

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE LINE OF THE SOUTHERN PACIFIC COMPANY AT SAN
LUIS OBISPO, CALIF , ON AUGUST 28, 1930.

October 16, 1930.

To the Commission:

On August 28, 1930, there was a rear-end collision between two passenger trains on the line of the Southern Pacific Company at San Luis Obispo, Calif , which resulted in the injury of 20 passengers and 2 employees. This accident was investigated in conjunction with representatives of the Railroad Commission of California.

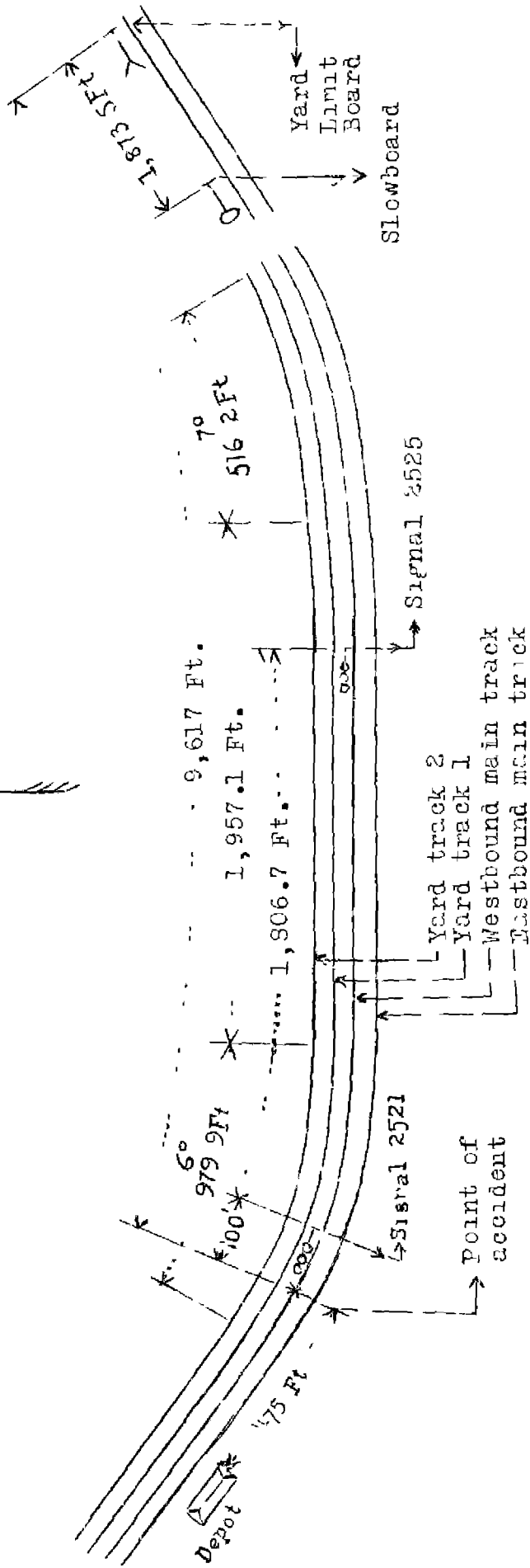
Location and method of operation

This accident occurred on the Guadalupe Subdivision of the Coast Division, which extends between Santa Barbara and San Luis Obispo, Calif , a distance of 118.6 miles; in the immediate vicinity of the point of accident this is a double-track line over which trains are operated by time-table, train orders, and automatic block-signal system. The accident occurred within yard limits, at a point approximately 475 feet east of the station at San Luis Obispo. Approaching this point from the east, there is a 7° curve to the right 516.2 feet in length and then the track is tangent for a distance of 1,957.1 feet, followed by a 6° curve to the right 979.9 feet in length, the accident occurring on this latter curve at a point 866.4 feet from its eastern end. The grade is level through the yard and at the point of accident. The east yard-limit board is located 9,317 feet east of the point of accident, and at a point 1,873.5 feet inside of this yard-limit board there is a 15 miles per hour slow board governing westbound movements, this being the maximum rate of speed permitted through San Luis Obispo yard under time-table instructions.

