INTERSTATE COMMERCE COMMISSION,

WASHINGTON

REPORT NO. 3501

WABASH RAILROAD COMPANY
AND
TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS

IN RE ACCIDENT

AT MAY STREET, ST. LOUIS, MO., ON

DECEMBER 26, 1952

SUMMARY

Date:	December 26, 1952	
Railroads:	Wabash	: Terminal Railroad Association of St. Louis
Location:	May Street, St. Louis, Mo.	
Kind of accident:	Side collision	
Trains involved:	Transfer train	: Transfer train
Engine numbers:	Diesel-electric unit 360	: Diesel-electric unit 1215
Consists:	25 cars, caboose	: 51 cars, caboose
Estimated speeds:	8 m. p. h.	: 8 m. p. h.
Operation:	Interlocking	
Tracks:	Double; tangent; level	: Double; tangent; level
Weather:	Clear	
Time:	11:13 a. m.	
Casualties:	1 killed; 4 injured	
Cause:	Terminal Railroad Association of St. Louis transfer train moving out of control on descending grade, as a result of the power brakes on the rear 39 cars and the caboose being inoperative because of a closed angle cock between the twelfth and the thirteenth cars	

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3501

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

WABASH RAILROAD COMPANY
AND
TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS

March 19, 1953

Accident at May Street, St. Louis, Mo., on December 26, 1952, caused by a Terminal Railroad Association of St. Louis transfer train moving out of control on a descending grade, as a result of the power brakes on the rear 39 cars and the caboose being inoperative because of a closed angle cock between the twelfth and the thirteenth cars.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On December 26, 1952, there was a side collision between a transfer train on the Wabash Railroad and a transfer train on the Terminal Railroad Association of St. Louis at May Street, St. Louis, Mo., which resulted in the death of one train-service employee, and the injury of four train-service employees.

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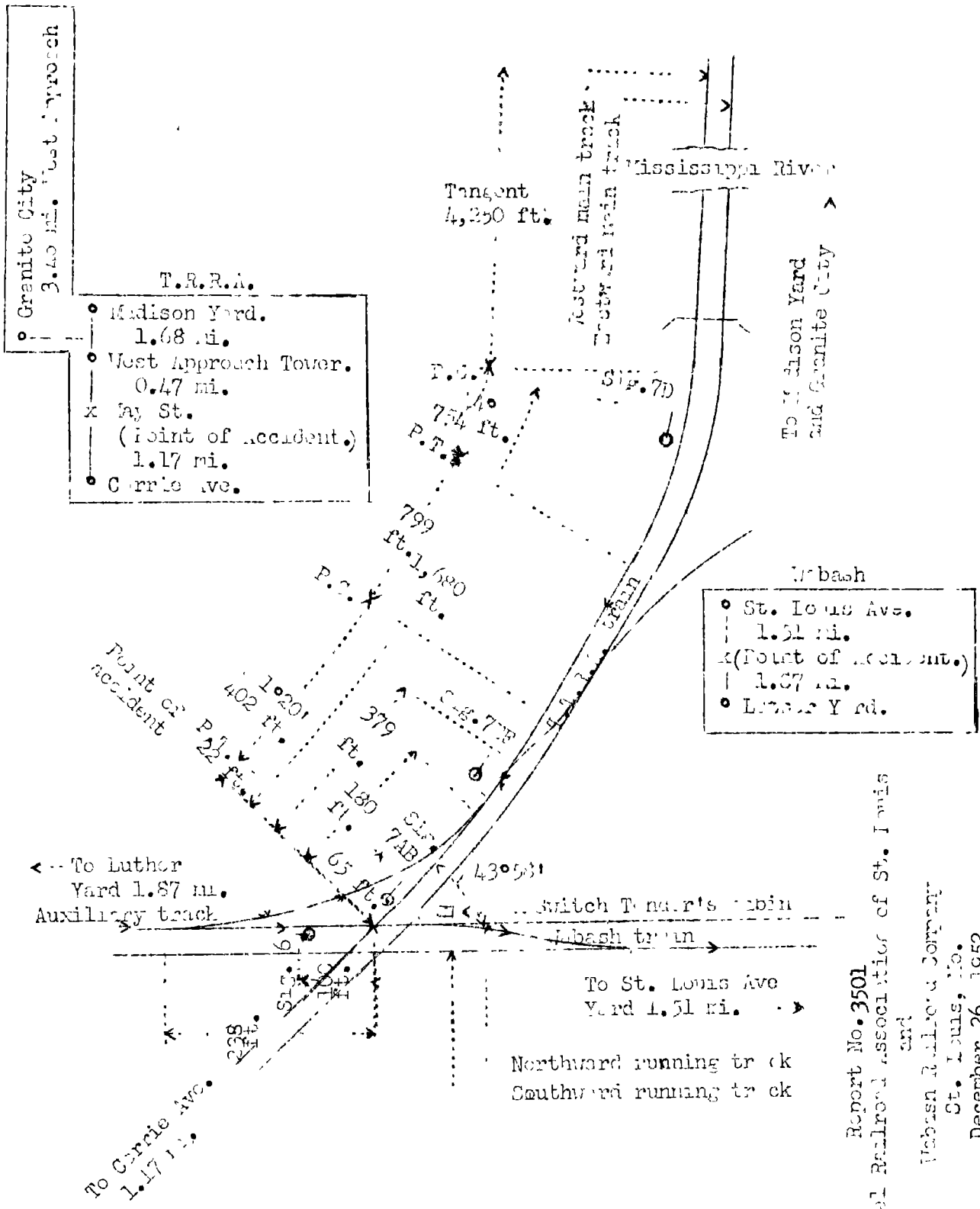
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Report No. 3501
Terminal Railroad Association of St. Louis
and
Wabash Railroad Company
St. Louis, Mo.
December 26, 1952.

