

BUREAU OF SAFETY

REPORT NO. 1955

Railroad: Baltimore & Ohio
Date: December 18, 1934.
Location: Big Gunpowder, Md.
Kind of accident: Rear-end collision
Trains involved: Two freights
Casualties: 1 trespasser injured
Cause: Failure of engineman properly to obey
signal indications and failure of
flagman to provide full flag protection.

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE BALTIMORE & OHIO RAILROAD AT BIG
GUNPOWDER, MD., ON DECEMBER 18, 1934.

February 28, 1935.

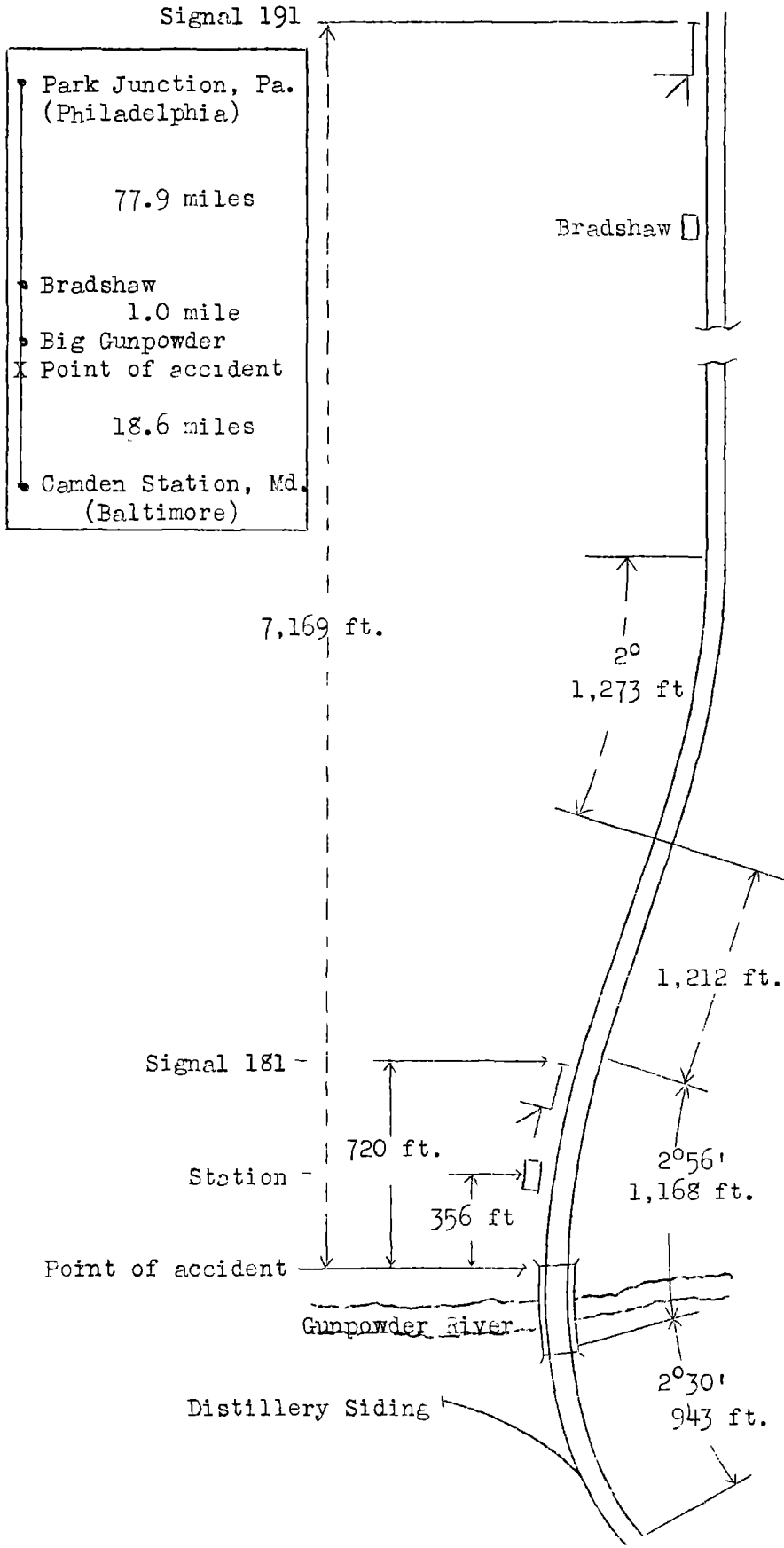
To the Commission:

On December 18, 1934, there was a rear-end collision between two freight trains on the Baltimore and Ohio Railroad at Big Gunpowder, Md., which resulted in the injury of one trespasser.

