

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 3164  
UNION PACIFIC RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
NEAR WATERLOO, NEBR., ON  
FEBRUARY 10, 1948

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SUMMARY

Railroad: Union Pacific

Date: February 10, 1948

Location: Waterloo, Nebr.

Kind of accident: Collision

Trains involved: Work : Passenger

Train numbers: Work Extra 5085 : 23

Engine numbers: 5085 : 820

Consists: 3 work-equipment : 13 cars  
cars, caboose

Estimated speeds: Standing : 10 m. p. h.

Operation: Signal indications

Track: Double; tangent; level

Weather: Cloudy

Time: 11:25 a. m.

Casualties: 1 killed; 1 injured

Cause: Failure properly to control speed  
of passenger train in accordance  
with train-order instructions

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 3164

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

UNION PACIFIC RAILROAD COMPANY

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March 26, 1948

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Accident near Waterloo, Nebr., on February 10, 1948,  
caused by failure properly to control the speed  
of the passenger train in accordance with train-  
order instructions.

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REPORT OF THE COMMISSION<sup>1</sup>

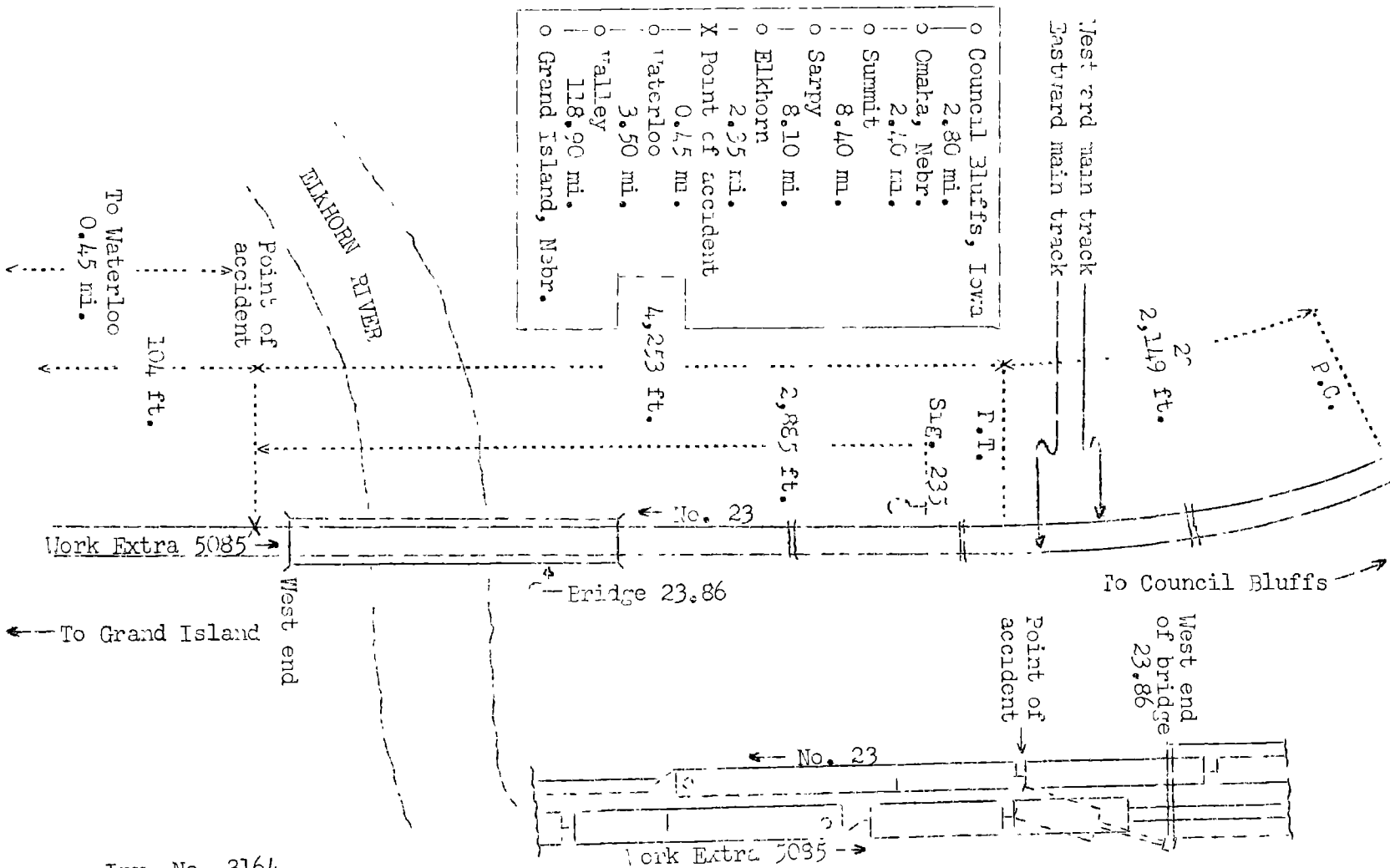
PATTERSON, Commissioner:

On February 10, 1948, there was a collision between a passenger train and the rear end portion of a pile driver in a work train standing on an adjacent main track on the Union Pacific Railroad near Waterloo, Nebr. This accident resulted in the death of one employee, and the injury of one employee.

