

RAILROAD ACCIDENT INVESTIGATION

Report No 3818

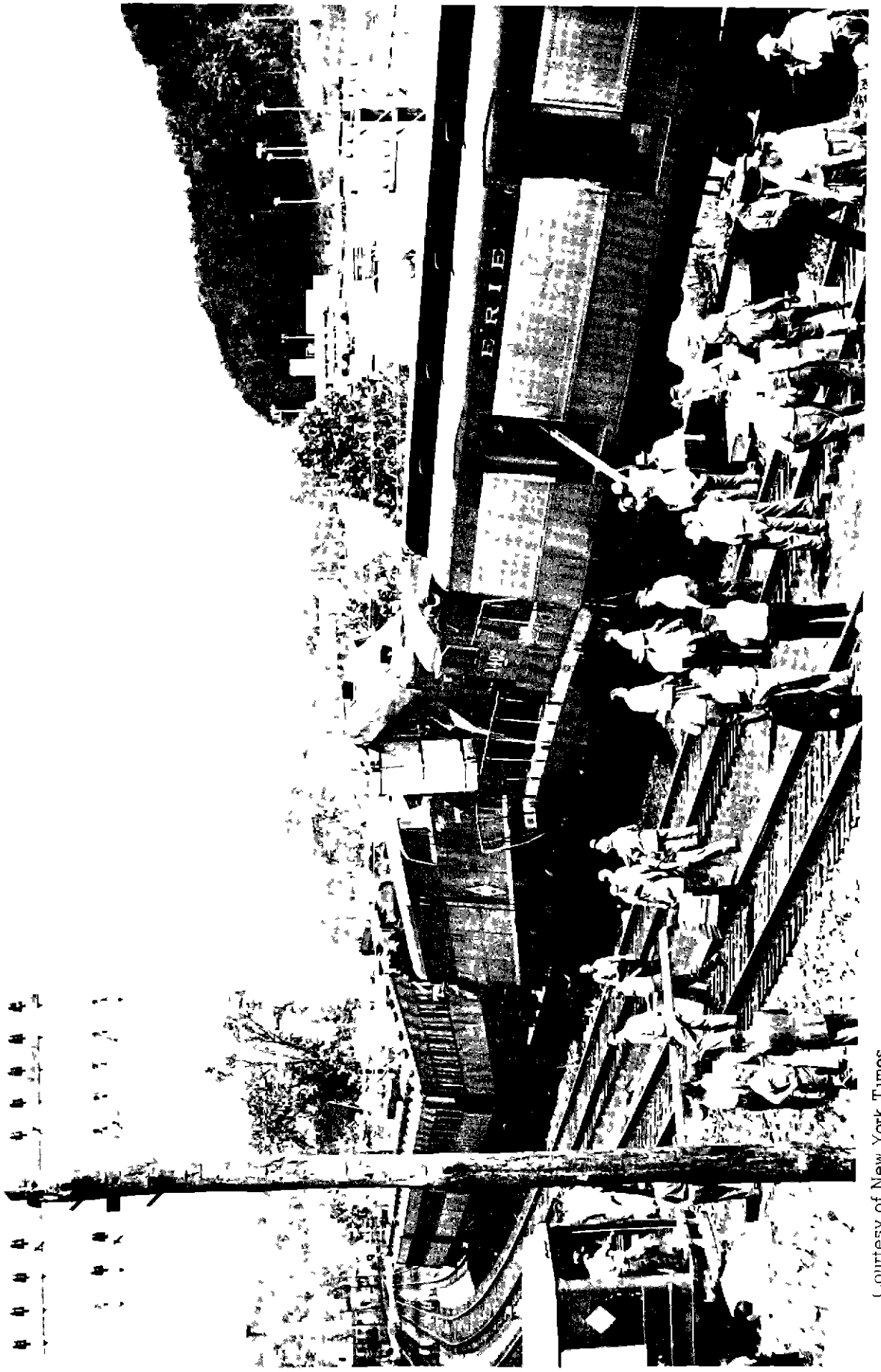
THE ERIE RAILROAD COMPANY

SLOATSBURG, N Y

AUGUST 11, 1958

INTERSTATE COMMERCE COMMISSION

Washington



Courtesy of New York Times

SUMMARY

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DATE	August 11, 1958	
RAILROAD	Erie	
LOCATION	Sloatsburg, N Y	
KIND OF ACCIDENT	Head-end collision	
TRAINS INVOLVED	Passenger	Passenger
TRAIN NUMBERS	50	53
LOCOMOTIVE NUMBERS	Diesel-electric unit 859	Diesel-electric unit 1402
CONSISTS	4 cars	5 cars
SPEEDS	15-20 m p h.	20 m p h
