

IN RE INVESTIGATION OF AN ACCIDENT ON THE CENTRAL OF VERMONT RAILWAY, NEAR BURLINGTON, VT., ON JUNE 6, 1918.

September 19, 1918.

On June 5, 1918, there was a head-and collision on the Central Vermont Railway near Burlington, Vt., which resulted in the death of 9 employees and 1 person carried under contract, and the injury of 8 employees. This accident was investigated jointly with the Public Service Commission of Vermont, and the Chief of the Bureau of Safety, Interstate Commerce Commission, makes the following report:

The third district of the Northern division of the Central Vermont Railway, upon which this accident occurred, is a single track line between Burlington and Cambridge Junction, a distance of 34 miles, over which trains are operated by time card and train orders, no block signal system being in use.

The first station north of Burlington on this line is Wincoaki, three miles distant. A tower from which switches and signals are operated is located approximately 3,000 feet north of the station at Burlington, and there is a tunnel under one of the city streets about 2,400 feet north of the tower. At Wincoaki the mouth switch of the yard is about 2,000 feet south of the station, and there is a bridge over the Wincoaki River about 1,200 feet south of that switch.

Approaching the point of accident from the north the track is tangent for 3,344 feet, then there is a 4-degree curve to the left, 2,379, feet long, which extends through the Burlington tunnel, the entrance to this curve being 1,429 feet north of the north portal of the tunnel. The track is on the descending grade varying from 1% to 5% to within 1,450 feet of the north portal of Burlington tunnel, then it is level for 700 feet to the tunnel. The track for 200 feet immediately north of the tunnel is in a deep cut. Approaching the point of accident from the south there is a 2-degree curve to the left, 1,568 feet in length, on which the tower is located; then there is a tangent 162 feet in length followed by a curve to the right of 4° 45'; 930 feet long, extending to the 4° curve, also to the right, on which the tunnel is located; the distance from the entrance to the compound curve to the south portal of the tunnel is 1,540 feet. There is a high embankment on the right hand side of the track the entire distance of 3,270 feet, and on the left hand side of the track there is a high embankment the last 1,650 feet before reaching the south portal of the tunnel. The tunnel in which the accident occurred is built through a high sand hill under North Avenue, Burlington, it is 341 feet in length and located on a 2-degree curve to the east;

the grade through the tunnel is level. The accident occurred in the tunnel about 130 feet from the north portal. Approaching the tunnel from the north the fireman would be on the inside of the curve and could not see the north portal when about 500 feet away, and the engineman could see it when about 250 feet away. The weather at the time was clear.

On the date of this accident, northbound extra 393, consisting of locomotive 393 and 7 cars, in charge of Conductor Notemeyer and Engineman Griffin, left Burlington at 5.45 a. m., and while doing switching work there a car was derailed on the freight house track south of the station. The crew was unable to reraill the car without assistance and the conductor reported that fact to the dispatcher at S. Albans by telephone, stating that it would be necessary to go to Burlington for assistance. The dispatcher instructed the conductor to report to the telegraph office when he was ready to go; he did so about 9.10 a.m. and received train order No. 39, reading as follows:

Engine 393 run extra Winooski to Burlington and return to Winooski.

The conductor was also given a message from the dispatcher reading as follows:

If you can make Winooski by 9.40 leave flagman there so you can go ahead and return for No. 72.

Locomotive 393 was cut off from the train and left Winooski 9.20 or 9.25 a.m., en route to Burlington. Upon arriving there after taking water and securing the necessary men and implements with which to reraill the car, locomotive 393 started back toward Winooski and collided with southbound train No. 72 in Burlington tunnel, located about a mile north of Burlington, at about 9.40 a. m. The speed of this train at the time of the collision was estimated to be about 25 miles per hour.

The southbound train No. 72, consisting of locomotive 333 and 6 cars, was in charge of Conductor Berry and Engineman Andrews. It was a second-class mixed train, running daily except Sunday from Cambridge Junction to Burlington; on the day of the accident it left Cambridge Junction at 6.10 a.m., arrived at Winooski at 9.26 a.m., left there at 9.30 a.m. and collided with locomotive 393 while running at an estimated speed of 8 miles per hour.

