RAILROAD ACCIDENT INVESTIGATION

Report No 4013

THE PENNSYLVANIA RAILROAD COMPANY

ORLEANS, N Y

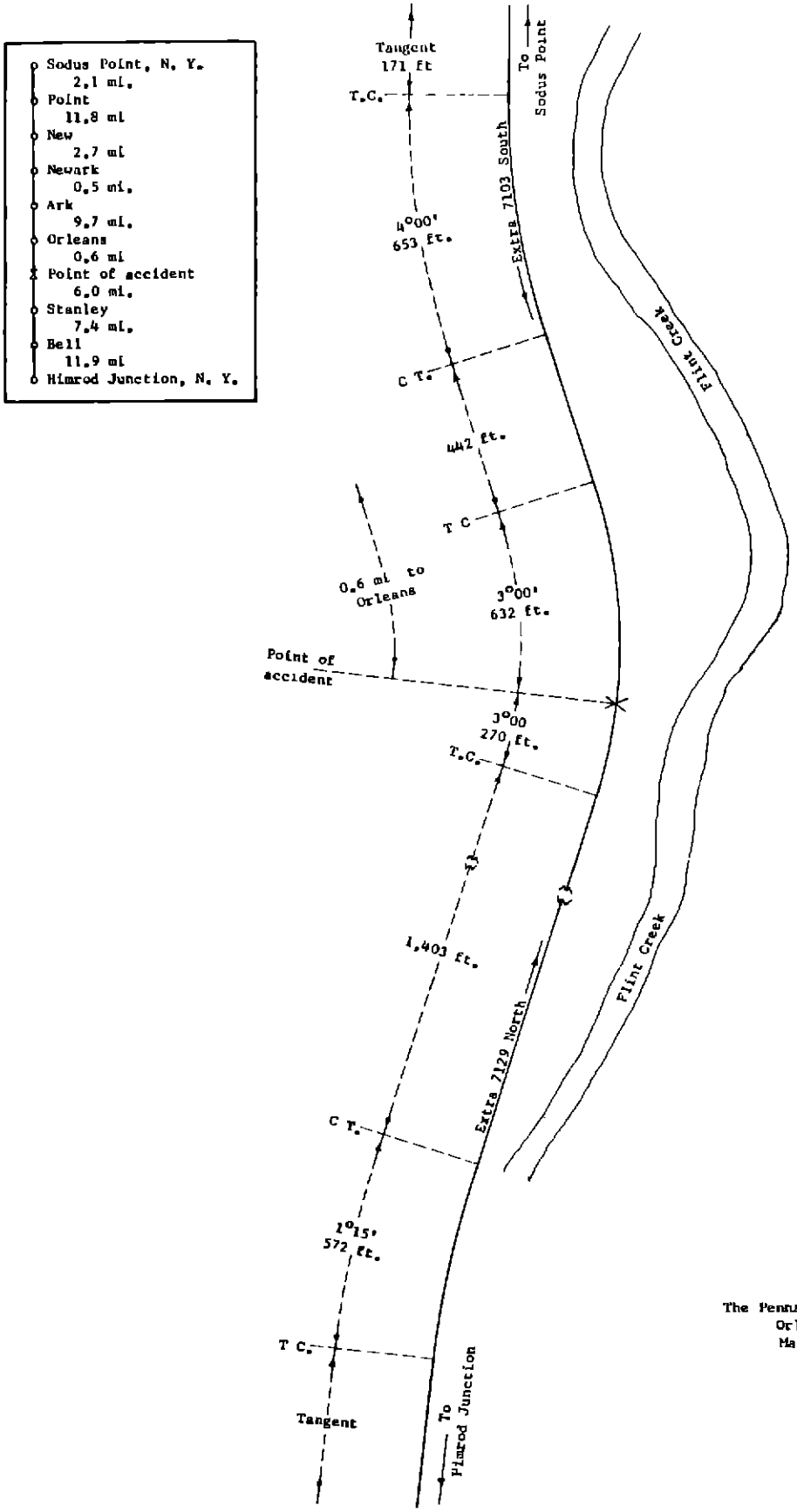
MAY 14, 1964

INTERSTATE COMMERCE COMMISSION

Washington

SUMMARY

DATE	May 14, 1964	
RAILROAD	Pennsylvania	
LOCATION	Orleans, N Y	
KIND OF ACCIDENT	Head-end collision	
TRAINS INVOLVED	Freight	Freight
TRAIN NUMBERS	Extra 7103 South	Extra 7129 North
LOCOMOTIVE NUMBERS	Diesel-electric units 7103, 7235, 9660	Diesel-electric units 7129, 7141, 7240
CONSISTS	114 cars, caboose	Diesel-electric unit 8623 in tow, 47 cars, caboose
SPEEDS	17 m p h	29 m p h
OPERATION	Timetable special instructions, manual block-signal system	
TRACK	Single, 3°00' curve, 0 70 percent descending grade northward	
WEATHER	Misty	
TIME	3 00 p m	
CASUALTIES	3 killed, 5 injured	
CAUSE	Northbound train occupying a manual block without authority	
RECOMMENDATION	That the Pennsylvania Railroad provide additional protection for train movements at unattended block-limit stations in manual block-signal territory	



