

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY AT GUERNSEY, IND., ON MARCH 19, 1931.

May 4, 1931.

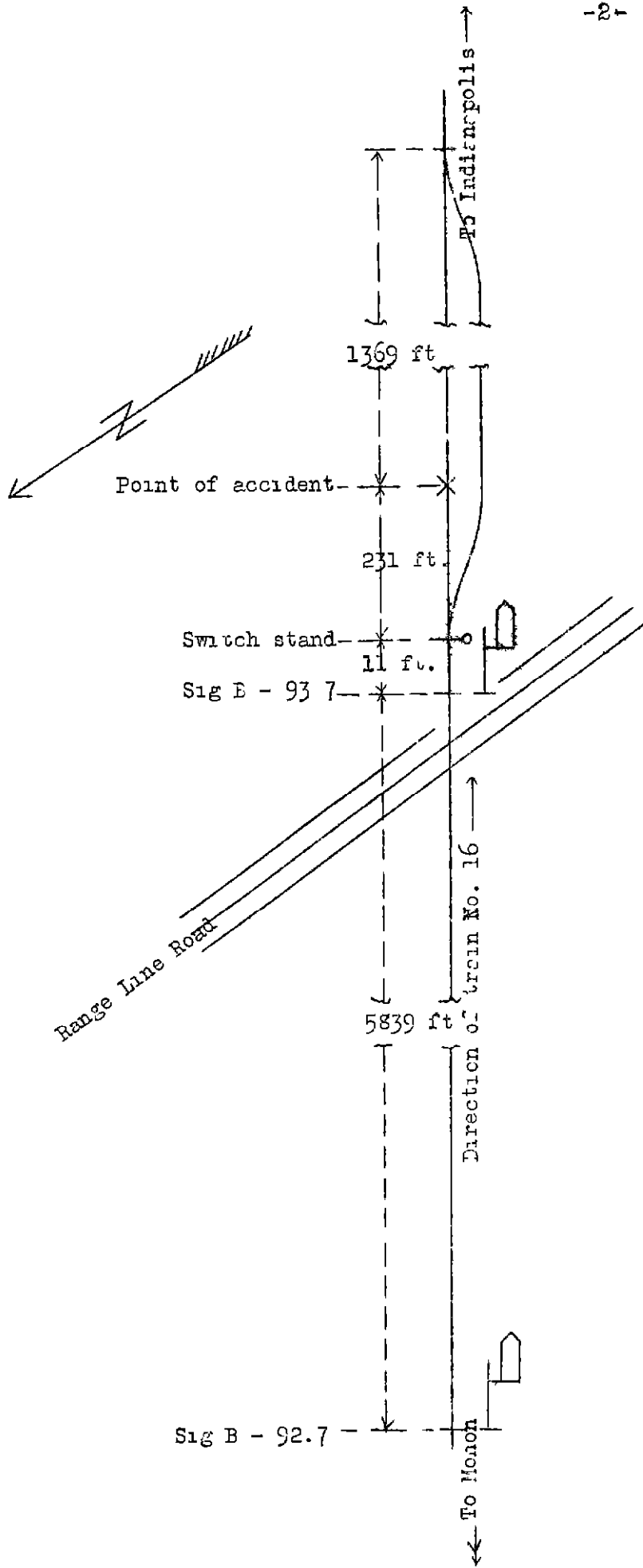
To the Commission:

On March 19, 1931, there was a head-end collision between a passenger train and a freight train on the Chicago, Indianapolis & Louisville Railway at Guernsey, Ind., resulting in the death of two employees and the injury of three employees. This accident was investigated in conjunction with representatives of the Public Service Commission of Indiana.

