INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2554

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY

REPORT IN RE ACCIDENT

AT GALLUP, N. MEX., ON

DECEMBER 21, 1941

SUMMARY

Railroad:	Atchison, Topeka & Santa Fe	
Date:	December 21, 1941	
Location:	Gallup, N. Mex.	
Kind of accident:	Head-end collision	
Trains involved:	Mixed	: Deadhead passenger equipment
Train numbers:	Extra 3244 West	: Extra 3733 East
Engine numbers:	3244	: 3733-3729
Consist:	55 cars and caboose	: 15 cars
Speed:	Standing	: About 35 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system; accident occurred within yard limits	
Track:	Double; 1° curve; 0.17 percent ascending grade eastward	
Weather:	Snow	
Time:	About 3:44 p. m.	
Casualties:	1 killed; 20 injured	
Cause:	Accident caused by failure properly to control the speed of Extra 3733 while moving within yard limits	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2554

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

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY

February 10, 1942.

Accident at Gallup, N. Mex., on December 21, 1941, caused by failure properly to control the speed of Extra 3733 while moving within yard limits.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On December 21, 1941, there was a head-end collision between a mixed train and a deadhead passenger-equipment train on the Atchison, Topeka & Santa Fe Railway at Gallup, N. Mex., which resulted in the death of 1 Pullman porter and the injury of 15 passengers, 2 Pullman porters and 3 train-service employees.

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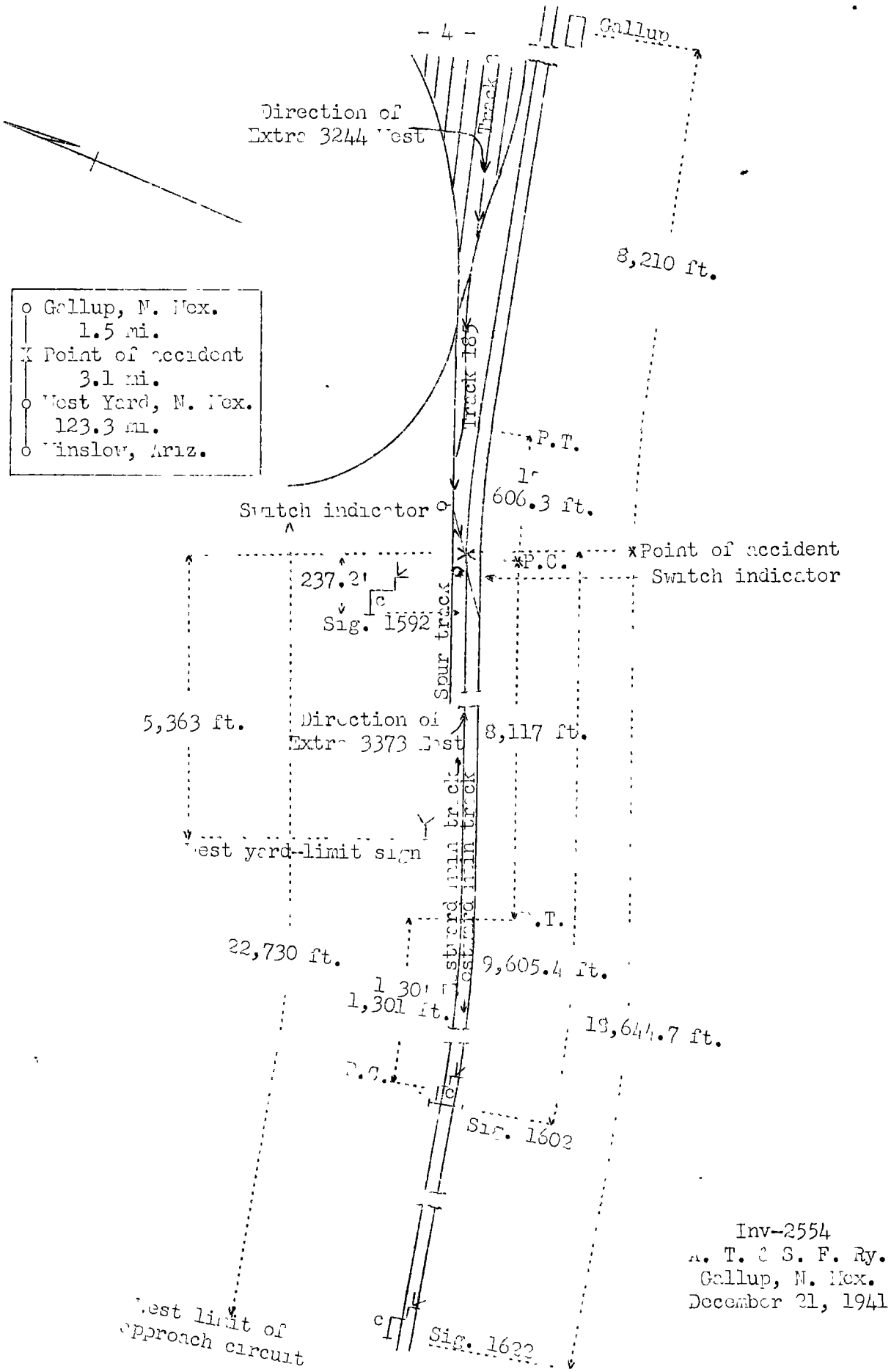
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2554
A. T. & S. F. Ry.
Gallup, N. Mex.
December 21, 1941

