INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3092

CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT DOWNERS GROVE, ILL., ON

APRIL 3, 1947

SUMMARY

Railroad:	Chicago, Burlington & Quincy
Date:	April 3, 1947
Location:	Downers Grove, Ill.
Kind of accident:	Collision
Train involved:	Passenger
Train number:	24
Engine number:	Diesel-electric unit 9914A
Consist:	7 cars
Speed:	70 m. p. h.
Operation:	Signal indications
Tracks:	Three; tangent; 0.166 percent ascending grade eastward
Weather:	Misting
Time:	10:40 p. m.
Casualties:	3 killed; 30 injured
Cause:	Operating a freight train in which the lading on one of the cars was not properly secured.

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3092

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

CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY

May 26, 1947

Accident at Downers Grove, Ill., on April 3, 1947, caused by operating a freight train in which the lading on one of the cars was not properly secured.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On April 3, 1947, there was a collision between a passenger train and a tractor which had fallen from a car of a freight train moving on an adjacent main track on the Chicago, Burlington & Quincy Railroad at Downers Grove, Ill. This accident resulted in the death of 2 passengers and 1 train-service employee, and the injury of 25 passengers, 2 dining-car employees, 1 coach porter and 2 train-service employees. The accident was investigated in conjunction with a representative of the Illinois Commerce Commission.

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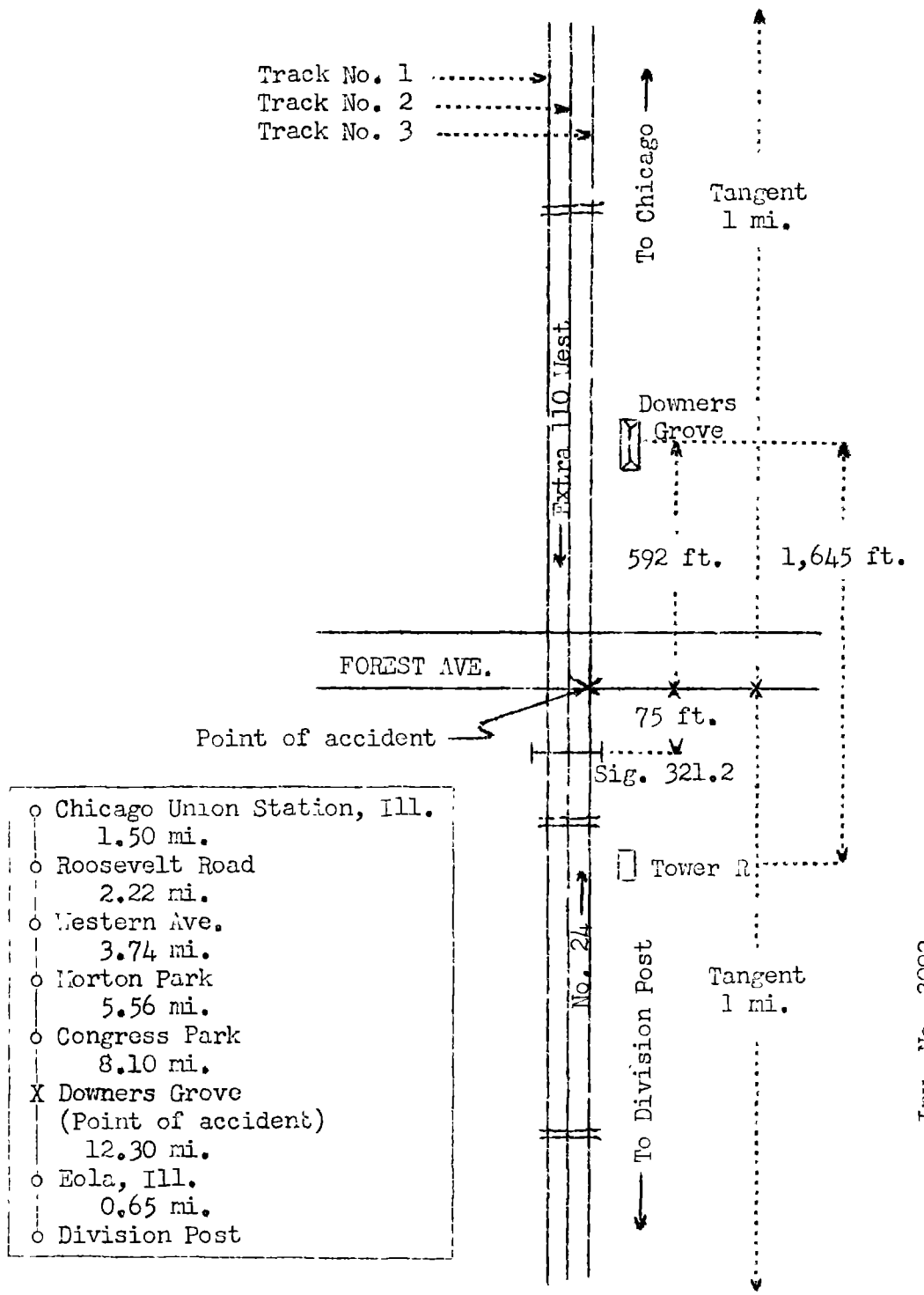
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3092
Chicago, Burlington & Quincy Railroad
Downers Grove, Ill.
April 3, 1947

