INTERSTATE COMMERCE COMMISSION

REPORT OF THE CHIEF OF THE DIVISION OF SAFETY COVERING THE INVESTIGATION OF AN ACCIDENT ON THE BALTIMORE & OHIO SOUTHWESTERN RAILROAD AT ORIENT, OHIO, ON AUGUST 12, 1915

OCTOBER 12, 1915

To the Commission

On August 12, 1915, there was a rear end collision between an extra passenger train and a freight train on the Baltimore & Ohio Southwestern Railroad at Orient, Ohio, which resulted in the death of 6 passengers and the injury of 32 passengers After investigation as to the cause and nature of this accident, I beg to submit the following report

The Midland subdivision of the Baltimore & Ohio Southwestern Railroad, on which this accident occurred, is a single-track line, extending from Columbus, Ohio, to Midland City, Ohio, a distance of 71 miles Trains are operated by train orders and time-table rights. A permissive manual block system is in operation

Westbound passenger extra, an excursion train, consisting of engine 1467, 1 combination car, and 5 coaches, all of wooden construction, en route from Sandusky, Ohio, to Bloomingburg, Ohio, was in charge of Conductor Schefler and Engineman Glancy, and left Sandusky at 7 40 p m At Newark, Ohio, engine 1467, on account of a broken trailer truck spring, was exchanged for engine 1474. The train arrived at Columbus at 12 49 a m, where it received the following train orders

Order No 49

Engine 1467 run extra, leaving Columbus on Wednesday August 11 as follows with light over all third class and extra trains Leave Columbus 10 40 p m, Broad Street 10 45 p m, Grove City, 10 55 p m, Orient 11 05 p m, Derby 11 15 p m, Mount Sterling 11 23 p m, Madison Mills, 11 30 p m, arrive Bloomingburg 11 35 p m

Order No 51 To all west

Run very slowly and carefully between Derby and Pleasant Corners looking out for washouts account heavy rains

Order No 54 To all west

Water running over track at Era and just west of Grove City, run carefully there

Order No 57 To all west

Run carefully through cut west of Greenlawn

Order No 3

Extra 1467 west run, 2 hours 30 minutes late C C C & St L Junction to Bloomingburg

The conductor and engineman were also given a message authorizing them to use engine 1474 on train orders Nos 49 and 3, in place of engine 1467 The train departed from Columbus at 1 28 a m At Gn tower, 1 4 miles west of Columbus, further instructions were received relative to track conditions and the train departed from that point at 1 45 a m , having been given a clear block signal At Broad Street, a siding about a mile west of Gn tower, the train was stopped by a brakeman of train 199, which was on the siding at that point, and Engineman Glancy communicated by telephone with the operator at Gn tower relative to track conditions After leaving Broad Street, the train proceeded about 5 1 miles when it stopped on account of bad track, about 1¼ miles east of Grove City At this point the flagman of extra 1474 went back to protect the rear of his train and stopped train No 199, which was following After being delayed about 15 minutes while repairs were being made to the track, extra 1474 departed and stopped again at Grove City station, where the section foreman got on the engine and rode to Pleasant Corners a distance of about 3 2 miles, at which point the train slowed down to let him off The next stop was at the water tank located 200 feet east of Orient station, which is 3 1 miles west of Pleasant Corners The train had been standing at this point about a minute or a minute and a half, taking water when the collision occurred at 3 20 a m

Westbound freight train No 199, en route from Newark to Midland City, in charge of Conductor Hagan and Engineman Stephens, left Newark at 6 50 p m The train arrived in Columbus yard about 9 p m At Gn tower, Columbus, it received train orders Nos 49, 51, and 54, and departed at 10 59 p m , going to the west end of the siding at Broad Street, about 1 mile distant, where it had cars to pick up While at this point the operator at Gn tower communicated with the engineman by telephone and instructed him to return to Gn tower with the engine for further orders A short time later the engine of train No 199 returned to Gn tower, where the crew received train order No 3 and a message stating that engine 1474 would be on the special instead of engine 1467, as stated in order No 49 Train 199 was then given a clearance card showing the numbers of the orders delivered to it and authorizing it to follow the special in 10 minutes The engine then departed from Gn tower at 1 25 a. m and proceeded to Broad Street, where it was passed by extra 1474. After coupling to its train, No 199 departed from