Location of Accident and Method of Operation

This accident occurred at the intersection of the Wabash Railroad and the Terminal Railroad Association of St. Louis, hereinafter referred to as the T.R.R.A., at May Street, St. Louis, Mo. The crossing is located on that part of the St. Louis Terminal Division of the Wabash extending between Luther Yard, St. Louis, and St. Louis Avenue Yard, St. Louis, 3.38 miles, and on that part of the T.R.R.A. extending between Granite City, Ill., and Carrie Avenue, St. Louis, 5.10 miles. The crossing is 1.87 miles south of Luther Yard and 3.93 miles west of Granite City. The tracks intersect at an angle of 43°58'. In the vicinity of the crossing the line of the Wabash consists of two running tracks, over which movements are made under the jurisdiction of a yard master. In the immediate vicinity of the crossing the tracks are tangent and practically level. In the vicinity of the crossing the T.R.R.A. is a double-track line, over which movements with the current of traffic are operated by timetable and an automatic block-signal system. East of May Street this line crosses the Mississippi River on Merchants Bridge, which is approximately 4,200 feet in length. The west abutment of the bridge is about 1,800 feet east of the crossing. From the east there are, in succession, a tangent 4,250 feet in length, a 4° curve to the right 754 feet, a tangent 799 feet, a 1°20' curve to the right 402 feet, and a tangent 22 feet to the crossing and 97 feet westward. From the east there is a vertical curve 1,279 feet, then the grade is, successively, 0.01 percent descending 621 feet, 1.51 percent descending 1,695 feet, 2.036 percent descending 500 feet, 1.08 percent descending 300 feet, and level 239 feet to the crossing. The northward running track of the Wabash and the westward main track of the T.R.R.A. are connected by an auxiliary track which extends between a switch in the Wabash track 238 feet north of the crossing and a switch in the T.R.R.A. track 180 feet east of the crossing. South of the crossing, a trailing-point crossover connects the two running tracks of the Wabash. The switches are all of the hand-throw type.

Movements over the crossing are governed by interlocking signals. Interlocking signal 6, governing south-bound movements on the northward running track of the Wabash, is located 100 feet north of the crossing. Automatic signal 7D and interlocking signals 7EF and 7AB, governing west-bound movements on the westward main track of the T.R.R.A., are located, respectively, 1,680 feet, 379 feet, and 65 feet east of the crossing. These signals are of the searchlight type and are

continuously lighted. Aspects applicable to this investigation and the corresponding names and indications are as follows:

Signal	Aspect	Indication	Name
6	Yellow	Proceed at restricted speed.	Low Restricting
7D	Yellow	Approach next home signal prepared to stop.	Caution signal
7EF 7AB	Red-over-red	Stop.	Stop-signal

The control machine is located at a switch tenders' cabin in the southeast angle of the crossing. Time, indication, and route locking are provided. The control circuits are so arranged that a controlled signal can display an aspect to proceed only when conflicting routes through the interlocking are unoccupied and all signals governing movements through conflicting routes are displaying aspects to stop. The control machine is operated by switch tenders, who also operate hand-throw switches in the vicinity.