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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. 3164  
 Union Pacific Railroad  
 Waterloo, Nebr.  
 February 10, 1948

Sketch showing position of pile driver at time of the accident

Location of Accident and Method of Operation

This accident occurred on that part of the Nebraska Division extending between Council Bluffs, Iowa, and Grand Island, Nebr., 146.9 miles, a double-track line, over which trains moving with the current of traffic are operated by signal indications. The passenger train was being operated on the westward main track, and the work train was on the eastward main track. The accident occurred 24.05 miles west of Council Bluffs and 0.45 mile east of the station at Waterloo, where the railroad spans the Elkhorn River at Bridge 23.86. From the east on the westward main track there are, in succession, a 2° curve to the right 2,149 feet in length and a tangent 4,253 feet to the point of accident and 104 feet westward. The grade for west-bound trains is 0.40 percent descending throughout a distance of 3,200 feet immediately east of Bridge 23.86, then it is level over the bridge.

The railroad crosses the river at approximately right angles. The bridge structure from east to west consists of ten 65-foot through-girder spans and one 163-foot truss span. The distance between the centerlines of the main tracks is 13 feet.

Automatic signal 235, governing west-bound movements on the westward main track, is 2,885 feet east of the point of accident. This signal is of the three-indication, color-light type.

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

DEFINITIONS

\* \* \*

Restricted Speed.--Proceed prepared to stop short of train, obstruction, \* \* \* or anything that may affect movement of train.

COLOR SIGNALS

10.

Color

Indication

\* \* \*

(b) Yellow.

Proceed as prescribed by the rules.

\* \* \*

10 (G). A yellow flag by day, \* \* \* placed on the engineer's side of the track, indicates that the track beginning one mile from the yellow signal is in condition for a speed of not more than ten miles per hour, unless a different speed covering that designated location is specified by train order \* \* \*

\* \* \*

15. The explosion of two torpedoes is a signal to immediately reduce speed to 20 miles per hour and proceed at that speed for a distance of one mile from the point where the torpedoes were placed, keeping a close lookout for train or obstruction. A slower speed must be observed where conditions require. \* \* \*

\* \* \*

99. When a train stops, except when clear of the main track, the flagman must go back immediately with flagman's signals, a sufficient distance to insure full protection. One-half mile from the rear of his train he will place two torpedoes on the rail, continuing back one and one-fourth miles from the rear of his train he will place two torpedoes on the rail. He may then return to the two torpedoes one-half mile from rear of his train where he must remain until relieved by another flagman or is recalled by the whistle of his engine.

\* \* \*

The front of the train must be protected in the same way when necessary.

\* \* \*

99 (G). Pile drivers, \* \* \* before blocking or fouling any track, protection in both directions must be provided as prescribed by Rule 99.

251. On portions of the railroad, and on designated tracks so specified on the time-table, trains will run with reference to other trains in the same direction by block signals whose indications will supersede the superiority of trains.

Time-table special instructions of this carrier read in part as follows:

The operation of trains with the current of traffic will be governed by Rules 251, \* \* \* and for operation of work trains, train order authority must be obtained.

FORMS OF TRAIN ORDERS

D-H.

WORK EXTRA

- (1) Eng 292 works extra on eastward track (or both tracks) six forty five 6 45 A M until five forty five 5 45 P M between D and E

The maximum authorized speed for the passenger train was 80 miles per hour.

Description of Accident

At Valley, 3.5 miles west of Waterloo, the crew of Work Extra 5085 received copies of train orders No. 7, No. 424 and No. 427 reading in part as follows:

Order No. 7

\* \* \*

Eng 5085 works extra on both tracks seven ten 710 am until nine thirty 930 pm between Valley and Summit via Sarpy and protects against second class trains between Valley and Summit via Sarpy

Order No. 424

Effective Eight thirty 830 am Jan 28  
Str trains must not exceed 40 MPH  
Other psgr trains 30 MPH  
\* \* \*

Over Bridge 23-86 account repairing

Order No. 427

Between eight thirty one 831 AM and four one 401 PM daily except Sundays on both tracks all trains must approach Bridge 23-86 at restricted speed and must stop before passing unless proceed signal with yellow flag or yellow light is received

Work Extra 5085, consisting of engine 5085, headed east, and a caboose, departed eastward from Valley at 8 a. m. At Waterloo one flat car, pile driver 03113 and one pile-driver tank supply car, in the order named, were assembled ahead of the engine. This train departed eastward from Waterloo about 8:30 a. m. About 2 hours 55 minutes later, while this train was standing on the eastward main track at the west end of Bridge 23.86, the rotating portion of the pile driver, which fouled the westward main track, was struck by No. 23.