Location and method of operation

This accident occurred on that part of the Baltimore Division extending between Park Junction (Philadelphia), Pa., and Camden Station (Baltimore), Md., a distance of 97.5 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 an automatic block-signal and train-stop system, the latter being of the intermittent inductive type. The accident occurred at a point 356 feet west of the station at Big Gunpowder, near the eastern end of a bridge about 400 feet in length which spans the Gunpowder River. Approaching this point from the east the track is tangent for 1 mile, followed by a 2° curve to the right 1,273 feet in length, tangent track for a distance of 1,212 feet and a compound curve to the left 2,111 feet in length, consisting of a $2^{\circ} 56'$ curve 1,168 feet and $2^{\circ} 30'$ curve 943 feet in length, the accident occurring on the $2^{\circ} 56'$ curve at a point 931 feet from its eastern end. The grade for west-bound trains is 0.63 percent ascending for a distance of 3,168 feet, followed by 1,848 feet of level track, the accident occurring at the leaving end of the level track. A spur track, known as the Distillery Siding, is located on the north side of the tracks and connects with the west-bound track at its western end, the switch being located 834 feet west of the point of accident.

The signals involved, Nos. 191 and 181, are located 7,169 and 720 feet, respectively, east of the point of accident, and are of the 3-position, upper-quadrant, semaphore type, approach lighted, the night indications being red for "stop and proceed"; yellow for "prepare to stop at next signal, train exceeding medium speed must at once reduce to that speed"; green for "proceed". Signal 181 is equipped with a circular disc with the letter "P" thereon, which under special instructions contained in the time table indicates that trains with 80 percent of



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tonnage ratings are not required to stop when a stop-and-proceed indication is displayed. The maximum authorized speed for freight trains in this territory is 40 miles per hour.

The weather was clear at the time of the accident, which occurred about 3:36 p.m.

Description

Extra 4220, a local west-bound freight train, consisted of 14 cars and a caboose, hauled by engine 4220, and was in charge of Conductor Wilson and Engineman Nickle. This train left Aberdeen Tower, approximately 14 miles east of the point of accident, at 2:50 p.m., according to the train sheet, stopped at Bradshaw, 12.9 miles beyond, for the purpose of performing station work and departed from that point at about 3:22 p.m.; this train stopped at Distillery Siding at Big Gunpowder about 3:28 p.m., according to the statement of the conductor, for the purpose of picking up cars, and while standing at that point the rear end was struck by Train No. 99.

Symbol Train No. 99, an extra west-bound freight train, consisted of 55 cars and a caboose, hauled by engine 4485, and was in charge of Conductor Blackburn and Engineman Eberwein. This train passed Aberdeen Tower at 3:17 p.m., according to the train sheet, passed signal 131 displaying a caution indication, and while traveling at a speed variously estimated to have been from 9 to 23 miles per hour passed signal 181 displaying a stop and proceed indication, and collided with the rear end of Extra 4220.

The caboose of Extra 4220 was shoved forward upon the bridge and blocked both tracks. The body of the car ahead of the caboose was thrown from the bridge and landed on the river bank, the trucks of this car being shoved under the car ahead of it; the second car from the caboose remained upright. The engine of Train No. 99 was slightly damaged.

Summary of evidence

Engineman Nickle, of Extra 4220, stated that on stopping at Distillery Siding he sounded the engine whistle signal for the flagman to go back to protect the rear of the train, and he then proceeded to pick up the cars on the spur track; while performing this work the rear end of his train was struck by Train No. 99. He thought his train had been standing about 10 minutes when the accident occurred. Fireman Morris stated that when his train was stopped at the siding he looked back and saw

the flagman about 4 or 5 car lengths from the rear of the train walking back with a red flag. He thought his train had been standing about 6 or 7 minutes, while Head Brakeman Argo thought the train had been standing at that point about 5 minutes, at the time of the accident.

Conductor Wilson, of Extra 4220, stated that on arrival at Bradshaw he was informed that Train No. 99 had passed Singerly, 33.6 miles east thereof, at 2:47 p.m., and he figured that he would have time to perform the work at Distillery Siding and go to Cowenton, several miles beyond. He stated that Train No. 99 is not carried in the time table but that he clears for that train upon information which he obtains from the dispatcher. After completing the work at Bradshaw his train left that point about 3:22 p.m. He rode on the engine so as to be in position to perform the work at Distillery Siding, and arrived at that point about 3:28 or 3:30 p.m. The engine was cut off and backed into the siding, and he observed the flagman going back to flag; he thought the flagman was then near the station shed or about 8 or 10 car lengths from the rear of the train.

