

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2520
THE KANSAS CITY SOUTHERN RAILWAY COMPANY
REPORT IN RE ACCIDENT
NEAR SHORELINE, LA., ON
AUGUST 18, 1941

SUMMARY

Railroad: Kansas City Southern

Date: August 18, 1941

Location: Shoreline, La.

Kind of accident: Rear-end collision

Trains involved: Freight : Passenger

Train numbers: Extra 513 South : 1

Engine numbers: 513 : Diesel-electric
engine 3

Consist: 47 cars and caboose : 6 cars

Estimated speed: 4 m. p. h. : 17-35 m. p. h.

Operation: Timetable and train orders

Track: Single; tangent; 0.266 percent
descending grade southward

Weather: Clear

Time: 9:47 p. m.

Casualties: 8 injured

Cause: Accident caused by an inferior train
occupying main track on the time of
a following superior train

Recommendation: That the Kansas City Southern Railway
Company establish an adequate block-
signal system on its Southern Divi-
sion, Fifth District, and submit to
this Commission for approval rules
and instructions for the proper main-
tenance and operation of such block-
signal system

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2520

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

THE KANSAS CITY SOUTHERN RAILWAY COMPANY

October 28, 1941.

Accident near Shoreline, La., on August 18, 1941, caused by an inferior train occupying main track on the time of a following superior train.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

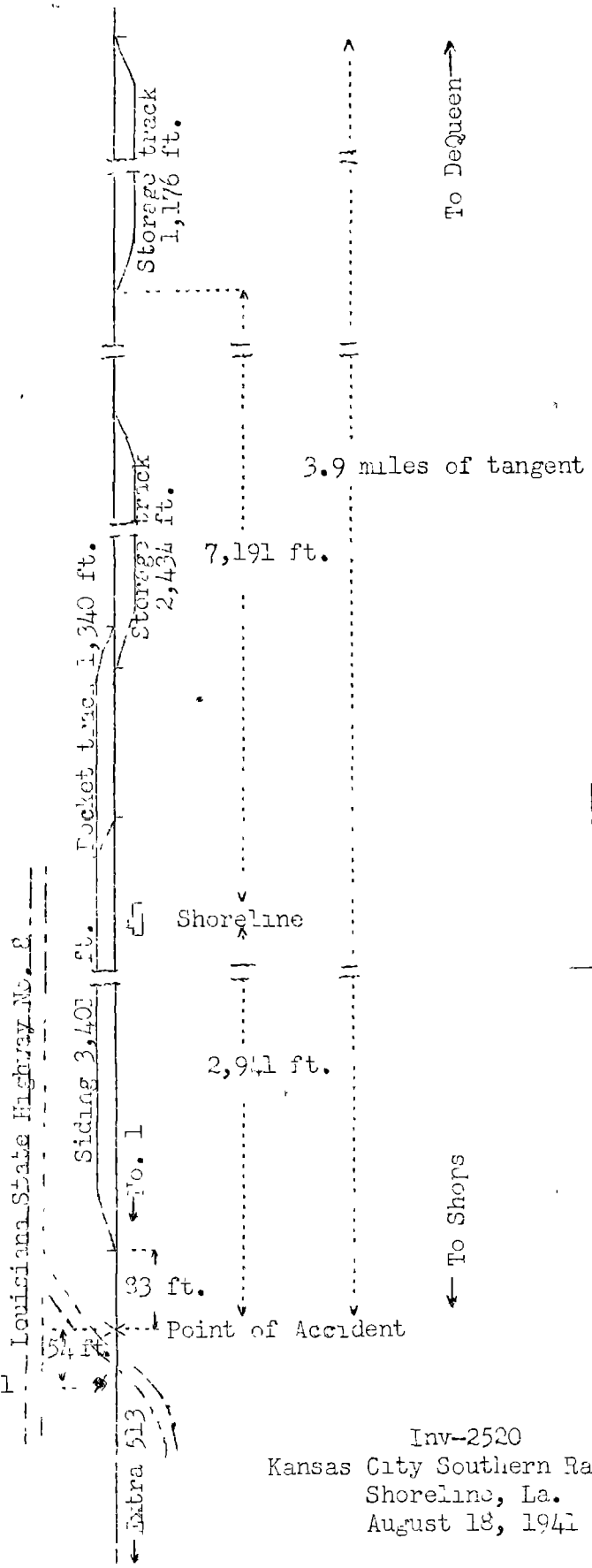
On August 18, 1941, there was a rear-end collision between a freight train and a passenger train on the Kansas City Southern Railway near Shoreline, La., which resulted in the injury of three passengers, two dining-car employees and three train-service employees.

