

Placer-Sierra Railroad Heritage Society

1912 WRECK OF SP 4208 PASSENGER CAB-FORWARD

The Roseville Register, Feb. 9, 1912. **OVERLAND LIMITED NO. 1 HAS A VERY BAD WRECK**

“We are indebted to the Sacramento Union for the following excellent write-up of the wreck to No. 1 on Monday morning in which three of our local people were injured:

Four trainmen were injured, one perhaps fatally, and the lives of 75 passengers were imperiled at 10:30 yesterday morning when the Southern Pacific’s westbound Overland Limited was derailed one mile east of Applegate, Placer county, and about 45 miles east of this city. The compound Mallet engine, the combination dynamo and baggage car and the diner left the rails and piled up at the bottom of a thirty-foot embankment. The two forward sleeping cars left the tracks but remained in an upright position. The passengers were badly shaken up, but apart from minor bruises no one suffered serious injury.

The injured men were brought to Sacramento yesterday afternoon on the fast mail train, arriving here at 1:45. They were taken immediately to the Wentworth hospital. Dr. H.T. Rooney, the company physician at Colfax, accompanied the injured men from the scene of the accident and administered first aid treatment. Engineer C.C. Brown was pinned under the wreck of his engine and was badly scalded. He was unconscious when removed from the cab by the train crew, who were assisted by a number of passengers in their work of rescue. The exterior burns sustained by the engineer are not believed to be necessary fatal, but the inhalations of live steam has rendered his condition serious. Brown is a widower with several grown children residing in Sacramento.

Fireman W.E. Clark succeeded in extricating himself from the ruins of the engine and managed to crawl to a place of safety. He was not badly injured, his wounds consisting of a wrenched hip and abrasions of the face and head.

Brakeman Cook was riding in the baggage car immediately behind the engine. He was not badly hurt, but at the solicitation of local railroad officials he was sent to the Wentworth hospital for treatment.

The negro Pullman car waiter, Allen Johnson, sustained a wrenched back. He was sent to San Francisco for treatment.

The cause of the derailment has not been definitely fixed, but it is believed to have been the result of a defective rail. The wreck occurred on a 6 per cent curve while the train was going not more than 25 miles per hour. A wrecking train was sent from this city within 30 minutes after the accident had been reported, and the tracks were cleared for the resumption of traffic by two o’clock. The Overland arrived here at 4 o’clock. The passengers reported having suffered no inconvenience, except that the wreck of the diner left them without means of obtaining a noon-day luncheon. An excellent dinner was awaiting them on arrival in Sacramento.

That no lives were lost is regarded as miraculous by local railroad officials. Breakfast in the diner had just been concluded when the derailment occurred, and not a single passenger was in it when the car top-ended down the embankment.

The presence of mind of A.M. Meston, a traveling engineer of the Southern Pacific, residing at Roseville, who was riding on the pilot of the engine, averted what might have resulted in more serious consequence to the crew and passengers of the train. When he felt the engine leaving the tracks, he closed the valve that supplies compressed air to the brakes. He then jumped to safety. His action locked the wheels of the Pullman sleeping cars and brought the train to a stop.

The Mallet engine, dynamo and baggage car and diner turned completely over after reaching the bottom of the embankment. The two sleeping cars were derailed but did not upset.

SP 4208 Wreck – continued

Superintendent H.W. Sheridan, accompanied by A.J. Gilson, master car repairer; W.H. Kirkbridge, division engineer, and L.S. Pratt, master mechanic, followed the wrecking train to the scene of the accident and spent the day in conducting an investigation into the cause of the derailment.

The operating officials of the Sacramento division continued their investigations into the cause of the wreck until darkness closed in without establishing any definite conclusion as to the cause of the accident. The board of inquiry will meet in the superintendent's office this morning to review the situation and make an effort to place the responsibility for the derailment.

Engineer Brown died Wednesday evening. The board of inquiry laid the accident to spreading of rails."



Photos of Wreck of SP 4208 taken by a passenger - *S-P Trainline Winter 2025*

Editor's Note: SP 4208 was on its maiden run pulling a passenger train when the accident happened. It had arrived in Sparks the day before, assigned to pull the premier Overland Limited westbound to Sacramento. The accident created a lot of attention at SP headquarters, as three separate Boards of Inquiry sought to determine the exact cause of the accident and propose a remedy if needed.

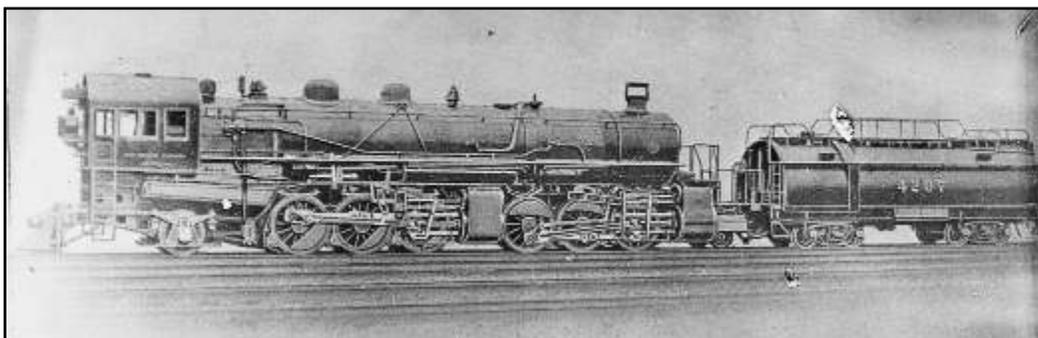
An excellent review of the accident and the resulting investigations was recently told in the Winter 2025 issue of S-P Trainline, a publication of the Southern Pacific Historical and Technical Society. The article **“Who Ordered These Engines to Run Backward?”** by **Richard Tower**, summarizes the three Boards of Inquiry that analyzed the accident. Here's an abbreviated summary of the findings and the resulting changes.

