

INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2473

THE BALTIMORE AND OHIO RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR NEFFS, OHIO, ON

DECEMBER 26, 1940

SUMMARY

Railroad: Baltimore and Ohio

Date: December 26, 1940

Location: Neffs, Ohio

Kind of accident: Head-end collision

Trains involved: Work : Freight

Train numbers: Work Extra 5175 : 89

Engine numbers: 5175 : 4581

Consist: 2 cars, caboose : 7 cars, caboose

Speed: Nearly stopped - : 2-10 m. p. h.
8 m. p. h.

Operation: Timetable, train orders and manual
block system

Track: Single; 3°20' curve; 0.64 percent
descending grade eastward

Weather: Fog

Time: 8:51 a. m.

Casualties: 2 killed; 4 injured

Cause: Accident caused by a work extra making
an opposing movement against a third-
class train without proper flag pro-
tection and by failure properly to
control speed of the third-class train
while moving in an occupied block

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2473

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE BALTIMORE AND OHIO RAILROAD COMPANY

February 27, 1941

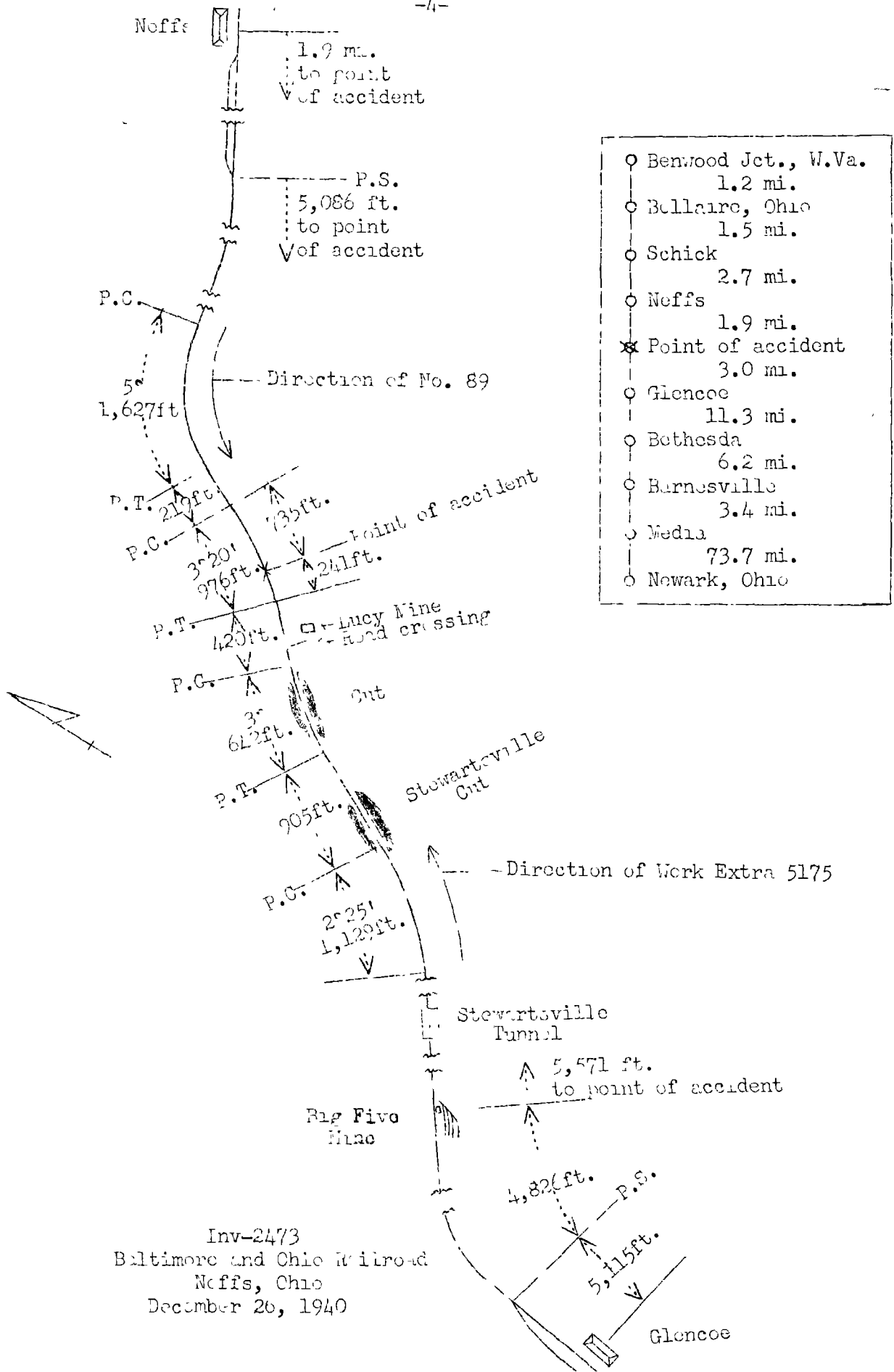
Accident near Neffs, Ohio, on December 26, 1940, caused by a work extra making an opposing movement against a third-class train without proper flag protection and by failure properly to control speed of the third-class train while moving in an occupied block.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On December 26, 1940, there was a head-end collision between a work train and a freight train on the Baltimore and Ohio Railroad near Neffs, Ohio, which resulted in the death of two employees and the injury of four employees.

