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INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
PENNSYLVANIA RAILROAD

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BRADFORD, OHIO

---

MAY 21, 1939

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INVESTIGATION NO. 2351

SUMMARY

Inv-2351

Railroad: Pennsylvania  
Date: May 21, 1939  
Location: Bradford, Ohio  
Kind of accident: Rear-end collision and third train col-  
lided with wreckage  
Trains involved: Freight : Freight : Freight  
Train numbers: Extra 6978 Extra 6821 Extra 6999  
(First NW-88) (Second NW-88) (NW-88-84)  
Engine numbers 6978-6814 6821 6999-6813  
Consist: 87 cars and 54 cars and 85 cars and  
caboose caboose caboose  
Speed: Standing 22-35 m.p.h. 25-65 m.p.h  
Operation: Timetable, train orders, and manual block-  
signal system.  
Track: Double; tangent; 0.30 percent descending  
for eastward movements  
Weather: Foggy  
Time: 2:15 a.m., and 3:05 a.m., respectively  
Casualties: 4 killed, 4 injured  
Cause: Failure to provide flag protection for  
the first train; failure to control  
properly the speed of the second train  
in accordance with permissive-block  
indication, and failure to protect the  
third train from the wreckage

Inv-2351

July 10, 1939.

To the Commission:

On May 21, 1939, there was a rear-end collision between two freight trains on the Pennsylvania Railroad at Bradford, Ohio, the wreckage of which was struck by a third freight train traveling in the same direction on an adjacent track, resulting in the death of four employees and the injury of four employees.

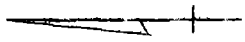
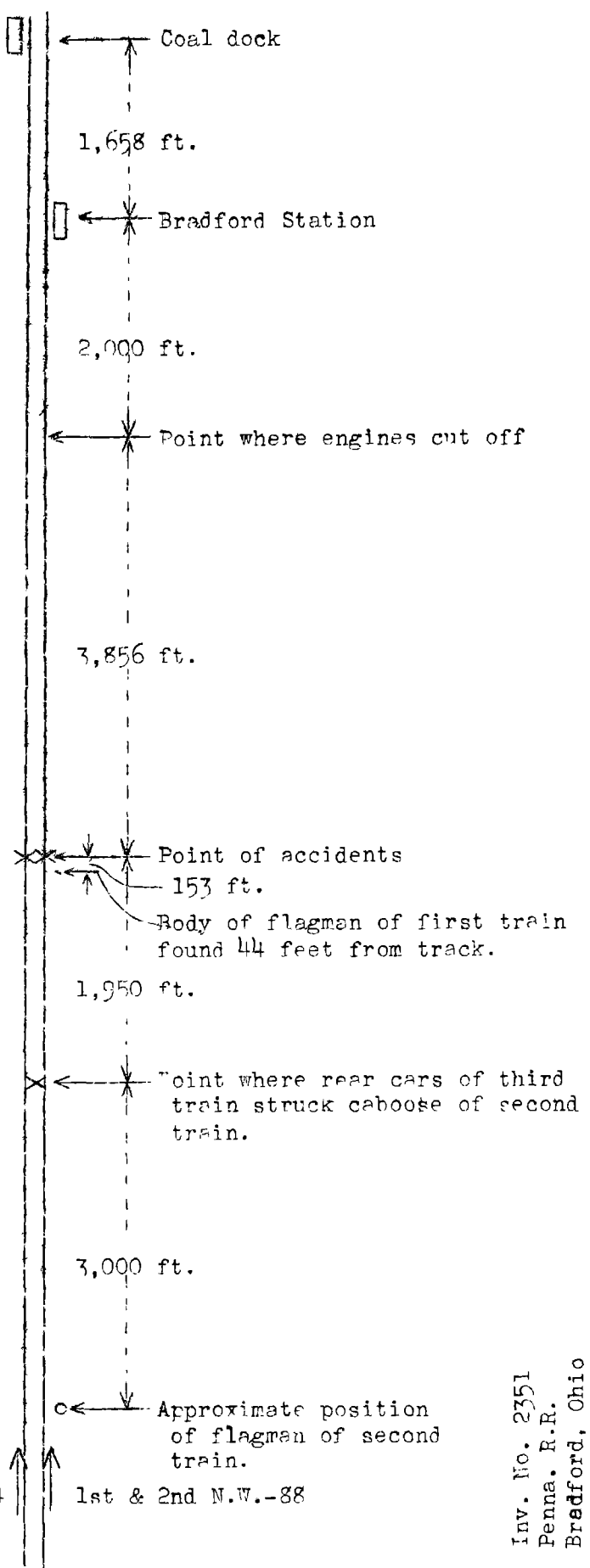
#### Location and Method of Operation