The signals involved are dwarf signals 2521 and 2525, located 100 feet and 1,906.7 feet, respectively, east of the point of accident. These signals are of the color-light type, the lenses being 6 inches in diameter; they are mounted vertically one above another, and display, from the ground upward, red, yellow, and green.

At the time of the accident, which occurred about 2.10 a.m., the weather was overcast, with a high fog, but ground visibility was good.

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INV. 1660

SOUTHERN PACIFIC CO.
- PACIFIC LINES -
San Luis Obispo, Cal.
August 28, 1930

Description

Westbound passenger train No 73, known as the "Padre," consisted of two baggage cars, one private car, one club car, six Pullman sleeping cars, and one Pullman observation car, all of steel construction, hauled by engine 2487, and was in charge of Conductor Nichols and Engineman Miller. This train departed from Santa Barbara at 10.50 p m , August 27, on time, and arrived at San Luis Obispo at 1.48 a m , August 28, on time. Engine 2487 was then cut off from the train and engines 3671 and 2484 were coupled to it, train and engine crews were also changed at this point, Conductor McNab and Enginemen Williams and Cooke taking charge of the train. It was scheduled to depart at 2 a.m , but was delayed by a broken steam hose connection, and was still standing at the station when it was struck by train No 75.

Westbound passenger train No. 75, known as the "Lark," consisted of one mail and baggage car, one club car, five Pullman sleeping cars, one dining car, four Pullman sleeping cars, and one Pullman observation car, all of steel construction and in the order named, hauled by engine 4355, and was in charge of Conductor Covington and Engineman Smith. This train left Santa Barbara at 11.13 p.m , on time, passed Hadley Tower, 7 miles east of San Luis Obispo, at 2 01 a m., on time, passed signal 2525 which was displaying a caution indication, passed signal 2521 displaying a stop indication, and collided with train No 73, about five minutes before its scheduled arriving time at San Luis Obispo, while traveling at a speed variously estimated to have been from 10 to 30 miles per hour.

The second engine and the first two cars in train No 73 were more or less damaged, while the last car in the same train was considerably damaged, its rear end being telescoped about 10 feet, and it also had its rear truck derailed. Engine 4355 was also badly damaged, the boiler being driven backward on the frame, and the first car in train No 75 was damaged to some extent. None of the other equipment was derailed, although minor damage was sustained by six other cars in the two trains.

Summary of evidence

Engineman Williams, of the leading engine of train No 73, stated that his engine was coupled to the train at 1 56 a m , and an air-brake test completed at 2 03 a m., at which time the conductor gave a proceed signal, but he did not move the train because there was a blue

flag on the front end of the engine. At the time of the accident, the train brakes had been released, but the independent brake was applied on his engine, and he estimated that the impact moved the train ahead a distance of 25 or 30 feet. According to a remark made by his fireman, who looked at his watch immediately, the accident occurred at 2 10 a m.

Conductor McNab stated that he took charge of train No. 73 when it arrived at San Luis Obispo and that after delivering train orders to the leading engineman and comparing watches with the second engineman, he boarded the train and gave a proceed signal. It was not noted upon, and he then discovered that car repairers were fixing a broken steam pipe under one of the cars. After consulting these repairmen, he stepped away from the side of the train to look back and ascertain whether the flagman was protecting, and at about that time the collision occurred, he immediately looked at his watch and noted the time to be 2 10 a m. As soon as he had made arrangements to care for the injured, he asked his flagman if he had been back to protect and the flagman replied that he was out about one car-length from the rear of the train. Conductor McNab said that he had an understanding with his flagman that at all times the flagman was to protect the rear and when any first-class train was due within five minutes, otherwise the flagman was to station himself 30 feet to the rear of the train as prescribed by rule. He thought this five-minute period was sufficient time to provide flag protection at a station, and said the arrangement was made to keep from unnecessarily delaying their train. He also said that he understood the rules provided that when a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately to protect the rear of his train, but in view of the protection afforded by block signals, as well as the rule providing that a train shall not arrive at a station ahead of its scheduled arriving time, he felt that his arrangement with the flagman was proper; in fact, had he been the flagman he would not have started back to protect until 2 10 a m, as train No. 75 was not scheduled to arrive at that station until 2 15 a m.

