INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3195

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

REPORT IN RE ACCIDENT

AT LAWTON, OKLA., ON

JULY 10, 1948

SUMMARY

Railroad:	St. Louis-San Francisco
Date:	July 10, 1948
Location:	Lawton, Okla.
Kind of accident:	Derailment
Train involved:	Freight
Train number:	Extra 1279 East
Engine number:	1279
Consist:	Auxiliary water car, 22 cars, caboose
Estimated speed:	About 10 m. p. h.
Operation:	Timetable and train orders
Track:	Single; tangent; 0.4 percent descending grade eastward
Weather:	Clear
Time:	7 p. m.
Casualties:	3 injured
Cause:	Partly open switch

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3195

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

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

October 8, 1948

Accident at Lawton, Okla., on July 10, 1948, caused by a switch being in partly open position.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On July 10, 1948, there was a derailment of a freight train on the St. Louis-San Francisco Railway at Lawton, Okla., which resulted in the injury of three employees.

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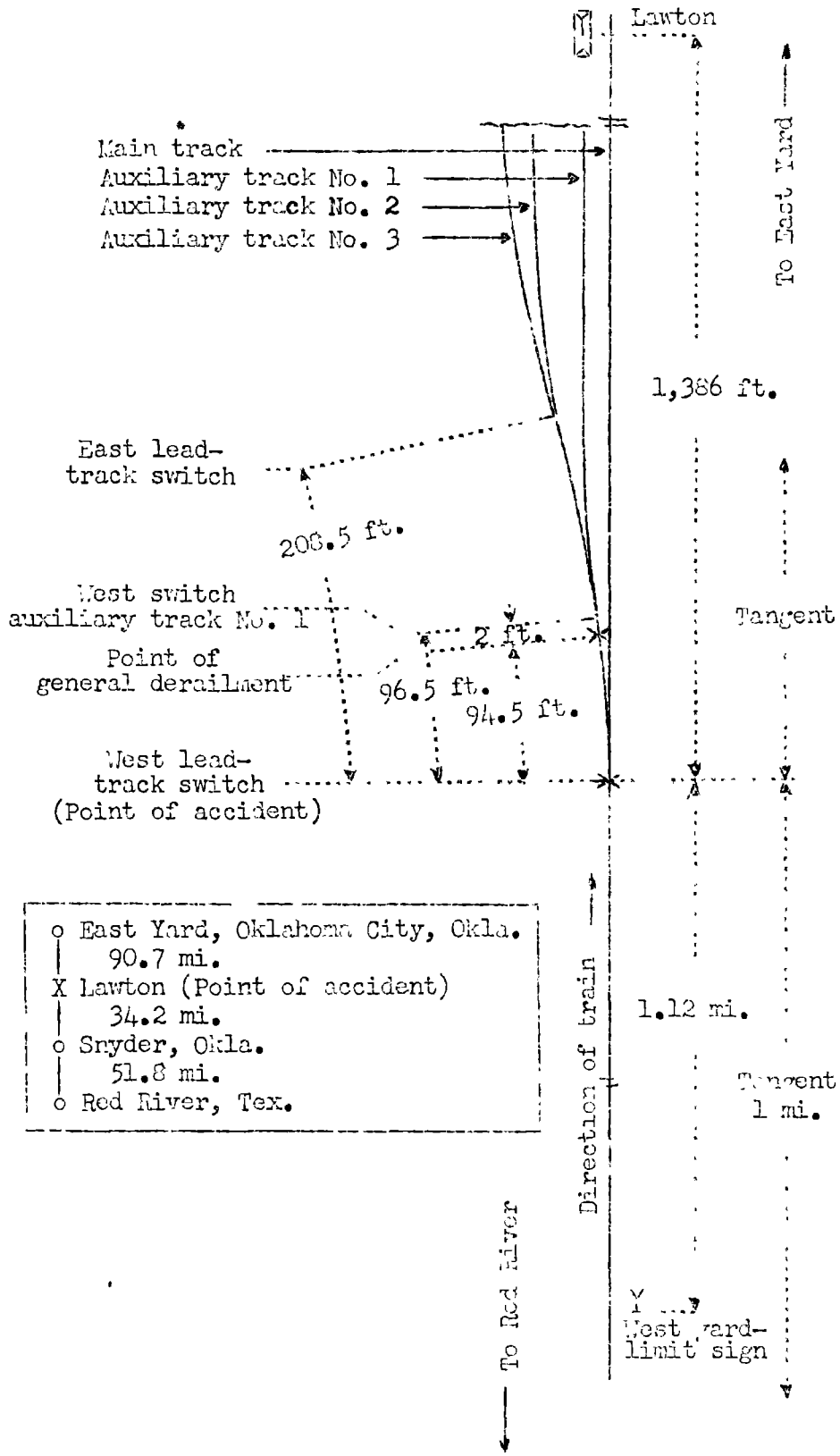
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3195
St. Louis-San Francisco Railway
Lawton, Okla.
July 10, 1943

