

tion the movements of preceding trains and, finally, locating the actual circuit by checking the relays.

Once the defective circuit has been located it is only necessary, commencing at either end of the circuit, to take rail-to-rail voltage readings at regular intervals until a point is reached where there is a decided variation in

the registered voltage. It is then apparent that the defect lies between this point and the point where the previous reading was obtained. Retracing one's steps and taking further readings at short intervals within these limits it will take but a short time to arrive at the defective bond or fractured rail.

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Disposition of Mechanical Interlocking Equipment

"What disposition should be made of serviceable mechanical interlocking equipment that has been removed from service as a result of abandonments or replacements by more modern equipment?"

Many Mechanical Plants in Service

E. T. Ambach

Assistant Signal Engineer, Baltimore & Ohio
Cincinnati, Ohio

The proper disposition of serviceable mechanical interlocking equipment that has been removed from service as a result of an abandonment, resulting from a change in the traffic load, or replacement by more modern equipment, depends, among other things, upon the age and serviceable condition of the salvaged material.

The question can be divided into two cases: First, mechanical-interlocking abandonment resulting from obsolescence; second, mechanical interlocking abandonment resulting from increased traffic or changed traffic conditions.

In the first case a careful field inspection should be made to determine how much, if any, material can be salvaged and rehabilitated. In many locations where mechanical plants are abandoned on account of obsolescence, about 90 per cent of the material recovered should be scrapped. The geographical location may also enter as a factor in determining the amount and kind of materials serviceable and the cost of rehabilitation. A recent survey seems to indicate that many railways are salvaging material at greater expense than that occasioned by the purchase of new material.

In the second case, it is assumed that the materials are of later design, and the articles are standard and in use on some other part of the railroad. A careful inspection should be made and the materials removed with the minimum amount of damage, and if the articles are within the tolerances of specifications for new ma-

terials, they should be packed and shipped direct to a storeroom for re-issue. The other material should be further checked and tagged for shipment to the signal repair shop where it can be rehabilitated at minimum expense and returned to the storeroom for re-issue. The balance should be scrapped.

While the mechanical interlocking may be listed as a passing standard about 70 per cent of the total number of levers in service are in mechanical plants, and no doubt these will remain in service for some time to come.

Prospect of Re-Use Determines

P. M. Gault

Signal Engineer, Missouri Pacific
St. Louis, Mo.

It would be impossible to make any rule applicable to all roads to cover the disposition of serviceable mechanical interlocking material which has been relieved as a result of abandonment or replacement by more modern equipment. The answer to this question would depend on the prospect of using this material either as repair or replacement parts in existing installations or in the construction of new interlocking plants where a more expensive type of protection is not justified.

On the Missouri Pacific we have replaced so many mechanical plants with automatic protection that we have accumulated a surplus of mechanical interlocking material far beyond our expected needs. It is our practice to turn interlocking pipe over to other departments where it can be used for water or air lines, after the ends have been cut off and rethreaded. Cranks and compensators in first-class condition are taken into stock

and issued for maintenance purposes. Concrete pipe-carrier foundations are used for retaining walls or rip-rap, and most of the remaining material is scrapped. Where there is a prospect of immediate use we salvage everything usable but these cases are few.

In case of jointly-owned plants, it has been our practice to divide the material between the owners and thus avoid any exchange of credits or money other than for scrap. This seems to be fair to all concerned and relieves the maintaining company of paying for something for which it has no use.

Expectancy of Service Governs

Robert B. Elsworth

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Only such mechanical interlocking material that has a reasonable expectancy of being returned to service should be classed as serviceable and taken into stock at a storeroom. Occasionally it is advisable to take into stock, material having a reasonable possibility of being sold. Other material for which there will never be a demand may properly be classed as unserviceable and scrapped.

It is just as wasteful and uneconomic to take large amounts of obsolete material into the storehouse and stock accounts, which will never be required for service, as it is to occasionally scrap material for which there might possibly be a demand within 5 or 10 years.

The answer to this question is that only such material as will be required for service or sale should be taken into stock.

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"Chattering" Slot-Arms

"What methods can be used to overcome the humming or 'chattering' of slot-arms on a-c. semaphore signals?"

Several Factors to Be Considered

W. F. Follett

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In considering the question of slot-arm vibration, a distinction should be made between humming and chattering. Almost any magnet will hum
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