

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE MISSOURI, OKLAHOMA & GULF RAILWAY AT
ATWOOD, OKLAHOMA, JANUARY 14, 1916.

On January 14, 1916, there was a derailment of a freight train on the Missouri, Oklahoma & Gulf Railway at Atwood, Oklahoma, resulting in the death of a brakeman and a tramp working his way as a coal passer, and the injury of the fireman. After investigation of this accident the Chief of the Division of Safety reports as follows:

Southbound extra 402, a fast freight train running as an extra, consisted of 24 cars and a caboose, hauled by locomotive 402, and was in charge of Conductor Dunn and Engineer Bo ser. This train left Muskogee, Oklahoma, at 6:00 a.m., and at Lawer, Oklahoma, 41.6 miles south of Muskogee, received the following speed restriction orders, all of which were on train order form 21, and none of which showed the signature of the conductor.

- MA-103 - Freight trains will not exceed 10 miles per hour on any unballasted track between Dustin and Denison.
- MA-108 - Run very slow from bridge 206-3 to 16 poles south.
- MA-203 - Freight trains will not exceed 20 miles an hour at any point and reduce as necessary to insure safety. Mallet Engines will not go in on produce track at Kearietta. All trains reduce to 5 miles an hour over bridge 183-8, around first and second curve MP-194, over frog south and passing track at Dustin, over bridge 204-5 and slide on each side around curve at slide six poles north MP-216 and to 5 miles an hour over bridge 204-7.
- MA-231 - Run carefully between Dustin and Lula, looking out for soft spots and holes and swings.
- MA-141 - Look out for men changing steel between MP-174 and 175. Reduce speed to 5 miles per hour over bridge 183-8 four poles north of Big Creek tank near bridge where slide is on mile 228, over bridge 202-8, 10 to 20 poles south of MP-19 and around first curve north of Atwood.

Atwood, where the accident occurred, is between Dustin and Denison, the points named in slow order A-103, and is between the two stations named in order No. A-333.

According to the train sheet, Extra 408 passed Calvin, 44.8 miles south of Dewar, the last open telegraph office, at 12:30 p.m. The train stopped for water at a water tank 3 miles south of Calvin, and at 12:36 p.m. was derailed at a point 300 feet north of the station at Atwood, 6 miles south of Calvin. The speed at the time of the derailment was estimated to have been between 20 and 25 miles an hour.

The engine truck remained on the track, while all the other wheels of the engine were derailed. The engine stopped in a practically upright position on a 12-foot fill 640 feet beyond the initial point of derailment. The tender came to rest on the west side of the fill at right angles to the engine, and supported the engine in its partly overturned position for about 45 minutes, when the connection broke between the engine and tender, the engine turning over and coming to rest on the bottom of the fill. Nine cars, immediately following the locomotive, were derailed, seven being turned over and two of them demolished.

This portion of the Missouri, Oklahoma & Gulf Railway is a single track line; no block signal system is in use, train movements being governed by time-table and train orders. Approaching the point of derailment from the north there is a 3-degree curve to the left 2,367 feet in length, a tangent 607 feet in length and another 3-degree curve to the left, this latter curve being 1,800 feet in length. The derailment occurred on the last named

curve at a point 500 feet south of its northern end. The track is laid with 70-pound steel rails, 33 feet in length, single spiked to about 18 untreated oak ties under each rail. No tie plates are used and the roadbed is of dirt, the track being unballasted from a point 3 miles north of Atwood to a point one half mile south of Atwood. While the gauge of the track did not exceed 4 feet 9 inches at any point, the surface and alignment were poor and the rails and ties were only in fairly good condition.

Engineman Hower stated that his train passed Calvin 14 minutes ahead of train No. 5, which was running one hour late and would have been due to pass that point at 12:39 p.m. This would indicate that extra 402 passed Calvin at 12:15 p.m. However, Engineman Hower afterwards stated that his train passed that point at 12:15 p.m., and later on stated that he did not know at what time his train passed Calvin. He stated that a stop was made at the water tank, about half a tank of water being taken, this stop consuming two or three minutes, and that he did not know the exact time his train left the water tank, but that immediately after whistling for Atwood his train was four minutes ahead of Train No. 5, which would have been due to leave Atwood, under the order directing it to run one hour late, at 12:41 p.m. He had intended to head in on the passing track at Atwood and allow train No. 5 to pass, but afterwards decided to continue to the station on the main track and, if not given any more time on that train, to proceed to the south switch and back in. The head brakeman then got on the fireman's seat box to observe the position of the train order board. This was seen to be in the stop position and engineman Hower whistled for it. At this time the locomotive was not