Flagman Forrester, of Extra 4220, stated that as his train stopped he got off and went back to flag and was standing about 10 feet west of signal 131 or about 20 car lengths from the rear of his train when he saw Train No. 99 approaching about 30 car lengths distant. He immediately flagged that train and started running toward it on the engineman's side but the engineman did not answer his signals. When the engine passed him he was a few car lengths east of the signal and the engineman made a gesture with his hands indicating that he had done all he could to stop the train. Flagman Forrester stated that while an application of the air brakes had been made it did not appear to have been an emergency application as he did not see any fire flying from the wheels, and he estimated the speed of the train to have been 22 or 23 miles per hour when it passed him. He had not placed any torpedo on the track as he stated that it was not his practice to do so until after he has been recalled, because his train takes siding or crosses over for many trains. When flagging at Bradshaw he left a torpedo on the track and after the accident the engineman of Train No. 99 told him that his engine had exploded it. He further stated the only information he had concerning Train No. 99 was that the conductor told him at Aberdeen that that train would follow No. 5 out of Wilsmere, but had he known that Train No. 99 was so close behind his train he would have gone back farther or remained at Bradshaw to flag. Flagman Forrester also stated that he did not hear Train No. 99 approaching.

Engineman Eberwein, of Train No. 99, stated that he had reduced the speed of his train considerably when he approached

signal 191 at Bradshaw; the brakeman and fireman called its yellow indication, which he acknowledged, and he operated the forestalling device of the automatic train stop system. The engine struck a torpedo, which he acknowledged by two short blasts on the whistle, and he told the fireman and brakeman to keep a sharp lookout ahead. He had steadied the train with several applications of the independent brake and on passing through Bradshaw the speed of his train was about 20 miles per hour. He then called the red indication of signal 181 which the fireman and brakeman repeated, and on asking them if they could see anything, they answered "no". As he passed the signal the speed had been reduced to between 12 and 15 miles per hour and he again operated the forestalling device of the automatic train stop, and on reaching a point between the signal and the station at Rig Gunpowder the fireman and brakeman called a warning of the train ahead. He immediately applied the air brakes in emergency, opened the sanders, reversed the engine and worked a little steam. He then saw a flagman about 20 feet east of the station running towards him, and waiving a flag. He thought he was about 4 car lengths from the caboose when he applied the air brakes in emergency, although he said he made the application as soon as he was warned. Engineman Eberwein stated that while he had a permissive indication allowing him to pass signal 181, he knew he should have operated his train so as to be able to stop within his range of vision; he knew there was a local freight ahead, but expected the flagman to give him proper warning in case he overtook the preceding train. He did not reduce the speed further as he approached the upgrade as he did not want to become stalled, but he said he knew he was taking a chance and running faster than he should. He experienced no difficulty with the brakes, which had been tested, and the automatic train-stop devices functioned properly.

Fireman Jacobson, of Train No. 99, stated that approaching Bradshaw Head Brakeman Skinner was sitting in front of him on the seat box, and smoke was observed around the curve about 35 or 40 car lengths distant, apparently made by the engine ahead. The brakeman remarked that there was smoke ahead, but Fireman Jacobson did not know whether the engineman heard him; he did not say anything to the engineman about the smoke as he thought the brakeman's remark was sufficient. On approaching signal 181 he estimated the speed to have been a little higher than 15 miles per hour; he was maintaining a lookout ahead watching the smoke when the engineman called out that signal 181 displayed a red indication. He repeated the indication and noted from the sound of the brake valve exhaust that an application of the brakes was being made which he thought was made by the automatic brake valve. He also heard the cab whistle indicating that the engineman operated the forestalling device of the automatic train stop. The engineman called over to keep a lookout ahead around

the curve, and very soon thereafter he saw the rear end of the train ahead, at which time his train was traveling about 9 or 10 miles per hour. He thought the engine was about 1 car length west of the signal when the engineman applied the brakes in emergency. Fireman Jacobson stated that there were no steam leaks obstructing his vision and he was looking out at all times, but at no time did he see the flagman.

