RAILROAD ACCIDENT INVESTIGATION

Report No 3780

CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD COMPANY

PEABODY, KAN

SEPTEMBER 23, 1957

INTERSTATE COMMERCE COMMISSION

Washington

SUMMARY

§§§

DATE	September 23, 1957
RAILROAD	Chicago, Rock Island and Pacific
LOCATION	Peabody, Kan
KIND OF ACCIDENT	Derailment
TRAIN INVOLVED	Passenger
TRAIN NUMBER	507
LOCOMOTIVE NUMBER	Diesel-electric units 648 and 632B
CONSIST	10 cars
SPEED	65 m p h
OPERATION	Signal indications
TRACK	Single, tangent, 0 09 descending grade southward
WEATHER	Clear
TIME	12 58 a m
CASUALTIES	52 injured
CAUSE	Broken switch rail

INTERSTATE COMMERCE COMMISSION

REPORT NO 3780

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

CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD COMPANY

March 17, 1958

Accident at Peabody, Kan , on September 23, 1957, caused by a broken switch rail

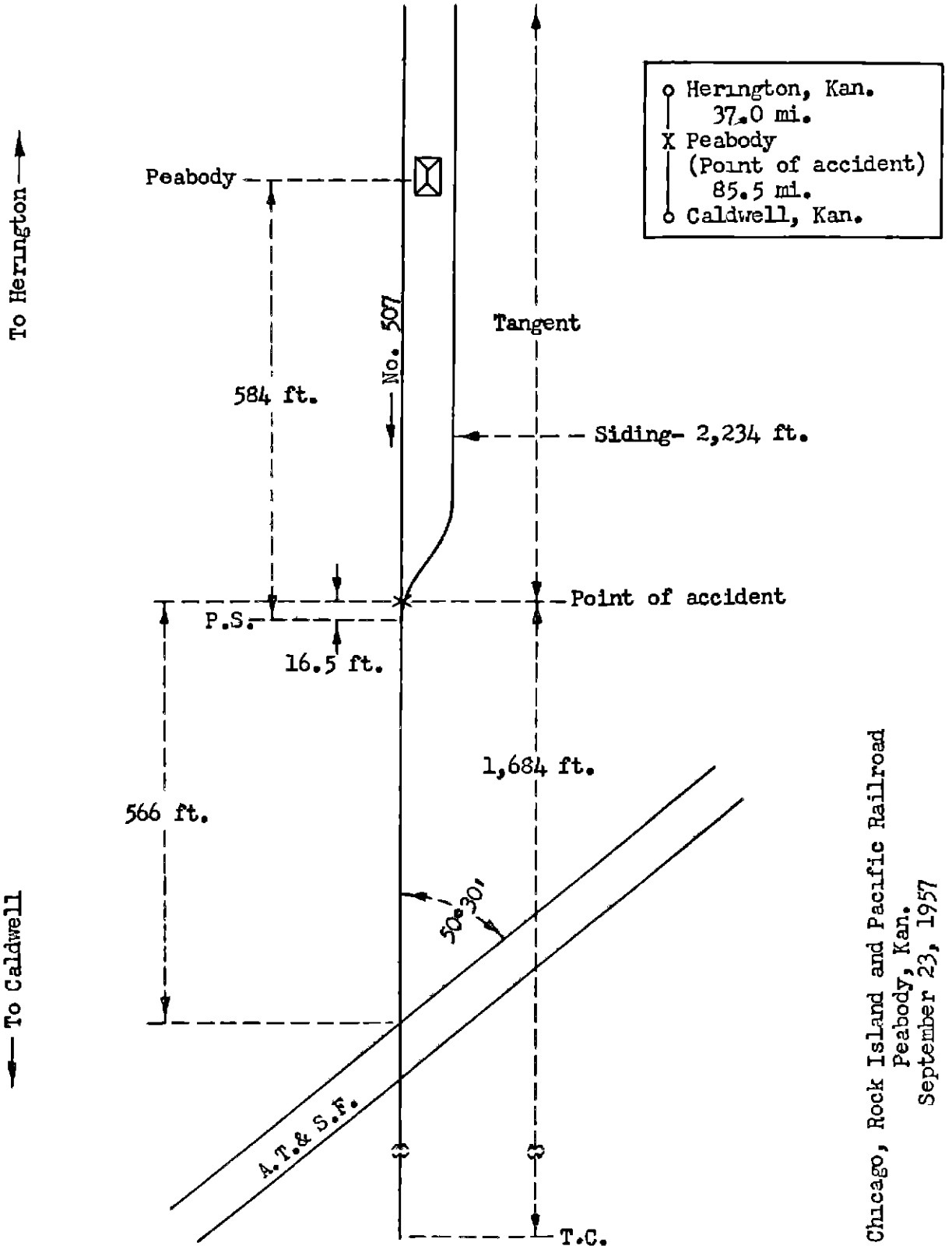
REPORT OF THE COMMISSION[1]

