

**In re Investigation of an accident which
occurred on the Atchison, Topeka &
Santa Fe Railway at Carrizo, Ariz.,
August 18, 1916.**

On August 18, 1916, there was a collision on the Atchison, Topeka & Santa Fe Railway at Carrizo, Ariz., which resulted in the injury of 2 employees, 2 mail clerks and 1 express messenger. After investigation of this accident the Chief of the Division of Safety reports as follows:

This part of the Atchison, Topeka & Santa Fe Railway is a single track line. No block signal system is in use, trains being operated by time-table and train orders. Approaching the point of accident from the east the track is tangent for 2,504 feet, followed by a curve to the left of one degree, this curve being 520 feet in length. About 500 feet beyond the end of this curve is the east passing track switch. The grade is slightly descending for westbound trains.

Westbound train No. 7, known as the Fargo Fast Mail and Express, consisted of 1 mail car, 4 express cars, 1 coach and 1 Pullman sleeping car, hauled by locomotive 1306, and was in charge of Conductor Nohl and Engineman Moore. It left Adamana at 5:42 p.m., 30 minutes late. At a point about one and one-half miles beyond Adamana, track work was in progress, and a slow order was in effect covering 3-1/2 miles of track, restricting the speed to 10 miles an hour. The end of this slow-speed track was about four-fifths of a mile from the east switch at Carrizo. After passing this slow-speed track the speed of train No. 7 was increased to about 40 miles an hour; and just after rounding the one-degree curve the train was flagged by the flagman of work extra 967 on account of the east switch being open. The engineman made a service application of the air brakes and looked ahead to discover the reason for being flagged, not seeing that the switch was open until the locomotive headed in on the passing track. At that time he made an emergency application of the brakes and both he and the fireman jumped from the locomotive. The locomotive continued on the passing track until it collided with some ballast cars which were standing at a point 524 feet beyond the switch, the speed at the time of the collision being estimated to have been about 35 miles an hour.

Locomotive 1306 was thrown over the first ballast car and struck the second car diagonally, turning over on its right side about 80 feet beyond the point of collision, being badly damaged. The mail car came to rest in an upright position on top of the first ballast car and was not badly damaged, while only slight damage was sustained by the first express car.

On the day of the accident work extra 967 was working between Carrizo and Adamana, stations 5.5 miles apart, unloading ballast, and at about 4.30 p.m. returned to Carrizo with nine empty ballast cars. The empty cars were placed on the passing track and then the rear portion of the train, which had been left standing on the main track, was backed in on the passing track ahead of the empty cars, these cars being removed from the main line in order to allow eastbound train No. 22 to pass. It then developed that locomotive 967 was running short of water and would have to go east to Adamana for water. It was then arranged between Engineman Lewis, Conductor Moss and Trainmaster Shipley that they would take six cars of ballast with them to Adamana and that, as soon as westbound trains Nos. 7 and 3 and a westbound extra freight train had left that point, the work extra would follow them and proceed with the work of unloading the ballast on the six cars. Locomotive 967 left the siding, en route to Adamana, as soon as train No. 22 had gone, at 4.51 p.m., leaving Flagman Jones to protect the work extra against eastbound trains.

Flagman Jones stated that after train No. 22 had passed he asked the trainmaster how many cars they would take with them and the trainmaster told him to cut off six cars. Flagman Jones then made the cut and gave the engineman a proceed signal, boarding the rear of the last car. The switch was opened by Conductor Moss, who then walked toward the train. When the last car was opposite Conductor Moss he boarded it on the same step with the flagman. Flagman Jones stated that the conductor seemed to be in a hurry and gave his instructions very rapidly. He understood the conductor to say that he was to hold all eastbound extras and, if necessary, have them cut off their locomotive and come out and bring back the work extra, as the work extra might not hear the whistle of the extra calling them in. Flagman Jones stated that he said "All right," and then heard Trainmaster Shipley make a remark of approval. He did not know whether or not the trainmaster heard all of the instructions given him by the conductor, but thought he heard only that part which related to having any eastbound extra, which might reach Carrizo, cut off its locomotive and come after the work extra. Flagman Jones stated that after receiving these instructions he got off, within 10 or 12 feet of the switch, and watched the work extra depart. He then looked west and saw two handcars approaching, and he closed the switch in order that they might pass and, as they did so, he told the section foreman to watch out for the work extra returning. After the handcars had passed the switch, which they did within two or three minutes after the work extra had gone, he lined the switch back for the passing track. After remaining at the switch a short time he walked west until he came to the caboose, where he procured some additional torpedoes. He then continued west, going to a point about 25 car lengths beyond the

caboose, and put torpedoes on the rail; he then started to walk east. At this time it was 3.30 p.m., and it occurred to him that train No. 7 was overdue. He heard a train approaching, at which time he was standing just west of the caboose, which was about 30 car lengths west of the open switch. He thought it was the work extra returning for the purpose of getting into clear for train No. 7, which was due to leave Adamana at 3.15 p.m., saying that he was under the impression that the work extra had gone out to unload ballast and intended to return ahead of train No. 7. He then walked easterly, intending, as soon as the work extra had backed into clear, to couple the cars to those which had been left on the passing track. After he had gone a short distance he heard the locomotive whistle and knew that it was not the locomotive of the work extra. He then saw the train rounding the curve and began to swing his red flag. He stated that he had hardly begun to flag the approaching train when an acknowledgment of his stop signal was sounded, and in a few seconds the train ran into the open switch and collided with the cars on the passing track. Flagman Jones further stated that while the rules require switches to be closed and locked for the main line when not in use, yet it was customary on most of the roads on which he had worked to leave the switches open under such circumstances. He said he had been ordered to do so, and in some cases reprimanded for not doing it, and he referred to the fact that when train No. 22 approached Carrizo the switch was lined for the passing track and the work extra was able to back in without additional delay. He also stated that another reason he left the switch open was because, under his orders, the work extra had to protect against westbound extras after 3.30 p.m., and when the work extra started east at 4.52 p.m., after train No. 22 had gone, it would have to flag into Adamana against westbound extras, this statement indicating that he did not think it would have been possible for the work extra to go to Adamana, and that it would therefore have to return to Carrizo ahead of train No. 7 in order to get out of the way of that train. At no time did he hear any one say anything about the work extra going to Adamana for water, and he did not know it had done so at this particular time.

