IN THE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD AT MONTOWESE, CONN., ON JULY 14, 1919.

August 28, 1919.

On July 14, 1919, there was a collision between a work train and a string of cars standing on a siding, on the New York, New Haven & Hartford Railroad at Montowese, Conn., which resulted in the death of 8 employees and injury of 46 employees. After investigation of this accident, the Chief of the Bureau of Safety reports as follows:

The collision occurred within the yard limits of the New Haven terminal on the Air Line of the New Haven Division. The line is single tracked and train movements are governed by time-table, train orders, and a manual block signal system.

Near Montowese station, there is a siding 950 feet in length on the south side of the main track. The accident occurred on this siding about 325 feet from its east end. The switchstand controlling the switch at the east end of the siding is 7½ feet high and is located 5½ feet to the right of the main track, and in daylight its indications may be discerned from a point nearly 3,000 feet distant. From mile-post 5.24, located about 4,100 feet east of the Montowese siding, the track is straight to the point of accident and for a distance of about 1,000 feet beyond. The grade from mile-post 5.24 is 1.5 per cent ascending for a distance of 700 feet and then 1.8 per cent descending for the remaining 3,400 feet to the point of collision. The track described above lies wholly within yard limits.

On the evening of July 14th, freight train extra 321 was derailed near mile-post 5.24 and the work extra involved in the accident at Montowese siding on July 14th had been engaged in transferring freight from these derailed cars.

On the morning of July 14th, westbound work train extra 606, consisting of locomotive 606, three box cars, a caboose and work car, in charge of Conductor Sullivan and Engineman Morrigan, left ater Street Yard, New Haven, and proceeded to Air Line Junction, at which point the conductor checked the train register and received a clearance. He did not, however, procure any form of train order defining the working limits for his train and the train proceeded to mile-post 5.24, about 3½ miles east of Air Line Junction, where it had been assigned in connection with transferring the freight from the wrecked cars of extra 321. During the day, prior to the time of the accident, back-up movements to the Montowese siding were made on four different occasions for the purpose of clearing trains, and in order to save time, the switch at the east end of the siding was left open each time the train departed from the siding and went to mile-post 5.24 to continue work. On the first of its trips to the Montowese siding, the train backed on to N.Y.N.H.&H. box car 87736, which was standing on the siding, and the coupler on the work car evidently slipped by the coupler on this box car; this resulted in breaking the brake pipe back of the angle cock on the box car. On the second trip to the siding the work extra set off two of its loaded cars and picked up two empty cars, one of which was

N.Y.C.&H.R. box car 87736, with the broken brake pipe. In the make-up of the train this car was placed second from the locomotive. At about 4.10 p.m., the work at mile-post 5.24 was completed and the laborers boarded the work car, the rear car of the train. The head brakeman who was out flagging westbound trains was called in three or four times but failed to return on account of a local freight train appearing in sight. The conductor signalled the engineman to back up and the work train started toward Montowese. The switch on to the Montowese passing track had been left open on the trip previous and as the work train approached the switch the conductor and rear brakeman who were riding on the rear of the train gave slow and stop signals to the engineman. The engineman, however, failed to stop his train and it entered the siding and collided with a string of 4 cars occupying the siding. The accident occurred at about 4.25 or 4.30 p.m. The speed of the work extra as it entered the siding is variously estimated at from 6 to 30 miles an hour.

The work car was telescoped by the caboose a distance of 20 feet; the center and intermediate sills were broken a few feet from the end of the car and the platform was demolished. On the other end of the work car, the coupler was driven underneath the platform for about 2 feet and the platform end sill was split on the right side. This work car was of all wooden construction, originally built in 1875 for a coach but had been condemned for passenger service. The caboose was practically demolished on the end coupled to the work car. The

caboose was converted from a box car in 1894 but the date originally built is unknown. With the exception of the work car and caboose, none of the cars in work extra 606 were damaged nor were the cars on the siding damaged to any extent. The two employees killed in this accident were track laborers riding on the platform of the work car, while all the injured were employees riding in the work car, with the exception of one man who was riding in the caboose.

