

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3346
THE ATCHISON, TOPEKA AND SANTA FE
RAILWAY COMPANY
IN RE ACCIDENT
AT HARDIN, MO., ON
JULY 18, 1950

SUMMARY

Date: July 18, 1950

Railroad: Atchison, Topeka and Santa Fe

Location: Hardin, Mo.

Kind of accident: Side collision

Trains involved: Freight : Freight

Train numbers: Extra 1204 : Extra 124 East
West

Engine numbers: Wabash Diesel- : Diesel-electric
electric units 1204, units 124, 124A
1204B and and 124C
1204A

Consists: 110 cars, caboose: 95 cars, caboose

Speeds: 15 m. p. h. : 20 m. p. h.

Operation: Interlocking

Tracks: Three; tangent; level

Weather: Dense fog

Time: 6:40 a. m.

Casualties: 3 injured

Cause: Failure to operate train in accordance
with signal indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3346

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

THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY

September 27, 1950

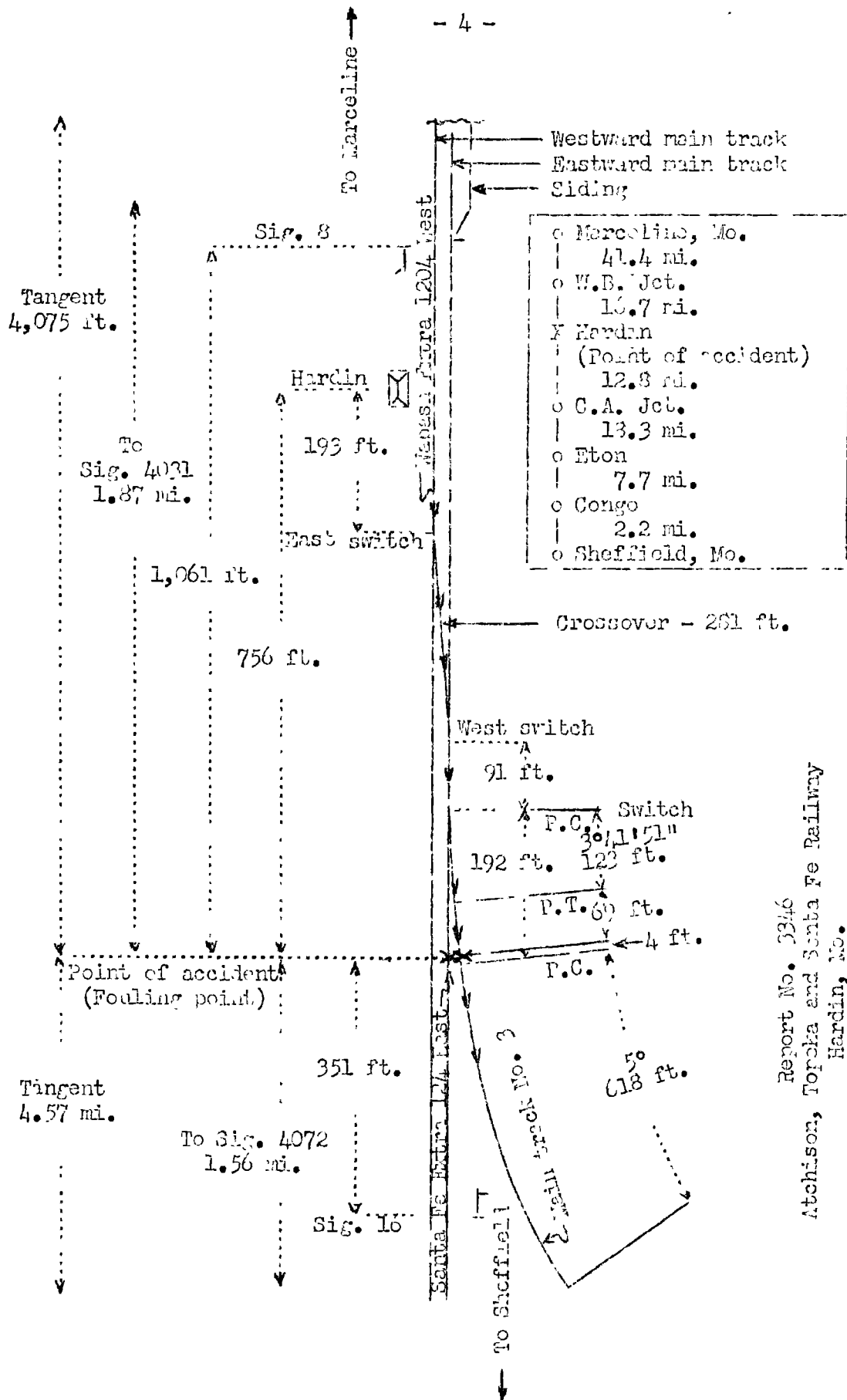
Accident at Hardin, Mo., on July 18, 1950, caused by
failure to operate a train in accordance with
signal indications.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On July 18, 1950, there was a collision between a freight train of the Atchison, Topeka and Santa Fe Railway and a freight train of the Wabash Railroad on the line of the first-named carrier at Hardin, Mo., which resulted in the injury of three employees.

