

In re investigation of an accident which occurred on the Western Maryland Railway, near Garrett Station, Pa., on November 11, 1917.

December 5, 1917.

On November 11, 1917, at about 4.40 p.m., a head-end collision occurred between two freight trains on the Western Maryland Railway, about 1-3/4 miles west of Garrett Station, Pa., resulting in the death of one employee and injuries to four other employees.

After an investigation of this accident, the Chief of the Bureau of Safety reports as follows.

This collision occurred on the Third District, extending from Cumberland, Md. to Connellsville, Pa., of the Western Division of the Western Maryland Railway, about 36 miles west of Cumberland. The line in the vicinity of the scene of accident is single track, and trains are operated by timetable, train orders, and under the protection of automatic signals. The point of accident was about midway of a curve, 3,600 feet west of the west end of Garrett passing siding.

The trains involved in this accident were eastbound freight train 1st 806, consisting of engine 776 with 60 loaded cars, with Conductor Sullivan and Engineman Deeler in charge, and westbound extra freight train with engine 754 with 20 loaded cars, with Conductor Pittman and Engineman Shaffer in charge. Engine 757 was acting as a pusher for 1st 806. This train left Dickerson Run, near Connellsville, at 9.25 a.m., and extra 754 left Cumberland at 12.30 p.m.

Beginning at the west end of Garrett passing siding, at which point extra 754 was waiting to meet other trains previous to the accident, there is about 100 feet of tangent ahead of the switch, followed by a 5-degree curve to the right, 1,500 feet long. The tangent following is 1,000 feet long, at the end of which a 2-degree, 58-minute curve to the left starts. It was 800 feet from the east end of this curve to the point of collision. From Rockwood Station, 6.4 miles west of Garrett, and proceeding east, there is a succession of curves, varying from 1 degree to 5 degrees, with short stretches of tangent in between, to a point 1-1/2 miles from the scene of the accident. From this point, a compound curve to the right

starts, 3,100 feet long, varying from 1-degree, 54-minutes to 5 degrees. There is then a piece of tangent about 300 feet long, followed by a 4-degree curve to the left, 1,900 feet long. The next tangent is 900 feet long, followed by the curve to the right on which the accident occurred 900 feet east of the point of curve.

From Garrett Station, the grade is descending westerly, varying from .15% to .37%, and at the point of accident, the grade is .21% descending. From Rockwood Station east, the grade is continuously ascending, varying from .1% to .3%.

The track follows the south bank of a river the entire distance, and for the greater part of the distance between Rockwood and Garrett, there are side cuts on the side of the track opposite the river. A single track of the Baltimore and Ohio Railroad is laid on the north side of and between the Western Maryland Railway and the river, and there is about the same distance between these two tracks as usually exists on a double-track railroad.

The signals on this section were placed in service in April, 1916, and are installed upon what is commonly known as the A. P. B. System. Under this scheme, a pair of signals is located approximately at the switch at each end of the passing siding. A signal leaving the passing siding is known as an absolute signal, whereas the signal in the opposite direction is known as the permissive signal, being distinguished by a square-end and a pointed-end blade respectively. The absolute signals also carry a red marker^{light} in a vertical line with the light on the signal arm, whereas on the permissive signals, the marker light is on the other side of the post, or staggered. Signals are located between the passing sidings to properly divide up the block for following movements, the number depending on the distance, and they are all permissive signals. When a train starts from a passing siding, all signals, including the absolute signal at the next siding, are set in the stop position and remain so until the train has left the next passing siding. Signals in the same direction, however, clear up after a train passes out of the block in the same way as on a double-track system. The signals are operated on normal clear system and use primary battery for operation. All circuits are direct current, including track circuits,

and the control is by means of line wire. Indicators are not used, but switch boxes are provided at all switches, shunting the track circuit.

The signals are 3-position, and indications are given in the upper quadrant. Night indications are given by red, yellow, and white lights for stop, caution, and proceed respectively. The first intermediate signals west of Garrett for both directions are on a bracket mast to the south of the main track, as the presence of the B. & O. track prevented the installation of the west-bound signal on the right hand side, as is the usual practice. There are no derrails on the ends of the passing sidings.

The investigation disclosed that on the day of the accident order No. 52 had been put out at Rockwood, reading as follows:-

Extra 754 and 612 west meet 1st No. 206 Eng. 776
and extra 617 East at Rockwood.

Later order No. 56 was issued, superseding order No. 52 in part, and reading as follows:-

Extras 754 and 612 west meet Extra 617 east at
Garrett instead of Rockwood. Extra 617 east take
siding.

thus leaving the meeting point for extra 754 and 1st 206 as originally established at Rockwood. The operators at Rockwood changed tricks before 1st 206 arrived at that point, and the first trick man failed to transfer order No. 52 with the other orders to the second trick man. When the orders were delivered to 1st 206, the first order, therefore, was not among those handed the engineer and conductor, so they had no order for meeting extra 754, but at the same time extra 754 had the original order to meet 1st 206 at Rockwood, having received this order at Colmar. Extra 754 waited at Garrett passing siding for extra 617. After that train arrived, the westbound signal did not clear up, and the dispatcher was called up and asked for instructions, but before he could find whether the block was clear and notify the crew of extra 754, the train had proceeded without any orders against the signal and collided with 1st 206. At the time of the accident, the weather was clear.

