

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE PENNSYLVANIA RAILROAD NEAR FRUITLAND,
MD., ON AUGUST 12, 1933.

December 15, 1933.

To the Commission:

On August 12, 1933, there was a derailment of a passenger train on the Pennsylvania Railroad near Fruitland, Md., which resulted in the death of 2 employees and 2 trespassers, and the injury of 1 postal clerk, 1 news agent and 4 employees, 3 of whom were off duty.

Location and method of operation

This accident occurred on that part of the Delmarva Division extending between Cape Charles, Va., and Canal, Del., a distance of 174.4 miles; in the vicinity of the point of accident this is a double-track line over which trains are operated by time table and an automatic block-signal system. The accident occurred on the north-bound track at a point 3,804 feet north of automatic block signal 90, this point being 1.34 miles north of Fruitland or 2.41 miles south of Salisbury; approaching the point of accident from the south, the track is tangent for 8.69 miles, this tangent continuing for a distance of 925 feet beyond the point of accident. The grade is practically level.

The track is laid with 130-pound rails, 30 feet in length, with 15 or 16 ties to the rail length, single-spiked, fully tie-plated, and ballasted with cinders to a depth of 13 inches; 4 rail anchors per rail also are used. The 4-hold splice bars are 24 inches long. The track is well maintained, and the speed limit for passenger trains in this vicinity is 60 miles per hour.

The weather was cloudy at the time of the accident, which occurred about 1:20 a.m.

Description

North-bound passenger train no. 450 consisted of 1 baggage and mail car, 1 express car, 3 coaches, and 3 Pullman sleeping cars, in the order named, all of steel construction, hauled by engine 5399, and was in charge of Conductor Sturgis and Engineman Brown. This train passed Cassatt, the last open office, 20.9 miles south of Fruitland, at 12:52 a.m., according to the train sheet, 7 minutes late, made a station stop at Princess Anne, 11.6 miles north of Cassatt, and was derailed north of Fruitland while traveling at a speed estimated to have been between 55 and 60 miles per hour.

To
Salisbury

1°

P.C.

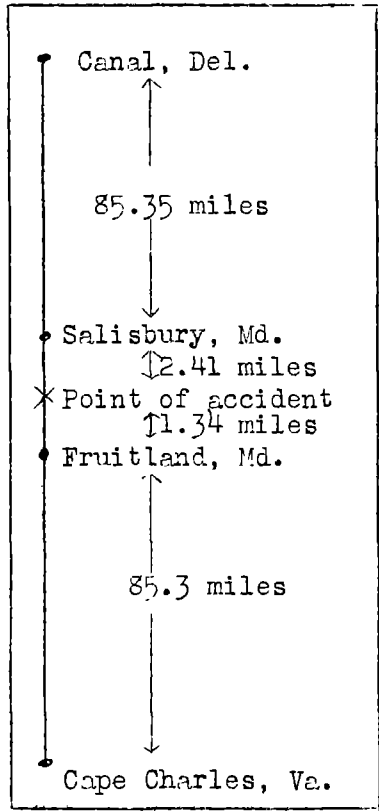
925 ft.

Point of accident

3,804 ft.

Signal 90

To
Fruitland



Inv. No; 1843
 Pennsylvania R.R.,
 Fruitland, Md.
 Aug. 12, 1933

Engine 5399, its tender and the first six cars were derailed to the east. The engine stopped on its right side, diagonally across the north-bound track, about 450 feet north of the point of derailment; the tender also was overturned and stopped behind the engine, with the cistern torn from the frame. The first car was behind the tender, the second and third cars were across both tracks and almost at right angles thereto, the second car being upright and the third car overturned on its right side, and the fourth, fifth and sixth cars remained practically upright. The employees killed were the engineman and fireman, while the employee injured was the baggagemaster.

Summary of evidence

Conductor Sturgis, who was riding in the third car, was unaware of anything wrong until the accident occurred, at which time the speed was about 55 or 60 miles per hour. After the accident Conductor Sturgis was caring for the passengers and arranging for their transfer to the relief train, and as a result he did not make any careful examination of track conditions; he stated, however, that he did not see any outsiders around the scene of the accident. It also appeared from the conductor's statements that he had talked with both the engineman and the fireman at Cape Charles prior to departing on this trip and that they appeared perfectly normal in every respect, also that the air brakes had been tested and worked properly en route.

Flagman Parker, who was riding on the rear car, stated that he noticed an air-brake application immediately prior to the accident; after the accident he went back to flag. Subsequently he examined the track but found no indications of dragging equipment. Flagman Parker did not make any close examination of the track at the scene of the accident and he did not see any outsiders in the vicinity.

Baggagemaster Hastings said that after the accident he was on the west side of the train and by looking under the couplings between the sixth and seventh cars he was able to see the east rail and could see that the splice bars, bolts and washers had been removed from a rail joint on the east side of the track and that the receiving end of the north rail at the joint had been moved out of alinement; one splice bar was lying on the ties away from the rail. He did not go around on the east side of the train and he did not see any outsiders at the scene of the accident. In his opinion the accident was the result of malicious tampering with the track.