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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.

- DeQueen, Ark. 53.90 mi.
- Depot Jct. 0.60 mi.
- Texarkana, Ark. 38.90 mi.
- Vivian, La. 5.00 mi.
- Shoreline 0.55 mi.
- X Point of Accident 25.55 mi.
- Shops, La.

Wig-wag crossing signal



Inv-2520
 Kansas City Southern Railway
 Shoreline, La.
 August 18, 1941

Location of Accident and Method of Operation

This accident occurred on that part of the Southern Division designated as the Fifth District, which extends between DeQueen, Ark., and Shops, La., a distance of 124.5 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 Shoreline a siding 3,401 feet in length parallels the main track on the west. The south switch of this siding is 2,858 feet south of the station. The accident occurred on the main track at a point 2,941 feet south of the station and 83 feet south of the south siding-switch. As the point of accident is approached from the north the track is tangent a distance of 3.9 miles to the point of accident and 1,803 feet beyond. At the point of accident the grade is 0.266 percent descending for south-bound trains. The switch stand at the south siding-switch is located 7 feet 4-1/2 inches west of the west rail of the main track. The spindle is equipped with one target and a switch lamp. When the switch is lined for the main track the switch lamp displays a green light. When the switch is lined for the siding a red target, 9-1/8 inches in width and 2 feet 7-15/16 inches in length and fastened to the spindle diagonally, is displayed, and the lamp displays a red light. The center of the lens and the center of the switch target are, respectively, 6 feet 7-9/16 inches and 5 feet 3-1/4 inches above the ties. When a train is moving from the siding to the main track through the south siding-switch the switch stand is obscured from the view of the crew of an approaching train moving southward on the main track.

At a point 125 feet south of the south siding-switch a highway crosses the main track at grade at an angle of $54^{\circ}18'$. At the time of the accident this crossing was protected by a wig-wag type signal, located in the southwest angle of the intersection, 8 feet 2 inches west of the west rail of the main track and 54 feet south of the point of accident. The signal-banner arm was equipped with an electric light which was displayed through a red lens 6-1/2 inches in diameter. The center of the lens was 15 feet 6 inches above the top of the rail. This signal was destroyed in the accident. The control circuit extended to a point 2,199 feet north of the signal. Because of the angle at which the wig-wag signal was placed in relation to the track, when the signal was in operation and the banner arm made its northward stroke, the red light was visible to members of the engine crew of a south-bound train.

Operating rules read in part as follows:

19. The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear of the train: * * * by night, green lights to the front and side and red lights to the rear. In addition, * * * freight trains will display a red light from center of rear platform of caboose. * * *

MOVEMENT OF TRAINS.

86. An inferior train must clear the time of a superior train, in the same direction, not less than five minutes; but must be clear at the time a first-class train, in the same direction, is due to leave the next station in the rear where time is shown.

In the vicinity of the point of accident the maximum authorized speed for passenger trains hauled by Diesel engines is 65 miles per hour, and for freight trains hauled by Class E-3 engines, 40 miles per hour.