Location of Accident and Method of Operation

This accident occurred on that part of the Chicago Division extending between Roosevelt Road, Chicago, and Eola, Ill., 32.57 miles, a three-track line in the vicinity of the point of accident. The main tracks are designated from north to south as No. 1, westward, No. 2, either direction, and No. 3, eastward. Trains moving with the current of traffic on tracks Nos. 1 and 3 and in either direction on track No. 2 are operated by signal indications. The freight train was being operated on track No. 2 and the passenger train on track No. 3. The accident occurred on track No. 3 at a point 19.73 miles west of Roosevelt Road and 592 feet west of the station at Downers Grove. The main tracks are tangent throughout a distance of more than 1 mile immediately west of the point of accident and a considerable distance eastward. The grade is 0.166 percent ascending eastward.

At the point of accident the distance between the centerlines of tracks Nos. 2 and 3 is 14 feet. The track structure of track No. 3 consists of 131-pound rail, 39 feet in length, laid on an average of 23 treated ties to the rail length. It is fully tieplated, single-spiked, provided with 6-hole angle bars and an average of 10 rail anchors per rail length. It is ballasted with slag to a depth of 12 inches.

Automatic signal 321.2 governs east-bound movements on track No. 3 and is mounted on a signal bridge 75 feet west of the point of accident. This signal is of the color-light type and is continuously lighted.

Operating rules read in part as follows:

102. * * *

When a train is disabled or stopped suddenly by an emergency application of the air brakes or other causes, adjacent tracks as well as tracks of other railroads that are liable to be obstructed must at once be protected until it is ascertained they are safe and clear for the movement of trains.

Rules of the Association of American Railroads governing the loading of commodities on open top cars read in part as follows:

* * *

Figure 170

TRACTORS-CRAWLER TYPE, WEIGHING 35,000 LBS. OR LESS--FLAT CARS

Item	No. of Pcs.	Description
* * *		
B	4	Wedge shaped blocks not less than 18 in., in length. Height at point of contact with crawler must not be less than 8 in., and width must not be less than 6 in. throughout its length. If 2 or more blocks are substituted for 6 in. x 8 in. block, they must not be less than 3 in. thick. Blocks should be nailed to 2 or more floor planks.
C	2	2 in. x 4 in. x 6 ft. If machine is too wide to permit placing on outside they must be placed on inside of crawler. Nail each to floor with five 40D nails.

Must be set in First Gear.

* * * Machines over 10 ft. high must be secured with rods, cables or wires to prevent tipping.

* * *

The maximum authorized speed was 50 miles per hour for the freight train on track No. 2, and 70 miles per hour for the passenger train on track No. 3.

Description of Accident

Extra 110 West, a west-bound freight train, consisting of Diesel-electric units 110D, C, B, and A, coupled in that order and in multiple-unit control, 101 cars and a caboose, passed Congress Park, 8.1 miles east of Downers Grove, at

10:26 p. m. While it was passing Tower R, located 1,645 feet west of the station at Downers Grove, and was moving on track No. 2 at a speed of 48 miles per hour, a tractor fell from the eighty-fifth car, obstructed track No. 3, and was struck by No. 24.

