

Dept. of Transportation

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INTERSTATE COMMERCE COMMISSION,
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INVESTIGATION NO. 2551
THE MISSOURI-KANSAS-TEXAS RAILROAD COMPANY
REPORT IN RE ACCIDENT
AT BOUGHNER, MO., ON
DECEMBER 17, 1941

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SUMMARY

Railroad:	Missouri-Kansas-Texas
Date:	December 17, 1941
Location:	Boughner, Mo.
Kind of accident:	Head-end collision
Trains involved:	Passenger : Passenger
Train numbers:	6 : 5
Engine numbers:	387-401 : 413
Consist:	9 cars : 9 cars
Speed:	Standing : 40-50 m. p. h.
Operation:	Timetable and train orders
Track:	Single; 2° curve; 0.021 percent descending grade northward
Weather:	Foggy
Time:	4:20 a. m.
Casualties:	3 killed; 14 injured
Cause:	Accident caused by lap of authority of two opposing trains, as a result of copies of the meet order held by the crews involved not reading alike
Recommendation:	That the Missouri-Kansas-Texas Railroad Company establish an adequate block system on the line involved in this accident

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2551

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

THE MISSOURI-KANSAS-TEXAS RAILROAD COMPANY

February 16, 1942.

Accident at Boughner, Mo., on December 17, 1941, caused
by lap of authority of two opposing trains, as a re-
sult of copies of the meet order held by the crews
involved not reading alike.

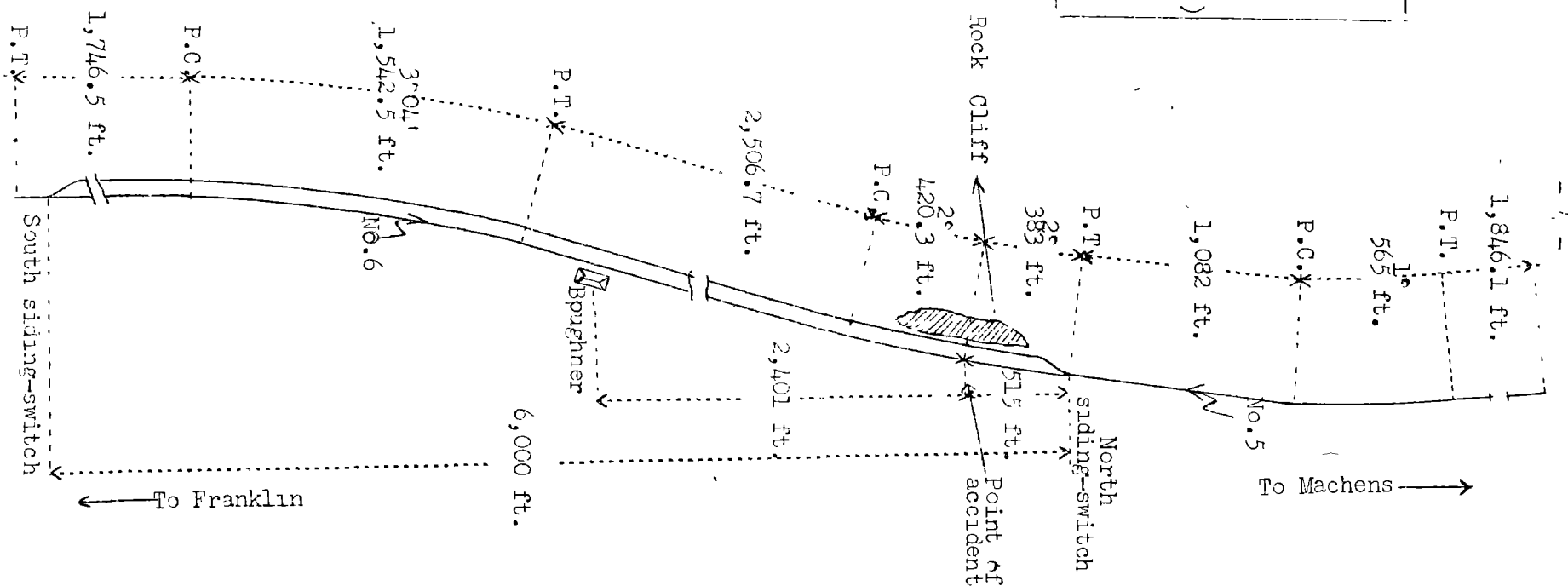
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On December 17, 1941, there was a head-end collision
between two passenger trains on the Missouri-Kansas-Texas
Railroad at Boughner, Mo., which resulted in the death of
3 train-service employees, and the injury of 3 passengers,
5 railway-mail clerks, 1 express messenger, 2 Pullman em-
ployees and 3 train-service employees.

