Inv-2314

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

LINE OF THE

SOUTHERN PACIFIC COMPANY

ERICKSON, CALIF.

NOVEMBER 15, 1938

INVESTIGATION NO. 2314

SUMMARY

Inv-2314

Railroad:	Southern Pacific
Date:	November 15, 1938
Location:	Erickson, Calif.
Kind of accident:	Parting of train and collision between the two portions
Train involved:	Freight
Train number:	Extra 4032
Engine number:	4032; helper engine 3666
Consist:	55 cars, caboose
Speed:	Head portion practically stopped; rear portion 6-18 m.p.h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Single; 4^{o} curve to left for westbound trains; 0.8 percent descending
Weather:	Slightly cloudy
Time:	11:50 a.m.
Casualty:	1 injured
Cause:	The failure to couple properly when train was assembled

Inv-2314

December 30, 1938.

To the Commission:

On November 15, 1938, there was a break-in-two and a collision between two portions of a freight train on the line of the Southern Pacific Company near Erickson, Calif., which resulted in the injury of one employee. This accident was investigated in conjunction with a representative of the Railroad Commission of California.

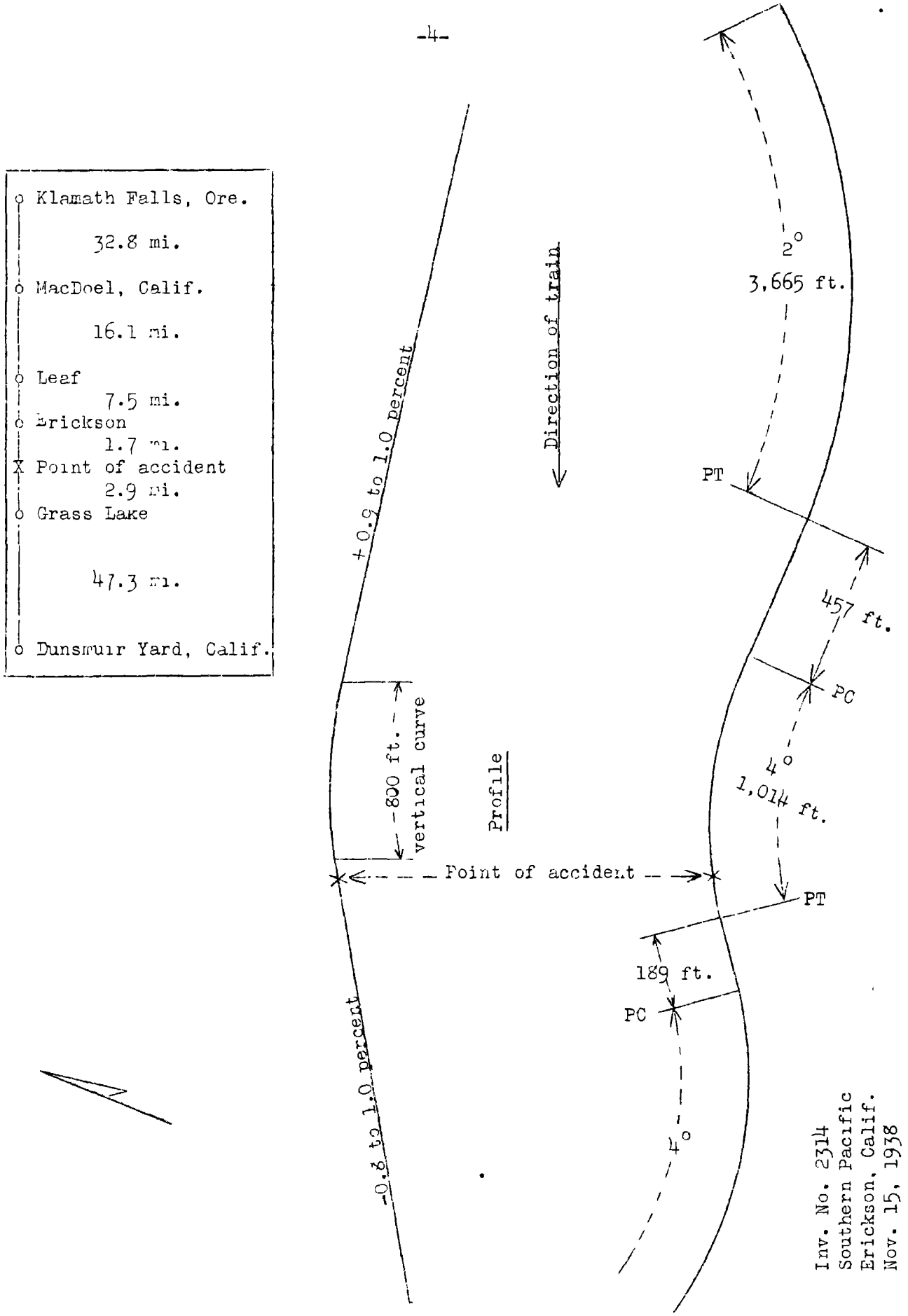
Location and Method of Operation

This accident occurred on the Sacramento Division, on that part of the Black Butte Subdivision which extends between Dunsmuir Yard, Calif., and Klamath Falls, Oreg., a distance of 108.3 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. The accident occurred approximately 1.73 miles west of the west siding switch at Erickson. Approaching this point from the east there are several long curves and tangents, followed by a 2° curve to the right 3,665 feet in length, tangent track a distance of 457 feet, and a 4° curve to the left 1,014 feet in length; the accident occurred on this last-mentioned curve at a point approximately 210 feet from its western end. The grade for west-bound trains varies from 0.9 to 1.0 percent ascending a distance of several miles, followed by a vertical curve 800 feet in length, and then descending grade varying from 0.8 to 1.0 percent a distance of approximately 1 mile; the parting occurred on the vertical curve and the collision a short distance beyond, at which point the grade is 0.8 percent descending.

The track structure consists of 131-pound rail, 39 feet in length, laid on an average of 24 treated ties to the rail length; it is fully tieplated, provided with 7 rail anchors to the rail length, ballasted with volcanic cinders, and is well maintained.

Helper engines are used to assist west-bound trains from Leaf, located 7.5 miles east of Erickson, to the hill summit where the accident occurred, a distance of 9.2 miles.

Miscellaneous timetable rules 4 and 4-a read in part as follows:



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Erickson, Calif.
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Rule 4. Not more than one F or AC type engine shall be placed on head end of freight trains, nor more than two Consolidations or one Mikado and one Consolidation. F or AC type engines must not be coupled ahead of engines smaller than Consolidation, when tonnage behind such engines is in excess of its rating as shown in timetable.

