

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2490
THE ERIE RAILROAD COMPANY
REPORT IN RE ACCIDENT
NEAR WINDHAM, OHIO, ON
MARCH 18, 1941

SUMMARY

Railroad: Erie

Date: March 18, 1941

Location: Windham, Ohio

Kind of accident: Side collision

Trains involved: Passenger : Freight

Train numbers: Extra 1644 : Extra 3400

Engine numbers: 1644 : 3400

Consist: 10 cars : 51 cars, caboose

Speed: 6-7 m. p. h. : 8-30 m. p. h.

Operation: Automatic block-signal system

Track: Double tangent; 0.41 percent
ascending grade eastward

Weather: Clear

Time: About 7:09 a.m.

Casualties: 2 killed; 164 injured

Cause: Accident caused by failure to provide adequate flag protection before passenger train entered crossover

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2490

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

THE ERIE RAILROAD COMPANY

May 5, 1941

Accident near Windham, Ohio, on March 18, 1941, caused by
failure to provide adequate flag protection before
passenger train entered crossover.

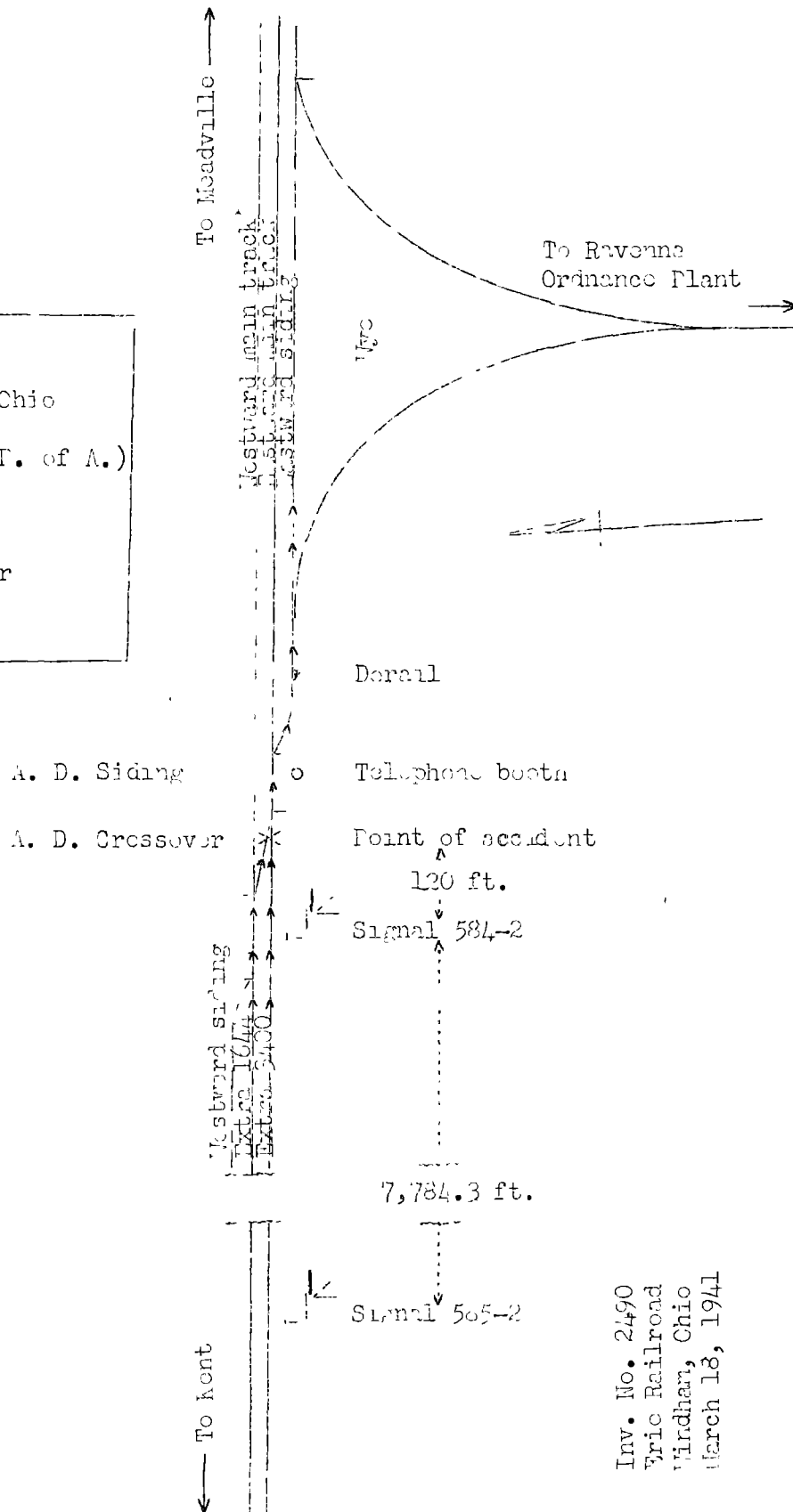
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On March 18, 1941, there was a side collision between a passenger train and a freight train on the Erie Railroad near Windham, Ohio, which resulted in the death of 2 passengers and the injury of 163 passengers and 1 employee. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Ohio.