Location of Accident and Method of Operation

This accident occurred on that part of the Southwestern Division extending between Red River, Tex., and East Yard, Oklahoma City, Okla., 176.7 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. Within yard limits at Lawton, 86 miles east of Red River, three auxiliary tracks, designated from south to north as tracks Nos. 1, 2 and 3, parallel the main track on the north. A lead track 209.5 feet long connects the west ends of the auxiliary tracks and the main track. The west lead-track switch is 1.12 miles east of the west yard-limit sign and 1,386 feet west of the station. Entry to the lead track at the west switch is made through a No. 10 turnout to the left having a curvature of 7°21', without superelevation. Entry to auxiliary track No. 1 at the west switch is made through a No. 8 turnout to the right having a curvature of 11°45', without superelevation. This switch is 96.5 feet east of the west lead-track switch. The accident occurred at the west lead-track switch, and the general derailment occurred at a point 94.5 feet east of the west lead-track switch and 2 feet west of the west switch of auxiliary track No. 1. The main track is tangent throughout a distance of more than 1 mile west of the west lead-track switch and a considerable distance eastward. The grade is 0.4 percent descending eastward.

The turnout of the west lead-track consists of 90-pound switch rails 15 feet long, 90-pound rails and a No. 10 spring-type 90-pound frog laid on 67 treated switch ties. It is fully tieplated and double-spiked, and provided with 4-hole joint bars. The track is ballasted with chats to a depth of from 6 to 9 inches under the ties. The switchstand is of the hand-throw intermediate-stand type, and is located 9 feet north of the centerline of the main track. It is provided with an oil-burning lamp and one target. The centers of the lenses and the center of the target are, respectively, 6 feet 10 inches and 5 feet 5 inches above the level of the tops of the ties. When the switch is lined normally a green light is displayed. When the switch is lined for entry to the lead track a red light and a red square-shape target are displayed at right angles to the track. The switch rails are arranged for a throw of 4-5/4 inches, and the points are maintained in proper relation by two switch rods. A connecting rod 6 feet long connects the crank of the switch-stand and the switch rails, and is located between two adjacent ties. The lamp, the target and the operating lever are attached

to the spindle of the switchstand. The operating lever is of the two-position, horizontal-throw type, 1 foot 6 inches long, and is attached to a fulcrum about 3 feet above the level of the tops of the ties. Two slots, spaced 90 degrees apart, are provided in the flange of the switch-stand table. These slots are arranged to correspond with the full-throw positions of the switch. To secure the operating lever in either the normal or reverse position of the switch a U-shape keeper is provided. This keeper has two legs, is of round stock metal 1/4-inch in diameter, and is riveted through the hinged lever above the fulcrum. When the lever is in dropped position in one of the slots, the shackle of a switch lock can be inserted in the keeper for locking the lever in dropped, or vertical, position. To operate the switch the lever is raised from vertical position to horizontal position, then moved in an arc of 90 degrees, and then to vertical position in a second slot.

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

> 93. * * *. Second and third class trains, extra trains and engines must move within yard limits prepared to stop short of train, obstruction, or anything that may require the speed of a train or engine to be reduced.
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> * * *
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> 104(a). Proper position for main track switches when not in use is set for main track and locked. When employes set switch for the main track they must test the lock and know that it is secured and must see that the switch points fit properly.
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> * * *

Rules of the maintenance-of-way department read in part as follows:

> 561. Inspection of Main Track Switches and Turnouts. Section foremen shall make a daily inspection of main track switches, and each week shall make a thorough examination of each switch * * * observe condition of switch lock * * *
>
> * * *

571. Locking Switches. Main track and siding switches, * * * must be kept locked at all times, except when in actual use, or when being inspected. * * * Locks should be fastened to stand or headblock.

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Description of Accident

Extra 1279 East, an east-bound freight train, consisting of engine 1279, one auxiliary water car, 22 cars and a caboose, departed from Snyder, the last open office, 34.2 miles west of Lawton, at 6:08 p. m., and, while moving at a speed estimated to have been approximately 10 miles per hour, the engine, the auxiliary water car and the first four cars were derailed immediately east of the west lead-track switch at Lawton.