This accident occurred on that part of the Logansport Division which extends between Logansport, Ind., and Bradford, Ohio, a distance of 114.4 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated by timetable, train orders, and a manual block-signal system. The eastward and the westward tracks are designated as No. 1 and No. 2, respectively. The trains involved in the rear-end collision were being operated eastward on track No. 1 and the train which struck the wreckage was traveling against the current of traffic on track No. 2. The rear-end collision occurred on the eastward track at a point 5,856 feet west of the station at Bradford. Approaching this point from the west the track is tangent more than 18 miles to the point of accident and a considerable distance east thereof. The grade is 0.30 percent descending eastward a distance of 1.2 miles to the point of accident. The tracks are laid on a fill about 10 feet in height. The maximum authorized speed for freight trains is 45 miles per hour.

Operating rules provide in part as follows:

- Rule 11. A train finding a fusee burning on or near its track must stop and extinguish the fusee, and then proceed with caution prepared to stop short of train or obstruction.
- Rule 99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees.

o	Bradford, Ohio
	1.1 mi.
X	Point of accident
	5.6 mi.
o	Stelvideo
	5.2 mi.
o	Meeker
	1.6 mi.
o	Woodington
	7.2 mi.
o	Union City, Ohio
	Ind.
	53.2 mi.
o	Kent
	25.1 mi.
o	Bunker Hill
	10.5 mi.
o	Anoka
	4.9 mi.
o	Logansport, Ind.



N.W.-88-84

1st & 2nd N.W.-88

Inv. No. 2351  
 Penna. R.R.  
 Bradford, Ohio  
 May 21, 1939.

\*\*\*

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fuseses must be thrown off at proper intervals.

Flagman's Signals.

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Night Signals - A red light,  
A white light,  
Torpedoes and fuseses.

Rule 101 b. When a sudden or severe application of the brakes takes place or an equipment failure occurs that may obstruct adjoining tracks, all tracks must be protected immediately.

Rule 280 requires that freight trains receiving a permissive block-signal indication must proceed with caution prepared to stop short of train or obstruction.

Rule 305. Block signals govern the use of the blocks, but, unless otherwise provided do not \*\*\* dispense with the use or the observance of other signals whenever and wherever they may be required.

The block in which this accident occurred extends between Union City, Ind., and Bradford, Ohio, a distance of 20.7 miles.

Fog pockets existed in the vicinity and there was a dense fog at the point of the accident, which occurred at 2:15 a.m., and 3:05 a.m., respectively.

Description

Extra 6978 East, designated as First NW-88, consisted of 84 loaded and 3 empty cars, and a caboose, hauled by engines 6978 and 6814, and was in charge of Conductor Thomas and Enginemen Powlen and Schork. This train left Anoka, 4.9 miles east of Logansport, at 10:40 p.m., according to the train sheet, passed Union City, the last open station, 19.59 miles west of the point of accident, at 1:24 a.m., and stopped at Bradford at 2:14 a.m., according to the testimony, and about one minute later, while the locomotives were being supplied at the coal dock, about one-half

mile distant, the rear end was struck by Extra 6821 East.

