

RAILROAD ACCIDENT INVESTIGATION

REPORT NO. 4142

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UNION PACIFIC RAILROAD COMPANY

WAMEGO, KANSAS

DECEMBER 21, 1967

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DEPARTMENT OF TRANSPORTATION  
FEDERAL RAILROAD ADMINISTRATION  
Washington, D. C. 20591

Summary

DATE:	December 21, 1967	
RAILROAD:	Union Pacific	
LOCATION:	Wamego, Kansas	
KIND OF ACCIDENT:	Collision	
TRAINS INVOLVED:	Freight	Passenger
TRAIN NUMBERS:	Extra 857 West	18
LOCOMOTIVE NUMBERS:	Diesel-electric units 857, 729B, 738B	Diesel-electric unit 962A
CONSISTS:	54 cars, caboose	6 cars
SPEEDS:	50 m.p.h.	15 m.p.h.
OPERATION:	Timetable, train orders, automatic block-signal system	
TRACK:	Single; tangent; level	
WEATHER:	Clear	
TIME:	9:29 p.m.	
CASUALTIES:	79 injured	
CAUSE:	Inaction of the engineer, possibly due to becoming incapacitated, to stop the passenger train on the siding as required and failure of the fireman to take appropriate action in sufficient time to stop the passenger train on the siding clear of the main track, resulting in the passenger train fouling the main track at the east turnout of the siding immediately in front of the westbound freight train.	

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Synopsis

On December 21, 1967, a collision occurred between a freight train and a passenger train on the Union Pacific Railroad at Wamego, Kansas. Seventy-nine passengers and employees were injured.

The accident was caused by inaction of the engineer, possibly due to becoming incapacitated, to stop the passenger train on the siding as required and failure of the fireman to take appropriate action in sufficient time to stop the passenger train on the siding clear of the main track, resulting in the passenger train fouling the main track at the east turnout of the siding immediately in front of the westbound freight train \*

\*The Federal Railroad Administration has no jurisdiction over railroad operating rules; track structures; bridges; rail-highway grade crossing protection; track clearances; consist of train crews; qualifications or physical condition of railroad employees; running and draft gear on cars, or the construction of cars except those appurtenances within jurisdiction of the Safety Appliances Act and the Power Brake Law of 1958

### Location and Method of Operation

The accident occurred on that part of the Kansas Division extending between Junction City and Terminal Jct., Kansas City, Kansas, a distance of 136 2 miles. In the accident area this is a single-track line over which trains operate by timetable, train orders and an automatic block-signal system

At Wamego, 34.8 miles east of Junction City, a siding 1 4 miles long parallels the main track on the south. The east siding-switch is 1.2 miles east of the station. The designated fouling point of the main track and the east end of the siding is 206 feet west of the east siding-switch.

The collision occurred 77 feet west of the east switch of the Wamego siding, and 129 feet east of the fouling point of the main track and the east end of the siding.

### Time and Weather

The collision took place at 9:29 p m., in clear weather

### Track

The main track is tangent and practically level a considerable distance east and west of the collision point

### Signal

Automatic signal 1035, governing westbound movements on the main track, is 76 feet east of the east switch of the Wamego siding. The circuits are so arranged that the signal displays a Stop aspect for an approaching westbound train if its block is occupied, or if the Wamego siding is occupied within 206 feet of the east switch

### Carrier's Operating Rules

Restricted Speed. - Proceed prepared to stop short of train, obstruction, or switch not properly lined \*\*\* but a speed of 15 miles per hour must not be exceeded.

17. Headlight must be displayed, burning bright to the front of every train by day and night. It must be extinguished when a train has stopped clear of main track to meet a train, \*\*\*

S-17 When headlight of a train on siding is burning, an opposing train must approach prepared to stop before passing headlight and if the head end of train is clear of main track, may proceed at restricted speed to the point where main track may be obstructed.