Despite receiving testimony about similar engines showing unstable behavior on curves, the first Board of Inquiry reported that they were “unable to form a definite conclusion.”

A second Board of Inquiry was formed and their reported cause was the rail turning over. They also mentioned that the locomotive design may have contributed, since it was really a locomotive operating backwards with the trailing wheels now leading, and perhaps they were not properly designed for that role.

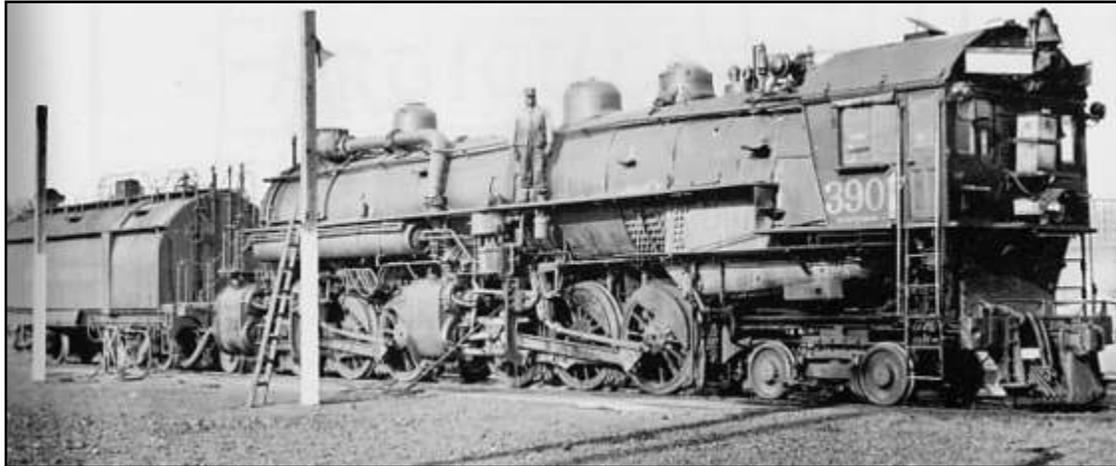
New SP President William Sproule was increasingly unhappy with each succeeding Board of Inquiry failing to find a direct cause of the derailment. He called for a third Board of Inquiry that included a series of instrumented test runs of a sister locomotive, SP 4207 that showed slight instability on curves when approaching 30 mph, while causing the driver wheels to bang against the inside of the rail at speeds above 34. The suspected cause was the large overhang of the firebox on this locomotive type, with the design of the lead wheels again being questioned. Despite these results the third Board concluded that the likely cause was excessive speed. The instability appeared to happen only above 30 mph. Since the posted speed limit was 25, the engineer must have been exceeding the speed limit. Sproule felt that the third Board of Inquiry gathered some important new information but their conclusions were not consistent with their findings.

This led SP and Baldwin to determine who had ordered the design change to put the cab ahead. Records showed that all that was ordered was to turn the engines around and modify the cab and other fittings as needed, with no mention of the design of the now leading wheels. SP agreed to purchase from Baldwin new four-wheel lead sets designed to steer the engine around curves. All remaining 2-6-6-2 cab-forwards became 4-6-6-2 and the derail problem was solved. However, the SP 4-6-6-2 cab-forwards were soon replaced by other locomotives for Donner passenger service, and the SP cab-forward 4-6-6-2 passenger locomotives were reassigned to other operational service.



SP 4207, a 2-6-6-2 cab-forward built for passenger service, was a sister to the engine that derailed in 1912 near Applegate. *Ken Yeo collection*

Resulting Modification from 2-6-6-2 to 4-6-6-2



SP 3907 in 4-6-6-2 configuration. In the 1930s SP renumbered the 4200 series passenger engines to the 3900 series. SP 3907 is the renumbered SP 4207 with the modified 4-wheel lead truck. *Ken Yeo collection*

What's the true story on origination of the Cab-Forward design??

Some historians credit North Pacific Coast's No. 21, an NWP locomotive, or a similar locomotive in Italy as the basis for the cab-forward design. But the article on cab-forwards in the Winter 2025 issue of S-P Trainline reports that a letter written by rival Santa Fe's master mechanic Hugo Shaefer appeared in the April 30, 1909 Railway Age Gazette, proposing that the cab be moved in front to improve visibility past the long boiler and piping. The idea was initially considered impractical by SP, but when the issues of both excessive smoke and visibility became obvious from May trials of the new SP mallets 4000 and 4001, SP officials revisited Shaefer's idea and in June submitted it to Baldwin for their thoughts. Baldwin came back with a design on July 9, and the SP cab-forward was born.

By early 1910 SP's new 2-8-8-2 Mallet Cab-forwards were operating on the Donner Route. These freight cab-forwards did not exhibit the derailment problems experienced by the later passenger 2-6-6-2's due to their heavier weight and a less pronounced overhang of the firebox.



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