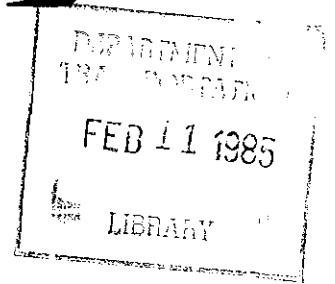


III  
1700  
1132  
100  
80 5  
80 6  
80 7

# Railroad accident investigation reports



**REPORT NO. 80-7  
ATCHISON, TOPEKA AND SANTA FE  
RAILWAY COMPANY  
CARNERO, NEW MEXICO  
DECEMBER 31, 1978**



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL RAILROAD ADMINISTRATION  
Office of Safety**

FEDERAL RAILROAD ADMINISTRATION

OFFICE OF SAFETY

---

---

RAILROAD ACCIDENT INVESTIGATION

ACCIDENT REPORT NO. 80-7

---

---

ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY

CARNERO, NEW MEXICO

DECEMBER 31, 1978

---

---

Synopsis

On December 31, 1978, at approximately 6:10 a.m., a side collision occurred between two Atchison, Topeka and Santa Fe Railway Company (ATSF) freight trains at the Carnero, New Mexico west siding switch. Light snow was falling at the time of the accident.

Casualties

The engineer of the westbound train and the flagman of the eastbound train were fatally injured in the collision. The conductor of the eastbound train was seriously injured.

Cause

The accident was caused by the failure of the engineer of the westbound train to operate that train in accordance with signal indications. At the time of the accident the engineer was under the influence of alcohol.

## Location and Method of Operation

The accident occurred on that section of the ATSF extending from Clovis to Belen, New Mexico, a distance of 240.7 miles. This is single main track territory. Train movement in this area is governed by signal indications of a traffic control system.

The collision occurred at the west end of the Carnero siding, where the main track and the siding converge. Carnero siding is located 142 miles west of Clovis, and 98.7 miles east of Belen.

### Track

From the east there are successively, a 1° curve to the right for 3,408 feet, a tangent 4,375 feet, a 0° 30' curve to the left for 5,080 feet, and a tangent 110 feet to the point of collision and several thousand feet beyond.

Approaching the point of accident from the east, the grade ascends at an average of 0.6 percent to Lzano Summit, which is located about 2,900 feet east of the Carnero station sign. From Lzano Summit the grade descends 0.6 percent to the accident area.

At Carnero, there is a siding 1.7 miles in length adjacent to the main track on the south.

### Maximum Authorized Speed

The maximum authorized speed on the Carnero siding is 40 m.p.h. Maximum authorized speed for freight trains handling only loaded cars on the main track is 70 m.p.h.

### Signals

Automatic signal 7983 and controlled signal 132LB, governing westbound train movements through the Carnero siding, are located 5,550 feet and 390 feet east of the point of collision, respectively. They are of the color-light type and continuously lighted.

The applicable signal aspects, corresponding indications and names are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
132LB	Red	Stop	Stop
7983	Yellow	Proceed preparing to stop at next signal; if exceeding medium speed immediately reduce to medium speed.	Approach

Circuits are so arranged that signal 7983 displays a yellow aspect when controlled signal 132LB is in red or stop position. Controlled signal 132LB will continue to display a red aspect until the block is unoccupied and the dispatcher reverses the switch and clears the signal.

#### Applicable Rules

General Rule G - The use of alcoholic beverages, intoxicants, or narcotics by employees subject to duty, or their possession or use while on duty or on Company property, is prohibited.

Employees must not report for duty under the influence of any drug, intoxicant, medication or other substance (including those prescribed by a doctor or dentist) that will in any way adversely affect their alertness, coordination, reaction, response or safety. No such drug, intoxicant, medication or other substance may be used by employees on duty or while on Company property.

Definition of Medium Speed - A speed not exceeding 40 miles per hour.

