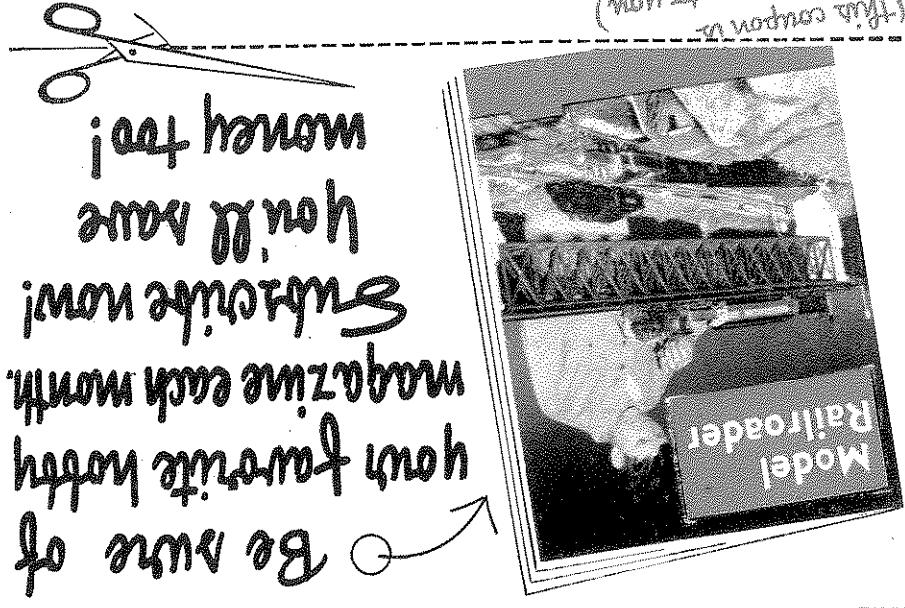


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The second difficulty is too much change in speed at various parts of the layout unless you keep twisting the knobs. Since this is for the most part a layout in which traffic moves in only one direction on a given track (as is the case with the B&O at the corrеспounding point). You can cut straight across the river instead of running diagonally under the bridges and the river modelled at high water gets around this is to provide a rapids stage to make the short piers look like a fair distance above the water. Even then, there is very little clear-ance for a bridge plus piers. A way to do this is to provide a bridge with a long span and the river modelled at high water.

realistic. With our invisible tracks below the river, we will need about 3.3 per cent grades on the main loop and almost 4 per cent on the rear cut-off track. The latter track is always open, so it's no problem. The mainline grades, fortunately, are somewhat self-com- pensating in that the rear end of any fairly long train will still be going downhill at the time that the locomo- tive is laboring up the worst part of the grade.

The alternative is to locate a cross-over near junction A, as shown in the plan. This crossover completes a "reversing loop" in the electrical circuit, so the proper reversible leads must be provided to one of the main-line blocks in which the crossover occurs. It's interesting to note that without this connection between the two main tracks there is no reversing loop even though the same train can pass either way in either direction. The fact that the normal direc-

Two or three times a day a crew will leave Brunswick with the quarry empires, trade them at Millville for miles, return in the same way, and do so many switch-hitches the loads of rock, and do any switching. To prevent the appearance of correct operation, of course, this train should appear the same way. This maneuver can be handled in two ways. If no crossover connection between the two mainline tracks is provided at junction A, it will be necessary to operate starting clockwise over the South Cut-off and then on the left-hand track from the end of the cut-off back to the junction when going from Millville. This may block the main a bit more than you

We need some mud interstretches with mainline traffic to spike up the operation, though, and a little branch-line business never hurts any layout. We can get both by inching along movement that accounts for much of the traffic on the Shenandoah Valley branch, Millville, W. Va., four miles down the branch from junction A, has extensive quarries that call for two or three trains a day to bring in empties and haul out loads of crushed rock. We use modelers license and move Ferry. Then, by taking advantage of the fact that a quarry can have vertical walls, we can have quite a stable scene separation between main cal walls, we can have quite a line and branch without running out of space.