¹Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2473
 Baltimore and Ohio Railroad
 Neffs, Ohio
 December 26, 1940

○	Benwood Jct., W.Va.	1.2 mi.
○	Bellaire, Ohio	1.5 mi.
○	Schick	2.7 mi.
○	Neffs	1.9 mi.
✕	Point of accident	3.0 mi.
○	Glencoe	11.3 mi.
○	Bethesda	6.2 mi.
○	Barnesville	3.4 mi.
○	Media	73.7 mi.
○	Newark, Ohio	

Location and Method of Operation

This accident occurred on that part of the Newark Division designated as the Central Ohio Sub-Division which extends between Schick and Newark, Ohio, a distance of 102.2 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and a manual block system. The accident occurred 1.9 miles west of the station at Neffs and 5,086 feet west of the west siding-switch. Glencoe and Pethesda are, respectively, 3 miles and 14.3 miles west of the point of accident. As the point of accident is approached from the east there are, in succession, a 5° curve to the left 1,627 feet in length, a tangent 219 feet, and a 3°20' curve to the right 735 feet to the point of accident and 241 feet beyond. As the point of accident is approached from the west there are, in succession, a 2°25' curve to the left 1,129 feet in length, a tangent 905 feet, a 3° curve to the right 642 feet, a tangent 420 feet, and the 3°20' curve on which the accident occurred. At points 965 and 1,480 feet, respectively, west and east of the point of accident the track is laid on hillside cuts, which are about 40 feet high to the south of the track. The grade for east-bound trains varies between 0.19 and 0.81 percent descending between Glencoe and Neffs, a distance of 4.0 miles, and is 0.64 percent at the point of accident.

Rules and Regulations of the Operating Department read in whole or in part as follows:

99. (C). When work trains, trackmen or other employees are performing work requiring flag protection, the flagmen will be furnished written instructions, which will be shown to the enginemen of all trains flagged.

* * *

FORMS OF TRAIN ORDERS.

Note.- In the forms of train orders, the words and figures in italics (underscored) are examples, indicating the manner in which the orders are to be filled out.

* * *

H.
WORK EXTRA.

(1.) Eng 292 works extra six forty-five
6 45 A M until five forty-five 5 45 P M be-
tween D and E.

The work extra will, whether standing or moving, protect itself against extras within the working limits in both directions as prescribed by the rules. The time of regular trains will be cleared.

* * *

To enable a work extra to work upon the time of a regular train, the following form will be used:

(5.) Work Extra 292 protects against
No fifty-five 55, Eng 1406 (or _____
class trains) between D and E.

The work extra may work upon the time of the train or trains mentioned in the order, and will protect itself against such train or trains. The regular train or trains receiving the order will run expecting to find the work extra protecting itself.

* * *

FORM A.

* * *

Explanation of Use.

* * *

- (A) 3. If block is clear insert the word "clear"; if not clear, the word "occupied." (An occupied block necessitates running at restricted speed.)

* * *

Special Instructions of the current timetable read in whole or in part as follows:

5. * * *

RESTRICTED SPEED: Proceed, prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

* * *

12. TRAIN ORDER STATIONS---IRREGULAR HOURS.

Stations open less than twenty-four hours:

Daily except Sunday:

	A.M.		P.M.
Neffs	9:00	to	5:00
Bethesda	6:45	to	3:45

* * *

23. TRAIN ORDERS.

* * *

On single track * * * to admit a train that is not carrying passengers into a block within which a work extra is working and is not clear of the block, a copy of the work extra's working order will be addressed and delivered to such trains at the entrance of the block and they may be admitted under permissive indication of the block signal on Form A.