TUGGLE, Commissioner

On September 23, 1957, there was a derailment of a passenger train on the Chicago, Rock Island and Pacific Railroad at Peabody, Kan , which resulted in the injury of 35 passengers, 9 dining-car employees, 2 Pullman Company employees, 1 railway express messenger, 3 train-service employees and 2 other employees

---

1 Under 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



Chicago, Rock Island and Pacific Railroad
Peabody, Kan.
September 23, 1957

Location of Accident and Method of Operation

This accident occurred on that part of the Southern Division extending between Herington and Caldwell, Kan , 122 5 miles In the vicinity of the point of accident this is a single-track line over which trains are operated by signal indications At Peabody, 37 miles south of Herington, a siding 2,234 feet in length parallels the main track on the east The south switch of the siding is located 584 feet south of the station The accident occurred on the main track at a point 16 5 feet north of this switch South of the point of accident two main tracks of the Atchison, Topeka and Santa Fe Railway cross the main line at grade at an angle of 50°30' The centerline of the north track is located 566 feet south of the point of accident The main track is tangent throughout a considerable distance north of the point of accident and 1,684 feet southward The grade for southbound trains is, successively, 0 70 percent descending 1 2 miles, and 0 09 percent descending 500 feet to the point of accident and 420 feet southward

The track structure in the vicinity of the point of accident consists of 112-pound rail, 39 feet in length, laid new in 1943 on an average of 22 treated ties to the rail length It is fully tieplated with double-shoulder tie plates, single-spiked, and is provided with 4-hole, 24-inch joint bars and an average of 10 rail anchors per rail It is ballasted with chats to a depth of 4 inches below the bottoms of the ties The south turnout of the siding consists of 112-pound reinforced switch rails 16 feet 6 inches in length, 112-pound rails, a No 10 spring-rail frog, and one-piece guard rails 10 feet in length The switch is provided with adjustable rail braces

The maximum authorized speed for passenger trains in the vicinity of the point of accident is 70 miles per hour but is restricted to 60 miles per hour at the crossing

Description of Accident

No 507, a southbound first-class passenger train, consisted of diesel-electric units 648 and 632B, coupled in multiple-unit control, 1 mail car, 1 baggage car, 3 coaches, 1 dining car, 2 sleeping cars, 1 observation car, and 1 business car, in the order named The first and tenth cars were of conventional all-steel construction and the other cars were of lightweight steel construction The second car was equipped with controlled-slack couplers and the other cars except the tenth car were equipped with tightlock couplers This train departed from Herington, the last open office, at 12 25 a m , on time, and while moving at a speed of 65 miles per hour, as indicated by the tape of the speed-recording device, the second diesel-electric unit, the first to the ninth cars, inclusive, and the front truck of the tenth car were derailed at the south switch of the siding at Peabody