\*\*\*

- 81 (A). When a train, either on main track or on siding, is to be stopped to be met \*\*\* by another train, \*\*\* stop should be made not less than 300 feet from fouling point \*\*\*

106. \*\*\*

Brakemen and firemen must call attention of conductor or engineer immediately to any apparent failure to observe the requirements of rules, timetable, train orders \*\*\*

When conditions \*\*\* require that the train be stopped or speed of train be reduced and the engineer or conductor fails to take proper action to do so, or should the engineer become incapacitated, brakemen and firemen must take immediate action to stop train

Maximum Authorized Speeds

The maximum authorized speed for freight trains in the territory involved is 60 miles per hour. However, all trains moving on the Wamego siding are restricted to a maximum speed of 15 miles per hour

Circumstances Prior to Accident

Train Extra 857 West

Extra 857 West, a westbound freight train consisting of 3 diesel-electric units, 54 cars and a caboose, left Terminal Jct., Kansas City, at 7:21 p m the day of the accident, after having received a brake test. It passed Topeka, 64 7 miles west of Terminal Jct., at 8:37 p.m , and copies of train order No 52 were delivered to the crew members at that point. About 50 minutes later, the train neared Wamego, where it was required to meet train No. 18 under the provisions of order No 52. The engineer, fireman and front brakeman were in the control compartment at the front of the first diesel-electric unit, which was of the road-switcher type. The conductor and flagman were in the caboose

Train No. 18

No 18, an eastbound first-class passenger train consisting of 1 car-body type diesel-electric unit, 2 baggage cars and 4 coaches, left Junction City at 8:34 p m., 36 minutes late the day of the accident, after its brakes had been tested and had been found to be functioning properly. Soon afterward, it stopped at Manhattan, 14 6 miles west of Wamego, where copies of train order No. 52 were delivered to the crew members. The train then left Manhattan, about 9:02 p.m , and proceeded toward Wamego to meet Extra 857 West as required by the train order. The engineer and fireman were in the control compartment at the front of the locomotive. The conductor, front brakeman and flagman were at various locations in the cars

Train Order No. 52

The order read in part as follows:

Eng 857 run extra Silver Lake to Junction City  
and has right over No 18 Eng 962 Silver Lake  
to Wamego No 18 take siding at Wamego

\*\*\*

Silver Lake is 26.0 miles east of Wamego. Train order No. 52 established Wamego as the meeting point for Extra 857 West and No. 18. Under its provisions and the carrier's rules, Extra 857 West was authorized to proceed on the main track from Silver Lake to Wamego, and to hold the main track at the latter point to meet No. 18. It was required to stop at least 300 feet short of the fouling point of the main track and the west end of the Wamego siding, unless No. 18 had entered the siding at the west switch and had cleared the main track.

The order and the carrier's rules required No. 18 to enter the Wamego siding at the west switch, and restricted it from proceeding eastward on the siding beyond a point 300 feet west of the fouling point of the main track and the east end of the siding, unless Extra 857 West had passed and cleared the east siding-switch.

The AccidentTrain Extra 857 West

Extra 857 West passed Silver Lake at 8:55 p.m. Approximately 33 minutes later, it approached signal 1035 and the east switch of the Wamego siding at 54 miles per hour, as indicated by the speed-recording tape. While approaching Wamego at a considerable distance, the enginemen and front brakeman saw that signal 1035 was displaying a Clear aspect. In addition, they saw the revolving amber light on the locomotive of No. 18 and saw that the headlight of the locomotive was extinguished. This indicated to them that No. 18 had entered the Wamego siding and had cleared the main track for their train, as required by train order No. 52.

As Extra 857 West neared signal 1035 and the east switch of the Wamego siding, the engineer initiated a service application of the brakes to reduce speed as required for a speed-restriction zone beyond the east siding-switch. However, before the brake application became effective, he and the other crew members on the locomotive saw the aspect displayed by signal 1035 suddenly change to Stop, noticed that the locomotive of No. 18 was fouling the main track at the east turnout of the siding, and saw the fireman of No. 18 giving stop signals with a flashlight from a point on the main track a short distance west of the east siding-switch. According to the front brakeman, Extra 857 West was not more than 900 feet from signal 1035 at that time. The engineer promptly applied the train brakes in emergency. Realizing a collision was inevitable, he and the front brakeman then sat on the floor

of the control compartment and braced themselves. The fireman remained in his seat. Moments later, at 9:29 p.m., when its speed had been reduced to 50 miles per hour, Extra 857 West collided with the locomotive of No. 18, 77 feet west of the east switch of the Wamego siding and 129 feet east of the fouling point of the main track and the east end of the siding.

#### No. 18

Shortly before the accident, No. 18 entered the Wamego siding at the west switch to meet Extra 857 West as required by train order No. 52. The train then proceeded eastward on the siding, attaining a speed of 21 miles per hour while moving in the Wamego station area, as indicated by the speed-recording tape. After passing the station and moving over road crossings in that area, the engineer extinguished the headlight in violation of the carrier's operating Rule No. 17, but permitted the revolving amber light on the locomotive to continue to function. At this time, both he and the fireman could see Extra 857 West approaching the east switch of the Wamego siding at a considerable distance.