Rule 4-a Pushing Trains Out of Yards: Pusher engine must not be placed behind wooden underframe cabooses or other wooden frame cars.

AC type engines must not be used as pushers behind any caboose.

The weather was slightly cloudy at the time of the accident, which occurred about 11:50 a.m.

Description

Extra 4032, a west-bound freight train, consisted of two loaded flat cars and a caboose, the latter of steel underframe construction with wooden superstructure, hauled by engine 4032, of the 2-8-8-2 type, Class AC, and was in charge of Conductor Swaggart and Engineman Harrell. This train left MacDoel, 23.6 miles east of Erickson, at 8:50 a.m., according to the train sheet. At Leaf, 52 cars loaded with logs and 1 empty car were picked up and helper engine 3666, of the 2-10-2 type, Class F, was coupled to the rear of the caboose. The train left Leaf at 10:25 a.m., and while the rear end of the train was moving over the vertical curve at the summit located west of Erickson the train parted between the forty-sixth and forty-seventh cars, and shortly afterwards the rear portion of the train, moving at a speed variously estimated to have been from 6 to 18 miles per hour, struck the head portion which was just coming to a stop.

The front end of the forty-fifth car mounted the rear end of the forty-fourth car. The rear end of the car next to the caboose was derailed and the caboose body was held suspended in the air by that car and the helper engine, the helper engine having crushed the rear end of the caboose. The employee injured was the flagman.

Summary of Evidence

Engineman Harrell stated that after the train had been assembled at Leaf, the brake pipe was charged to 80 pounds pressure and he made a 15-pound brake pipe reduction. Because of the curvature of the track at that point he was unable to see whether the train crew made an inspection of each car, but it

was customary to do so. A short time after he made the brake-pipe reduction he received a signal for a rear-end test; he responded with the proper whistle signal and then noticed the brake-pipe pressure drop, indicating that the test had been made. No report was made to him by the conductor or any trainman regarding the condition of the brakes, nor had this been customary. When departing from Leaf the train started easily and apparently the helper engine shoved the slack up. After starting, the slack was stretched over a considerable distance of the forward portion of the train, but he did not think that it was stretched as far back as the forty-sixth car at that time. The train proceeded without incident until passing over the hill west of Erickson when he felt a slight jerk, at which time from 25 to 35 cars were over the hill. He saw that the brake-pipe pressure was dropping slowly; he closed the throttle, lapped the brake valve, and the train stopped. He stated that miscellaneous timetable rule 4 was issued because several cases of trains parting had been attributed to the concentration of too much power on the head end of the train.