Operating rules of the T.R.R.A. read in part as follows:

TRAINMEN.

1051. When making up a train on which air-brakes are to be used, all hose connections must be coupled and all angle cocks opened, except the one on the rear of the last car on which the air-brake is to be used.

The release cocks on the auxiliary reservoirs must be closed, the handles of the pressure-retaining valve set properly, the cars cut in and the hand brakes released before the air-brakes are tested.

1052. When a test application of the air-brakes is made, trainmen or car inspectors must see by looking at brake cylinder pistons that they are all set properly; must give the proper signal for releasing the brakes and see by again looking at brake cylinder pistons that they are all released.

CAR INSPECTORS.

1121. (Same as rule No. 1051 for trainmen.)

1126. Inspectors must inform the conductor and engineer when the tests are completed.

1127. (Same as rule No. 1052 for trainmen.)

General Notice No. 906 dated April 17, 1950, and addressed to all enginemen reads as follows:

Enginemen's Terminal Inspection regarding air brake test to be made after coupling up to train and receiving signals that train pipe air is ready to be charged:

Engineers will be governed by request of train crew and car inspector airman. It is the practice of our crews to fully charge train line to 80 pounds pressure, then make a reduction of 20 pounds, and release train brakes as indicated by air gauge on engine, train line will charge to gauge pressure. The train is then ready to proceed on receipt of proper signal from train crew.

Engineers will see that instructions are followed.

The maximum authorized speeds for freight trains are 20 miles per hour for Wabash movements over the crossing at May Street, 20 miles per hour on the main track of the T.R.R.A., and 10 miles per hour for west-bound T.R.R.A. movements approaching West Approach Tower, near the west end of Merchants Bridge, and from West Approach Tower to May Street crossing.

Description of Accident

A Wabash transfer train, consisting of Diesel-electric unit 360, 25 cars, and a caboose, entered the line of the T.R.R.A. at Granite City, departed from Granite City at 10:46 a. m., and arrived at May Street about 11:02 a. m. After an interval of several minutes this train proceeded through the auxiliary track to the northward running track of the Wabash, then began a reverse movement over the crossing and through the crossover to the southward running track. While it was moving over the crossing at a speed of about 8 miles per hour it was struck by a T.R.R.A. transfer train.

A T.R.R.A. transfer train, consisting of Diesel-electric unit 1215, headed eastward and moving in backward motion, 51 cars and a caboose, departed from Madison Yard, Venice, Ill., 2.15 miles east of May Street, about 11 a. m., passed signal 7D, which indicated Approach, passed signals 7EF and 7AB, each of which indicated Stop, and while moving at a speed of about 8 miles per hour it struck the front end of the first car and the rear end of the locomotive of the Wabash train.

The locomotive and the first car of the Wabash train and the locomotive, the first two cars, and the front truck of the third car of the T.R.R.A. train were derailed. The locomotive of the Wabash train stopped at right angles to the T.R.R.A. tracks. The rear end was toward the south, 5 feet north of the center-line of the westward main track, and 31 feet west of the point of accident. The locomotive of the T.R.R.A. train stopped 12 feet west of the point of accident, across the T.R.R.A. tracks and at right angles to them. The rear end was toward the north. The derailed cars stopped in various positions on or near the crossing. The first car of each train was badly damaged. The other derailed cars were somewhat damaged.

The engineer of the T.R.R.A. train was killed. The fireman of the T.R.R.A. train and the engineer, the fireman, and one yard brakeman of the Wabash train were injured.

The weather was clear at the time of the accident, which occurred about 11:13 a. m.

Diesel-electric unit 1215 is of the road-switcher type and is equipped with 6BL brake equipment. At the time of the accident the feed valve was adjusted to supply brake-pipe pressure of 80 pounds. The rail-sanding equipment is so arranged that the rails are sanded automatically when the brake valve is placed in emergency position.