¹ Under 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.

- Meadville, Pa. 62.4 mi.
- SW. Junction, Ohio 6.5 mi.
- X A. D. Siding (T. of A.) 1.9 mi.
- Windham 16.7 mi.
- K. X. Crossover 1.6 mi.
- Kent, Ohio



Inv. No. 2490
 Erie Railroad
 Windham, Ohio
 March 18, 1941

Location and Method of Operation

This accident occurred on that part of the Mahoning Division designated as the Second Sub-Division which extends between Kent, Ohio, and Meadville, Pa., a distance of 39.1 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated with the current of traffic by an automatic block-signal system, the indications of which supersede time-table superiority. A crossover, designated as A. D. Crossover, between the eastward and the westward main tracks is located 1.0 miles east of the station at Windham; it is 192 feet in length and is trailing-point for movement with the current of traffic. The accident occurred on the eastward main track at the fouling point of the crossover. At A. D. Siding the eastward siding parallels the main track on the south and is 4,732 feet in length. The west siding-switch is 49.7 feet east of the east switch of the crossover. A hand-throw derail is located on the eastward siding 210 feet east of the west switch. Two legs of a wye leading to the Ravenna Ordnance Plant, located about 4 miles south of the main tracks, connect with the eastward siding at points 306 and 1,802 feet east of the west switch of the siding. The switchstands of the crossover are of the hand-throw, low-stand, double-vanetype. When the switches are lined for movement on the main tracks a rectangular white target is displayed, and when lined for movement through the crossover a red arrow-shape target is displayed.

As the point of accident is approached from the west there are, in succession, a 1° curve to the right 950 feet in length, a tangent 2,368 feet, a 0°03' curve to the right 537 feet, a tangent 1,173 feet, a 0°03' curve to the right 537 feet, and a tangent 3,825 feet to the point of accident and a considerable distance beyond. The grade for east-bound trains varies between 0.37 and 0.70 percent descending more than 4,700 feet, is level 2,530 feet, and then 0.41 percent ascending 3,189 feet to the point of accident.

A telephone booth is located 25 feet south of the eastward track and 60 feet west of the east switch of the crossover.

Automatic signals 585-2 and 584-2, which govern movements on the eastward main track, are mounted on masts located 8 feet south of the right rail of the track at points, respectively, 7,904.3 and 120 feet west of the point of accident. These signals are of the one-arm, three-position, upper-quadrant, semaphore type, and are oil lighted. The aspects, indications and names are as follows:

<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
Green	Proceed	Clear
Yellow	Prepare to stop at next signal train exceeding medium speed must at once reduce to that speed	Approach
Red	Stop then proceed in accordance with rule-509-B	Stop and proceed

Rule 509b. When train is stopped by a Stop and Proceed signal it may proceed:

* * *

(b) On two or more tracks at once at restricted speed.

Definitions.

Medium Speed.--One-half maximum authorized speed at point involved, but not to exceed thirty miles per hour unless otherwise provided.

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

When either switch of the crossover at A. D. Siding or the derail at the west end of the eastward siding is open, or the eastward main track east of signal 584-2 is occupied, signal 584-2 displays stop-and-proceed and signal 585-2 displays approach.

Rules of the operating department read in whole or in part as follows:

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 fuses. * * *

* * *

The front of the train must be protected in the same way when necessary by the trainman or fireman.