Track Supervisor White, who arrived at the scene about 2:20 a.m., said inspection of the track for a distance of about 1,000 feet south of the point of accident failed to disclose indications of dragging equipment, while north of the point of accident the track had been torn up for a distance of 400 feet. At the rail joint where the splice bars had been removed, as stated by the baggagemaster, the leaving end of the south rail was intact, but

the north rail was turned over toward the east, and was about 16 inches north and 18 inches east of its normal location in the track. One splice bar was found lying on the ties between the rails, 5 feet north of the joint, and the other splice bar was found on the embankment east of the track, 9 feet south and 8 feet east of the joint, as though it had been struck by a wheel and hurled there. Bolts and nut locks were found scattered around, both north and south of the joint and also between the rails and east of the track; the bond wire clip was on the east side of the track, north of and close to the joint. The threads on the bolts were intact, as though the nuts had been turned off with a wrench, and the nuts were missing. At the next joint north of the one where the accident occurred, the two center bolts were missing from the splice bars. Track Supervisor White stated that the receiving end of the north rail at the joint where the accident occurred could have been moved laterally about 6 inches without breaking the bond wires, but he did not think it could have been moved more than $\frac{1}{4}$ inch without removing the spikes.

Supervisor of Telegraph and Signals King, who arrived at the scene about 3:40 a.m., said the bond wire clip at the severed rail joint was not damaged; the bond wires were bent in angular position at the receiving end of the north rail, and were pulled from the pin at the leaving end of the south rail, the conditions indicating that the bond wires were intact until the accident occurred. Tests made of signal 90 disclosed it to be working properly, with the relay in perfect condition, and as soon as the track and bonding had been restored and the cars removed the signal resumed its normal functions. Within a period of 2 days following the accident there was found in a thicket east of the track, among freshly-crushed undergrowth near the rail joint involved, a unit rail-anchor wrench, the jaw of a Stilson wrench, a Stilson wrench handle, and a pinch bar. Supervisor King was of the opinion that the splice bars had been removed by some unknown person, the receiving end of the north rail at the joint pried outward without disturbing the bond wires, and the outside splice bar placed between the severed ends of the rail, there being a flange mark on the splice bar and also on the gauge side of the head of the north rail at the receiving end, and he said that with the track circuit thus unbroken undoubtedly the engine-man received a clear indication at signal 90.

Acting Track Supervisor Dixon stated that tools of a floating gang, in charge of Acting Foreman Phillips, were stored in a portable tool box which was locked at night. The lid was secured by a hasp, staple and switch lock; it was found, however, that the staple was loose enough so that it could be moved sufficiently to permit the tool box to be opened without opening the lock.

Acting Foreman Phillips stated that he was certain the portable tool box was locked after the tools had been replaced each night. He also said that the rail-anchor wrench found in the thicket after the accident was used by the floating gang on August 10, but that on looking for this wrench between 2 and 3 p.m.,

August 11, he could not find it and that night he reported it as missing to Acting Track Supervisor Dixon. The floating gang had not worked near the scene of the accident on the day this wrench was last used; on the night of August 10, the tool box was stored on the west side of the tracks in the vicinity of signal 71, located about 6,500 feet north of the point of accident, while on the night of August 11, it was stored on the east side of the tracks about 3,000 feet farther north.

Division Engineer Parvin was of the opinion that the derailment was caused by the removal of the splice bars from the rail joint and that the receiving end of the north rail was pried outward sufficiently to permit placing the outside splice bar between the ends of the rails without disturbing the bond wires, resulting in the wheels of the train striking the splice bar and forcing the east rail outward and precipitating the derailment.

The last train ahead of train no. 450 was north-bound freight train extra 4130 which passed that point about 10 p.m., August 11, at a speed of about 40 miles per hour, and nothing unusual was noticed by members of that crew.

Careful inspection of engine 5399 and also of the derailed equipment failed to disclose any defect that could have caused or contributed to the accident.

Conclusions

This accident was caused by malicious tampering with the track.

As a result of the investigation it was developed that a rail joint had been disconnected in the east rail of the track, both splice bars removed, and the receiving end of the north rail at the joint then moved out of line enough to enable a splice bar to be forced between the ends of the rails, causing the train to be derailed at the joint. It further appeared that the tampering with the track was done in such a way as not to interfere with the operation of the automatic signals, and that signal 90, south of the point of accident, was displaying a proceed indication when passed by train no. 450.

The evidence further indicated that some of the tools which were used in tampering with the track were tools belonging to the railroad company; the rail-anchor wrench presumably had been stolen from the tool box of a floating gang on the night of August 10 and there was evidence tending to indicate that the pinch bar also came from the same tool box, which was found to be in such condition that it could be opened without opening the lock. The proper disposition of track tools at the end of a day's work is of the utmost importance; such tools should be stored for the night under conditions providing a greater degree of safety than was afforded in the present case.

Respectfully submitted,
W. P. BORLAND,
Director.