

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2577  
THE NASHVILLE, CHATTANOOGA & ST. LOUIS  
RAILWAY COMPANY  
REPORT IN RE ACCIDENT  
NEAR DENVER, TENN., ON  
MARCH 15, 1942

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- 2 -

## SUMMARY

Railroad: Nashville, Chattanooga & St. Louis

Date: March 15, 1942

Location: Denver, Tenn.

Kind of accident: Head-end collision

Trains involved: Freight : Passenger

Train numbers: Extra 606 North : 1

Engine numbers: 606 : 507

Consist: 30 cars and cabooses : 9 cars

Estimated speed: 25-30 m. p. h. : 25-50 m. p. h.

Operation: Timetable and train orders

Track: Single; 4°30' curve; 0.032 percent  
descending grade southward

Weather: Cloudy

Time: 4:25 a. m.

Casualties: 5 killed; 35 injured

Cause: Accident caused by failure to  
address a restricting order  
to the superior train

Recommendation: That the Nashville, Chattanooga &  
St. Louis Railway Company establish  
an adequate block system on the  
line involved in this accident

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2577

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

THE NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY COMPANY

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April 29, 1942.

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Accident near Denver, Tenn., on March 15, 1942, caused  
by failure to address a restricting order to the  
superior train.

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REPORT OF THE COMMISSION<sup>1</sup>

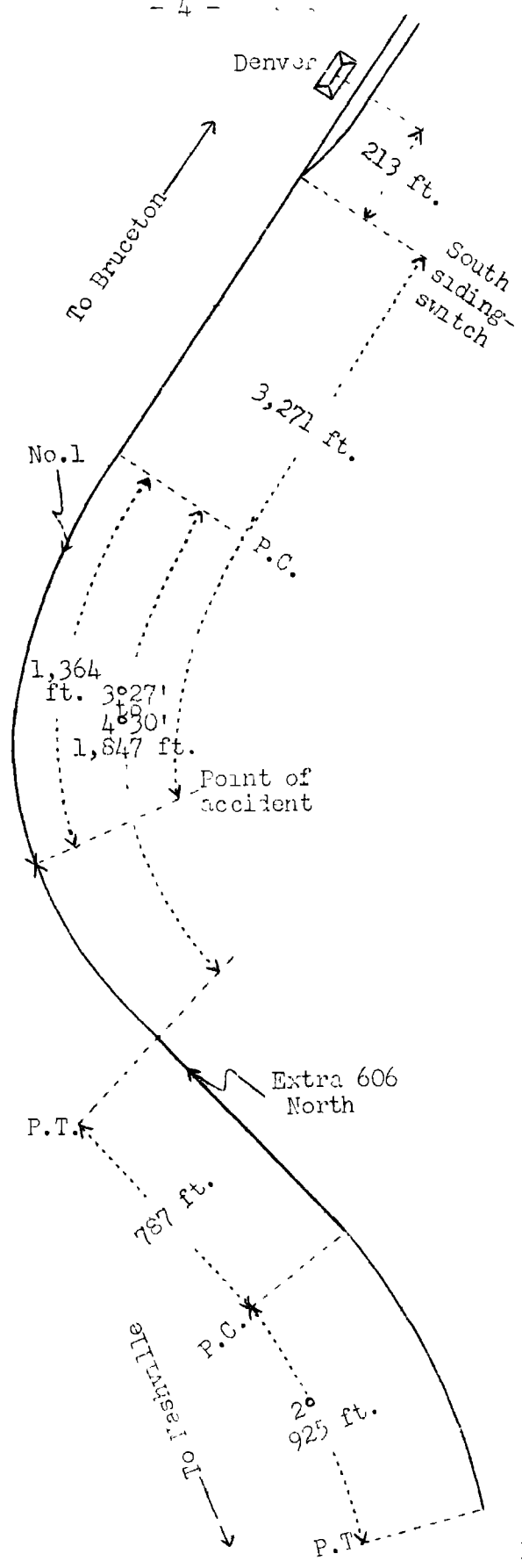
PATTERSON, Commissioner:

On March 15, 1942, there was a head-end collision between a passenger train and a freight train on the Nashville, Chattanooga & St. Louis Railway near Denver, Tenn., which resulted in the death of 5 train-service employees and the injury of 27 passengers, 1 Pullman employee, 6 employees off duty and 1 train-service employee on duty.

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<sup>1</sup>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.

○	Bruceton, Tenn.	17.15 mi.
○	Johnsonville	2.60 mi.
○	Denver	0.66 mi.
✱	Point of accident	34.84 mi.
○	Colesburg	39.62 mi.
○	Nashville, Tenn.	



