

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3528

THE ATCHISON, TOPEKA AND SANTA FE
RAILWAY COMPANY

IN RE ACCIDENT

AT PLANADA, CALIF., ON

JUNE 23, 1953

SUMMARY

Date: June 23, 1953

Railroad: Atchison, Topeka and Santa Fe

Location: Planada, Calif.

Kind of accident: Side collision

Trains involved: Passenger : Freight

Train numbers: 6 : Extra 281 West

Engine numbers: Diesel-electric : Diesel-electric
units 74L and units 281L and
52A 281A

Consists: 8 cars : 66 cars, caboose

Speeds: Standing : 51 m. p. h.

Operation: Timetable, train orders, and
automatic block-signal system

Track: Single; tangent; 0.13 percent
ascending grade eastward on siding,
practically level on main track

Weather: Clear

Time: 2:45 a. m.

Casualties: 3 killed; 6 injured

Cause: Train fouling main track immediately
in front of opposing train

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3528

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

THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY

August 19, 1953

Accident at Planada, Calif., on June 23, 1953, caused by
a train fouling the main track immediately in front
of an opposing train.

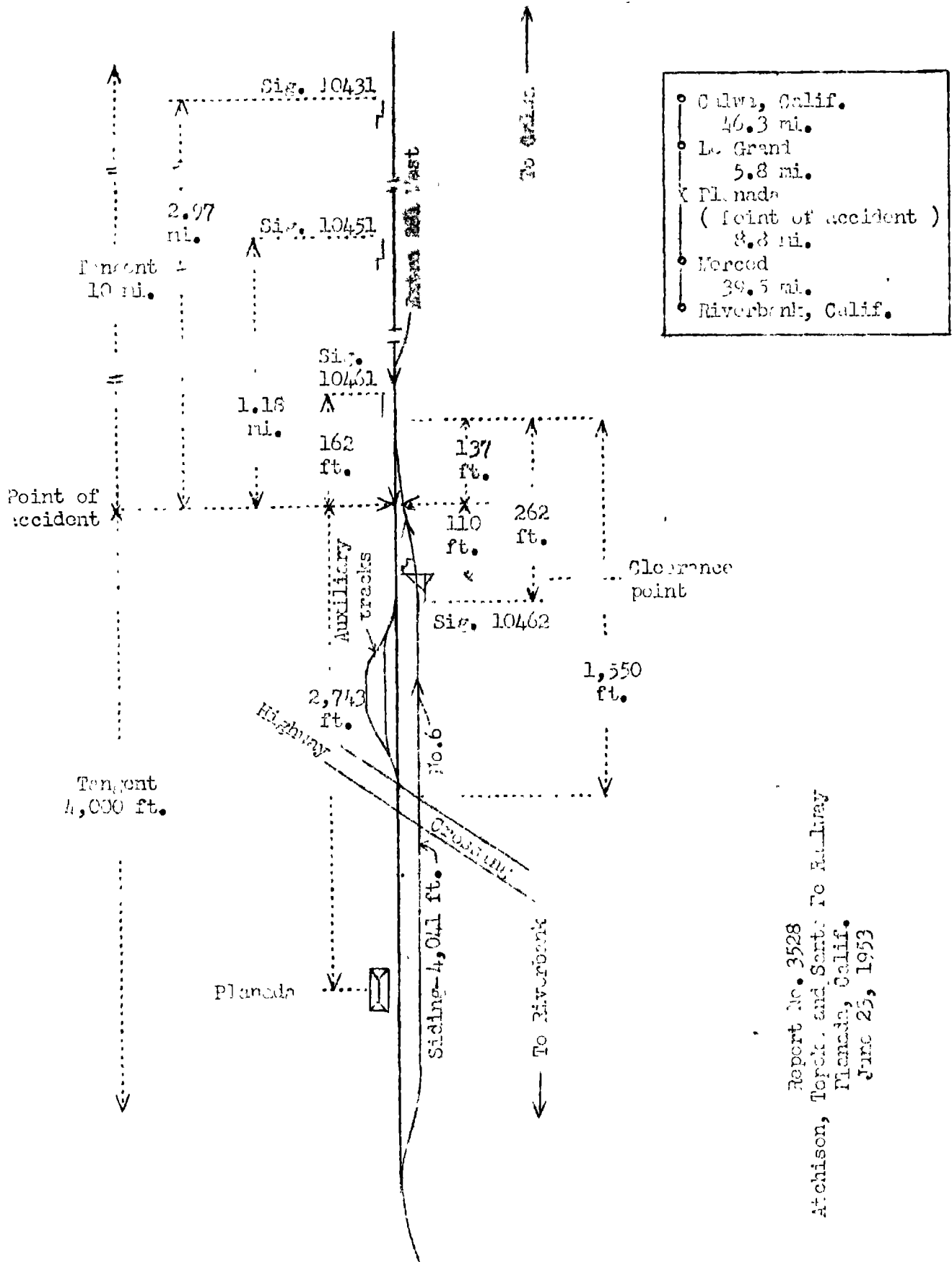
REPORT OF THE COMMISSION¹

CLARKE, Commissioner:

On June 23, 1953, there was a side collision between a passenger train and a freight train on the Atchison, Topeka and Santa Fe Railway at Planada, Calif., which resulted in the death of two employees and one trespasser, and the injury of two employees and four trespassers. This accident was investigated in conjunction with a representative of the Public Utilities Commission of California.

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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 Clarke for consideration and disposition.



Report No. 3528
 Atchison, Topeka, and Santa Fe Railway
 Planada, Calif.
 June 25, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the Valley Division extending between Riverbank and Calwa, Calif., 100.4 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable, train orders, and an automatic block-signal system supplemented by an intermittent inductive automatic train-stop system. At Planada, 48.3 miles east of Riverbank, a siding 4,041 feet in length parallels the main track on the south. The east switch of this siding is 2,880 feet east of the station. The accident occurred at the east end of the siding at a point 110 feet east of the clearance point and 137 feet west of the switch points. The main track is tangent throughout a distance of about 10 miles immediately east of the point of accident and about 4,000 feet westward. The grade on the main track is practically level. At the point of accident the grade on the siding is about 0.13 percent ascending eastward.

