

4,300 ft. beyond or west of the distant signal. An automatic block signal was located 6,100 ft. east of the distant signal. When the second section of the circus train stopped to cool the hot box the flagman started back with fuses and lantern. It appears from the preliminary investigation that the automatic signals and the signals of the flagman were disregarded by the engineman of the empty equipment train, as, after the accident, the distant signal for the interlocking plant was found to be in the stop position with the red light showing, while the automatic block signal was found to be in the caution position with the yellow light showing properly. This shows that the signals were operated properly. The signal system consists of 1 arm, 3 position upper quadrant signals.

After receiving the caution indication, the engineman should have been prepared to stop at the next signal in advance. Rule 8 of the automatic block signal rules, in the Book of Rules for the operating department of the Michigan Central, reads, "a train passing an automatic distant signal which indicates caution must be under control, so it may be stopped on reaching the home signal." All employees involved in this accident, and in fact all employees in the entire transportation service, are examined on all block signal and operating rules once a year as required by the State of Indiana.

Engineman Sargent has been in the service of the Michigan Central 28 years, is an extra passenger engineman and is about 55 years old. He reported for duty at 9:30 a. m. on June 21, having been off duty since 1:30 p. m. on June 20. At the time of the accident he had been on duty 6 hrs. and 27 min., with a total time off duty of 32 hours prior to starting work. Mr. Kraus, fireman, was called for duty at 12:15 a. m. on June 22, after having been off duty 23 hrs. and 50 min. prior to starting work. He had been on duty 3 hrs. and 42 min. when the collision occurred.

Further investigation indicates that Engineman Sargent was dozing or asleep, which was the cause of the accident. The flagman of the circus train was back from six to eight hundred feet at the time of the accident. At the coroner's inquest at Hammond on June 25, Engineman Sargent, under his constitutional rights, refused to testify at this time. Conductor Johnson stated to Sargent after the wreck, "This is quite a bad mess," and asked him what was the matter. Sargent's answer was that "I must have been dozing." Circus officers on June 25 compiled a list of dead and missing, which totals 78. Railroad officers advise they know of no changes quoted in figures in casualties as given in the beginning of this article.

MAINTAINING AN INTERLOCKING PLANT AT HIGH TIDE

DURING the early part of June strange things happened in the state of Iowa. The geographical setting of the country suddenly reversed itself. Maintainers, battery men, lampmen, in fact every one in the central portion of Iowa found themselves hard pressed to discover some means of reaching shore. Oceans of water seemed to have suddenly emptied into that particular portion of the country and inundated railroad tracks and the lowlands to such an extent as to cause a suspension of train movements on a number of lines for about 24 hours.

The Chicago & North Western experienced its greatest trouble in the vicinity of Tama, Iowa. At Tama the North Western maintains and operates a 60-lever mechanical interlocking plant for the protection of the

Chicago, Milwaukee & St. Paul double track crossing with the North Western double track main line and the Jewell Junction branch.

Exceptionally heavy rains, together with a cloudburst at Gladbrook, Iowa, northwest of Tama, filled to an overflowing capacity the small creek which flows from that point toward Tama, and empties into the stream, south of the tracks, at that place. The two pictures shown here gives one a very good idea of the condition that existed at the interlocking plant. The picture show-



Wanted—Motor Boat to Reach Dwarf Signal

ing the ground signal poles just to the right of the center also shows a dwarf signal at the extreme right, almost submerged. The other picture shows the accumulation of trash between tracks and the pipe lines, a portion of which is shown in the bottom left-hand corner of the picture. No particular damage was done to the plant, except to throw out of line a small portion of the pipe runs. In one or two cases the earth was washed away from



Shooting Track Trouble Under Difficulties

around concrete cable post foundations. At one location the earth around the battery well was washed away. The battery well, however, was not disturbed. The water in the tower rose to the top of the vertical cranks. The maintainers' greatest trouble was the removal of trash after the water subsided.

In the lower picture the signal formen is having a hearty laugh at the expense of one of the men, who inadvertently had the misfortune to step in a hole between the ties, receiving an involuntary ducking. If floods like this one were to occur often it would be necessary for the railroads to develop a combined motor track car and boat for the use of the maintainers so they could cover their territory.