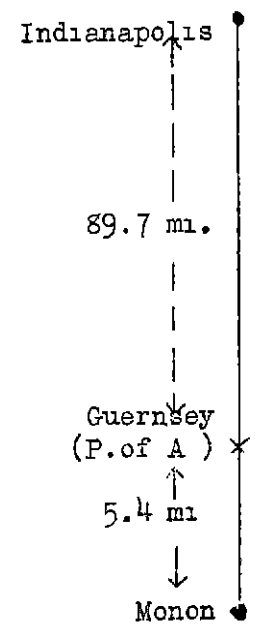
Location and method of operation

This accident occurred on the Second Subdivision of the Northern Division, extending between Monon and Indianapolis, Ind., a distance of 95.1 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders, an automatic block-signal system, and an automatic train-stop system of the intermittent inductive type. The accident occurred on the main track, at a point 231 feet south of the north switch of the passing track at Guernsey. Approaching the passing track from the north, the track is tangent for more than $2\frac{1}{2}$ miles, this tangent also extending for a considerable distance beyond. The grade is level for a distance of 3,100 feet, to within 150 feet of the north switch, and then it is 0.36 per cent ascending for southbound trains for a distance of 1,100 feet.

The passing track at Guernsey is 1,600 feet in length and parallels the main track on the west. The switchstand of the north switch is located on the engine-man's side of a southbound engine, the switch lamp being about 8 feet above the ties; a green indication is displayed by the lamp when the switch is lined for the main track, as was the case in this instance. Southbound automatic block signals B-93.7 and B-92.7, the signals involved, are of the three-position, upper-quadrant type, and are located 11 feet and 5,850 feet, respectively north of the north switch of the passing track; night indications are red, yellow, and green, for stop, caution, and proceed



Inv. No. 1697
 Chicago, Indianapolis & Louisville Ry.
 Guernsey, Indiana
 March 19, 1931



Sig B - 92.7

To Monon

1369 ft

231 ft

Switch stand

11 ft.

Sig E - 93.7

5839 ft

Direction of train No. 16

Indianapolis

89.7 mi.

Guernsey
(P. of A)

5.4 mi

Monon

respectively. The train-stop inductors for these signals are located in the center of the track and directly opposite the signals.

Under the heading AUTOMATIC TRAIN STOP contained in time table No. 60, effective July 27, 1930, Rules for Enginemen, it is required that:

When passing a block signal in either the approach position or the stop position, engineman must operate the lever of the forestalling switch to prevent an automatic brake application. This forestalling switch has a time limit of 15 seconds.

Engineman must not forestall until after signal indication has been observed and has been obeyed according to the block signal rules.

The automatic train stop device must be working properly and sealed when leaving a terminal.

Before leaving the roundhouse, the engineman must inspect the system to see that it is in service and cut-out cock properly sealed. ***

When leaving the roundhouse, engineman must operate his engine over the test inductor located near the roundhouse to determine if engine will pass a clear inductor; to determine if an engine will receive an automatic brake application at a stop inductor and to determine if his engine will pass a stop inductor when operating the forestalling switch. ***

The view approaching Guernsey from either direction is unobstructed. The weather was cloudy at the time of the accident, which occurred about 4.10 a.m.

Description

Northbound passenger train No. 36 consisted of three baggage cars, one coach, and four Pullman sleeping cars, hauled by engine 442, and was in charge of Conductor McCullough and Engineman Miller. At Delphi, the last open office, 17.2 miles south of Guernsey, the crew received, among others, a copy of train order No. 207, Form 19, requiring their train to wait at Guernsey until 4.12 a.m. for train No. 91. Train No. 36 left Delphi at 3.17 a.m., according to the train sheet, two minutes late, and on arrival at Guernsey was brought to a stop on the main track, clear of the north switch, at about 4.06 a.m., and

after standing at this point about four minutes it was struck by train No. 91.

