Inv-2283

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

DELAWARE AND HUDSON RAILROAD

HUDSON, PA.

JULY 21, 1938.

INVESTIGATION NO. 2283

SUMMARY

Inv-2283

Railroad:	Delaware and Hudson	
Date:	July 21, 1938	
Location:	Hudson, Pa.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	CRRofNJ Extra 928	: D&H Extra 1064
Engine numbers:	928	: 1064
Consist:	26 cars, caboose	: 60 cars, caboose, : helper engine 1068
Speed:	Standing	: 20-25 m.p.h.
Operation:	Timetable, train orders and automatic block-signal system	
Track:	Three-tracks; 6° and 7° compound curve, followed by short tangent on which accident occurred; 1.21 percent ascending grade.	
Weather:	Rain	
Time:	11:30 p.m.	
Casualties:	3 injured	
Cause:	Failure of Extra 928 to provide proper flag protection and failure of Extra 1064 to be operated in accordance with interlocking signal indication.	

Inv-2283

August 19, 1938.

To the Commission:

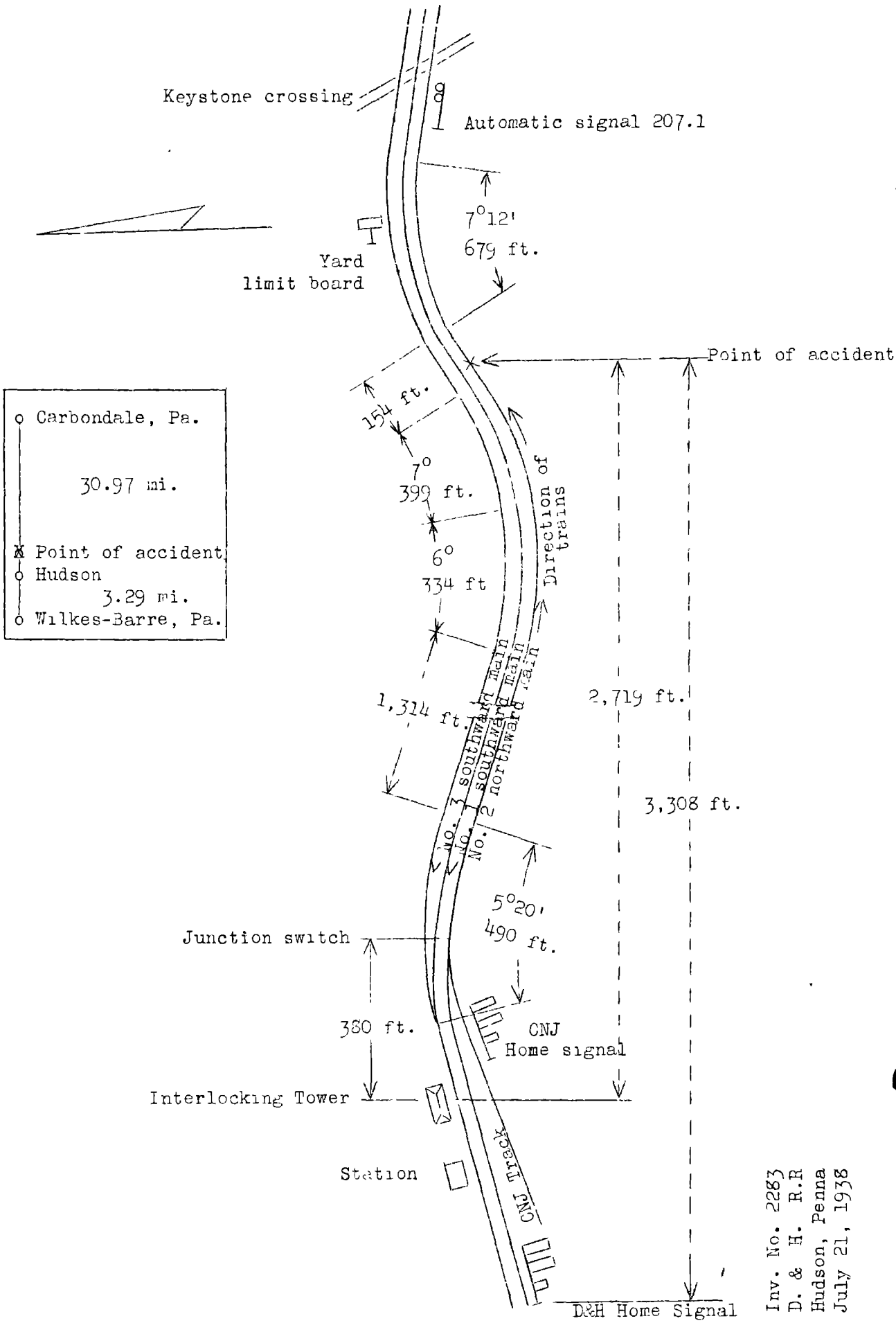
On July 21, 1938, there was a rear-end collision between a Central Railroad of New Jersey freight train and a Delaware and Hudson Railroad freight train on the tracks of the latter railroad near Hudson, Pa., which resulted in the injury of three employees.

