

INTERSTATE COMMERCE COMMISSION

WASHINGTON

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INVESTIGATION NO. 3261

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

REPORT IN RE ACCIDENT

AT LEBANON, MO., ON

JUNE 23, 1949

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SUMMARY

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Date: June 23, 1949

Railroad: St. Louis-San Francisco

Location: Lebanon, Mo.

Kind of accident: Collision between two portions of train

Train involved: Freight

Train number: Extra 5221 East

Engine numbers: Diesel-electric units  
5221A, 5310B and 5220A

Consist: 113 cars, caboose

Speed: 32 m. p. h.

Operation: Signal indications

Track: Double; 1°30' curve; 1.4 percent descending grade eastward

Weather: Clear

Time: 7:45 a. m.

Casualties: 1 killed; 17 injured

Cause: Defective lock block of coupler

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 3261

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

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

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August 17, 1949

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Accident at Lebanon, Mo., on June 23, 1949, caused by a  
defective lock block of a coupler.

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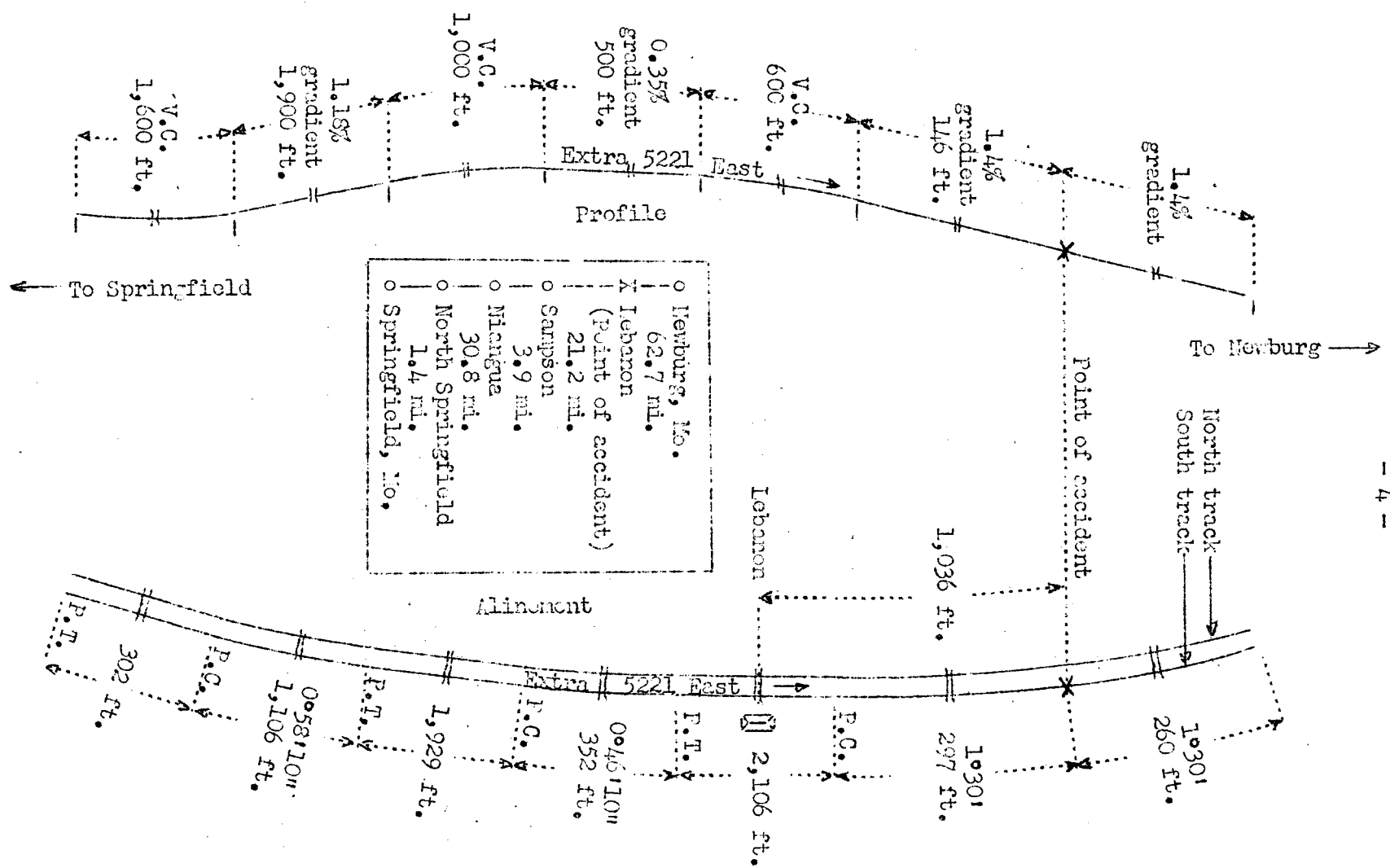
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REPORT OF THE COMMISSION