Flagman Leeman, of train No. 73, who also went on duty upon arrival of the train at San Luis Obispo, said he took his position 30 feet or more to the rear of his train, out on a yard track south of the eastbound main track, so that he could get a better view around the curve toward the east. He watched the time continuously and when his train did not proceed, he started back to protect against train No. 75, at 2.08 or 2.09 a m. At about the same time he observed the reflection of the headlight of an approaching train and he then

started running towards that train giving stop signals with his red lantern, but these signals were not acknowledged. He was on the fireman's side of the train while giving these signals, and observing that the speed of that train was not being reduced, he crossed over to the engineman's side just before the train reached him and when the engine passed him he shouted a warning, although he did not see any one in the engine cab. He thought he was back about four car-lengths, and estimated the speed of train No. 75 at 30 miles per hour when the engine passed him. While returning to his train he saw that signal 2531 was displaying a red indication, and upon reaching the engine of train No. 75 he asked the engineman what had been the difficulty, and the engineman stated that the headlight of a yard engine, which was on an adjoining yard track north of the main tracks had blinded him. Flagman Leeman said that previous arrangements had been made by Conductor McNab and himself that if their train was not out of the way of a first-class train by five minutes, he was to watch out for such trains, and he said it was customary to protect against train No. 75 at this point in the manner in which it was done on the day of the accident. He knew that train No. 75 was due to leave Hadley Tower at 2:01 a. m., and that it was not scheduled to arrive at San Luis Obispo until 2:15 a. m., and according to his understanding when the arriving time of a train is shown in the time-table, the train is not to arrive in advance of that time, consequently even though had he waited until 2:10 a. m. before starting back, he would have had plenty of time to afford proper protection. While he understood the rules required a flagman to go back immediately when a train stops under circumstances in which it is liable to be overtaken by another train, yet he thought he did not violate this rule in view of the rule requiring train No. 75 not to arrive until 2:15 a. m.

Engineman Smith, of train No. 75, stated that a terminal test of the brakes was made before leaving Los Angeles, and after leaving that point he made a running test, and he said that in making several station stops en route he experienced no difficulty. His train passed Hadley Tower on time, moving at a speed of about 50 miles per hour, which speed was maintained until the train had reached a point a short distance east of the yard-limit board at San Luis Obispo, at which time he placed the throttle in drifting position, and he said the speed was gradually reduced until the train was traveling at about 20 miles per hour when it entered the first curve east of the curve on which the accident occurred. Before reaching signal 2535 he made a service application of the brakes and had reduced speed to less than 15 miles per hour by the time the train passed this signal, which he observed to be displaying a caution indication. He released the brakes and closed the throttle after passing

