

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2597
THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY
REPORT IN RE ACCIDENT
NEAR CALZONA, CALIF., ON
JUNE 25, 1942

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SUMMARY

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Railroad:	Atchison, Topeka & Santa Fe
Date:	June 25, 1942
Location:	Calzona, Calif.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	117
Engine number:	3520
Consist:	4 cars
Speed:	35-40 m. p. h.
Operation:	Timetable and train orders
Track:	Single; tangent; 0.20 percent ascending grade westward
Weather:	Clear
Time:	About 10:30 p. m.
Casualties:	2 killed; 31 injured
Cause:	Accident caused by bridge being burned out

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2597

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

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY

August 19, 1942.

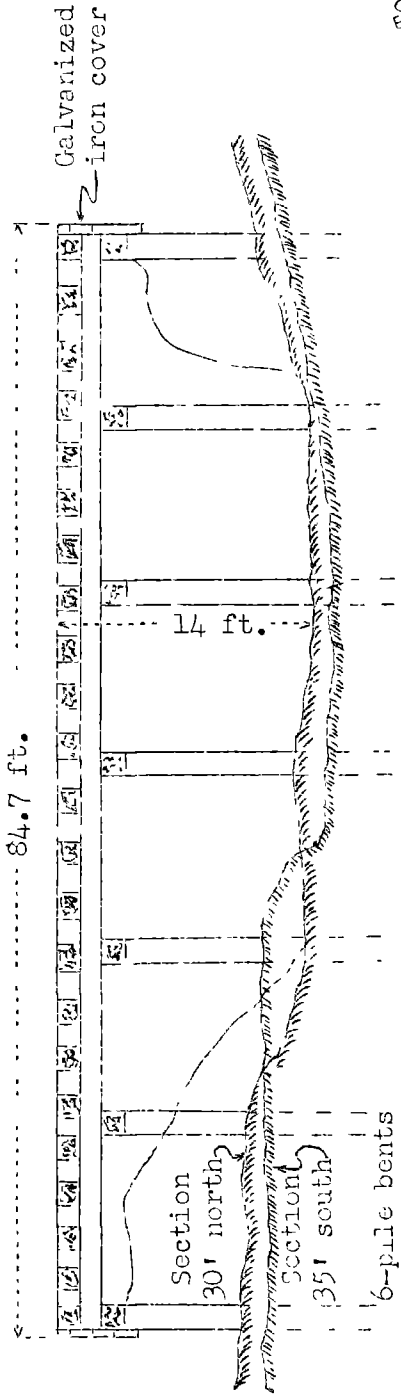
Accident near Calzona, Calif., on June 25, 1942, caused by
a bridge being burned out.

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REPORT OF THE COMMISSION

PATTERSON, Commissioner:

On June 25, 1942, there was a derailment of a passenger train on the Atchison, Topeka & Santa Fe Railway near Calzona, Calif., which resulted in the death of 2 employees, and the injury of 27 passengers, 1 express messenger, 2 employees off duty and 1 train-service employee. This accident was investigated in conjunction with representatives of the Railroad Commission of California.