The engineman, fireman, brakeman and 3 shop men on locomotive 393, and the engineman, fireman, and brakeman on train 72 were killed. The head end of locomotive 393 was badly damaged, its

from bent, and the rear of the cab partially telescoped by the tender. Locomotive 333 was badly damaged, as to make it necessary practically to rebuild it. Both tenders were considerably bent and damaged.

Dispatcher Kerle stated that about 8.30 a.m. on the date of the accident Conductor Notemeyer called him by telephone, told him of the derailed car and advised it would be necessary to secure men and tools for rerailling it from Burlington, but stated he was not ready to go after them at that time. About 9.10 the operator at Wincooski informed him that engine 393 was ready to go, and the order was issued. He stated that the telegram which was sent to Conductor Notemeyer at the same time was intended simply as a suggestion to leave a flagman at Wincooski and return ahead of train No. 72 if he thought it possible to do so. He stated that this message ~~did not~~ and was not intended in any way to modify the rights of Extra 393 under the running order previously issued; his purpose was to suggest a method for Extra 393 to make the move from Wincooski and return ahead of train 72, as otherwise it could not return ahead of 29, a northbound first class train due to leave Burlington at 9.50 a.m., which would have involved a delay of about an hour.

Station Agent Kellogg at Wincooski stated that on the morning of the accident when he arrived at the station at about seven o'clock extra 393 was already there switching in the yard; a car was derailed at the south end of the house track about nine o'clock and Conductor Notemeyer told him that it would be necessary to get men and tools from the enginehouse at Burlington to reraill the car. The conductor called the enginehouse by telephone and told them what was required, and then he told the operator that he wanted orders to run to Burlington. These were furnished and he stated that extra 393 left Wincooski about about 8.20; train No. 72 arrived about 9.26, pulled down five or six car lengths beyond the station and stopped clear of the crossing south of the station. He was familiar with the order and telegram in regard to the movement of engine 393 from Wincooski to Burlington and return, but did not know what instructions Conductor Notemeyer had given his flagman. While he did not see train No. 72 depart, he understood it left on time at 9.30. Soon afterwards he learned that extra 393 had left Burlington on the return trip, and he notified the dispatcher of the impending collision.

Operator Barlow at Wincooski stated that Conductor Notemeyer talked over the telephone with the dispatcher in regard the derailed car and the trip to Burlington for water, tools and assistance; a little later he received the running order for that trip, the order being completed at 9.11 a.m. He also received the message from the dispatcher in regard to that movement and handed it to Conductor Notemeyer who remarked he didn't think he could make

Winooski by 9.40. He said the order and message were delivered to Conductor Notmeyer at about 9.15; the conductor left the station and a few minutes later he saw extra 393 leaving the yard. Train No. 72 arrived at 9.26, and while the record indicated that it departed at 9.30 he wasn't sure just what time that train did leave; however, he saw train 72 passing over the bridge about half a mile south of Winooski station at 9.35 and assumed it left about on time. Listening in on the 'phone, he overheard a conversation between the Burlington telegraph office and the tower, and learned the Extra 393 had left Burlington; this was about the time train No. 72 passed out of his sight, and he reported the situation to the dispatcher.

Operator Perry at Burlington stated that he registered Extra 393 as arriving at 9.30; the towerman called him by 'phone and asked him to register its arrival at that time. He stated that he also registered its arrival at that time. He stated that he also registered its time of departure in the same manner at 9.35; the towerman called him at about 9.37, told him the extra had departed and asked him to register it out at 9.35. He said he knew of other instances where engines coming from Winooski to Burlington and returning had not come to the station to register, but he did not think it was a general practice. Operator Perry stated it was about 9.32 when the towerman asked him to register the arrival of Extra 393, and a minute or two later he called Winooski and learned from the operator that No. 72 had left. When the towerman then asked him to register Extra 393 out, he asked where they were going and if the towerman could not stop them; but it was too late to do so as the train had already passed the tower.