* * *

The maximum authorized speed for the trains involved is 30 miles per hour.

There was a dense fog at the time of the accident, which occurred about 8:51 a. m.

Description

Extra 5175, with Conductor Gildea and Engineman Beall in charge, consisted of engine 5175, headed east, and a caboose. At Bearwood Jet, W. Va., 2.7 miles east of Schick, the crew received, among others, copies of train orders Nos. 13 and 26, Form 19, which read as follows:

No. 13: Eng 5175 works Extra Six Forty Five 645 AM until Six Thirty 630 PM between Schick and Glencoe protecting against Second 2nd and Third 3rd class trains not protecting against extra trains until Nine Fifteen 915 AM.

No. 26: No One Hundred Four 104 Engs 4543 and 4547 coupled wait at Bethesda until Eight Twenty 820 AM.

The crew received also a clearance card Form A which bore information as follows:

All trains due at 645 AM have arrived and departed except No. 89 and No. 97.

This train departed from Benwood Jct. at 7:05 a. m., according to the train sheet, and passed Bellaire, 1.5 miles east of Schick and the last open office, at 7:11 a. m. At Neffs, work-train equipment was added to the train; it then consisted of a caboose, one camp car, engine 5175, and a spreader car, from west to east in the order named. A flagman was left at Neffs and Work Extra 5175 proceeded to a point near Big Five Mine, 2.9 miles west of Neffs, and arrived at that point about 7:50 a. m., according to statements of the crew. After ditching service was performed, this train departed eastward about 8:45 a. m. to clear at Neffs for Nos. 89 and 104, and, while moving at a speed variously estimated to have been from nearly stopped to 8 miles per hour, it collided with No. 89.

No. 89, a west-bound third-class freight train, with Conductor Longfellow and Engineman Grubaugh in charge, consisted of engine 4581, 2 loaded and 5 empty cars, and a caboose. At Benwood Jct. the crew received among others copies of train order No. 13, Form 19, previously quoted, and train order No. 32, Form 19, reading as follows:

No. One Hundred Four 104 Engs 4543 and 4547 coupled meet No. Eighty Nine 89 Eng 4581 at Neffs.

This train departed from Benwood Jct. at 8:15 a. m., according to the train sheet, 1 hour 30 minutes late, stopped at Neffs at 8:32 a. m., where it was flagged by the flagman of Work Extra 5175, and the crew received copies of train order No. 33, Form 19, reading as follows:

No One Hundred Four 104 Engs 4543 and 4547 coupled meet No. Eighty Nine 89 Eng 4581 at Glencoe instead of Neffs.

The crew received also a clearance card Form A which bore information as follows:

Proceed Block is occupied to Bethesda.
Preceding train Work Extra 5175 in
block. * * *
Signal is at stop for train No. 89 to
meet No 104 at Glencoe order 33.

This train departed from Neffs at 8:43 a. m., 1 hour 41 minutes late, and, at a point 1.9 miles west of Neffs, while moving at a speed estimated to have been from 2 to 10 miles per hour, it collided with Work Extra 5175.

No. 104, an east-bound second-class freight train, was due to leave Bethesda, Glencoe, and Neffs at 7:20 a. m., 7:45 a. m., and 7:55 a. m., respectively, and was at Glencoe at the time of the accident.

The engine truck of engine 4581 and the rear truck of the caboose of No. 89 were derailed. The engine-truck radius braces, the engine-truck center-pin, the front engine deck casting, the smoke box and the right cylinder were broken; the cistern was shifted forward on the tender frame. The spreader car, which was 41 feet in length over end-sills and had a steel underframe, was crushed into a space of 7 feet between the two engines and demolished. Engine 5175 was derailed and stopped with the front end about 8 feet north of the center of the track and the trailer truck to the south of the track. The engine truck was wedged against the driving wheels. The steel pilot-beam and the smoke-box ring and door were broken; the front and back flue-sheets were bulged and torn; the tender deck was broken.

The employees killed were a track foreman and the spreader-car operator of Work Extra 5175. The employees injured were the engineman and the front brakeman of Work Extra 5175 and the fireman and the front brakeman of No. 39.