Automatic signals 10431, 10451, and 10461, governing west-bound movements, are located, respectively, 2.97 miles, 1.18 miles, and 162 feet east of the point of accident. Signals 10431 and 10451 are of the one-arm, upper quadrant, semaphore type, and signal 10461 is of the searchlight type. These signals are approach lighted, and each displays three aspects. The night aspects and the corresponding indications and names are as follows:

<u>Signal</u>	<u>Night Aspect</u>	<u>Name</u>	<u>Indication</u>
10431	Green	Clear	Proceed.
10451	Green	Clear	Proceed.
10461	Green	Clear	Proceed.
	Red over number plate	Stop and Proceed	Stop; then pro- ceed * * *

The controlling circuits of these signals are arranged on the overlap principle. When any portion of the siding between the clearance point and the east siding-switch is occupied, signals 10451 and 10461 each indicate Stop and Proceed and signal 10431 indicates Approach. The shunt fouling circuit on the siding extends to a point 247 feet west of the east siding-switch.

Automatic signal 10462, governing east-bound movements on the main track, is located 262 feet west of the east siding-switch. It is mounted on a bracket post of cantilever construction. The mast is on the south side of the siding and the cantilever portion extends over that track. The signal is mounted above and to the right of the main track.

Siding switches at Planada are of the spring type with provision for manual operation. When a train enters the siding at this station the siding switch must be operated manually for entry to the siding and it must be restored to normal position by manual operation when the train is clear of the main track. Under usual conditions manual operation of the siding switches is not required for egress from the siding. Trains authorized under the rules to proceed may depart from the siding and trail through the siding switches when signal indications permit entry to the main track or when protection for the movement is otherwise provided.

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

17. The headlight will be displayed to the front of every train by night. It must be extinguished when a train turns out to meet another train and has stopped clear of main track.

* * *

105. * * * trains or engines using other than main track must proceed prepared to stop short of train, obstruction or switch not properly lined.