Extra 6821 East, designated as Second NW-88, consisted of 54 loaded cars and a caboose, hauled by engine 6821, and was in charge of Conductor Gilbert and Engineman Pinney. This train left Anoka at 11:07 p.m., according to the train sheet, arrived at Union City at 1:28 a.m., where it was stopped by a red fusee, departed from that point under a permissive block-signal indication at 1:37 a.m., and, while traveling at a speed variously estimated from 22 to 35 miles per hour, collided with the rear of Extra 6978 East.

The caboose and the rear car of the first train were destroyed and the next three cars were derailed and badly damaged. The engine of the second train was derailed and stopped upright on the eastward track with the rear portion of the tender fouling the westward track; both were badly damaged. Both main tracks were blocked by the wreckage.

Extra 6999 East, designated as NW-88-84, consisted of 85 loaded freight cars and a caboose, hauled by engines 6999 and 6813, each of which was equipped with an auxiliary water tank. This train, in charge of Conductor Hahn and Enginemen Tikfer and Messersmith, left Anoka at 12:25 a.m., according to the train sheet, passed Union City, where it received a clear block-signal indication and in order to expedite its movement it was routed via the westward track; it departed at 2:33 a.m., and, while traveling at a speed variously estimated from 25 to 65 miles per hour, collided with the wreckage of the preceding trains.

The leading engine stopped on its right side, headed northwest with its front end at the foot of the embankment; the tender and the auxiliary water car stopped on their sides parallel and adjacent to the locomotive, both being immediately west thereof. The second engine stopped on its left side, headed south, with its tender and the auxiliary water car west of and closely adjacent to the locomotive; all were on the roadbed at right angles thereto. The wreckage from the rear-end collision, the nine head cars of the second train, and the fifteen head cars of the third train were piled on and adjacent to the tracks within a distance of 451 feet. Many of these cars were destroyed. In addition, the twenty-fifth, twenty-eighth, twenty-ninth and thirtieth cars of the third train were derailed; also, the forty-eighth car and the following thirteen cars were derailed to the south and they collided with the rear end of the second train, demolishing the caboose and derailing and badly damaging the three rear cars. In the vicinity of the rear end of the second train a total of 17 cars and the caboose were piled in a mass of wreckage within a dis-

tance of 380 feet on and adjacent to the tracks; 12 of these cars were destroyed and the others were badly damaged.

The employees killed were the flagman of Extra 6978, the fireman of Extra 6821 and the engineman and the fireman of the leading engine of Extra 6999. The employees injured were the engineman of Extra 6821, the head brakeman of Extra 6999, and the engineman and the fireman of the second engine of that train.

#### Summary of Evidence

Engineman Powlen, of the leading engine of Extra 6978, stated that his train stopped about 15 minutes each at both Kent and Woodington, 73.9, and 13.5 miles, respectively, west of Bradford. The delay at Kent was to repair the stoker which had failed about 15 miles west thereof. The weather was clear en route to Ridgeville, 33 miles west of the point of accident, but thereafter light fog banks were encountered intermittently en route to Union City. Heavier fog banks were encountered at Meeker, 11.9 miles west of Bradford, and beyond, and when his train passed the point where the rear-end collision later occurred the fog was sufficient to restrict the view of the rear lights of a caboose to a distance of about 10 or 15 car lengths. His train stopped at Bradford about 2:13 or 2:14 a.m., and both locomotives were at the coal docks east of the station, getting supplies, when the accident occurred. He has worked about 12 or 15 years on the portion of the division involved and it is a common occurrence for fog banks to rise suddenly at various points.

Fireman Ross, of the leading engine of Extra 6978, corroborated in substance the testimony of his engineer,

Head Brakeman Nicoles, who was on the leading engine of Extra 6978, corroborated the testimony of the engineman as to the density of the fog banks after passing Meeker and at the point where the accidents later occurred.

Engineman Schork, of the second engine of Extra 6978, corroborated the testimony of Engineman Powlen as to fog pockets. He said that on previous occasions he had been questioned about delays and when he attributed them to foggy weather the excuse was satisfactory.

The statement of Fireman Williams, of the second engine of Extra 6978, added nothing of importance.