* * *

When day signals cannot be plainly seen, owing to weather or other conditions, night signals must also be used. Conductors and enginemen are responsible for the protection of their trains.

D-152. When a train crosses over to, or obstructs another track, unless otherwise provided, it must first be protected as prescribed by Rule 99 in both directions on that track.

D-263. A train must not cross over, * * *, without authority from the train dispatcher or signalman.

Special Order No. 19, dated March 10, 1941, and addressed to all concerned read in part as follows:

Effective Thursday, March 13, 1941, and daily except Sundays until further notice, passenger extra will be operated on the following schedule;

Westbound

* * *

Depart Youngstown	6:15 am
Girard	6:25 am
Niles	6:33 am
Warren	6:48 am
Arrive A. D. Crossover	7:05 am

* * *

* * * Freight trains will clear the time of these trains.

* * *

Time-table special instructions read in part as follows:

CROSSOVER MOVEMENT.

When necessary to * * * cross over from one main track to another, permission will first be obtained * * *. This does not relieve enginemen and trainmen from protecting the movement as per Rule 99. * * *

The maximum authorized speed for freight trains is 50 miles per hour.

The wind was blowing from the north and the weather was clear at the time of the accident, which occurred about 7:09 a. m.

Description

Extra 1644 West, a west-bound passenger train, with Conductor Welsh and Engineman Hand in charge, consisted of engine 1644 and 10 coaches; all cars were of steel construction. This train departed from Youngstown, Ohio, 25.9 miles east of Windham, at 6:15 a.m., according to the statements of the crew, entered the Second Sub-Division at SN. Junction, 8.4 miles east of Windham, at 6:55 a. m., according to the train sheet, and at A. D. Siding stopped on the westward main track just west of the crossover about 7:05 a. m. Soon afterward the train started a back-up movement through the crossover to the eastward main track and to the eastward siding; while the train was moving through the crossover at a speed estimated at 6 or 7 miles per hour, the fifth, sixth and seventh cars were struck by Extra 3400 East.

Extra 3400 East, an east-bound freight train, with Conductor Hill and Engineman Stallsmith in charge, consisted of engine 3400, 47 loaded and 4 empty cars, and a caboose. This train departed from K. X. Crossover, 16.7 miles west of Windham and the last open office, at 6:30 a. m., according to the train sheet, passed signal 535-2, which was displaying proceed, passed signal 534-2, which was displaying stop-and-proceed, and, while moving at a speed variously estimated as between 8 and 30 miles per hour, collided with Extra 1644.

The fifth car of Extra 1644 was derailed but remained upright and crosswise of the crossover, with its rear end 30 feet east of the west crossover switch. The left side-sheets were raked and torn, the left side sill and the left side of the rear vestibule were torn loose, the floor was buckled, and 18 windows were broken. The sixth car was derailed and stopped bottom up, north of the westward main track and parallel to it, with its front end 25 feet east of the west crossover switch. The left side-sheets and the bottom of the car inward to the center sill were torn out a

distance of 14 feet, the left side of the roof was torn out a distance of 30 feet, the front vestibule was demolished, both trucks were detached and badly damaged, and 41 windows were broken. The seventh car was derailed and stopped upright, diagonally across both main tracks and the siding, with its rear end 450 feet east of the east crossover switch; both couplers and 15 windows were broken. The remainder of the cars in this train were not derailed but sustained considerable interior damage. On the third, fourth and eighth cars, one coupler was broken on each car.

Engine 3400 and its tender, remaining coupled, were derailed to the left, headed northeast, and stopped on their left sides, diagonally across the siding and both main tracks. The front end of the engine was 405 feet east of the east crossover switch. The engine pilot and one air compressor were demolished, the smoke-box was buckled, the left side of the trailer-truck frame was cracked, the engine-truck frame was bent, the engine cab was buckled and its roof was demolished. Both front corners, the right rear corner and the right side-sheets of the tender cistern were buckled; the right side of the frame was cracked and the rear coupler was broken. The first 15 cars of Extra 3400 were derailed and stopped in various positions across both main tracks and the eastward siding. The wreckage was contained within a distance of 255 feet. Of these cars, 8 were destroyed and the remainder were badly damaged. The front truck of the sixteenth car was shoved toward the center of the car.