Head Brakeman Skinner, of Train No. 99, first made the statement that when he saw the red indication of signal 181 the engine was about 10 or 15 car lengths from it and he saw the caboose ahead when his engine had just reached the signal. In a later statement, however, he admitted that he did not see the red indication of this signal, although when the engineman called its indication he repeated it. He first saw the train ahead when it was from 13 to 15 car lengths away, at which time the speed of his train was from 15 to 18 miles per hour. He stated that he maintained a constant lookout ahead, yet he did not see the signal or the flagman. Brakeman Skinner stated that on passing through Bradshaw he had seen the smoke ahead and made a remark about it, but did not know whether the engineman heard him. On reaching the tangent track he did not see the smoke and assumed that the train had gone over the hill.

Conductor Blackburn, of Train No. 99, stated that the speed of his train after passing Bradshaw, had been reduced from about 30 to 15 or 18 miles per hour, the speed usually being reduced due to the ascending grade. The first intimation he had of anything wrong was when the brakes were applied in emergency, the train traveling about 12 or 15 car lengths before coming to a stop.

Subsequent to the accident a test was conducted to ascertain the range of vision approaching the point of accident. This test was made between the hours of 11:30 a.m., and 1 p.m., at which time the weather was cloudy. Signal 181 could be seen by the engineman of an approaching west-bound train for a distance of 1,724 feet, and could be seen by the fireman at a distance of 1,562 feet; from this latter point the station shed on the west-bound track could be seen from both sides of the engine until the signal was passed. A caboose, standing at a point 720 feet east of signal 181, could be seen from the fireman's side of the cab for a distance of 951 feet, while it could not be seen from the engineman's side until the engine had nearly reached it.

Discussion

According to the evidence signal 191 displayed a yellow indication and signal 181 displayed a red indication for Train

No. 99. Signal 181 being equipped with a circular disc with the letter "P" thereon, this train was authorized to pass it without stopping; however, under rule 509(3) it was required to proceed at slow speed expecting to find a train in the block, broken rail, obstruction, or switch not properly set, slow speed being defined as one-fourth the normal speed, or in this case 10 miles per hour. According to Engineman Eberwein's statement he reduced the speed of his train to about 20 miles per hour at signal 191 and the speed was between 12 and 15 miles per hour when he passed signal 181; he operated the forestalling device of the automatic train stop at both of these signals. However, on being warned of the train ahead just after passing signal 181 he was unable to stop his train in time to avert the accident. Engineman Eberwein stated that he expected the flagman to give him ample opportunity to stop; he did not reduce the speed further as he did not want to become stalled on the ascending grade, but he admitted that he was taking a chance. The estimates of speed by other members of the crew on passing signal 181 were from 9 to 18 miles per hour while Flagman Ferrester of Extra 4220 thought the speed was about 23 miles per hour at that time. According to the train sheet Train No. 99 passed Aberdeen, approximately 14 miles east of the point of accident, at 3:17 p.m.; the accident occurred 19 minutes later, indicating an average speed of 44.4 miles per hour between these points, and it therefore appears probable that the speed just prior to the accident was considerably in excess of estimates made by some members of the crew of this train.

The evidence indicates that the fireman and head brakeman were not as alert as they might have been in advising the engineman of the conditions ahead; in the vicinity of the point of accident the engineman's view was obscured by the curve to the left and he instructed them to look out for the train ahead. They both said they maintained a constant lookout ahead, and had seen smoke on passing through Bradshaw, at which time the brakeman remarked about it, although neither of them knew whether or not the engineman had heard the remark; the red indication of signal 181 was first called by the engineman, and both the fireman and head brakeman repeated it, although the head brakeman later admitted that he had not seen this signal, and the fireman stated that he was watching the smoke ahead, although he did see the signal. Tests subsequent to the accident indicated that a train could have been seen from the left side of the cab for a distance of 951 feet or 231 feet east of signal 181, but according to their own statements, the train was not seen by the fireman or brakeman until after they had passed the signal, and neither of them saw the flagman of that train at any time.

Flagman Forrester said he went back with flagging equipment to a point about 10 feet west of signal 181 where he remained until he saw Train No. 99 approaching; he then ran toward the approaching train and was east of the signal when the engine passed him. Engineman Eberwein, however, stated that he did not see the flagman until after he had passed the signal and had applied the brakes in emergency, while the fireman and head brakeman did not see him at any time. The rules provide that a flagman shall go back a sufficient distance to insure full protection, placing two torpedoes. Extra 4220 had been standing an ample period to enable the flagman to afford proper protection.

Conclusions

This accident was caused by the failure of Engineman Eberwein, of Train No. 99, properly to obey signal indications, and the failure of Flagman Forrester to provide full flag protection.

Respectfully submitted,

W. J. PATTERSON,
Director.