cut in the band to let the brushes through. This band is fastened with two or three snaps.

The care mentioned above is all that we have found to be necessary and is successful, as we experience very little trouble with switch machines.

Whitefish, Mont. W. E. SHEPHERD,
Signal Supervisor, Great Northern.

Covering Some Types of Switch Machines Entirely With Snow Has Reduced Troubles Arising From Drifting Snow

THE only types of power switch machines which we have in use on the Eastern lines are the General Railway Signal Company's Model-4A and Model-2 and the Federal Signal Company's Model-41. The General Railway Signal Company's Model-4A machine and the Federal Signal Company's Model -41 do not receive any special attention for winter maintenance. The General Railway Signal Company's Model-2 machine has an open cover, allowing snow to drift in and we have found that by covering these machines over entirely with snow that we experience very little trouble in winter maintenance. We do use an enclosed type of switch adjustment in connection with these machines which prevents trouble from snow and ice at the adjustment.

Montreal, Que. E. S. TAYLOR,
Signal Engineer, Canadian Pacific.

Smash Boards at Automatic Interlockers

"Should smash boards be used on home signals at automatic signaling interlocking plants? Why?"

To Employ Them for the Purpose of Enforcing Respect for Signal Indications Is a Reflection on the Entire Scheme of Train Operation by Signal Indication

I DO not favor the use of smash boards on home signals at automatic signaling interlocking plants. They surely do not prevent any overlooking of the signal indication, and to employ them for the purpose of making enginemen respect the signal indication is, to my mind, a reflection on the entire scheme of safe train operation by signal indication.

They add unnecessary and undesirable complications to the control circuits, and the known objections will more than offset any imaginary benefits, and all this at a greatly increased cost of installation. The position of the smash board is, in itself, an indication to the engineman and as this is necessarily on a separate and probably less reliable control from that used for the signal arm, there is no assurance that a stop signal indication is always accompanied by a stop smash board, nor that a clear signal indication is accompanied by a clear smash board, so it would seem that a broken or unbroken smash board does not prove anything definite at all.

Their use is an inference that it is expected that enginemen will disregard stop signals where they can get away with it without leaving some tangible evidence, and this surely will not promote a sense of respect on the part of enginemen for the proper observance of signal indications at the thousands of other signals of equal importance but where no smash boards are used.

Proper signal observance should, in my opinion, be accomplished through different methods than by the use of smash boards.

Milwaukee, Wis. J. C. MILL,
Signal Engineer, Chicago, Milwaukee & St. Paul.

Are Snow Melters at Switches Effective?

"Under what conditions of traffic and climate is the installation of snow melting devices justifiable at switches in interlocking plants?"

Snow and Below Freezing Weather During More Than Three Months a Year would Justify Melting Devices

THE installation of equipment to maintain above-freezing temperatures at switches in interlocking plants must be justified by a sufficient volume of traffic and considerable snow and cold weather during the winter. In this connection I would say, off-hand, that a fairly dense traffic entailing considerable crossover and turnout movements and a climate where snow and temperatures below freezing were experienced for three months or more a year, would justify putting in some type of snow melting device.

Buffalo, N. Y. B. M. MCDONALD,
Division Engineer, New York Central.

Steam Coils Have Been Found Effective in the Chicago Terminal of the Illinois Central—Experiments Now Being Conducted with Electric Snow Melters

MANY train delays occur at interlocking plants in northern climates during the winter months on account of snow and ice blocking the switches. This is especially true in localities where the annual snowfall is heavy, where high winds are common, causing the snow to drift over the tracks, where there is alternate thawing and freezing, making it difficult to keep drains open, or where sleet storms are frequent. When these delays occur on a busy terminal, traffic congestion results with consequent confusion and annoyance to the traveling public as well as to the operating officers of the railroad.

Every avoidable delay to traffic represents an economic loss, not only in dollars and cents but in public good will and confidence. Signal department officers in recent years have been alert to detect and remove the causes of these delays, in many instances going out of their way to co-operate with other departments in this important matter.

Under ordinary track and weather conditions traffic may be kept open by the regular maintenance forces using shovels and snow burners. The burners are very efficient in cleaning up after the shovelers. At electro-pneumatic interlocking plants the burners may be made more effective in removing large quantities of snow by throwing a flame six or eight feet long under air pressure if provision has been made for connecting to the air line at frequent intervals and suitable drainage provided to take care of the water. However, extreme care must be exercised in the use of burners on account of fire hazards.

Large sums of money are expended annually for overtime work by regular employees on snow duty, and it is often necessary to employ extra shovelers during heavy storms. Sometimes there is delay in getting the necessary men out, especially during the night. Where there are a large number of tracks and especially if