Location of Accident and Method of Operation

This accident occurred on that part of the Albuquerque Division designated as the Second District, which extends between Winslow, Ariz., and Gallup, N. Mex., a distance of 127.9 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The current of traffic is to the left. A 14-track classification yard parallels the main tracks on the north. The west end of this yard is 7,300 feet west of the station at Gallup. A spur track parallels the main tracks on the north and extends westward from the west end of the yard a distance of about 2,500 feet. At a point 8,210 feet west of the station a facing-point crossover for east-bound movements, designated as the east crossover, connects the spur track and the eastward main track. A trailing-point crossover for movements with the current of traffic is 265.9 feet in length and connects the main tracks. The east switch of this crossover is 20 feet west of the west switch of the east crossover. The accident occurred within yard limits at the west switch of the east crossover.

As the point of accident is approached from the west there are, in succession, a 1°30' curve to the left 1,301 feet in length, a tangent 8,117 feet, and a 1° curve to the right 606.3 feet in length. The accident occurred on the latter curve 6.6 feet from its western end. As the point of accident is approached from the east by trains departing from the yard, the route, which consists of the yard tracks and the spur track, practically parallels the main tracks to the east crossover.

The grade for east-bound trains varies between 0.10 and 0.20 percent ascending throughout a distance of 7,900 feet to the point of accident, and is 0.17 percent at the point of accident.

Automatic signals 1622, 1602, and 1592, governing east-bound movements on the eastward main track, are located, respectively, 18,644.7 feet, 9,605.4 feet and 237.2 feet west of the point of accident. These signals are 3-indication, color-light signals, and are continuously lighted. The aspects and corresponding indications and names of these signals are as follows:

Aspect	Indication	Name
Green	Proceed	Clear Signal
Yellow	Proceed at restricted speed	Restricted Speed Signal
Red	Stop-Then proceed * * *	Stop and Proceed Signal

The circuits are so arranged that when either switch is lined for movement from the spur track to the eastward main track, signal 1592 displays a red aspect and signals 1602 and 1622 display yellow aspects. A switch indicator is located 5.7 feet east of the east switch of the east crossover. The approach circuit for this indicator extends westward 22,730 feet. This indicator is lighted when the eastward main track is unoccupied, and is not lighted when the track is occupied within the approach circuit.

Each switch of both crossovers is equipped with a single-vane switch target mounted on a spindle of the intermediate type, and switch lamps are provided.

Operating rules read in part as follows:

DEFINITIONS

Fixed Signal.--A signal of fixed location indicating a condition affecting the movement of a train.

Note. * * * The definition of a "Fixed Signal" covers such signals as * * * yard limit boards, switch, * * *.