When No. 18 reached a point about midway on the siding, the engineer made a light application of the brakes to reduce speed slowly as the train proceeded eastward. According to the engineer's statements, a diabetic condition caused him to "black out" while approaching a rail-highway grade crossing located 763 feet west of the east siding-switch. He stated that he partially regained consciousness after his locomotive moved over the crossing, when he heard the fireman shout "We are going too far." He further stated that he then applied the train brakes in emergency, immediately lapsed into unconsciousness again, and did not regain consciousness until the next day in the hospital.

Shortly after the locomotive of No. 18 moved over the grade crossing mentioned above, the fireman saw that Extra 857 West was closely approaching the east switch of the siding and was about to pass his train. To avoid the possibility of being struck by anything projecting from the opposing train when it passed on the main track, he left his seat and stood behind the engineer. According to his statements, the fireman did not notice any unusual condition of the engineer and did not realize anything was wrong until he saw that his train was getting close to the east siding-switch and that it was not stopping clear of the main track. He stated that he called a warning to the engineer at this time and the engineer promptly responded by applying the brakes in emergency. Realizing then that his train could not stop on the siding before it fouled the main track in front of Extra 857 West, the fireman alighted from the locomotive and gave the opposing train stop signals with a flashlight from the main track structure. Apparently about the same time that the fireman alighted, the locomotive passed the fouling point of the main track and the east end of the siding. Immediately thereafter, it collided with the locomotive of Extra 857 West.

The speed tape indicates that No. 18 had reduced speed to 17 miles per hour when its brakes were applied in emergency, and that its speed was reduced to 15 miles per hour at the time of the collision

#### Casualties

The engineer, fireman, front brakeman and conductor of Extra 857 West, and the engineer, conductor, front brakeman, flagman, train baggageman, 1 chair car attendant and 69 passengers of No. 18 were injured.

#### Damages

##### Extra 857 West

All three diesel-electric units and the first 9 cars of Extra 857 West were derailed. The first diesel-electric unit separated from the second unit and stopped on its left side with the front end facing westward, 50 feet north of the main track and 94 feet west of the collision point. The second and third units stopped upright on and in line with the main track structure, and with the front of the second unit 109 feet west of the first unit. The nine derailed cars stopped in various positions on or near the main track structure. The locomotive units were heavily damaged. Of the nine derailed cars, four were destroyed, one heavily damaged, and two somewhat damaged.

##### No. 18

No 18 was moved six feet westward by the impact. All trucks of the locomotive and first car, and the front truck of the second car were derailed. Separations occurred at both ends of the first car. The locomotive overturned and stopped on its right side, on the south side of, and parallel to, the siding. The first car also overturned onto its right side. It stopped on and in line with the south side of the siding structure immediately behind the locomotive. The second car stopped upright on and in line with the siding structure immediately to the rear of the first car. The locomotive was destroyed, and the first and second cars were somewhat damaged.

According to the carrier's estimate, the cost of damages to the track structure and the equipment of both trains, exclusive of lading, was \$174,688.

#### Train Crews Hours of Service

##### Extra 857 West

At the time of the accident, the engineer and fireman had been on duty 3 hours 9 minutes. The conductor, front brakeman and flagman had been on duty 2 hours 59 minutes. All crew members were previously off duty over 24 hours.



No. 18

At the time of the accident, the engineer and fireman had been on duty 1 hour 29 minutes. The conductor, front brakeman and flagman had been on duty 5 hours 14 minutes. All crew members were previously off duty more than nine hours.

Engineer of No. 18Age and Experience

The engineer was 67 years old and had 49 years of engine-service experience, including approximately four years service as an engineer on No. 18. He was familiar with the Wamego siding, having frequently operated trains required to enter that siding.

Physical Condition

Before going on duty for the trip involved, the engineer had been off duty 9 hours 28 minutes in Junction City. According to his statements, he had adequate rest before going on duty and had not felt sleepy or fatigued while en route from Junction City to the collision point.

According to the carrier's records, a physical examination conducted on June 21, 1966, revealed that the engineer had a diabetic condition and that he was taken out of service two or three days later for treatment of this condition. The records further indicate that as a result of another physical examination on July 20, 1966, a carrier physician qualified the engineer for service, and the engineer returned to duty a few days later.