The employee injured was the conductor of Extra 1644.

Summary of Evidence

Engineman Hand, of Extra 1644, stated that his train was being operated on the schedule created by special order No. 19. His train arrived at the crossover at A. D. Siding at 7:05 a.m. and stopped west of the crossover on the westward main track. He sounded the engine whistle signal for flagmen to protect the train. About 3 minutes later, having received a signal to back, he sounded the engine whistle in acknowledgment and opened the throttle. When his engine started to move he looked westward but did not see a train approaching. Before the crossover movement was started he could see signal 584-2 over the tops of the coaches and that signal was displaying stop-and-proceed. He asked the fireman if everything on the left side of the train was all right and the fireman replied in the affirmative; however, the fireman did not specifically state whether the front brakeman was providing flag protection against trains moving on the eastward track nor did the engineman ask him concerning flag protection. About 35 or

40 seconds later, when the train was moving through the crossover at a speed of 6 or 7 miles per hour, the fireman called the attention of the engineman to an approaching east-bound train. The engineman glanced toward the west and observed that the approaching train was about 4,900 feet distant and that steam and smoke were blowing down over its engine, but he was not alarmed that the approaching train would fail to stop before it reached signal 584-2. Soon afterward he glanced to the left and saw box cars passing his engine; then the accident occurred. He said that automatic signal indications are not to be used to assist in providing flag protection. He was somewhat confused concerning the provisions of special order No. 19. In one statement he expressed the opinion that at 7:05 a. m. east-bound freight trains should approach A. D. Crossover under control, but in another statement he said that crossover movements should be properly protected. He thought, in view of more than 1 mile of tangent track and the automatic signal displaying stop-and-proceed, a fusee displayed about 50 feet east of the signal is sufficient flag protection when the weather is clear; however, if the weather is stormy he should instruct his fireman to drop off a fusee from the engine before the back-up movement is started. Later, he said that an east-bound freight train moving at maximum authorized speed could not be stopped in the distance that a fusee placed in the vicinity of signal 584-2 could be seen. He said that supervisory officials had instructed him not to depend upon signals in providing flag protection. He said that it was his duty to observe if proper flag protection is provided before a crossover movement is started. At the time of the accident there was a strong wind and snow was blowing.

Fireman Less, of Extra 1644, stated that after his train stopped at A. D. Crossover the ornance-plant pilot lined the derail on the eastward siding, and the front brakeman lined the eastward siding-switch and the east switch of the crossover. After the movement was started the fireman looked westward, saw an east-bound train approaching about 1/2 mile distant, and informed the engineman accordingly. At that time a fusee was burning on the eastward track but there was no flagman providing protection. When about six coaches of Extra 1644 had entered the crossover, the front brakeman started to flag the approaching train from a point about 280 feet east of the crossover. Because smoke and steam obscured the front end of the approaching engine, he could not determine whether it was a freight train, or an overdue commuting train approaching the crossover. He was not alarmed that the east-bound train would not stop. He understood that the rules require adequate flag protection before a crossover movement is started; however, he knew of no previous instance wherein

adequate flag protection at this point had been provided by his crew. He said that automatic signal indications are not to be used to assist in providing flag protection. It did not occur to him that in the absence of proper flag protection he himself should have provided it. He said that Extra 3400 was moving at a speed of 20 miles per hour at the time of the collision. He was last examined on operating rules during February, 1941.