Summary of Evidence

Conductor Gildea, of Work Extra 5175, stated that at Benwood Jct. he received train orders Nos. 13 and 26, and he understood both orders. A clearance card Form A was received which bore the information that all trains due at 6:45 a. m. had been represented except Nos. 89 and 97; however, No. 97 departed from Benwood Jct. before his train left that point. At Neffs work-train equipment was added to his train but an application and release test of the air brakes was not made; however, after the train was assembled he observed that all brakes applied when the air was cut in. The conductor orally instructed the front brake-

man to stay at Neffs, to provide flag protection until No. 89 arrived at that point, to instruct the crew of No. 89 to maintain a lookout for Work Extra 5175 ditching eastward between Big Five Mine and Neffs, and to ride on No. 89 until it overtook the work extra. The conductor informed the front brakeman that, if No. 104 arrived within the working limits prior to the arrival of No. 89, the work extra would clear at Neffs, but if No. 89 should arrive first, the work extra would clear at Glencoe. His reason for instructing the front brakeman to ride from Neffs on No. 89 was that if No. 89 should arrive first the work train would clear at Glencoe, then after all overdue regular trains had arrived his train would work in the vicinity of Glencoe and would need the front brakeman to provide flag protection in that vicinity. Work Extra 5175 arrived at Big Five Mine about 7:50 a. m., and proceeded to ditch eastward toward Neffs. About 8:25 a. m., the time designated in order No. 26 having expired, he called the operator at Bethesda, 16.2 miles west of Neffs, to ascertain the location of No. 104. The operator informed him that No. 104 was near Barnesville, 22.4 miles west of Neffs, and Nos. 89 and 104 were to meet at Neffs, according to the provisions of order No. 26. The conductor gave this information to his engineer, added that the front brakeman was at Neffs, and that the work extra would proceed to Neffs as soon as the spreader wings were lifted. He thought the engineer thoroughly understood the conditions under which the work train was moving, since he did not inform anyone that the front brakeman would hold No. 89 at Neffs; however, in a later statement the conductor said that he probably did not inform his engineer fully concerning the flagging instructions. He did not attempt to communicate with the front brakeman at Neffs to inform him that Work Extra 5175 was proceeding to Neffs to clear for Nos. 89 and 104; however, he thought that under the circumstances it would have been advisable to do so. Soon afterward his train departed toward Neffs and moved at a speed not exceeding 5 or 6 miles per hour. The conductor was on the front end of the spreader car, which was the front unit during this movement and which was equipped with a standard back-up hose. He said that visibility was restricted by fog to 2 or 3 car lengths. Just after the front end of the train passed the road crossing 405 feet west of the point where the accident occurred, he heard an engine whistle sounded to the east. He immediately opened the conductor's emergency valve, jumped off, and attempted to light a fuse, but the accident occurred before he had time to do so. He thought his train was stopped when the accident occurred. He said that Work Extra 5175 proceeded eastward toward Neffs on the information given by the operator at Bethesda that Nos. 89 and 104 were to meet at Neffs. He understood that the rules required his train to have train-order authority to proceed against superior trains and that information given orally by an operator was not authority to move against a superior train. During the past 4 years he had been

in work-train service almost continuously, but he seldom provided flagmen with written flagging instructions. He said that definite understanding among all concerned probably would have averted the accident. He was last examined on operating rules in October, 1938.