Inv. No. 2577  
 N. C. & St. L. Ry.  
 Denver, Tenn.  
 March 15, 1942

### Location of Accident and Method of Operation

This accident occurred on that part of the Nashville Division which extends between Bruceton and Nashville, Tenn., a distance of 94.87 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 Denver a siding 1,996 feet in length parallels the main track on the east. The south switch of this siding is 213 feet south of the station. The accident occurred at a point 3,271 feet south of the south siding-switch. As the point of accident is approached from the north there is a tangent 1.39 miles in length, which is followed by a compound curve to the left 1,847 feet in length, the curvature of which varies from  $3^{\circ}27'$  to  $4^{\circ}30'$ . The accident occurred on this curve at a point 1,364 feet south of its northern end where the curvature is  $4^{\circ}30'$ . As the point of accident is approached from the south there are, in succession, a  $2^{\circ}$  curve to the left 925 feet in length, a tangent 787 feet, and the curve on which the accident occurred. At the point of accident the grade is 0.032 percent ascending northward. In the vicinity of the point of accident the track is laid on a hillside cut.

Operating rules read in part as follows:

204. Train orders must be addressed to those who are to execute them, naming the place at which each is to receive his copy. Those for a train must be addressed to the conductor and enginemen, and also to any one who acts as its pilot. A copy for each person addressed must be supplied by the operator.

\* \* \*

205. Each train order must be written in full in a book provided for the purpose at the office of the train dispatcher; and with it recorded the names of those who have signed for the order; the time and the signals which show when and from what offices the order was repeated; the responses transmitted, and the train dispatcher's initials. These records must be made at once, and never from memory or memoranda.

208. A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable.

- 6 -

The several addresses must be in the order of superiority of trains and when practicable must include the operator at the meeting or waiting point, each office taking its proper address.

\* \* \*

210. When a "31" train order has been transmitted, \* \* \*. Each operator receiving the order should observe whether the others repeat correctly.

\* \* \*

434. \* \* \*

Each figure and word of a train order must be written or underscored while it is being repeated.

\* \* \*

On the curve involved the maximum authorized speed for passenger trains is 45 miles per hour, and for freight trains, 35 miles per hour.

Extra 606 North, a north-bound freight train, consisted of engine 606, 29 loaded cars and 1 empty car and a caboose. At Nashville, 75.12 miles south of Denver, a terminal air-brake test was made and the brakes functioned properly. At Colesburg, 35.5 miles south of Denver, the crew received a clearance card together with copies of train order No. 14, Form 19, which read as follows:

Ex 606 North meet No. 1 Eng 507 at  
Denver First No 55 Eng 601 at John-  
**sonville** and has right over Second  
No 55 Colesburg to Bruceston

Extra 606 departed from Colesburg at 3:20 a. m., according to the dispatcher's record of movement of trains, passed McEwen, 17.95 miles south of Denver and the last open office, at 3:54 a. m., and while moving at an estimated speed of 25 to 30 miles per hour it collided with No. 1 at a point about 0.6 mile south of the south siding-switch at Denver.

No. 1, a south-bound first-class passenger train, consisted of engine 507, 1 express car, 1 baggage car, 1 mail car, 1 passenger-baggage car, 1 coach, 2 Pullman sleeping cars, 1 coach and 1 business car, in the order named. All cars were of steel construction except the rear car, which was of wooden construction. At Bruceston, 19.75 miles north of Denver, the crew received copies of a clearance together

- 7 -

with copies of three train orders not involved in this accident. After a terminal air-brake test was completed this train departed from Bruceston at 3:53 a. m., according to the dispatcher's record of movement of trains, 13 minutes late. Soon after it departed from Bruceston a running test was made, and the brakes functioned properly at all points where used en route. This train passed Johnsonville, 2.6 miles north of Denver and the last open office, at 4:22 a. m., 9 minutes late, and while moving at an estimated speed of 35 to 50 miles per hour it collided with Extra 606 North.

Because of track curvature and a growth of trees on the east side of the curve, the view of the point of accident from the left side of a south-bound engine is restricted to a distance of 1,472 feet, and from the right side of a north-bound engine, 1,271 feet.

The boiler of engine 507, of No. 1, was torn from its frame and stopped bottom up, down the embankment to the east, at an angle of 75 degrees to the track and 30 feet from it. The tender and the driving-wheel assembly stopped at the rear of the boiler. The cab was torn off. The tender was derailed and demolished. The first and second cars were destroyed. The third car stopped down the embankment to the east and was badly damaged. The front truck of the fourth car was derailed. The boiler of engine 606 was torn from the frame and stopped, bottom up, down the embankment, at right angles to the track and near the frame of engine 507. The driving-wheel assembly and frame remained upright on the roadbed. The cab was torn off. The tender was derailed and stopped down the embankment, 37 feet horizontally distant from the track. The first seven cars were demolished. The wreckage of both trains was contained within a distance of 160 feet.

It was cloudy at the time of the accident, which occurred about 4:5 a. m.

The employees killed were the engineer, the fireman and the front brakeman of Extra 606 North, and the fireman of No. 1 and a student fireman who was on the engine. The employees injured were the engineer of No. 1.

#### Rate

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 24.5 trains.