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

93. * * *

Within yard limits all trains and engines may use main track, not protecting against second or third class trains or extra trains, but will give way as soon as possible upon their approach. All except first class trains will move within yard limits at restricted speed; the responsibility for accident with respect to second or third class or extra trains rests with the approaching train.

On the crossover involved the maximum authorized speed is 15 miles per hour.

The west yard-limit sign is located 5,363 feet west of the point of accident.

Description of Accident

Extra 3244 West, a west-bound mixed train, consisted of engine 3244, one Pullman sleeping car, two coaches, one baggage car, one Pullman sleeping car, two coaches, one baggage car, two coaches, 45 freight cars and a caboose, in the order named. The first ten cars were of all-steel construction. After a terminal air-brake test was made, this train departed from yard track No. 3 at 3:41 p. m., according to the statement of the engineer, and proceeded through the running track, then the spur track at a low rate of speed, entered the east crossover and stopped, with the front end of the engine standing at the switch points of the west switch. Soon afterward Extra 3244 West was struck by Extra 3733 East.

Extra 3733 East, an east-bound deadhead passenger-equipment train, consisted of engines 3733 and 3729, coupled, one baggage car, one Pullman sleeping car, five tourist sleeping cars, one Pullman sleeping car, two tourist sleeping cars, one Pullman sleeping car, two tourist sleeping cars and two coaches, in the order named. At Winslow, 127.9 miles west of Gallup, a terminal air-brake test was made, and the brakes functioned properly at all points where used en route. This train departed from Winslow at 12:49 p. m., according to the dispatcher's record of movement of trains, passed Chambers, 48.1 miles west of Gallup and the last open office, at 2:41 p. m., passed the west yard-limit sign at a speed of 70 miles per hour, as indicated by the tapes of the speed recorders with which both engines were equipped, and while moving at a speed of 35 miles per hour it collided with Extra 3244 West. There was no condition of the first engine of Extra 3733 that distracted the attention of the crew or obscured their vision.

Engine 3244 was moved backward about 67 feet, was derailed but remained upright and in line with the crossover. The engine truck was demolished and the cab was crushed. The front-end deck castings and the pilot beam were broken. The tender was derailed but remained upright. Both trucks were demolished and the rear cistern sheet was pushed forward about 2 feet. The tender telescoped the first car about one-third its length. The front truck of the first car was derailed. Engine 3733 was derailed but remained upright and in line with the track. The engine truck was demolished. The front-end deck casting and the pilot beam were broken.

The tender was derailed but remained upright. The front pair of engine-truck wheels of engine 3729, the second engine of Extra 3733, was derailed. The front end was badly damaged. The front end of the first car, the rear end of the sixth car and the front end of the seventh car were telescoped.

Because of a snowstorm at the time of the accident, visibility was restricted to a distance of about 400 feet. The accident occurred about 3:44 p. m.

The employees injured were the engineer of Extra 3244 West and the firemen of engines 3733 and 3729 of Extra 3733 East.

Signal Data

Tests made after the accident disclosed that the involved signals and the switch indicator functioned as intended.

Discussion

The rules governing operation on the line involved provide that within yard limits all trains and engines may use the main tracks, that trains and engines need not protect against second-class or inferior trains, and that all except first-class trains must be operated prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced. All members of both crews involved understood these requirements.

About 3:41 p. m. Extra 3244 West proceeded from the yard and through the spur track to the east crossover, which connects the spur track and the eastward main track. To reach the westward main track it was necessary for this train to cross the eastward main track at a crossover just west of the east crossover. According to the statement of the front brakeman, as his train was approaching the east crossover he went ahead to line both switches of the crossover before the engine reached the inside switch. Before he lined the east switch of the east crossover he observed that the switch indicator was lighted, which indicated that the eastward main track was unoccupied within the approach circuit. He lined both switches of the east crossover, but before he could line the east switch of the crossover between the main tracks he observed Extra 3733 East approaching at a distance of about 600 feet. He gave stop signals to the engineer of Extra 3244 West, then lighted a fusee and gave stop signals to Extra 3733 East, but Extra 3733 was moving at a speed too great to stop short of Extra 3244. The front brakeman said that the switch locks were frozen and about 2 minutes elapsed while he was lining

