More Comments on Latch Locking

"Is there any good reason why electric locking cannot entirely displace, in many instances, the mechanical preliminary latch locking on interlocking machines?"

Electric Protection Should Receive Serious Consideration and Be Given a Fair Trial—If Feasible, It Will Be Possible to Make Interlocking Machines More Flexible

By Charles MacGregor
Circuit Engineer, Interborough Rapid Transit Company, New York

"CAN wayside signals be eliminated where train control is in effect?" was the subject of adverse criticism a short time ago. So also was the question of "the abolition of derails in high speed tracks" until taken up by a prominent signal engineer. Today the latter is general practice, and the former is undergoing extensive tests to ascertain its possibilities.

Some years back I applied the principle of breaking opposing signal controls through each other, which produces the same result as mechanical locking, the object at the time being to protect against two opposing signals being cleared during a period in which extensive locking changes were being made to the interlocking machine. The possibilities of dispensing with the preliminary mechanical locking were recognized and discussed at the time, but were considered too radical for serious consideration at that time.

In connection with the above subject it may be found desirable to revise route locking so that a train will hold all switches over which it will pass, whether the signal is cleared or not. This would mean that a train flagged by or over-running an interlocking signal would hold the switches as they were when the train entered the interlocking. This principle is at present in use to protect crossing roads at non-derailed grade crossings; where the master lever, or master relay, controlling the crossing is controlled directly by the track circuit relays.

Even without the suggested refinements it would seem that preliminary latch locking is in the same position today that mechanical detector bars were when track circuit-controlled detector locks were first introduced, and the mechanical detector bars still retained in service because of lack of confidence in a then untried invention. This also appears to be the position of wayside signals used in conjunction with train control today.

In view of the many seemingly radical changes in the art of signaling that have proved decidedly practical in the past, it would appear that this more recent suggestion should at least receive serious consideration, and I hope some trial by the more progressive members of the profession, before being condemned; as if found feasible, the revision of interlocking machines to obtain greater flexibility and accessibility to the circuit controllers and spring combination would inevitably result. This to one who has had some experience in the manufacture and installation of interlocking machines would seem desirable.

C. F. Lower, Downers Grove, Ill., suggests the possibility of eliminating from 50 to 75 per cent of the mechanical locking in present machines by doing away with the locking of opposing signals. If believed necessary, the opposing signals at the end of a crossover located within the limits of an interlocking plant, can be checked through each other in such a way that one signal must be at stop before the second signal can be cleared and vice-versa. Crossover movements are at slow speed and usually are made by the authority of a call-on signal. For this reason he believes there is little need for mechanically interlocking such opposing signal levers.

Is Pipe Line Insulation Necessary?

"Is it necessary to insulate the pipe line of a pipe-connected derail in track circuit terirtory? Where should insulation be placed in the pipe line so as to secure the most effective use?"

Insulated Pipe Connection Believed to Be Necessary

By E. F. Shaw
Signal Inspector, Chicago & North Western, Lake Bluff, Ill.

INSULATION of the pipe line in a pipe-connected derail in track circuit territory is necessary. There is the ever-present possibility of tie plates being placed or moved so as to come into contact with pipe carriers with resultant shorting of the track circuit. With the pipe line laid the entire distance from the switch point to the derail on the outside of the side track, one insulation is sufficient and it should be placed as near as possible to the first insulated rail joint from the switch point on the outside lead rail. With the pipe line laid as is the standard on the C. & N. W., and crossing under the side track at right angles, using compensating cranks placed half way between the switch point and derail, additional insulation should be placed in the pipe line at a point between the rails of the side track. Either method of insulation will eliminate any possibility of a short in the track circuit. Of course the maintainer when making his inspection of side track foulings should check tie plates closely for clearances from pipe carriers, and also the pipe line at all points where it might come into contact with the rail.

Does Not Believe It Necessary to Use an Insulating Connection

E. K. POST, signal engineer, Pennsylvania, Philadelphia, Pa., states that the use of an insulating pipe connection in the pipe line that operates the derail connected to a hand-operated main-track switch is not necessary. In his opinion the derail should be located back of the insulated rail joint and should be operated from a switch throwing and locking mechanism which has the operating rod and also the front rod insulated from the switch point. With this arrangement there is no connection between the pipe line and the energized parts of the track circuit.

A. Vallee, supervisor of signal construction of the Delaware & Hudson, Albany, N. Y., replies that on his railroad it is the practice to insulate the pipe line of a pipe-connected derail in track circuit territory. It is best to insert this insulation in the pipe line at the nearest point to the switch stand. The derail is located beyond the end insulated joints on the side track.