Conductor Welsh, of Extra 1644, stated that the rear end of his train stopped on the westward main track about one car length west of A. D. Crossover. The front brakeman proceeded to the telephone to obtain authority from the dispatcher for his train to make the crossover movement from the westward main track across the eastward main track to the eastward siding. The conductor alighted on the south side from the eighth car and at this time the front brakeman, returning from the telephone, signaled that the crossover movement had been authorized. The ordinance-company pilot lined the derail on the siding for the train to enter, which position caused signal 584-2 to display stop-and-proceed, then the flagman lined the west crossover switch for entrance to the crossover and the front brakeman lined the east crossover switch and the west switch of the eastward siding for entrance to the siding. When Extra 1644 backed into the crossover the flagman and the conductor boarded the eighth car and the front brakeman lighted a fusee and started westward. The conductor looked westward but did not see a train approaching. The first he knew of anything being wrong was when the impact occurred. He estimated that about 2 minutes were consumed from the time the derail was opened until all the switches involved were lined for the crossover movement. He said that it was not necessary for a flagman to proceed westward any great distance to provide adequate flag protection against east-bound trains, as the track was tangent; furthermore, special order No. 19 required trains at 7:05 a. m. to approach A. D. Crossover under control, and automatic signal 584-2 was displaying stop-and-proceed. Visibility was unrestricted and it was possible to see an object the size of a man a distance of about 1 mile. He said that he did not depend upon signal indications to assist in providing flag protection; however, he assumed that signal 585-2 would display approach for east-bound trains. He thought a lighted fusee in the vicinity of the crossover could be seen a distance of about 80 or 100 car lengths, which should be sufficient distance for stopping a train. When officials rode on his train the two brakemen provided adequate flag protection for the crossover movement, and the conductor obtained authority from the dispatcher to make the crossover movement and then lined the switches himself; however, in most instances the crossover movement at A. D. Siding was made in the manner in which it was being made at the time the accident occurred. He

was last examined on operating rules on February 14, 1941. He understood that before a crossover movement is started adequate flag protection should be provided; however, in this instance, the crossover movement was started before any flag protection was provided. There had been no understanding that the fireman would provide flag protection for the front end of the train. Extra 1644 was moving at a speed of about 7 miles per hour when the accident occurred. The weather was cloudy and wind was blowing.

Front Brakeman Loomis, of Extra 1644, stated that his train stopped at A. D. Crossover at 7:05 a. m. He proceeded to the telephone, obtained authority from the dispatcher for his train to make a crossover movement to the eastward siding, and informed the dispatcher that his train would be into clear in 2 minutes. He did not ask the dispatcher about any east-bound train, nor did the dispatcher inform him concerning any such train. The brakeman said that he is promoted to conductor and usually obtains authority for his train to make the crossover movement. He gave a hand signal for the flagman to line the west switch of the crossover and he himself lined the east crossover switch and the siding switch. Before any switches were lined, the front brakeman placed a lighted red fusee on the eastward track and the ordnance-plant pilot lined the eastward-siding derail. The front brakeman looked westward but neither saw nor heard any train approaching. After the switches were lined the flagman boarded the train and gave a signal for the track to back. The movement was started promptly and the front brakeman proceeded westward to provide flag protection against east-bound trains. He observed an east-bound train approaching about 4,900 feet distant and, holding a lighted fusee, he gave stop signals. He could not estimate the speed of the approaching train. His signals were not acknowledged from the approaching train, and when the brakeman reached a point about 800 feet west of signal 584-2 he jumped to the south of the track to avoid being struck. Brakeman Loomis was last examined on operating rules in February, 1941. He had been assigned to the commuting train since February and the movement involved at the crossover was handled in the usual manner. He understood that a crossover movement should be protected before the switches are lined against main-track movements but expressed the opinion that since the weather was clear, the track was tangent, and a fusee was displayed, sufficient protection was provided. He said that the first day he was assigned to this service he had assumed the duty of obtaining authority to cross over, as the conductor was busy with other duties and he assisted the conductor in order to avoid delay. If he provided adequate protection unusual delay would occur. He said that he did not depend upon automatic signals to assist in providing flag protection. The usual time consumed during the crossover movement is 2 minutes. If more time is used the dispatcher is informed of the delay and flag protection is provided.

Flagman Thomas, of Extra 1644, stated that at A. D. Crossover, after the front brakeman obtained authority for the train to move from the westward main track to the eastward siding, he himself lined the west crossover switch, then sounded the communicating signal whistle for the train to back. After his train started the back-up movement through the crossover, he tossed a lighted fusee, which landed between the rails of the eastward main track. At that time he saw the front brakeman proceeding westward with a lighted fusee. The flagman could see eastward about 1-1/2 miles; therefore, he remained on the train and did not provide protection for the rear of his train. He said that the procedure for movement at A. D. Siding was the same each day. Since being assigned to the commuting service in February, he had depended upon the automatic signals to the rear of his train to assist in providing flag protection. He understood that his duty was to provide flag protection a distance sufficient in which a following train could be stopped, and that the front brakeman was required to provide adequate flag protection on the eastward track; however, both were required also to line switches and to perform other duties incidental to making a crossover movement. The flagman said that the conductor was usually occupied with duties within the train so that he was unable to assist in the movement. He thought when authority for a crossover movement was granted by the dispatcher it indicated that no train was moving in the opposite direction on the adjacent main track; also, under the provisions of special order No. 19 the crew of any east-bound freight train should expect to find a train operating on the special schedule and moving through the crossover at A. D. Siding at 7:05 a. m., but he had not been so instructed and could not explain why he had formed such an opinion since that part of the special schedule was applicable on the westward main track only. In 1927 he was promoted to conductor, and he was last examined on the operating rules in February, 1941. Visibility was good at the time of the accident, which occurred about 7:09 a. m. He said that if adequate flag protection had been provided the accident might have been averted.