Conductor Thomas, of Extra 6978, stated that he was in the caboose en route to Woodington and that Flagman Schaefer, who was an efficient employee, also was in the caboose and was normal in every respect; the flagman left a burning fusee when recalled at Kent. Approaching Woodington, 7.2 miles east of Union City, the conductor saw a blaze on the train at a point some distance forward and told the flagman he would apply the brakes from the caboose. The flagman dropped a burning fusee and when the train stopped he alighted and flagged Extra 6821. Conductor Thomas hurried forward and discovered burning paper on a flat car, the thirty-fourth or thirty-fifth car in the train. When he left the caboose the markers were burning properly, the flagman's red lantern was lighted and there was an ample supply of torpedoes and fusees. After extinguishing the fire he and Brakeman Skelton rode the flat car to Bradford where he noted that the train stopped at 2:14 a.m. The locomotives were detached and moved to the coal dock, about one-half mile distant. Immediately after the train stopped he proceeded toward the rear. A light fog restricted the view to about 25 car lengths at his location. He had progressed about 12 car lengths when a run-in of slack occurred indicating a rear-end collision; he said that this occurred at 2:17 a.m. Arriving at the rear of the train he discovered that the debris fouled both main tracks. After observing the wreckage and getting no response to his calls he hastened toward Bradford to report the accident. Stopping at a telephone en route he notified the operator of the collision, and then flagged one of his engines which was returning from the coal dock and rode back to the tower where he was informed of the movement on the westward track of Extra 6999 East. He, the road foreman of engines, and the assistant road foreman of engines then drove an automobile westward in an attempt to flag the third train but it had collided with the wreckage before they arrived.

Brakeman Skelton, of Extra 6978, stated that the flagman acknowledged the recall at Woodington with a proceed signal. He and the conductor boarded the flat car and remained on it until arrival at Bradford, and then he proceeded to the head end of the train.

Engineman Pinney, of Extra 6821, stated that the air brakes functioned properly between Anoka Junction and the point of accident. A permissive block-signal indication was received at the entrance to each block en route after departing from Anoka. Approaching Kent he saw a burning fusee and reduced the speed to about 15 miles per hour and the fusee burned out before he reached it. About 8 miles west of Union City he saw the rear end of Extra 6978 about  $1\frac{1}{2}$  miles distant and reduced the speed to about 18 miles per



hour and the preceding train disappeared. Approaching Union City he saw another fusee which burned out before he reached it. Just west of Meeker he was flagged and he stopped about 40 car lengths from the rear of Extra 6978. He wanted a sufficient interval after its departure to prevent overtaking it and after passing over the railroad crossing at Meeker he could see about two miles and it was not in view. About 1-3/4 miles west of the point where the accident occurred the speed of his train was about 28 miles per hour. Expecting to find the rear of the preceding train standing about 1 1/2 miles distant, he closed the throttle and let the train drift down the grade. After drifting about 1/2 mile or more he closed his windshield and removed his goggles, and both he and the fireman were on the alert for a fusee or a flagman. The sky was clear and the view seemed to be unrestricted for safe movement about a mile but suddenly a bank of dense fog about 18 feet in height appeared, and before they had moved one car length into the fog he and the fireman simultaneously saw the caboose about three car lengths distant, at which time the speed was about 22 miles per hour. He made an emergency application of the brakes and then the collision occurred. When the engine was within about 10 feet of the caboose he thought he saw a man standing on the south side of the platform and another man with an electric lantern in his hand standing on the ground with one hand on the handhold in the act of getting on or off. The man with the electric lamp ran toward the right-of-way fence. He expected to strike torpedoes and to see a fusee but none were encountered and he was not flagged by anyone just prior to the collision. After the accident occurred some time was consumed in reporting the accident by telephone from a farm house. After he returned to the wreckage he and the head brakeman were searching for the flagman of the preceding train when they heard Extra 6999 approaching and ran from the scene. Engineman Pinney said that he had encountered no fog and the view was clear until the locomotive entered the fog at the point of accident.