working steam and when the board was cleared in response to the whistle signal, he began to work steam. He stated that he then leaned out of the window in order to see if the operator came out with a train order, at which time he heard a noise behind him and at once shut off steam and applied the brakes, the derailment occurring at 12:36 p.m. He estimated the speed at this time to have been from 15 to 18 miles per hour. It was his opinion that a broken flange on the second car in the train was responsible for the accident, claiming that the derailed cars pulled the locomotive from the track. He stated, however, that he did not find any broken flange but had only talked with others who had. He stated that on looking at the track near the point of derailment he found four or five places on the inner rail on the curve where there

ere splavings on the inside of the rail. He insisted that at the time the tender derailed none of the wheels of the locomotive was derailed, and that he had not been violating any of the slow orders or speed restrictions received by him. He stated that he did not have a copy of slow order A-103, which restricted speed to ten miles per hour over all unbraked track; that an order of this character had been issued previously, but that he did not receive a copy of it on this date. Subsequent to the accident Engineman Dewar turned over to one of the officials of the railroad the clearance and slow orders received by him at Dewar. When these were shown to him at the hearing he insisted that the Clearance which he had received did not mention order A-103 and said that the clearance shown to him was not the one received, as it did not mention a meet order with extra 404. As a matter of fact, the order to meet extra 404 was embodied in the running orders

received by him before leaving the terminal. As further indication of the fact that Engineman Howser was confused as to the orders received by him, it is to be noted that when shown the order issued at the terminal at Muskogee before starting on this run, he stated that he did not remember whether or not he had received it. This order, train order No. 7, besides providing a meeting point with extra 404, contained the running orders of extra 403, and without this order this extra could not have left its terminal. At one place in his statements Engineman Howser said that the speed over the first curve north of Atwood was restricted to ten miles an hour and that the order containing this restriction, No. A-361, contained no other restriction, when as a matter of fact that order restricted the speed to five miles per hour on the curve in question and also provided speed restrictions at five other points, together with instructions to watch out for men changing rails at still another point. Engineman Howser also stated that he observed all the rules and regulations and observed train orders as far as had always been done; that they always tried to get trains over the road to the best advantage, and that some of the men had been instructed that they were running too slowly. No one had ever told him, however, to take any changes on places covered by slow orders.

Conductor Dunn stated that his train passed Calvin at 12:12 p.m., while later in his statements he said that his train was 12 minutes ahead of train No. 3 when Engineman Howser whistled approaching Calvin. If this latter statement was correct then it was about 12:17 p.m. at that time, and it was probably close to 12:20 p.m. when the engine passed the station, as the train had

to stop at a railway crossing one mile north of Calvin, and could not have been traveling at high speed when the engineman whistled for Calvin. Conductor Dunn also stated that his train was derailed while traveling at a speed of 15 to 20 miles per hour and that at that time it was 5 minutes ahead of the schedule of train No. 5 under the order for that train to run one hour late. He also said that he received a clearance card at Dewar and that to the best of his knowledge slow order A-103 was one of the orders mentioned in the clearance, although he did not remember that particular order. He also stated that while he usually checked over the orders received by him, he might not have done so in this case. He gave copies of the orders to the engineman but did not read them to him. He stated that his train might have varied somewhat from the speed limits provided by the slow orders, but that it was customary to make the best time possible with this train. He also said that if the order limiting the speed to ten miles per hour over unballasted track was among the orders received at Dewar he would have applied the air brake from the caboose. Conductor Dunn further stated that after the accident the engine was derailed with the exception of its forward truck. He examined the track, and at a point about 15 car lengths back from where the cars were derailed he found marks which looked like flange marks. He also noticed marks on the ties on both sides of the right hand rail, these marks extending back a distance of about 15 car lengths from where the accident occurred. He said further that when the flagman went back to flag he met some tramps who told him of finding a piece of broken flange. This piece of flange was found about

one mile north of the point of derailment and was about 14 or 15 inches in length, and the metal at the break was clean and fresh, there being no rust on any of it. He did not find the wheel from which the broken flange came, but stated that in his opinion the broken flange was the cause of the accident.