Broad Street 10 minutes behind extra 1474 Leaving Broad Street the train consisted of engine 2669, 20 loaded and 14 empty cars, 1,120 tons About 1¼ miles east of Grove City the train was stopped by the flagman of extra 1474 It followed the extra from this point, over taking it again just east of Grove City station After leaving Grove City extra 1474 was not again seen until just before the accident occurred When the train had reached a point about 500 feet east of Orient station, and was running at a speed estimated to have been between 5 and 10 miles per hour, it collided with extra 1474 at the water tank

The locomotive of train 199 demolished the rear coach of extra 1474 This car was burned at the scene of the accident The second

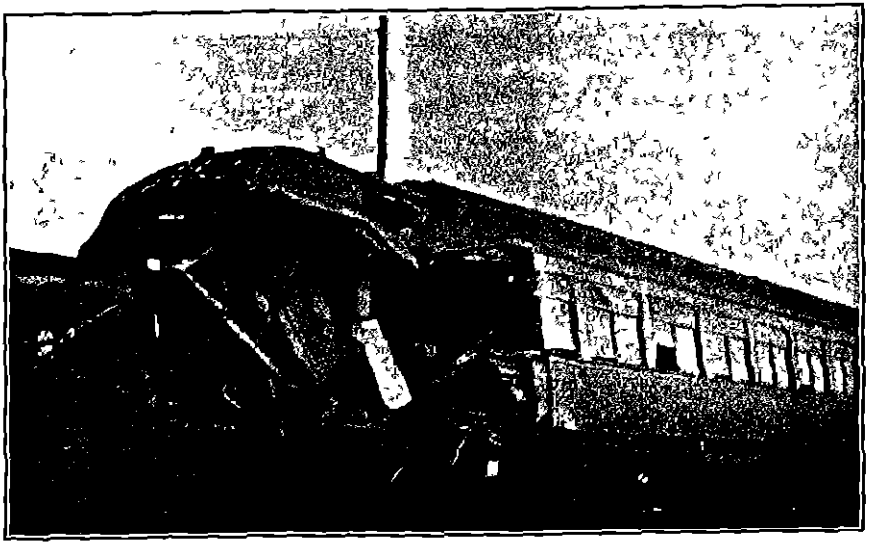
No 1.—View showing demolished rear car with the car next to the rear turned on its left side.

rear car in the train was a wide vestibule car, and its east end was crushed in for a distance of about 10 feet and the car turned over on its left side The third car had one corner post broken The front end of engine 2669 was slightly damaged Illustration No 1 shows the demolished rear coach and the second rear coach turned on its left side Illustration No 2 is a view of the damaged end of the second rear coach after it had been righted and placed upon its trucks

Beginning at a point about 0 7 of a mile east of Orient station and proceeding westward the track is tangent for about 850 feet This is followed by a 2° curve to the right 2,700 feet in length, followed in turn by a 1° 14′ curve to the right 1,200 feet in length It was 2,300 feet west of the east end of the first mentioned curve that the accident occurred A view of about 750 feet may be ob

tained from the engine of an approaching west bound train At this point there is a grade of 0 5 per cent descending westward Illustration No 3 shows the view approaching the point of accident from the east

Engineman Glancy, of extra 1474, stated that upon arrival at Orient he stopped his train at the water tank, but that on account of the tank being a little high it was necessary for him to move his engine backward about a foot before water could be taken He had just completed this backward movement and was in the act of reaching for the whistle cord to signal the flagman to go back and protect the rear of the train, when someone shouted for him



