How CTC Affects D&H M/W Work

Signal engineers and M/W engineers have mutual interests in CTC, especially when it involves a reduction in trackage. The effect of CTC on M/W work was discussed by D&H Chief Engineer C. E. R. Haight at a recent Metropolitan Maintenance of Way Club meeting in New York. His talk is presented herewith.

There are four main points that I should like to discuss:

- What does CTC mean in terms of off-track equipment?
- Does CTC make it easier to get the track?
- What do maintenance men need to know to use CTC to best advantage?
- What does CTC mean to maintenance-of-way expenses?

What does CTC mean in terms of off-track equipment? In my opinion, it means two principal things: First, due to the reduction in trackage; that is, going from double track to single track, or from three or four tracks to two tracks, it becomes essential to use more off-track equipment, particularly where single track results. This has been the case in the majority of Delaware & Hudson installations. Secondly, it means, and this feature complements the first, that you have greater opportunity for the use of off-track equipment, because of the roadways gained alongside the remaining track or tracks where other tracks were abandoned and removed. The D&H will have 160 miles of roadway available when two CTC projects now underway are completed. Also, 300 miles of our mainline, exclusive of branch mains, or 66% will be CTC territory.

Take Full Advantage of Roads

It is my belief that the gain of the roadways adjacent to remaining tracks makes the working of off-track machinery an essential condition in the design of our track equipment. True, we now have truck-mounted cranes and highway trailers for handling materials, but I believe we must also take full advantage of these parallel roads with our mechanized maintenance work; that is, tie renewals, surfacing, ditching, rail renewal and the like.

The parallel roadways mentioned bring up a further consideration and that is their maintenance. In the past, we in maintenance-of-way have been primarily concerned with the maintenance of tracks. However, with mileages of these roadways continually increasing, keeping them in shape for use is beginning to take part of our efforts and expenditures. It will continue to require more and more care as time goes on. Luckily, highway people and contractors have developed equipment, such as bulldozers and graders, which can rapidly and effectively repair roadway surfaces.

M/W Track Occupancy Simplified

Does CTC make it easier to get the track? Here we have factors involved which may vary on different railroads. On the D&H we feel that track occupancy by maintenance-of-way forces is simplified where CTC has been installed. The reason is that with CTC the dispatcher can see at a glance on the CTC machine what train situation exists at any given location. Also, it is possible, to the extent that the dispatcher is able, to set up signals and routes so that maintenance forces can move or work without delays, which can occur due to flagging requirements in other than CTC territory. Please note that I do not mean that flagging in CTC territories is not necessary. It is necessary wherever conditions require. What I am trying to say might be illustrated by this example. Where there are two tracks under CTC the dispatcher, by proper setting up of routes and signals, could handle railroad traffic on one track while letting maintenance forces work on the other track. This in effect would be the same as taking a track out of service.

What do maintenance men need to know to use CTC to best advantage? Here, I believe, is a requirement which is generally present in much of our railroading work; namely, to be sufficiently familiar with the workings and problems of other departments to be able to discuss and plan any particular job, with their supervisors, so that the job can be done with the greatest efficiency possible and with the least interference to the handling of our railroad traffic.

To meet these requirements under CTC, the M/W man should know the operating rules applicable to CTC. He must have a knowledge of the manner in which the CTC territory is set up to work. For example, he should know which tracks are equipped for double running (that is, in either direction), which tracks are equipped for single direction operation, the limits of the CTC territory, etc. He must also have a reasonable knowledge of the train traffic to be handled. All of these things will enable the maintenance man to plan the carrying out of his work in CTC territory in consultation with transportation officials to the benefit of the company as a whole.

Another thing to remember is that the maintenance man must have information about the particular job when planning with the transportation officials. He must be able to show how much a particular gang costs in wages when idled for an hour; how much that gang is costing per day; what effect any excessive running time will have on the cost of a job and the length of time for performing it and how much track space is required to get the equipment in the clear. All of these factors are important in arriving at decisions as to how the work will be handled.

What does CTC mean to maintenance-of-way expenses? Basically, it means a reduction in these expenses because one of the important considerations when installing CTC is the ability to handle railroad traffic on less trackage than would otherwise be required and thereby effect savings in track maintenance. As a result of the installations already made and those in progress, 168 miles of main track will have been abandoned.