this signal, but again applied the brakes with the intention of stopping before passing signal 3521, but due to some cars standing on yard track 2 he was unable to see around the curve, while as his train was rounding the curve, the tender headlight and to some extent, escaping steam from a switch engine standing on yard track 1, interfered with his vision and as a result he passed signal 3521 without seeing it. His first intuition that train No. 73 was standing at the station was when he observed the banner or sign on the rear end of that train, just before the collision occurred, he immediately moved the brake-valve handle into emergency position without having released the brakes after the second application, and estimated the speed at the time of the accident at 10 miles per hour. Although he did not look at his watch at the time of the accident, he thought it occurred at about 2.12 a.m., basing his estimate on the average running time between Hadley Tower and the point of accident. While he had noticed the yard engine on the adjoining track, yet he paid no attention to it as his attention was being given to observing signal 3521, and he said he saw no stop signals being given while approaching the point of accident, and did not see the flagman of train No. 73 until he appeared at the gangway on his side of the engine very shortly after the collision occurred. It also appeared from his statements that with track 1 occupied, signal 3521 could not be seen a distance of more than one-half an engine-length ahead, that he had found this signal displaying a stop indication several times prior to the date of the accident due to helper engines moving to and from the roundhouse to the west end of the yard, and that on several occasions he had over-run this signal under such conditions. Engineer Smith further stated that although train No. 73 is not scheduled to arrive at San Luis Obispo until 3.15 a.m., he considered he had the right of track at any point between Hadley Tower and the point of accident after 2.01 a.m., the scheduled time for his train to pass Hadley Tower, provided he did not arrive at San Luis Obispo until 3.15 a.m., and he expressed the opinion that flag protection should have been afforded by the crew of train No. 73 after 2.01 a.m. He also said that if train No. 73 had not been standing where it was at the time of the accident, his own train would not have stopped at the station until 3.15 a.m., as it was his practice to move slowly into the station so that he could make a good stop. Engineer Smith said he went on duty at San Luis Obispo at 3.15 a.m., August 27, arrived at Los Angeles at 10.05 a.m., and at 7.20 p.m. went on duty on train No. 75 on the trip on which this accident occurred. He was shown as having been off duty at Los Angeles for 9 hours and 15 minutes, but stated that the weather was hot and he slept very little, in fact, he said he did not go to bed until 11.25 a.m., and was up again before 4 p.m. On the San Luis Obispo end of his run, it was

his custom to go to bed at 7 p.m. and get up at 2 a.m., but at Los Angeles, where he would be during the middle of the day, he would get very little sleep. He did not feel that the men on these runs were obtaining enough rest, and said he was very tired on the trip on which the accident occurred, although he had not been napping and did not feel that his lack of adequate rest had anything to do with the occurrence of the accident.

Fireman Spangler, of train No. 75, stated that his train approached signal 2525 at a speed of about 45 miles per hour, and just before reaching that signal he noticed it was displaying a yellow indication and called it to the engineer, who applied the brakes, reducing the speed to about 15 miles per hour, although the fireman said the speed might have been greater. Another application of the brakes was made after passing this signal, which further reduced the speed before reaching the curve on which the accident occurred. Fireman Spangler did not see a flagman, or any stop signals, but said there might have been a flagman near the rear end of train No. 73, where he could not have been seen from the fireman's position on the outside of the curve. It was also impossible for Fireman Spangler to see signal 2521, due to the curve, and his first knowledge of anything unusual was when the engineer applied the brakes in emergency and then crossed over to the fireman's side and told him to get off, the collision occurring a few seconds later. After closing various valves, tank valve, firing valve, air compressor, etc., the fireman looked at his watch and it was then 2:12 a.m., which indicated to him that the accident occurred about 2:10 a.m., and he estimated that the train was traveling at a speed of at least 15 miles per hour when the collision occurred. Fireman Spangler farther stated that he could not say whether his train was running ahead of schedule, as it was not due at the station until 2:15 a.m., and until it came to a stop at that point it would be impossible to determine whether it was ahead of time, in a subsequent statement, however, he said his train would have arrived ahead of time if the accident had not occurred. In his opinion, train No. 73 should have been protected after 2:01 a.m.