Rule 30 - When train or engine is moving, a close lookout ahead must be maintained. All members of the crew in the control compartment of the engine must, and other members of train and yard crews will, when practicable, communicate to each other, by its name or aspect, the indication of each signal affecting the movement of their train or engine as soon as it becomes visible or audible. If the engineman fails to control speed in accordance with signal indication or speed restriction, other crew members must take necessary action to ensure safety.

Rule 802(B) - Should the engineman fail to obey signals or become incapacitated, any other available crew member must, if necessary, stop the engine and report the facts to the conductor.

Rule 132 - Trains must not be run in excess of the maximum authorized speed. Conductors and enginemen are jointly responsible for determining the maximum authorized speed for which their train qualifies. (Santa Fe Rules - Operating Department)

1. Speed Regulations -

(c) Speed Restrictions - Switches and Auxiliary Tracks. Maximum speed permitted through turnout of other than main track switches, 10 MPH; switches at each end of sidings on which TCS is in effect, 40 MPH, ...

Trains and engines using auxiliary tracks must not exceed maximum turnout speed for that track ... (ATSF Timetable No. 4 Special Instructions)

Sight Distance

Sight distance is unrestricted for crew members of approaching trains in either direction. However, at the time of the accident, visibility was somewhat hampered by blowing snow.

Circumstances Prior to the Accident

Extra 5568 East

Extra 5568 East, consisting of four diesel-electric locomotive units, 35 loaded trailer-on-flat cars and a caboose, departed Belen at 3:30 a.m. on the day of the accident. The train brakes had been tested by mechanical department employees, and functioned properly when used en route.

At approximately 6:00 a.m., Extra 5568 East approached Carnero operating at a speed of about 70 m.p.h. The train dispatcher had established a meet with Extra 5629 West at Carnero and Extra 5568 East was designated to operate on the main track.

The engineer and the front brakeman were in the control compartment of the leading locomotive unit. The conductor and the flagman were in the caboose.

Extra 5629 West

Extra 5629 West, consisting of four diesel-electric locomotive units, 51 loaded trailer-on-flat cars and a caboose, 3,823 tons departed Clovis at 3:20 a.m. on the day of the accident. Before departure, locomotive unit 5629 was added as the controlling unit because locomotive unit 8703, the last trailing unit in the locomotive consist, was inoperative. The train brakes had been tested by mechanical department employees and had functioned properly when used en route.

As Extra 5629 West approached the Carnero siding, it was moving at a speed of 50 m.p.h. In accordance with the route established by the train dispatcher, the westbound train was routed onto the Carnero siding. The speed was reduced to about 31 m.p.h. as the train entered the siding. At signal 7983, approximately 5,550 feet east of the point of collision, train speed was increased to 44 m.p.h. At this location, the caboose was still on the main track, 600 feet east of the switch.

Approaching the point of collision, the conductor had two brief radio communications with the engineer that the brakes had released when the train entered the siding at Carnero, and a second time after the caboose had cleared the main track. The engineer acknowledged both communications in a normal manner.

The engineer and the front brakeman were in the control compartment of locomotive unit 5629. The conductor and the flagman were in the caboose.

The AccidentExtra 5568 East

Approximately 6,000 feet west of Carnero, the engineer of Extra 5568 East shut off power and made a brake application. Speed was reduced to 60 m.p.h., as the locomotive passed the west end of the Carnero siding. The brakes remained applied and train speed continued to be reduced as the train moved through Carnero on the main track. As the locomotives of the two trains passed, the speed had been reduced to about 55 m.p.h. on Extra 5568 East.

Extra 5568 East was being operated at a speed of 48 m.p.h., when the caboose approached the west end switch of the siding. Shortly thereafter, the rear car and the caboose were struck by the front locomotive unit of Extra 5629 West. The collision caused the caboose to derail and separate from the train. The train brakes were in emergency and the rear car stopped 1,688 feet east of the point of collision. The trailing truck of this car derailed, but the car remained coupled to the train. The flagman of Extra 5568 East was in the caboose at the time of the collision, and sustained fatal injuries. The conductor in that same caboose was severely injured.