Tower man Lounsbury, who was on duty at the tower at the north end of Burlington yard, stated that when extra 393 arrived the conductor jumped off from the engine and told him to call the operator and register them in, advising that he had left a flagman at Winooski to hold train 72 until his return. Nothing was said about 9.40 or any other time limit; he understood the engine was going to take water, get tools and men at the enginehouse, and return immediately to Winooski. He made a note that Extra engine 393 arrived at 9.30, called the operator to register its arrival, and was instructed by the operator to let him know when they started back. He stated the engine took water and then stopped at the enginehouse where tools and equipment were loaded on; when a whistle signal was sounded, the switches being already lined up, he gave a hand signal to proceed. He was busy when the engine passed the tower and did not make a note of the time then, but a little later saw that it was 9.42 and the extra was then passing the signal 10 or 12 car lengths north of the tower so he concluded it was about 9.40 when it passed the tower and made a note of its depart-

ture at that time. He stated it occurred quite frequently that the arrival and departure of an extra engine, operated by this crew returning to Burlington for water, was registered in the same manner as on the date of the accident. He stated that he knew nothing about the orders held; his duties consisted merely of operating the switches and signals. After the engine passed he called the operator and notified him that it was leaving, but nothing was said about stopping it. He heard someone say the engineman was going to give them a fast ride, and when the engine went around the curve south of the tunnel he thought it was running about 35 miles an hour. He stated that extra 393 had not passed out of his sight when the annunciator bell ran, indicating the approach of a train north of the tunnel; but extra 393 was then beyond the signal north of the tower.

Foreman Fitzsimmons of the Burlington enginehouse, stated that extra 393 arrived a little before 9.30 and he had the necessary tools and men ready. When the engine was taking water the engineman spoke to him about loading on the tools and said they had to be back at Winoski at 9.40 as they had left a flagman with instructions to hold everything until that time. They compared watches then and it was 9.30 just as they finished taking water. He stated it was about 9.32 when extra 393 left the enginehouse at Burlington, and he thought there was ample time to get to Winoski by 9.40. When the engine departed there were on board four of the train crew, namely, the engineman, fireman, conductor, and brakeman, and eight enginehouse men including himself. Passing the tower the speed was low; going through the tunnel he thought they were running 25 miles an hour. He stated that he had no warning of the impending collision; he was riding on the running board on the right side of the engine with his feet on the steam chest, and to protect himself against cinders in the tunnel he had his hand over both eyes; the next thing he knew he was pinned under the wreckage with hot water falling upon him. Some of the men were riding on the front end, some on both running boards, some in the cab, and some on the tender. He did not think steam was shut off nor the brakes applied before the collision occurred.

Flagman Desew of Extra 393 stated that it was nearly 9.30 when Conductor Notmeyer told him they were going back to Burlington for water, tools and men, and instructed him to flag all trains and hold them until 9.40. He stated that after the departure of his engine he worked at the derailed car and when train 72 came he flagged it. That train came to a stop up towards the station; he was walking up to it, he met Brakeman Foster and the section foreman was near by. He stated that he told Brakeman Foster his engine had gone to Burlington for water and men to help rereil the car, and that he was to hold everything until 9.40; if his engine was not back by that time he understood he was to let them go. About that time the engine started slowly toward him, and as it went by

he called to the engineman who was leaning out of the cab window giving him the same information as he had given the brakeman. The train continued to move, and he thought it was pulling down to clear the crossing. He walked along beside the locomotive as he was talking to the engineman. He didn't look at his watch and didn't know what time it was when he flagged train No. 72. He did not pay any special attention to that train afterwards as he thought it was just going down to clear the switch, and he resumed work at the derailed car. He did not notice until some time later that train No. 72 had departed. He stated the section foreman overheard his conversation with the brakeman and was near by when he was talking to the engineman. The engineman replied "All right," and the brakeman climbed on the locomotive as it passed.

Section Foreman Molinger stated that when train 72 arrived on the morning of the accident he was walking from the station down toward the derailed car, and before he reached that car he met Flagman Desaw who was walking toward the locomotive of train No. 72; the train at that time had stopped clear of the crossing south of the station. He stated that Brakeman Foster was walking down with him, and Flagman Desaw told the brakeman that 393 had gone to Burlington and was coming right back. He heard nothing said about holding trains until 9.40. Brakeman Foster continued walking down to the derailed car; and then got on the engine as it went by. The section foreman stated he did not hear the conversation between Flagman Desaw and the engineman although the flagman, after talking with the brakeman, walked back toward the train and when the train went by he was standing on the other side of the track about opposite the derailed car. He said he noticed train No. 72 passed but he did not pay particular attention to it as he didn't know what orders Desaw had.

