

Inv-2337

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
CHICAGO, BURLINGTON & QUINCY RAILROAD

BEVERLY, MO.

FEBRUARY 28, 1939

INVESTIGATION NO. 2337

SUMMARY

Inv-2337

Railroad: Chicago, Burlington & Quincy
Date: February 28, 1939
Location: Beverly, Mo.
Kind of accident: Derailment
Train involved: Freight
Train number: 68
Engine number: 5247
Consist: 63 cars, caboose
Speed: 15-25 m.p.h.
Operation: Timetable, train orders and controlled
manual block system; interlocking
limits
Track: Single; tangent; slight descending grade
southward
Time: 7:58 a.m.
Weather: Windy and snow was blowing
Casualties: 1 killed
Cause: Failure properly to obey interlocking
signal indications

April 11, 1939.

To the Commission:

On February 28, 1939, there was a derailment of a freight train on the Chicago, Burlington & Quincy Railroad at Beverly, Mo., which resulted in the death of one employee.

Location and Method of Operation

This accident occurred on that part of the St. Joseph Division extending between St. Joseph and Ustick, Mo., a distance of 60.1 miles; in the immediate vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and a controlled manual block system. The accident occurred at a switch-point derail within the limits of Beverly interlocking plant.

Approaching from the north there is a 1° curve to the right 990 feet long, followed by a tangent 2,655 feet long on which the accident occurred at a point 662 feet from its southern end. The grade is slightly descending southward at the point of accident.

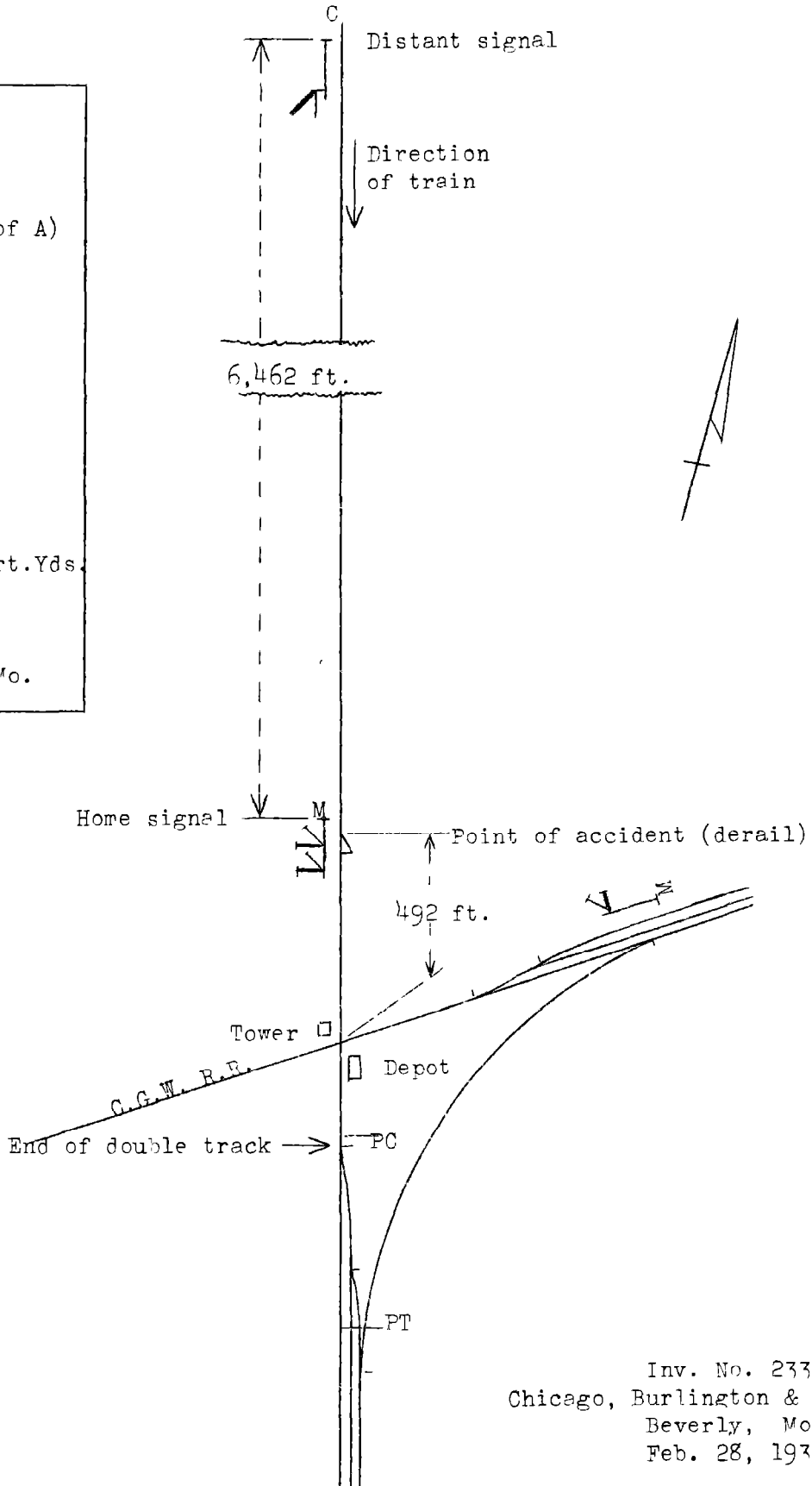
At Beverly the Chicago Great Western Railroad crosses the C.B. & Q. and is a single-track line. The C.B. & Q. extends almost north and south, and the C.G.W. almost east and west. The interlocking tower is located in the northwest angle of the crossing, and the depot in the southeast angle. Southward from Beverly the C.B. & Q. is a double-track line, the end-of-double-track switch being located 279 feet south of the intersection. The north switch of a siding which parallels the main tracks on the east is located 227 feet south of the end-of-double-track switch.