The engineer was taken to a hospital in Wamego shortly after the accident and was then transferred to a hospital in Topeka, Kansas. He was admitted to the latter hospital at 12:05 a.m. the day after the accident, and underwent surgery soon thereafter due to the severity of his injuries. According to a physician's report, neither a blood sugar or blood alcohol test was made before the engineer underwent surgery, because such test did not seem to be indicated due to the engineer being in good condition, coherent, and cooperative when admitted to each hospital. The report indicates that the engineer was not in a diabetic coma when admitted to each hospital, nor under the influence of alcohol or suffering any ill effects from medication he was regularly taking to control his diabetic condition.

Analysis of Accident

Extra 857 West was proceeding westward on the main track in approach to signal 1035 and the east switch of the Wamego siding in accordance with applicable rules of the carrier, and as authorized by train order No. 52, when the engineer saw the Clear aspect displayed by signal 1035 change to Stop and saw the locomotive of No. 18 fouling the main track a short distance ahead. He promptly applied the brakes in emergency. However,

at that time there was insufficient braking distance for his train to stop short of signal 1035 or the opposing train fouling the main track, resulting in the collision.

No 18 entered the Wamego siding at the west switch to meet Extra 857 West, as required by train order No. 52. It then proceeded toward the east end of the siding at 21 miles per hour, 6 miles per hour in excess of its maximum authorized speed. While the train was moving on the siding, the engineer extinguished the headlight in violation of the carrier's operating Rule No. 17. When it reached a point about midway on the siding, the engineer began to reduce the speed, indicating that he was alert at this time. Soon afterward, while moving at approximately 17 miles per hour, No. 18 began to move over the grade crossing located 763 feet west of the east siding-switch and to approach a point 506 feet from that switch, or 300 feet west of the fouling point of the main track and the east end of the siding, where it was required by the carrier's Rule 81 (A) to stop and wait for Extra 857 West to pass on the main track. The engineer took no action at this time to stop the train on the siding as required and the fireman felt no alarm about this lack of action, apparently as a result of assuming that the engineer intended to stop the train a relatively few feet short of the fouling point rather than 300 feet distant. Soon afterward, as No. 18 neared the fouling point at 17 miles per hour, the fireman realized that the engineer was not taking any action to stop the train on the siding and that the locomotive was about to foul the main track immediately in front of Extra 857 West. He shouted a warning and the engineer immediately applied the brakes in emergency. However, the fireman's warning and the emergency brake application occurred too late to stop No. 18 short of the fouling point, resulting in the locomotive moving beyond that point and fouling the main track immediately in front of the opposing train, causing the accident.

It is evident that lack of action by the engineer of No. 18 to stop his train on the siding short of the fouling point was the primary cause of the accident. A contributing cause was failure of the fireman to take prompt action, as required by the carrier's operating Rule 106, to stop the train when the engineer failed to take any action to stop on the siding as prescribed by the carrier's operating Rule 81 (A). Failure of the engineer to keep the headlight of No. 18 illuminated while moving on the siding, as required by the carrier's operating Rule No. 17, apparently was a casual factor in the accident. Had the headlight remained illuminated, the engineer of Extra 857 West probably would have controlled the speed of his train in approach to the east switch of the Wamego siding as prescribed by the carrier's Rule No. S-17. Thus, he probably would have been able to stop his train short of a collision, after seeing the aspect by signal 1035 change to Stop and seeing No. 18 foul the main track at the east end of the siding.

In view of his statements, it would appear that the engineer of No. 18 did not stop his train on the Wamego siding clear of the main track due to lapsing into unconsciousness, as a result of a diabetic condition, while his train neared the point where it was required to stop and wait for Extra 857 West to pass. On the other hand, the report of the carrier's physician concerning the engineer's physical condition when admitted to hospitals after the accident tends to indicate that the engineer's diabetic condition was not a contributing factor in the accident. Because of this conflict between the engineer's statements and the physician's report, some doubt is cast upon the reason that the engineer gave for failing to stop his train on the siding clear of the main track. The reason why he failed to do so therefore cannot be definitely determined. However, under the circumstances disclosed by the investigation and in the absence of information relating to any other reason, weight must be given to the engineer's reason for failing to stop his train on the Wamego siding as required.