Conductor Berry of train No. 72 stated that on the morning of the accident his train arrived at Winoski at 9.26, pulled down below the crossing and waited for time; it was about 9.30 or 9.32 when the train pulled out and passed the south switch. He stated that after the accident when he got off from the train he compared watches with the brakeman and it was then 9.42; he thought the collision occurred at about 9.40. He said he did not see Flagman Desaw at Winoski, and knew nothing of any flagging instructions held by him. He stated that his train slowed up approaching the tunnel, and at the time it entered the tunnel he thought it was running about eight miles per hour.

Brakeman Tucker of train No. 72 stated that he was riding with the conductor in the baggage part of the combination car, which was the rear car in the train. On the date of the accident there were no passengers on board and train No. 72 did not stop however, with the rear end about a car length from the crossing

south of the station and then started again. He did not see Flagman Desaw, and did not know anything about what flagging instruction he had. Brakeman Tucker stated that he was holding his watch in his hand, and then it was just 9.30 when train No. 72 started to pull out. The train did not stop again, nor slow up, until it reached the scene of the accident.

This accident was caused by the failure of Flagman Desaw to carry out his flagging instructions, and by Extra 393 occupying the main track on the time of a superior train without proper protection, for which Conductor Notmeyer and Engineer Griffin were responsible. Laz practices in the operation of trains and the absence of necessary supervision were also disclosed.

According to Flagman Desaw's own statement, the flagging instructions were definite and positive to flag all trains and hold them until 9.40. But from the evidence there is considerable doubt whether these instructions were properly communicated to members of the crew of train No. 72. While the flagman stated he told both the brakeman and the engineer that he was instructed to hold everything until 9.40, the section foreman and the brakeman heard nothing said about 9.40 or any other time limit for flagging and holding trains; and it is not believe Engineer Andrews understood the flagman's instructions as he was flagged only a few hundred feet from the point where he would have been required to wait if he had understood and observed them and instead of waiting as required he proceed on schedule time. It is apparent, therefore, that Flagman Desaw did not take proper measures to see that his flagging instructions were correctly understood and observed.

There is some conflict in the testimony as to the time when extra 393 left Burlington on the return trip to Winoski. The operator at Burlington stated it was registered out at 9.35, while the towerman said it was not until 9.40 that it was registered out. The enginehouse foreman said it was about 9.32, while the towerman said it was not until 9.40 that it was registered out. The enginehouse foreman said it was about 9.37 when they left the enginehouse and he thought there was ample time to get to Winoski by 9.40. The conductor of Train No. 72 stated that just after the accident occurred he compared watches with the brakeman and it was then 9.42. This last statement of time is supported by the testimony of the towerman, as well as by the fact that train No. 72 was running on schedule time, having left Winoski at 9.30, and being due to arrive at Burlington at 9.45; its speed at the time of the accident was estimated by the conductor at 8 miles per hour, the average schedule speed being 12 miles per hour.

It seems evident, therefore, that the time of the collision was very close to 9.40. And as the point where Extra 393 would clear for train No. 72 at Winoski was nearly two miles north of the scene of the accident, it is apparent that Extra 393 would clear for train No. 72 at Winoski was nearly two miles north of the scene of the accident, it is apparent that Extra 393 would have occupied the main line on the time of train No. 72 without flag protection. For this reason, the conductor and engineer of Extra 393, as well as the flagman, are responsible for this accident.

The investigation disclosed that the copy of message delivered to Conductor Notemyer was not dated or signed, indicating careless handling of matters of such importance. The assistant superintendent stated that the arrival and departure of Extra 393 should have been registered personally by Conductor Notemyer instead of being left to the towerman; he also stated that not withstanding that Burlington was a terminal, the crew of extra 393 was not required to secure a clearance card when leaving Burlington on this short turn-around run. It is evident from the investigation that the time available for making the trip from Winoski to Burlington and return ahead of trains 72, and 29 was very short at best, and in order to make that run in the time available the ordinary precautions for safeguarding train movements were sacrificed. Other instances where movements of the same character were made in a similar manner were disclosed by the investigation, indicating the absence of necessary supervision to insure safe operation of trains.

The conditions of safety would be improved on this line by a rule, or a construction of the present rule, requiring a train under similar circumstances leaving a terminal to secure a clearance. Had the block system been in use on this line, the accident would no doubt have been averted.

All the employees involved in this accident were experienced men, and none of them had been on duty for excessive periods.