Discussion

At the time of the accident the Wabash train was en route from Granite City to St. Louis Avenue Yard. The T.R.R.A. train was en route from Madison Yard to Luther Yard. When the Wabash train arrived at May Street a movement through a conflicting route was being made, and the train was stopped at signal 7EF. Several minutes later the train proceeded through the auxiliary track to the northward running track of the Wabash. After this movement was completed, the auxiliary-track switches were restored to normal position. The switch tender lined the route

for the train to proceed southward in a back-up movement through the interlocking on the northward running track, lined the switches of the crossover south of the crossing for movement through the crossover, and gave a hand signal for the train to move southward. He remained in the vicinity of the crossover, and until the collision occurred he was not aware that the T.R.R.A. train had passed signals 7EF and 7AB, each of which indicated Stop.

Members of the crew of the Wabash train said that after the train stopped on the northward running track the indication of signal 6 changed from Stop to Restricting, and that the switch tender gave a hand signal for the train to move southward. As the train moved over the crossing the yard conductor and one yard brakeman were on the caboose, and the enginemen and one yard brakeman were in the control compartment of the locomotive. None of these employees observed the approach of the T.R.R.A. train until immediately before the collision occurred.

As the T.R.R.A. train was approaching May Street the speed was between 10 and 15 miles per hour. The enginemen, the yard conductor, and one yard brakeman were in the control compartment of the locomotive, and one yard brakeman was in the caboose. The brakes of this train had not been tested after the train was assembled at Madison Yard and had not been used after the train departed from Madison Yard. Signal 7D indicated Approach, and the indication was called by the enginemen. Surviving employees who were on the locomotive said that the engineer made a service brake-pipe reduction either immediately before or soon after the locomotive passed the signal. Within a few seconds the engineer realized that the brake application was not effective in reducing the speed of the train. He then placed the brake valve in emergency position. The employees on the locomotive then became aware that the train would not stop short of the crossing. The yard brakeman attempted to reach the auxiliary-track switch in time to divert the train toward the northward running track of the Wabash. He was unable to reach the switch before the locomotive passed. The surviving employees who were on the locomotive said they thought that the speed of the train was somewhat reduced before the collision occurred.

When the equipment of the T.R.R.A. train was examined soon after the accident occurred it was found that the angle cock at the front end of the thirteenth car was closed and that a brake application had not been obtained behind the twelfth car. There were numerous small newly formed slid-flat spots

on all wheels of the locomotive. This condition indicated that the wheels had been sliding intermittently before the accident occurred. The brakes of the first two cars were damaged to the extent that their condition before the accident occurred could not be determined. The brakes of the third to the twelfth cars, inclusive, were found to be applied. The brakes of the 39 cars and caboose behind the twelfth car were not applied, and tests of a number of these cars disclosed that the air-brake systems were not charged.

Apparently the angle cock at the front end of the thirteenth car was in closed position when the locomotive was first coupled to the train at Madison Yard. After the cars of the train were assembled, and before the locomotive arrived, an assistant yard master instructed an employee of the car department to couple the air hose. When the locomotive arrived, the assistant yard master informed the yard conductor that the air hose had been coupled and that the locomotive was to charge the air-brake system of the train while another crew placed the caboose on the rear end. The yard conductor instructed the other members of his crew as to the movements which were to be made. He then entered the yard office, which is located near the end of the track on which the train was assembled. At this time none of the members of the crew had been advised as to the number of cars in the train. One yard brakeman coupled the locomotive to the train and opened the angle cocks at the east end of the locomotive and the front end of the first car, and the other yard brakeman accompanied the caboose. After the locomotive had been coupled to the train for a period of 10 to 12 minutes, the fireman and the yard brakeman who remained with the locomotive heard the engineer make a brake-pipe reduction. About the same time, they observed the yard conductor returning from the yard office. As the conductor approached the locomotive, the engineer signaled and called to him that the air-brake system had been charged. The yard conductor returned to the yard office and informed the assistant yard master that the train was ready to proceed, providing the caboose had been coupled to the rear end. After the assistant yard master was informed by telephone that the caboose was being coupled to the rear end of the train, he informed the conductor that the train should proceed. The yard conductor then left the yard office, gave a proceed signal and then boarded the locomotive. The yard brakeman at the front of the train did not receive a signal from the yard brakeman at the rear, but he did not mention this fact to the other employees on the locomotive. He said that previously the