Location and method of operation

This accident occurred on that part of the Pennsylvania Division which extends between Wilkes-Barre and Carbondale, Pa., a distance of 34.26 miles. In the vicinity of the point of accident this is a 3-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The tracks, numbered from east to west, are No. 2, northward main; No. 1, southward main; and No. 3, southward slow main. Trains of the C.R.R.of N.J. are operated over the territory between Hudson and Minooka Junction, a distance of 11.09 miles and movements on all tracks are governed by D.& H. rules. The junction switch at Hudson where the C.R.R.of N.J. trains enter track No. 2 is located 380 feet north of the interlocking tower. The accident occurred within yard limits on track 2 at a point approximately 2,719 feet north of the interlocking tower. Approaching this point from the south there is a 5° 20' curve to the right 490 feet in length, followed by tangent track for a distance of 1,314 feet, a compound curve to the left consisting of a 6° curve 334 feet in length and a 7° curve 399 feet in length, and then 154 feet of tangent track, the accident occurring on this latter tangent at a point approximately 50 feet from its southern end. The grade for north-bound trains varies from 0.97 to 1.37 percent ascending, being 1.21 percent at the point of accident.

Northward D.& H. home interlocking signal, located approximately 3,308 feet south of the point of accident, is of the 3-arm, upper-quadrant, semaphore type, the lower arm being a calling-on signal. When this signal displays a red-over-red-over-yellow indication, a train may proceed with caution prepared to stop; its indications govern northward movements to automatic block signal 207.1 which is located approximately 1,030 feet north of the point of accident.

Due to a high embankment on the inside of the compound curve, the view had by an engineman of a north-bound train is greatly restricted.


Keystone crossing
Automatic signal 207.1
7°12'
679 ft.
Yard
limit board
Point of accident
154 ft.
7°
399 ft.
6°
334 ft
Direction of trains
Carbondale, Pa.
30.97 mi.
Point of accident
Hudson
3.29 mi.
Wilkes-Barre, Pa.
1,314 ft.
2,719 ft.
No. 3 southward main
No. 2 northward main
No. 1 southward main
3,308 ft.
5°20'
490 ft.
Junction switch
380 ft.
CNJ
Home signal
Interlocking Tower
Station
CNJ Track
D&H Home Signal
Inv. No. 2283
D. & H. R.R
Hudson, Penna
July 21, 1938

The north yard-limit board is located 464 feet north of the point of accident.

Rules 7, 93a, 99 and 99a read in whole or in part as follows:

> Rule 7. Employees whose duties may require them to give signals must provide themselves with the proper appliances, keep them in good order and ready for immediate use.
>
> Rule 93a. (Double, three or more tracks.) Within yard limits the main tracks may be used clearing first-class trains as prescribed by the rules and protecting against other regular and extra trains.
>
> Rule 99. When a train stops or is delayed, under circumstances in which it may be overtaken by another train, the flagman must go back immediately with stop signals a sufficient distance to insure full protection, and place and leave two torpedoes on the rail. When recalled he may return to his train.
>
> Rule 99a. When conditions require it a fusee must be used.

It was raining at the time of the accident, which occurred about 11:30 p.m.