* * *

FORMS OF TRAIN ORDERS.

S-A.

Fixing Meeting Points for Opposing Trains.

(1) * * *

No 5 Eng 13 meet Extra 95 East at B.

* * *

The foregoing examples may be modified by adding
"___" take siding" * * *

Trains receiving these orders will run with respect to each other to the designated points and there meet in the manner prescribed by the rules.

890. Should the engineman fail to obey signals or become incapacitated, the fireman should stop the engine * * *

891. * * *

Firemen must assist in keeping a constant lookout and must instantly give the engineman notice of any obstruction or signal they may perceive.

Timetable special instructions read in part as follows:

5. Rule 17, first paragraph is amended: The headlight will be displayed to the front of every train by day and night. It must be extinguished when a train turns out to meet another train and has stopped clear of main track. * * *

In the vicinity of the point of accident the maximum authorized speeds are 90 miles per hour for the passenger train and 60 miles per hour for the freight train.

Description of Accident

No. 6, an east-bound first-class passenger train, consisted of Diesel-electric units 74L and 52A, coupled in multiple-unit control, five baggage cars, one baggage-mail car, and two coaches, in the order named. The first car was of steel-underframe construction, and the other cars were of conventional all-steel construction. At Merced, 8.8 miles west of Planada and the last open office, the crew received copies of train order No. 228 reading in part as follows:

EXTRA 281 WEST MEET NO 6 AT PLANADA

* * *

NO 6 TAKE SIDING

This train departed from Merced at 2:29 a. m., 9 minutes late, entered the siding at Planada at the west switch, and stopped about 2:41 a. m., with the rear end of the train immediately east of the clearance point at the west end of

the siding. After the front brakeman restored the west siding-switch to normal position the train moved eastward. It passed the clearance point at the east end of the siding, fouled the main track, and stopped with the front end of the locomotive 137 feet west of the east siding-switch. A few seconds later the front end was struck by Extra 281 West.

Extra 281 West, a west-bound freight train, consisted of Diesel-electric units 281L and 281A, coupled in multiple-unit control, 66 cars, and a caboose. At Le Grand, 5.8 miles east of Planada and the last open office, copies of train order No. 228 were delivered to the crew. This train passed Le Grand at 2:38 a. m., passed signals 10431 and 10451, each of which indicated Proceed, passed signal 10461, which indicated Stop and Proceed, and while moving at a speed of 51 miles per hour, as indicated by the tape of the speed-recording device, it struck the front end of No. 6.

The Diesel-electric units and the front truck of the first car of No. 6 were derailed to the south. The first Diesel-electric unit was overturned and stopped on its right side south of the siding and parallel to it. The second Diesel-electric unit remained on the track structure. It leaned toward the south at an angle of about 30 degrees. The front truck of the first car remained in line with the track. The left side of the front end of the first Diesel-electric unit was crushed inward as a result of the collision. Both Diesel-electric units were considerably damaged. The first and fourth cars were struck by derailed equipment of Extra 281 West and were somewhat damaged. The Diesel-electric units, the first 15 cars, and the front truck of the sixteenth car of Extra 281 West were derailed. A separation occurred between the Diesel-electric units. The first unit stopped on its left side, at right angles to and across the main track and adjacent auxiliary tracks, at a point about 420 feet west of the point of collision. The second Diesel-electric unit was derailed to the south and stopped with the front end about 410 feet west of the point of collision. It leaned toward the south and against the side of the fourth car of No. 6. The derailed cars of this train stopped in various positions on or near the track. The first Diesel-electric unit was badly damaged, and the second Diesel-electric unit was considerably damaged. The first and the sixteenth cars were somewhat damaged, and the other derailed cars were badly damaged.

The engineer of No. 6 and the fireman of Extra 281 West were killed. The engineer and the front brakeman of Extra 281 West were injured.

The weather was clear at the time of the accident, which occurred about 2:45 a. m.

Discussion

The crews of both trains held copies of train order No. 228, which established Planada as the meeting point between No. 6 and Extra 281 West. The order included the instruction that No. 6 take siding. Under the rules, No. 6 was required to enter the siding at the west siding-switch and remain clear of the main track until Extra 281 West had been met.