The C.B. & Q. southward interlocking distant and home signals and the switch-point derail are located 7,010, 548 and 492 feet, respectively, north of the crossing.

The distant signal is a color light signal and displays a green or a yellow aspect. A green aspect indicates proceed. A yellow aspect indicates approach next signal at restricted speed. Restricted speed is defined as proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

The two-arm, two-position, mechanically operated home signal is of the lower-quadrant semaphore type. The top arm, which displays either a green or a red aspect, is longer than

o	Ustick, Mo.	
		25.8 mi.
X	Beverly (P of A)	
		3.3 mi.
o	Weston	
		12.8 mi.
o	Armour	
		16.6 mi.
o	St. Joseph Frt. Yds.	
		1.6 mi.
o	St. Joseph, Mo.	



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the bottom arm, which displays either a yellow or a red aspect. A green-over-red aspect indicates a movement with the current of traffic on the southward main track. A red-over-yellow aspect indicates proceed-at-restricted speed for a movement against the current of traffic or a movement from the single track to the siding. Either a green-over-red or a red-over-yellow aspect permits a train to use the crossing. A red-over-red aspect indicates stop.

The towerman can route trains over any of the tracks south of the intersection. The handling of southward trains through the Beverly interlocking plant, when such trains are reversed south of the intersection, is governed by the home signal. Reverse movements are authorized by train order and if the route is lined for such a movement, or for a movement to enter the siding, the distant signal displays yellow aspect and the bottom arm of the home signal is lowered. The distant signal is cleared only with the top arm of the home signal. The interlocking and circuits are so arranged that the distant signal cannot display a proceed indication when the lower arm of the home signal is cleared.

The maximum permissible speed for freight trains is 50 miles per hour, but at the time of the accident the speed of southward trains was restricted by train order to not in excess of 35 miles per hour over the crossing at Beverly.

The weather was windy and snow was blowing at the time of the accident, which occurred about 7:58 a.m.

Description

No. 68, a south-bound freight train, consisted of 63 loaded cars and a caboose, hauled by engine 5247, with an auxiliary tank, and was in charge of Conductor Allen and Engineman Hayes. This train left St. Joseph freight yards at 6:45 a.m., according to the train sheet, 5 hours late, and while approaching Beverly, 32.7 miles distant it passed the distant signal displaying a yellow aspect, passed the home signal displaying a red aspect, and was derailed at the split-switch derail while traveling at a speed estimated to have been from 15 to 25 miles per hour.

The engine, tender, auxiliary water tank, the first 11 cars and the forward truck of the twelfth car were derailed. The engine remained upright and stopped in line with the track, its forward end being 252 feet south of the derail. The auxiliary water tank and first 11 cars stopped behind the engine,

across, near, and at right angles to the track, and bunched within a space of about 150 feet. The employee killed was the fireman.

Summary of Evidence

Engineman Hayes stated that the air brakes were tested at St. Joseph and they worked properly en route. Weather conditions were bad and the wind was blowing snow around. He received instructions from the Conductor to proceed carefully. At Armour, 16.1 miles north of Beverly, a message was received which read: "No. 24 left StJoe 15m late. Do not delay them. No wires south of Armour to reverse any body." Approaching Beverly visibility was restricted considerably. He had the side window open and was maintaining a lookout, but the yellow aspect of the distant signal could not be seen until the engine had almost reached it; the signal was covered with snow and only a small portion of the light was showing. The caution indication was called and repeated by the engine crew. The speed was reduced to about 25 miles per hour when passing the distant signal, and afterwards the fireman remarked, "We are going the wrong way." The head brakeman then came over and looked out from the engineman's side of the cab. The engineman interpreted the fireman's remark to mean that their train was going to be diverted to some other track at Beverly. He became confused and could not imagine how their train could be reversed when there was no communication available, as indicated by the message, for the dispatcher to put out a train order at Beverly, but thought that probably the fireman could see better than he and had seen the indication displayed by the home signal. He made a further reduction of the brake-pipe pressure and moved the brake valve from running to lap position. The home signal, which was on his side, was not visible until he reached a point about 300 feet north thereof, at which point he saw that it was displaying a stop indication, and he immediately called, "Derail board", which was repeated by the fireman. The engineman applied the air brakes in emergency when the engine entered the derail, at which time the speed was about 15 to 20 miles per hour. He did not know how the fireman got off the engine. Everything happened quickly and he was very excited. He could not imagine what the fireman meant when he shouted "Wrong way", but said that this remark did not influence him in regard to observing the position of the home signal. He could not say how far the engine was past the distant signal when the fireman remarked about being reversed as he had his head out the window. The weather was stormy and cloudy and it was dark at that time, but 10 minutes after the accident it was daylight and bright.