OPERATION	Timetable, train orders, and automatic block-signal system	
TRACK	Double, 1°40' curve, 0.47 percent ascending grade westward	
WEATHER	Partly cloudy	
TIME	5:47 a m	
CASUALTIES	5 killed, 37 injured	
CAUSE	Failure to deliver a right-of-track order	

INTERSTATE COMMERCE COMMISSION

REPORT NO 3818

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

THE ERIE RAILROAD COMPANY

January 16, 1959

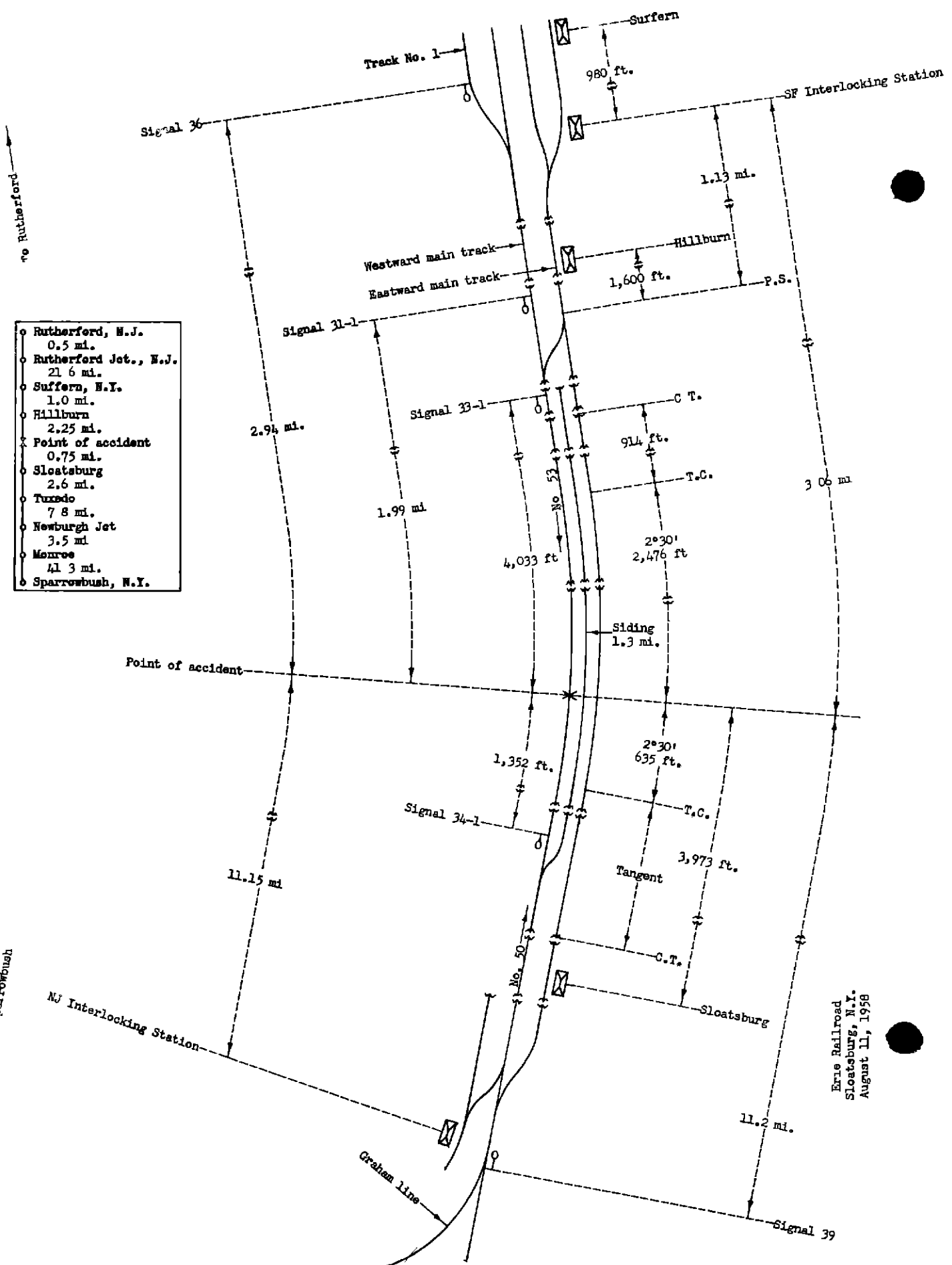
Accident near Sloatsburg, N Y , on August 11, 1958, caused by failure to deliver a right-of-track order

