

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2487
THE CENTRAL OF GEORGIA RAILWAY COMPANY
REPORT IN RE ACCIDENT
AT STURDIVANT, ALA., ON
MARCH 13, 1941

SUMMARY

Railroad: Central of Georgia

Date: March 13, 1941

Location: Sturdivant, Ala.

Kind of accident: Head-end collision

Trains involved: Freight : Freight

Train numbers: Extra 703 : 34

Engine numbers: 703 : 702

Consist: 73 cars, caboose : 65 cars, caboose

Speed: Standing : 10-15 m. p. h.

Operation: Timetable and train orders

Track: Single; tangent; 0.50 percent
ascending grade eastward

Weather: Cloudy

Time: 6:51 a. m.

Casualties: 3 injured

Cause: Accident caused by failure to provide
adequate flag protection for inferior
train after it had failed to clear
the time of opposing superior train

Recommendation: That consideration be given to installa-
tion of a suitable block system

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2487

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

THE CENTRAL OF GEORGIA RAILWAY COMPANY

April 28, 1941

Accident at Sturdivant, Ala., on March 13, 1941, caused by
failure to provide adequate flag protection for inferior
train after it had failed to clear the time of opposing
superior train.

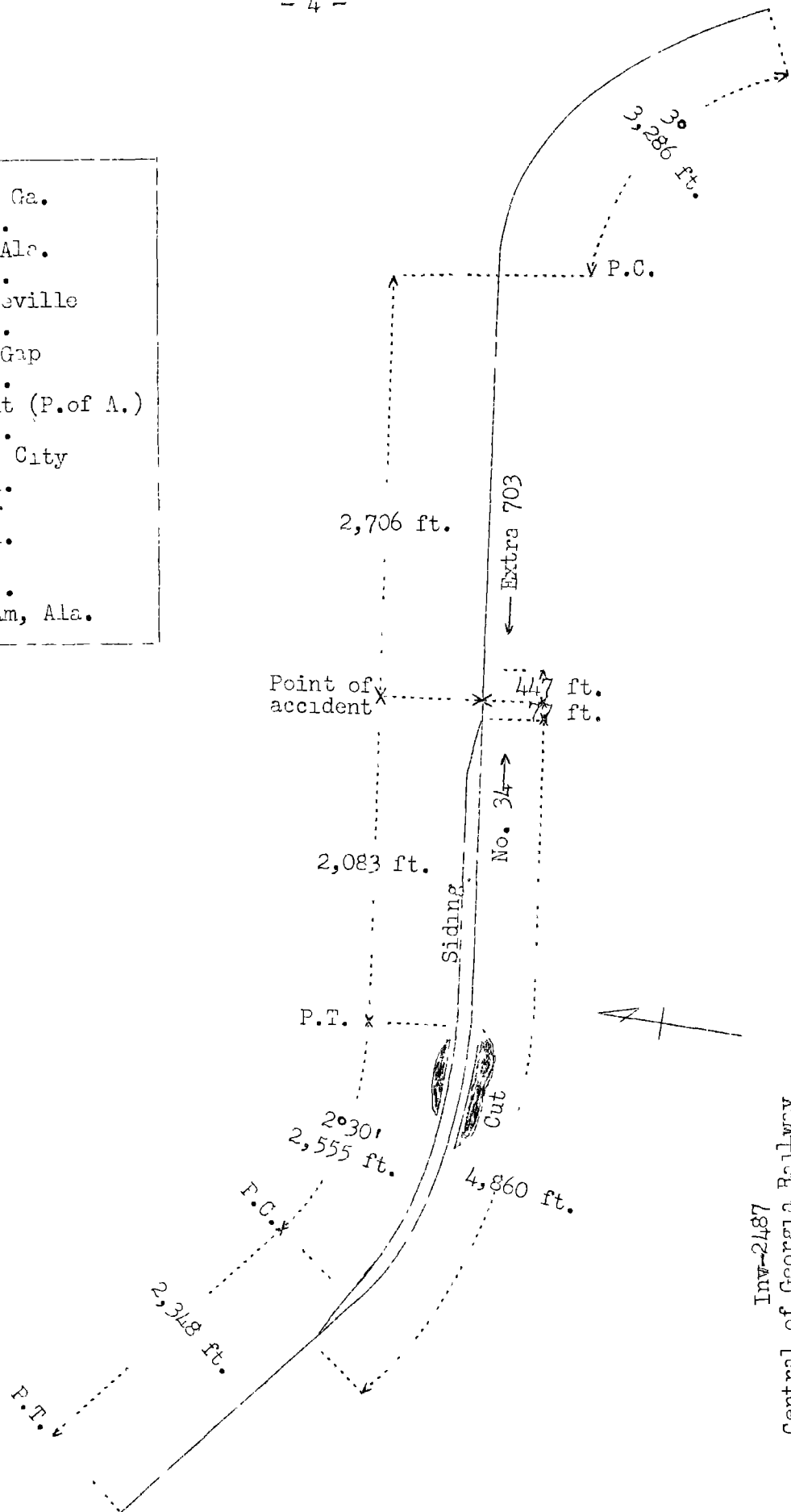
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On March 13, 1941, there was a head-end collision
between two freight trains on the Central of Georgia Railway
at Sturdivant, Ala., which resulted in the injury of three
employees.

