

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-

vention and published elsewhere in this issue, the committee suggested several means of securing more reliable track circuit operation where conditions were unfavorable. It is evident that the committee has done good work in the time spent on these tests. However, this subject will require concentrated research if the best remedy is to be determined in the shortest possible time. Whether this can be accomplished by a voluntary committee, without the members neglecting their regular work, seems doubtful. The most logical method would be to employ a competent man or men to devote their full time to this study. Adequate electrical instruments and supplies must be procured. The officers of the Signal Section are making arrangements to secure an appropriation from the parent body of the American Railway Association to meet the expenses for research. During the last few years large appropriations have been made by the A. R. A. for the investigation of air brake systems and of equipment for detecting transverse fissures in rails, and, therefore, it is not anticipated that there will be any difficulty in securing an appropriation for research work on track circuit problems. Realizing the importance of this work, no time should be lost by the officers of the association, or the committee in establishing a research group; the signaling field will assist in every way possible to secure the results desired.

Bringing Home More Dividends Than Expenses

WHILE returning from the recent convention of the Signal Section, A. R. A., a signal supervisor stated that he was bringing home new ideas and information gained at the meeting, which, when placed in effect, would soon result in savings that would far exceed the charges for his time and expenses to attend the convention. This man attended each session of the convention, and spent the major portion of the remaining hours in the lobby talking over signaling problems with other railroad men and manufacturers' representatives. Some of these conversations covered the use of meters, modern methods of mixing concrete for construction, schedules of signal lamp renewals, track circuit testing, the organization of maintenance forces, the training of men, and performance records.

This man gained many valuable ideas in this way,

and if the men he talked with did not pick up equally as many it was their own fault, because this supervisor has charge of a large territory on which considerable new construction and a complete overhauling of existing facilities has been in progress during the last few years. As a part of the steel replacements on the main-line mileage under his supervision, low resistance bonds were installed and parkway cable replaced wires and trunking. Cases were rewired, signals painted, foundations whitewashed, and the entire maintenance force took on a new spirit of enthusiasm that has resulted in a monthly signal performance record to be proud of.

This increased efficiency is, without doubt, the result at least in part of ideas that this man gained at previous conventions for he has been a regular attendant. The same dividends can be earned by others who attended the meeting.

A Cover for Padlocks

By H. Fairfield

Signal Maintainer, New York Central, Sandusky, Ohio

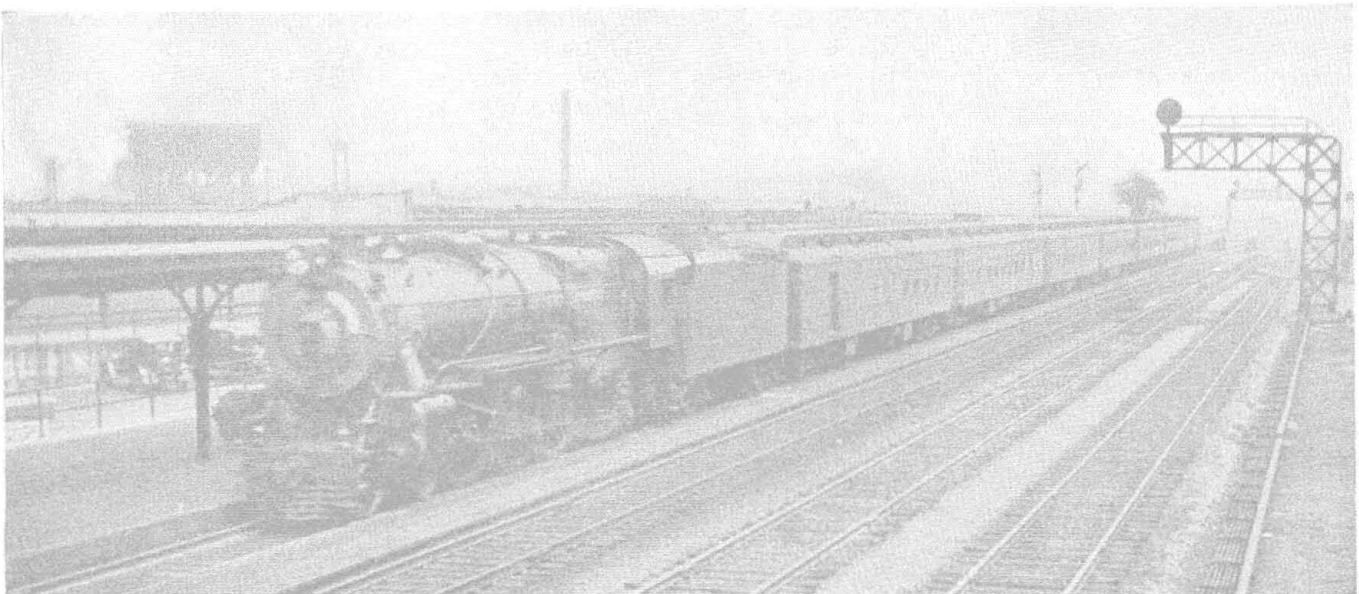
A small piece of leather or canvas about five inches by six inches, if tacked above a signal padlock and hasp on a relay box, will serve the purpose of protecting the lock from sleet and snow. When so protected, the lock will not freeze up in the winter time. Also, if a little No-oxide paint is placed on the hinges and hasps of relay cases, they will not rust and hence, will work freely at all times.

ANOTHER KINK

If a mixture of one part kerosene and two parts of black oil be applied to the top of a rusty rail, it will cause the driving wheels of an engine to slip and this in turn will brighten up the top surface of the rail. Better shunting of the track circuit will result and all train movements will be better protected. This procedure, of course, is only advisable on certain industry tracks which are little used and, hence, likely to accumulate a rust coating.

A THIRD KINK

A very substantial jumper connection for fouling connections at turnouts and crossovers can be made by using the American Steel & Wire Company's bond Type-DS-1, or any stranded cable bond of similar type. This bond wire measures 12 ft. long and should be stapled to the cross ties by means of metal straps.



Signals and automatic train control safeguard passenger trains