### Discussion

The operating rules on the line involved require that train orders must be addressed to those who are to execute them. Train orders intended for a train must be addressed to the conductor and the engineer of that train. At the time of transmittal the train dispatcher is required to write train orders in full in a book provided for that purpose. Operators receiving an order must write it on the prescribed form during transmission and must then repeat it to the dispatcher. The time and the signals which show the time of repetition and the offices from which the order is repeated, the names of those who have signed for the order and the responses must be recorded in the train-order book. The records in the train-order book must be made at once and never from memory or memoranda. The dispatcher, the student dispatcher who transmitted the order and the three operators who handled the order involved in this accident understood these requirements.

The investigation disclosed that a student dispatcher was transmitting orders under the supervision of the regularly assigned dispatcher. Train order No. 14 was transmitted to Bruceton on Form 31 for First and Second 55, to Colceburg on Form 19 for Extra 606 North, and to Johnsonville on Form 19 for the operator. Among other provisions this order established a meeting point between No. 1, a south-bound first-class train, and Extra 606, a north-bound freight train, at Denver, a blind siding. Extra 606 was required to enter the siding at Denver. According to the statement of the student dispatcher, he addressed the order to First and Second 55, south-bound third-class trains, at Bruceton, but forgot to address the order to No. 1 at Bruceton and, during the repetition, failed to discover the omission. The regular dispatcher was seated across the desk from the student dispatcher and listened both to the transmission of the order and to its repetition. The office was equipped with a loud-speaker by which the repetition could be heard plainly. The operator at Johnsonville, who held the middle order, the operator at Bruceton and the operator at Colceburg repeated in the order named. Each listened to the repetition of the others but none discovered that the copy held by the operator at Bruceton lacked an address to No. 1. The order was made complete at 3:18 a. m. and the regular dispatcher checked the order in the train-order book but failed to discover that it was not addressed to No. 1. According to the statement of the operator



at Bruceston, as order No. 14 was not addressed to No. 1, he did not deliver copies of that order to the conductor and the engineer; however, he delivered copies of three other orders to that train. Of these orders, two were speed-restriction orders on Form 17, and the other, on Form 31, established a meeting point between No. 1 and No. 54, a north-bound third-class train, at Gorman, 14.3 miles south of Denver. The Form 31 order, which required the signature of the conductor of No. 1, was made complete at 3:40 a. m. Had train order No. 14 been properly addressed, the conductor of No. 1 would have been required to sign it. When the operator at Bruceston transmitted the signature of the conductor of No. 1 on the one Form 31 order, the student dispatcher and the assigned dispatcher again failed to discover that order No. 14 had not been addressed to No. 1. Since Bruceston was the initial station of the schedule of No. 1, the operator could not have assumed that No. 1 would receive copies of order No. 14 at some point before it reached Bruceston, and he knew that the order was not addressed to No. 1 at any point south of Bruceston. At the time of the accident, this employee had worked as an operator less than 3 months. The regular dispatcher was employed as operator in 1917, and was promoted to dispatcher in 1927. The student dispatcher was employed as operator in October, 1940. On October 9, 1941, he was authorized to become a student dispatcher. Throughout the period of instruction he had always transmitted orders under direct supervision of a qualified dispatcher.

The operators at Colesburg and Johnsonville heard the operator at Bruceston repeat the body of the order involved but did not hear him repeat the forepart of the order.

The operator at Johnsonville said that as No. 1 was approaching his station the train-order signal displayed stop. He informed the dispatcher of the approach of No. 1 and was instructed to clear the train-order signal.

Under train order No. 14, Extra 606 North was authorized to use the main track as far as the south siding-switch at Denver. Because of its superiority being unrestricted, No. 1 had authority to use the main track south of the south siding-switch; therefore, this resulted in a lap of authority between opposing trains and as a result of this lap these trains collided south of the south siding-switch.

According to the statement of the engineer of No. 1, as his train was approaching the point where the accident

occurred the speed was 35 to 40 miles per hour, the headlight was lighted brightly and he was maintaining a lookout ahead. The regular fireman was using the fire and the student fireman was on the left seatbox. Because of the curvature to the right, the engineer did not observe anything was wrong until his train collided with Extra 606 North. Apparently the student fireman did not see the crossing train as he gave no warning. Since all members of the crew on the engine of Extra 606 were killed in the accident it could not be determined when they first became aware of the approach of No. 1. According to the statements of the conductor and the flagman of Extra 606, as their train was approaching the point where the accident occurred the speed was about 25 or 30 miles per hour. The first they knew of anything being wrong was when the brakes were applied in emergency just before the collision occurred.

In the territory involved trains are operated by timetable and train orders only. If an adequate block system had been in use on this territory, this accident could have been averted.

#### Cause

It is found that this accident was caused by failure to adjust the restricting order to the superior train.

#### Recommendation

It is recommended that the Nashville, Chattanooga & St. Louis Railway Company establish an adequate block system on the line involved in this accident.

Dated at Washington, D. C., this twenty-ninth day of April, 1942.

By the Commission, Commissioner Pittsman.

W. T. BARTELL,

(SEAL)

Secretary.