#### Findings

1. Extra 857 West was moving in accordance with applicable rules of the carrier and the provisions of train order No 52 when No. 18 fouled the main track a short distance ahead. At that time, there was insufficient braking distance for Extra 857 West to stop short of a collision.
2. No 18 entered the Wamego siding at the west switch to meet Extra 857 West, as required by train order No 52.
3. No. 18 proceeded eastward on the siding at various speeds slightly in excess of its maximum authorized speed on the siding. The excessive speed, however, was not a significant factor in the accident.
4. The engineer extinguished the headlight of No 18 while moving on the siding, in violation of the carrier's operating Rule No. 17. Had the headlight remained lighted, the engineer of Extra 857 West possibly would have controlled the speed of his train in approach to the east siding-switch as prescribed by the carrier's operating Rule No. S-17. In this event, Extra 857 West probably could have stopped on the main track a sufficient distance east of the east siding-switch to prevent the collision, after its enginemen saw No 18 foul the main track at the east end of the siding.
5. No. 18 failed to stop on the siding and wait for the opposing train to pass, as required. As a result, its locomotive fouled the main track at the east turnout of the siding immediately in front of Extra 857 West, causing the accident.

6. The primary cause of the accident was lack of action by the engineer of No. 18, possibly as a result of becoming incapacitated, to stop his train on the siding as required by the carrier's Rule 81 (A) when a train enters a siding to meet an opposing train.
7. A contributing cause was failure of the fireman of No 18 to take appropriate action to stop his train on the siding when the engineer failed to take such action, as required by the carrier's Rule 106.

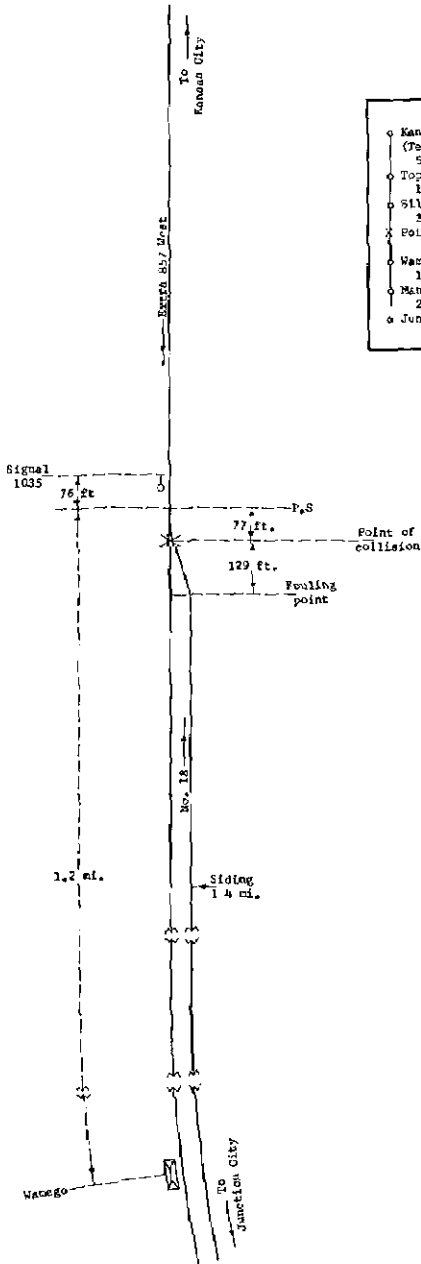
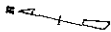
Cause

The accident was caused by inaction of the engineer, possibly due to becoming incapacitated, to stop the passenger train on the siding as required and failure of the fireman to take appropriate action in sufficient time to stop the passenger train on the siding clear of the main track, resulting in the passenger train fouling the main track at the east turnout of the siding immediately in front of the westbound freight train.

Dated at Washington, D. C., this 10th  
day of January 1969  
By the Federal Railroad Administration,  
Railroad Safety Board

Bette E. Holt  
Acting Executive Secretary

(SEAL)



- |   |                     |
|---|---------------------|
| ○ | Kansas City, Kans.  |
| ○ | (Terminal Jct )     |
| ○ | 54.7 mi.            |
| ○ | Topeka              |
| ○ | 10.7 mi.            |
| ○ | Silver Lake         |
| ○ | 34.8 mi.            |
| X | Point of collision  |
| ○ | 1.2 mi.             |
| ○ | Wamego              |
| ○ | 14.6 mi.            |
| ○ | Manhattan           |
| ○ | 20.2 mi.            |
| ○ | Junction City, Kans |

Union Pacific Railroad  
 Wamego, Kansas  
 December 21, 1967