No 2.—Damaged end of the car next to the rear

to go ahead and at the same time the air whistle signal sounded He immediately opened the throttle and the train had just started when the collision occurred He stated that the maximum speed of his train from Grove City to Orient was about 15 miles per hour Engineman Glancy said that when placing his engine at the water spout at Orient he looked back and was sure that he saw his flagman going back with red and white lanterns He thought that the force of the collision drove his train forward about 1½ car lengths

Conductor Schefler, of extra 1474, stated that his train stopped at a point about 1¼ miles east of Grove City and while waiting for the track to be repaired train No 199 came up behind and stopped When leaving this point he was riding in the rear car and stated that he is sure train No 199 did not wait 10 minutes after the departure of his train before following it He stated further that shortly after

leaving Grove City Flagman Fuller told him that he had had a full understanding with Engineman Stephens, of train 199, regarding the work that extra 1474 had to do Conductor Scheffer said that leaving Grove City he was riding on the rear of his train and remained there until it arrived at Orient When his train arrived at Orient Flagman Fuller was somewhere in the train, and about 15 seconds after the train stopped he came out of the rear car and started back to flag Shortly after his train stopped he heard the roar of train No 199 approaching and shouted to his flagman to hurry A little later he saw the headlight of the locomotive of train No 199, whereupon he stepped to one side to watch it approach, expecting

No 3 —View approaching point of accident from the east

that it would stop When he realized that No 199 could not stop he stepped to the rear platform and with the air whistle signaled the engineman to go ahead He estimates that Flagman Fuller was back about 400 feet when the engine of train No 199 passed him, and that the speed of train No 199 was about 10 miles per hour when the collision occurred Conductor Scheffer stated that on account of both trains holding the same slow orders governing their movements, and because of the warning Flagman Fuller had given Engineman Stephens of train No 199, he did not consider it necessary to use a fusee, as prescribed by rule No 99-C

Flagman Fuller, of extra 1474, stated that when his train came to a stop about 1¼ miles east of Grove City he went back and flagged train No 199 When No 199 had stopped he climbed upon the engine and told Engineman Stephens that extra 1474 had work to

do at all stations and to look out for them He also told him, as a matter of precaution, that he supposed his train would take water at Orient He stated that as his train was leaving Grove City station train No 199 was approaching Flagman Fuller further stated that when extra 1474 stopped at Orient to take water he was at the forward end of the rear car and assisted several passengers who got off at that point After completing this work he passed through the rear coach, secured his flagging outfit, and had started back to flag when he heard train No 199 approaching, whereupon he began to run When he had reached a point about three or four telegraph poles from the rear of his train he saw the headlight of train No 199 about one quarter of a mile distant, as the train approached he signaled with his red lantern for it to stop, but his signal was not answered He continued to run toward the oncoming train until he was about five or six telegraph poles from the rear end of his train, at which point the engine of train No 199 passed him Flagman Fuller said that although he had fusees he did not consider it necessary to throw off a fusee before stopping at Orient, as he had told the engineman of No 199 to look out for his train at all stations, he considered it the first duty of a flagman to attend to his passengers and then go back and flag He stated further that he generally went back to protect his train without being signaled to do so by the engineman, and that it is his duty to go back without waiting for a signal