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

o	Columbus, Ga.
	28.7 mi.
o	Opelika, Ala.
	28.3 mi.
o	North Dadeville
	4.3 mi.
o	Jacksons Gap
	4.1 mi.
X	Sturdivant (P. of A.)
	6.1 mi.
o	Alexander City
	12.1 mi.
o	Goodwater
	46.4 mi.
o	Winburn
	24.5 mi.
o	Birmingham, Ala.



Inv-2487
 Central of Georgia Railway
 Sturdivant, Ala.
 March 13, 1941

Location and Method of Operation

This accident occurred on that part of the Columbus Division designated as the Birmingham District which extends between Columbus, Ga., and East Thomas, Birmingham, Ala., a distance of 154.5 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders; there is no block system in use. At Sturdivant a siding 4,860 feet in length parallels the main track on the north; the east switch of the siding is 524 feet west of the station at Sturdivant. The accident occurred on the main track at a point 77 feet east of the east siding-switch. As the point of accident is approached from the east there is a 3° curve to the left 3,286 feet in length, which is followed by a tangent 2,706 feet to the point of accident. As the point of accident is approached from the west there are, in succession, a tangent 2,348 feet in length, a 2°30' curve to the left 2,555 feet, and a tangent 2,083 feet to the point of accident. At the east end of the 2°30' curve the track is laid through a hillside cut 800 feet in length. The north wall of this cut is 22 feet high. Between Alexander City and Sturdivant the grade for east-bound trains is, successively, an average of 0.83 percent descending a distance of about 4.0 miles, level 1,500 feet, 0.40 percent ascending 3,000 feet and 0.50 percent ascending 2,630 feet to the point of accident and 2,270 feet beyond.

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

5. * * *

The time applies to the switch where an inferior train enters the siding; * * *

87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of opposing regular trains not less than five minutes unless otherwise provided, * * *

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes,

and when necessary, in addition, displaying lighted fusees.

* * *

The front of the train must be protected in the same way when necessary by the head trainman; if he is unable to go the fireman must be sent in his place.

* * *

Conductors and enginemen are responsible for the protection of their trains.

Flagman's signals:

Day Signals - A red flag,
Torpedoes and
Fusees.

* * *

FORMS OF TRAIN ORDERS

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

* * *

E.

Time Orders.

* * *

(3.) No. 1 Eng 911 wait at H until 9 59 a m
for No 2 Eng 912.

The train first named must not pass the designated point before the time given, unless the other train has arrived. The train last named is required to run with respect to the time specified, at the designated

point or any intermediate station where schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of the train first named.

* * *

The maximum authorized speed for the trains involved is 40 miles per hour.

The weather was cloudy at the time of the accident, which occurred at 6:51 a. m.

Description

Extra 703, a west-bound freight train, with Conductor Cutcliffe and Engineman Bradford in charge, consisted of engine 703, 15 loaded and 58 empty cars and a caboose. At Opelika, 36.7 miles east of Sturdivant and the last open office, the crew received copies of a clearance card and, among others, copies of train order No. 23, Form 19, which read as follows:

No 34 Eng 702 wait at Alexander City until
640 am Sturdivant until 650 am for Extra
703 West.

This train departed from Opelika at 5:37 a. m., according to the train sheet, stopped at Sturdivant about 6:41 a. m., with the engine standing 77 feet east of the east siding-switch, according to statements of the crew, and about 10 minutes later was struck by No. 34.