Head Brakeman Schwartz, of Extra 6821, stated that he was in the cupola of the tender from which a forward view is not afforded. At Union City he was out on the tender and observed that they received a permissive block indication. He observed no fog until the train arrived in the vicinity of Woodington. After leaving Woodington he was eating his lunch in the cupola and was not particularly observing the movement, but his attention was attracted to a fog when the engineman applied the brakes and sounded several short blasts of the whistle as the collision occurred. The speed at this time was between 30 and 35 miles per hour. They exploded no torpedoes prior to the accident. Immediately after the accident occurred he observed that a fog existed

at that point which would restrict the view of caboose markers to a distance of about 5 car lengths. About 5 minutes after the collision his conductor instructed him to care for the injured fireman. Shortly afterwards he was relieved of this duty and was searching for the flagman of the first train when the third train, which he estimated was traveling about 50 miles per hour, struck the wreckage. He thought that the reason he did not protect the westward track after the rear-end collision occurred was because of his nervous condition.

Conductor Gilbert, of Extra 6821, stated that he and his flagmen were in the caboose from Anoka Junction to the point of accident. The maximum authorized speed was not exceeded at any time. The weather was clear and he did not observe any fog until they were in the vicinity of Stelvedio, about 7 miles west of Bradford. From that point eastward they passed through pockets of fog at various points. When nearing Bradford an emergency application of the brakes was followed by a severe stop, at which time he observed that it was 2:15 a.m. Remarking to his flagmen that he believed they had collided with the preceding train, he instructed him to proceed westward and protect both tracks. The flagman immediately departed with a red and a white lantern, torpedoes, and fuses. As the conductor hurried from the rear to the head end he observed that a dense fog, restricting the view to about five car lengths, existed at the caboose and was continuous to the point of accident. Arriving at the head end he instructed the head brakeman to care for the injured fireman and then hurried across the fields to a farm house where he reported the accident by telephone to the operator at Bradford and notified him that both main tracks were blocked. The operator informed him that Extra 6999 had already passed Union City. He was returning to the scene of the accident and was about ten car lengths west of that point when Extra 6999 appeared in the fog with the brakes applied in service application and was traveling at a speed of about 50 miles per hour. He signaled then with his white lantern to stop but the fireman of the second engine evidently thought that he was giving a greeting signal and returned a similar light. He stated that the second collision occurred at 3:05 a.m.

Flagman Denton, of Extra 6821, stated that he was thoroughly familiar with the operating rules. He first observed fog after leaving Mecker. From that point eastward pockets of fog were encountered at various points which at times restricted the view to a distance of about 15 car lengths. The speed of the train in that vicinity and at the time the accident occurred was 25 to 27 miles per hour which he thought was excessive because of the weather conditions and the permissive block under which the train was

operating. During his experience prior to the time of accident other trains were operated at much less speed under similar conditions. When the brakes became applied in emergency he agreed with the conductor that a collision had occurred and proceeded westward to flag all eastward trains on both tracks. He had in his possession a red and a white lantern, three fusees, and two sets of torpedoes. The fog in the vicinity of the caboose restricted the view to a distance of about five car lengths. As he went back he observed that there were fog pockets at intervals of about thirty car lengths; each was so dense that it appeared like a wall. At a point about 120 car lengths west of the caboose he placed torpedoes on the rail of the eastward track, then walked back and stationed himself at the first clear spot between the fog pockets. In order to know in advance on which track a train was approaching he did not place torpedoes on the westward track. He was expecting Extra 6999 to appear soon and he assumed they would be on the eastward track. Presently he heard Extra 6999 constantly sounding the whistle as it approached. He prepared to flag them with a lighted fusee. He saw the headlight about 22 car lengths distant and a whistle signal indicating they were on the westward track was sounded. He stepped astride the north rail of the eastward track and waved a stop signal with the fusee above his head. He could plainly see the engineman of the leading engine as it passed but his signal was not acknowledged. The train passed him at a speed of 60 or 65 miles per hour with sufficient fire flying from the brakes of the entire train to indicate a moderate brake application was being made, similar to that which is usually made at that point.