Conductor Moss stated that when he boarded the work extra as it was starting for Adamana, he told Flagman Jones that they would have to go to Adamana for water, that they were on short time and would have to hurry, and for him to hold all eastbound extras. If any train approached he was to have the crew cut off their locomotive and go out, under protection of a flag, and bring in the work extra. At the time these instructions were given to the flagman the train was moving ahead at a low rate of speed, and Flagman Jones signified that he understood the instructions. Conductor Moss said he could not

say positively that the flagman closed the switch after the work extra started, but he felt certain that he did so, saying that he would have noticed it if he had not. He said he did not give Flagman Jones any instructions, or say anything which might have been construed as instructions, about having the switch lined for the passing track; and that if he had wanted the switch to be left open he would have instructed the flagman to that effect. He had had Flagman Jones with him since the first of August, and had also had him with several times previously, and he considered him to be a reliable man, and said that he always performed his duties satisfactorily.

Trainmaster Shipley stated that he heard Conductor Moss tell Flagman Jones that they would have to go to Adamana for water and for him to remain there and hold all eastbound trains until their return. He said that the conductor also told the flagman that, in case any train reached Carrizo, he was to have them sound a whistle, calling in the work extra, and if the work extra did not come in, to have the crew out off their locomotive and come out after them. He stated that he thought the information given to the flagman was in a plain and concise form, and that it apparently was understood by the flagman. He could not say that he saw the flagman line the switch for the main track after departure of the work extra, but thought he did so.

Head Brakeman Crozier was stationed about three miles east of Carrizo to protect the work extra against westbound trains. When the work extra reached him on its way to Adamana for water he went with it. He did not know anything about the instructions given to Flagman Jones by Conductor Moss, but stated that if he had been in the place of Flagman Jones and had understood that the work extra was not going to Adamana for water, but only going out to unload the cars and return to Carrizo, he would have left the switch lined for the passing track, as he would have considered that he was protecting the switch as well as stopping eastbound trains. He also stated that it was the practice, under such circumstances, to leave the switch open when it was definitely known that the work train was to return.

Section Foreman Greel stated that he followed train No. 22 to the switch at Carrizo and then followed the work extra when it left Carrizo immediately behind train No. 22. When he approached the switch it was lined for the passing track and Flagman Jones lined it for the main track in order to allow the two handcars to pass. When he went by Flagman Jones, the latter told him to watch out for the work extra, but did not say anything about its returning to Carrizo. After the handcars had passed, he saw Flagman Jones line the switch back for the passing track.

Enginesman Moore, of train No. 7, stated that his train approached Carrizo at a speed of 35 or 40 miles an hour. He was on the outside of the curve and when the train reached the straight track he saw the flagman violently giving stop signals. He at once acknowledged the signals and made a service application of the air brakes. At this time the flagman was standing near some outfit cars which were on a spur track north of the main track, at a point about half a mile beyond the curve, which would be about 2,000 feet from the switch. Enginesman Moore stated that his attention was centered on the flagman and on making a stop by the time the flagman was reached, and he did not notice that the switch was open until the locomotive entered the passing track. He stated that the brakes had just about taken hold of the wheels when the locomotive reached the switch points, and that he then placed the brake valve in the emergency position, opened the sanders and jumped.

Fireman Karris stated that he thought the speed was about 40 miles an hour approaching the switch. He was working on the fire and heard Enginesman Moore answer the flagman. An application of the air brakes was made and he then felt the locomotive lurch to one side as it entered the passing track. He had not seen the signals of the flagman, on account of being busy with the fire, and did not know that the switch was open until the locomotive entered the passing track.

While the direct cause of this accident was the failure of Flagman Jones to close the east passing track switch after it had been used by work extra 967, a contributing cause was the failure of Conductor Moss and Flagman Jones to have a definite understanding as to the movements to be made by the work extra. There is a conflict in the statements of these two men as to what instructions were given the flagman, the conductor saying that he told him the work extra was going to Adamans for water, while Flagman Jones claims nothing was said about going for water and says he understood that the work extra would return to Carrizo ahead of train No. 7. Notwithstanding these conflicting statements, Flagman Jones is at fault for his failure to comply with rule No. 104, of the rules and regulations of the operating department, which reads in part as follows:

"Switches must be left in proper position after having been used. Conductors are responsible for the position of the switches used by them and their trainmen, except where switchtenders are stationed."

Under this rule the switch should have been lined for the main track by Flagman Jones as soon as the work extra departed, and should have been left in that position.

Flagman Jones had been in railroad service about 13 years, the last 4 years and 9 months of which were spent on the Albuquerque Division of this railway, and for nearly two years of this period he had been employed as a conductor. He had a good record and was considered to be a reliable employee. Conductor Moss had been employed as a conductor since January, 1913, previous to which he had been employed in train service for many years, both on this railway and on other railways; his record was good. At the time of the accident these men had been on duty about 8-1/2 hours, after a period off duty of about 25 hours.