The Pennsylvania Railroad
Orleans, N Y.
May 14 1964

View from about 350 feet south of accident point

First and second diesel-electric units of Extra 7129 North sh[illegible] at bottom of photo, [illegible] electric unit 8623 in tow

INTERSTATE COMMERCE COMMISSION

SAFETY AND SERVICE BOARD NO. 1

RAILROAD ACCIDENT INVESTIGATION

Report No 4013

THE PENNSYLVANIA RAILROAD COMPANY

May 14, 1964

Synopsis

About 3 00 p m , May 14, 1964, at Orleans, N Y , a head-end collision occurred between two freight trains on the Pennsylvania Railroad Three train-service employees were killed and five were injured

The accident was caused by the northbound train occupying a manual block without authority.

LOCATION AND METHOD OF OPERATION

The accident occurred on that part of the Northern Division of the Pennsylvania Railroad extending between Himrod Junction and Sodus Point, N Y , 52 7 miles, a single-track line designated as the Sodus Bay Secondary Track Trains are operated over this line by timetable special instructions and a manual block-signal system

The accident occurred on the main track 25 3 miles north of Himrod Junction and 0 6 miles south of Orleans, within the block extending between Bell and Ark

Block-limit stations designated as Bell, Ark, New, and Point are located, respectively, 11 9, 35 6, 38 8, and 50 6 miles north of Himrod Junction A block signal, governing northbound movements on the Sodus Bay Secondary Track, is located near the Himrod Junction block station. This signal and the block-limit stations mentioned above are controlled by the block station operator at Himrod Junction

Description and Discussion

On the Sodus Bay Secondary Track, trains may operate between block-limit stations by verbal permission of the Himrod Junction operator, acting under instructions of the train dispatcher The operator may give a train at a block-limit station verbal permission to enter one block, and the train-phone or telephone may be used to give such permission A train must not enter a block without a proper block-signal indication or permission of the operator

Extra 7103 South, a southbound freight train, consisting of three diesel-electric units, 94 cars and a caboose, left Sodus Point at 12 20 p m with verbal permission from the Himrod Junction operator to pass Point as though a Clear-block signal was displayed The train passed Point at 12 45 p m At 1 25 p m , it passed New with verbal permission from the operator to proceed to Ark as though a Permissive-block signal was displayed After passing New, Extra 7103 South proceeded southward to Newark, 0 5 miles north of Ark, where it stopped to pick up twenty cars While these cars were being added to the train, the conductor telephoned the Himrod Junction operator and received verbal permission for the train to pass Ark and continue 16 3 miles farther southward to Stanley as though a Clear-block signal was displayed The operator instructed the conductor that Extra 7103 South was required to enter the siding at Stanley to meet a northbound train The operator also instructed him to report when his train had entered the Stanley siding and cleared the block between Ark and Bell Extra 7103 South left Newark about 2 15 p m with 114 cars Five minutes later, it passed Ark and proceeded en route to Stanley as verbally authorized by the Himrod Junction operator All crew members knew their train was required to enter the siding at Stanley to clear the block for a northbound train, but were not informed as to the identity of the opposing train

Extra 7103 South closely approached Orleans about 3 00 p m As it moved in this vicinity, the enginemens' view of the track ahead was materially restricted by track curvature, trees along the track structure, and walls of cuts Shortly after the locomotive passed Orleans, and while the train was moving at 17 miles per hour, as indicated by the speed-recording tape, the engineer suddenly saw the locomotive of Extra 7129 North at a distance of about 450 feet He promptly called a warning and applied the brakes in emergency The collision occurred immediately afterward, before the speed of Extra 7103 South was materially reduced The engineer and fireman of this train, and the conductor and swing brakeman, who were also on the locomotive, were injured

According to their statements, the crew members of Extra 7103 South did not receive, transmit or overhear any communication on the trainphone equipment of the locomotive after departure from Sodus Point on the day of the accident