Engineman Stephens, of train No 199, stated that after his train arrived at Broad Street, and while the train crew were filling out their train, the operator at Gn tower called on the telephone and instructed them to return to the tower for further orders, whereupon he returned with his engine to the tower and was given three train orders and a clearance card, Form A, showing the numbers of the orders that had been delivered to him and reading "Follow 10 minutes behind special' After receiving the orders and clearance he returned with his engine to the west end of Broad Street and there waited for extra 1474 to pass After the extra had passed, his train finished its work and departed about 2 a m He stated that his train was stopped by Flagman Fuller about 1¼ miles east of Grove City, on account of extra 1474 being held waiting for repairs to be made to the track At this point Flagman Fuller got upon the engine and informed him that extra 1474 had work to do at all stations, but nothing was said about looking out for them, although it was understood that he would do so Engineman Stephens further stated that his train waited 10 minutes after the departure of extra 1474, his train was again stopped near Grove City station on account of extra 1474 ahead, that extra 1474 departed from this point

at 2 50 a m, and that his train waited until 3 02 a m before proceeding He stated that approaching Orient, when about 20 car lengths east of the east switch, he made a 20 pound reduction in his train line pressure, with the expectation of bringing his train to a stop at the west switch of the passing siding, as he was to meet an eastbound extra there After reducing the speed of his train to about 12 miles per hour he released the brakes, when rounding the curve he discovered the markers on the rear of extra 1474 about six car lengths ahead He immediately made an emergency application of the brakes and applied sand, and, when about one car length from the rear end of the train, reversed his engine He further stated that his maximum speed between Pleasant Corners and Orient was 15 miles per hour, and he estimates that his train was running about 5 miles per hour at the time the collision occurred Engineman Stephens insists that he was running his train under control approaching Orient, but that the heavy rain which was falling at that time interfered with his vision and also prevented the sand from becoming effective He stated that had the passenger extra been standing at the station platform, instead of the water tank, he would have been able to stop before reaching the rear end of the standing train Engineman Stephens stated that he expected extra 1474 would be gone before his train reached Orient, or in case of meeting with any delay it would immediately be protected by a flag After he discovered the markers, he saw some one standing near the rear coach, but could not say whether it was the flagman or some other person He said that his engine was equipped with an oil headlight and that it was in good condition for that kind of a headlight He stated that at times it was impossible to tell whether or not it was burning without getting down to look at it, and that it was not of any use as far as illuminating the track any great distance ahead was concerned The air brakes were tested before leaving Broad Street, and were in good working order

Fireman Davidson of train No 199 stated that while his train was standing at Grove City he heard Flagman Fuller tell Engineman Stephens "Look out for us, we are going to make all stops between here and Bloomingburg" He stated that after extra 1474 left Grove City his train waited 10 minutes and departed at 2 50 a m His first intimation of the impending accident was the emergency application of the brakes He immediately got down upon the step and jumped off just before the collision occurred He estimates the speed of his train at that time to have been between 4 and 6 miles per hour He stated that the only person that he saw, whom he might have taken to be a flagman, was a man with a lantern standing about one car length from the rear coach

Brakeman Rodgers of train No 199 stated that approaching Orient he was riding on the fireman's seat and was looking ahead He stated that he saw the flagman about two car lengths from the rear of extra 1474, and that when the train came to a stop the flagman was standing at the rear end of the engine of train No 199

Operator Randall at Gn tower stated that train No 199 arrived at his tower about 11 p m and pulled down to the west end of Broad Street siding About 1 o'clock the dispatcher asked him to get the crew for a train order He communicated with the conductor by telephone and the crew returned to the office with the engine The order was completed at 1 25 a m and the dispatcher said "Clear him and tell him he can follow the special in 10 minutes" Operator Randall stated that he then wrote on the clearance form A "Follow 10 minutes behind the special," and delivered it, together with a copy of the train orders After the engine had returned to the west end of the siding, and after the passenger train had left Gn tower, he again communicated with the crew of train No 199 by telephone in regard to the condition of the track

Superintendent Brooke stated that trains on the Midland subdivision are operated under a permissive manual block system, and that under this system no train is allowed to follow a passenger train from an open telegraph office until the passenger train clears the block ahead, except that a train passed at a nontelegraph siding may follow a passenger train after an interval of 10 minutes If the nontelegraph office is provided with a telephone the crew is not required to communicate with the nearest block station, but may follow a passenger train after the 10 minute interval He stated that under the conditions obtaining it was permissible for train No 199 to follow extra 1474 from Broad Street in 10 minutes He also stated that in this block, 21 miles in length, a freight train followed a passenger train in 10 minutes, and that an opposing freight train was about to be admitted to this same block and that under the rules such a practice is permissible Superintendent Brooke admitted that the block system in this particular instance did not afford any additional protection