Engineman Messersmith, of the second engine of Extra 6999, stated that a terminal air-brake test was made at Logansport and the brakes functioned properly en route. The train was crossed over to the westward track at Union City where a clear block-signal indication was received. The headlight on the leading engine was burning brightly. About 2½ miles west of Bradford Engineman Tikfer, of the leading engine, whistled him down and he closed the throttle. Shortly thereafter Engineman Tikfer made about a 6-pound brake-pipe reduction. The weather was slightly hazy at that point but Engineman Messersmith could see the flagman of Extra 6821 about 30 car lengths distant standing in the middle of the eastward track. A lighted fusee was stuck in a tie at the same point. Engineman Tikfer then made an additional 6-pound brake-pipe reduction and sounded one long blast of the whistle. The flagman gave no indication that he wanted them to stop and as they passed him he jerked his lanterns slightly upward as a greeting signal. Because of the flagman's position on the eastward track, the location of the fusee thereon, and his actions Engineman Messersmith

thought that the flagman was protecting trains on the eastward track only; it was his opinion that Engineman Tikfer was justified in thinking the same thing. Immediately after passing the caboose of Extra 6821, they entered a dense fog which existed for a short distance. When they emerged from the fog it was again clear and he saw the wreckage about 15 car lengths distant. The speed at this time was about 25 miles per hour and the engineman of the leading engine did not further apply the brakes before they struck the wreckage.

Fireman Shaffer, of the second engine of Extra 6999, stated that immediately before the accident occurred he saw in a nearby field 200 or 300 feet distant a white lantern being waved as a stop signal. As it was so far from the tracks he attached no importance to it and merely waved a white light in return. He estimated the speed of his train as between 45 and 50 miles per hour at the time the wreckage was struck.

Head Brakeman Bryan, of Extra 6999, was on the engineman's side of the leading engine approaching Bradford. When they first saw Flagman Denton Engineman Tikfer shut off the engine and the speed was reduced to about 25 miles per hour. A lighted fusee was stuck in the end of a tie on the south side of the eastward track and the flagman was standing 4 or 5 feet east of the fusee with his lanterns in one hand. He made no move whatever to flag them and Brakeman Bryan supposed that he was protecting the train on the eastward track. The fog restricted the view of the markers of that train to a distance of about 10 car lengths. He then crossed to the fireman's side and was conversing with him when the accident occurred.

Conductor Hahn, of Extra 6999, stated that Brakeman Ayers and Flagman Duncan were in the caboose with him. The weather was clear and he did not observe any fog until he opened the rear door when about two miles west of Bradford. After the caboose passed he saw the flagman of Extra 6821 standing in the middle of the eastward track and holding a lighted fusee in one hand while the red lantern and the white lantern were in his other hand. He was positive the flagman was not giving stop signals and Conductor Hahn supposed he was protecting a train on the eastward track only. His train was traveling about 40 or 45 miles per hour at the time of the accident which occurred about 3:05 a.m.

Flagman Duncan, of Extra 6999, substantially corroborated the testimony of Conductor Hahn.

The statement of Brakeman Ayers, of Extra 6999, contained nothing additional of importance.

Operator Robertson, who was on duty at Bradford, stated that a ground fog existed in that vicinity when both accidents occurred; the sky could be seen above this fog. The dispatcher's telephone line became noisy about 2:15 a.m. About 2:40 a.m., Conductor Gilbert reported the accident; he immediately called the dispatcher and learned that Extra 6999 had passed Union City at 2:37 a.m. Powerman Shafer corroborated the statement of the operator with respect to the dispatcher's telephone line becoming noisy at 2:15 a.m.

Dispatcher Kroeger stated that in order for the third train to arrive at Bradford as early as possible he routed it on the westward track from Union City to Bradford because the second train was reported to be only a short distance ahead. The third train left Union City at 2:33 a.m. and he was not advised of the rear-end collision until 2:48 a.m. He corroborated the statement of the operator in regard to the telephone line becoming noisy at 2:15 a.m.