Both engines were badly damaged by the collision,

and 5 cars were destroyed. Conductor Pittman of extra 754 was caught under the wreckage and killed.

Train Dispatcher Babst said that he issued order No. 52 providing for extras 754 and 612 west to meet 1st 206 and extra 617 at Rockwood, and that he told the operator at Rockwood to make 7 copies, as there was a helper on 1st 206. He did not know that only four copies were made until he heard of it outside the office after the accident. This order was put out at 3.15 p.m. at Colmar, for the westbound, and at Rockwood for the eastbound train.

Train Dispatcher Ruckel, who was on duty and in charge of 3rd district at the time of the accident, said that when he took the train sheet about 3.40 p.m., there were 5 westbound and 3 eastbound trains on the district, and that 11 orders, including No. 52, were transferred to him. It was seen that the arrangement provided for in order No. 52 would not work out well, so he planned to supersede that part of the order calling for extras 754 and 612 to meet extra 617 at Rockwood and changed the meeting place for these trains to Garrett. The first order issued for this purpose was not in the correct form, which was immediately noticed and another issued at once annulling the incorrect form. The superseding order, No. 55, was placed at Meyersdale for the westbound trains and was delivered to them, but the original order which had been superseded in part only was not delivered at Rockwood to train 1st 206. He said that someone called him on the telephone from the west end of Garrett Siding, said extra 754 was there, with the signal against them, and asked for instructions, at the same time stating that extra 617 was in to clear. Dispatcher Ruckel said he told him that probably 1st 206 was on the circuit at Rockwood, and asked if 754 was going to Rockwood ahead of No. 3. The reply was "All right". Nothing was said about any work 1st 206 might be doing at Rockwood. While he was talking with the party at Garrett, he called Rockwood Station and was told that 1st 206 was not in sight. Then he tried to get Garrett siding but could not do so, although shortly after that the engineer of extra 612 came on the telephone and said extra 754 had gone. He asked the operator at Rockwood if 1st 206 had gotten order 52, and was told it was not on the table and had not been transferred to him. Later it was found on the hook where completed orders are filed. Dispatcher Ruckel stated further that he had no knowledge of any train running against a stop signal without first getting a

message, and could give no explanation as to why the conductor of 754 started after having had only some conversation but no orders.

Operator Bull said he was on duty at Rockwood when order 52 was put out, and made only 4 copies of it as he did not clearly understand how many the dispatcher told him to make. He also received the superseding order, noticed the incorrect form, spoke to the dispatcher about it, and copied the correct order, No. 53. On arrival of extra 617, he delivered the orders, including 3 of the 4 copies of order No. 52. When he transferred his unfulfilled orders to the relief operator about 4 p.m., he neglected to include order No. 52, and thinks his error in filing the last copy was due to assuming it had been fulfilled, as extra 617, the last train mentioned in the order, was the first to arrive. It is his practice to hang orders on a series of hooks above his table, until delivered. When he left the office, 1st 206 was just coming into the coal tipples. He said he had received messages from the dispatcher authorizing trains to pass an automatic signal in the stop position, but it had not been his practice to make copies of such messages or to repeat them. He has not done that at Rockwood, as the siding is east of the station and the conductors call the dispatcher direct from the telephone at the east end of the siding.

Engineman Shaffer of extra 754 stated that at Colmar he received the order to meet extra 617 and 1st 206 at Rockwood. At Meyersdale, he received an order, changing the meeting point with extra 617 from Rockwood to Garrett. He stated that he did not notice at what time he reached Garrett, but after taking water, pulled down to the west end of the siding and waited 10 or 20 minutes for extra 617. When that train cleared, he called in his flagman. The westbound automatic signal was against him so he told the brakeman to call up the dispatcher. He started toward the telephone, and the brakeman told him that the dispatcher was giving an order so he returned to the engine. The conductor then went to the telephone. Later, the fireman told him that the conductor was giving a signal to pull out, and about the same time, he saw the brakeman step across the track and signal him ahead. The conductor and brakeman got on the engine, and the conductor told him that 1st 206 was in the block at Rockwood. The train departed about 4.35 p.m. and was running at a speed of about 15 miles per hour. Approaching the scene of accident, he did not have over 2 or 3 car lengths view ahead, but the brakeman, who was on the left side of the locomotive, saw the

approaching train first. The brakeman immediately called to him, but hesitated before getting off, apparently thinking the approaching train might be on the adjacent S. & O. track. Enginemen Shaffer stated that he thought he applied the brakes before leaving the engine and that the speed was somewhat reduced before the accident, which occurred at 4.40 p.m. He said that in the past he had secured instructions to pass signals, always in a verbal form, but he had not had such instruction on the signals, as he ran over this district at infrequent intervals.