PATTERSON, Commissioner:

On June 23, 1949, there was a collision between two portions of a freight train on the St. Louis-San Francisco Railway at Lebanon, Mo., which resulted in the death of 1 maintenance-of-way employee, and the injury of 1 person carried under contract and 16 maintenance-of-way 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.



- o Newburg, Mo.
- o 62.7 mi.
- x Lebanon (Point of accident)
- o 21.2 mi.
- o Sampson
- o 3.9 mi.
- o Niagara
- o 30.8 mi.
- o North Springfield
- o 1.4 mi.
- o Springfield, Mo.

Inv. No. 3261  
 St. Louis-San Francisco Railway  
 Lebanon, Mo.  
 June 23, 1949

Location of Accident and Method of Operation

This accident occurred on that part of the Eastern Division extending between Springfield and Newburg, Mo., 120 miles. In the vicinity of the point of accident this is a double-track line, over which trains are operated in either direction by signal indications. The main tracks from south to north are designated as south track and north track. The accident occurred on the south track 57.5 miles east of Springfield and 1,036 feet east of the station at Lebanon. From the west there are, in succession, a tangent 302 feet in length, a 0°58'10" curve to the left 1,106 feet, a tangent 1,929 feet, a 0°46'10" curve to the left 352 feet, a tangent 2,106 feet and a 1°30' curve to the left 297 feet to the point of collision and 260 feet eastward. From the west there are, in succession, a concave vertical curve 1,600 feet, a 1.18 percent ascending grade 1,900 feet, a convex vertical curve 1,000 feet, a 0.35 percent descending grade 500 feet, a convex vertical curve 600 feet and a 1.4 percent descending grade 146 feet to the point of accident and a considerable distance eastward.

The maximum authorized speed for the train involved was 55 miles per hour.

Description of Accident

Extra 5221 East, an east-bound freight train, consisted of Diesel-electric units 5221A, 5310B and 5220A, coupled in multiple-unit control, 29 maintenance-of-way cars, 84 freight cars and a caboose. The maintenance-of-way cars consisted of 2 coaches, 3 tool cars, 7 bunk cars, 2 tool cars, 1 commissary car, 1 tool car, 1 water car, 2 utility cars, 1 dining car, 1 kitchen car, 2 dining cars, 2 foreman's cars, 1 coal-water car, 1 kitchen car, 1 water car and 1 tool car, in the order named. The two coaches were provided with L-type air-brake equipment and the other maintenance-of-way cars were provided with K-type air-brake equipment. This train departed from North Springfield, 55.9 miles west of Lebanon, at 4:20 a. m., and while it was moving at a speed of 32 miles per hour, as indicated by the speed recorder tape, a separation occurred between the eighth and ninth cars. A few seconds later the rear portion of the train collided with the front portion at a point 1,036 feet east of the station at Lebanon.

The Diesel-electric units stopped with the front end of the first unit 570 feet east of the point of accident. The seventh car stopped on its right side and south of the track. The eighth car stopped upright, off its trucks and across the south track. The ninth car stopped on its left side and across both tracks. These cars were badly damaged. The tenth car was not derailed but was somewhat damaged.