No. 24, an east-bound passenger train, consisted of Diesel-electric engine 9914A, one baggage-tavern car, two coaches, one dinette car, one dining car, one coach and one parlor-lounge car, in the order named. The cars are constructed with conventional steel underframes and stainless-steel superstructures, and are provided with articulation-type trucks, except at the front end of the first car and the rear end of the seventh car. This train, moving on track No. 3, passed Tower R, the last open office, at 10:40 p. m., passed signal 321.2, which displayed proceed, and while moving at an estimated speed of 70 miles per hour it struck the tractor, and the engine and the cars were derailed.

The tractor was demolished. The coupler at the rear of the engine was pulled out and the engine became separated from the train. The engine continued eastward in an upright position and in line with the track a distance of 470 feet, then it struck the station platform, overturned, stopped on its right side and across tracks Nos. 1, 2 and 3 and at an angle of 30 degrees to them, with the front end 875 feet east of the point of collision. The front end of the engine, both traction trucks, the right side of the superstructure, and the framing were badly damaged. The cars remained upright and coupled, and stopped with the front of the first car and the rear of the seventh car, respectively, 668 and 209 feet east of the point of collision. The first car struck the north wall of the station, then it was diverted northward and stopped with its front end on track No. 3, and its rear end on the station platform and 10 feet south of track No. 3. This car was badly damaged, and the right side at the rear was demolished throughout a distance of 12 feet and inward to the centersills. The second car stopped in line with the first car, with its front end 10 feet south of track No. 3 and on the station platform, and its rear end inside the station and 30 feet south of track No. 3. The right side of the car was demolished inward to the centersills throughout one-half the length of the car. The third car stopped with its front end against the north wall of the station and 30 feet south of track No. 3, and its rear end on track No. 3. This car was badly damaged. The fourth to seventh cars stopped in line with track No. 3, and were considerably damaged.

The engineer of No. 24 died as a result of injuries received in the accident. The fireman and the front brakeman of No. 24 were injured.

It was misting at the time of the accident, which occurred about 10:40 p. m.

The tractor involved was an I. H. C. Model TD-18 TracTracTor, equipped with a continuous-travel crawler track arranged on each side. There was no pivoted wheel for steering. Each crawler track was 20 inches wide, and was provided with 37 square-end track shoes 2-1/4 inches high. These shoes were so arranged that at any time 12 of them would be in contact with the surface under the tractor. The length of the track in contact with the surface upon which it moved was 7 feet 5/8-inch. The tractor was 6 feet 8 inches high at the top of the exhaust pipe, 7 feet 10 inches wide and 13 feet 2-1/4 inches long. The weight of the tractor in working order was 23,945 pounds. The tractor was cushioned against vertical shock by a heavy-duty 6-leaf spring mounted transversely between the main frame and the track frame.

The eighty-fifth car of Extra 110 West was Southern 51327, a flat car of the fish-belly steel-underframe type, and was built in March 1942. It is 54 feet 2 inches long, 10 feet 4 inches wide and 3 feet 10 inches high. Its lightweight, capacity and load limit are, respectively, 60,900, 140,000 and 149,100 pounds. The trucks are of the 4-wheel type, having 33-inch one-wear steel wheels, and a cluster of five helical springs at each side of each truck. Roller-type side-bearings are provided. The draft gear is of the spring-and-wedge friction type. The couplers and knuckles are type E, and the uncoupling mechanism is of the rotary bottom-operated type. The flooring of the car consists of yellow-pine planking 2-3/4 inches thick, 6 inches wide and 10 feet 4 inches long, laid transversely, and secured to the framing by three bolts 1/2-inch thick and 4 inches long. The flooring is covered by black paint. The draft gear was inspected, the journal boxes repacked, and the air brake cleaned during September, 1946. The lading of this car consisted of two tractors, including the tractor involved, and the total weight of the car and the lading was 108,790 pounds.