Southbound second-class freight train No. 91 consisted of 30 loaded and 10 empty cars, 1,417 tons, hauled by engines 252 and 440, and was in charge of Conductor McConahay and Enginemen Harlow and Smith. At Monon, 5.4 miles north of Guernsey, the crew received copy of train order No. 207, Form 19, previously referred to, together with a clearance card. Train No. 91 left Monon at 5.55 a.m., according to the train sheet, 1 hour and 26 minutes late, passed signal B-92.7, which was displaying a caution indication, passed signal B-93.7, which was displaying a stop indication, passed the north switch of the passing track, and collided with train No. 36 while traveling at a speed estimated to have been between 20 and 25 miles per hour. The evidence does not show whether or not the engineman operated the forestalling switch when passing over the inductor located at signal B-92.7.

The force of the impact drove train No. 36 backward a distance of 140 feet, the two trains coming to rest with the front ends of their engines separated by a distance of 41 feet. Engine 252, the lead engine of train No. 91, was only partly derailed but was badly damaged. Engine 440, the second engine, was not derailed or damaged to any extent, neither were any of the cars in the freight train. Engine 412, of train No. 36, was also partly derailed and badly damaged, while the first car was somewhat damaged and some of the other cars slightly damaged. The employees killed were the engineman of engine 252, the lead engine of the freight train, and the engineman of engine 442, of the passenger train. All three firemen were injured.

Summary of evidence

Train No. 91 was made up in the yard at Monon, and according to the conductor it consisted of cars which had arrived from the north in train No. 71, together with 21 other cars which were added to the rear of the train by a yard engine. Engineman Harlow and Conductor McConahay had arrived at Monon at 12.05 a.m. on second-class train No. 90 with engine 252, while Engineman Smith had arrived on second-class train No. 50 with engine 440. These were the crews which were moving southward with train No. 91 at the time of the accident.

Fireman Wilbanks, of engine 252, did not know whether a test was made of the air brakes after his engine was coupled ahead of engine 440 in the yard at Monon, but said the brakes worked properly at the time they were used to reduce speed in order to open the switch and head out of the yard to the main track. As the train was approaching Guernsey, where train No. 36 was to be met, the fireman was working on the left inductor, with the lead brakeman

holding his electric lantern so that the fireman could see to do this work. Signal B-92.7 was displaying a caution indication and the fireman called it to the engineman when it was about 1 mile distant; the head brakeman called it back, but the fireman could not remember whether the engineman called it back or not. Fireman Wilbanks then gave his attention to the injector and did not notice when his engine passed the caution signal or whether the engineman operated the forestalling lever of the train stop device, neither could he recall whether the engineman whistled for the meeting point, or where the train was when steam was shut off, although he did remember hearing a road crossing whistle signal. The fireman thought his train must have passed the distant signal at its maximum speed, 35 or 40 miles per hour, and later on the engineman made a service air brake application and the speed was being reduced; the fireman stopped working on the injector, looked ahead and saw the headlight of the engine of train No. 36 dimmed, and realizing that a collision was imminent he shouted a warning of danger to the engineman, who then applied the air brakes in emergency, when about 1,500 or 2,000 feet from train No. 36. Fireman Wilbanks did not know how much the speed had been reduced prior to the emergency application, at which time he estimated the speed to have been between 35 and 40 miles per hour, no release having been made from the previous service application; he stated, however, that the air brakes were taking proper effect, and thought a stop would have been made in 10 car-lengths additional distance. It further appeared from the fireman's statements that the engineman had appeared to be in normal physical condition after arriving at Monon on train No. 90; that the engineman handled the engine when leaving the roundhouse preparatory to going out on train No. 91, and that the train stop device functioned properly when the engine passed over the three test inductors after leaving the roundhouse.