REPORT OF THE COMMISSION¹

FREAS, Commissioner

On August 11, 1958, there was a head-end collision between 2 passenger trains on the Erie Railroad near Sloatsburg, N Y , which resulted in the death of 2 passengers and 3 train-service employees, and the injury of 24 passengers, 1 railway express messenger, 2 railway mail clerks, 3 employees not on duty, and 7 train-service employees. This accident was investigated in conjunction with representatives of the New York Public Service Commission.

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



- Rutherford, N.J. 0.5 mi.
- Rutherford Jet., N.J. 21.6 mi.
- Suffern, N.Y. 1.0 mi.
- Hillburn 2.25 mi.
- ✕ Point of accident 0.75 mi.
- Sloatsburg 2.6 mi.
- Tuxedo 7.8 mi.
- Newburgh Jet 3.5 mi.
- Monroe 41.3 mi.
- Sparrowbush, N.Y.

Errie Railroad
Sloatsburg, N.Y.
August 11, 1958

Location of Accident and Method of Operation

This accident occurred on that part of the New York Division extending between Rutherford, N J , and Sparrowbush, N Y , 81.3 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 an automatic block-signal system. Trains moving against the current of traffic are operated by train orders. This accident occurred on the westward main track at a point 25.4 miles west of Rutherford and 3,973 feet east of the station at Sloatsburg, N Y. SF Interlocking Station is located 22.6 miles west of Rutherford, approximately 980 feet west of the station at Suffern, N Y , and 3.06 miles east of the point of accident. East of SF interlocking the railroad consists of a 4-track line. The most northerly track of the 4-track line is designated as track No. 1. NJ Interlocking Station, Newburgh Jct , N Y , is located 36.5 miles west of Rutherford, and 11.15 miles west of the point of accident. West of Newburgh Jct the railroad is a single-track line. A single-track line designated as the Graham line diverges to the north from the westward main track at NJ interlocking. A siding approximately 1.3 miles in length is located between the main tracks in the vicinity of the point of accident. At Hillburn, N Y , a trailing-point crossover connects the main tracks. The switches of the crossover are of the manually-operated type. The east switch of the crossover is located 1.13 miles west of SF Interlocking Station and approximately 1,600 feet west of the station at Hillburn. From the east on the westward main track there are, in succession, a tangent 914 feet in length, and a compound curve to the right, having a maximum curvature of 2°30', 2,476 feet to the point of accident and 635 feet westward. The curvature at the point of accident is 1°40'. From the west there are, in succession, a tangent of considerable length and the curve on which the accident occurred. The grade is 0.47 percent ascending westward at the point of accident.

Interlocking signal 36, controlled from SF Interlocking Station and governing westbound movements on track No. 1 through SF interlocking to the westward main track, and automatic signals 31-1, 33-1, and 34-1, governing westbound movements on the westward main track, are located, respectively, 2.94 miles east, 1.99 miles east, 4,033 feet east, and 1,352 feet west of the point of accident. Interlocking signal 39, controlled from NJ Interlocking Station and governing eastbound movements from the single-track line through NJ interlocking to the westward main track, is located 11.2 miles west of the point of accident. Signal 36 is of the color-light type, and the other signals are of the searchlight type. The aspects applicable to this investigation, and the corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
36	Red-over-red	STOP	STOP
36	Green-over-red	PROCEED	CLEAR
31-1	Green-with-number plate	PROCEED	CLEAR
33-1	Yellow-with-number plate	PREPARE TO STOP AT NEXT SIGNAL. TRAIN EXCEEDING MEDIUM SPEED MUST AT ONCE REDUCE TO THAT SPEED.	APPROACH

34-1	Red-with-number plate	STOP THEN PROCEED AT RESTRICTED SPEED	STOP AND PROCEED
39	Red-over-red	STOP	STOP
39	Red-over-yellow	PROCEED AT RESTRICTED SPEED	RESTRICTING

The controlling circuits are so arranged that when the blocks of signals 31-1 and 33-1 are unoccupied, and the block of signal 34-1 is occupied, signal 31-1 displays a Clear aspect, signal 33-1 displays an Approach aspect, and signal 34-1 displays a Stop-and-proceed aspect. Signals 36 and 39 are also used as train order signals.