Front Brakeman Brown, of Work Extra 5175, stated that at Neffs his conductor instructed him orally to remain at that point, to flag all trains, to instruct the crew of No. 89 to maintain a lookout for Work Extra 5175 moving eastward from Big Five Mine, and to ride on No. 89, as Work Extra 5175 would proceed to Glencoe to clear; also, he was to instruct the engineman of No. 89 to sound the whistle frequently so that the crew of Work Extra 5175 could hear No. 89 approaching. Before the arrival of No. 89 the operator at Neffs informed him that No. 104 would meet No. 89 at Neffs. The brakeman flagged No. 89 and instructed the engineman to be on the lookout for the work train moving eastward from Big Five Mine and to sound the engine whistle frequently. Later, the crew of No. 89 received a train order which changed the meeting point between Nos. 89 and 104 from Neffs to Glencoe. Since he had received no further instructions from his conductor he boarded the engine of No. 89 and stationed himself on the left side of the cab as that train departed from Neffs. The train proceeded at a speed of 10 or 12 miles per hour and the engineman sounded the whistle frequently. The brakeman thought the engineman operated the train carefully but since visibility was restricted to about 2 car lengths because of dense fog the speed was slightly greater than that from which a train could be stopped within the existing range of vision. The first he knew of anything being wrong was when the engineman applied the air brakes in emergency; the collision occurred 4 or 5 seconds later. The brakeman said the air brakes appeared to function properly but, because of the short distance intervening, the speed of the train was not reduced appreciably before the accident occurred. He thought the work train either was stopped or was moving very slowly at the time the collision occurred. He was unaware that his conductor had received any information concerning the meeting point of Nos. 89 and 104; however, if he had known that his conductor received such information he would have held No. 89 at Neffs. Since he was stationed at the telegraph station prior to the arrival of No. 89 at Neffs, his conductor could have communicated with him. He had been assigned to work-train service with Conductor Gildea during the past 2 months and in that period he had never received any written flagging instructions. He was last examined on operating rules in October, 1938.

Engineman Beall, of Work Extra 5175, stated that at Benwood Jet. he received train orders Nos. 13 and 26, and a clearance card Form A. The train proceeded to Neffs where work-train

equipment was added; the air-brakes were not tested but they functioned properly at all points where used. The brakeman was left at Neffs to provide flag protection and the train proceeded to a point near Big Five Mine. As the train moved eastward from this point, it ditched along the roadbed. At 8:25 or 8:30 a. m. the conductor came from the telephone and informed him that it was time to proceed to Neffs to clear for Nos. 89 and 104, and that those trains were to meet at Neffs. The conductor informed him also that their front brakeman was at Neffs; by this he understood that No. 89 would be held at Neffs. When his train departed for Neffs, about 8:45 a. m., the fog was so dense that he was unable to see the conductor who was stationed near the back-up emergency valve on the front end of the spreader car. While the work train was approaching the point where the accident occurred the engineman did not open the throttle but used the drifting valve only and the speed was 8 or 10 miles per hour. Soon after the train passed over the road crossing, about 405 feet west of the point where the accident occurred, the air brakes were applied in emergency. The engineman placed the brake valve in lap position and the collision occurred a few seconds later. He thought his train was stopped at the time of the collision, which was about 9.51 a. m. He was last examined on operating rules in October, 1938. He was assigned to work-train service about 2 months prior to the accident. He understood train order No. 13 required his train to move within working limits under flag protection against second and third-class trains, but the work extra could work on the time of the trains mentioned in the order. He understood second and third-class trains were required to move within the working limits of a work extra expecting to find the work extra protecting itself. Had he known that No. 89 would proceed west of Neffs and his flagman would ride that train until the work extra was met, he said he would not have proceeded toward Neffs. He said that he would not use a meet order addressed to another train as authority for his train to proceed against an opposing train. The rules require conductors to issue written instructions to flagmen who are to provide protection for work extras; however, it had not been customary for conductors with whom he had worked to give written flagging instructions to flagmen or to inform the engineman of the work extra what the instructions were.

Fireman Schiller, of Work Extra 5175, corroborated the statement of his engineman in all essential details. When the work train was approaching the point where the accident occurred he was stationed in the left gangway maintaining a lookout. When his train entered a curve to the left the speed was 6 or 8 miles per hour and the collision occurred before he saw the opposing train. Visibility was restricted by a dense fog.

Flagman Shepherd, of Work Extra 5175, stated that he did not know what flagging instructions the conductor had given the front brakeman who was stationed at Neffs. When his train started to ditch near Big Five Mine, the time specified for No. 104 to wait at Bethesda had nearly expired, so he proceeded westward and placed torpedoes at a point 4 or 5 car lengths east of the east siding-switch at Glencoe. The conductor had not informed him where Work Extra 5175 would clear for either No. 104 or No. 89 but had said that he would ascertain their location by telephone. About 8:30 a. m. the flagman was recalled and he thought No. 104 was to meet No. 89 at Neffs. He used about 5 minutes returning to the train, which departed as soon as he boarded the caboose. Because of dense fog he remained on the rear platform of the caboose and maintained a lookout to the rear for a following train. He expected No. 89 to remain at Neffs for his train. He thought his train was nearly stopped when the accident occurred. He had been assigned to work-train service for 4 months prior to the day of the accident. He had received written flagging instructions from the conductor in only a few instances.