Head Brakeman Newton, of train No. 91, stated that a standing test was made of the air brakes before leaving the west yard at Monon, a signal being received from the rear end of the train, which was the only way they had of knowing that the test was made. On proceeding from the yard his train was slowed down almost to a stop by means of the automatic brake, and he opened the switch leading to the main track, after which he boarded lead engine 252 and rode on that engine. Approaching signal B-92.7, which was displaying a caution indication, the speed was between 40 and 45 miles per hour, and he and the fireman called the indication, but he did not hear the enginemen repeat it. The fireman was working on the left injector and the head brakeman stood in front of the seat box with his back to the front window, holding his electric lantern for the fireman. Head Brakeman Newton

said that after passing signal B-92.7, the engineman made two brake-pipe reductions, although he could not state the exact location of the train when these were made. The first was a service reduction, then probably not one minute elapsed until the air brakes were applied in emergency, this latter application being after the fireman had warned the engineman of conditions ahead. Head Brake-man Newton jumped just prior to the collision, at which time he estimated that the speed had been reduced to between 20 and 25 miles per hour. His train was about eight car-lengths from train No. 36 when he first saw it, and the headlight on the engine of that train was not burning, having been turned out after his own train came in sight, however, he said that the switch lamp of the north switch of the passing track was burning and that the headlight on his own engine was also burning. He did not recall whether the engine whistle was sounded approaching Guernsey, or at any point after leaving Monon, as he was helping the fireman work on the injector. Head Brakeman Newton further stated that on the north-bound trip on train No. 90 Engineman Marlow made all stops properly and he did not notice anything in regard to the appearance or actions of the engineman to indicate that he was not in normal condition. In his opinion the accident was caused by misjudgment of speed.

Engineman Smith, of engine 440, stated that in moving his engine over the train-stop test inductors, located near the roundhouse, he observed that the train-stop apparatus and the air brakes functioned properly. After coupling engine 440 to the train, one car near the head end was set out on an adjoining track; engine 440 was again coupled to the train, after which engine 252 was coupled ahead, the air was coupled throughout the entire train, and the brake valve on engine 440 was cut out with the double-heading cock. The only test made of the air brakes before leaving Monon, to his knowledge, consisted of releasing the air brakes on the cars that had just previously arrived on another train; he was unable to say whether any test was made by applying or releasing the brakes from lead engine 252 before departing. On departing from the yard, however, the train was brought almost to a stop, speed being reduced to about 1 mile per hour, in order to permit the brakeman to open the switch leading to the main track. Engineman Smith was fully aware of the contents of train order No. 207, in regard to the wait until 4.12 a.m. at Guernsey, and said that he was fairly well familiar with the territory on this line, although this was his first trip over it for about six years. After leaving Monon he looked at the gauge in the cab of his engine and noticed that the brake-pipe pressure was 70 pounds; he worked steam until reaching a point about one-fourth mile north of signal B-92.7, at which time the speed of his train was at its maximum, 50 miles per hour, where he shut off steam. Signal B-92.7 was displaying a caution indication, and while he was de-