A maintenance-of-way employee was killed. He was in the ninth car, and was thrown from the north side-door when this car overturned.

The weather was clear at the time of the accident, which occurred at 7:45 a. m.

The eighth and ninth cars were built in 1907, and were converted into maintenance-of-way sleeping cars, respectively, in 1927 and in 1934. They were of steel underframe and double sheathed wooden superstructure construction. They were equipped with wrought iron riveted coupler yokes and tandem spring draft gears. End doors, 1 foot 8-1/2 inches wide and 5 feet 11-1/2 inches high, and side doors, 2 feet 8 inches wide and 6 feet 2 inches high, were provided. The west end of the eighth car was equipped with a Simplex coupler having a 5-inch by 7-inch shank and a 9-inch knuckle. The east end of the ninth car was equipped with a type-D coupler having a 5-inch by 7-inch shank and an 11-inch knuckle. Each was equipped with a rotary type uncoupling lever.

#### Discussion

When Extra 5221 East was approaching Sampson, 21.2 miles west of Lebanon, at a speed of about 40 miles per hour, the conductor discovered that the brakes were sticking on the eighty-second car. Because of the length of the train and the curvature of the track, visual signals could not be transmitted from the caboose to the engine. When the speed of the train had been reduced to 30 miles per hour on an ascending grade, he opened the conductor's valve and the train was stopped without excessive slack action. After the air brake on this car had been cut out and released, the train proceeded. As it approached Lebanon the speed was 32 miles per hour. The enginemen and the front brakeman were in the control compartment of the first Diesel-electric unit. The conductor and the flagman were in the cupola of the caboose. The throttle was in the fourth pulling position. The slack was stretched, and the

train was riding smoothly. When the Diesel-electric units had reached a point on the 1°30' curve about 1,100 feet east of the station the brakes became applied in emergency. The front brakeman locked back and discovered that there had been a separation of the train a short distance behind the engine and that the rear portion of the train was overtaking the front portion. A few seconds later when the front portion was almost stopped it was struck by the rear portion.

Examination after the accident disclosed that the draft sills at the rear end of the eighth car were bent, the coupler yoke rivets were sheared and the coupler was displaced. The coupler, the carry-iron and the uncoupling lever were found lying near the rear end of the eighth car. Because of damage, the height of the coupler above the tops of the rails before the separation occurred could not be determined. However, there was no condition which indicated that before the separation occurred the height was not within the specified limits. The coupler shank and guard arm were bent. The damage to the draft sills, buffer block and attachments indicated that the coupler was in place prior to the collision and that the damage occurred as a result of the collision. The lock block anti-creep lug was badly worn, and the anti-creep feature was completely nullified. It was worn to the extent that the lock block could be moved inside the coupler sufficiently to permit the knuckle to open without raising the lock lift. It is apparent that this defective lock block gradually worked upward sufficiently to permit the knuckle to open.

After the separation occurred the front portion of the train was on a descending grade, and it pulled away from the rear portion, which was on an ascending grade, a distance of about 30 feet. The engineer said that the collision occurred about 10 seconds after he felt the emergency application, about the same time that he released the independent brake and placed the automatic brake valve in lap position. The application of the brakes in emergency caused the power-control switch on the first Diesel-electric unit to cut off the power. The engineer did not have time to restore the switch to normal position before the collision occurred. Because of the type of brakes on the maintenance-of-way cars, the high braking ratio on account of the light weight of these cars, and the interval of time between the application of the brakes on the front portion and the

application on the rear cars of the rear portion, a high retarding force was developed on the front portion before an effective retarding force was developed on the rear portion of the train. As a result, the rear portion of the train overtook the front portion.

The draft sills and attachments at the rear end of the eighth car did not have sufficient strength to hold the coupler in line of draft during the run-in of the 49 loaded and 57 empty cars in the rear portion of the train. Failure of one of the draft sills permitted the coupler to deflect to one side, and this contributed to the buckling of the 3 maintenance-of-way cars.

Cause

It is found that this accident was caused by a defective lock block of a coupler.

Dated at Washington, D. C., this seventeenth day of August, 1949.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.