Conductor Covington, of train No. 75, stated that before departing from Los Angeles on the trip on which the accident occurred, he checked the time at the station and his watch was then six seconds fast. He said his train passed Hadley Tower on time and traveled at the maximum speed of 50 miles per hour until it reached the slow board near the east end of San Luis Obispo yard, where steam was shut off, and he said he felt an application of the brakes before reaching signal 2525, which reduced the speed to about 15 miles per hour, although it

might have been slightly faster. Upon reaching the roundhouse, located approximately 1,700 feet east of the point of accident, speed was further reduced to 10 or 12 miles per hour. Just after passing the roundhouse, he looked at his watch, which showed 2:12 a.m., indicating that his train was on time and would not stop at the station before it was due to arrive. He was standing on the rear platform of the club car, with the door open preparatory to getting off at the station, when the collision occurred and the impact caused him to fall, and also overturned and extinguished some lanterns that were on the platform. He picked up one of these lanterns, lighted it, and noted the time to be 2:13 a.m. He said there were no land marks by which the speed could be checked while approaching the point of accident, but as nearly as he could estimate it, the train was traveling between 10 and 15 miles per hour at the time of the accident, which was the usual speed approaching that point, and if he had considered the speed excessive at any point within yard limits, he could have signalled the engineman to reduce speed. After the accident he went forward and noticed that signal 3521 was burning and displaying a red indication. Conductor Covington said that it was not unusual for his train to arrive at San Luis Obispo while train No. 73 was standing, at that point, but in such cases his own train had always been headed through yard track 1. He was positive that the accident could not have occurred any earlier than 2:15 a.m., as an engine of the type involved could not haul 13 cars from Hadley Tower to the point of accident in less than 12 minutes. Conductor Covington was also of the impression that his train had a right to the track at any point between Hadley Tower and San Luis Obispo after 2:01 a.m., so long as it did not arrive at the station before 2:15 a.m., and said that train No. 73 should have been protected accordingly.

The statements of Brakeman Sandstrom and Flagman Falck, of train No. 75, were to the effect that their train was moving through the yard at about the usual speed when the collision occurred. Brakeman Sandstrom estimated the speed at the time of the accident at 12 miles per hour, while Flagman Falck could not estimate it as he was not looking out at the time, neither of them knew what time the accident occurred.

Engine Foreman Foster, who was in charge of yard engine 2660, which was in the vicinity of the point of accident at the time of its occurrence, stated that the engine was backing eastward on yard track 1 at a speed of 5 or 6 miles per hour and when it reached a point about three car-lengths east of signal 3521 he observed train No. 75 approaching around the curve about seven or eight car-lengths distant. Realizing that that train was traveling at a high rate of speed in view of existing conditions, he signalled his engineman to stop and

the engine was stopped immediately. He then got off the rear footboard, alongside the westbound main track, and gave stop signals with his white light to the engineer of train No. 75, but these signals apparently were not acted upon, as he noticed no reduction in the speed of that train and it passed him travelling at a speed of 20 or 25 miles per hour. When the engine passed him he saw the engineer, who appeared to be leaning slightly out of the window. Engine Foreman Foster also saw the flagman of train No. 73 giving stop signals with red and white lights, but could not state the exact location of this flagman, as his attention was centered on the approaching train, neither did he know to what extent the rear headlight of his engine interfered with the view of the engineer of train No. 75, although he was of the opinion that it would have little effect, as the headlights of yard engines are not as bright as those of road engines. His engine, however, probably obstructed the view of signal 2521 from the approaching train until the engine of that train passed the point at which his own engine was standing.

Switchman Newman, of engine 2630, stated that he was riding on the footboard of the tender with Engine Foreman Foster while rounding the curve on track 1, and when he noticed the headlight of train No. 75 he thought the train was traveling pretty fast so he, as well as the conductor, began giving stop signals. These signals were not acknowledged by means of the engine whistle, although he saw fire flying from the wheels before the collision occurred. He thought his engine was standing about 400 feet to the rear of train No. 73 when the forward end of train 75 passed him, and he estimated the speed of that train at that time at 25 miles per hour.