pending on Engineman Marlow properly to handle the train and did not notice the exact location at the time the air brakes were applied, he thought this took place about half-way between signals B-92.7 and B-93.7; a light service reduction was made, between 5 and 10 pounds according to the gauge in his cab, and immediately thereafter, before the speed was materially reduced, the brakes were applied in emergency, at which time engine 252 was working steam, although not a heavy throttle. Engineman Smith then looked out to see what the trouble was and at that time his train was so close to the north switch that he could distinguish the switch banner by the reflection from the headlight of the lead engine, and could see the engine of train No. 36 standing on the main track; he estimated that his train was then not more than one-fourth mile from the switch and said that the switch lamp was out and that the headlight of the engine of train No. 36 was extinguished. He then definitely realized that there was danger ahead and that his train could not be brought to a stop, estimating the speed to have been about 25 miles per hour on passing over Range Line road crossing, located immediately north of the switch. Engineman Smith did not make any effort himself to bring the train to a stop, saying that he had no opportunity after Engineman Marlow started to make the stop, and he was of the opinion that the train could have been brought to a stop without incident had Engineman Marlow started braking soon enough. Engineman Smith said that in the case of a freight train it sometimes was the practice for the train arriving first at a waiting point to open the switch for the opposing train, although the approaching train should be under full control, prepared to stop, unless there was some one at the switch and the engineman of the approaching train could plainly see the proper indication displayed by the switch target and also received a proceed signal from the man at the switch, in which event the approaching train would head right in on the siding. When his train was about 2 or 3 miles north of the switch he saw the headlight of the engine of train No. 36 extinguished, cut out entirely, the dimmer not being turned on, nor was the headlight of that engine blinked as his train approached the waiting point. Engineman Smith knew that his train would have to hurry on account of the short time at their disposal in order to make Guernsey for train No. 36 by the time shown in the wait order, and on leaving Monon he did not think that there was sufficient time for his train to take the siding at that point and clear the superior train not less than five minutes, as required, although he felt that his train could reach Guernsey and clear before the expiration of the time shown in the wait order, and he thought this was the reason why Engineman Marlow approached the waiting point at such a high rate of speed. Engineman Smith stated that he probably should have been more on the alert approaching Guernsey in order to see that Engineman Marlow took proper precaution to have the train under control, but said that naturally when working with another engineman, "he leaves the responsibility up to the man in charge." Statements of Fireman Houston, of engine 440, developed nothing additional of importance.

Conductor McConahay, of train No. 91, stated that when engines 440 and 252 coupled to the train at Monon, he was engaged in checking the cars, and as he went toward the rear of the train he observed the car inspectors walking alongside the cars and pulling the release rods in order to see whether the air was going back through the train. On reaching a point about 10 or 12 car-lengths from the caboose the train started to move, and when he entered the caboose he noted that the brake-pipe pressure on the air gauge registered 70 pounds. Speed was reduced so that the head brakeman could open the switch leading from the yard to the main track, but he thought the independent brake was used for this purpose. His train started to move from the yard at 3.55 a.m., and when it had reached a point about one-fourth mile south of Monon he looked at his watch and it was then 4.02 a.m., and he felt satisfied that they could reach Guernsey for train No. 36, although they would not clear them five minutes as required, and he also realized that his train was too long to get entirely in the clear on the siding. After passing signal B-92.7 he felt the air brakes apply in service, at which time he estimated the speed to have been between 45 and 50 miles per hour; the speed of the train was reduced perceptibly and shortly afterwards the collision occurred, at which time he estimated the speed to have been about 20 miles per hour, he had not noticed any further application of the brakes. Conductor McConahay did not know of any test being made of the air brakes on his train before departing from Monon, but said there was no doubt in his mind but that the brakes were in good condition and had nothing to do with causing the accident. He checked the train register when he received the orders, but did not make report of this check to the enginemen, saying that he saw Engineman Marlow personally check the register; when he delivered the orders to the enginemen they were not read to him as it was not required that he do so. Conductor McConahay said that his train had run on short time before, and that in this particular case he had no hesitancy in making the movement, although he would not have felt safe in trying it with only one engine. In his opinion, the accident was the result of Engineman Marlow not beginning to brake soon enough.

Flagman Moore, of train No. 91, stated that before leaving Monon he asked the car inspectors whether the air brakes were all right and they replied that they were. About 30 or 40 minutes after the collision he flagged the yard engine that came from Monon and then rode on it to the point of accident. The yard engine coupled to the rear of train No. 91, considerable difficulty was experienced in getting the train started, and it was necessary to release the brakes before the train was moved. Flagman Moore had been concerned as to whether his train was going to reach Guernsey to clear train No. 36; he said he called the attention of the conductor to the short time, but that the conductor replied that there was plenty of time. Flagman Moore also stated that

when train No. 91 is late it is customary to meet train No. 36 at Guernsey, and that it is necessary to saw by. Train No. 36 never had the switch open for them at Guernsey, but did when they met at Pittsburg, located 14.1 miles south of Guernsey.