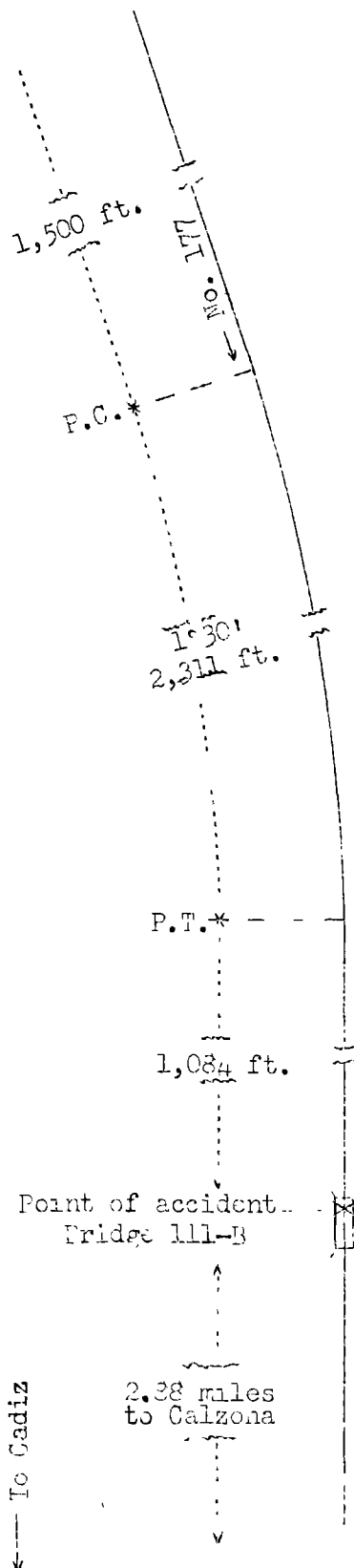
¹Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Side view of
Bridge 111-P

→ To Parker

← To Cadiz



- o Parker, Ariz.
1.5 mi.
- o Larp, Calif.
3.92 mi.
- X Point of accident
2.88 mi.
- o Calzona
76.4 mi.
- o Cadiz, Calif.

Inv-2597
Atchison, Topeka & Santa Fe Railway
Calzona, Calif.
June 25, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the Arizona Division designated as the Parker District and extending between Parker, Ariz., and Cadiz, Calif., a distance of 84.7 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. The accident occurred at Bridge 111-B, which spans a dry wash at a point 2.88 miles east of Calzona. As the point of accident is approached from the east there are, in succession, a tangent 1,500 feet in length, a 1°30' curve to the right 2,311 feet, and a tangent 1,084 feet to the point of accident. At the point of accident the grade for west-bound trains is 0.20 percent ascending.

Immediately east of Bridge 111-B the track structure consists of 90-pound rail, 33 feet in length, laid on 20 ties to the rail length; it is single-spiked, fully tieplated, and is laid on 10 inches of gravel ballast.

Bridge 111-B, an open-deck 7-bent pile-and-timber trestle, 84.7 feet in length, was rebuilt during September, 1925. The bents were spaced 14 feet apart. Each bent consisted of 6 piles, which were sway-braced. The minimum penetration of the piles was 13 feet 3 inches and the maximum, 22 feet 6 inches. The caps were 12 inches by 14 inches by 14 feet. Two 4-ply chords of 7-inch by 16-inch stringers were provided. The ties were 6 inches by 3 inches by 9 feet and were spaced about 6 inches apart. The caps and the stringers were covered by No. 26 galvanized iron. The maximum height of the trestle was 14 feet. All material, except the stringers and the bulkheads, was treated wood.

Rules and Regulations for the Maintenance of Way and Structures read in part as follows:

SECTION FOREMEN.

65. Inspect Section Daily.--They, or one or more of their reliable men, must pass over their entire section every day (Sundays and holidays included) unless relieved therefrom by Roadmaster.

They must * * * examine all * * * bridges * * * and know that each is safe for movement of trains.

* * *

66. Remove Combustible Material.--They must see that all trestles, * * * are kept free from an accumulation of weeds, etc.

In the vicinity of the point of accident the maximum authorized speed for passenger trains is 45 miles per hour.

Description of Accident

No. 117, a west-bound first-class passenger train, consisted of engine 3520, one baggage-express car, one chair car and two Pullman sleeping cars, in the order named. All cars were of steel construction. After a terminal air-brake test was made this train departed from Parker, 8.3 miles east of Calzona, at 10:10 p. m., according to the dispatcher's record of movement of trains, 10 minutes late. Soon after it departed from Parker a running test of the brakes was made and they functioned properly en route. This train departed from Earp, 6.8 miles east of Calzona, at 10:21 p. m., according to the statement of the conductor, 15 minutes late, and while moving at an estimated speed of 35 to 40 miles per hour it was derailed at Bridge 111-B.

