

Centralized Traffic Control Installed on the Baltimore & Ohio

Train operation by signal indication on 43 miles of single track reduces delays and effects saving in operating costs

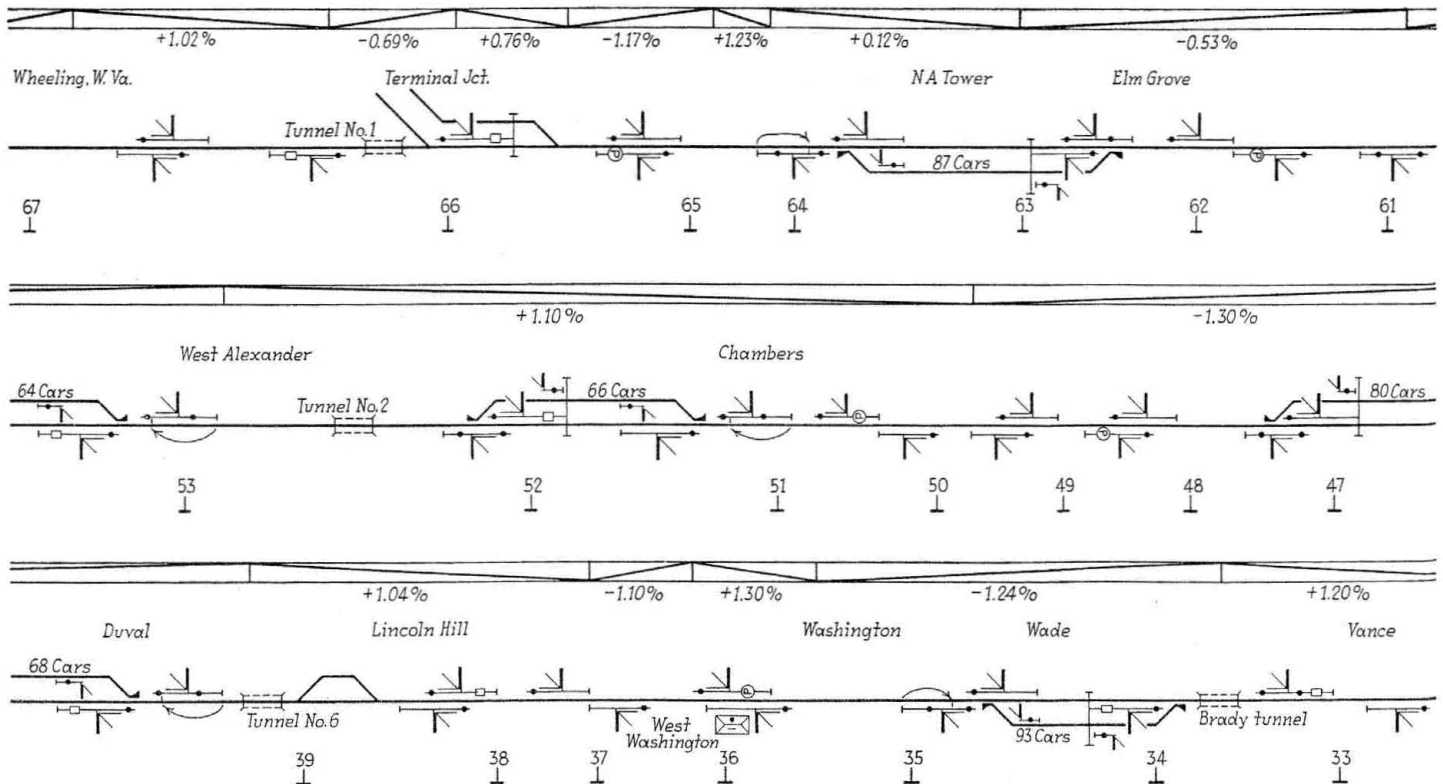


View of lap layout at Clokey looking west

THE Baltimore & Ohio has installed centralized traffic control on 43 miles of single track between Wheeling, W. Va., and Gilkeson, Pa., and, as a part of the project, has provided automatic signaling on 19 miles of double track from Gilkeson to Glenwood Junction (Pittsburgh). The centralized control installation includes the operation of the switches, at 11 passing tracks and at the end of double track, as well as the signals at these points for directing train movements, a total of 23 power-operated switches, 70 controlled signals and 38 automatic signals being involved in the project. The

control machine is located at West Washington, 31 miles from Wheeling.