Discussion

Extra 110 West was moving on track No. 2 at a speed of 48 miles per hour, as indicated by the speedometer with which the first Diesel-electric unit was equipped, in territory where the maximum authorized speed for this train was 50 miles per hour. As this train was passing Tower R, located 1,053

feet west of the point of accident, the enginemen and the front brakeman were maintaining a lookout from the control compartment at the front of the first Diesel-electric unit, the conductor was in the caboose and the flagman was maintaining a lookout ahead from the window at the left side of the cupola. The first any of these employees knew of anything being wrong was when the flagman saw sparks flying from the vicinity of the eighty-fifth car, and at that time the rear of the train was about 1,000 feet east of the point where the accident occurred. Before the flagman could take action to stop either train, the brakes of Extra 110 West became applied in emergency and No. 24, which was moving on track No. 3, passed the rear of Extra 110 West. Extra 110 West stopped with the front end and the rear end, respectively, about 5,500 feet and 1,250 feet west of the point of accident. A separation occurred between the eighty-fifth and eighty-sixth cars. Immediately afterward examination disclosed that a tractor had fallen from the eighty-fifth car of Extra 110 West, then had obstructed track No. 3 at a street-grade-crossing 592 feet west of the station at Downers Grove and 1,053 feet east of Tower R, where it was struck by No. 24.

As No. 24 was approaching Tower R the speed was 73 miles per hour, as indicated by the speedometer with which the Diesel-electric engine was equipped. The maximum authorized speed for this train moving on track No. 3 was 70 miles per hour. The conventional headlight and the oscillating headlight at the front of the engine were lighted brightly, and the enginemen and a Diesel-engine mechanic were maintaining a lookout ahead from the control compartment at the front of the engine. The members of the train crew were stationed in various cars throughout the train. Signal 321.2 displayed proceed. The fireman said that a considerable amount of dust was stirred by the passage of Extra 110 West, and his view of the track ahead was partially obscured. The first he knew of anything being wrong was when he observed that a separation had occurred between two cars of Extra 110 West. Then he saw the tractor which obstructed track No. 3 a few hundred feet distant. He immediately called a warning, which was simultaneous with the engineer's action in moving the brake valve to emergency position. The collision occurred before No. 24 could be stopped. The engineer of No. 24 died as a result of injuries received during the derailment. The brakes of this train had been tested and had functioned properly at all points where used en route.

Under the rules, the members of the crew of Extra 110 West were required to protect adjacent tracks in both directions when the train was stopped as a result of the emergency application of the brakes. However, No. 24 had passed the rear

of Extra 110 West before action could be taken to stop that train and before Extra 110 West had stopped.

The investigation disclosed that on April 1, 1947, two tractors had been loaded on Southern 51327, a flat car, at the plant of the International Harvester Company, located on West Thirty-first Street, Chicago, Ill. This shipment was destined to New Orleans, La., via the Illinois Northern Railway, the Chicago, Burlington & Quincy Railroad and the Gulf, Mobile and Ohio Railroad. The car was moved from the plant of the I.H.C. by the I.N. and was delivered in a cut of 34 cars in interchange to the C.B.& Q., and was accepted by the latter-mentioned carrier at its yard at Western Avenue, Chicago, Ill., 17.40 miles east of Downers Grove, at 11:40 a. m., April 3. Later, this car was assembled in a cut of cars and was transferred to the C.B.& Q. classification yard at Morton Park, Chicago, Ill., 13.66 miles east of Downers Grove. After various switching movements, the car was assembled in the train of Extra 110 West, which departed from Morton Park about 9:45 p. m., April 3.

Examination after the accident disclosed that the tractor involved, which had been loaded at the A, or rear, end of the car, had slid laterally and had fallen from the left side of the car. On the wooden decking of the car there were marks made by the raised portions of the track shoes of the tractor as it moved laterally. The ends of the decking were broken throughout a distance of 12 feet at the rear portion of the left side of the car, the left rear sill step was bent backward, the uncoupling lever bracket at the left rear side of the car was bent, and the left running board of the eighty-sixth car, a tank car, was broken about half its length. The coupler at the rear of the eighty-fifth car was found in open position. Evidently, when the tractor slid from the car, the uncoupling lever was struck with sufficient force to operate the uncoupling mechanism. Several bystanders who were at the street-grade-crossing near the station during the passage of Extra 110 West saw the tractor slide laterally on the deck of the car. Then it hung momentarily over the side of the car, dropped to the surface of the crossing, and stopped upright and across track No. 3, where it was struck immediately afterward by No. 24.