Extra 7129 North, a northbound freight train, consisted of three diesel-electric units, coupled in multiple-unit control, a diesel-electric unit in tow, 47 cars and a caboose The train left Elmira, N Y at 12 17 p m and proceeded 4 1 miles over the Erie-Lackawanna Railroad to HO Block and Interlocking Station, where it entered the Elmira Branch of the Pennsylvania Railroad, a single-track branch line extending 32 9 miles northward to Himrod Junction Extra 7129 North passed HO Block and Interlocking Station at 12 32 p m and proceeded under train order and Clearance Card (Form K) authority to Himrod Junction As it approached Himrod Junction, the engineer called the operator by train-phone and inquired as to the condition of the block between Himrod Junction and Bell The

operator replied that the train could continue northward, and at this time he caused the signal at Himrod Junction to display a Clear-block aspect This authorized the train to pass Himrod Junction and proceed to Bell The train was required to stop at Bell unless the conductor or engineer obtained permission from the Himrod Junction operator to proceed in the adjacent block extending between Bell and Ark

Extra 7129 North passed Himrod Junction at 1 59 p m According to the fireman, at about 2 30 p m , while approaching Bell, the front brakeman left the control compartment of the second diesel-electric unit and came to the control compartment of the first unit, where he stood behind the engineer Soon afterward, upon completion of a brief conversation with the engineer, he returned to the second diesel-electric unit The fireman did not overhear this conversation He said the engineer called "Clear block" immediately after the front brakeman left the control compartment, and he did not question the authority for this call The fireman did not hear any communication over the train-phone system in approach to Bell He assumed the front brakeman had used the train-phone equipment of the second diesel-electric unit to obtain the Himrod Junction operator's permission to pass Bell and had relayed this permission to the engineer The fireman said he assumed this because it was possible for the train-phone of the first diesel-electric unit to be inoperative while the train-phone of the second unit was operative The investigation disclosed nothing to indicate that the train-phone equipment of the first diesel-electric unit of Extra 7129 North was defective on the day of the accident

As Extra 7129 North closely approached Bell, the engineer again called "Clear Block" and the fireman said he repeated the call There was no further communication between the enginemen prior to the accident When the train passed Bell the conductor and flagman, who were in the caboose, assumed the engineer had communicated with the Himrod Junction operator and obtained permission to enter the block between Bell and Ark

About thirty minutes after passing Bell, the train entered the curve involved at 29 miles per hour, as indicated by the speed-recording tape, and soon afterward collided with Extra 7103 South The engineer, front brakeman, and swing brakeman were killed The fireman was injured The fireman was the sole survivor of the four employees on the locomotive of Extra 7129 North, and apparently neither he nor the engineer saw the opposing train prior to the collision The conductor and flagman could not recall whether the brakes were applied in emergency before the collision

The train dispatcher and the Himrod Junction operator said they did not authorize Extra 7129 North to enter the block between Bell and Ark They said Extra 7129 North had been authorized to proceed from Himrod Junction to Bell and it was intended this train should wait at Bell until Extra 7103 South had entered the siding at Stanley and cleared the block between Bell and Ark The Himrod Junction operator said he had no communication with Extra 7103 South after he gave the conductor of this train verbal permission to pass Ark and proceed to Stanley He also said he had no communication with Extra 7129 North after this train passed the block signal at Himrod Junction

FINDINGS

The investigation disclosed that before Extra 7103 South entered the block between Ark and Bell, the conductor obtained verbal permission by telephone from the Himrod Junction operator to pass Ark and proceed to Stanley as though a Clear-block signal was displayed It also disclosed the opposing train, Extra 7129 North, entered the block involved without permission of the operator, who intended to hold this train at Bell until the conductor of Extra 7103 South reported his train had entered the siding at Stanley and cleared the block The engineer, front brakeman and swing brakeman of Extra 7129 North were killed in the accident The investigation disclosed nothing to indicate the Himrod Junction operator had communicated with any crew member of Extra 7129 North after this train passed Himrod Junction The reason why Extra 7129 North did not stop and remain at Bell as required could not be determined

CAUSE

This accident was caused by the northbound train occupying a manual block without authority

RECOMMENDATION

It is recommended that the Pennsylvania Railroad provide additional protection for train movements at unattended block-limit stations in manual block-signal territory

Dated at Washington, D C , this third
day of December, 1964

By the Commission, Safety and Service Board No 1

(SEAL)

HAROLD D McCOY,

Secretary

APPENDIX

Track Structure.

The main track in the accident area is laid in a sidehill cut The wall of the cut is on the west side of the track structure and rises to a maximum height of about 22 feet above rail level The shoulder of the cut is about 40 feet east of the track Eastward from the shoulder, the ground slopes downward at about 45 degrees to the west bank of Flint Creek, 60 to 70 feet below the track

From the south on the main track there are, in succession, a lengthy tangent, a 1°15′ curve to the right 572 feet, a tangent 1,403 feet, and a 3°00′ curve to the left 270 feet to the accident point and 632 feet northward From the north there are, successively, a series of short curves and tangents throughout a considerable distance, a tangent 171 feet, a compound curve to the left having a maximum curvature of 4°00′, 653 feet, a tangent 442 feet, and the curve on which the accident occurred In this vicinity, the average grade for northbound trains is 0 70 percent descending