Description of Accident

Extra 513 South, a south-bound freight train, consisted at the time of the accident of Class E-3 engine 513, 35 loaded and 12 empty cars and a caboose. This train departed from Vivian, 5 miles north of Shoreline, at 6:00 p. m., according to the dispatcher's record of movement of trains, and stopped in the siding at Shoreline at 6:55 p. m. At Shoreline the crew received copies of a clearance card and train order No. 65, Form 19, which read as follows:

Exa 556 South Wait at Vivian until 1001 pm
Other Southward Extras except Extra 513
South wait at Vivian until 1201 am

The caboose and 9 cars were left on the siding and, after switching service was completed, 38 cars were added to the train. This train had just departed from Shoreline and while moving at a speed of about 4 miles per hour its rear end was struck by No. 1 at a point 83 feet south of the south siding-switch.

No. 1, a south-bound first-class passenger train, consisted at the time of the accident of Diesel-electric engine 3, one storage-mail car, one express car, one mail-baggage car, one coach, one Pullman sleeping car and one diner-lounge-observation car, in the order named. The first three cars were of steel construction and the other cars had alloy steel underframes and superstructures and fabricated aluminum alloy shells. This train departed from

DeQueen, 98.4 miles north of Shoreline, at 7:15 p. m., according to the dispatcher's record of movement of trains, on time. A car was added to the train at Texarkana, where the brakes were tested and found to be functioning properly. This train departed from Depot Junction, Texarkana, 44.5 miles north of Shoreline and the last open office, at 8:57 p. m., 8 minutes late, departed from Vivian at 9:41 p. m., 3 minutes late, according to the conductor's statement, and while moving at an estimated speed of 17 to 35 miles per hour it collided with the rear end of Extra 513 South.

The brakes of No. 1 had functioned properly at all points where used en route.

The caboose of Extra 513 was demolished. The rear car was derailed to the right and stopped, badly damaged, on its right side. The front end of the second car ahead of the caboose was slightly damaged and its rear truck was derailed. Diesel-electric engine 3 stopped with its front end 59 feet south of the point of impact. The front end of the engine was badly damaged.

The weather was clear at the time of the accident, which occurred at 9:47 p. m.

The train-service employees injured were the engineer and the fireman of No. 1, and a student engineman.

Data

During the 30-day period preceding the day of the accident, the average daily movement over the line involved was 12.56 trains.

According to the timetable, No. 1 was due to leave Vivian, the first station north of Shoreline where time is shown, at 9:38 p. m., and was due to leave Shoreline at 9:44 p. m.

Discussion

The rules governing operation on the line involved provide that an inferior train must be clear at the time a following first-class train is due to leave the next station in the rear where time is shown. All the employees involved understood these requirements.

No. 1, which was a south-bound first-class train, departed from Vivian, the last station north of Shoreline where time is shown, at 9:41 p. m., 3 minutes late. No train orders restricting the movement of No. 1 had been issued. Extra 513 South had been engaged in switching at Shoreline a period of 2 hours 30 minutes and had just departed from Shoreline when its rear end

was struck by No. 1 at a point 83 feet south of the south siding-switch at 9:47 p. m., or 3 minutes after No. 1 was due to leave Shoreline. The accident occurred on tangent track at a point where there was an unrestrained view to the north a distance of 3.9 miles. Since No. 1 was due to leave Vivian at 9:38 p. m., Extra 513 was required to be in the clear at Shoreline not later than that time, if it cleared at Shoreline for No. 1. Extra 513 departed from Shoreline ahead of No. 1 and since No. 1 was due to leave Shoreline at 9:44 p. m., Extra 513 was required to be south of Oil City, the first station south of Shoreline, or in the clear at Oil City, not later than 9:44 p. m. Had Extra 513 complied with either of these requirements the accident would have been averted.