Engineer Miller, of engine 2360, stated that while moving around the curve he saw the reflection of the headlight of an approaching westbound train, he reduced speed, and on seeing stop signals given by a member of his crew, he immediately brought his engine to a stop, at a point approximately 325 feet east of the rear end of train No. 73. The head end of train No. 75 passed him at a speed he estimated to have been between 20 and 25 miles per hour, and he saw fire begin to fly from the brake shoes of that train and heard the exhaust of the air when the two trains were only about one or one and one-half car-lengths apart. Engineer Miller also said that the generator of his engine was cut down so that the headlights would not shine too brightly, but he did not know whether the glare interfered with the approaching engineer's vision; there was no steam escaping from his engine, however, and he also said signal 2521 was displaying a red indication both before and after the accident.

Fireman Wells, of engine 2880, stated that he was sitting on the seatbox on the left side of the engine during its back-up movement on track 1, and when he observed the reflection of a headlight towards the east he thought at the time that it was a freight train entering the yard. He then looked eastward and saw a flagman standing towards his engine between the two main tracks, and when the flagman was opposite the cab he saw that the flagman was giving stop signals. Fireman Wells estimated the speed of train No. 75 at 15 or 20 miles per hour when it passed his engine, and said that when he noted the time, two or three minutes after the collision occurred, his watch showed that it was then 2:15 a.m.

Yardmaster Read was standing about 60 feet east of the station on the south side of train No. 73 at the time of the accident, and when it occurred he immediately noted the time, which he said was a few seconds past 2:09 a.m. At that time he did not think train No. 75 was involved, as it was unusual for that train to arrive at the station more than a few seconds ahead of its schedule. Brake on Culp, who had arrived on train No. 73, stated that he was on his way home and had reached a point about 500 feet from the point of accident when the sound of its occurrence attracted his attention, and upon checking the time he found it as 2:10 a.m. Flagman Hamilton, who also had arrived on train No. 73, stated that he was in the vicinity of the station when the collision occurred, and his watch showed the time to be exactly 2:10 a.m. Acting Car Foreman Dana stated that while inspecting the equipment of train No. 73, he discovered a steam leak under one of the cars and was assisting in making repairs at the time of the accident, which he noted as occurring at 2:10 a.m.

Signal Maintainer White stated that he had tested signals 2521 and 2525 at about 10 a.m., on August 27, and that he again tested them about half an hour after the occurrence of the accident, and on both occasions he found them to be in proper working condition.

Tests conducted subsequent to the accident revealed that the caution indication of signal 2525 could be seen from the engine end's side of a westbound engine for a distance of approximately 900 feet, and with freight cars standing on yard track 3, signal 2521 can not be seen from the right side of an engine approaching from the east until the engine is within 377 feet of the signal, while cars standing on yard track 1 limit the view of this signal from the right side of a west-bound engine to 210 feet.

Conclusions

This accident was caused by the failure of Engineer Smith, of train No. 75, properly to observe and obey signal indications, and by his failure to operate his train at the reduced rate of speed required within the yard limits of San Luis Obispo.

According to the statements of Engineer Smith, he shut off steam in the vicinity of the yard-limit board, moving at a speed of 50 miles per hour, and permitted the train to drift until it neared signal 2525, which was displaying a caution indication, and he then reduced the speed to about 15 miles per hour. After passing this signal, he released the brakes, but applied them again before reaching signal 2521. Due to cars on the inside of the curve, however, he was unable to see around the curve, and because his view was also interfered with by the headlight of a yard engine, he passed signal 2521 without having observed its indication, and his first knowledge of an impending collision was when he saw the rear end of train No. 73 only a short distance ahead; he immediately applied the brakes in emergency, just before the collision occurred. He was aware of the location of signal 2521 and should have brought his train to a stop before passing this signal, which as shown by the evidence, was displaying a stop indication. Having made the stop, Engineer Smith then could have proceeded in accordance with the provisions of automatic block-signal rule 509F, which provides that in double-track territory a train may, after stopping, proceed with caution, not exceeding 12 miles per hour, rule 509-H holds an engineer entering an occupied block responsible for accident caused by encountering a train in the block. It also appeared that the flagman of train No. 73 was running towards the approaching train giving stop signals, which was corroborated by the fireman of yard engine 2660, and that the foreman and a switchman of the yard engine were giving emergency stop signals from a point a short distance east of signal 2521. No adequate reason appeared for the failure of Engineer Smith to observe any of these stop signals.