#### Extra 5629 West

Automatic signal 7983, governing movements on the Carnero siding, displayed a yellow aspect as Extra 5629 West passed it and proceeded in the siding. According to the front brakeman he called the signal to the engineer, and received an acknowledgement. At this point, the speed of the train was about 44 m.p.h. Shortly after passing the yellow signal, the conductor informed the engineer that the rear end of the train was clear of the main track. This communication was also acknowledged. Train speed was increased in the next 2,000 feet to about 46 m.p.h. Within the following 2,000 feet, the red aspect of signal 132LB came into view, and was called by the brakeman. The engineer acknowledged the call, and shortly thereafter, the front end crew of Extra 5629 West sighted the eastbound train. While the front brakeman inspected the passing train, the engineer made a service application of the air brakes. At a point approximately 2,000 feet from the west siding switch, the engineer initiated an emergency brake application. Extra 5629 West passed signal 132LB at an approximate speed of 30 m.p.h., with the train brakes applied in emergency. The train continued westward on the siding and at the west switch of the Carnero siding struck the rear car and the caboose of Extra 5568 East. The train stopped on the main track with the front locomotive unit 542 feet west of the collision point. As a result of the collision, the engineer sustained fatal injuries.

#### Damages

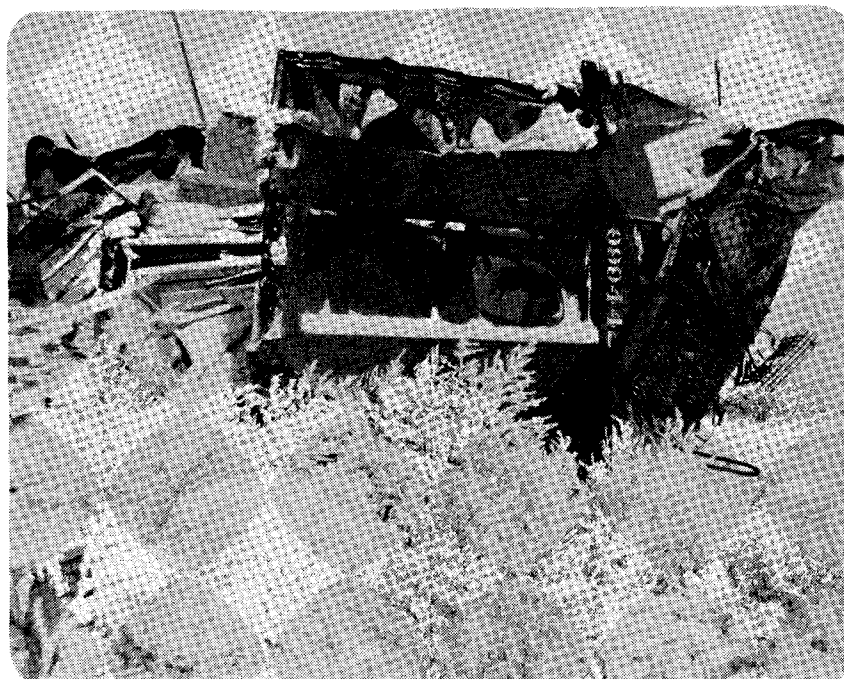
The caboose of Extra 5568 East uncoupled from the train and was thrown to the north side of the main track and into a signal mast. The caboose was destroyed. The trailing truck of the rear car was derailed and this car sustained minor damage.

The upper corner of the caboose ripped through the cab of the lead locomotive unit of Extra 5629 West and tore away part of the cab. The locomotive unit was moderately damaged on the right front and side. None of the equipment of Extra 5629 West was derailed.