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

o	Machens, Mo.
o	73.3 mi.
o	McKitttrick
o	42.6 mi.
o	North Jefferson
o	3.0 mi.
*	Boughner
	(Point of accident)
o	23.2 mi.
o	McBaine
o	19.6 mi.
o	Franklin, Mo.



Inv. No. 2551
Missouri-Kansas-Texas Railroad
Boughner, Mo.,
December 17, 1941.

Location of Accident and Method of Operation

This accident occurred on that part of the Northern District designated as the St. Louis Division, which extends between Machens and Franklin, Mo., a distance of 162.2 miles. In the immediate 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 Boughner a siding 6,000 feet in length parallels the main track on the west. The north switch of this siding is 2,916 feet north of the station. The accident occurred on the main track at a point 515 feet south of the north siding-switch. As the point of accident is approached from the south there are, in succession, a tangent 1,746.5 feet in length, a 3°04' curve to the right 1,542.5 feet, a tangent 2,506.7 feet and a 2° curve to the left 420.3 feet to the point of accident and 383 feet beyond. As the point of accident is approached from the north there are, in succession, a tangent 1,846.1 feet in length, a 1° curve to the right 565 feet, a tangent 1,082 feet and the curve on which the accident occurred. At the point of accident the grade is 0.021 percent descending for north-bound trains.

Operating rules read in part as follows:

202. Each train order must be given in the same words to all persons or trains addressed.

205. Each train order must be written in full in a book provided for the purpose at the office of the Superintendent or Trainmaster; 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 and the responses transmitted; and the train dispatcher's initials. These records must be made at once, and never from memory or memoranda.

206. * * *

When train orders are transmitted by telegraph, the train dispatcher must underscore each word and figure in the body of the order at the time it is repeated. When transmitting by telephone he must write the order as he transmits it and underscore as prescribed above.

* * *

208. A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable. When not sent simultaneously to all, the order must be sent first to the superior train.

* * *

209. Telegraphers receiving train orders must write them in manifold during transmission and if they can not at one writing make the requisite number of copies must trace others from one of the copies first made, and repeat to the train dispatcher from the new copies each time additional copies are made.

They must retain a copy of each train order.

211. * * * Each telegrapher receiving the order should observe whether the others repeat correctly. * * *

FORMS OF TRAIN ORDERS

FORM P

SUPERSEDING AN ORDER OR A PART OF AN ORDER

This order will be given by adding to prescribed forms the words "instead of _____."

(1) No. 1 meet No. 2 at C instead of B. * * *

When a train is directed by train order to take siding for another train, such instructions apply only at the point named in that order, and do not apply to the superseding order unless so specified.

On the line involved the telephone is used for transmission of train orders.

Time-table special instructions read in part as follows:

1. Northward and eastward trains are superior to trains of the same class in the opposite direction, unless otherwise specified.

In the vicinity of the point of accident the maximum authorized speed for passenger trains is 50 miles per hour.

Description of Accident

No. 6, a north-bound first-class passenger train, consisted of engines 387 and 401, two express-refrigerator cars, three baggage cars, one baggage-mail car, one coach, one chair car and one Pullman sleeping car, in the order named. The first two cars were of steel-underframe construction and the remainder were of all-steel construction. After a terminal air-brake test was made this train departed from Franklin, 42.8 miles south of Boughner, at 2:43 a. m., according to the dispatcher's record of movement of trains, 1 hour 28 minutes late. This train arrived at McBaine, 23.2 miles south of Boughner and the last open office, at 3:18 a. m. The crew received a clearance card together with three train orders, of which one was train order No. 19, Form 19, reading as follows:

No 6 Eng 387 meet
No 5 Eng 413 at North Jefferson
No 6 Take Siding

No. 6 was delayed at McBaine and at 3:40 a. m. the crew received another clearance card together with train order No. 28, Form 19, which read as follows:

No 6 Eng 387-401 coupled meet
No 5 Eng 413 at Boughner instead
of No Jefferson

This train departed from McBaine at 3:45 a. m., 1 hour 46 minutes late, stopped on the main track at a point 515 feet south of the north siding-switch at Boughner, and about 8 minutes later it was struck by No. 5.