This subdivision traverses a mountainous territory passing over several minor divides, there being nine tunnels, ranging from 400 ft. to 1,700 ft. in length. Starting at Glenwood Junction a double track line ascends on a grade of about 1.7 to 1.9 per cent for five miles to the Whitehall tunnel, and then descends on a grade of 1.1 to 1.2 per cent for four miles, a rolling grade extending through Thomas tunnel and for 11 miles to Gilkeson, the end of the double track. On the single-track section be-



tween Gilkeson and Wheeling the line passes through seven tunnels, each of which marks the apex of grades descending for two to three miles in each direction, the maximum gradient eastbound being 1.7 and westbound 1.85 per cent. The grades most difficult to negotiate extend in each direction out of Washington, Pa., the condition being aggravated by the fact that all trains stop here for water and are required to run slowly through the city. The mallet-type locomotives assigned to freight service on this division have a tonnage rating of 2,300 tons eastbound and 2,200 tons westbound. On the average, a train of 40 loads constitutes a tonnage rating. The lading includes merchandise moved in either direction and considerable coal is handled eastbound. The traffic includes four passenger trains each way and from four to six freight trains each way daily, including the local freight operated each way daily. Considerable coal is mined in this territory and a turn-around pick-up train is operated from Pittsburgh to Elm Grove and return daily. Therefore, the total number of train movements ranges from 18 to 20 daily. In addition to the difficulties on account of grades, the line includes numerous curves, most of which range from 3 to 8 deg. but some are as high as 11 to 12 deg. The speed limit is 40 m.p.h. for passenger and 30 m.p.h. for freight trains.

The Track Layout

Previous to the improvements recently completed, this line consisted of a single main track from Glenwood Junction to Rand, a distance of 2 miles; double track Rand to Bertha, 4.5 miles; single track Bertha to Finleyville, 6.6 miles; double track Finleyville to Gilkeson, 6 miles; and single track Gilkeson to Wheeling 43.2 miles, with 13 intermediate passing sidings having an average capacity of 65 cars.

It was decided to connect the short stretches of double track so as to provide continuous double track from the west end of the Monongahela River bridge at Glenwood

Junction, to Gilkeson, a distance of 18.7 miles. The east end of the double track was connected with the interlocking plant at Glenwood Junction by a low-voltage remote control machine and the entire double track signaled with color-position-light automatic signals, 30 being used. The double track extensions released the three-trick manual block train order stations at Rand, Bertha and Finleyville and permitted more flexible operation of fill out and turn around service between interchange points at Bruceton with the Pittsburgh & West Virginia and at Snowden with the Montour Railroad.

The topography of the single track territory between Gilkeson and Wheeling is such that the cost of constructing second track was prohibitive, there being seven tunnels varying in length from 400 ft. to 1,700 ft., 58 bridges and numerous heavy cuts and fills. Therefore it was decided to increase the track capacity of this section by providing centralized traffic control and re-arranging the passing sidings and increasing the capacity in each instance to 80 or more cars. The north siding at Clokey was extended and a new south siding constructed so as to make a lap layout. The sidings at Wade, Taylorville, Claysville, West Alexander and Elm Grove (NA Tower) were extended. The sidings at Duval, Bell Siding, Point Mills, and Triadelphia were left as they were, while those at Wylandville and Vance were retired.

The switches for the passing tracks, as well as the switch at the end of double track at Gilkeson, are all equipped with power-operated switch machines, the control of which is included in the centralized machine at Washington. This control machine, of course, also includes the control of all the absolute signals for directing train movements at the various switches where power machines are used as mentioned above. The west end of the centralized traffic control ties in with the interlocking located at the east end of the yard at Wheeling. The control office was located at Washington because this point was centrally located on the division and because this is a good sized town where living conditions are