The engine and the tender, remaining coupled, stopped on their left sides and across the auxiliary tracks, with the front end of the engine 282 feet east of the west lead-track switch. The engine was considerably damaged. The derailed cars stopped in various positions, and were somewhat damaged.

The engineer, the fireman and the front brakeman were injured.

The weather was clear and it was daylight at the time of the accident, which occurred about 7 p. m.

Engine 1279 is of the 2-8-0 type. The total weight in working order is 241,900 pounds, distributed as follows: Engine truck, 22,600 pounds; and driving wheels, 219,300 pounds. The specified diameters of the engine-truck wheels and the driving wheels are, respectively, 33 and 63 inches. The rigid wheelbase of the engine is 17 feet long. The total length of the engine and tender is 71 feet.

The tender is rectangular in shape, and its capacity is 8,500 gallons of water and 3,500 gallons of oil.

The last class 3 repairs to the engine were completed December 30, 1943. The last class 5 repairs were completed April 22, 1948. The last trip inspection and repairs were completed at Quanah, Tex., 94 miles west of Lawton, on July 10, 1948. The accumulated mileage since the last class 5 repairs was 13,120 miles.

Discussion

As Extra 1279 East was approaching Lawton the speed was about 40 miles per hour. The enginemen, and the front brakeman, who was on the engine, were maintaining a lookout ahead. The conductor and the flagman were in the caboose. Prior to the time of the accident, the engine and the cars had been riding smoothly. The engineer said that when the engine was in the vicinity of the west yard-limit sign he made a service brake-pipe reduction, which reduced the speed of the train to about 15 miles per hour, and that he made further brake-pipe reductions, which reduced the speed of the train to about 10 miles per hour as the engine approached the immediate vicinity of the west lead-track switch. The position of the target of the west lead-track switch indicated that the switch was lined for movement on the main track. The first he knew of anything being wrong was when he felt the engine lurch suddenly as it entered the turnout. He immediately moved the brake valve to emergency position, but the derailment occurred before the train could be stopped. The other members of the crew were not aware of anything being wrong until the derailment occurred. The brakes of this train had been tested and had functioned properly en route. After the accident no defective condition of the engine or cars which could have contributed to the cause of the accident was found.

Examination of the main track throughout a considerable distance west of the west lead-track switch disclosed no indication of dragging equipment or of defective track. Beginning at a point 8 feet 8 inches east of the west lead-track switch and extending 94.5 feet eastward, marks on the track structure indicated that the west lead-track switch was in partly open position as Extra 1279 East was approaching the switch, and that all wheels of the engine, the tender, the auxiliary water car and the front truck of the first car entered the turnout, that the wheels of the rear truck of the first car and the front truck of the second car proceeded on the main track, and that the wheels of the rear truck of the second car and all wheels of the remainder of the derailed equipment entered the turnout. From a point 94.5 feet east of the west lead-track switch to the point where the engine stopped, the lead track and auxiliary track No. 1 were torn up. When examined after the accident the west lead-track switch was found lined for entry to that track, the operating lever was in vertical position in the locking notch and the target was displayed at right angles to the track. The switch lock, which was in locked position, and the switch-lock keeper were found on the ground at the foot of the switchstand. One

of the switch rods was slightly bent but the switch point fitted properly against the stock rail. There was no indication that the switch had previously been run through. The investigation disclosed that when the switch was lined for normal movement the switch-lock keeper could be pulled from its position in the operating lever by pulling up on the lever with the switch lock in place. One leg of the keeper was found to be broken, and examination indicated that it had been in this condition during a considerable period of time. The other leg of the keeper had been recently broken. Tests disclosed that if the operating lever was lifted out of the locking notch and released quickly, the switch points would open approximately 2 inches and the operating lever would remain about midway between the locking notches.

The switch involved was last inspected by the section foreman on the day previous to the accident, and no defective condition was observed. About 3:15 p. m. on the day of the accident, a section laborer examined the switch and at that time it was lined for movement on the main track. The last train that passed over the switch prior to the accident was No. 403, a west-bound passenger train, which passed Lawton about 3 hours before the time of the derailment. The crew of this train did not observe any unusual condition of the switch. The division engineer said that the condition of the switch-lock keeper indicated to him that, between the time No. 403 passed and the time the accident occurred, some person or persons had forced the keeper from its normal position and had raised the operating lever to position for the switch points to be in partly open position. However, the fact that the switch-lock keeper was defective made it possible for a person to raise the operating lever sufficiently for the switch points to move to a partly open position.

Cause

It is found that this accident was caused by a switch being in partly open position.

Dated at Washington, D. C., this eighth day of October, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.