

Editorial Comment

Educate Highway Users to Observe Crossing Signals

THE automatic highway crossing signal, as installed on the railroads, was both commended and criticised in a committee report presented by Chairman Frank McManamy before the recent meeting of the National Association of Railroad and Utilities Commissioners. This report, consisting of 72 printed pages, included a discussion of many of the phases of the highway crossing protection problem, but the particular point here discussed had to do with the use of automatic crossing signals:

"The trend at the present time is almost universally toward the installation of flashing or swinging light signals to indicate the approach of trains. These signals are controlled automatically by approaching trains, by means of electric track circuits; when operated, they are visible at a considerable distance from the crossing and have the appearance of a red light waved back and forth at right angles to the direction of traffic on the highway. The swinging lights or "wig-wags" also have large red disks, and the lights used with wig-wags are visible in both directions. The installation of flashing-light signals generally predominates in the East, while in the West wig-wags are more commonly used.

The application of devices of this type has the important advantage that the indications which are displayed when a train is approaching are distinctive and sufficiently similar or uniform in character, when different types of apparatus are employed, that there should be no difficulty on the part of automobile drivers in recognizing them and knowing instantly or subconsciously their intended meaning; furthermore, they are designed to operate continuously, night and day, and under all sorts of weather conditions, and the costs of installation, maintenance and operation are not excessive."

This comment should be pleasing to the railroads and especially to the Signal Section, A. R. A., for in the development of the requisite for an automatic crossing warning they have endeavored to be consistent by defining the aspect. "When indicating the approach of a train, the appearance of a horizontal swinging red light and/or disk." This includes both the wig-wag and the flasher-light types.

The report mentioned above then gives consideration to the desirability of uniformity of aspects for crossing signals as follows:

"The necessity for uniformity in the indications displayed by crossing signal devices cannot be too strongly stressed. The danger at grade crossings is the same, and the warning devices designed to protect against this danger should be identical in character wherever encountered. The apparatus employed for displaying this indication may vary materially, but the aspect should be such as to cause the same conscious or subconscious response or reaction on the part of the motorist."

Although these signals afford an arrestive indication when a train is approaching, many automobile drivers disregard the indication, either because of a lack of understanding of the danger, or because there is no definite requirement fixing the proper action to be taken. Suggestions for educating the public as to the use of crossing signals were given in the report as follows:

"In all of the movements and campaigns for safeguarding traffic, education has been recognized as a factor of the highest importance. It may seem scarcely credible that there are considerable numbers of automobile drivers who actually do not know that the display of flashing-light signals at a crossing, or the operation of a wig-wag, indicates that a train is approaching, but that fact has been demonstrated repeatedly, and an examination of a representative number and class of automobile drivers would, undoubtedly disclose a very great need for definite information as to the meaning of these signals and the requirements which should be observed when

they are displayed. Flashing lights are used in some instances merely as markers for crossing locations or approaches, crossroads, curves and other similar points of danger, and it is questioned whether the light and disk signals used at crossings to indicate the approach of trains are in the minds of many drivers anything more than markers of the crossing location."

Although this part of the report may appear to contradict other sections of the report (quoted previously), nevertheless it does point out the need for conscientious effort in educating the public. The educational activities of the railroads were outlined in another paragraph of the report:

"The railroads themselves have carried on educational movements, such as the "Cross Crossings Cautiously" campaigns, the distribution of posters depicting the dangers at grade crossings and the disastrous results of the lack of necessary care and caution at these points, and the erection of crossing signs and signals in stations, or other conspicuous places, together with placards describing the signals and their meaning. In co-operation with the public schools, addresses and lectures have been given, pictures and signal devices displayed, and essay contests carried on, all of which are helpful and commendable. No doubt greater use can be made of the facilities for educational purposes of motor clubs and associations, traffic bureaus and the press. Aside from the need for thorough familiarity by individual motorists forming the membership of motor clubs and associations with the indications of crossing signal devices, there is the moral obligation resting upon the members of any organization formed for the purpose of improving conditions affecting motoring, of rigidly living up to the requirements of these indications, thereby not only protecting themselves, but at the same time setting an example of proper conduct for others to observe and follow. And in collecting and disseminating information in regard to routes, not only the location of grade crossings, but also the type of protective devices and the need of caution at all such crossings, and extraordinary care at any particularly hazardous crossings, should be pointed out."

This section of the report emphasizes the fact that the real reason for this modern grade crossing problem is the increased use of automobiles. The number of trains has increased little, if any, during the period when the number of automobiles in service in the United States has risen by leaps and bounds. Therefore, it seems fair to say that the highway authorities, the automobile clubs, etc., must of necessity assume their share of the work of educating the motorists as to the protection afforded by the automatic crossing signals which the railroads have spent large sums to install and maintain.

Scientific Research on Track Circuits

THE track circuit, the fundamental feature of all signaling and interlocking, has been found wanting in insuring safety of operation, when modern light-weight rolling stock, such as gas-electric rail coaches, is used. As expressed by H. W. Lewis, chairman of the Signal Section, "we have all folded our hands and thought we were fine. Now the operation of rail motor cars is increasing, and our track circuits are weak in that particular service."

Every one interested in signaling realizes the seriousness of the failure of a track circuit to shunt, but this new problem can and will be solved. In the investigations made by Committee IV-D-C. Signaling, it was determined that recording electrical measuring instruments could be used successfully to note the operation of a track circuit with reference to shunting action. In the report on this subject, presented at the recent con-