No. 5, a south-bound first-class passenger train, consisted of engine 413, one express-refrigerator car, three baggage cars, one baggage-mail car, one chair car, one Pullman sleeping car, one Pullman tourist car and one business car, in the order named. The first car was of steel-underframe construction and the remainder were of all-steel construction. The brakes of No. 5 had been tested at St. Louis, 146.3 miles north of Boughner, and functioned properly en route. This train departed from Machens, 119.4 miles north of Boughner, at 1 a. m., according to the dispatcher's record of movement of trains, 23 minutes late. At McKittrick, 45.6 miles north of Boughner, the crew received a clearance card and four train orders, of which one was train order No. 19, Form 19, previously quoted. This train departed from McKittrick at 3 a. m., 25 minutes late. At North Jefferson, 3 miles north of Boughner and the last open office, the crew received a clearance card together with two train orders, of which one was train order No. 28, Form 19, which read as follows:

No 6 Eng 387-401 coupled meet
No 5 Eng 413 at Boughner instead
of North Jefferson
No 6 Take Siding

This train departed from North Jefferson at 4:15 a. m., 28 minutes late, and while moving at an estimated speed of 40 to 50 miles per hour it collided with No. 6.

In the vicinity of the point of accident a rock cliff about 50 feet in height and 300 feet in length parallels the track on the west. Because of track curvature and the rock cliff, the view from the right side of the cab of a south-bound engine of an engine standing at the point of accident is restricted to a distance of about 1,800 feet.

Engine 387, the first engine of No. 6, was derailed to the east and stopped on its right side at an angle of 45 degrees to the track. The tender remained upright on the track. The front pair of driving wheels of engine 401, the second engine of No. 6, was derailed and the engine stopped with the front end 13 feet to the rear of the tender of engine 387. Both engines were badly damaged. The first car telescoped the tender of engine 401 a distance of 5 feet.

Engine 413, of No. 5, was derailed to the west and stopped on its right side at right angles to the track. The tender was derailed and stopped, bottom up, on the siding and in line with it. The engine and tender were badly damaged. The first car was demolished and the wreckage stopped across the main track and the siding. The second car was derailed and stopped at right angles to the main track, with the rear end on the cab of engine 387. The third car was derailed and stopped with the front end against the rock cliff and the rear end on the cab of engine 413. The fourth car was derailed and stopped upright on the track, with the front end about 12 feet above the track. The front truck of the fifth car was derailed.

Fog prevailed at the time of the accident, which occurred at 4:20 a. m.

The employees killed were the engineer and the fireman of No. 5 and the engineer of the first engine of No. 6. The employees injured were the fireman of the first engine of No. 6 and the engineer and the fireman of the second engine of No. 6.

Data

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 10.7 trains.

Discussion

The operating rules on the line involved require that train orders must be sent in the same words to all persons or trains involved. When the telephone is used for dispatching trains, at the time of transmittal the train dispatcher is required to write train orders in full in a book provided for the purpose. Operators receiving an order must write it during transmission on the prescribed form and must then repeat it to the dispatcher, who must underscore in his train-order book each word and figure as the order is being repeated. 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 and the two operators who handled the order involved in this accident understood these requirements.