Engineman Stallsmith, of Extra 3400, stated that at Kent, 20.2 miles west of A. D. Crossover, a terminal air-brake test was made and the brakes functioned properly en route. As his train was approaching Windham the speed was about 50 miles per hour, and he made about a 10-pound brake-pipe reduction. When the speed was reduced to about 40 miles per hour, he released the brakes. Signal 585-2 displayed clear and the fireman, the front brakeman and he called its indication. The wind was blowing from the north. Smoke and steam blowing down over the right side of the engine materially restricted visibility. He was depending mostly on the fireman to observe and to inform him of conditions ahead. When his train was about 1/4 mile west of signal 584-2, the fireman said that the signal displayed

stop-and-proceed and the engineman started to make a service brake-pipe reduction. The fireman again warned him and the engineman moved the brake valve to emergency position and opened the sander valve. The engineman could not see the signal and did not see Extra 1644 until his engine was about 350 feet distant. He estimated that the speed of his train had been reduced to 12 or 15 miles per hour when the accident occurred. The engineman did not hear any torpedo exploded nor did he see either a flagman or a lighted fusee. About 2 minutes elapsed while his train moved between signals 585-2 and 584-2. At Kent he read special order No. 19, which he thought gave trains operating on the special schedule permission to cross over at A. D. Crossover at 7:05 a. m. and that the crews of east-bound trains were required to maintain a lookout for such movement at A. D. Crossover at that time; however, crossover movements should be protected by a flagman stationed at a distance sufficient for stopping an approaching train. He thought if a flagman had been stationed about 900 feet west of the crossover he would have been in view a distance sufficient for stopping the train. Formerly, the rules required that, after crossover switches between two main tracks were lined for a crossover movement, an interval of 2 minutes should elapse before such movement was started; however, at present the rules do not require any time interval. He said that the road foreman of engines had instructed train and engine employees to approach A. D. Crossover at 7:05 a. m. with caution and to maintain a lookout for the commuting special crossing over. He was last examined on operating rules on February 25, 1941.

Fireman Stevenson, of Extra 3400, stated that as his train was approaching the point where the accident occurred the speed was about 40 miles per hour and he was maintaining a lookout ahead. Blowing snow restricted visibility. When his train approached signal 585-2 the engineman and the front brakeman called the indication as clear but he could not see it. He was tending the fire and did not see signal 584-2 until his train^{was} about 30 car lengths west of it. At that time he observed that the signal was displaying stop-and-proceed and Extra 1644 was backing through the crossover. He immediately called a warning to the engineman, who started a service brake-pipe reduction, then moved the brake valve to emergency position but the distance was not sufficient for stopping his train short of Extra 1644. The speed was 8 or 10 miles per hour and it was about 7:07 a. m. when the accident occurred. He did not observe either a flagman or a burning fusee. He said that a freight train similar to Extra 3400 could not be stopped by an emergency application of the brakes from a speed of 40 miles per hour in less than 50 car lengths and by a service application in less than 1 mile. He was last examined on operating rules on February 24, 1941. He understood that before a crossover movement is

started adequate flag protection must be provided. In his opinion a flagman should have been stationed at least 1/2 mile west of A. D. Crossover to insure full protection. He had been instructed by the road foreman of engines that east-bound trains must run with respect to the time shown for a west-bound train operating on the schedule authorized by special order No. 19. In this instance he had forgotten that a special schedule was due at A. D. Crossover at 7:05 a. m.