Description

Extra 928, a C.R.R.of N.J. north-bound freight train, consisted of 15 loaded cars, 11 empty cars and a caboose, hauled by engine 928, and was in charge of Conductor Cadden and Engineman McCue. This train departed from Hudson at 11:14 p.m., according to the train sheet, and became stalled on the grade approximately one-half mile north of the station where it was struck by Extra 1064.

Extra 1064, a D.& H. north-bound freight train, consisted of 8 loaded cars, 52 empty cars and a caboose, hauled by engine 1064, of the 2-8-0 type, and pushed by helper engine 1068 coupled to the rear, and was in charge of Conductor Hart and Engineman Merritt, and Engineman Nagle of the helper engine. This train passed Hudson at 11:28 p.m., according to the train sheet, having passed the northward home interlocking signal displaying a "proceed with caution prepared to stop" indication, and collided with the rear end of Extra 928 while traveling at a speed estimated to have been between 20 and 25 miles per hour.

Engine 1064 stopped diagonally across track 1, fouling track 3 and leaning to the left at an angle of about 45°; the draw bar between the engine and tender was twisted; one safety chain was broken but the tender was not derailed; the body of the caboose of Extra 928 was pushed upward and stopped on the right side of the smoke box of engine 1064 and was destroyed by fire, but the trucks remained on the road bed and were derailed; the rear car of Extra 928 was derailed but remained practically in line with the track; none of the remaining equipment in either train was derailed. The employees injured were the engineman of Extra 1064 and the engineman and fireman of the helper engine.

Summary of evidence

Engineman McCue, of Extra 928, stated that the tonnage of his train was 1,460 tons, the allowed tonnage rating being 1,600 tons for the type of engine he was operating. On passing Hudson the speed was about 12 or 15 miles per hour and shortly thereafter the engine started to slip on the ascending grade. The sanders were open and working properly, but the engine continued to slip due to wet, slippery rail, and the train finally stalled about 2 car lengths south of a highway crossing, known as Keystone crossing, near signal 207.1. He backed up about one car length to obtain slack and thought the train had stood about 2 or 3 minutes when he started it forward and had proceeded only a short distance when it became stalled again with the engine and first two cars north of the crossing. He was about to back up the second time for slack when the air brakes were applied in emergency due to the collision, and about that time he saw the conductor approaching the engine. Engineman McCue stated that he did not whistle out a flag at any time, stating that he did not give it a thought, but when he looked back immediately after the accident, he saw some one, whom he thought was his flagman, coming around the curve with a red and a white lantern. The flagman was south of engine 1064 and behind the flagman there was a burning fusee. He also saw that the caboose was on fire. Engineman McCue then went back to the rear of his train, talked with his flagman who told him that he had tried to flag Extra 1064, and that he had shouted to the engineman but the cab windows were closed. The flagman did not say anything about a fusee, and the engineman did not ascertain its location. Engineman McCue further stated that vision was not restricted in any way due to the rain.

Fireman Lenahan, of Extra 928, stated that after the accident he looked back from the right side of the cab and all he could see was a small flame and steam; he did not see a flagman or a fusee.

Conductor Cadden, of Extra 928, stated that as soon as the train stopped on the grade the flagman, the head brakeman and he left the caboose; the flagman started back, the head brakeman proceeded toward the engine on the right side of the train and the conductor proceeded on the left side looking for sticking brakes or dragging brake rigging. He thought it took about 5 minutes to walk the length of his train. Conductor Cadden walked around the front of the engine and as he reached the engineman's side the collision occurred. He looked back, saw fire, and started to run back; at that time he did not see the flagman or a burning fusee, although about 10 minutes later the flagman told him that he had gone back about 10 car lengths from the caboose to flag and that he had left a burning fusee, but did not place torpedoes. At that time the flagman had a red and a white lantern. The accident occurred about 11:30 p.m.