The interlocking at SF is of the mechanical type. The machine is provided with 36 levers of which 28 are working levers. A track model board is located above the interlocking machine. An approach annunciator consisting of a bell operating on the single-stroke principle is provided. The east end of the annunciator circuit of track No. 1 is located 1.2 miles east of SF Interlocking Station. When a westbound train enters the annunciator circuit of track No. 1 the bell sounds and a light becomes lighted on the track model board.

This carrier's operating rules read in part as follows:

DEFINITIONS

Fixed Signal—A signal of fixed location indicating a condition affecting the movement of a train or engine.

NOTE TO DEFINITION OF FIXED SIGNAL—The definition of a "Fixed signal" covers such signals as switch, train order, block, interlocking, * * * or other means for displaying indications that govern the movement of a train or engine.

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.

OPERATING RULES

207 To transmit a train order, the signal "31" or the signal "19" followed by the direction must be given to each office addressed, the number of copies being stated, if more or less than three—thus, "31, West, copy 5," or "19, East, copy 2."

When an operator receives the signal "31" or "19" followed by the direction, he must immediately display the "Stop Signal" for the direction indicated and then reply "stop displayed," adding the direction.

210 When a "31" train order has been transmitted, operators must, unless otherwise directed, repeat it at once from the manifold copy in the succession in which the several offices have been addressed, and then write the time of repetition on the order. Each operator receiving the order should observe whether the others repeat correctly.

The conductor or engineer or others addressed must read it to the operator and then sign it, and the operator will send their signatures preceded by the number of the order to the Superintendent. The response "Complete," and the time, with the initials of the Superintendent, will then be given by the train dispatcher. Each operator receiving this response will then write on each copy the word "Complete," the time, and his last name in full and then deliver a copy to each person addressed, except that when the order is signed by the conductor, he must personally deliver a copy of it to each engineer, * * *

214 When a train order has been repeated and before "Complete" has been given, the order must be treated as a holding order for the train addressed, but must not be otherwise acted on until "Complete" has been given.

* * *

221 Unless otherwise provided, a fixed signal must be used at each train order office, which shall indicate "Stop" where there is an operator on duty, except when changed to "Proceed" to allow a train to pass when there are no train orders for that train and when authorized by train dispatcher. While "Stop" is indicated, train must not leave without Clearance Form "A" * * *

When a train order is to be delivered to a train, the fixed signal must be displayed at "Stop" for the track and in the direction of the approaching train, and a flag or light must be displayed in the place provided for the purpose, a red flag or red light indicating "31" orders or "19" orders that restrict the superiority of the train at that point, a yellow flag or yellow light indicating other "19" orders.

This combination of signals must be acknowledged by the engineer by two short sounds of the engine whistle * * * in delivering "31" orders the fixed signals must remain at "Stop" until the order is delivered as prescribed by Rule 210.

* * *

FORMS OF TRAIN ORDERS

J

Holding Order

(1) Hold No 2

(2) Hold all, or eastward, trains

When a train has been so held it must not proceed until the order to hold is annulled, or an order given to the operator in the form

_____ may go

* * *

D-R

Providing for a Movement Against the Current of Traffic

(1) No 1 has right over opposing trains on _____ track C to F

The designated train must use the track specified between the points named and has right over opposing trains on that track between those points. Opposing trains must not leave the point last named until the designated train arrives

All trains between the points named moving with the current of traffic in the same direction as the designated train must, when practicable, receive a copy of the order, and may then proceed on their schedules, or rights

* * *

D-271 A train running against the current of traffic, where signals are not provided to govern the movement against the current of traffic, must receive train order authority, Clearance Form "A" * * * for such movement

