

**In re Investigation of accident which occurred
on the St. Joseph Valley Railway at
Inverness, Indiana, December 30,
1916.**

January 29, 1917.

On December 30, 1916, there was a rear-end collision between a gasoline-motor passenger and baggage car and an extra freight train on the St. Joseph Valley Railway at Inverness, Ind., which resulted in the death of 2 passengers, and the injury of 25 passengers and 1 employee. After the investigation of this accident, the Chief of the Division of Safety reports as follows:

This is a single track railway, extending between Columbia, Ohio, and Elkhart, Ind., a distance of 69.8 miles. Passenger trains usually are gasoline-motor cars; freight trains are drawn by steam locomotives. There is no block signal system of any sort in use, trains being operated under time-table and train orders, train dispatching being done by telephone. Conductors on trains between Columbia, Ohio, and LaGrange, Ind., a distance of 36.8 miles, receive their own orders at all points except LaGrange.

Westbound passenger train No. 7 consisted of a gasoline motor car, of wooden construction, 30 feet in length, which was a combination baggage and passenger car, in charge of Conductor Dole and Motorman Myers. This car left Columbia, on route to Elkhart, at 4.12 p. m., 22 minutes late, was delayed 10 minutes at Angola, Ind., 9.8 miles west of Columbia, waiting for and loading passengers; it left Angola at 4.55 p. m., 20 minutes late, with 77 passengers on board, its seating capacity being 21. Train No. 7 arrived at Inverness, 7.1 miles west of Angola, at 5.30 p. m., 30 minutes late, and while discharging passengers at that place its rear end was struck by westbound freight train extra 128, at about 5.33 p. m.

Westbound extra 128 consisted of 4 loaded and 1 empty freight cars, and 1 combination baggage and passenger car, hauled by locomotive 128, and was in charge of Conductor Deter and Engineman Herring. This train, on route to Orland, Ind., 21.8 miles west of Columbia, left the latter place at 4.15 p. m., three minutes after the departure of train No. 7. Angola station is located about one-half mile from the main line, and is reached by a spur track. Where the spur track connects with the main line there is a wye, one arm leading to the west and the other to the east. A short

distance west of the point where the west arm of this wye joins the main track, this railway crosses the tracks of the New York Central Railroad, some distance beyond which point a track leads from the main line to Angola Junction, which station, according to the time-table, is one mile west of Angola and located a short distance south of the main track. At the switch of each arm of the wye of the spur track leading to Angola, at Angola station, at the New York Central Railroad Crossing, and at the switch of the track leading to Angola Junction, there are located electric lights, which, if burning, indicate that the track between these points is occupied. When extra 128 reached the east arm of the Angola spur track wye, the lights were not burning, which indicated that train No. 7 was either at Angola and had cleared itself there, or had returned to the main track and continued westward. As is the practice for all train crews, an electric light switch was thrown by a member of the crew of extra 128, turning on all the lights mentioned; the train then proceeded and backed in on the track leading to Angola Junction, reaching that place at 4.50 p. m. When extra 128 was into clear the lights were turned off, and while that train was doing some work about Angola Junction, train No. 7 passed, it having been at Angola station when extra 128 arrived at the east switch of the wye of the spur track leading to Angola Junction. Extra 128, after having completed its work, left Angola Junction at 5.20 p. m., covered the distance of 6.1 miles to Inverness in about 15 minutes, and collided with the rear end of train No. 7 while traveling at a speed of about 20 miles an hour.

Approaching the point of accident from the east there is, following two miles of tangent track, a 5-degree curve to the left, 462 feet in length, followed by 264 feet of tangent track to the point of accident, all of which is on a descending grade for westbound trains; beginning at a point 452 feet east of the point of accident and continuing to a point 2,000 feet west of it, this is a 2 $\frac{1}{2}$ grade. The curve is laid in a cut of about 7 feet maximum depth, the view of the engineer on a westbound train, approaching Inverness, being limited to about 325 feet, while that of the fireman is about 700 feet.

The rear vestibule of the motor car was destroyed and all the seats in the car were torn loose; locomotive 128 sustained slight damage. Neither the car nor the locomotive was derailed. It was dark at the time of accident and the weather was cloudy.