Engine 3520 was derailed and stopped, badly damaged, on its left side on the roadbed at an angle of 20 degrees to the track, with the front end of the engine about 57 feet west of the west end of the bridge. The engine truck and the trailer truck were detached and the cab was demolished. The tender was torn loose from the engine, both trucks were detached, and the cistern stopped across the track and 15 feet west of the engine. The oil tank was detached and stopped against the boiler head. The first car stopped, badly damaged, on its left side, with its rear end on the west abutment and its front end down the embankment at a point 50 feet west of the west end of the bridge. The second car remained upright and stopped, badly damaged, with its front end resting on the bed of the wash and its rear end on the roadbed at the east end of the bridge. The front end of the second car was telescoped a distance of 8 feet, and the rear vestibule was crushed. The front truck of the third car was derailed and the front vestibule was crushed. The fourth car was slightly damaged, but was not derailed.

The weather was clear at the time of the accident, which occurred about 10:30 p. m.

The employees killed were the engineer and the fireman, and the train-service employee injured was the conductor.

Data

In the vicinity of the point of accident the terrain is typically desert and the only vegetation is scattered growths of creosote bush, smoke trees and palo verde. The channel is dry the greater part of the time.

Discussion

No. 117 was moving on tangent track at a speed of 35 to 40 miles per hour in territory where the maximum authorized speed was 45 miles per hour. According to the statements of surviving members of the crew, as their train was approaching the point where the accident occurred the train was riding smoothly. About 2 seconds before the accident occurred the brakes were applied in emergency; however, the distance was not sufficient for stopping short of Bridge 111-F, and the train was derailed at the bridge. The track immediately east of Bridge 111-B was in good condition.

The investigation disclosed that prior to the time of the accident all the deck and practically all the piles of this bridge had been destroyed by fire. The manner in which the bridge was burned indicated that the fire had started at the bottom of the bents and burned upward. Some of the piles were burned 4 to 5 inches below the ground level. Immediately after the accident occurred no flame was visible, but the abutment bents were still smouldering. Ashes had been blown away by a 35-mile-per-hour wind that had prevailed throughout the evening. Charcoal and ashes from the bridge were found at points 500 feet north of the location of the bridge. The evidence indicates that only the rails remained in place. Because of tangent track throughout a distance of 1,089 feet east of Bridge 111-B, the enginemen could have had an unobstructed view of the bridge. Since both enginemen were killed in the accident it could not be determined when they first became aware of the defective condition of the bridge, but apparently the engine was close to the east end of the bridge as the brakes were not applied until about 2 seconds before the accident occurred.

The section foreman said that during his tour of duty on June 25 his force and he were engaged in track work at a point about 10 miles west of Bridge 111-B. His tour of duty ended at 2:30 p. m. He did not know of the defective condition of Bridge 111-B until after the accident occurred. The last time he had passed over this bridge was about 6:30 a. m., June 22, and at that time the dry wash was free of debris. The roadmaster said that because of sparse vegetation in the vicinity of Bridge 111-B there is no fire hazard from woods or grass. The last train that passed over Bridge 111-B was a west-bound freight train. According to the statements of the crew of that train, their train passed over the bridge about 1:30 p. m., and at that time there was no indication of the bridge being afire. No member of the crew was smoking at that time. Both enginemen said that combustion was complete and no oil or carbon was dropping through the dampers. If the fire had started on the deck of the bridge, it is not probable it would have burned downward far enough to consume piles several inches below the

ground-line. A deputy sheriff who checked conditions in the immediate vicinity of the bridge was of the opinion that the fire was of incendiary origin.

Cause

It is found that this accident was caused by a bridge being burned out.

Dated at Washington, D. C., this nineteenth day of August, 1942.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.