The cliff is composed of stratified layers of hard gray shale, varying in thickness from a few inches to several feet. These layers are tilted at an angle of $41^{\circ}36'$ and have a horizontal deflection of $41^{\circ}18'$ to the alignment of the track. The shale is overlaid with a layer of gravelly soil, about 12 inches thick, covered with vegetation. In addition to the planes of stratification, the shale is faulted at right angles to these planes. The north shore line of the Susquehanna River is about 80 feet south of the center-line of track No. 2.

Automatic block-signal 1241 and interlocking signal 02R, governing east-bound movements on track No. 2, are located, respectively, 4,378 feet east and 394 feet west of the point of accident. These signals are of the position-light type and are continuously lighted.

The maximum authorized speed for passenger trains is 65 miles per hour.

Description of Accident

No. 581, a west-bound first-class passenger train, consisted of engine 3674, one baggage car, one passenger-baggage car, one passenger car, one cafe-coach and four sleeping cars, in the order named. This train departed from Harrisburg, 7.8 miles east of Division Post, at 12:46 a. m., 1 hour 46 minutes late, passed Rockville, the last open office, 1.6 miles east of Division Post, at 12:57 a. m., 1 hour 48 minutes late, and while moving at an estimated speed of 65 miles per hour it struck a rock slide, and the engine and the first five cars were derailed.

The engine stopped on its left side on the siding, with the front of the engine 414 feet west of the point of accident. The tender stopped with its rear end 17 feet north of the track and 33 feet east of the front end of the engine, and its front end against the rear end of the engine. Separations occurred at both ends of the first two cars. All cars remained upright. The first car stopped against the engine and tender, across and at right angles to the tracks, with its front end 45 feet south of track No. 2. The second car stopped at an angle of about 45 degrees to the tracks, with the front end on track No. 2 and 334 feet west of the point of accident. The third car passed the second car and stopped with its front end against the rear end of the first car, 20 feet north of track No. 2 and 348 feet west of the point of accident. Its rear end was on the siding and 274 feet west of the point of accident. The fourth car stopped approximately parallel to the track. The rear truck of the fifth car was not derailed. The engine and the first three cars were badly damaged, the fourth car was considerably damaged, and the fifth car was slightly damaged.

The engineer, the fireman, the brakeman and the baggage man were injured.

It was snowing at the time of the accident, which occurred at 1:57 a. m.

Discussion

As No. 581 was approaching the point where the accident occurred the speed was about 65 miles per hour. The headlight was lighted brightly and the enginemen were maintaining a lookout ahead from their respective positions in the cab of the engine. The conductor was in the fifth car and the other members of the crew were in various locations throughout the cars of the train. The brakes of this train had been tested and had functioned properly when used en route. It was snowing and visibility was restricted to about 250 feet. The enginemen said that signal 1241 and signal O2R indicated Proceed. The indications were called by the fireman and repeated by the engineer. The engineer said that shortly after he called the indication of signal O2R he saw that the track ahead was obstructed, and immediately placed the brake valve in the emergency position, but the accident occurred before the brakes became effective.

Examination of the track after the accident occurred disclosed that approximately 100 cubic yards of shale had become dislodged from the cliff and had fallen into the north drainage ditch and across track No. 2 and the siding. The shale on the siding and in the ditch indicated that track No. 2 had been covered throughout a distance of about 55 feet to a maximum depth of approximately 7 feet. This slide had occurred along one side of a vertical fault and was about 12 feet wide, 4 feet deep and about 60 feet long.

The cut in which the accident occurred was completed in 1857 when the railroad was constructed. Prior to this accident only a few rocks had fallen into the ditch at widely separated intervals. Periodic inspections of the cliff are made by the supervisor and by the track foreman. A track patrolman is assigned to patrol this territory twice a week. The supervisor inspected the territory where the slide occurred during the month of November and did not observe any unusual conditions. The track foreman inspected the cliff on November 25, 1950, and saw no indication that a slide might occur. The track patrolman passed this location on December 8, 1950, and observed no unusual condition. Passenger Extra 581, a west-bound express train, consisting of an engine and six cars, passed the point where the accident occurred at 12:19 a. m., 1 hour 18 minutes before the accident occurred, and the crew noticed no dangerous condition at that time.

After the slide occurred, it was observed that the shale contained no excess water and that the exposed surface of the cliff was dry. At this location there has been no seepage from the cracks along the lines of stratification and only after hard rains has surface drainage been visible. On 18 of the 30 days immediately preceding the day of the accident, the temperature had been below freezing during the night and above freezing during the day. Apparently frost action over a long period of time had weakened the cohesion between two layers of shale to such an extent that the slide occurred.

At numerous locations along the Susquehanna Division the carrier has installed slide protection fences connected with the automatic block-signal system. However, because there had been no slide at the point where the accident occurred, the carrier had not considered it necessary to install a slide protection fence at this point.

Cause

It is found that this accident was caused by a rock slide.

Dated at Washington, D. C., this thirtieth day of January, 1951.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BANTEL,
Secretary.