Conductor Dole, of train No. 7, stated that his train had no orders of any kind when it left Columbia, that the number of passengers carried was exceptionally large, and

that he did not see extra 128 when his train passed the switch near Angola Junction. He stated that three stops were made between Angola and Inverness, where his train arrived at 5.50 p. m.; that there were 35 passengers to be discharged there, and that the collision occurred at 5.35 p. m. He stated that if his train were delayed, and if he knew there was a train following, he would not wait more than seven or eight minutes before protecting his train, and in this instance the accident occurred not more than five minutes after his train came to a stop. He also stated no fuses were furnished his train, although fuses are supposed to be used where trains are delayed on the main track. He further stated that he was unaware of the fact that the extra was following his train, although he had seen extra 128 at Columbia and knew that it would follow his train out of that place, but thought that when his train was at Angola, inasmuch as it was considerably delayed, extra 128 had proceeded to its destination ahead of his train. He stated that such movements have been made, although it was necessary for such extras to have an order before doing so, and if that had been done he would have received a copy of the order. Conductor Dole also stated that only one marker was displayed on the car, that being on the right side, there being none on the left side because of the socket having been broken off. The marker displayed was an ordinary red lantern fastened near the top of the car, about four feet from the rear of the rear vestibule. Conductor Dole stated that he had been examined on the book of rules of the Detroit United Railways, where he had once been employed as an extra conductor for 2-1/2 months. He stated further that he had a copy of the book of rules of this company; that he had read it thoroughly, but that he did not know how long a train should be delayed before it would be necessary to protect it under rule 99.

Noteman Myers, of train No. 7, stated that he and his conductor were the only members of the crew; that he did not see extra 128 at Angola Junction when his train passed near that place on the main track; that he did not know there was a train near; and that he has never known it to be necessary to protect his car against following trains. He said that he made no attempt to make up any time, as he had the largest number of passengers on board that he ever hauled between Angola and Inverness.

Conductor Deter, of extra 128, stated that on the day of the accident he first went on duty on eastbound train No. 20, which was drawn by locomotive 128, and which left LeRange at 6.30 a. m. This train arrived at Angola Junction at 10.57 a. m., and some time later he received, in a telephone booth at that place, train order No. 4, reading as follows:

"Eng. 128 run extra Angola Junction to Columbia and return to Orland."

His train left Angola Junction at 2.14 p. m., arrived at Columbia at 3.15 p. m., and left that place for Orland at 4.15 p. m. He stated that when his train left Columbia it consisted of two cars and the coach; that at Berlein, 4.5 miles west of Columbia, a car was picked up; and that at Angola Junction two cars were set out and four picked up. He further stated that the brakes on the six cars composing his train at the time of the accident were working, but that the brakes on the engine were not good, because of a broken brake head; regardless of these defects, however, the brakes seemed to hold effectively upon each application. Conductor Deter stated that he saw train No. 7 leave Columbia; that he knew there was a rule requiring trains to be spaced five minutes apart; and that when his train was at Angola Junction train No. 7 passed, at about 5.00 p. m., his own train leaving at 5.20 p. m. He also stated that one stop was made between Angola Junction and Inverness, at a point known as the Lake James Line crossing, where the tracks of an electric railway cross the St. Joseph Valley Railway, this stop causing little delay. He stated that after leaving Angola Junction he rode in the coach until near Inverness, when he went out on the rear platform; and that he felt no application of the brakes as his train approached the point of accident. He further stated that the speed approaching Inverness was between 25 and 30 miles an hour; and that he had no intimation of the presence of train No. 7 before the collision occurred. According to the timetable, train No. 7 is allowed 25 minutes to go from Angola to Inverness, while in this case 35 minutes were consumed. Conductor Deter stated that it was very unusual for a motor car to require so much time, and that when his train was approaching Inverness he had no doubt that train No. 7 had already left that place. He further stated that he had a copy of the book of rules, but had never been examined thereon.