You may say this is all very good

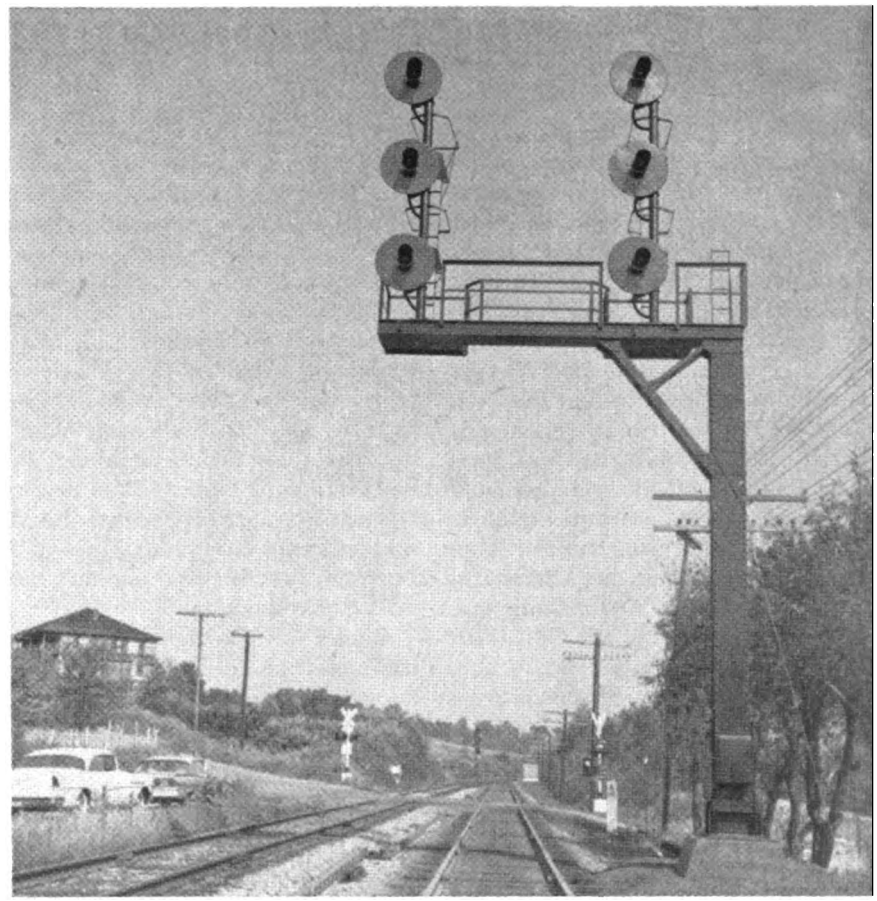
Cuts Costs

it what about the resultant increase tonnage passing over the track or acks that remain? True, if you ındle 20 trains in 24 hours over one ack, where formerly the trains were ındled 10 on each of two tracks, the ıst of maintaining the one track will : greater than it was for that same ack when it handled only 10 trains. owever, the maintenance costs do ɔt double. Some years ago, the AREA :veloped figures on this, which indi-ıted that about 33% of maintenance ısts were affected by increases in affic. There may be varying opinions ı the extent to which the increase in affic affects track maintenance costs, ıt I believe it to be generally agreed ıat it is considerably less than a direct ıtio with traffic.

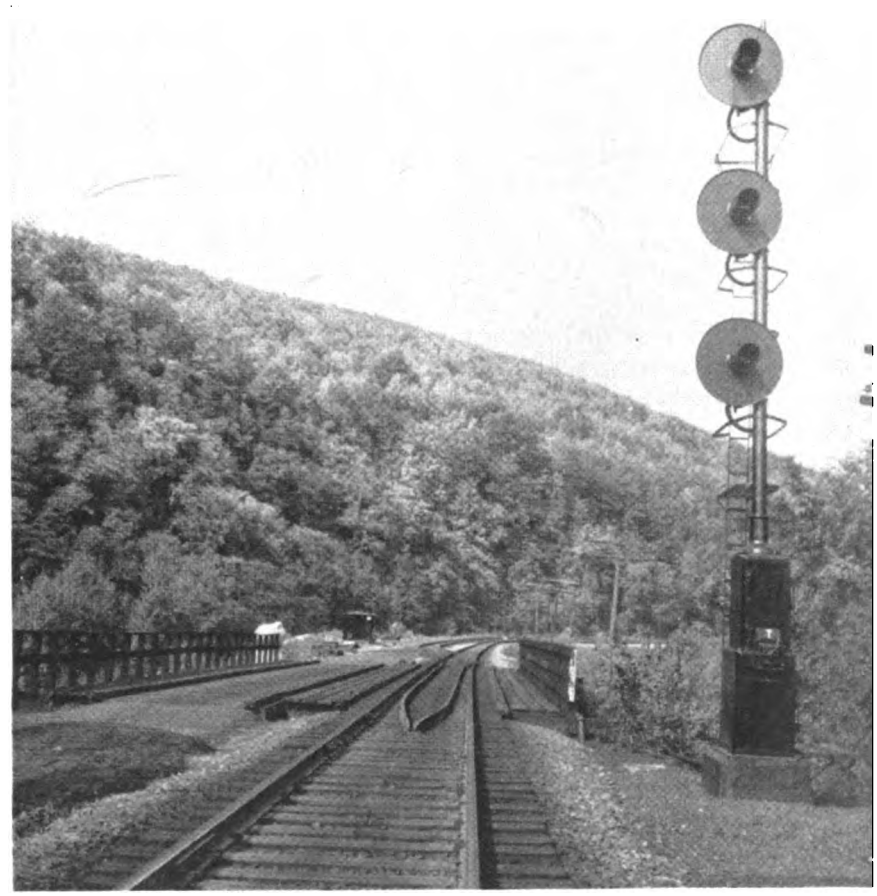
A further effect on M/W use of TC is the introduction generally of ldditional high speed turnouts. These :quire a high standard of mainte-ance in order to function as intended. lowever, here again we have found ıat these are affected by abandon-ıents, such as the elimination of the ecessity for many crossovers when :TC reduces double track to single ack, which compensates for the ıaintenance needs on the high speed ırnouts. The interlockings at the ends f double tracks and at other locations ave involved the installation and sub-:quent maintenance of 54 turnouts nd 22 crossovers, most of which are lo. 20.

M/W at Reasonable Costs

In summarizing, let me say that our xperience has indicated that the in-roduction of CTC, in many cases, ıcreases the amount of single track to e maintained with its track occu-ıancy problems. But the greater op-rating flexibility, together with the pace gained where tracks are aban-loned, which permits use of off-track :quipment, permits maintenance work o be carried out within reasonable :osts under most conditions. And let ne add that I believe the overall bene-it from track abandonments per-nitted by CTC gives us maintenance ıavings which help keep our railroads an efficient medium of transportation. That efficiency of transportation is the primary objective of all of us.



Trains can run on one track while M/W men work on other.



When track is removed, roadway can be built for M/W use.