Conductor Sullivan of the work extra stated that on leaving New Haven on the morning of the accident, the train consisted of five cars, all of which were coupled up with air, and the train proceeded to mile-post 5.24 for the purpose of transferring freight from the derailed cars. During the day several trips were made to the Montowese siding for the purpose of clearing trains, and in order to save time, the switch at that point was left open each time they returned to their work at mile-post 5.24. He stated that another train was working west of the siding and that he therefore left no one to protect the switch, although he admitted that he should either have locked the switch for the main line or have left a flagman to protect it. He also stated that he had no understanding with his engineman about the switch, but thought the engineman was aware of the fact that it had been left open. On one of their trips to the siding, 2 loaded cars were set out and 2 empty cars picked up, the one placed second from the engine having a broken brake pipe. He said he told the engineman

that because of the broken train line only one car in the train was coupled up with air. The broken train line was ignored in order to expedite the work, although he knew by so doing he was violating the rule requiring 85 per cent of the train to be coupled up with air. Conductor Sullivan stated further that at about 4.10 p.m., the work at mile-post was completed for the day and after the men were aboard, while he was on the rear platform of the work car, he gave the engineman a hand signal to back up. At about that time a westbound local freight train appeared in sight and it was his intention to back in on Montowese siding and allow this train to pass, after which he intended leaving the three loaded box cars on the siding and then proceeding to New Haven with only the caboose and work car. He said that when the rear end of the train reached the summit of the ascending grade, 3,000 feet from the Montowese siding, he gave the engineman a hand signal to shut off steam. When about 80 car lengths from the switch he gave a hand signal to the engineman to slow down, the speed at that time being 15 or 20 miles an hour, but the engineman not appearing to accept his signals promptly and act upon them, he got down on the bottom step of the work car and again signalled the engineman to slow down; the engineman did not slow down sufficiently, however, and the conductor stated that he then set the hand brake on the rear end of the work car. He said that the work car was too crowded with men to get through the car to apply additional hand brakes. Conductor Sullivan also stated that a conductor's emergency valve was installed in the rear end of

the work car and had the train line not been broken he could undoubtedly have avoided the collision by its use. He said that he was still on the work car when the rear of the train reached the switch and that he did not jump off until within about 5 feet from the string of cars on the siding. In his estimation the train was not running over 6 miles an hour when the collision occurred. He said that the engineman experienced no trouble in stopping the train on the previous trips despite the broken train line, that on all of the previous trips into the siding he signalled the engineman from the rear platform of the work car in the same manner as he did on this trip and on each trip excepting this one, he got off at a point about where he thought the engine would come to a standstill into clear. The engineman told him after the accident that he thought they were going direct to New Haven on this trip without stopping at the siding, but that he did everything possible to stop the train.

Flagman Quilhot of the work extra stated that on several different occasions during the day his train backed up into the Montowese siding to clear trains and that the switch was left open each time upon returning to mile-post 5.24 to continue the work. He stated that it was customary to handle switches in this manner within yard limits, although contrary to rule. He heard no conversation between the conductor and engineman with regard to the open switch and did not know whether or not the engineman was aware that it was left open. He stated

that when the train left mile-post 5.24 for the last time, the understanding he had with the conductor was to the effect that the train would back into the Montowese siding for the purpose of clearing the westbound local freight train and for the purpose of leaving the three loaded cars at that point. When the train left mile-post 5.24 on this trip, he was riding on the rear platform of the caboose. He said the engineman did not stop before going into the siding as he had done on all the previous trips and when within about 2 car lengths from the switch, realizing the engineman was going too fast, he jumped off and swung his arms and threw his hat but the engineman was not looking out of the window. Flagman Guilhot stated further that after the accident he informed the engineman about his efforts at signalling him to stop and the engineman told him that coal dust had blown into his eyes and hampered his vision.