No. 34, an east-bound second-class freight train, with Conductor Nickerson and Engineman Farr in charge, consisted of engine 702, 64 loaded cars, 1 empty car and a caboose. At Goodwater, 18.2 miles west of Sturdivant and the last open office, the crew received copies of a clearance card and train order No. 23, Form 19, previously quoted. This train departed from Goodwater at 6:15 a. m., according to the train sheet, 3 hours 8 minutes late, passed Alexander City, 6.1 miles west of Sturdivant, at 6:40 a. m., according to statements of the crew, 3 hours 7 minutes late. It was flagged by the front brakeman of Extra 703 West, who was standing at a point 3,316 feet west of the east siding-switch at Sturdivant, but the train failed to stop short of the clearance point of the east siding-switch and, while moving at a speed of 10 to 15 miles per hour, collided with Extra 703.

The force of the impact moved Extra 703 back a distance of 131 feet. The front-end deck-casting was bent downward about 3-7/8 inches; the pilot beam, the coupler and the pocket casting were crushed. The left front wheel of the rear tender-truck was suspended about 3 inches above the rail. The rear sheet of the tender cistern was indented about 2-3/4 inches in several places. The right engine-truck wheel of engine 702 was suspended about 2 inches above the rail. The front-end deck-casting, the pilot beam, the coupler and the pocket casting were crushed; the engine-truck frame and the radius bars were bent. The first and second cars of Extra 703 were demolished. The third car was derailed to the north and stopped on top of the wreckage of the first and second cars. The fourth car was derailed but stopped upright at a 30-degree angle to the track. The first car of No. 34 was derailed but stopped upright and in line with the track; this car was badly damaged. The second car was overturned to the north of the track and was demolished. The third, fourth and fifth cars were derailed and stopped at various angles to the track; the third car was destroyed. The sixth and seventh cars were derailed and stopped practically in line with the track.

The employees injured were the engineman, the fireman and the front brakeman of No. 34.

Summary of Evidence

Engineman Bradford, of Extra 703, stated that at Columbus an air-brake test was made and the brakes functioned properly en route. Before his train departed from Columbus, the conductor, the fireman and he compared time; the greatest variation of their watches was 2 or 3 seconds. At Opelika he received train order No. 23 and understood that, in accordance with the provision that No. 34 must wait at Sturdivant until 6:50 a. m., his train was required to be in the clear at that point not later than 6:45 a. m. His train departed from Jackson's Gap, 4.1 miles east of Sturdivant, at 6:30 a. m. When it was approaching Sturdivant the speed was about 35 or 40 miles per hour. At a point about 40 or 50 car lengths east of the east siding-switch he made a brake-pipe reduction of 5 pounds, which was followed by another reduction of 10 or 15 pounds. When speed was reduced sufficiently for the front brakeman to line the switch so that the train could enter the siding without stopping, the engineman released the brakes. Immediately afterward the train became separated between the tender and the first car as a result of the knuckle in the tender coupler being broken. The train stopped at 6:41 a. m. About 6:42 a. m. the front brakeman

started to run westward to provide flag protection against No. 34. The engineman attempted to install an emergency knuckle, but neither of the two emergency knuckles available would fit into the tender coupler-head. Since the original knuckle was broken at the top only, he replaced it, intending to attempt to pull the train into clear. The engine was recoupled to the train about 6:48 or 6:49 a. m., at which time the front brakeman had disappeared from view around the curve west of Sturdivant. Soon afterward No. 34, moving around the curve at a speed of about 40 miles per hour, came into view. Realizing it was moving too fast to stop short of his train, he attempted to back his train; however, since the brakes were not released the train could not be moved. He said that No. 34 was moving at a speed of 10 or 12 miles per hour at the time of the collision, which occurred about 6:51 or 6:52 a. m. It was daylight and the weather was cloudy. He said that if the knuckle had not been broken his train could have been clear of the main track at 6:45 a. m. It was his opinion that if he had operated the engine on the siding and had taken the front brakeman to its west end, the brakeman could have flagged No. 34 at a greater distance and the accident might have been prevented; however, there was a period of 8 minutes available before the wait order expired, during which time the brakeman could proceed a distance sufficient for No. 34 to stop short of the fouling point of the east end of the siding, and during the 8 minutes he could probably replace the damaged knuckle, move the train into clear, and lessen the delay to No. 34. He had been in charge of trains operating on the schedule of No. 34 and, in his opinion, in view of the ascending grade, if that train was flagged from a point 3,316 feet west of the east siding-switch, the distance was sufficient for stopping No. 34 from a speed of 40 miles per hour.