Engineman Herring, of extra 128, stated that when his locomotive was hauling train No. 20 from LaGrange to Angola Junction, through some accident the brake head on the engine was broken at Mongo, Ind., 8.4 miles east of LaGrange, throwing the brake shoe and rendering the brakes on the engine inoperative; the train line, however, was not affected. He stated that he had no difficulty in keeping the train line pressure up to 70 pounds between Mongo and Columbia, or between Columbia and Inverness, but that the brakes did not work satisfactorily, and that he reversed the engine when making practically all stops. Engineman Herring stated that he did not see train No. 7 when his train was at Angola Junction; that his conductor said nothing to him about it;

train No. 7 before the collision occurred, but that he did see

that he did not know it was running late, but naturally supposed that when his train would reach Inverness train No. 7 would have gone some time since, inasmuch as it was scheduled to leave there at 5.00 p. m. He further stated that when his train started down the grade toward Inverness he shut off steam and allowed the engine to drift; that he tried the brakes before reaching the curve, but they did not seem to take hold; that he did not intend to stop at Inverness and therefore released the brakes after trying them. He stated that he first saw train No. 7 when about 500 feet distant, whereupon he made an emergency application of the brakes, apparently without effect, and reversed his locomotive; and that after the collision his train pushed train No. 7 ahead about 600 or 800 feet before coming to a stop. Engineman Herring stated that at no time did his crew make a test of the air brakes to learn the number in operative condition, and that he knew of no rule regulating them to do so. He further stated that when the order, calling for his train to run as an extra, was received at Angolia Junction on the eastbound trip, he did not show it to his fireman; that, while under the rules he should have done so, yet on a number of occasions he has offered orders to the fireman but the latter has not cared to see them, in which case he has told him the contents of the order. He also stated that approaching the point of accident the fireman was not looking out on his side; that he had often told him to do so, but that he had paid no attention to him. Engineman Herring stated that he thought the maximum speed of his train on this trip was 25 miles an hour; that the speed at the time of collision was about 15 miles an hour; and he ascribed the accident to the facts that he had no knowledge that train No. 7 was running late, and that proper braking power in the train was lacking. He further stated that he had not been examined for promotion to engineman on this railroad, because they did not have any examination.

Fireman Eaton, of extra 128, stated that between Mougo and Columbia, on the eastbound trip, and later, on the westbound trip, the engineman frequently complained about there not being sufficient brake power to hold the train, but did not notify any one regarding that condition. He further stated that he was busy with his fire and did not see the engineman reverse the engine about 500 feet east of the point of accident, the speed at the time of collision being about 15 miles an hour.

Boor Brakeman Brown, of extra 128, stated that the speed of his train was between 25 and 30 miles an hour just before reaching Inverness, and that he did not feel any application of the brakes immediately prior to the collision. He stated that the locomotive was so damaged that it could

not haul the train, and when a regular train arrived some time after the accident, the disabled engine was taken away from its train and when it was attempted to move the cars of the extra it was found necessary to first "bleed" the air from the cylinder on a car, as the brakes were sticking, indicating that the air in extra 128 had been working back through the train line satisfactorily.

Dispatcher Nelson, on duty at LaGrange, stated that, while the rules require trains in the same direction to be spaced five minutes apart, according to the report of the agent at Columbia train No. 7 and extra 128 left there only three minutes apart; that there is no operator at that place to keep trains spaced five minutes apart; and that there is no train register kept at Columbia. He stated that the agent at Angola reported train No. 7 as leaving there at 4.55 p. m.; that he spoke with the conductor of extra 128 over the telephone at Angola Junction, told him that train No. 7 was late, and that if his train could leave there by 4.55 p. m. he would give him an order to proceed ahead of train No. 7, the conductor replying that he would not be ready for at least 15 minutes; and that the agent at that place reported extra 128 as having left at 5.20 p. m. Dispatcher Nelson stated further that in case he desired to issue an order to an extra at Inverness he would call the agent, who would have to flag the extra, the agent at Inverness being located in a store building several hundred feet from the track. He further stated that in case of emergency there would be no means of reaching a train between Columbia and Angola; and that under the rules he could not have held extra 128 at Angola Junction until train No. 7 left Inverness. Dispatcher Nelson stated that, to his knowledge, none of the employees of the company had ever been examined on the rules governing employees in train operation; neither had any of them ever been examined on the air brake rules. He stated that the company did not at that time have a standard clock, and that, while some of the employees came to him to learn the correct time, he did not know where all the employees learned it, or whether conductors and engineers and motormen compared watches. He stated that there are no speed restrictions governing extra trains.