No. 6 entered the siding at Planada at the west siding-switch and stopped when the rear end was clear of the main track. After the front brakeman had restored the west siding-switch to normal position, he boarded the rear car and a proceed signal was given. The train then moved eastward on the siding. When their train was entering the siding members of the crew observed that signal 10462 indicated Approach. The fireman said that when the locomotive was in the vicinity of a highway crossing, about 1,550 feet west of the east siding-switch, the engineer manipulated the headlight switch and caused the headlight to blink momentarily and then extinguished the light. He estimated that the speed of the train during the movement on the siding was from 8 to 10 miles per hour. The headlight of Extra 281 West was visible during this time. The fireman said that he could see signal 10462, which is 15 feet west of the clearance point at the east end of the siding, during the eastward movement on the siding, and when the locomotive was about 250 feet west of signal 10462 he called a warning. The engineer acknowledged the warning but took no action to stop the train. He said that the engineer apparently was looking directly into the rays of the headlight of Extra 281 West and may have misjudged the distance to the clearance point of the siding. The fireman became concerned and crossed the control compartment to take action to stop the train. He said that he again called a warning and before he could apply the brakes the engineer moved the brake valve to service position. The fireman said that at this time the engineer apparently was uncertain of his exact location and asked him if the object which the locomotive was closely approaching was the signal near the east end of the siding. The brake application was made

when the locomotive was in the immediate vicinity of signal 10462. The fireman said that the brakes were released immediately after the train stopped. The engineer moved the reverser to position for backward movement and opened the throttle in an effort to back the train clear of the main track. The collision occurred a few seconds later, before the train could be moved westward. The members of the train crew said that they had noticed nothing unusual about the movement through the siding and when the train stopped they were not aware that the front end had fouled the main track.

As Extra 281 West was approaching the point where the accident occurred the speed was about 51 miles per hour, as indicated by the tape of the speed-recording device. The engineer, the fireman, and the front brakeman were maintaining a lookout ahead from the control compartment of the locomotive. The conductor and the flagman were in the caboose. Copies of train order No. 228 were delivered to the crew at Le Grand, and the members of the crew on the locomotive observed the headlight of No. 6 in the vicinity of Planada as their train was passing Le Grand. The engineer said that an intermediate wayside signal west of Le Grand indicated Approach and the indication changed to Proceed before his locomotive passed it. This indicated to him that No. 6 had cleared the main track at Planada. Signals 10431, 10451, and 10461 each indicated Proceed. When the locomotive was about 1 mile east of Planada the headlight of No. 6 was extinguished. The front brakeman said that he observed No. 6 moving on the siding. When it passed the clearance point and fouled the main track, he and the fireman left the control compartment. The engineer said that his locomotive was about 475 feet from the east siding-switch when he observed the aspect of signal 10461 change from green to red. He said that he immediately made an emergency application of the brakes and simultaneously observed that the locomotive of No. 6 had fouled the main track. The collision occurred before the speed of the train had been materially reduced.

After the accident occurred the signals involved were found to be displaying the proper aspects. Examination disclosed no defective condition of the signal system.

The clearance point at the east end of the siding is marked by painted insulated joint bars at the end of the shunt fouling circuit. When No. 6 cleared the main track at Planada and ceased to occupy the approach lighting circuit of signal 10462, located near the clearance point at the east end of the siding, the light in this signal was extinguished.

Evidently after the headlight of the locomotive was extinguished during the movement on the siding, the engineer was unable to see the track ahead clearly. When the fireman called a warning the engineer apparently misjudged his location and took no action until the distance was insufficient in which to stop the train short of the fouling point. Examination of the tape of the speed-recording device indicates that the speed of the movement on the siding immediately before the brakes were applied was 20 miles per hour.

Cause

It is found that this accident was caused by a train fouling the main track immediately in front of an opposing train.

Dated at Washington, D. C., this nineteenth day of August, 1953.

By the Commission, Commissioner Clarke.

(SEAL)

GEORGE W. LAIRD,
Acting Secretary.