Fireman Campbell, of Extra 703, corroborated the statement of his engineman.

Front Brakeman Hill, of Extra 703, stated that he read train order No. 23 and understood that his train was required to be in the clear at Sturdivant by 6:45 a. m. As his train approached the east siding-switch at Sturdivant the speed was reduced and, to avoid stopping his train, he ran ahead to open the switch. Before he arrived at the switch he was recalled by the engineman and instructed to provide flag protection against No. 34; at that time the front brakeman observed that his train was separated between the tender and the first car. He immediately started to run westward to provide flag protection. His flagging equipment consisted of a red flag and two torpedoes. Soon afterward he heard No. 34 sound the meeting-point whistle

signal. The front brakeman had reached a point 3,316 feet west of the east siding-switch when No. 34 came into view around the curve. His flagging signals were not acknowledged; however, the engine ceased to exhaust about the time he was giving stop signals. After the collision occurred the caboose of No. 34 was standing about 10 or 15 car lengths east of the point where the brakeman was located while he was giving stop signals. He said that he had proceeded as far westward as possible in the time available and was exhausted from running when he flagged No. 34. He was 19 years of age, was employed on October 15, 1940, and was examined on operating rules before he was assigned to service.

Conductor Cutcliffe, of Extra 703, stated that he understood his train was required to be clear at Sturdivant not later than 6:45 a. m. His train departed from North Dadeville, 8.4 miles east of Sturdivant and the last siding long enough to contain his train, at 6:21 or 6:22 a. m., and there was ample time to clear No. 34 at Sturdivant by 6:45 a. m. As his train was approaching Sturdivant the speed was reduced, the brake-pipe pressure became depleted, and the train stopped at 6:41 a. m. He proceeded to the front end to ascertain the cause. At 6:51 a. m., before he arrived at the front end of the train, the accident occurred. Soon afterward he examined the knuckle in the tender coupler and found that the top half was broken off; the break appeared to be new. In his opinion, had the engine been used to convey the front brakeman through the siding to its west end, flag protection could have been provided at a greater distance. It was cloudy at the time of the accident but visibility was not restricted.

The statement of Flagman McCall, of Extra 703, added nothing of importance.

Engineman Farr, of No. 34, stated that at Birmingham, before his engine departed from the enginehouse, the brakes of the engine and tender were tested and they functioned properly. A terminal air-brake test of the train was made and the brakes were reported as functioning properly. At Winburn, 64.6 miles west of Sturdivant, 23 cars were added to the train; the brakes were tested and found to be operative. The brakes were used at numerous points en route and in each instance the brakes controlled the speed of the train properly. When he compared time at Birmingham his watch was 18 seconds faster than the official time. At Goodwater he received train order No. 23 and understood that his train would wait at Alexander City until 6:40 a. m. and at Sturdivant until 6:50 a. m. for Extra 703 West. At 6:40 a. m. No. 34 passed the switch which would have been used by Extra 703

had that train entered the siding at Alexander City. When his train was moving on the descending grade east of Alexander City he made a brake-pipe reduction of about 10 pounds to control the speed; the brakes were held applied for about 3 minutes, then when his engine was at a point 2.01 miles west of the east siding-switch at Sturdivant the speed was 25 or 30 miles per hour and he released the brakes. It was 6:50 a. m. when this point was reached and he informed the fireman that the time specified in the wait order had expired. As the engine passed the west siding-switch at Sturdivant, the engineman opened the throttle. When the engine entered the curve, 4,066 feet west of the east siding-switch, the speed was about 40 miles per hour and the fireman called a warning to stop. The engineman immediately placed the brake valve in emergency position, closed the throttle and opened the sander valve. He thought the brakes had been released about 2 minutes and the brake-pipe pressure was restored to the point from which an emergency application was fully obtained; however, the distance between Extra 703 and the point from which he was flagged was insufficient for stopping his train short of Extra 703. The speed was 12 or 15 miles per hour at the time of the collision. He said that if the flagman had been stationed 15 car lengths farther west he would have been on tangent track in view a distance of 2,300 feet farther, and undoubtedly the accident would have been averted. The engineman was last examined on the operating rules on November 18, 1939. He understood that after the time specified in a wait order had expired there was no reason why a superior train should not be operated at maximum authorized speed while it was passing the switch where the inferior train is required to enter the siding. If an inferior train fails to clear the time of a superior train, it is required to furnish flag protection a distance sufficient for stopping the superior train moving at maximum authorized speed. He said that a train consisting of 65 cars and weighing 4,000 tons could not be stopped from a speed of 40 miles per hour by an emergency application of the brakes within the distance available after the flagging signals, in this instance, were observed.