Flagman Trimble stated that he did not see any of the orders leaving Dewar. His train passed Calvin at about 12:15 p.m. and stopped from three to five minutes at the water tank. He thought the speed was about 15 or 20 miles an hour at the time of derailment. He went back to flag immediately after its occurrence and met some tramps who told him that they had found a piece of broken flange. After being relieved from flagging, he notified Conductor Dunn concerning the broken flange and afterwards he saw in the wreckage a wheel from which the piece of broken flange had evidently come, and stated that this wheel was from a car belonging to the Missouri, Oklahoma & Gulf Railway. In this connection it is to be noted that the 5th, 6th and 7th cars to be derailed were Missouri, Oklahoma & Gulf cars, while the first four cars derailed belonged to other roads. Flagman Trimble also stated that he examined the track for a distance of 12 to 14 car lengths north of the point of derailment and stated that the track seemed to be spread and some bolts had been sheared off at rail joints on the inside rail of the curve. He also noticed wheel marks on the inside of the curve but was unable to state whether or not these marks were made by a driving wheel.

Section foreman Crumley was working near the water tank at the time extra 402 stopped for water, and stated that it was not quite 12:30 p.m. when the extra left the water tank. About

six minutes after the subpass of the extra passed around the curve he heard the locomotive whistle for the station at Atwood. He saw the piece of broken flange found about one and one-half miles from the point of derailment and states that it showed a fresh break. He examined one of the wheels in the wreckage which had a broken flange and stated that the broken piece fitted with the break in the flange. He thought the truck with the broken flange came from under one of the coal cars, but did not discover any marks made by the broken flange. In his opinion the broken flange was responsible for the derailment.

Master Car Builder Carothers stated that he did not see the piece of broken flange referred to, but was told by the foreman of the wrecking crew that had seen it and that it was a piece that had been broken off sometime ago. In this connection, however, it should be stated that two pieces of broken flange were found, one of which, according to the section foreman, he himself had noticed a week or so previously, while the other piece of broken flange had evidently broken off recently, as the break was clean and fresh. Mr. Carothers also stated that the guard rail at the switch had been sheared in such a manner that he did not think it could have been done by a coal car wheel, as this kind of a wheel would have broken instead of making the marks. In his opinion the driving wheel spread the track when it was off the rail, allowing one of the cars to be derailed. North of the guard rail there was a mark on the left side of the track, about six inches inside of the left rail, where a wheel had run on the ties, and there were corresponding marks on the outside of the right hand rail. These marks appeared to have been made by a driving

The forward driving wheel on the left side showed that it had come in contact with the rail as the wheel revolved, while the paint and finish had been worn from the tire of that wheel due to contact with the ball of the rail. In his opinion the accident was due to the derailment of the driving wheel on account of excessive speed, and stated that from the general appearance of the accident he judged the speed to have been between 25 and 30 miles per hour.

Operator Danner, on duty at Dewar, stated that the conductor of extra 402 received a clearance card and five slow orders, A-102, A-103, A-283, A-332 and A-341. He also stated that the conductor did not read the orders back to him and, as far as he knew, did not check them against the numbers set down on the clearance card.

Operator Hill, on duty at Calvin, stated that extra 402 passed that point at 12:30 p.m. He took this time from a clock which had been compared with the standard time sent over the wires at 11:00 a.m. that day.

Engineman Parrish, who was called into the investigation, stated that ever since he had been with the company he had had it forcibly impressed on him that the rules and speed limits were to be observed. A few days previous to the accident he was on train No. 57, a second class through freight train, and Road Foreman of Engines Gandy rode with him, saying that he was making the trip for the purpose of seeing why he was not getting over the road in better shape and that he had been instructed to see that they make running time on that train. He told Mr. Gandy that it was impossible under the present conditions and that the men were trying to get over the road to the best of their ability. Engine-

man Parrish stated that at one point he reduced the speed where he knew the track was in bad condition, remarking that there was a bad place at that point and that they would have to run slowly, and he stated that Mr. Candy told him: "That is the worst place we have had since we left Miami, and that is good for 20 or 25 miles an hour." He then told Mr. Candy that he thought it best not to take any chances on the track, and was told: "We have got to get over the road and I say this track is good for 20 or 25 miles an hour." Engineman Parrish stated that he still argued with the road foreman and was told: "If you do not make the time I will have to tell Mr. Ferris that you will not."

Road Foreman of Engines Candy stated that Engineman Parrish fooled away a lot of time in different ways and that he did not seem to want to get over the road. As he had received instructions to ride the trains and see what was delaying them he encouraged Engineman Parrish in every way he could to make up time where he was laying around water tanks and stations. Candy stated that he handled the train himself over a part of the distance and then turned it over to Engineman Parrish. He stated that the latter began to loaf along and kill time between stations on good track and that he got very impatient with him and encouraged him to move the train along on the good track and observe the slow orders on the bad track. The engineman then did as he asked him and a fairly good trip was made. Mr. Candy also stated that at one point where the track was in good condition Engineman Parrish asked him how fast he thought the train was traveling and he remarked that he thought it must be traveling about 15 miles an hour, and that he thought the track was good for at least 20

miles an hour. He denied telling Engineman Parriah, when the latter reduced speed at a point where the track seemed to be bad, that it was good for a speed of 20 miles an hour.