The five members of the crew of Extra 513 said they forgot the schedule of No. 1. During the time Extra 513 was switching at Shoreline no member of the crew checked his timetable. When the train was assembled, the caboose and 19 cars were on the south end of the siding and the front portion, which consisted of 28 cars and the engine, extended through the turnout and on the main track. It had not been necessary to provide flag protection prior to the time No. 1 was due to leave Vivian as there was no overdue schedule, and train orders had been issued specifying that south-bound extras, except Extra 513 South, would wait at Vivian until 10:01 p. m. When Extra 513 was moving from the siding to the main track the flagman was in the caboose and the other members of the crew, except the conductor, were on the engine. According to the statement of the conductor, he was at the south siding-switch when his train was moving from the siding. When the caboose was clear of the siding the conductor closed the switch and then saw No. 1 approaching. He called to the flagman to light a fusee and ran toward the approaching train and gave stop signals with his white lantern. The flagman jumped from the caboose just prior to the collision and then lighted a fusee. All members of the crew of Extra 513 stated that prior to the occurrence of the accident proper signals were displayed from the rear of their caboose. According to the statement of the engineer of No. 1, when his train was approaching the station at Shoreline the speed was 64 miles per hour, as indicated by the speedometer with which the engine was equipped, and he was maintaining a lookout ahead from his usual position. The fireman was on the left seat-box and a student engineman was occupying a seat to the right of the fireman. The brakes functioned properly at all points where used en route. The engineer's attention was momentarily diverted in checking the time his train would pass the station at Shoreline and when he again looked ahead his engine was just north of the station. He saw the red light on the wig-wag crossing-signal and a dim red light in the vicinity of the south siding-switch. Several seconds elapsed and his engine had reached a point about 2,600 feet north of the point where the accident occurred when he observed the caboose of the preceding train and saw stop signals being given with a white lantern.

The fireman and the student engineman both saw the red lights in the vicinity of the south siding-switch about the same time as did the engineer. The fireman stated that he mentioned the presence of red lights when he first saw them and the student engineman identified them as being the wig-wag crossing-signal. Soon afterward the fireman observed the markers on the caboose of the preceding train and called a warning to the engineer, who moved the brake-valve to emergency position, but the distance was not sufficient for stopping short of the preceding train. Both the fireman and the engineer thought the brakes were applied in emergency about 2,600 feet north of the point where the accident occurred but the student engineman estimated the distance as 1,100 feet.

Subsequent to the accident, tests made with a train consisting of a Diesel-electric engine and equipment similar to that of No. 1 at the time of the accident disclosed that on level tangent track the train was stopped from a speed of 60 miles per hour in a distance of 2,248 feet by a full service application of the brakes and in 1,512 feet by an emergency application. A visual test conducted at the point of accident under conditions similar to those existing at the time of the accident disclosed that markers displaying red to the rear from the caboose of a train moving southward on the siding could be seen from the control compartment of a Diesel-electric engine a distance of 10,138 feet and the cars of the train could be seen moving through the turnout of the south siding-switch a distance of 3,171 feet. The wig-wag crossing-signal was destroyed as a result of the accident. When this signal was operating, the red light was visible to the crew on the engine of a south-bound train. The control circuit for south-bound trains extended to a point 2,199 feet north of the signal but the employees on the engine of No. 1 did not know the exact point where their engine would actuate this signal. The fireman was the first to see what appeared to him to be markers but the student engineman said it was the highway crossing signal. As a result, the engineer delayed applying the brakes on his train. Had the lens of this signal been provided with a shield or hood placed in the proper position the red light would not have been visible to the members of the crew on the engine of No. 1 and action probably would have been taken to stop the train when it was first possible to see the markers on the preceding train.

The operation of trains on this line is by timetable and train orders only. The first warning the crew of No. 1 had that the preceding train was on the main track was when the fireman mentioned the presence of red lights in the vicinity of the south switch. If this line had been provided with an adequate block-signal system, it is probable the accident would have been averted.

Cause

It is found that this accident was caused by an inferior train occupying the main track on the time of a following superior train.

Recommendation

It is recommended that the Kansas City Southern Railway Company establish an adequate block-signal system on its Southern Division, Fifth District, and submit to this Commission for approval rules and instructions for the proper maintenance and operation of such block-signal system.

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

By the Commission, Commissioner Patterson.

W. P. BARTEL,

Secretary.

(SEAL)