The crew of Extra 110 West said that, prior to the accident, the Diesel-electric units and the cars of the train had been riding smoothly and there was no indication of irregularity in the surface or the alinement of the track. The train had been handled smoothly and there was no abnormal stretching or closure of slack between the cars. The wheels

of the eighty-fifth car were of good flange and tread contour, and measurements indicated that they were not out-of-round. The journals were measured and the greatest variation in roundness was 0.0015 inch, and the greatest variation in taper was 0.0045 inch. The clearance of the side-bearings between the body bolsters and the truck-bolsters varied between 3/16-inch and 5/16-inch.

The rules of the Assocation of American Railroads governing the movement in trains of crawler-type tractors loaded on flat cars provide that, to prevent displacement by fore-and-aft motion, the crawler tracks must be chocked by wedge-shape blocking not less than 18 inches long, 8 inches high at the points of contact with the crawler-tracks, and 6 inches wide. If two or more pieces of blocking are substituted for 6-inch by 8-inch blocking, each piece must be not less than 3 inches thick. The end blocking must be nailed to two or more planks of the flooring. To prevent lateral displacement, the crawler track must be secured on each side by blocking not less than 2 inches thick by 4 inches wide by 6 feet long, nailed to the floor by not less than five 40D nails. If the machine is too wide to permit the placing of side blocking outside the crawler-track, such blocking may be placed inside each track. In addition, the gear-shifting lever must be placed in position to engage the gears for low speed.

Examination disclosed that the tractor remaining on the car at the B, or front, end was properly secured, and there was no evidence of shifting from its original position. At the A end of the car, eight pieces of blocking were firmly secured to the flooring to prevent fore-and-aft movement of the tractor at that end. This blocking consisted of two wedge-shape hardwood blocks, 6 inches wide by 8 inches high by 18 inches long, located at each end of each crawler track, and nailed to two planks at the inner locations and to three planks at the end location by 60D nails. Seven of these blocks were marked by paint, which indicated that they had been in close contact with the crawler tracks. The eighth block was unmarked. There was no indication that side blocking had been provided, nor were there any nail holes alined longitudinally in the flooring of the car to indicate that any side blocking had been properly secured, either outside or inside the crawler tracks of the tractor involved. However, one piece of blocking, consisting of two pieces of fir nailed together and measuring 2 inches thick by 4 inches wide by 4.5 feet long, was lying loosely, together with a broken hammer handle, at the A end of the car. The end blocking

indicated that the tractor involved had been loaded in line with the centerline of the car, and, since the overall width of the tractor was 7 feet 10 inches, the outer edge of either crawler track should have been about 15 inches inward from either edge of the car. Therefore there was ample space for applying blocking outside each crawler track.

The inspector employed by the I.H.C. said that he had inspected the car involved after it had been loaded and before it left the plant. He was certain that the required blocking was in place and properly secured, but he did not strike the blocking with a hammer to ascertain if it was secure. He had never been instructed with regard to the loading rules of the A.A.R. There is no record of any inspection made by the I.N. Ry. Two car inspectors employed by the C.B.& Q. to inspect cars received in interchange at the yard of this carrier at Western Avenue said that they had inspected the car involved after its arrival at Western Avenue, and at that time the required blocking was in place and properly secured. One of these inspectors said that he boarded the car and tested all blocking by striking each piece with a hammer, and there was no indication that the blocking was not securely fastened. Other inspectors employed by the C.B.& Q. at the yard at Morton Park said that they had inspected the car at several points in that yard, and they were positive in their statements that all required blocking was in place and properly secured. The flooring of the car was of sound wood and was covered with paint. It was in such condition that if any nails had been driven into it to secure side blocking for the tractor in question, the nail holes would have been detected easily. From this it is apparent that any inspection made prior to the accident was not sufficiently thorough to ascertain the true condition of the blocking.

Cause

It is found that this accident was caused by operating a freight train in which the lading on one of the cars was not properly secured.

Dated at Washington, D. C., this twenty-sixth day of May, 1947.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.