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.



o	Marcelino, Mo.	41.4 mi.
o	W.B. Jet.	16.7 mi.
x	Hardin	(Point of accident)
		12.8 mi.
o	C.A. Jet.	13.3 mi.
o	Eton	7.7 mi.
o	Congo	2.2 mi.
o	Sheffield, Mo.	

Report No. 3346
 Atchison, Topeka and Santa Fe Railway
 Hardin, Mo.
 July 18, 1950

Location of Accident and Method of Operation

This accident occurred on that part of the Missouri Division extending between Marceline and Sheffield, Mo., 99.1 miles. In the vicinity of the point of accident this is a three-track line. From north to south the tracks are designated as westward, eastward, and No. 3. On the eastward and westward tracks trains moving with the current of traffic are operated by signal indications, and on track No. 3 trains are operated by train orders and a manual-block system. Track No. 3 extends between Hardin and C.A. Jct., located, respectively, 58.1 miles and 70.9 miles west of Marceline. Trains of the Wabash Railroad regularly are operated over that portion of the Atchison, Topeka and Santa Fe Railway extending between W.B. Jct., 41.4 miles west of Marceline, and C.A. Jct. At Hardin a facing-point crossover 281 feet in length connects the westward and the eastward tracks. The east crossover-switch is 193 feet west of the station. Track No. 3 connects with the eastward track at a point 91 feet west of the west crossover-switch. The switch of track No. 3 is facing-point for west-bound movements. A siding 5,915 feet in length parallels the eastward track on the south. The west siding-switch is 287 feet east of the station. The west siding-switch, the switch of track No. 3, and both switches of the crossover are within interlocking limits. The accident occurred at the fouling point between the eastward track and track No. 3, at a point 192 feet west of the point-of-switch. The eastward and westward tracks are tangent throughout distances of 4,075 feet east and 4.57 miles west of the point of accident. From the east on track No. 3 there are, in succession, a $3^{\circ}41'51''$ curve to the left 123 feet in length, a tangent 69 feet to the point of accident and 4 feet westward, and a 5° curve to the left 618 feet in length. The grade is level at the point of accident.

Interlocking signal 8, governing west-bound movements from the westward track through the routes of Hardin interlocking, is located 1,061 feet east of the point of accident. Automatic signal 4072, governing east-bound movements on the eastward track, and interlocking signal 16, governing east-bound movements from the eastward track through the routes of Hardin interlocking, are located, respectively, 1.56 miles and 351 feet west of the point of accident. These signals are of the one-arm upper-quadrant semaphore type, and signal 4072 has a color-light unit mounted on the mast below the semaphore arm. Signals 8 and 16 display three aspects, and signal 4072 displays four aspects. These signals are approach lighted. The aspects applicable to this investigation and the corresponding indications and names are as follows:

<u>Signal</u>	<u>Day Aspect</u>	<u>Night Aspect</u>	<u>Indication</u>	<u>Name</u>
8 16	Diagonal	Yellow	PROCEED PREPARED TO ENTER TURNOUT OR TO STOP SHORT OF TRAIN OR OBSTRUCTION.	APPROACH- RESTRICT- ING
16	Horizontal	Red	STOP.	STOP
4072	Diagonal over number plate	Yellow over number plate	PROCEED PREPARING TO STOP AT NEXT SIGNAL; IF EXCEED- ING MEDIUM SPEED, IMMEDIATELY REDUCE TO THAT SPEED.	APPROACH

The controlling circuits of signals 8, 4072 and 16 are so arranged that when the route is lined for a movement from the westward track to track No. 3, signal 8 indicates Approach-Restricting, signal 4072 indicates Approach, and signal 16 indicates Stop. When the route is lined for movements from the eastward track to the siding, signal 4072 indicates Approach and signal 16 indicates Approach-Restricting. Route locking is provided for all routes through the interlocking, and approach and indication locking are provided in connection with interlocking signals 8 and 16.

This carrier's operating rules read in part as follows:

Definitions.

Medium Speed.--A speed not exceeding one-half authorized speed, but not exceeding 30 miles per hour.

34. All members of engine and train crews must, when practicable, communicate to each other by its name, the indication of each signal affecting the movement of their train or engine.