Trains Involved

Extra 7103 South consisted of road-switcher type diesel-electric units 7103 and 7235, and car-body type unit 9660, coupled in multiple-unit control, 114 cars and a caboose The first and third diesel-electric units were equipped with trainphones and the second unit and the caboose were not As the train approached the accident point, the engineer, fireman, and conductor were in the control compartment at the rear of the first diesel-electric unit The front brakeman and swing brakeman were in the control compartment at the rear of the third unit, and the flagman was in the caboose The brakes of the train had been tested and had functioned properly when used en route

Extra 7129 North consisted of road-switcher type diesel-electric units 7129, 7141 and 7240, coupled in multiple-unit control, switcher type diesel-electric unit 8623 in tow, 47 cars and a caboose The first and second diesel-electric units were equipped with trainphones and the third unit and the caboose were not As this train approached the accident point, the engineer and fireman were in the control compartment at the rear of the first diesel-electric unit The front brakeman and swing brakeman were in the control compartment of the second unit, and the conductor and flagman were in the caboose The brakes of the train had been tested and had functioned properly when used en route

Resultant Damages

The three diesel-electric units, the first to seventh cars, inclusive, and the eleventh and thirteenth cars of Extra 7103 South were derailed The first diesel-electric unit stopped upright with the front end a few feet west of the track structure near the accident point and with the rear end on the track structure The second and third units stopped upright on and in line with the track structure immediately to the rear of the first unit The derailed cars stopped in various positions on or near the track structure to the rear of the diesel-electric units The first and second diesel-electric units were heavily damaged and the third unit was somewhat damaged Of the derailed cars, four were heavily damaged and five somewhat damaged

The three locomotive units, the diesel-electric unit in tow, and the first to eighth cars, inclusive, of Extra 7129 North were derailed The first diesel-electric unit overturned to the right and stopped upside-down with the front end on the west bank of Flint Creek about 120 feet north of the accident point Its rear end extended diagonally southward into the creek and was slightly submerged The second unit also overturned to the right and stopped on the bank of the creek, adjacent to and above the first unit The third diesel-electric unit and the unit in tow jackknifed to the right, and each stopped upright with one end on the track structure and the other on the shoulder of the sidehill cut The derailed cars stopped in various positions on the track structure and the slope to Flint Creek The first and second diesel-electric units were destroyed, the third unit was heavily damaged, and the unit in tow was somewhat damaged Of the derailed cars, three were destroyed, three heavily damaged, and two slightly damaged The ninth and tenth cars were also destroyed

Operating Rules

SECONDARY TRACK - A designated track upon which trains and engines may be operated without time-table authority, train orders or block signals

271 On designated secondary tracks so specified on the time-table, movements of trains will be made on verbal permission of the operator * * *

MANUAL BLOCK SIGNAL SYSTEM

305 * * *

At a block-limit station trains will be governed in their use of the block by instructions of the operator in charge of the block-limit station as indicated on the timetable

317 * * *

Before admitting a train or engine to a block under Clear-block signal, the operator in charge of the block station or block-limit station at the entrance of the block must know that the block is clear and that no other train or engine has been given permission or a signal to enter the block Signals governing opposing movements where provided, must display Stop-signal The operator will then display a Clear block signal for the train or engine to be admitted to the block The operator in charge of a block-limit station may give a train or engine at that block limit station verbal permission to enter one block The operator, when authorized by the Superintendent Transportation, will issue Clearance Card (Form K) to a train to pass one or more block-limit stations as though Clear block signal were displayed

* * *

326 When a train clears the main track, the operator must know that it is clear of the block before reporting the block clear or displaying a Clear-block signal for that block

* * *

361 * * *

Unless authorized to proceed by Clearance Card (FormK), or as provided by Telephone-Trainphone Rules, trains must stop at block-limit stations and the conductor or engineman must communicate with the operator in charge as to the condition of the next block * * *

365 * * *

A train must not enter a block * * * without proper block signals or permission of the operator * * *

TELEPHONE-TRAINPHONE

702 * * *

Trainphone will be used for communication between engines, cars, stations * * * and other locations, for conducting transportation

705 Employees must insure being in communication with the proper persons and must not take action until certain that all the conversation concerning them has been heard, understood, acknowledged and finished

When telephone or trainphone is used for block operations, * * * the conductor, engineman, or driver of track car must personally receive all communications and take all necessary action They must identify themselves to the operator * * * by giving name, occupation, identification, and location of train engine, track car or other equipment involved Operators must identify themselves by name occupation and station

707 Trainphone may be used for communication incident to Manual Block Signal System operation as follows

For the operator in charge of a block-limit station to give a train verbal permission to enter one block

The maximum authorized speed for freight trains in the territory involved is 30 miles per hour

Interstate Commerce Commission
Washington, D. C. 20423

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