



What's the Answer?

If You Have a Question That You Would Like to Have Someone Answer, Or If You Can Answer Any of the Questions Shown Below, Please Write to the Editor.

Installation of Bond Wires*

"Should bonds, such as the cable type or the ordinary bond wires, be installed on the gage side of the rail or on the outside of the rail? Why?"

"On the larger sized rails with adequate space behind the angle bar, what are the advantages or disadvantages of placing bonds behind the bars?"

Use Protectors on Outside

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Bonds of either the cable type or the ordinary bond wires should preferably be installed on the outside of the rail rather than on the gage side, if the many years' experience of the C.&N.W. with both methods of installation can be considered of any value. Bonds installed on the outside have remained in good condition for many years and have not been subject to damage from dragging equipment. A great deal of this good result was primarily due to the use of bond-wire protectors which, of course, could be installed on the outside so as to place the bond wire in an elevated position along the ball of the rail; whereas if installed on the gage side, it would have been necessary to put them in a lower position where they would be more or less in the way of track forces when any work was required, such as removing angle bars for shimming or welding, etc. The only apparent disadvantage in placing the bond wires on the outside was that routine inspection was a little more difficult than it would have been with the bonds on the gage side, but this inconvenience was not sufficient to prevent the adoption of the outside method as a general standard.

Our experience with reference to the advisability of locating bonds between the angle bar and the web of the rail, which of course could more

To Be Answered in a Later Issue

- (1) *On a remote control or C.T.C. installation, is it desirable to provide, on the control machine, some sort of an indication as to whether the a-c. power is on or off? How can such an indication be secured effectively and economically?*
- (2) *Do you bury or leave any slack parkway cable in the ground outside the foundation of a signal, cable post, tower, or other terminating point? How much slack do you leave and has your experience shown this practice to be justified?*
- (3) *Is it good practice to re-install a cable-type bond after it has been removed from service, when new rail is laid?*
- (4) *Do you, or do you not, connect the lead sheaths of cables together electrically, and to a tested ground, at the cable-ends? If so, what experience has convinced you of the necessity for so doing?*
- (5) *What methods can be used to overcome the humming or "chattering" of slot-arms on a-c. semaphore signals?*

easily be done because of the increased space available with the larger sized rail, is as follows: This method was given a thorough test, and the practice was discontinued for two principal reasons. One was that with any galvanized-iron wire, either cable or single strand, the rusting was so pronounced that failures occurred from this reason even in districts where efforts were made to keep the angle bars oiled; the other reason was that the bonds were found to be an inconvenience to track men, interfering with the replacement of track bolts, or because the bond at times would get in the lower angle of the fishing space and prevent the proper draw-up of the angle bars. Both of these circumstances resulted in frequent bond-wire failures, and then the trouble really began, because of the difficulties in actually locating the joint which was responsible for the signal failure. This method was accordingly discontinued.

*For more discussion on this question, see page 42 of the January, 1935, issue.

Cable Connections to Switch Machines

"When underground wires or cable is run to a switch machine, what sort of a pot-head should be used and what kind of conduit or protection extends from the pot-head to the switch machine?"

Pipe Risers Used

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For several years we have used a special cable-entrance scheme which is applied similarly to both switch machines and switch circuit controllers. In this method the cable running to a switch box is brought up from the ground through a piece of cast-iron soil pipe of suitable size, at a

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