

keep them apart. Designating the towns on this section of the line from west to east by consecutive letters of the alphabet in order to conceal their real names, 206 had received orders at A to meet 5 at G. But as 5 made better time than the dispatcher had figured on, he changed his mind and sent the operator at E an order for 206 to wait there for 5. It was this order that was not delivered, and it was my oft-cursed intermediate signal, between E and F, that saved the day. I decided right then that I would never swear at a signal again until I found out what the matter was.

Omaha, Neb.

V. A. B.

THE GRETNA DISASTER

The wreck of three passenger trains at Gretna, Scotland, on the Caledonian Railway, May 22, reported briefly in *The Signal Engineer* for June, resulted in the death of 161 persons and the injury of 200 others. Nineteen passenger cars and 12 freight cars were wrecked and destroyed by fire, and four locomotives were damaged beyond repair.

The collision occurred at a signal box known as Quintinshill, about a mile north of Gretna station. A northbound local passenger train was set off on the southbound track to allow two express trains to pass it. These expresses, when on time, leave Carlisle, a few miles south, ahead of the local. The local train would have been put on a siding, but for the fact that there was much congestion because of Whitsun traffic and the movement of troops. While standing on the east track the local was run into by a troop train coming from the north, at full speed, both the distant and the home signals being clear for it. The northbound express train then came on at high speed on the west track before there was time to send out an adequate warning and ran into the wreckage of the first collision. Flames broke out within a very few minutes, either from coals which fell from the fire-boxes of the locomotives or from ruptured gas pipes. A considerable number of the victims were soldiers who had alighted from the southbound train and were walking or standing on the northbound track. They were unable to escape from the oncoming express train because of the freight cars on a side track west of the main line.

The collision occurred about 6:40 a. m., just as the night signalman was going off duty, and some confusion in the giving of information by the night man to the day man, or misunderstanding on the part of the latter, appears to be one reason why signals were cleared for the southbound troop train when the northbound local passenger stood in its way. Mechan, the night man, regularly remained on duty until 6:30, instead of going off at six, according to the regulations; this in order to enable the day man, Tinsley, to reach the cabin by a convenient train from Gretna, the very train which was standing in front of the cabin and which was run into. This irregular habit was concealed from the inspectors; the night man made no entries on the train sheet after 6 o'clock, leaving a memorandum from which these were made by the day man.

When a northbound train is thus standing at a station on a southbound track the rules require that the signal man put a collar on the levers of the signals, so that he cannot absently clear a signal for an approaching southbound train, but it appears that this use of the collar was habitually neglected.

The fireman of the local passenger train had gone into the cabin, and it was his duty to see that the collar was used, but this duty also was neglected.

A train of empty freight cars, southbound, preceding the troop train, had just arrived at Quintinshill, and had entered a side track. Whether the arrival of this train had been reported to the next station north appears to be in doubt; both the day man and the night man say that they did not make this report, which throws responsibility on Kirkpatrick, the block station next north, but the reports do not tell what happened there. The day man admits that he forgot all

about the local passenger train, standing less than 100 ft. from his cabin. There was a freight train on a side track between the cabin and the main line which, however, does not appear to have formed a complete obstruction to his view of the passenger train.

The English papers refer to this disaster as the worst that ever occurred on a railroad anywhere in the world, measuring, of course, by the number of persons killed and injured. So far as official records are concerned we have no facts at variance with this statement; but there was a wreck at Mailpois, Mexico, in June, 1881, which, according to the newspapers, resulted in the death of 214 persons and the injury of 50 others. A similar report from Santa Ana, Salvador, May 3, 1894, reported over 200 persons killed. A train wreck at Kobe, Japan, July 28, 1895, resulted, according to report, in 140 fatal injuries. The longest death list in any train accident in the United States is that of the wreck at Eden, Colo., August 7, 1904, when a train broke through a bridge and 94 were killed.

EMERGENCY SUBURBAN TRAFFIC

During the three-day strike of the employes of the surface and elevated lines of Chicago, which began June 13, most of the steam roads entering the city handled a greatly increased amount of suburban traffic, making necessary in some cases the operation of a number of extra trains during the morning and evening rush hours. The Chicago & North-Western operated 288 loaded suburban trains and 93 regular passenger trains into and out of its Madison Street terminal between 6 a. m. and midnight on Tuesday. The electric interlocking system in this practically new terminal proved entirely adequate to the demand and could have handled even more trains safely if they could have been loaded in the station. The only change made in the operation of the terminal plants was the addition of a number of experienced maintainers in the towers primarily to assist in the operation of the intercommunicating system between towers and outlying signals and also to be convenient in case of emergencies too great for the regular maintenance force to handle promptly. The Illinois Central, which handles the largest suburban business in the city, increased the number of its trains in this service from 279 to 622, in and out. On account of this road's superior track facilities, practically no congestion of trains resulted from this increased service, the tightest point being a short stretch of single track near the Randolph street terminal of the suburban line. The Rock Island used four extra suburban trains during the rush hours, running them back and forth at 15-minute intervals in addition to the 39 regular trains each way, daily. In one hour and 10 minutes, during one of the evening rush hours, this company handled 22 suburban trains of 6 cars each, out of two tracks in the La Salle street station. The Western Indiana operated 42 extra trains during the three days in addition to the 15 regular daily trains. The congestion was particularly acute at this road's Dearborn street terminal, where it was ordinarily impossible to set in more than one train at a time. The Union station lines also increased their service, the Pennsylvania lines running 50 extra trains during the three days, the Chicago & Alton two extra trains each way, daily, and the Chicago, Burlington & Quincy four trains in addition to the normal number of 16. The Chicago, Milwaukee & St. Paul, which also uses this station, removed its suburban traffic temporarily to an abandoned station a short distance north. The Baltimore & Ohio, using the Grand Central station, operated 17 extra trains. With the exception of the North-Western, which had a very special problem to meet, practically no extra precautions were taken to insure the proper performance of signals or to increase the capacity of interlocking plants, and the safe operation of such a large number of extra trains, many of which were run without any schedules, reflects credit on the roads concerned.