Fireman Wilkes, of No. 34, corroborated the statement of his engineman in all essential details and added that when his train was rounding the curve west of Sturdivant he observed the flagman of Extra 703 about 8 or 10 car lengths distant. The fireman called a warning and the engineman immediately applied the brakes in emergency. When his engine was about 15 car lengths from Extra 703, the fireman jumped; at that time the speed was about 20 miles per hour. He said that the wait order expired when the train was a considerable distance west of Sturdivant, and that the collision occurred about 6:52 or 6:53 a. m.

Front Brakeman Donner, of No. 34, stated that as his train approached Sturdivant he was on the left side of the engine cab maintaining a lookout ahead. The engine passed the west siding-switch at 6:51 a. m., at which time steam was being worked. When the engine was near the east end of the curve he saw the flagman of Extra 703 about 3 or 4 car lengths distant and he and the fireman simultaneously called a warning to the engineman. The front brakeman said that he observed both the flagman and Extra 703 at the same time. The engineman immediately applied the brakes in emergency but the distance was insufficient for stopping short of Extra 703.

Conductor Nickerson, of No. 34, stated that before his train departed from Birmingham he and the engineman compared time and there was a variation of 2 seconds in their watches. As his train was approaching the point where the accident occurred he was in the cupola of the caboose. When his train was moving on the descending grade east of Alexander City the brakes were applied; then at a point 1-1/4 miles west of Sturdivant, when the speed of the train was reduced to about 25 miles per hour, this application was released. At 6:51 a. m., when the caboose was about 650 feet west of the west siding-switch, the speed was about 40 miles per hour and he felt the air brakes become applied in emergency. The accident occurred at 6:52 a. m. When his caboose stopped he observed that the front brakeman of Extra 703, who appeared exhausted, was about 5 car lengths west of it. The conductor said that the brakes seemed to be effective. In his opinion, a train similar to No. 34 could not be stopped by an emergency application from a speed of 40 miles per hour in a distance less than 70 car lengths. He said that if engine 703 had been used to convey the front brakeman of that train through the siding to the west switch, he would have been on tangent track and could have been seen by the engine crew of No. 34 a distance of 2,300 feet.

The statement of Flagman Bonner, of No. 34, added nothing of importance except that he said the flagman of Extra 703 was about 10 car lengths west of the caboose of No. 34 after the collision occurred.

Road Foreman of Engines Boswell stated that he was on the engine of No. 34, March 21, when an emergency-braking test was conducted in the vicinity of the point of accident. The train was assembled with heavy and light loads mixed throughout the train in an endeavor to reproduce the braking conditions that existed on the day of the accident. The train consisted of an engine of the same type as engine 702, 70 loaded cars and a

caboose; the adjusted tonnage was 3,958 tons, or approximately the same as that of No. 34 on the day of the accident. When the train was about 2 miles east of the east siding-switch at Sturdivant the speed was 42.4 miles per hour and when the engine passed the west siding-switch the speed was about 45 miles per hour. The division superintendent was stationed at the point where the front brakeman of Extra 703 stated he was located on the day the accident occurred. When No. 34 came into view the superintendent waved stop signals. The engine crew had not been forewarned of the test to be made. The train stopped at a point 1,306 feet east of the location of the flagman, and 2,086.5 feet west of the point of accident; the elapsed time from the beginning of the emergency application until the train stopped was 55 seconds. During the test it was raining and the rails were wet.

Master Mechanic Burke stated that he arrived at the scene of the accident about 10:55 a. m., March 13, and examined engine 702. He found the automatic brake-valve in emergency position and the reverse lever in position for full forward motion. The sander valves were closed, but there were piles of sand near the pipes, which indicated that the valves had been open.