Engineman Carrigan of the work extra stated that the locomotive he was using was equipped with a straight air brake valve, which was in good operating condition. He stated that in making the trips to the Montowese siding to clear trains on the day of the accident, he had no trouble in handling the train. He stated that he was notified by the conductor that the train line was broken after the three cars had been picked up but was not informed what position in the train the car with the broken train line occupied, and he made no effort to ascertain its position, although he realized that it was his duty to do so and to set the car out if it brought the percentage of

operative air brakes below 85 per cent. He was able to control the train just as well after picking up the defective car, the only difference he noticed being in the amount of slack. He stated further that the conductor had at no time notified him as to the position of the switch at the east end of the Montowese siding and he supposed it was closed each time after departing from the switch, inasmuch as he brought the train to a stop before entering and departing from the switch in each case and waited until a signal to go ahead was given him. On the trip to the switch just previous to the one on which the accident occurred, he stopped after coming off the siding and immediately thereafter was given a signal to go ahead. Engineman Harrigan stated that at 4.25 p.m., when ready to back up for the last time, he called in the flagman three times; he then received a signal to back up, and assumed the train was going direct to New Haven without stopping at the siding. After backing about a car length, the westbound local freight train appeared in sight. He stated that his train worked a little harder on this trip than on the previous ones and he used a little more steam on the ascending grade; when the work car was within about 2 car lengths from the top of the ascending grade he shut off steam and made a 20 or 25 pound brake pipe reduction to apply the air brakes, and then released them. He stated that before making this application of the brakes he had 75 pounds brake pipe pressure and 90 pounds main reservoir pressure. He said he was looking back all the while and could see either the conductor or brakeman on the rear plat-

form of the work car. Suddenly some coal dust blew into his eyes and when he was able to open his eyes again, he saw the conductor signalling him to stop. He at once applied the train brakes in emergency, as well as the independent brake, and reversed the engine; the wheels on the locomotive locked and slid the entire distance until the rear end of the train struck the standing cars. He stated that the speed at the time of the collision was probably 6 or 8 miles an hour, and his train did not strike the cars on the siding hard enough to ring the bell on his locomotive. Engineman Harrigan stated that the reason he was unable to stop before colliding with the cars was due to the fact that he had just released the brakes and they were not fully recharged.

Fireman Noonan of the work extra stated that he did not know in what position the switch at Montowese siding was left after each of the trips to the siding on the day of the accident, although approaching it on two different occasions prior to the accident, he noticed it was set for the siding; he heard no conversation between the engineman and conductor regarding the position and did not know it had been left open after the trip there just prior to the one on which the accident occurred. He stated that he heard the conductor tell the engineman that they had one car "cut out" and while he did not hear the conductor tell the engineman anything about the location of the cut out car, it was his impression that the cars to the rear of the cut out car were coupled up with air. Fireman

Noonan stated that when the work extra started from mile-post 5.24 after the work was completed, the engineman said to him, "We are through, we are goin to New Haven," but he did not know whether or not they were first going into the side track to let the local freight train pass, the smoke from the local having just appeared in sight. He said the engineman used steam until the top of the grade was reached and then shut off, and after the train had gone over the summit, made an application of the brakes. The fireman stated that he was putting in coal at that time and heard the brakes applied, whereupon he walked over to the engineman's side of the cab and looked out of the window; he saw the conductor giving stop signals from the rear platform of the work car, the train having reached a point about 8 or 10 car lengths from the switch by that time. He said the engineman then applied the brakes; he then saw the conductor giving a signal to stop quick and the engineman put the brakes into the emergency position and also applied the straight air brake, after which he grabbed the reverse lever, put it in the forward motion, pulled the throttle wide open and blew the whistle for hand brakes. He said that at the time the locomotive was reversed the train was 3 or 4 car lengths from the switch. Fireman Noonan stated further that he knew nothing about the engineman getting dust in his eyes. He also stated that if he had looked out of his own side of the cab he could have seen the position of the switch at the Montowese siding from almost the summit of the

grade, a distance of nearly 3,000 feet, but at the time this point was passed, he was shoveling coal and because after that he looked out of the engineman's side of the cab, he did not see the position of the switch at any time on this trip. He did not think the engineman asked him concerning the position of the switch; at any rate, he did not hear him.