INTERLOCKING RULES

617 Operating levers must be blocked or marked and, must not be used * * * when a track is obstructed

The maximum authorized speed for passenger trains in the vicinity of the point of accident is 70 miles per hour

Description of Accident

No 50, an eastbound first-class passenger train, consisted of diesel-electric unit 859, a road type unit, and 4 coaches of conventional all-steel construction. This train departed from Monroe, N Y, 3.5 miles west of Newburgh Jct, at 5 25 a m, on time, passed signal 39, which displayed a Restricting aspect, and passed NJ Interlocking Station, the last open office, at 5 32 a m, 1 minute late, where members of the crew received copies of a Clearance Form A and of train order No 103 which read as follows

#50 Engine 859 has right over
opposing trains on westward
track Newburgh Jct to first
crossover west of Hillburn

This train entered the westward main track at NJ interlocking and while moving at an estimated speed of 15 to 20 miles per hour it collided with No 53 at a point 3,973 feet east of the station at Slootsburg

No 53, a westbound first-class passenger train, consisted of road-switcher type diesel-electric unit 1402 with the control compartment at the east end, 1 express car, 1 mail-baggage car, 1 mail car, and 2 coaches, in the order named. The cars were of conventional all-steel construction. This train departed from Hoboken, N J, 8.4 miles east of Rutherford, at 4 00 a m, on time. It passed Rutherford Jct at 4 17 a m, 1 minute late, departed from the station at Suffern at 5 40 a m, on time, passed signal 36, which displayed a Clear aspect, passed SF Interlocking Tower, the last open office, about 5 41 a m, passed signal 31-1, which displayed a Clear aspect, passed signal 33-1, which displayed an Approach aspect, and while moving at an estimated speed of 20 miles per hour it collided with No 50

The front truck of the diesel-electric unit and the front truck of the first car of No 50 were derailed. The underframe of the diesel-electric unit of No 50 overrode the underframe of the diesel-electric unit of No 53. The superstructure of the diesel-electric unit of No 53 was telescoped throughout a distance of approximately 25 feet. The underframe of the first car of No 50 overrode the underframe of the diesel-electric unit and the superstructure of the car was telescoped throughout a distance of approximately 17 feet. Both diesel-electric units were heavily damaged. The first car of each train was destroyed and the other cars were somewhat damaged.

The engineer, the fireman, and the front brakeman of No 50 were killed. The engineer, the fireman, the conductor, and the baggageman of No 53, the conductor and the flagman of No 50, and a road foreman of engines, who was in the control compartment of the diesel-electric unit of No 50, were injured.

The weather was partly cloudy at the time of the accident, which occurred at 5 47 a m.

Both diesel-electric units involved in the accident, and the interlocking stations at SF and NJ are provided with two-way radio-telephone equipment.

Discussion

The office of the train dispatcher in charge of the operation of trains between Hoboken and Newburgh Jct is located at Hoboken. About 5 15 a m on the day of the accident the train dispatcher was informed by the operator at NJ Interlocking Station that Extra 703 East, an eastbound freight train, consisting of 3 diesel-electric units, 115 cars, and a caboose, was approaching NJ Interlocking on the Graham Line. Switching operations were to be performed by the members of the crew of that train in the vicinity of Hillburn. In order to expedite the movement of the freight train and to prevent a delay to No 50, the train dispatcher decided to authorize the freight train to operate over the eastward main track and to authorize No 50 to operate against the current of traffic over the westward main track, and he so informed the operator at NJ Interlocking Station. At 5 16 a m the train dispatcher transmitted by telephone train order No 103 form 31 to the operator at SF Interlocking Station addressed to C & E all westbound trains, and form 19 to the operator at NJ Interlocking Station addressed to C & E No 50. Each operator repeated the order. The operator at SF Interlocking Station completed the repetition of the order and gave the stop-displayed signal at 5 17 a m. The form 19 order for the crew of No 50 was made complete at 5 18 a m.

Both the locomotive and the caboose of Extra 703 East were provided with radio-telephone equipment. The operator at NJ Interlocking Station said that he informed the crew of that train and the engine crew of No 50 of the intended movements by use of the radio-telephone. As Extra 703 East was approaching NJ interlocking the operator lined the route for movement from the Graham Line through NJ interlocking to the eastward main track. This train passed NJ Interlocking Station at a speed of approximately 25 miles per hour and entered the eastward main track at 5 28 a m.