Conductor McCullough, of train No. 36, stated that his train came to a stop on the main track at Guernsey, clear of the north switch of the passing track, at 4.06 a.m. He was in the coach, the fourth car, when his train came to a stop and he looked ahead along the west side of the train, the passing track side, but saw nothing of train No. 91, and then went back in the coach and sat down; after a minute or so he got up and went out again, at which time he could hear train No. 91 coming. He went back inside again and sat down, and felt that his train was going to be delayed longer than the time specified in the wait order. Then he got up again, intending to go out, and was standing with his watch in his hand when the collision occurred; he placed this time at 4.12 a.m. Conductor McCullough stated that the switch lamp was burning. Flagman Bailey said that the passenger train came to a stop at Guernsey at 4.05 a.m., and he placed the time of the collision at 4.11 a.m. During the time his train stood waiting on the main track at Guernsey he did not go back to flag, saying that he got back on his train when he saw train No. 91 approaching and was standing inside the coach when the collision occurred.

Night Engine Hostler Faucett, on duty at Monon, stated that on the morning of the accident he made several tests of the train-stop apparatus on engine 252, and it was in proper working order, while the air brakes worked properly when passing over the test inductors. Night Machinist Swisher stated that he inspected engines 252 and 440 and found nothing that would interfere with their proper operation. These employees did not, however, observe the air gauge to see what pressure was carried, nor did either of them test the air-brake equipment, Hostler Faucett saying that such tests were made at other terminals.

Car Foreman Napier stated that he had never issued instructions to give trains departing from Monon the required terminal air-brake test, saying that as soon as the engine is coupled to a train, car inspectors observe whether there is air in the auxiliary reservoirs of each car, and the brakes set, and then they permit the train to depart. Car Inspectors Hays and Gears stated that they did not make a terminal test of the air brakes of train No. 91 on the morning of the accident, but that they did ascertain that air was in the auxiliary reservoirs of all the cars in the train by pulling the release rods on each car. They did not,

however, observe the air gauge in the caboose to see whether the required brake-pipe pressure was carried, nor did they give the engineman a signal to apply the brakes or make sure that all the brakes in the train were operative.

Master Mechanic English stated that he arrived at the scene of the accident about 3½ hours after its occurrence at which time the cars in train No. 91 and engine 440 had been pulled back to Monon. He noticed that the brake valve on engine 252 was in the emergency position, then he went to the roundhouse at Monon and saw that the brake valve on engine 440 was cut-out for double-heading purposes. All train-stop apparatus was either sealed or padlocked. The air-brake equipment on engine 252, of the freight train, and engine 442, of the passenger train, was damaged to such an extent that it was questionable whether it could be tested. Master Mechanic English further stated that at Monon car inspectors are available for making terminal tests, but the practice has been that the car inspectors look over the train in order to know that angle cocks are in proper position and that brake-pipe pressure extends to the rear of the train; this practice is in line with verbal instructions. This terminal is not considered as an initial or originating terminal and outbound trains consist usually of cuts of cars assembled from several directions which have already been given tests at originating terminals. Monon is not equipped with air on the repair track, nor is there any yard plant, and periodical air cleaning is not attempted, this periodical cleaning and maintenance being done at Indianapolis and South Hammond only. Instructions have been issued that cars must not be permitted to leave originating terminals with the air brakes cut out, except cars loaded with perishable freight or live stock and these only when placed to the rear of all brakes operated by engineman.

Air Brake Supervisor Gaugh stated that the air brakes on engines 252 and 440 had been tested and were known to be in good condition about four or five hours prior to the accident, while the automatic train-stop equipment also was tested during that period, engine 252 being tested at Belt Junction and engine 440 at Lafayette shops, and found to be in proper working order. Instructions are that at points where cars are picked up or set out, enginemen and trainmen will test the air brakes by making an application and release test. Instructions are given to car inspectors, also train and engine crews, how to make the prescribed terminal test according to the A.R.A. rules, but he said that he knew that such terminal tests were not being made at Monon, which was not considered as an originating point, and therefore required only the making of the application and release test. Crews are supposed to know before departing

from a terminal that all brakes are operative, yet Mr. Gaugh said this was not actually the case, since they could not tell unless a terminal test was made. He admitted that the practice followed at Monon was contrary to the recommended practices and rules of the American Railway Association.