Separations occurred at both ends of the second to the fifth cars, inclusive The couplers at both ends of the fourth car and at the south end of the sixth car were broken The diesel-electric units stopped with the front end of the first unit 1,351 feet south of the point of accident The second unit was derailed and stopped in line with the track This unit leaned at an angle of about 40 degrees The first car stopped upright near the track and leaned at an angle of about 30 degrees The second car stopped upright, in line with the track, with the rear end 663 feet south of the point of accident The third and fourth cars stopped on their sides, parallel to each other, on and parallel to the tracks of the Atchison, Topeka and Santa Fe Railway The fifth car stopped 480 feet south of the point of accident on its side, with the front end near the track and the rear end 32 feet east of the track The sixth to the tenth cars, inclusive, stopped in line with the track The first diesel-electric unit was slightly damaged and the second unit was somewhat damaged Eight of the derailed cars were considerably damaged and two were slightly damaged

The conductor, the front brakeman, the flagman, 9 dining-car employees, 2 Pullman Company employees, 2 business car employees, and 1 railway-express messenger were injured

The weather was clear at the time of the accident, which occurred at 12 58 a m

Discussion

As No 507 was approaching the point where the accident occurred the enginemen were in their respective positions in the control compartment of the locomotive and they were maintaining a lookout ahead The conductor and the front brakeman were in the third car, and the flagman was in the ninth car The brakes of this train had been tested and had functioned properly when used en route The members of the crew said that before the derailment occurred the locomotive and cars were riding smoothly and that there was no indication of defective track or equipment The speed of the train was reduced to 65 miles per hour approaching the crossing in compliance with the speed restriction The first knowledge the enginemen had of anything being wrong was when the brakes became applied in emergency as a result of the derailment

Examination of the locomotive and the cars after the derailment occurred disclosed no condition which could have caused or contributed to the cause of the derailment Examination of the track throughout a considerable distance north of the point of derailment disclosed no indication of defective track or dragging equipment

Examination of the turnout disclosed that the east switch rail was broken vertically throughout the entire close section 13 inches from the heel of the switch rail A horizontal web fracture extended from the vertical break through the bolt holes to the end of the rail Both broken pieces of rail were displaced The head of the rail on the south end of the 13-inch piece and the head of the north end of the remaining piece of switch rail were battered indicating that movements were made in both directions after the break occurred Small progressive fractures appeared adjacent to each bolt hole in the horizontal break The other portions of the horizontal break and the vertical break appeared to be new One of the joint-bar bolts at the heel of the switch rail was broken A mark appeared on the head of the east stock rail beginning on the gage side immediately south of the vertical break and extending diagonally across the rail throughout a distance of 33 inches, indicating that a wheel had derailed to the east The inside base of the east stock rail was bent downward at a point about 4 feet 6 inches south of the heel of the switch The gage side of this stock rail was heavily scored and the rail was broken near the joint south of the point of switch as a result of the derailment From a point 33 feet south of the heel of the switch the track was destroyed throughout a distance of 575 feet

Examination of the rear truck of the first diesel-electric unit disclosed heavy score marks on the outside of the rims of the wheels One brake rod was bent and score marks were found on the bottom of the traction motors It is apparent that this truck was derailed at the switch and then became rerailed It appears that the broken pieces became displaced under the wheels of the front truck of the first diesel-electric unit causing the wheels of the rear truck to derail to the east No 93, a southbound freight train, was the last train to move over the switch before the accident occurred The crew of this train made no report of any unusual conditions

The switch rail involved in the accident was planed from a standard 112-pound rail manufactured in August 1938 A chemical analysis of the rail disclosed that it conformed to the specifications of the carrier

The section of track in the vicinity of the point of accident was last inspected prior to the accident on September 21, 1957, by a track supervisor No defective condition was observed at that time An official of the carrier said that a rail-defect detector car was not operated in the vicinity of the point of accident subsequent to 1943 when controlled-cooled rail was laid in that territory

Cause

This accident was caused by a broken switch rail

Dated at Washington, D C , this seventeenth day of March, 1958

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