297. * * * interlocking signals govern the use of the routes of an interlocking, and as to movements within home signal limits, their indications supersede the superiority of trains.

818. During heavy fog * * * or other conditions which impair vision and when signal aspects are not readily discernible, it shall be the duty of enginemen * * * to regulate the speed of their train * * * sufficiently to insure safety * * *

The maximum authorized speeds were 60 miles per hour for freight trains moving on the eastward and westward tracks and 20 miles per hour for freight trains moving from the westward track to track No. 3 at Hardin.

Description of Accident

Extra 1204 West, a west-bound Wabash freight train, consisted of Diesel-electric units 1204, 1204B and 1204A, coupled in multiple-unit control, 110 cars and a caboose. This train departed from W.B. Jct., the last open office, at 6:10 a. m. and stopped at signal 8 at Hardin about 6:35 a. m. It immediately proceeded, passed signal 8, which indicated Approach-Restricting, and while it was moving through the route from the westward track to track No. 3 at a speed of 15 miles per hour the eighth car was struck by Extra 124 East.

Extra 124 East, an east-bound Atchison, Topeka and Santa Fe freight train, consisted of Diesel-electric units 124, 124A and 124C, coupled in multiple-unit control, 95 cars and a caboose. This train passed Henrietta, the last open office, 5.9 miles west of Hardin, at 6:31 a. m., passed signal 4072, which indicated Approach, passed signal 16, which indicated Stop, and while moving on the eastward track at a speed of about 20 miles per hour it struck the eighth car of Extra 1204 West.

There were no separations between the units of Extra 124 East. The first Diesel-electric unit was derailed to the north and stopped across the westward track. It leaned to the north at an angle of about 45 degrees, with its front end 184 feet east of the point of collision. It was badly damaged. The rear truck of the second Diesel-electric unit was derailed, and the second and third Diesel-electric units were slightly damaged. The eighth to the thirteenth cars, inclusive, and the front truck of the fourteenth car of Extra 1204 West were derailed. These cars stopped in various positions on and south of the eastward track. The eleventh car was badly damaged, and the other derailed cars were somewhat damaged.

The engineer and the front brakeman of Extra 124 East and the conductor of Extra 1204 West were injured.

There was a dense fog at the time of the accident, which occurred at 6:40 a. m.

Discussion

As Extra 1204 West was approaching the point where the accident occurred the engineer and the front brakeman were maintaining a lookout ahead from the control compartment at the front of the first Diesel-electric unit, and the conductor and the flagman were in the caboose. The headlight was lighted brightly. Signal 8, governing the use of the route through the interlocking from the westward track to track No. 3 indicated Approach-Restricting. As the front of the train was passing through the crossover, the employees on the Diesel-electric unit observed the headlight of Extra 124 East, and after the front end of their train entered track No. 3 they observed that Extra 124 East was passing signal 16. The collision occurred a few seconds later.

At Eton, 31.1 miles west of Hardin, the crew of Extra 124 East received instructions to clear No. 19, an east-bound first-class train, 10 minutes late. Extra 124 East passed Eton at 5:47 a. m. As this train was approaching Hardin the engineer and the front brakeman were maintaining a lookout ahead from the control compartment at the front of the first Diesel-electric unit, the fireman was in the engine compartment of the first Diesel-electric unit, and the conductor and the flagman were in the caboose. The headlight was lighted brightly. The brakes of this train had been tested and had functioned properly when used en route. Because of dense fog in the vicinity of Hardin, the aspects of signals were not visible at distances greater than about 250 feet. Signal 4072 indicated Approach, and as the train passed the signal the engineer initiated a light service application of the brakes. The schedule time of No. 19 at Hardin was 6:42 a. m., and the engineer of Extra 124 East said he expected that the route through Hardin interlocking would be lined for his train to enter the siding to clear for No. 19. As the train approached signal 16, the engineer and the front brakeman observed a light which appeared to them to be yellow and which they thought was the yellow aspect that they expected to receive at signal 16. The brake application then was released. Several seconds later the front brakeman observed signal 16, which indicated Stop, and both he and the engineer observed that Extra 1204 West was moving on track No. 3. The engineer immediately initiated an emergency brake application. According to the tape of the speed recording device, the speed of the train was 41 miles per hour when it passed signal 4072 and was 27 miles per hour when the emergency brake application became effective. The engineer said that the speed was reduced by the emergency brake application, but he could not

estimate the speed at the time of the collision. The engineer and the front brakeman said that evidently when the front end of Extra 1204 West was moving between the crossover and the turnout of track No. 3 they mistook its headlight to be a yellow aspect displayed by signal 16.

Cause

It is found that this accident was caused by failure to operate a train in accordance with signal indications.

Dated at Washington, D. C., this twenty-seventh day of September, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.