Head Brakeman Vrendenburgh stated that on the day of the accident he went to the Montowese siding only once with the work train when it went to clear another train. On that trip he rode on the rear end of the train and observed that the switch was left open for the siding and that the train did not stop before entering. He said that shortly after noon, while he was standing near the locomotive, he heard the conductor say to the engineman, "You have a broken train line and you have one car of air." Brakeman Vrendenburgh further stated that prior to the time the work extra left mile-post 5.24 for the last time, he had been sent out to protect against the west bound local freight train, and when the work extra was ready to leave he was called in three times, but remained out as he could hear the local approaching.

The primary cause of this accident were, first, the failure of the engineman of work extra 606 properly to control the speed of his train approaching the Montowese siding; and, second, the failure of the conductor either to have the east switch at Montowese siding set for the main line or to have a member of his crew in charge of the switch. A contributing cause of the accident was the failure of the fireman on ap-

approaching the siding, to observe and to notify the engineman of the position of the switch which was on the side of the cab.

At the time of the accident the crew was making their third back-up movement from mile-post 5.24 to the Montowese siding with the defective train line and having but 42-6/7 per cent. of the air brakes operative. This was in direct violation of the Federal Safety Appliance Act, as well as the operating rules of the New York, New Haven & Hartford Railroad, both of which require that not less than 85 per cent of the cars in a train must have their air brakes operative. The conductor knew the location of the car having the broken brake pipe and while the engineman stated that he did not know which car was defective, he admitted that he made no effort to find out; in any event, he knew that with a train of five cars, none of them could have defective air brakes without reducing the percentage to below 85 per cent. Had the air brakes been in operative condition on the required minimum percentage of the cars in this train, either the engineman or the conductor would undoubtedly have been able to bring the work train to a stop in time to avert the accident. The only explanation made by the crew for their violation of rules and neglect of duty in failing to set out the defective car was that the work might be expedited. As long as railroad employees follow practices which involve sacrificing safety for dispatch, accidents of this nature will continue to occur.

During the various movements between mile-post 5.24 and the Montowese siding the crew of the work extra left the

east switch to the siding set for the siding practically all day, without anyone in charge of same, in violation of rule 104 of the New York, New Haven & Hartford Railroad, which reads in part as follows:

> "Switches must be left in proper position after having been used. Conductors are responsible for the position of the switches used by them and their trainmen, except where switch-tenders are stationed.
> "A switch must not be left open for a following train unless in charge of a trainman of such train."

There was no understanding between the conductor and engineman as to the position in which the switch was left during the day, nor did the engineman understand that the train was to take the siding, when it left mile-post 6.24 after the work had been completed. Had these matters been understood by the engineman it is probable that the accident might have been prevented.

Rule 1245 of the company's book of operating rules, states in part:

> "When not engaged in firing, they (firemen) must observe all fixed signals and must notify engineman of any evidence of danger or irregularity. They must frequently look back to see if the train is complete and in good order, and must keep in mind all orders and notices affecting the safe movement of the train."

Had Fireman Noonan been on the alert and had he observed the indication on the switchstand at the east end of the Montowese siding, as he was in position to do, he could have warned the engineman of the impending danger in time to have averted the accident.

Conductor Sullivan entered the service of the New York, New Haven & Hartford Railroad Company as freight brake-

man in September, 1908, was promoted to freight flagman in December, 1910, and to freight conductor in March, 1912. His record was good. Engineman Darrigan entered the service as fireman in December, 1902, and was promoted to engineman in December, 1912. His record is clear. Fireman Noonan entered the service as fireman in October, 1917, and his record is clear.

None of the employees involved in this accident had been on duty in violation of the provisions of the Hours of Service Law.

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