

What's the Answer?

Communications Maintenance

What is preventive maintenance in communications work? What is the minimum that should be done, and why? Do you schedule or perform a certain amount of preventive maintenance work annually? Please explain.

No Minimum

By D. C. HILL
Superintendent of Communications
Northern Pacific
St. Paul, Minn.

Preventive maintenance is any type of work performed which tends to reduce possibilities of line or equipment interruptions. On our property we do not speak of a minimum of this type of maintenance which should be performed, but rather insist on a maximum amount of such work which can ordinarily be performed in connection with the maintenance employees' other assigned duties. Because of the fact that we expect a maximum of preventive maintenance work at all time, it is, of course, not necessary to set up any schedule for such work with but very few exceptions.

A preventive maintenance schedule is very difficult to set up, because our maintenance employees have such a wide variety of duties to perform. In addition to ordinary trouble-shooting, they are called upon for minor installation and rearrangement work and, therefore, we have found that to stay within any fixed schedule is difficult so far as general preventive maintenance schedule is concerned. We do insist, however, on a fairly close schedule so far as carrier, radio and 62-A selector keys, and this has eliminated to a large degree the trouble calls on this type of equipment. Much of our linemen's work, of course, is taken up with preventive maintenance work, although for obvious reasons there can be no set schedule so far as this work is concerned.

We continually stress to our men that when they go to a certain office to clear trouble, while there and on their return trip to headquarters, they stop at intermediate offices and check equipment to prevent further trouble calls. Some men just naturally do this more readily than others, and we find that the man who is conscientious about preventive maintenance generally does

less traveling and is able to perform his work within a normal day's time, whereas the man who is lax about preventive maintenance spends time on the road that no doubt would be unnecessary if he had paid more attention to preventive maintenance.

Ground Wires

What, in your opinion, is the most suitable way in which to connect ground wires to metal cable sheaths?

Solder or Clamp

By ANONYMOUS

With lead sheath cable, we solder a length of bonding ribbon (tinned copper) to the lead sheath of the cable and connect one end of the ribbon to No. 6 copper wire with a mechanical connection. The No. 6 copper wire is connected to a ground rod with a clamp.

With a steel or bronze tape covered cable, the tape is thoroughly cleaned and scraped where the ground is to be applied. A flexible copper strip with holes spaced approximately every inch is then clamped around each cable with stove bolts. At the end of the flexible strip we connect No. 6 copper wire to the strip by forming an eye in the wire and bolting it with washers and stove bolt to the strip. The other end of the wire is connected to a ground rod with a clamp.

Switch Machines for CTC

In centralized traffic control territory, do you use dual-control switch machines? Please explain why, or why not.

Use Dual-Control

By M. R. ROBERTS
Principal Assistant
Signal Engineer
Chicago, Burlington & Quincy
Chicago

In the majority of our CTC territory, we use dual-control switch machines. With the use of dual-control switch machines a considerable amount of delay to trains is avoided in event of failure of the switch machine to operate, since

the rules provide means to operate these switches by the dual-control mechanism so that a crew man may line the switch when necessary for the track on which movement is to be made. Also, at many locations there is a considerable amount of switching done, and under certain conditions it is done with power switches in the hand control position, which is also fully covered by the rules.

In the event of a storm extending over considerable territory, that caused the CTC to become inoperative, the power switches can be put on hand throw and selector lever locked in this position with a signal department padlock, and hand-throw lever lock with switch padlock so trains may be operated on train orders, and switches handled by hand in the meeting and passing of trains.

Use Dual-Control

By E. A. BURGIN
Signal Engineer
Chesapeake & Ohio
Richmond, Va.

We do use dual-control switch machines in traffic control territory in order that trainmen may operate switches by hand in case of failure of any of the control equipment and for switching operation. In both instances, permission must be obtained from the train dispatcher prior to placing machine in position for hand operation.

Line and Bias Check

What is the quickest and most effective way you have found to check line and bias currents of printing telegraph equipment?

Ammeter with Test Cords

By H. O. ROOKER
Communications Supervisor
Illinois Central
Chicago, Ill.

In my opinion the quickest and most effective way to check line and bias currents of printing telegraph equipment, is to install an ammeter with testing cords attached of sufficient lengths to reach a centralized area with jacks in a turret. This will enable personnel assigned to such duties to make spot checks on equipment, when conditions warrant. This applies where equipment does not already have ammeter and associated rheostats installed by manufacturers for making checks and correcting adjustments, etc.

We also use a 20-cycle a.c. dotter