This accident was caused by a freight train following a passenger train in a block without being under control, as required by the rules of the Baltimore & Ohio Southwestern Railroad, for which Engineman Stephens is responsible General Rule 108 reads as follows

Unless automatic block signals are used or other practice is authorized, a positive block will be maintained behind all passenger trains at all times and in all places, except that when a passenger train passes a train at a non telegraph siding the train so passed will wait 10 minutes after the departure of the passenger train, and may then proceed under control until the next

telegraph station is reached or it is ascertained that the block ahead is clear "Under control" means running at such speed that it can be stopped by the locomotive engineer within his range of vision

Under this rule, Engineman Stephens was required to proceed a distance of 20 miles at a rate of speed that would have enabled him to stop his train at any time within his range of vision, on a dark, stormy night, with an oil headlight that at times it was impossible to tell whether or not it was burning without getting down to look at it He knew the condition of the weather and that the condition of the track was bad, he knew that extra 1474 was ahead of him and that he had already overtaken it twice after waiting 10 minutes In view of this he should have used extreme caution through this block The fact that train No 199 overtook extra 1474 at Grove City station, waited there 10 minutes as the evidence indicates, and again overtook it at Orient, after it had been stopped a little more than a minute, would indicate that train No 199 was running at a speed considerably faster than extra 1474, or else that it did not wait for the full 10 minutes to elapse before following it from Grove City

Contributing to the cause of this accident was the failure of Conductor Schefler and Flagman Fuller of extra 1474 properly to protect their train

Rules 99, 99 (A), and 99 (C) are as follows

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 there will place two torpedoes on the rail on the locomotive engineer's side

99 (A) Should a train be heard or seen approaching before the flagman has reached the required distance he must at once place two torpedoes on the rail and if by night or during foggy or stormy weather display a burning red fusee, continuing in the direction of the approaching train

99 (C) Should the speed of the train be reduced and its rear thereby endangered, making it necessary to check a following train before a flagman can get off a burning fusee shall be thrown off at intervals to insure safety

Under rule 99 the flagman should have gone back immediately after the train stopped, with proper signals to protect the rear of his train Rule 99 (C) required that the flagman of extra 1474, which was running at a slow rate of speed, should have thrown a lighted fusee from the rear of the train as a warning to following trains Although this train was provided with fusees, none was used after leaving Columbus

General rule 803, defining the duties of passenger conductors, reads as follows

The conductor is responsible for the movement safety and proper care of his train and for the vigilance and conduct of the men employed thereon and must report any misconduct or neglect of duty

This rule places the responsibility for the observance of rule 99 and its subdivisions by all members of the train crew upon the conductor It was his duty to know that Flagman Fuller went back promptly and provided the proper protection for the rear of his train. It was also his duty to know that when the train was running at a slow rate of speed a fusee was thrown from the rear of the train to check following trains Conductor Schefler was standing on the rear platform of the rear car, and he knew that these rules were not obeyed He was not engaged with other duties, but was occupying this position for the express purpose of protecting his train, yet when his train made an unexpected stop at the water tank and the flagman did not immediately appear he made no attempt to protect the train himself—not even when he heard train No 199 approaching

Flagman Fuller violated rule 99 in not going back immediately to protect the rear of his train He violated rule 99(A) in not lighting a fusee when he heard the approaching train, and he violated rule 99(C) by not throwing off a lighted fusee at intervals when his train was running at a reduced rate of speed Flagman Fuller used extremely poor judgment in assisting passengers to alight at other than the regular station stop, while the rear of his train was left unprotected against a train which he knew to be following closely