yard brakeman at the rear occasionally informed the yard conductor by telephone when the caboose was coupled to the rear of the train and the brake pipe charged, and for this reason he did not consider the absence of a signal unusual. The yard brakeman who accompanied the caboose said that after the caboose was coupled to the train he found that there was no air pressure in the brake pipe of the rear car. He started toward the front of the train with the intention of making an inspection of the air-brake system. When he had walked a short distance he was overtaken by an employee of the car department who offered to make the inspection. The yard brakeman then returned to the caboose, and the employee of the car department proceeded toward the locomotive. When this employee was about midway of the train, it began to move. A yard engine was pushing from the rear. The employee of the car department gave stop signals, but there was no response to the signals and the train continued to move. The yard brakeman said that as the caboose passed the yard office he called to the assistant yard master and gave a signal indicating that the air-brake system at the rear of the train was not charged. The assistant yard master said that he heard the yard brakeman call, but because of the noise made by the yard engine he did not hear what was said. He did not see the signal given by the yard brakeman. He had instructed the crew of the yard engine to assist in starting the train, and when the rear of the train passed the yard office he gave a signal indicating that the engine was to continue to push until the speed had been increased. The yard engine stopped before the rear of the train reached Merchants Bridge. The air hose between the yard engine and the caboose had not been coupled, and neither the employees on the yard engine nor the employees on the locomotive of the train were aware that the air-brake system at the rear of the train was not charged.

This investigation disclosed that movements of T.R.R.A. transfer trains between yards are made without a proper test of the brakes. The operating rules of this carrier prescribe the method to be used in testing the brakes of a train, but these rules have not been enforced by the carrier nor complied with by the employees. Enginemen are instructed by general notice that after a locomotive is coupled to a train the brake pipe is to be charged to a pressure of 80 pounds, a brake-pipe reduction of 20 pounds is to be made, and the brake pipe is then to be recharged to a pressure of 80 pounds. When the gauge on the locomotive indicates that the brake pipe is fully recharged, the train proceeds on receipt of a signal from the trainmen. Yard trainmen are instructed orally that

they must know that the brake pipe throughout the length of their train is charged before a movement is started, but they are not required to make a car-to-car test to ascertain whether the brake of each car applies and releases properly. The caboose used by the crew of the train involved in this accident was not equipped with an operative air-pressure gauge. When using this caboose or other cabooses not equipped with operative air-pressure gauges it is impossible for employees to determine the brake-pipe pressure at the rear of a train, and under these conditions employees accept the sound of the exhaust of air when an angle cock or conductor's valve at the rear of a train is opened as an indication that the air-brake system of the train is charged. As a result of the failure of the carrier to require a proper test of the brakes, none of the employees of the T.R.R.A. train involved in this accident, with the exception of one yard brakeman and an employee of the car department, knew whether the air-brake system at the rear of the train was charged. If a proper test of the brakes had been required and made, all employees concerned would have known that the air-brake system at the rear of the train was not charged, and the closed angle cock on the thirteenth car would have been found. Unless a proper test of the brakes is made it cannot be known that the requirements of the law are being observed or that the brakes are in such condition as to insure safe movement of the train.

The power-brake provisions of the Safety Appliance Acts require that not less than 85 percent of the cars in a train be equipped with power brakes used and operated by the engineman on the locomotive drawing such train. However, the brakes of only 24.5 percent of the cars of the T.R.R.A. train involved in this accident were under the control of the engineer of that train and this train was therefore being operated in violation of the power brake provisions of the safety appliance law.

Cause

It is found that this accident was caused by a T.R.R.A. transfer train moving out of control on a descending grade, as a result of the power brakes on the rear 39 cars and the caboose being inoperative because of a closed angle cock between the twelfth and the thirteenth cars.

Dated at Washington, D. C., this nineteenth day of March, 1953.

By the Commission, Commissioner Patterson.

(SEAL)

GEORGE W. LAIRD,
Acting Secretary.