Flagman Fronheiser, of Extra 928, stated that as his train was gradually reducing speed he realized that it was going to stall and he threw off a fusee on the curve. When the train stopped he started back to flag, taking with him a red and a white lantern and a fusee. The fusees are of the 5-minute type and he could see the burning fusee he had thrown off, but it soon burned out. He went back a distance of 10 car lengths, where he could see a light in the Hudson interlocking tower; he heard the exhaust of an approaching train and saw it when it was about 7 or 8 car lengths from him. He placed a burning fusee on the right side of the track and started to flag the train, walking northward toward his own train as he did so. When the engine passed him he was about 8 car lengths from his caboose and he called to the engineman, but the cab window was closed. The train was moving at a speed of about 15 miles per hour and the engineman was still working steam when the collision occurred. The red marker lights on his caboose were lighted. Flagman Fronheiser stated that he did not have any torpedoes with him as he had used the last one at a point south thereof. He had asked several times recently for a supply of torpedoes, but had been informed at Allentown that the supply was exhausted and he had also been informed by some one that the supply was exhausted at Mauch Chunk, although he did not report this fact to the superintendent or any other officer. Flagman Fronheiser further stated that his train became stalled about 11:20 p.m.; when the collision occurred he looked at his watch and it was 11:28 p.m.

Head Brakeman McClafferty, of Extra 928, stated that he rode in the caboose from Wilkes-Barre in order to change his wet clothes. As soon as the train stopped he proceeded to the

road crossing at the head end of their train, walking along on the right side of the train. After reaching the crossing he heard an approaching train, saw it coming around the curve and saw a burning fusee in the middle of the track to the rear of his caboose but could not tell how far back it was. He did not see the flagman until after the accident when he came around the engine of Extra 1064. Brakeman McClafferty then went northward to protect the southward track.

Engineman Merritt, of Extra 1064, stated that an air-brake test was made at Wilkes-Barre, but a test was not made after cars were picked up at Parsons; however, the train line was charged to 80 pounds. He received a caution indication on the calling-on arm of the home interlocking signal at Hudson and passed through Hudson at a speed of about 15 miles per hour; speed was then gradually increased to between 20 and 25 miles per hour but he eased off on the throttle since the helper engine was working steam. He was leaning out of the side cab window looking ahead, the fireman was on the deck firing and the head brakeman on the seat box on the left side of the cab. He was unable to see any distance around the curve and was looking ahead to see the indication of the automatic signal located approximately at the grade crossing. Just as he saw the automatic signal he saw a flagman and the caboose of the standing train about 30 feet ahead; the flagman jumped quickly from the track and his own head brakeman called out a warning. He also said that the caboose marker lights appeared bright. Engineman Merritt closed the throttle but did not have time to apply the air brakes. He said he might have been proceeding a little faster than he should have been but nevertheless he could have stopped within a very short distance. He did not see a fusee at any time, and since the flagman told him after the accident that he had placed one on the track, Engineman Merritt walked back along his train about 12 or 15 car lengths but was unable to find it. The flagman also told the engineman that his own train had started back and he had opened the emergency valve on the caboose to stop the train. He thought the accident occurred about 11:30 p.m.

Fireman Smith, of Extra 1064, stated that he observed the caution indication at the home interlocking signal and he looked ahead from the left side immediately after passing Hudson but did not look out again. The windows on both sides of the cab were open. He was on the engine deck when he heard the brakeman call out a warning just before the accident. After the accident he did not see any indication of a fusee, and when he closed the injector in the cab he noted that the various lights were lighted in the cab. It was his opinion that on rounding the compound curve the rear end of the caboose could not be seen from the left side of an approaching engine for a distance of more than 10

car lengths.

Head Brakeman Gallagher, of Extra 1064, stated that on approaching Hudson he was on the left seat box and he called the caution indication of the home interlocking signal. It was raining but all of the cab windows were open. He first saw a red marker light, then he saw both marker lights on the caboose which appeared to be about 7 or 8 car lengths ahead; he immediately warned the engineman and looked across to the engineman who closed the throttle and leaned out of his cab window as far as he could. Brakeman Gallagher did not see a lighted fusee at any time, but when about 2 or 3 car lengths from the caboose he saw the flagman who was at the rear of the caboose, waving his lantern.

Conductor Hart, of Extra 1064, stated that he observed the caution indication of the home interlocking signal and he thought the speed was about 25 miles per hour on passing through Hudson.