Front Brakeman Dortman, of Extra 3400, stated that when the engineman called the indication of signal 585-2 the front brakeman looked from the engineman's window and observed from a point 500 feet west of the signal that the indication was clear. The fireman also called the signal. The front brakeman did not again look out until the fireman warned the engineman that signal 584-2 displayed stop-and-proceed. The front brakeman crossed to the left side and observed that his train was about 3/4 mile west of A. D. Crossover, signal 584-2 was displaying stop-and-proceed, and Extra 1644 was backing through the crossover. He did not see either a flagman or a lighted fusee. He estimated the speed at 15 or 20 miles per hour when the collision occurred. He understood that under special order No. 19, an east-bound freight train should not pass A. D. Crossover until it was determined that the passenger extra had completed the crossover movement.

Conductor Hill, of Extra 3400, stated that as his train was approaching the point where the accident occurred he was in the cupola and the speed was about 40 or 45 miles per hour. When the caboose was about 3,000 feet west of the crossover at A. D. Siding the brakes were applied in emergency, and the train stopped abruptly. The speed was reduced to about 25 or 30 miles per hour when the collision occurred.

The statement of Flagman First, of Extra 3400, added nothing of importance.

M. L. Andrews, of the Ravenna Ordnance Company, stated that he pilots commuting trains from the eastward siding to the ordnance plant. Extra 1644 West arrived at A. D. Crossover at 7:05 a. m. Flag protection was provided by placing lighted fusees on the eastward main track west of the crossover.

Dispatcher Mitchell, at Youngstown, stated that about 7:05 a. m. the front brakeman of Extra 1644 requested authority for his train to move from the westward main track to the eastward siding. The dispatcher granted authority for such movement but did not inform the brakeman that Extra 3400 East had departed from K.X. Crossover at 6:30 a. m. Based on the usual running time of 30 minutes, he assumed that Extra 3400

should pass A. D. Crossover about 7 a. m. or 7:10 a. m. It is not customary to stop fast freight trains, such as Extra 3400, to permit other trains to make crossover movements ahead. When he granted authority for Extra 1644 to cross over at A. D. Crossover, he thought Extra 3400 was approaching that point. Usually he gives information concerning approaching trains to the person requesting permission to make the crossover movement; however, it is not customary to grant authority for movements in advance of approaching trains. In this instance neither he nor the front brakeman of Extra 1644 mentioned any approaching train. The dispatcher said that under the rules and special timetable instructions adequate flag protection must be provided before crossover switches are lined for a crossover movement.

Engineman Soules and Conductor Thompson, of the Akron-A. D. Siding commuting train, stated that frequently crossover movements are made at A. D. Crossover under the protection of fusees placed at the crossover switches. Conductor Thompson said that a lighted fusee on a tie at the switch could be seen in clear weather a distance sufficient for stopping an approaching train.

Chief Train Master Garland stated that special order No. 19 was issued for information to commuting passengers employed at the Ravenna Ordnance Plant and for preceding west-bound freight trains to clear the times shown in order to avoid delay to trains operating on the schedule authorized by the order. Trains moving in the opposite direction on the adjacent main track are required to run with respect to this schedule only at stations where passengers are loaded and unloaded. A. D. Siding is not one of these stations. The special order does ^{not} confer to trains operating on the schedule involved any right or authority over trains moving on adjacent tracks.

General Manager Rosser stated that the time, 7:05 a. m., of the schedule authorized by special order No. 19 was to indicate the final terminal of the schedule and for information to west-bound freight trains. A. D. Crossover is not a station for loading and unloading passengers.

Road Foreman of Engines Hill stated that he had instructed train and engine-service employees that freight trains must approach A. D. Crossover under control at the time specified in special order No. 19 and expect a commuting train to be using the crossover.

Road Foreman of Engines Maher stated that at the scene of the accident he inspected engine 3400 and found the automatic brake valve in emergency position, the double-heading cock

open, the sander valve open and the reverse lever in position for forward motion.

Leading Car Inspector Waltrous, at Kent, stated that, accompanied by Car Inspectors Miller and Pione, he conducted a terminal air-brake test of Extra 3400 East. Each brake applied and released properly. Brake-pipe pressure of 80 pounds was maintained by engine 3400.

Machinist Dipirro stated that he tested the air-brake equipment of engine 3400 before it departed from Kent, and that the equipment was in safe and suitable condition for service.