The statement of Fireman Harrell contained no additional facts of importance.

Conductor Swaggart stated that when assembling the train at Leaf the helper engine, in charge of Middle Brakeman Trusty, placed the caboose behind the cars which were east of a highway crossing on track 1. After the switching had been completed by the road engine, the helper engine coupled the rear cars and caboose to the head portion of the train which was just west of the highway on track 1. An air brake test was then made, as well as a rear-end test. Conductor Swaggart said that he was near the head end when the brake test was made but his train crew inspected the cars. After departing from Leaf, he was on the right side in the cupola and as the caboose was going over the top of the hill he saw that the air pressure had dropped; looking ahead he observed that the train had parted at a point which appeared to be between the ninth and tenth cars from the caboose and he could see the forward portion of the train disappear around the curve. He signaled the engineman of the helper engine to stop, and in a few seconds the rear portion struck the forward portion. After the accident he found the air hose parted between the forty-sixth and forty-seventh cars which were the ninth and tenth cars from the caboose; the indications were that the train had parted between these cars and then became recoupled when the rear portion struck the head portion.

Middle Brakeman Trusty stated that at Leaf he cut in the air between the helper engine and the caboose and between the caboose and the rear car. When he saw that the head end was ready he coupled the cars that were standing on either side of the highway crossing; he was positive that this coupling was

properly made; he saw the pin drop and after the engineman of the helper engine released the straight air the cars rolled back a sufficient distance to pull the coupling and he observed that it was made securely. He noticed that the pistons were out on some of the cars; he did not participate in the regular air-brake test. Having gone back to the caboose and receiving the signal from the engineman, he made the rear-end test from the caboose. It was proper to make the rear-end test from the last angle cock on the train, which would be the rear end of the helper engine, but it did not occur to him to make the test from the helper engine instead of from the caboose. He did not know how many cars had stood east of the highway crossing, but said that the track held 8 or 9 cars.

Head Brakeman Poole stated that they performed the work at Leaf on the day of the accident in about the same manner as usual. He worked at the head end of the train and could not state how many cars were east of the highway crossing before the coupling was made. The flagman was out toward the east protecting the train while it was being assembled. After the entire train was coupled up, the rear-end brake test was made and the train departed.

Engineman Marsh, of helper engine 3666, stated that after the coupling at the crossing was made, he let the engine drift back, but he could not say whether it was sufficient to stretch the slack between the cars where the coupling had been made. After the air had been cut through the train he closed the brake valve cut-out cock on his engine and it remained closed until after the accident. The only air-brake test made was the rear-end test from the caboose. When departing from Leaf he had his engine practically shut off a short distance; he was unable to say whether the slack was stretched through the train during this time but as soon as he received a proceed signal he pushed up the slack, whistled off, and worked a heavy throttle until the accident occurred. When his engine was about two or three car lengths from the summit of the hill he felt the brakes apply on the engine and a short time later or about the time he received a stop signal from the conductor he closed the throttle and applied the independent brake. The train was traveling at a speed of 15 or 18 miles per hour at the time of the parting and traveled a distance of about five or six car lengths before the rear end struck the forward portion, at which time the speed of the rear portion had been reduced to from 6 to 10 miles per hour. After the accident he noted that the angle cocks on the ninth and tenth cars from the caboose were open.

The statement of Fireman Phillips, of helper engine 3666, added nothing of importance.

Car Inspector Smith, of Leaf, stated that on the day of the accident nine cars stood east of the highway crossing on track 1; S.P. 48953, the forty-seventh car in Extra 4032, stood just east of the crossing, and S.P. 43048, the forty-sixth car, stood just west of the crossing.

Car Foreman Miller, of Dunsmuir, stated that on his arrival at the scene of accident he found that the forty-sixth and forty-seventh cars were coupled but the air hose were parted and the angle cock on the forty-sixth car was open and the angle cock on the forty-seventh car was closed. He and another car foreman carefully inspected these cars, both of which were equipped with AAR type D couplers, with bottom-lift Carmer coupler release levers on both ends. The couplers were 33 inches above the rail, and the knuckles, lock blocks and lifters were in good order. The knuckle pins were slightly worn but the couplers would not take the coupler gauge. No defects that would cause the cars to uncouple were found.

