

RAILROAD ACCIDENT INVESTIGATION

Report No 3768

SOUTHERN PACIFIC COMPANY

CRESTON, CALIF

JULY 24, 1957

INTERSTATE COMMERCE COMMISSION

Washington

SUMMARY

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| DATE | July 24, 1957 |
| RAILROAD | Southern Pacific Company |
| LOCATION | Creston, Calif |
| KIND OF ACCIDENT | Engine crankcase explosion |
| TRAIN INVOLVED | Freight |
| TRAIN NUMBER | Extra |
| LOCOMOTIVE NUMBER | Diesel-electric units 5252, 4902, and 4901 |
| CONSIST | 102 cars, caboose |
| ESTIMATED SPEED | 4 or 5 m. p. h |
| TIME | 4 55 a. m |
| CASUALTIES | 1 injured |
| CAUSE | Crankcase explosion resulting from over-heated crankshaft main bearings |

INTERSTATE COMMERCE COMMISSION

REPORT NO 3768

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION
REPORTS UNDER THE LOCOMOTIVE INSPECTION ACT
OF FEBRUARY 17, 1911, AS AMENDED

SOUTHERN PACIFIC COMPANY

December 2, 1957

Accident at Creston, Calif , on July 24, 1957, caused by an explosion in the engine crank-case of a diesel-electric locomotive unit

REPORT OF THE COMMISSION¹*TUGGLE, Commissioner*

On July 24, 1957, about 4 55 a m , at Creston, Calif , an explosion occurred in the crank-case of the engine of Southern Pacific Company diesel-electric locomotive unit 5252 while units 5252, 4902, and 4901 were hauling a freight train at an estimated speed of 4 or 5 miles per hour. The engineer was seriously injured.

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

DESCRIPTION OF ACCIDENT

Southern Pacific Company diesel-electric locomotive units 5252, 4902, and 4901, in the order named, hauling an eastbound extra freight train, departed from Schellville, Calif., at 3 45 a m., July 24, 1957, and proceeded to Creston, Calif., with several delays en route caused by low lubricating oil pressure, where at 4 55 a m., while the train, with a consist of 102 cars totaling 5,195 tons, was moving at an estimated speed of 4 or 5 miles per hour, a crankcase explosion occurred on locomotive unit 5252, seriously injuring the engineer. The same locomotive consist had departed from Roseville, Calif., at 7 30 p m., July 23, 1957, hauling a westbound extra freight train to Schellville. On three occasions while en route westbound to Schellville, and again after leaving Schellville, eastbound, the diesel engine of locomotive unit 5252 stopped on account of low lubricating oil pressure. Each time the engine stopped, the fireman rotated the cleaning handle of the lubricating oil strainer and then restarted the engine.

Just prior to the accident while the train was ascending a grade, the fireman saw smoke under the lead unit and advised the engineer of his observation. The engineer, with the throttle in number 8 position, left his normal position at the controls and proceeded to investigate the cause of trouble. He then stopped the diesel engine of unit 5252 and had unlatched the high voltage cabinet doors in the cab, when the crankcase explosion occurred and the resulting pressure on the unlatched cabinet door threw him back across the cab against a fire extinguisher. After the train stopped, the head brakeman extinguished the fire which had started around the diesel engine crankcase. The conductor who had walked up from the caboose, called an ambulance which took the engineer to Fairfield, Calif., where he was treated for bruises on his left arm, left leg, and back.

DESCRIPTION OF LOCOMOTIVE UNIT

Diesel-electric locomotive unit 5252, type C-C, was built by the Baldwin-Lima-Hamilton Corporation in 1951, diameter of driving wheels when new, 42 inches, weight in working order, 377,150 pounds, tractive effort, 94,285 pounds. It was equipped with a 1600 horsepower diesel engine directly connected to the main generator. The engine was equipped with a Woodward governor and low lubricating oil pressure shut-down device. The lubricating oil system was provided with a metal-edge type strainer.

EXAMINATION OF ENGINE INVOLVED

After the accident, unit 5252 was taken to the company's general shops at Sacramento, Calif., where the diesel engine was removed and shipped to their shops at Los Angeles, Calif., to be overhauled. When investigation was made at Sacramento, the engine had been removed from the locomotive unit and prepared for shipping. The crankcase covers had been removed and the actual condition that existed at time of the accident could not be determined. Records indicate that right numbers 2, 7, and 8, and left 2, 3, and 5 crankcase covers were blown off, the remaining covers were bent or loose, and the locking device for right numbers 7 and 8 covers was broken in several places. A number of the hood doors were blown open on both sides of the engine compartment. The hood door opposite numbers 7 and 8 cylinders, on the right side, had the top hinge broken and a number of the door fastening devices were broken on the right and left sides. Lubricating oil level in the crankcase was found to be up to the full mark of the dip stick. Laboratory report showed the viscosity and flash point of the oil to be within the company's prescribed limits and no water was found in the oil. Examination of the engine at Los Angeles disclosed that the numbers 4, 5, 6, and 7 main bearing shells were missing, that all main bearings were burned, that the number 5 main-crankshaft journal was burned blue and rough, and that numbers 4, 6, and 7 main

journals were badly scored. End housing was broken and studs pulled out. The shut-down unit of the low lubricating oil pressure device was examined and the piston cup (leather) was found in poor condition and the cylinder full of grit.

INSPECTION AND REPAIR REPORTS

The last inspection at which time annual work was done was made November 1, 1956, at Brooklyn, Oreg., and the last monthly inspection was made on July 8, 1957, at Oakland, Calif.

Daily inspection and repair reports filed at Oakland and Roseville, Calif., from June 1, 1957, to date of accident were examined and the records indicate that all defects reported during that period had been repaired.

DISCUSSION

All crankshaft main bearings were burned and several were found badly scored. In the damaged condition in which the diesel engine was found, it was impossible to establish the sequence of main bearing failures and thus determine the bearing which initially failed. However, severest damage was indicated at the crankshaft journal of the number 5 main bearing, which could have been the bearing responsible for ignition of crankcase oil vapor.

CAUSE OF ACCIDENT

It is found that this accident was caused by a crankcase explosion resulting from overheated crankshaft main bearings.

Dated at Washington, D. C., this Second
day of December, 1957

By the Commission, Commissioner Tuggle

(SEAL)

HAROLD D. McCOY,
Secretary

Interstate Commerce Commission

Washington 25, D C

OFFICIAL BUSINESS

RETURN AFTER FIVE DAYS

POSTAGE AND FEES PAID
INTERSTATE COMMERCE COMMISSION