Careful examination of the locomotive and track showed that the forward driving wheels had been derailed. This pair of wheels was derailed to the right, then traveled a distance of 103 feet astride the right rail to the point where the right wheel came in contact with the metal blocking in the heel of a frog. The blocking was broken and the right driving wheel rerailed itself. At the same time the left wheel struck the guard rail opposite the frog but was not rerailed. This driving wheel then forced the left rail out of place for a distance of 523 feet to where the engine finally came to a stop. The face of the left forward driving wheel showed marked evidence of abrasion, all of the point being obliterated and the outer rim of the tread sheared to a sharp edge, this evidently having been done by the tire of the wheel crowding the left rail out of place. The counter balance of the forward driving wheel had also been considerably marked, while the counter-balances on the left intermediate, main and back driving wheels showed that they had come in contact with the rail. The examination of the engine and tender also showed that all the flanges of the wheels were in good condition and the wheels properly gauged. The piece of flange wheel showed a fresh break was found to have come from a truck under either the fifth or sixth car in the train, both of which cars were Missouri, Oklahoma & Gulf coal cars.

The direct cause of this accident could not be definitely

determined on account of the conflicting statements of those involved, and also on account of the presence in the wreckage of a wheel from which there had been broken a piece of flange 12 or 14 inches in length. In view of the fact, however, that the marks on the track and on the wheels of the locomotive indicated that the driving wheels had run on the ties for a short distance north of the frog, that the wheel on the right side derailed itself at the frog, and that the left wheel then pushed the left rail out of place for a distance of 525 feet, it is believed that the engine was the first part of the train to be derailed, its derailment being due to the fact that the train was being operated over this unballasted track at a rate of speed in excess of that allowed by the orders held by the crew in charge of the train, for which Engineer Hower and Conductor Dunn are responsible.

While Engineer Hower denied that he was in possession of slow order A-103 restricting the speed to ten miles an hour over unballasted track, he admitted having a copy of the order limiting the speed on the first curve north of Atwood. This curve is nearly 2,400 feet in length and a compliance with this slow order would have required that his train consume about five minutes on the curve. The operator as Calvin stated that the train passed his station at 12:17 p.m., and in view of the top at the water tank it would have been impossible to have observed the five-miles-an-hour slow order on the curve, as well as the order restricting the speed of freight trains to 20 miles per hour at all points, and over this distance of 8 miles, and be derailed at 12:36 p.m. The operator as Hower, however, stated that order A-103 was among those delivered to Conductor Dunn and that its

number was shown on the clearance card along with the numbers of the other slow orders. Conductor Dunn stated that the order was among those received by him and that he delivered copies of all of the orders to the enginemen. While the statements relative to the receipt and delivery of these train orders are very conflicting it is believed that Engineman Howser did receive the slow order and that he failed to observe its provisions. Conductor Dunn had copies of the slow orders in question and, had he been paying proper attention to the operation of his train, he could not have failed to observe that the orders were not being observed.

Engineman Howser was employed as an engineman in August, 1910, and was suspended for 30 days in October of the same year on account of responsibility in connection with an accident due to his violating a slow order limiting speed to five miles an hour. In June, 1912, he was reprimanded for various derailments occurring in the preceding sixty days due to fast running. He was suspended for 15 days in 1914 for responsibility in connection with a collision and in August, 1915, received 30 days book suspension for a derailment due to excessive speed.

Conductor Dunn was employed as a brakeman and conductor in August, 1911, previous to which he had been employed on the St. Louis & San Francisco Railroad as a conductor from 1899 to 1911. His record was good.

Rule No. 213, of the Rules of the Transportation Department of the Missouri, Oklahoma & Gulf Railway, requires that train orders written on Form 31 must be signed for by all persons, ex-

cepting engineers, to whom the orders are addressed. None of the slow orders involved in this accident was signed for by Conductor Dunn and it seems to be the custom, after the first issue of the order has been made complete, for the operator to distribute copies of the orders to other trains without obtaining conductors' signatures or without the dispatcher having information relative thereto. Such a lax method of handling form 31 train orders should not be permitted.