This accident was caused by the failure of Conductor Dole properly to protect his train as required by rule 99.

Rule 105, of the operating rules of this railway, reads as follows:

"Conductors, engineers and motormen are responsible for the safety of their trains and, under conditions not provided for by the rules, must take every precaution for their protection."

Rule 99 reads in part as follows:

"When a train or engine stops or is delayed, under circumstances in which it may be overtaken by another train, the flagman must go back immediately with stop signals a sufficient distance to insure full protection. When recalled he may return, first placing two torpedoes on the rail not less than one rail length apart, when the conditions require it."

Conductor Dole knew that the extra was following, when his train was at Angola, and also knew that if the extra had gone on beyond Angola Junction ahead of his train it would have required an order to do so, and that he would have received a copy of it. The number of passengers handled between Angola and Inverness was extraordinarily large on this trip, and, although only three intervening stops were made, 10 minutes were lost between those two places. There were quite a number of passengers to be discharged at Inverness, and, inasmuch as train No. 7 had no flagman, Conductor Dole should have gone back to protect the train, in the manner prescribed by rule 99, while the passengers were being discharged. Conductor Dole stated that he had never been examined on the book of rules of this railway, and, from his statement that he would go back to protect a train within seven or eight minutes after it came to a stop, it is evident that he was not fully acquainted with the rules.

Conductor Dole also stated that his car had not been furnished with torpedoes, but upon investigation after the accident two red and one green 10-minute fuses were found at the rear of the car; and had he thrown off a burning fuse at some advantageous point near Inverness, this accident might have been prevented.

Rule 99-B reads as follows:

"Should the speed of a train be reduced and its rear thereby endangered, making it necessary to check a following train before a flagman can get off, a burning fuse shall be thrown off at intervals to insure safety."

Whether or not the speed was actually reduced between Angola and Inverness, the fact that train No. 7 consumed 10 minutes more than schedule running time between Angola and Inverness, occasioned mostly, perhaps, by the length of stops, had the same effect insofar as endangering the rear of the train was concerned. The engineman of extra 123 stated that the air brakes on his train had not seemed to take hold properly on this trip, the brakes on the engine being inoperative, but a stop had been made at the Lake James Line crossing a short while before the collision occurred, and it is believed that had a burning fusee been thrown off by train No. 7, extra 123 would have been brought to a stop in time to avert the collision.

The investigation of this accident disclosed the fact that the operating practices of this railway are bad. Even the most important rules are disregarded, evidently because of lack of familiarity with them on the part of employees. Rule C, of the general rules, requires that employees must pass the required examinations. All of the employees involved, who were asked concerning the rules, stated that they had never been examined on them; and the dispatcher stated that he knew of no instance when employees were examined on the train operating rules.

The time-table of this company specifies that standard clock is located at LaGrange, but the dispatcher stated that at the present time they have no standard clock, which indicated that employees apparently get time as best they can.

It is to be noted that, when leaving Angola, train No. 7 had on board 77 passengers, a number more than 3-1/2 times its seating capacity, which was 21 passengers; and the only man available for protection purposes was the conductor in charge of the train.

Under operating conditions such as those disclosed, it is indeed remarkable that similar accidents are not a frequent occurrence on this railway. There is little benefit to be derived from the formulation and distribution of rules of any character if the employees are not examined as to their knowledge of them, and constant effort put forth to insure entire familiarity and compliance with these rules. Such dereliction of duty, such manifest indifference to the welfare and safety of their employees and the traveling public, on the part of those charged with the operation of this railway, cannot be too strongly condemned.

Discipline and hours-of-service records of employees have never been kept by this railway, but the employees involved in this accident were considered competent men. At the time of accident none of the employees had been on duty in violation of the provisions of the hours of service act.