Brakeman Robinson of extra 754 stated that he opened the switch for extra 617 to go into the siding and closed it after the train was into clear. After the conductor was through telephoning and had gotten on the engine, he heard him tell the enginemen that 206 was setting out cars with hot boxes at Rockwood. He spoke to the conductor at Garrett about train No. 3 which was shortly due and the conductor told him they would make Rockwood for it. He saw train No. 206 approaching when about 5 or 7 car lengths distant and at once called to the enginemen and jumped from the train.

Fireman Dressman of extra 754 said he saw the train orders held by Enginemen Shaffer. He noted the engine numbers of the different trains they passed and saw that they corresponded with the numbers in the orders. He heard the conductor, as he got on the engine, tell Enginemen Shaffer that 206 was setting out hot boxes and it was all right to go ahead and "proceed with caution into the red block." He did not know whether the brakes were applied and thought the speed of his train was about 12 or 15 miles per hour at the time of the accident. Conductor Sullivan of train 1st 206 said they arrived at Rockwood 4.20 p.m., took coal and water on the first locomotive and then pulled up for helper engine to take coal. He received several orders there, but none in which extras 754 and 612 were mentioned. On leaving Rockwood he had 30 minutes to reach Garret and clear Train 3. The first signal leaving Rockwood was clear. When they came in sight of the intermediate signal next west of the point of accident, which he saw from the left side over the top of the boiler, it was at caution, but changed to stop as they got very close to it. When the signal changed, he called the enginemen's attention to it; he shut off and the train was drifting at the time extra 754 was sighted.

Enginemen Beeler of train 1st 206 stated they

He had received no orders in reference to extras 754 and 612. All of the intermediate signals were clear except the one next west of the point of accident which indicated caution when he first came in sight of it. When about 2 car lengths from this signal, it went from caution to stop, then back to caution and finally back to stop. He at once shut off steam and had reduced speed from about 25 miles per hour to 8 or 10 when he first saw extra 754 approaching; his train was nearly stopped when the collision occurred. He had not used the air brakes up to that time, although they were working all right. Engineman Beeler stated that the reason he did not stop as soon as possible when the signal went to stop was that his time was short to clear train 3. He knew extra 617 was ahead and would have to be in to clear at Garrett before this signal could go to caution position, so that when the signal went to stop, he assumed that that train was backing up so as to head in at Garrett. The conductor also called his attention to the stop signal just after he had shut off. Engineman Beeler stated further that he had passed absolute automatic signals on verbal instructions at different times, although he was familiar with the time table rules governing these signals.

Brakeman McFadden of 1st 206 said they got two orders and a bulletin at Rockwood. Approaching the signal west of the point of accident he was riding on the pilot and he saw the signal change from caution to stop. When he saw extra 754 it was but 5 or 6 car lengths distant.

This accident was caused primarily by the failure of Operator Muhl to properly transfer the orders he had on hand for delivery to his relief operator when the latter came on duty, which resulted in train 1st 206 not getting the order to meet extra 754 at Rockwood. A contributing cause was the failure of the conductor and engineman of extra 754 to properly observe the rule requiring an order, caution or clearance card to pass an "absolute arm" signal when in the stop position.

The investigation further developed the fact that the conductor and engineman of train 1st 206 also failed to bring their train at once to a stop when they saw the signal go to the stop position in front of the train.

The fact that these experienced employees passed signals indicating stop with apparently the same confidence and assurance as though the signals were clear, indicates there is a laxity in enforcing Time-table Rule 62 which reads in part as follows:-

"A Semaphore arm having a square end is called an "Absolute Arm" and when in the "Stop" position indicates that the stop must be made at or before reaching the signal and that it must not be passed in the "Stop" position without authority to do so, either by special order, caution or clearance card."

All the employees involved stated that it was the practice to pass these "absolute arm" signals at stop, upon communicating with the dispatcher but without getting an order or message, except at points where an operator was stationed. When these orders are given by telephone at a point where no operators are stationed, under the method practiced on the Western Maryland Railway, there is no way by which the officials may check the obedience to this rule, which requires the member of the crew talking with the dispatcher to prepare a message as authority for the conductor and engineman to pass the stop signal. Again it is quite evident from the testimony that orders are given to run past an "absolute arm" signal when in the stop position, merely to facilitate traffic or relieve temporary congestion, whereas the usual intent of such rules is to provide a means of moving trains when there is an actual failure of the signal. The habit of issuing orders against the indication of a signal that is properly performing the function for which it was installed cannot be too severely condemned, as this practice tends to throw discredit upon the whole system and thereby lessen the importance of the signal indications in the minds of the employees.

During the past few years, a number of accidents have been investigated on this road that developed bad operating practices and deficient methods of train operation. While great improvements have been made, especially in the installation of automatic signals, such safeguards are without effect unless every care is used in enforcing strict obedience to the rules under which they are operated.

The employees involved in this accident were experienced men. The crew on train 1st 806 had been on duty 9 hours and 40 minutes and of extra 754, 5 hours and 40 minutes at the time of the accident.