Conclusions

This accident was caused primarily by the failure of Engineman Marlow, of Train No. 91, properly to obey signal indications.

An order had been issued requiring train No. 36 to wait at Guernsey until 4.12 a.m. for train No. 91, and the evidence indicates that train No. 91 left Monon without sufficient time to make the movement and regardless of the further fact that Conductor McConahay knew his train was too long to get entirely into clear on the passing track at Guernsey. The speed of train No. 91 was increased en route until it reached 50 miles per hour, as estimated by the engineman of the second engine and also by the conductor, and apparently the train was still moving at about this rate of speed when automatic signal B-93.7 was passed. This signal was displaying a caution indication and its indication was observed and called by the fireman and head brakeman of the first engine and by the engineman of the second engine. In the time-table instructions of this railroad there is a provision relating to the automatic train-stop, quoted in the first part of this report, which states that enginemen must not forestall until after the signal indication has been obeyed according to the block-signal rules, and in the block-signal rules it is provided that when a caution indication is received, the train should "prepare to stop at next signal." These instructions were not obeyed by Engineman Marlow, for the evidence is clear that he failed to take any action toward bringing his train under control until comparatively close to signal B-93.7, which was displaying a stop indication; in fact, it appears that it was not until after the fireman had called a warning to him that he applied the air brakes in emergency, too late to avert the accident. No adequate test of the air brakes on this train had been made at Monon, but they appeared to have operated properly when used, both at Monon and when approaching Guernsey, and in view of the further fact that the engineman seemed to be conscious and aware of his location, it would appear that the only reasonable explanation for his failure is the fact that he misjudged either the speed of his train or the braking distance available for stopping before reaching the passing-track switch.

Engineman Smith, in charge of the second engine on train No. 91, had observed the caution signal indication before his train reached it and had shut off steam. It is apparent, however, that he was not paying close attention to the operation of his train, as he apparently did not realize the danger until after Engineman Marlow had applied the brakes in emergency. Engineman Smith was aware that his train had passed the caution signal indication at a speed of approximately 50 miles per hour, knew that it was running on short time, and when some distance away had seen the headlight of the engine of train No. 36 standing at the meeting point. Under these circumstances he should have been prepared to take control of the train in time to avoid an accident.

Under the rules it is required that at meeting points between trains of different classes the inferior train must take the siding and clear the superior train not less than five minutes. Enginemen Marlow and Smith and Conductor McConahay knew before leaving Monon that their train could not reach the waiting point without encroaching upon the five minutes clearance time. Running on short time did not cause this accident, but it may have been a factor in causing Engineman Marlow to delay action toward bringing his train under control, and there is no doubt that it was the principal factor so far as the high rate of speed was concerned, and the employees in charge of this train are open to censure for attempting to make such a movement. This is particularly true in view of the conductor's statement that he could not have gotten into clear, but would have had to send out a flagman and saw by the passenger train.

No terminal test was made of the air brakes on train No. 91 prior to its departure from Monon, and it developed that no such test was required by the current instructions in effect at this point. The practice is to make sure that the air is cut through to the caboose, this being done by means of an application and release test, but not to make a terminal test because of the fact that Monon is not considered as an initial terminal and outbound trains usually consist of cars assembled from various directions which have previously been given tests at initial terminals. The result of this practice was that the crew of train No. 91 had no knowledge concerning the condition of the brakes in their train. This is not a safe condition and steps should be taken which will result in crews being in possession of definite and accurate information as to the condition of the brakes in their trains before departing from terminals where trains are made up.

