Editorial Comment

Pole Lines for Automatic Signaling

AFTER HEATED argument, the Signal Section, at its March convention, adopted for letter ballot a specification for attaching signal line wires and cables to existing communication pole lines. This specification represents the results of extended conferences between representatives of the Signal Section and the Telegraph & Telephone Section, both parties making concessions in order to arrive at final agreements on important stipulations. On the floor of the convention some members of the Signal Section objected to certain requirements in the specification, but the committee contended that there was nothing to be gained by further conferences with the T. & T. Section. Therefore, the Signal Section could either accept the specification as it stood or let the matter drift on indefinitely. An argument was advanced to the effect that the communication companies, which own or control the pole lines in the majority of instances, are in a position to exact even more stringent rules, resulting in much more expensive construction. Therefore, it seemed that the Signal Section had no alternative but to adopt the specification.

Since the specification will probably be approved by letter ballot, the signal engineer will no longer be in a position to trade with the telegraph conferees in any signaling project involving pole lines. However, wherever the communication companies' representatives become unreasonable, the signal engineer still has one other means of meeting his requirements.

Disadvantages of Joint Line

A certain road desired to avail itself of the privilege accorded in contracts already in effect of using an existing pole line for the line wires for a proposed automatic signal installation. When this proposal was submitted to the communication company, it asked the railroad to pay for the higher poles that would be required in the vicinity of road crossings, as well as for new poles and additional guys on curves. As a result, the charges proposed for the adapting of the existing line for the signal wires were almost as large as the cost of a new pole line adequate for the signaling requirements. Therefore, a new pole line was constructed exclusively for signal circuits on several hundred miles of road. As a matter of fact, a considerable number of roads have for years followed the practice of providing separate pole lines for signaling, while the Pennsylvania has developed and installed a new system of universal code control by means of which wayside automatic block signals, as well as continuously-controlled cab signals, are all actuated through track circuits without the use of line wires for the control.

At first thought the building of a separate line might seem to be unwarranted. However, several developments of recent years contribute to a reduction in such costs. Wood poles, treated with preservatives to render a life of 30 years or more, offer an opportunity for extending the life of pole lines on an economic basis. In open country, 25-ft. to 30-ft. Class-B poles are adequate for a signal line. Furthermore, modern line wires of high tensile strength permit span lengths to be increased to 150 ft., thus reducing the number of poles required to 35 per mile. As a matter of fact, span lengths of 280 to 300 ft. are the usual practice on rural power and telephone lines, even in heavy loading sleet territory. Furthermore, the cost of installation has been reduced decidedly by the development of power machines for digging the holes and setting the poles. Such methods of construction have been used in recent years on the Union Pacific, the Texas & Pacific and the Atchison, Topeka & Sante Fe, as explained in articles from time to time in *Railway Signaling*.

Economics of Separate Pole Line for Signaling

By taking advantage of modern materials and construction methods, a pole line adequate for signaling can now be installed complete in open country for about $950 per mile. An equivalent amount can be spent in adapting an existing communication pole line to the application of signal wires, especially where higher poles are required at numerous places. Furthermore, after such a job is completed, there is always the likelihood of signal failures resulting from broken communication wires falling across the signal wires. It is also known that when an extended section of joint pole line goes down during a sleet storm, the communication companies usually have other routes over which their business can be handled, and that while the dispatcher's circuits are usually connected through as quickly as possible, the signal circuits have to wait. This procedure is wrong because the operation of the automatic block signals is of vital importance, especially when dispatching and communication lines are disrupted. Under such a circumstance, a train accident occurred a few years ago on a large road.

In conclusion, if the installation of signal wires and cables on communication pole lines involves unreasonable requirements, the signal engineer always has the privilege of constructing a railroad-owned signal pole line; furthermore, in many instances construction costs and the operating advantages of having a separate pole line will prove this to be advisable.