#### Observations of the Commission's Inspectors

The Commission's inspectors were present when the body of the flagman of Extra 6978 was found under a car 44.5 feet south of the eastward track at a point 153 feet west of where his caboose was standing when the rear-end collision occurred. A sweater, an electric lantern, and a timetable which was identified as Flagman Schaefer's were found in the wreckage 179 feet east of the point where his caboose had stood.

Records submitted in this investigation established that over the territory involved during the 30 days preceding the date of accident 60 eastward passenger trains, 288 eastward freight trains, 60 westward passenger trains, and 258 westward freight trains were operated, an average of 22.2 trains daily.

#### Discussion

According to the evidence, the first train passed Union City at 1:24 a.m. and stopped just west of Meeker, 11.9 miles west of Bradford, to permit the conductor to go to the middle of his train to extinguish a fire of papers on a flat car, at which time the flagman dropped a burning fusee. When this train stopped the caboose markers were burning and the flagman flagged the second train. The conductor remained on the flat car until arriving at Bradford about 2:14 a.m., where his train stopped for supplies.

At 1:37 a.m. the second train departed from Union City, at which point it received a permissive block-signal

indication. It was flagged at Meeker and, after waiting a sufficient interval for the first train to get some distance ahead, it proceeded. About 1-3/4 miles west of the point where the accident occurred, the speed was about 28 miles per hour; the engineman closed the throttle and permitted the train to drift as he expected to find the first train about 1 1/2 miles distant. The engineman of the second train said that the view seemed to be unrestricted but suddenly a dense bank of fog was encountered and, after moving about one car length into the fog, he and the fireman simultaneously saw the caboos of the first train about three car lengths distant, at which time the speed was about 22 miles per hour; however, the preponderance of other evidence was to the effect that there were many fog pockets en route and some witnesses estimated the speed of the second train at the time of the accident as high as 35 miles per hour. The accident occurred about 2:15 a.m.

Under the rules a train receiving a permissive block-signal indication must proceed with caution prepared to stop short of train or obstruction. Under the weather conditions existing en route to Bradford it appears that the second train was being operated at a rate of speed too high to comply with the rules. The engineman said that he expected either to strike torpedoes or to see a fusee, but he encountered neither and was not flagged just prior to the collision. Had the engineman complied with the permissive block-signal indication this accident would not have occurred.

The flagman of the first train had protected his train en route. Why he did not do so at Bradford is not known as he was killed in the accident, his body being found about 153 feet west of the point where the caboos stood when struck and about 44 feet south of the eastward track. Only about one minute elapsed between the time the first train stopped and the time the collision occurred. This period would not enable the flagman to go back a great distance, but he had sufficient warning of the stop to have dropped off burning fusees at proper intervals as required by the rules under the existing conditions. Had he done so the accident no doubt would have been averted.

The flagman of the second train stated that he surmised that his train had collided with the first train, and he proceeded westward intending to flag all east-bound trains on both tracks. He placed torpedoes on the eastward track only in order to know in advance on which track a train was approaching. He stated that when he saw the third train approaching about 25 car lengths distant he waved a lighted fusee over his head as a stop signal while standing astride the north rail of the eastward track; however, both the head brakeman of the third train and the engineman of the second engine of that train said they saw the flagman about 30 car

lengths distant as they approached and as they passed him the burning fusee was stuck in a tie near the south rail of the eastward track and the flagman was near the fusee and had both lanterns in one hand. They said he gave no indication whatever that he was flagging the westward track and they naturally supposed that he was protecting only the eastward track. The conductor and the flagman of the third train saw the flagman on the eastward track as the caboose passed; they stated that he made no move to flag them. The rules required that the flagman protect both tracks in the same manner. Had he done so no doubt the second accident would not have occurred.

#### Conclusion

The rear-end collision was caused by failure to protect the rear end of the first train, and by failure to control properly the speed of the second train in compliance with a permissive manual-block indication.

The collision of the third train with the wreckage was caused by failure to provide proper flag protection.

Respectfully submitted,

W. J. PATTERSON,

Director.