The statements of Flagman Ball and Middle Brakeman Kilgannon, of Extra 1064, who were in the caboose at the time of the accident, and of Engineman Nagle, Fireman Kilgannon and Flagman McGuire, of the helper engine, added nothing of value to the statements of other employees.

Trainmaster Compton, of C.R.R.of N.J., when questioning one of the witnesses, stated that there was no evidence of a fusee having been placed at the point indicated by Flagman Fronheiser but that a fusee was found on a tie near the point where the tender of engine 1064 stopped.

Observations of Commission's Inspectors

Observations and tests were made to determine the distance a caboose standing at the point of accident could be seen from an approaching north-bound engine. It was found that the right marker-light could first be seen from the left side of the cab when 569 feet from it and both marker lights could be seen when 550 feet from the caboose. The right marker-light could not be seen from the right side of the engine cab until 127 feet from the caboose.

Discussion

Extra 928 became stalled due to a wet, slippery rail; slack was taken and the train proceeded only a few car lengths when it became stalled again and before slack could be taken the second time the collision occurred. According to the state-

ments of the conductor and flagman, from 5 to 8 minutes elapsed from the time the train first stopped until the time of the accident. The accident occurred within yard limits; however, the rules of this railroad required this train to provide flag protection. The statements are conflicting as to just what flag protection was provided. The rules require that a flagman go back immediately with stop signals a sufficient distance to insure full protection and place and leave two torpedoes on the rail. The flagman did not have any torpedoes with him, stating that the supply was exhausted. According to his own statement, he had 8 minutes to provide flag protection, but went back a distance of only 10 car lengths, saw the approaching train when it was 7 or 8 car lengths from him, placed a burning fusee on the track and then flagged with his lantern, at which time he was about 8 car lengths from his caboose. The conductor and head brakeman, however, walked the entire length of their train, 26 cars, before the collision occurred. The conductor stated that he did not at any time see the flagman or a burning fusee, although the brakeman said he saw a burning fusee to the rear of the caboose, and the engineman stated that on looking back immediately after the accident he saw a flagman coming around the curve with a red and a white lantern and behind the flagman was a burning fusee. A fusee was not seen, however, by the engine crew of Extra 1064 and the flagman was seen at the rear of the caboose. The engineman of Extra 1064 stated that his train was about 30 feet away when he first saw the flagman and the caboose and he saw the flagman jump from the track. The head brakeman of Extra 1064, who was on the left side of the engine cab, stated that he saw the marker lights of the caboose about 7 or 8 car lengths ahead and when 2 or 3 car lengths from it he saw the flagman who was at the rear of the caboose waving his lantern. He warned the engineman as soon as he saw the caboose, but the engineman said he heard the warning of the brakeman at the same instant he himself saw the flagman.

With the time available the flagman should and could have gone back a sufficient distance to provide proper protection and should have had torpedoes to place on the rail. He stated that on several occasions recently he had asked for torpedoes and had been informed that the supply was exhausted; however, the provisions of rule 7 required him to have proper appliances and there was no evidence introduced to the effect that he was relieved from that requirement. In the absence of torpedoes and the fact that the view was greatly restricted at this point, he should have taken extra precautions to see that his train was properly protected. After the accident a fusee was found near the tender of engine 1064, which would indicate that the

flagman had not gone back any considerable distance when he placed the fusee on the track.

The engineman of Extra 1064 received an indication at the home interlocking signal requiring him to operate his train with caution prepared to stop, yet he increased the speed after passing Hudson and was traveling at a speed of between 20 and 25 miles per hour on rounding the curve just south of the point of accident and he stated he did not even have time to apply the air brakes in emergency when he saw the train and flagman ahead. The engineman admitted that he might have been proceeding a little too fast. From observations made some time after the accident it appears that had the employees on the left side of the engine of the following train been alert they could have seen the markers of the preceding train for a distance of 550 feet, but the engineman's view was restricted to a distance of 127 feet. Under these circumstances it appears that a speed of 20 to 25 miles per hour was too great to comply with the caution indication received at Hudson.

Conclusion

This accident was caused by the failure of Extra 928 to provide proper flag protection and by the failure of Extra 1064 to be operated in accordance with the interlocking home signal indication.

Respectfully submitted,

W. J. PATTERSON,

Director.