The carrier's estimate of damage was \$8,950 to equipment, \$4,014 to track and \$10,000 to signals.



Lead Locomotive Unit of Extra 5629 West



Caboose of Extra 5568 East



## Post-Accident Analysis and Investigation

The front and rear ends of both trains were equipped with operable two-way radios, but there was no radio contact between the trains until after the collision.

Tests of the air brake equipment on both trains were made after the accident and before the trains were moved. The brakes on both trains were found to be functioning properly.

### Extra 5629 West

The lead locomotive unit of Extra 5629 West, unit No. 5629, was equipped with an overspeed device and an alerter. The overspeed device was set to give a warning at a speed of 73 m.p.h. The alerter is designed to detect normal movements of an engineer operating the train. If no movements are detected in a short period, a warning is sounded. The post-accident investigation disclosed that both safety features were cut-out and inoperative at the time of the collision.

The speed recorder on locomotive unit 5629 was operable and equipped with a tape. The speed recorder was calibrated, and train speeds stated in this report are based on that correlation. The carrier's analysis of the speed tape indicated that Extra 5629 West had been operated at excessive speeds prior to the collision.

The controls of locomotive unit 5629 were found after the accident in the following position: the dynamic brake selector lever was in power, the selector lever was in forward, the throttle was in idle, the automatic brake was in handle-off, and the independent brake was in release.

### Crew of Extra 5629 West

The engineer of Extra 5629 West was first employed as a fireman in July 1941. He was promoted to engineer in November 1947. The engineer had been discharged and later reinstated on three occasions for passing a signal displaying a "Stop" indication. These incidents occurred in July 1952, June 1961 and August 1971. He had also been disciplined on two occasions for excessive speed (January 1965 and September 1977). His last physical examination was on February 21, 1978. At this time, his blood pressure was high and medication was prescribed to control it. The engineer had successfully passed a carrier operating rule examination ten months prior to the accident.

The front brakeman and the conductor were both long time employees, with clear records over the past ten years. The flagman had been employed since March 1973. He had also been disciplined in June 1978 for his responsibility in an excessive speed violation. All crew members had been re-examined on the carrier operating rules in the last ten months prior to the accident.

The engineer's body was examined by the New Mexico State Medical Examiner's office. This examination revealed that at the time of death, the engineer's blood alcohol level was .216% or higher. This level exceeds the legal limits of intoxication in the State of New Mexico.

The engineer's suitcase contained a "fifth" liquor bottle labeled "Vodka". The bottle contained about 3/4 ounce of the liquid. Analysis of this liquid revealed that it contained 30% ethyl alcohol, the variety used in alcoholic beverages.

Crew members of Extra 5629 West, and employees at the initial terminal who had talked with the engineer, stated that the engineer behaved normally and did not appear to be under the influence of alcohol.

#### Findings

1. At the time of the accident, Extra 5568 East was being operated in accordance with applicable rules and regulations of the carrier.

2. Calibration of the speed tape on the leading locomotive of Extra 5629 West revealed that the train was being operated at excessive speeds approaching and on the Carnero siding.

3. After passing signal 7983, which displayed a yellow aspect, the engineer of Extra 5629 West took no immediate action to prepare the train for a stop before reaching the next signal. In fact, after passing the signal, train speed was increased.

4. The crew of Extra 5629 West failed to take action to require the train's engineer to control the train speed as the train passed signal 7983 and approached the next signal.

5. While the front brakeman was inspecting the passing train, the engineer made a service application of the train brakes.

6. At a point approximately 2,000 feet from the west siding switch, the engineer initiated an emergency brake application.

7. Extra 5629 West passed signal 132LB displaying a red indication, and collided with the rear end of Extra 5568 East.

Dated at Washington, D. C., this  
9th Day of June 1980  
by the Federal Railroad Administration

J. W. Walsh  
Chairman  
Railroad Safety Board