Road Foreman of Engines Davis stated that on the Leaf-Weed logger, the run on which the accident occurred, it is the practice to place Consolidation, Mikado and 2-10-2 type engines as pushers behind the caboose from Leaf to Grass Lake, a distance of 12.1 miles. Enginemen have objected to having helper engines placed immediately behind cars of logs. Since the occurrence of this accident, instructions have been issued that nothing larger than Consolidation type engines be used as helpers behind cabooses.

Observations of Commission's Inspectors

Inspection of S.P. 43048, the forty-sixth car, developed that all parts of the couplers were in good condition and that there was no excessive slack in the draft gears. It was impossible to make an inspection of S.P. 48953, the forty-seventh car, as it was not on the line. Both cars are steel flat cars with full decks. All the cars used in logging service between Leaf and Weed are of this type; the average overall length is 44 feet. Inspection of a considerable number of these cars disclosed that the air-brake equipment had been cleaned within the prescribed period; the couplers generally were in good condition, there was no indication of excessive slack in the draft gear of any car inspected. Most of the cars in this service are equipped with type D couplers, and on the majority of the cars so equipped a Carmer underlift lever is used to release the lock block. Inspection of these levers showed that the inside arm is heavier than the outside arm and that the weight of a bell crank, through which power applied to the outer end of the lever is transmitted to the lock block, tends to keep the lock block in proper position when the knuckle is closed.

The total weight of engine 4032 is 481,200 pounds and it has a tractive effort of 90,940 pounds. The total weight of engine 3666 is 397,900 pounds, and it has a tractive effort of 75,150 pounds. Engine 3666 is equipped with No. 6 ET air-brake equipment with brake cylinder cut-out cocks located outside the cab. The brake pipe cut-out cock is in the brake pipe under the automatic brake valve. Observation of several trains leaving Dunsmuir, a division terminal, revealed that the helper engines were placed in the trains ahead of the cabooses.

Discussion

The evidence indicates that as the rear end of the train was moving over the summit of the hill west of Erickson the train parted between the forty-sixth and forty-seventh cars, or the tenth and ninth cars, respectively, ahead of the caboose, and then recoupled when the rear portion struck the head portion. The fact that the cars recoupled at the time of collision indicates that the separation was not due to a difference in height of draw bars; the height of each coupler was found to be 33 inches from the rail. There was no excessive slack in the draft rigging and after the accident all parts of the couplers were found to be in good condition.

The majority of the cars in this train was picked up at Leaf, 7.5 miles east of Erickson, and the last coupling to be made was between the forty-sixth and forty-seventh cars, these cars having been separated at a highway crossing. The middle brakeman, who made the coupling at the crossing, stated that he was positive the lock blocks dropped to their proper positions and that the coupling was made securely. It could not be definitely established whether the slack was stretched on the entire train at any time after the coupling was made, but the fact that the train was started from Leaf without great effort indicates that the slack was never stretched throughout the train until proceeding over the hill west of Erickson, when it parted; it appears probable therefore, that the cars were not securely coupled when the train was assembled at Leaf.

In the movement of this train the helper engine was placed behind the caboose, and as a result of the collision the caboose was practically demolished. Placing a helper engine behind a caboose constitutes a hazard to the occupants of the caboose. On this division the practice of placing a helper engine behind a caboose is restricted to trains composed of loaded log cars; this practice was established because enginemen objected to placing an engine directly behind cars loaded with logs. Rule 4 in the current timetable was issued to prevent the concentration of so much power on the head end of trains that it might cause damage to draft rigging. On the day of the accident the road engine

was an AC type and the helper engine was an F type, so that the use of these engines as a double header would have been in violation of rule 4; it was therefore necessary to use the helper engine at the rear of the train. Since the occurrence of this accident a bulletin has been issued which prohibits placing behind the caboose any helper engine heavier than the Consolidation type. Engines of the Consolidation type weighing 225,000 pounds and having a tractive force of 47,530 pounds are in use on the Sacramento Division.

Conclusion

This accident was apparently caused by the failure of the couplers between the forty-sixth and forty-seventh cars to couple properly when the train was assembled.

Respectfully submitted,

W. J. PATTERSON,

Director.