At Omaha, 21.7 miles east of Waterloo, the crew of No. 23, a west-bound first-class passenger train, received copies of train orders No. 424 and No. 427. This train consisted of engine 820, two express-refrigerator cars, two baggage-express cars, three coaches, one dining car, one lounge car and four sleeping cars, in the order named. All cars were of steel construction. This train departed from Omaha at 11 a. m., 1 hour 50 minutes late, departed from Elkhorn, the last open office, 2.35 miles east of the point of accident, at 11:22 a. m., 1 hour 47 minutes late, passed signal 235, which displayed proceed, and while moving on the westward main track at an estimated speed of 10 miles per hour it struck the rotating portion of the pile driver.

The north side of the rotating portion of the pile driver was crushed inward throughout a distance of about 8 feet at the rear end. The frame of the rotating portion, the boiler and the leader of the pile driver were badly damaged. None of the equipment of either train was derailed. No. 23 stopped with the front of the engine 121 feet west of the point of accident. The left side of the engine was somewhat damaged.

The employee killed and the employee injured were members of the bridge maintenance force. These employees were on the pile driver when the accident occurred.

Pile driver 03113, built by the Industrial Brown Hoist Corporation, is of the heavy-duty, steam-driven, self-propelled, full-circle swing type, model 15.



The weather was cloudy at the time of the accident, which occurred about 11:25 a. m.

### Discussion

The investigation disclosed that at the time of the accident Work Extra 5085 was engaged in driving piling at Bridge 23.86. During certain operations of the pile driver the rotating portion fouled the adjacent main track. Because of this condition, train-order instructions were issued requiring all trains to approach this bridge prepared to stop and, unless proceed signals were given with a yellow flag or a yellow light, all trains were required to stop before entering upon the bridge. A temporary slow-speed signal governing movement of west-bound trains on the westward main track was located on the north side of the track at a point 1.12 miles east of the bridge. This signal consisted of a yellow flag on a mast, and its indication required the speed of west-bound trains to be reduced to not exceeding 10 miles per hour at a point 1 mile westward. At the time of the accident Work Extra 5085 was standing at the west end of the bridge. The rotating portion of the pile driver was at an angle of about 18 degrees to the track, and it fouled the westward main track. The operator of the controlling mechanism was preparing to operate the pile driver to position to clear the westward main track when the rotating portion was struck by No. 23.

Immediately prior to the accident, the enginemen of Work Extra 5085 were on the engine and the conductor was in the immediate vicinity of the engine. The flagman had placed two torpedoes on the north rail of the westward main track at a point 1.26 miles east of the bridge, then he proceeded westward. He had reached a point about 3,600 feet east of the bridge when he heard the explosion of the torpedoes and saw No. 23 approaching. When the engine of that train was closely approaching his location he gave hand signals to the engineer for the train to proceed at slow speed. The flagman said his signals were acknowledged by the engineer, and he estimated the speed of No. 23 as about 45 miles per hour when the engine passed him. When No. 23 was within a few hundred feet of the location of the pile driver, the conductor of Work Extra 5085 and an employee of the bridge forces observed that the speed of No. 23 was excessive, and they immediately gave stop signals with red flags from a point near the pile driver. They estimated the speed of No. 23 at the time of the collision as about 10 miles per hour.

As No. 23 was approaching the bridge the enginemen were maintaining a lookout ahead from their respective positions on the engine, and the members of the train crew were in various locations throughout the cars of the train. Each member of the crew had read the train orders involved, and they understood that the speed of their train was required to be controlled in accordance with the provisions of the orders. The engineer said that when he saw the yellow slow-speed sign he thought the speed of his train was about 50 miles per hour, and he made a 10-pound brake-pipe reduction and, when his engine exploded the torpedoes, he made a further reduction of about 4 pounds. This brake application was not released. The engine was not equipped with a speedometer. He thought the speed of his train was being controlled properly when he passed the flagman and until he saw stop signals being given in the vicinity of the pile driver. He then moved the brake valve to emergency position, but the collision occurred before the train could be stopped. The brakes of No. 23 had been tested and had functioned properly en route. When examined after the accident there was no condition found that would prevent proper functioning of the train-brake system.

Cause

It is found that this accident was caused by failure properly to control the speed of the passenger train in accordance with train-order instructions.

Dated at Washington, D. C., this twenty-sixth day of March, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,  
Secretary.