Engineman Grubaugh, of No. 89, stated that at Benwood Jct. a terminal air-brake test was made. The brakes of cars added to the train were tested and they functioned properly en route. He received copies of train orders Nos. 13 and 32 at Benwood Jct. and understood their provisions. At Neffs his train was flagged by the work-train flagman, who informed him that the work train was in the vicinity of Big Five Mine and that No. 89 could proceed. The flagman told him to sound the whistle frequently so that the work-train crew could hear No. 89 as it approached and could clear promptly. The engineman said that because of noise he failed to hear the flagman say that the work train was moving eastward from Big Five Mine; he expected to find the work train working near Big Five Mine. Before his train left Neffs he received copies of train orders Nos. 13 and 33 together with a clearance card Form A, which bore the information, "Block occupied by Work Extra 5175," and he understood that Nos. 89 and 104 would meet at Glencoe instead of Neffs. After No. 89 left Neffs the speed was about 8 miles per hour, he sounded the whistle frequently to warn the crew of the work train of the approach of his train, and he was maintaining a lookout ahead. The headlight was burning brightly but fog restricted the view ahead to a distance of about 100 feet. The throttle was closed but the drifting valve was open. He expected to find the work train in the vicinity of Big Five Mine and did not expect it to move eastward toward Neffs. At a distance of about 100 feet he saw the work train moving eastward at a speed of about 15 or 20 miles per hour. He immediately applied the air brakes in emergency but the distance was too short for stopping. The speed of his train was 2 or 3 miles per hour at

the time of the collision, which occurred at 8:50 a. m. He understood train order No. 13 required him to proceed expecting to find the work extra working at any point within its working limits, and he knew a train should move in an occupied block prepared to stop within the range of vision. He thought if the work train had not been moving eastward the accident would not have occurred. He thought he could have seen the opposing train at a greater distance if a lighted fusee had been displayed at the front end. He was last examined on the rules in October, 1938.

Fireman Bell, of No. 89, stated that he understood the provisions of train order No. 13. At Neffs when the work-train flagman boarded the engine, the fireman was unable to hear what instructions the flagman gave the engineer. After No. 89 departed from Neffs the flagman informed the fireman that the work train was in the vicinity of Big Five Mine but said nothing that would indicate it was expected to proceed eastward. As his train was approaching the point where the accident occurred the speed was about 8 miles per hour and he was maintaining a look-out ahead. On account of fog, visibility was restricted to 3 or 4 car lengths. Because of track curvature he did not observe the work train prior to the accident. The engineer applied the air brakes in emergency; however, the accident occurred almost immediately and the speed of his train had not been reduced.

Front Brakeman Stephenson, of No. 89, stated that before the work-train flagman boarded the engine at Neffs the flagman informed him that Work Extra 5175 was in the vicinity of Big Five Mine and it would move either to Neffs ahead of No. 104 or to Glencoe ahead of No. 80, but the flagman did not know which movement would be made. When No. 89 was approaching the point where the accident occurred the front brakeman was behind the fireman on the seat and the speed of the train was 8 or 10 miles per hour. Because of fog, visibility in the vicinity of the point of accident was restricted to 2 or 3 car lengths. He said that the engineer sounded the whistle frequently. The brakeman thought his train was operated at safe speed in view of the information his crew had received concerning the work train.

Conductor Longfellow, of No. 89, stated that he received a copy of train order No. 13 and understood its requirements. When his train was approaching the point where the accident occurred he was in the caboose and the speed of his train was 8 or 10 miles per hour. Fog restricted visibility to 3 or 4 car lengths; however, he did not fear that the train was moving too rapidly. Between Neffs and the point of accident he heard the engine whistle sounded frequently. The collision occurred almost simultaneously with the emergency application of the brakes.

The statement of Flagman Merritt, of No. 89, added nothing of importance.