Order No. 19, which was sent to No. 6 at McBaine and to No. 5 at McKittrick, established the meeting point for these trains at North Jefferson, and it required No. 6 to take siding. At 3:32 a. m. the dispatcher authorized the operator at McBaine to clear No. 6 with three orders, including order No. 19. No. 6 did not depart immediately and the dispatcher issued order No. 28 to No. 6 at McBaine and to No. 5 at North Jefferson. This order changed the meeting point for these trains from North Jefferson to Boughner, 3 miles south of North Jefferson. After the operator at McBaine repeated the order, the dispatcher made it complete at 3:40 a. m., and No. 6 departed from McBaine at 3:45 a. m., and stopped on the main track a short distance south of the north siding-switch at Boughner. About 8 minutes later it was struck by No. 5. After the crew of No. 5 received copies of order No. 28 at North Jefferson, this train departed from that station at 4:15 a. m., passed the north siding-switch at Boughner and collided with No. 6.

Immediately after the accident occurred it was found that the copies of order No. 28 held by the crew of No. 5 required No. 6 to take siding at Boughner, but the copies bearing the same number held by the crew of No. 6 did not require No. 6 to take siding. Both were first-class trains and, since No. 6 was superior to No. 5 by direction, the copies of the order held by the crew of No. 6 authorized this train to hold the main track at Boughner. The discrepancy in the copies of the order held by the crews involved resulted in each train being authorized to occupy the main track between the siding switches at Boughner.

There was considerable discrepancy in the statements of the dispatcher and the two operators involved concerning the issuance and repetition of order No. 28. The dispatcher could not

state positively but said that according to his memory and the record in the train-order book, order No. 28 was sent in the same words simultaneously to the operators at McBaine and North Jefferson, and the instruction for No. 6 to take siding was sent to both operators and repeated by them. The dispatcher thought there was no interruption during the time the order was being transmitted, and when it was repeated he assumed that each operator had observed whether the other operator repeated the order correctly.

The operator at McBaine stated that he had copied about one line of order No. 28 when the operator at North Jefferson interrupted the dispatcher and asked for the number of the order being transmitted, and in reply the dispatcher told the operator at North Jefferson to wait a minute as he desired to have No. 6 leave immediately, then the dispatcher finished transmitting the order. The operator at McBaine was positive that the instruction for No. 6 to take siding at Boughner was neither transmitted by the dispatcher nor repeated by himself. The operator at McBaine did not observe the repetition of the order by the operator at North Jefferson because he left the telephone immediately after he had received "complete" to order No. 28 so that he could deliver copies of the order and clearance card to No. 6 as soon as possible and thereby reduce delay to this train. At McBaine the conductor of No. 6 read the order before the operator tore the copies from the train-order pad and he commented to the operator that No. 6 was not required to take siding at Boughner. The operator at Nevada Tower, 147 miles south of McBaine, stated that while he was listening on the telephone to finish the repetition of an order as soon as the dispatcher instructed him to do so he heard order No. 28 being sent by the dispatcher and repeated by the operator at McBaine, and he was positive that the instruction to take siding was neither transmitted nor repeated.

The operator at North Jefferson stated that part of the order involved had been transmitted when he asked the dispatcher for the number of the order, and in reply the dispatcher told him that he would send the order to him later if the operator did not get it at that time. The operator copied part of the order, then transacted business at the ticket window, and about 6 or 8 minutes later he repeated the part of the order he had copied and asked the dispatcher if No. 6 was to take siding. The dispatcher then told him to add to the order the instruction for No. 6 to take siding.

From the statements of the dispatcher, the two operators involved and the operator at Nevada Tower, it appears that the dispatcher did not transmit simultaneously order No. 28 in its entirety. If the dispatcher had transmitted the order simul-

taneously and in the same words to each office and if each operator had observed whether the order was repeated correctly, undoubtedly this accident would have been averted.

In the territory involved, trains are operated by timetable and train orders only. If an adequate block system had been in use in this territory, this accident would have been averted. This carrier has an automatic block-signal system in operation between Sedalia, Mo., and Easley, Mo., a distance of 64.7 miles. The northern end of this system is located 16.1 miles south of Boughner.

Cause

It is found that this accident was caused by lap of authority of two opposing trains, as a result of copies of the meet order held by the crews involved not reading alike.

Recommendation

It is recommended that the Missouri-Kansas-Texas Railroad Company establish an adequate block-signal system on the line involved in this accident.

Dated at Washington, D. C., this sixteenth day of February, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.