As No 50 was approaching NJ interlocking, signal 39 displayed a Stop aspect, and a yellow flag, indicating that the operator held a form 19 train order for that train, was displayed in its proper place at the interlocking station. The engineer acknowledged these signals by sounding the locomotive horn. The operator then caused signal 39 to display a Restricting aspect and delivered copies of a Clearance Form A and train order No 103 to the crew as the train passed NJ Interlocking Station at slow speed. Under the provisions of this order No 50 had right over opposing trains on the westward main track between Newburgh Jct and the first crossover west of Hillburn. The train passed the interlocking station and entered the westward main track at 5 32 a m. Stops were made at Southfields and Tuxedo, 7 15 miles and 3 35 miles west of the point of accident, respectively, and at Sloatsburg. As this train was approaching the point where the accident occurred the engineer was operating the locomotive, the fireman was seated on the brakeman's seat, and a road foreman of engines was seated on the fireman's seat. The conductor, the front brakeman, and the flagman were in the first coach. The brakes of this train had been tested and had functioned properly when used.

en route. The headlight was lighted dimly. The road foreman said that shortly after the train departed from Sloatsburg the employees in the control compartment observed No. 53 approaching at a considerable distance. They were not aware that the train was occupying the westward main track at that time. Their view of No. 53 was then obstructed by curvature of the track and vegetation. Both the road foreman and the fireman observed that No. 53 was occupying the westward main track when it again came into view. They called a warning to the engineer who immediately initiated an emergency application of the brakes. The engineer and the fireman entered the engine compartment before the collision occurred. The road foreman estimated that the speed of the train was about 50 miles per hour when the brakes were applied in emergency and that it was reduced to 15 to 20 miles per hour when the collision occurred.

As No. 53 was approaching the point where the accident occurred the enginemen were in the control compartment of the diesel-electric unit, and the members of the train crew were in various locations throughout the cars of the train. The brakes of this train had been tested and had functioned properly when used en route. The headlight was lighted dimly. The engineer, the fireman, and the conductor were injured in the accident and could not be questioned at the time of the investigation. The flagman said he observed that signal 36 displayed a Clear aspect and that neither a red flag nor a red light was displayed at SF Interlocking Station to indicate that the operator at that point held a form 31 train order for the crew of No. 53. In a statement to the road foreman of engines, the engineer said that signal 31-1 displayed a Clear aspect. He said that signal 33-1 displayed an Approach aspect and that the speed of the train was reduced to comply with the indication. The flagman said that the speed of the train was reduced in the vicinity of signal 33-1 and that an emergency application of the brakes was made immediately prior to the collision. He estimated that the speed of the train was about 20 miles per hour when the collision occurred.

Under the rules of the carrier when a train dispatcher transmits the signal "31 West" to an operator at one station and the signal "19 East" to an operator at another station, the operator receiving the signal "31 West" is required to ascertain immediately that the lever controlling the train-order signal governing westbound movements is in position to cause the signal to display a Stop aspect. He is required to block the lever in that position and to display a red flag or a red light in the proper place at the interlocking station to indicate that he is holding a form 31 train order for the crew of a westbound train. He is then required to give the train dispatcher the "stop displayed west" signal. The operator receiving the signal "19 East" is required to ascertain immediately that the lever controlling the train-order signal governing eastbound movements is in position to cause the signal to display a Stop aspect. He is required to block the lever in that position and to display a yellow flag or yellow light in the proper place at the interlocking station to indicate that he is holding a form 19 train order for the crew of an eastbound train. He is then required to give the train dispatcher the "stop displayed east" signal. After receiving the stop-displayed signal from each operator the train dispatcher transmits the train order. The order must be repeated at once by each operator, after which the train dispatcher makes the form 19 train order complete. In order to make the form 31 train order complete, the conductor or the engineer addressed must read it to the operator and then sign it. The operator informs the train dispatcher that the order has been properly signed and the train dispatcher then makes the order complete. Under the rules when a train order has been repeated and before "Complete" has been given, the order must be considered as a holding order for the train addressed but must not be otherwise acted on until "Complete" has been given.