the switches of the east crossover. After the occurrence of the accident he observed that the switch indicator gave an indication that the eastward main track was occupied. According to the statement of the engineer of Extra 3244, as his train was approaching the point where the accident occurred he and the fireman were maintaining a lookout ahead from their respective sides of the cab. The headlight was not lighted, and the engine was moving slowly so that the brakeman could line the switches of the crossover. The first knowledge the engineer had of anything being wrong was when he observed simultaneously the brakeman giving stop signals and Extra 3733 East approaching at a distance of 400 to 600 feet. He immediately applied the brakes of the engine and tender, and the train stopped. He then placed the reverse lever in position for backward motion and opened the throttle. The collision occurred before his train could be started backward. The conductor and the engineer of Extra 3244 understood that their train could use the main tracks and protection was not required except against first-class trains. There was no first-class train due for 2 hours 28 minutes. The conductor said that if no first-class train is due, it is customary for trains to use the crossover involved even though the switch indicator gives information of an approaching train.

As Extra 3733 was approaching the point where the accident occurred the speed was 70 miles per hour, the throttles of both engines were closed to drifting position, the headlight of the first engine was not lighted and the enginemen were maintaining a lookout ahead. Because of a severe snowstorm, visibility was restricted to about 400 feet. The engineer of engine 3733, the first engine of Extra 3733, said that signals 1622 and 1602 displayed proceed for his train. When his train was at a point about 9,000 feet west of the point where the accident occurred he made a brake-pipe reduction, and when the speed had been reduced so that he was confident of stopping short of anything that required the speed of a train to be reduced he released the brakes. The brakes were again applied about 2,400 feet west of the point where the accident occurred and held applied until the engine reached a point about 400 feet west of signal 1592. The engineer said that this signal displayed proceed and he released the brakes. Soon afterward he observed simultaneously the front brakeman of Extra 3244 giving stop signals with a lighted red fusee and engine 3244 on the crossover. He did not observe whether the east crossover switch was lined for movement to the eastward main track. He immediately moved the brake valve to emergency position and opened the sander valve, but the distance was insufficient to stop in time to avert the accident. According to the statement of the fireman of engine 3733, signals 1622, 1602 and 1592 displayed proceed for his train. The engineer of engine

3729, the second engine of Extra 3733, said that in his opinion the train was being operated under control prepared to stop short of a train or obstruction. He said that signal 1602 displayed proceed, but because of snow and smoke drifting down he was unable to see signal 1592. The fireman of engine 3729 said that signals 1602 and 1592 displayed proceed for his train. He thought his train was being operated at restricted speed. The conductor of Extra 3733 said that because of snow and smoke drifting down along the train he was unable to judge the speed of his train. However, as his train was approaching the crossover he felt the brakes being applied and was confident his train was being properly controlled. The front brakeman stated that at the time of the accident he was in the fifteenth car. Immediately after the collision occurred he alighted from this car and observed that signal 1592 was displaying a red aspect.

Tests made after the occurrence of the accident disclosed that signals 1622, 1602 and 1592 and the switch indicator functioned as intended. Under the rules Extra 3733 East was not authorized to operate in accordance with proceed signal indications east of the west yard-limit sign, but was required to be operated in accordance with the yard-limit rule. The tapes of the speed recorders with which engines 3733 and 3729 were equipped disclosed that at a point one-half mile west of the point where the accident occurred the speed was 70 miles per hour and gradually decreased to 35 miles per hour at the point of collision. When this train was one-half mile west of the point of accident it had traversed a distance of 2,900 feet within yard limits. The brakes of Extra 3733 had been tested and had controlled the speed properly at all points where used en route. Had the speed of Extra 3733 been controlled in accordance with the yard-limit rule, this accident would have been averted.

Cause

It is found that this accident was caused by failure properly to control the speed of Extra 3733 while moving within yard limits.

Dated at Washington, D. C., this tenth day of February, 1942.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.