Agent-Operator Finley, on duty at Bethesda, stated that about 8:22 a. m. Conductor Gildea called him and inquired concerning the location of Nos. 89 and 104. He replied that No. 89 had not arrived at Neffs and No. 104 was about Media, 25.8 miles west of Neffs. The conductor then asked where these trains were to meet and the operator informed him that they were to meet at Neffs, according to a copy of train order No. 32, which was addressed to the operator at Bethesda and made complete at 8:15 a. m. Soon afterward the operator copied train order No. 33, which was addressed to the operator at Bethesda and which provided that No. 89 would meet No. 104 at Glencoe instead of Neffs; this order was made complete at 8:17 a. m. He did not inform the dispatcher of his conversation with Conductor Gildea since it did not occur to him that the work-train conductor would assume the provisions of train order No. 32 pertaining to No. 104 as authority to proceed to Neffs against No. 89. The operator thought the work-train conductor would use the information only to avoid delay to regular trains. He knew that a dispatcher could change a meeting point between trains at any time prior to the fulfillment of an order; however, he did not expect the work train to proceed on an order addressed to another train. The operator said that it was customary for work-train conductors to request information concerning meeting points of regular trains and he had not been criticized for giving this information orally from train orders addressed to him, nor had he been instructed to do so.

Agent-Operator Richardson, who went on duty at Neffs at 8 a. m., stated that before he went on duty he was informed by the work-train conductor that Work Extra 5175 would proceed to Big Five Mine, then would perform ditching service eastward. At 8:23 a. m. he heard the operator at Bethesda inform Conductor Gildea that Nos. 104 and 89 were to meet at Neffs. Soon afterward the train dispatcher issued train order No. 33, which changed the meeting point from Neffs to Glencoe. Agent-Operator Richardson did not inform the dispatcher concerning the work-train conductor's conversation with the operator at Bethesda. At 8:40 a. m. the operator at Neffs reported No. 89 ready to depart from his station and was instructed by the train dispatcher to deliver a clearance Form A and to permit the train to depart. No. 89 departed at 8:43 a. m. It was very foggy and visibility was restricted to about 150 feet. The work-train flagman had been in his office before the arrival of No. 89 but did not inform the operator what his flagging instructions were.

Train Dispatcher Gline stated that No. 89 was ready to leave Neffs before the time anticipated; therefore, he issued train order No. 33 to supersede train order No. 32; this changed

the meeting point to Glencoe instead of Neffs. He was unaware of any conversation between the operator at Bethesda and Conductor Gildea until after the accident occurred.

Train Master Colnot stated that train order No. 13 gave Work Extra 5175 authority, between the hours of 6:45 a. m. and 6:30 p. m., to move in either direction between Schick and Glencoe, protecting against second and third-class trains, and protecting against extra trains after 9:15 a. m. A copy of train order No. 13, together with clearance Form A, which bore the information, "Block is occupied by Work Extra 5175," was delivered to No. 89 and gave that train authority to proceed into the block at restricted speed prepared to stop short of train or obstruction and to expect to find Work Extra 5175 protecting itself. Operators are expected to furnish information to any member of a crew relating to movement of other trains; such information is to be used as information only, since train movements are authorized by timetable or train orders or are made under flag protection.

Road Foreman of Engines Vernon stated that he conducts examinations on the Book of Rules approximately every 2 years. The last examination was held in October and November, 1938. Employees are instructed that work-train flagmen shall be furnished written flagging instructions, which shall be shown to the engineer of all trains flagged. Train order No. 13 required No. 89 to proceed into the working limits involved, expecting to find the work extra protecting itself. The clearance Form A which was received at Neffs and which bore information of an occupied block, required No. 89 to proceed prepared to stop short of a train or obstruction. Train orders addressed to other trains do not authorize a work extra to make an opposing movement against a regular train. He said a train similar to Work Extra 5175 could be stopped from a speed of 10 or 12 miles per hour by an emergency application of the brakes within a distance of 40 or 50 feet.

According to the timetable and data furnished by the carrier, at 8 a. m. two trains were due over the territory between Neffs and Glencoe. These trains were No. 89, a west-bound third-class train, due to leave Neffs at 7:02 a. m., and No. 104, an east-bound second-class train, due to leave Glencoe at 7:45 a. m.

Observations of the Commission's Inspectors

The Commission's inspectors observed a braking test conducted January 6, 1941, at the scene of the accident; a train consisting of an engine of the same type as engine 4581, 3 loaded and 5 empty cars and a caboose was used. The train was in

charge of the engineman who was in charge of No. 89 on the day of the accident. The train was stopped by an emergency application of the brakes from a speed of 8 or 9 miles per hour in a distance of 26-1/2 feet.