General Air Brake Inspector Higley stated that, after the accident, tests disclosed that all air-regulating devices, air gauges, the brake valve, and the distributing valve functioned properly.

General Signal Inspector Rober stated that he arrived at the scene of the accident at 12:30 p. m., March 18. At 11 p. m., March 19, the eastward main track was restored to service and signals 585-2 and 584-2 functioned as intended.

Signal Supervisor Castor stated that external and internal tests and a 24-hour observation test failed to disclose any condition that could have prevented the signals involved from functioning properly.

Observations of the Commission's Inspectors

Inspection by the Commission's inspectors of signals 585-2 and 584-2 disclosed that the operating values were within the prescribed limits, the mechanisms moved freely, there was no excessive wear, and all circuits were free from grounds.

Discussion

According to the evidence, Extra 1644 West, a passenger train, stopped at the crossover at A. D. Siding, received permission from the dispatcher to cross over to the eastward track and thence to the eastward siding, and was backing through the crossover at a speed of 6 or 7 miles per hour when its fifth, sixth and seventh cars were struck by Extra 3400 East, which was moving at a speed variously estimated as from 8 to 30 miles per hour. The weather was clear but blowing snow obscured visibility somewhat. The accident occurred on tangent track and in automatic block-signal territory.

Under the rules, the crew of the passenger train understood that they were required to furnish adequate protection against trains on the eastward main track before their train could foul that track. According to the statement of the front brakeman of the passenger train, he flagged Extra 3400 with a lighted fusee from a point about 900 feet west of the crossover but the engineman, fireman and front brakeman of Extra 3400 did not see a flagman; however, at a considerable distance they saw the passenger train proceeding through the crossover, and the stop-and-proceed indication of the signal just west of the crossover. All the members of the crew of the passenger train understood that they are not permitted to depend upon automatic signal indications to assist in providing flag protection; however, there was considerable evidence that they were, to a great extent, depending upon signal indications for protection, and that the movement in question was made in the same manner as on previous days. One member of the crew of Extra 3400 thought the flagman of the other train should have flagged from a point at least 1/2 mile west of the crossover in order to furnish adequate protection. The front brakeman of the passenger train said his train would be delayed considerably if proper flag protection were furnished. Nevertheless, if adequate flag protection had been furnished, it is probable this accident would have been averted.

Some of the members of the crews of both trains thought a special order, which specified a schedule for the passenger train for taking on passengers and provided that freight trains should clear the time of the passenger train, required Extra 3400 to approach the crossover with caution and to expect to find it occupied by the passenger train. The passenger-train crew were relying upon the special order for protection against trains on the eastward track. Prior to the accident the officials did not have a common understanding of the meaning of this order; however, the preponderance of evidence was that it applied only to trains on the westward track.

The crew of Extra 3400 East received a proceed indication at the signal located about 1-1/2 miles west of the crossover, and a stop-and-proceed indication at the next signal located just west of the crossover. Since the signals were operating as intended, it is apparent the engine of Extra 3400 had passed the approach signal before the derail on the siding, which was the first unit in connection with the crossover movement to be operated, was lined for the passenger train to enter the siding. Extra 3400 traversed the distance between these signals in about 2 or 2-1/2 minutes. Under the rules in effect at the time of the accident, the crew of the passenger train

were not required to wait after the process of lining the switches and derail was started; however, there was evidence introduced that formerly an interval of 2 minutes was required. If the crew of the passenger train had waited a short time after the derail was lined before it started the crossover movement, it is probable they would have known of the approach of Extra 3400 and the accident would have been averted. The permission to cross over, granted by the dispatcher, did not imply there was no train approaching closely on the eastward track; it implied only that the crossover movement could be made at that time, irrespective of possible delay to any other train.

The failure to obey one or more operating rules for a considerable length of time, as the investigation disclosed had been the case in the movement of the passenger train through the crossover involved, and lack of a common understanding among the officials and also among the employees as to the requirements of the special order indicates lack of proper supervision. Officials of this railroad should immediately take necessary steps to obtain among themselves and the employees a common understanding of all operating rules and regulations and to enforce obedience to the rules and regulations.

Cause

It is found that this accident was caused by failure to provide adequate flag protection before the passenger train entered a crossover.

Dated at Washington, D. C., this fifth
day of May, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.