According to data furnished by the railroad, tests conducted on March 21 at the scene of the accident disclosed that a man 46 years of age, starting from a point 172 feet east of the east siding-switch, arrived at the point where the front brakeman of Extra 703 stated that he was located, a distance of 3,488 feet, in 6 minutes 25 seconds.

During the 30-day period preceding the day of the accident, the average daily movement over the territory involved was 17.83 trains.

Discussion

According to the evidence, Extra 703 West stopped at the east siding-switch at Sturdivant about 6:41 a. m., with the engine standing 77 feet east of the switch. In stopping, the train became separated between the tender and the first car, as a result of the knuckle in the tender coupler being broken. About 10 minutes later No. 34, an east-bound train, moving at an estimated speed of 10 to 15 miles per hour, collided with Extra 703, which had not started to enter the siding.

Both crews had copies of a train order which specified that No. 34 would wait at Sturdivant until 6:50 a. m. for Extra 703

West. The crews understood that No. 34 was required not to pass the fouling point of the east siding-switch before 6:50 a. m. unless Extra 703 was in the clear, that Extra 703 was required to be clear of the main track at Sturdivant not later than 6:45 a. m. if it proceeded to that station to clear for No. 34, and that, if it failed to clear the main track by the time required, it must furnish sufficient flag protection to enable No. 34 to stop short of the fouling point at the east siding-switch.

According to the statements of the engineman, the fireman and the front brakeman of Extra 703, when the tender coupler was found broken the front brakeman proceeded westward to provide flag protection against No. 34. According to the statement of the front brakeman, he ran the greater part of the distance and had reached the farthest point possible, or 3,393 feet west of his engine, when he flagged No. 34. Because of this point being in a cut and on a 2°30' curve, the brakeman could not be seen from the right side of the engine of the approaching train, but he could be seen a distance of about 750 feet from the left side. If the front brakeman had reached a point about 1,400 feet farther west, he would have been on tangent track where his flagging signals could have been seen by the members of the engine crew of an east-bound train a distance of 2,300 feet. The statement of the front brakeman indicates that he used about 8 minutes in proceeding to the west; however, a few days after the accident occurred, a man 27 years older than this brakeman traversed the distance involved in 6 minutes 25 seconds. This fact indicates that possibly the brakeman did not start westward as soon as he thought he did. If the brakeman had been taken on his engine through the siding to its west end, he would have been on tangent track and undoubtedly would have been able to give ample warning to the crew of the approaching train; however, the engineman of Extra 703 thought he would be able to replace the broken knuckle and move his train into clear before the expiration of the wait order, but he was delayed by not being able to procure a knuckle that would fit the coupler involved.

According to the evidence, No. 34 was moving at a speed of about 40 miles per hour and the throttle was open when the fireman and the front brakeman of that train saw the flagging signals. They warned the engineman, who immediately applied the brakes in emergency. The brakes had been tested and they functioned properly en route. The conductor of No. 34 thought a train similar to his train could not be stopped from a speed of 40 miles per hour by an emergency application of the brakes in less than 70 car lengths, or a distance of 3,150 feet. No. 34 consisted of 65 cars which weighed 3,940 tons; the caboose

stopped 5 or 10 car lengths east of the point where the front brakeman of Extra 703 was stationed. The engineman of No. 34 said the distance available for stopping his train from a speed of 40 miles per hour was not sufficient. Several days after the occurrence of the accident, a test disclosed that a 70-car train, weighing 3,958 tons and having heavy and light loads mixed throughout the train, was stopped at a point 2,083 feet west of the point of accident from a speed of about 45 miles per hour by an emergency application of the brakes, which was made somewhere in the vicinity of the point where the brake application was made on the day of the accident; however, this test is not conclusive because practically the same tonnage was distributed over five more cars in the test train and the exact point where each emergency application was made is not known; in addition, it is possible that the brake systems of the two trains varied somewhat.

If a suitable block system had been in use on this line, it is probable the accident would have been averted. During the 30-day period preceding the day of the accident, the average daily movement was 17.83 trains. This volume of traffic warrants additional protection.

Cause

It is found that this accident was caused by failure to provide adequate flag protection for the inferior train after it had failed to clear the time of an opposing superior train.

Recommendation

It is recommended that the Central of Georgia Railway Company give consideration to the installation of a suitable block system on the Birmingham District.

Dated at Washington, D. C., this twenty-eighth day of April, 1941.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.