Under special instructions contained in the timetable, it is provided that trains must not exceed a speed of 15 miles per hour in San Luis Obispo yard. Engineer Smith also violated this rule, for he allowed his train to enter the yard at a speed of approximately 50 miles per hour, and speed was not reduced to the maximum permitted until the train approached signal 2525, considerably more than a mile inside the yard limits, in fact, the fireman stated that the train was traveling about 45 miles per hour at that time. There is considerable difference in the estimates of speed of train No. 75 at the time of the accident, the crew of this train estimated it at

from 10 to 15 miles per hour, but the crew of the yard engine said that the head end of train No. 75 passed their engine at a speed of from 15 to 25 miles per hour, and the flagman of train No. 73 stated that it was traveling about 30 miles per hour when the engine passed him at a point about four car-lengths to the rear of his train. Train No. 73 was standing with only the independent brake applied on the leading engine, and in view of the damage resulting from the collision, it would appear that train No. 75 was traveling at a higher rate of speed than that estimated by the crew. Conductor Covington should have realized that his train was greatly exceeding the speed limit in passing through the yard, and is subject to criticism for his failure to see that the rules were complied with.

Considerable attention was given in the investigation of this accident to the question of the responsibility of the conductor and flagman of train No. 73 in connection with proper protection of their train by flag. Summarized briefly, it appears that the conductor and flagman had an arrangement of their own that the flagman was to start back to protect, at a station, at least five minutes prior to the arriving time of a following train. In this particular case, the arrangement worked out so that the flagman was just about to start back when he saw the headlight of train No. 75, and he was back only a short distance when that train passed him, approximately five minutes ahead of its schedule.^{time} The arrangement between the conductor and flagman was based upon their understanding of the rules. The crew of the following train naturally adopted the interpretation of the rules that flag protection was required against their train by the time it was due out of the last station where time was shown, and a similar idea seems to have prevailed with the board of inquiry organized by the company in connection with its investigation of this accident. The book of rules in effect at the time of this accident took effect June 15, 1930, and rule 99A of this book of rules in substance says that during station stops the flagman of a train carrying passengers will take a position not less than 30 feet behind the rear of his train, except when required to go farther to afford protection. In a pamphlet entitled "Resume of Important Changes in Rules and Regulations of the Transportation Department," it is stated that rule 99A applies only when a train is not stopped under circumstances in which it may be overtaken, and when such circumstances do exist, then rule 99 "must be immediately complied with." If it is intended that the full provisions of rule 99 should apply to passenger trains standing at stations within yard limits, in block-signal territory, and at points where the speed of all trains is materially restricted, such intention should be expressly provided for in the rules.

There is a considerable volume of passenger traffic between San Francisco and Los Angeles over this line, and for a period of 30 days prior to the date of this accident there was a daily average of approximately 21 trains at this point. The direct cause of this accident was the failure of the engineer of train No. 75 to observe and obey the stop indication of a block signal. He said that he had not had proper rest prior to starting on this trip and that he was very tired. The evidence indicates that his view was somewhat interfered with by cars and a switch engine on adjoining tracks, but even under these circumstances he approached the station for a considerable distance at a rate of speed in excess of that permitted, and according to his own statement he did not see the block signal or the hand signals of the flagman and other employees near by. To prevent accidents of this character, automatic train control devices have been developed and are now in use on several thousand miles of railroad, including a portion of the Southern Pacific Lines. The traffic on the line where this accident occurred, and the circumstances surrounding it, are such that the carrier should give careful consideration to the need for additional protection on this line.

The investigation disclosed a lack of uniformity of understanding of the rules with respect to flagging under the circumstances which existed at the time of this accident. This is a matter which should be given prompt attention by the carrier.

All of the employees involved were experienced men, and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND

Director.