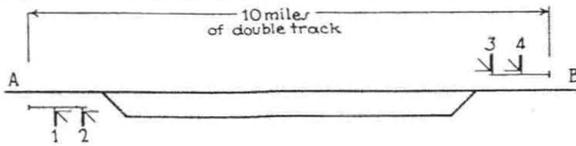


## Signal Aspects at End of Double Track

"A to B represents a section of double track about 10 miles long, on which train movements are to be directed by signal indication in either direction on both tracks.



Should the top arm, or the lower arm at A be used to direct movements to the right-hand track? Which arm at B? Number 20 turnouts are to be used."

### Top Arm for Non-Restricted Move

By F. B. WIEGAND

Signal Engineer, New York Central, Cleveland, Ohio

THE signal indications should be in accord with those in the Standard Code of the A. R. A. At both A and B the top arm should govern movement on the straight track. The aspects should be in accord with Rule 281-B, the indication being "proceed." There are no restrictions governing this movement, all movements being made at normal speed and it would, therefore seem proper in this case to use the top arm for straight movements.

For the diverging movements at both A and B, a restriction is involved. The No. 20 turnout necessitates a medium-speed movement, the medium-speed movement being made at whatever speed the road has adopted for medium speed. The Standard Code does not specify what is "medium speed" and, hence, this is optional with the railroad, which may select the speed it desires to adopt as "medium speed." At both ends of the turnout the lower arm should be used for giving the indication over the turnout to the second track, this indication being in accord with Fig. A, Rule 283, the indication being "proceed at not exceeding medium speed."

If intermediate signals are used, Fig. B, Rule 285, the indication being "proceed prepared to stop at next signal, trains exceeding medium speed must at once reduce to that speed," and Fig. A, Rule 290, the indication being "proceed at restricted speed," are also involved. These latter two rules show the signal arms in the 45-deg. position, indicating that the signal in advance is at stop.

### Local Operating Conditions Should Govern

By LEROY WYANT

Signal Engineer, Chicago, Rock Island & Pacific, Chicago

LOCAL conditions and standard practice of the railroad involved should be carefully considered before deciding the question. At point B the use of the top arm for right hand moves appears logical. At point A, if so called "speed signaling" is the standard practice of the railroad involved, I would install a three-arm signal, and then use the middle arm for right-hand moves. If limited to a two-arm signal as shown in the sketch, then I would determine if in actual operation, there is a normal or preponderant movement to the right or left-hand track, and use the top arm to govern such normal or preponderant traffic. If traffic should be divided about evenly to the right and left-hand tracks, I would use the top arm for the straight track and the lower arm for the turnout.

It has been my experience that the signal man takes problems of this nature more seriously than the operating man. The former endeavors to follow a standard all over the line while the latter favors deciding each location on its merits, considering the top arm on a signal pole as the most important and assigning it to the main route, irrespective of track layout. It has also been my experience that the average engineman uses the signals as route, rather than speed signals, and depends on his accurate knowledge of track layout, rather than signal aspects to govern his speed. Therefore from the engineman's viewpoint the main thing is to advise him fully which routes the arms apply to at a given point.

### Top Arm for Straight Route

By B. W. MOLIS

Signal Engineer, Denver & Rio Grande Western, Denver, Colo.

ACCORDING to the sketch, it seems that the operation on the double track will provide for movement of trains in both the normal and reverse directions, and that the route through the straight track at A will be used possibly as often as the route through the turnout. Under the above condition, there is no normal route at A. If the condition exists on a road that is signaled for "speed signaling," or is endeavoring to adopt such a scheme, then I personally believe the top signal should govern the straight route and the lower signal should govern through the turnout, and the indications would then be consistent with the aspects as given in the Standard Code.

## Annual Signal Budgets

"Do you carry on signal construction work in accordance with a definite annual signal budget, prepared with the thought of co-ordinating each year's work in line with a 5 or 10-year program? How is the budget estimate arrived at? If no budgeting plan is followed, how are the expenditures in the signal department regulated?"

### Construction Program and Annual Budgeting Procedure of the Pennsylvania Clearly Outlined

By A. H. RUDD

Chief Signal Engineer, Pennsylvania, Philadelphia, Pa.

OUR program for signal construction work is at present based on a survey of freight movement and traffic conditions, and the relative importance of our high-speed passenger lines in the territories served by what are known as our "Blue Ribbon" trains, and eventually through routes of lesser importance, with the extension of cab signals, automatic signals, dispatcher's control, etc., depending upon the necessities of the individual sections considered. Our present program has been set up to cover, tentatively, construction work for a period of five years, but with a fairly definite two-year program based thereon, and a one-year budget.

Recommendations are made to the management along these lines, including items on which the management may desire preferential treatment, the final decision resting, of course, with the operating executives as to what items shall be considered for inclusion in the budget. A general estimate of the cost of each project is submitted with the recommendations, and this constitutes, in effect, the budget for the ensuing years.