Discussion

According to the evidence, Work Extra 5175 was moving eastward toward Neffs to clear for No. 89, a third-class train, and No. 104, a second-class train, when it collided with No. 89 at a point 1.9 miles west of Neffs. The crews of both trains had copies of train order No. 13, which authorized engine 5175 to work from 6:45 a. m. until 6:30 p. m. between Schick and Glencoe, protecting against second-class and third-class trains. The working limits covered a distance of 7.6 miles and within these limits the work extra could clear trains at Schick, Neffs, and Glencoe.

Under the provisions of the work order, the work extra was not required to protect against extra trains until after 9:15 a. m. and it could work on the time of second-class and third-class trains by providing flag protection. No. 89 was due to leave Neffs at 7:02 a. m. and No. 104 was due to leave Glencoe at 7:45 a. m., but the crew of the work train held copies of a train order specifying that No. 104 would wait at Bethesda, 11.3 miles west of Glencoe, until 8:20 a. m.; therefore, after 7:02 a. m. the work train was required to protect against No. 89 between Neffs and Glencoe and after 8:20 a. m. against No. 104 between the same points. Under the provisions of the work order, second-class and third-class trains could enter the working limits after the crews of these trains were given copies of the order. When the work train departed westward from Neffs, it left a flagman at that station to protect against No. 89. The work train arrived at Big Five Mine, 2.9 miles west of Neffs, about 7:50 a. m. and began ditching eastward toward Neffs. The flagman stationed at Neffs had been instructed orally to flag No. 89, to inform the crew of that train to maintain a lookout for the work train moving eastward between Big Five Mine and Neffs and that the work train would go to Glencoe to clear, to inform the engineman of No. 89 to sound the whistle frequently, and to ride on the engine of No. 89 until the work train was overtaken. In addition, the flagman was instructed that if No. 104 arrived before No. 89 the work train would clear at Neffs. At 8:23 a. m. the work-train conductor inquired on the telephone of the operator at Bethesda the locations of Nos. 104 and 89 and the meeting point of these trains. From information contained in a train order made complete at 8:15 a. m., the operator told the conductor that the meeting point was at Neffs. The conductor then informed the engineman as to the meeting point and told the engineman that the work train would go to Neffs to clear both

trains but he did not inform the engineman as to instructions given to the flagman. About 4 minutes after the operator at Bethesda had given the conductor information concerning the meeting point of Nos. 89 and 104, a train order changing the meeting point of these trains from Neffs to Glencoe was issued. No. 89 departed from Neffs at 8:43 a. m. and the work train departed eastward from the vicinity of Big Five Mine about 8:45 a. m. without flag protection; these trains collided midway between these points. Had the conductor followed the procedure he outlined to the flagman at Neffs, had he communicated with the flagman at Neffs by telephone before the work train started eastward to clear at Neffs, or had he informed his engineman fully of the situation, it is probable this accident would have been averted. Had the crew of the work train furnished proper flag protection for the movement to Neffs or remained at the scene of its work until the first train arrived and then made arrangements to proceed ahead of that train to the clearing point, this accident would have been averted.

After the crew of No. 89 received a clearance Form A stating that the block involved was occupied, this train entered the block at Neffs. The block permission required No. 89 to proceed prepared to stop short of train or obstruction. Because of a dense fog, visibility was restricted to a distance of not more than 150 feet. The speed of No. 89 at the time of the accident was variously estimated at 2 to 10 miles per hour and that of the work train from nearly stopped to 8 miles per hour; however, from the resultant damage it is apparent that one or both trains were moving in excess of the speeds estimated by the crews involved. According to the statement of the engineman of No. 89 he did not understand the flagman to say the work train was moving eastward, and he thought the accident would have been averted if the work train had not been approaching from the opposite direction. Subsequent to the accident, in a stopping test a train similar to No. 89 moving at a speed of 8 or 9 miles per hour was stopped in a distance of 26-1/2 feet. Since the engineman of No. 89 said he would have operated his train at a lower rate of speed if he had known the work train was a considerable distance east of Big Five Mine, it follows that under the weather conditions that existed at the point of accident he was operating at a speed too high to comply with the requirements of the rules applicable to operation in an occupied block.

The rules required that the conductor of the work train furnish his flagman with written flagging instructions; the flagman was required to show his flagging instructions to the engineman of each train flagged. The conductor did not issue written flagging instructions for the flagman at Neffs; had he done so and if the engineman of No. 89 had read them, it is probable that the engineman would have discovered the true situation and averted the accident.