Before transmitting train order No 103 on the day of the accident the train dispatcher gave the signal "31 West" to the operator at SF Interlocking Station and the signal "19 East" to the operator at NJ Interlocking Station. The operator at SF Interlocking Station said that when the train dispatcher gave the signal "31 West" he observed that the lever controlling signal 36 was in position to cause that signal to display a Stop aspect. However, he did not block the lever, did not display either a red flag or a red light, and did not give the stop-displayed signal after the signal "31 West" was given and before the train order was transmitted as required by the rules. The train dispatcher transmitted the train order without requiring the operator to give the stop-displayed signal after the signal "31 West" was given and before the train order was transmitted. In copying the order the operator omitted the word "west" and noted on the order that it was repeated at 5 14 a m. The train dispatcher's record indicated that the order was repeated at 5 17 a m. However, the train dispatcher said that the operator repeated the order correctly. The operator said that while the train dispatcher was transmitting the order a telephone in the interlocking station was ringing. He gave the stop-displayed signal after repeating the order although he had not displayed the proper signals, and then answered the telephone. He said that his attention was distracted by the telephone conversation, and that he then became preoccupied and overlooked the fact that he held a form 31 train order for No 53. He said that shortly after the annunciator bell sounded indicating that No 53 had entered the approach annunciator circuit he cleared signal 36. He said that after No 53 passed the interlocking station he realized that he had not delivered copies of train order No 103 to the members of the crew. He immediately attempted to call the members of the crews of No 50, No 53, and Extra 703 East by radio telephone but was unsuccessful. He then notified the train dispatcher. The train dispatcher called the agent at Tuxedo by telephone and found that No 50 had already passed that station. The train dispatcher said that the radio-telephone equipment in the dispatcher's office was required to be connected through SF Interlocking Station and therefore he did not attempt to reach the members of the crews by that method. The operator at SF Interlocking Station continued to call by radio telephone. He eventually reached the members of the crew of Extra 703 East but No 53 had already passed that train. The members of the crew of Extra 703 East said that when the operator at NJ Interlocking Station informed them by radio telephone that their train was to operate over the eastward main track they did not understand that No 50 was to operate against the current of traffic on the westward main track and therefore they took no action when No 53 passed.

The train dispatcher said that it is the practice to operate No 50 against the current of traffic on the westward main track approximately twice weekly to expedite the movement of the east-bound freight train. He said that when these movements are made it is not expected that the form 31 train order addressed to C & E No 53 at SF Interlocking Station should be completed. Such an order then would necessarily serve as a holding order. After No 50 enters the eastward main track at the first crossover west of Hillburn and passes SF interlocking, the train dispatcher annuls the order.

Under the rules when a train is authorized by train order to move against the current of traffic between two points, all trains between the points named moving with the current of traffic in the same direction as the designated train must, when practicable, receive a copy of the order. The train dispatcher said that he did not address copies of train order No 103 to the members of the crew of Extra 703 East because he thought that train would be delayed if he did so.

In the instant case the operator at SF Interlocking Station failed to block the lever controlling signal 36 in a position to cause that signal to display a Stop aspect, and to display a red flag or red light as required by the rules when he received the signal "31 West" from the train dispatcher. He did not give the stop-displayed signal until after the order was transmitted although the

rules require that the signal be given after the signal "31 West" has been given by the train dispatcher and before the order is transmitted. He gave the stop-displayed signal without fulfilling the requirements of the rules regarding the blocking of the signal lever and the proper display of train order signals. The operator at NJ Interlocking Station did not give the stop-displayed signal at any time while handling the form 19 train order involved although the rules require that that signal be given after the signal "19 East" has been given by the train dispatcher and before the order is transmitted. The train dispatcher failed to require both operators to give the stop-displayed signal at the time specified by the rules. Both the night chief train dispatcher and the train dispatcher said that it has been the practice to give the stop-displayed signal after transmitting the order when a form 31 train order is involved. Further, the train dispatcher said that it is not the usual practice to require the operator at NJ Interlocking Station to give the stop-displayed signal when a form 19 train order is involved.

Cause

This accident was caused by failure to deliver a right-of-track order.

Recommendation

It is recommended that the carrier take steps to insure full compliance with operating rules.

Dated at Washington, D C , this sixteenth
day of January, 1959

By the Commission, Commissioner Freas,

(SEAL)

H D McCOY,
Secretary