He fully understood that after receiving a restricted indication at the distant signal the rules required him to approach the home signal under full control, prepared to stop, and that had he so operated the train the accident would have been averted. Engineman Hayes was employed as a fireman September 19, 1907, and was promoted to engineman October 22, 1921; he had handled trains on this line and he said that he was thoroughly familiar with the physical characteristics of the road in this vicinity.

Head Brakeman Hampton stated that he was in the deck of the engine cab when the enginemen called the yellow aspect and he observed it from the gangway as they passed the distant signal. He was engaged thereafter in looking to the rear trying to inspect the train, and he did not observe the position of the home signal or whether the brakes were applied prior to the emergency application. He was not in a position to hear any remarks of the engineman or the fireman in regard to the route. Wind blown snow greatly reduced the visibility at the time of the accident.

Conductor Allen stated that owing to weather conditions and wind blown snow the distance signal indications could be seen varied from about 10 to 25 car lengths. The speed was about 30 miles per hour when the caboose passed the distant signal; it was reduced thereafter and was about 25 miles per hour at the time the emergency application was made and the derailment occurred. He did not see the home signal prior to the accident.

Flagman Paden stated that the air brakes were used to reduce the speed to approximately 25 miles per hour between the distant signal and the home signal and the train was moving at that speed when the emergency application was made at the time of accident.

Towerman Hoffman, at Beverly, stated that about 7:40 a.m. he lined the route for C.G.W. west-bound passenger train No. 15, and about 7:45 a.m. he gave the block to the operator at Weston, 5.3 miles north of Beverly, for C.B. & Q. freight train No. 68. The pipe line of the interlocking was covered with snow and ice and it was impossible to operate the westward home signal for the C.G.W. passenger train, which arrived and stopped at that signal at 7:55 a.m., and sounded the engine whistle. He then left the tower and started walking toward the inoperative C.G.W. home signal, located 755 feet east of the intersection, to examine the switches and derails and make certain that the route was set, as required by the rules, before giving hand signals for the C.G.W. passenger

train to proceed through the interlocking. On his way he saw the C.B. & Q. freight train with its headlight burning rounding the curve north of the intersection and traveling at a speed of possibly 30 miles per hour, but he was not in position to estimate its speed accurately. When he reached the C.G.W. home signal, the C.B. & Q. freight train had almost reached the C.B. & Q. home signal, which was displaying a stop indication, and he remarked to the engineman of the C.G.W. passenger train that he thought the C.B. & Q. freight train was going to run the derail, which it did, the accident occurring at 7:58 a.m. There was no one in the tower at the time of the accident.

Observations of the Commission's Inspectors

A check of the records of the railroad company showed that during January and February, 1939, a total of 47 southward trains were routed over the northward main track at Beverly and of this number 33 movements or 70 percent were made by train No. 68.

Discussion

The route over the crossing involved was lined for a C.G.W. passenger train which was standing near its home signal because the towerman could not clear that signal as ice and snow were on the signal pipes. According to the evidence visibility was considerably restricted as No. 68 approached Beverly, and the engineman had his head out the side window maintaining a lookout. The distant signal was nearly covered with snow and the yellow aspect displayed could not be seen until the engine had almost reached the signal; only a small portion of the light was showing. The restrictive indication was called and repeated, and the engineman fully understood that under the rules he was required to approach the home signal at restricted speed, prepared to stop. The speed was reduced to about 25 miles per hour when passing the distant signal, after which time the fireman remarked, "We are going the wrong way." This remark was interpreted by the engineman to mean that their train was going to be diverted to some other track at Beverly, and it confused him, as he could not understand how it could be reversed when a message received at Armour stated that there were no wires south of Armour and consequently the dispatcher could not issue a train order at Beverly for a diverging movement. However, he thought that possibly the fireman could see better than he and had seen the bottom arm of the home signal displayed for a reverse movement. The engineman made a further brake-pipe reduction and moved the brake valve from running to lap position. The

The engine was within about 300 feet of the home signal before he could see the stop indication displayed by that signal and he immediately called, "Derail board", then moved the brake valve to emergency position as the engine entered the derail.

The air brakes on train No. 68 were tested at St. Joseph and they worked properly en route. In order to make a reverse movement at Beverly it is necessary to obtain a train order authorizing such a movement, and when it is made the southward distant signal displays a restrictive indication, and the southward home signal displays a proceed-at-restricted-speed indication, in which the bottom arm of the signal is lowered. On previous trips train No. 68 had frequently been diverted to the northward track at Beverly.

Conclusion

This accident was caused by failure properly to obey interlocking signal indications.

Respectfully submitted,

W. J. PATTERSON

Director.