Engineman Stephens entered the service of the Baltimore & Ohio Southwestern Railroad as fireman March 6, 1903, and was promoted to freight engineman August 9, 1906

Conductor Schefler entered the service as brakeman, November, 1886, he was promoted to freight conductor March 19, 1890, and was promoted to passenger conductor July 1, 1913 He has a clear record since 1906, and during the year 1913 three merit entries had been placed on his record

Flagman Fuller entered the service as freight brakeman January 30, 1902, he was promoted to freight conductor March 26, 1911 and was made a passenger brakeman January 22, 1912

While the direct cause of this collision was the failure of the employees involved properly to perform their duties, the system of operation in effect rendered this accident possible

This section of single track, 70 miles in length, is divided at night into five block sections, three of which are 10 miles in length, one of 15 miles, and one of 21 miles In each of these sections there are one or more intermediate sidings at which trains may meet or pass The investigation disclosed that at the time of the accident in the block 21 miles in length, where the collision occurred, a freight train was permitted to follow a passenger train in 10 minutes, from an outlying siding located about one mile from the entrance to the block and connected by telephone with the tower at that entrance, and that

after the passenger train had passed this block station the train dispatcher through the operator was able to communicate with the crew of the freight train Investigation also develops that, had not the accident occurred, an opposing freight train would have been admitted into this same 21-mile section

A proper observance of rule 108 requires that a positive block be maintained behind all passenger trains at all times with one exception This exception permits a train passed by a passenger train at a nontelegraph siding to follow the passenger train after an interval of 10 minutes This exception indicates that its purpose is to provide for the movement of a train which had entered a block and for some reason was unable to clear the block for a following passenger train and was compelled to take a siding to be passed where no means of communication were available In this instance no such condition existed Instead, the train dispatcher authorized by clearance card a freight train, after waiting 10 minutes, to follow a passenger train in the block from a siding located less than a mile from the entrance to the block and from which communication with the freight train could be, and was had, after the passenger train had entered the block Under the construction placed on rule 108 by the Baltimore & Ohio Southwestern Railroad the superintendent states that such a practice was permissible

In view of the conditions obtaining and the obvious intent of rule 108, there does not appear to be any reason, except to expedite the movement of train No 199, why it should not have been held until the block was clear It is admitted by the superintendent that in this instance the block system, as operated, did not afford any additional protection

A manual block system, operated in the manner in which this system was operated, fails to give the protection which a block system is designed to afford—it is a block system in name only, as it furnishes no better protection than the time interval system

On April 1, 1914, for economic reasons, two operators were taken off at Derby and two at Madison Mills, thereby reducing these offices from day and night offices to day offices only, and on October 23, 1914, a further reduction in the number of night offices on this line was made by taking off two operators from Grove City, making that a day office, and by taking off one operator from Sabina, leaving that office operated from 5 30 a m until 11 20 p m

If safety permitted, and ordinarily the traffic conditions were such that the Baltimore & Ohio Southwestern Railroad officials deemed it expedient, in the interests of economy, to close these night offices, then it would appear that when conditions did arise that the volume of traffic was increased and the factor of safety thereby reduced, as in this instance, by the movement of a special passenger train at

night, measures should have been taken to insure the safe operation of trains, either by maintaining an absolute block or by temporarily restoring such block offices as would render the block system effective

The rear coach of extra 1474, in which all of the fatalities occurred, was of wooden construction, with open platforms, and was built in 1883 by the Ohio Falls Car Co Its length was 50 feet 5 inches and its weight 50,600 pounds, and it had a seating capacity of 58 The superiority of cars of all-steel construction over those of wooden construction has been repeatedly demonstrated, and if the cars in this passenger train had been of all-steel construction the number of fatalities resulting from this accident undoubtedly would have been much less

Respectfully submitted

H W BELNAP,
Chief, Division of Safety

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