In the book of rules of this railway there is a provision similar to that contained in the standard code, to the effect that a headlight "must be dimmed * * while

standing on main track at meeting points. " The evidence indicated that the headlight on the engine of train No. 36 was burning when it arrived at Guernsey, and the engineman of the second engine of train No. 91 said he saw it when his train was 2 or 3 miles distant; there is a conflict in the testimony, however, as to whether this headlight subsequently was dimmed in accordance with the rule or extinguished entirely. In either event, however, this had no bearing on the failure of Engineman Marlow to obey signal indications.

As a result of the investigation it was developed that the flagman of passenger train No. 36 did not go back to flag during the time that his train stood waiting on the main track at Guernsey, also that when Engineman Smith arrived in Monon on train No. 56 on the First Sub-division, he was on the lead engine, but that the air brakes were being operated from the second engine. This condition arose at Reynolds, 7.4 miles from Monon; his engine had been the second engine, but in switching out a car at Reynolds his engine became the lead engine, but the hose between the two engines was not coupled before leaving that point. These conditions, coupled with others previously mentioned, point to the need for energetic action on the part of officials toward seeing that rules are strictly enforced and obeyed, and that unsafe practices are eliminated.

Attention is further called to the fact that the accident here under investigation adds one more example to the list of those occurring in territory protected by some form of automatic train-control device in which enginemen have failed properly to control the speed of their trains, resulting in an accident. This subject, and its connection with the general question of the necessity of starting to control the speed of a train at the caution signal location, is discussed at some length in the report covering the investigation of an accident which occurred at Camp Douglas, Wis., on February 28, 1931, our investigation No. 1694. In the present instance, the instructions direct enginemen not to forestall until after the signal indication has been observed and has been obeyed according to block signal rules, but the weakness in this provision is that the block signal rules do not require the taking of any affirmative action at the caution indication toward bringing the train under control, the requirement being merely to "Prepare to stop at next signal." The following statements were made in the Camp Douglas report concerning the interpretations to be placed on caution or approach signal indications, and the operation of the forestalling feature of train-stop devices, and they apply with equal force to the circumstances surrounding the occurrence of the present accident:

In the American Railway Association's standard code of block signal rules, as revised in January, 1928, the approach indication of a block signal as shown in rule 285 is "Prepare to stop at next signal. Train exceeding medium speed must at once reduce to that speed." A number of railroad companies have adopted rules in conformity with this provision of the standard code. This principle is recommended.

The foregoing statements apply with even added force where automatic train-stop devices are in service. These devices, or the greater portion of them, were installed by the carriers pursuant to orders of this Commission. By the order of June 13, 1922, prescribing specifications and requirements for automatic train stop devices, it was required that the device bring the train to a stop, after which the engineman could restore the apparatus to normal condition and the train be permitted to proceed. At the solicitation of the carriers, however, this requirement was modified by the order of July 18, 1924, by permitting the use of a forestalling device by means of which the engineman could forestall an automatic application of the air brakes and then control his train in the usual manner in accordance with hand signals or under limits fixed by train order or prescribed by the operating rules of the company. The use of a forestalling device is not required, and the statement was made in the concurring opinion in the proceeding upon which the order of July 18, 1924, was based, that "If experience shows that the permissive feature does not fulfill its purpose, we can at any time require its elimination."

On some railroads the rules provide that an engineman shall not forestall an automatic brake application until a restrictive signal has been observed and is being obeyed. This provision, together with the interpretation of approach and caution indications referred to in the foregoing, evidences a proper appreciation of the safety questions involved and should be incorporated in the rules of all railroads using devices of this character.

The current book of rules on the Monon became effective February 1, 1929, more than a year after the last revision of the standard code of the American Railway Association; however, the rule relating to the approach signal indication was not changed to conform to the standard code.

All of the employees involved were experienced men, and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. Borland,

Director.