

New Electric Interlocking at Clyde, Ill.

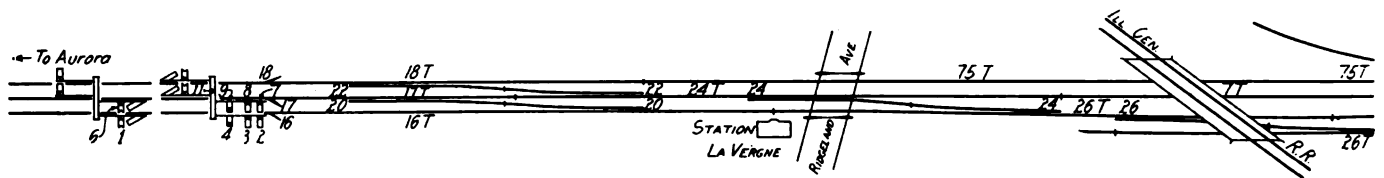
A Plant on the Chicago, Burlington & Quincy for Handling Increased Main Line and Yard Movements Due to Heavier Traffic

THE Chicago, Burlington & Quincy placed in service at Clyde, Ill., nine miles west of Chicago, on March 31, 1918, an electric interlocking plant for controlling main line movements and movements to and from their West Chicago yards, which have been extended a considerable distance due to the increased amount of traffic.

The tower is a three-story brick structure with terra cotta roof and concrete floors, and is electric lighted. A hot water heating system and work room is located on

The interlocking is the Federal Signal Company's type 4, with d. c. operation and a. c. indication. The machine is a 60-lever frame with 23 levers for 15 switches and 8 derails, 14 levers for 10 home and 4 distant signals, 11 levers for 3 call-on and 8 dwarf signals and 12 spare spaces.

The switches are operated by the Federal Signal Company's type 41, 110 volt d. c. switch movements. All main line derails are of the Wharton type, while the other derails are Hayes. All rail is 90 lb. A. R. A. type. All



Track Layout Showing the Final Arrangement of the Switches, Derails and Signals and the Numbering of the Track Circuits on the Plant

the first floor. The storage batteries, charging unit and terminal distributing board is on the second floor, while the interlocking machine is located on the third floor. The Burlington's standard tower is a two-story structure, but because of an overhead railway crossing on the Illinois Central just west of the tower location, it was

signals are of the Federal Signal Company's manufacture. The high signals are type 4, 110 volts, d. c. top post mechanisms and the dwarf signals are the type 4, 110-volt d. c. motor driven. Signals operate to 60 deg., lower quadrant. The dwarf signals are equipped with enameled metal discs.

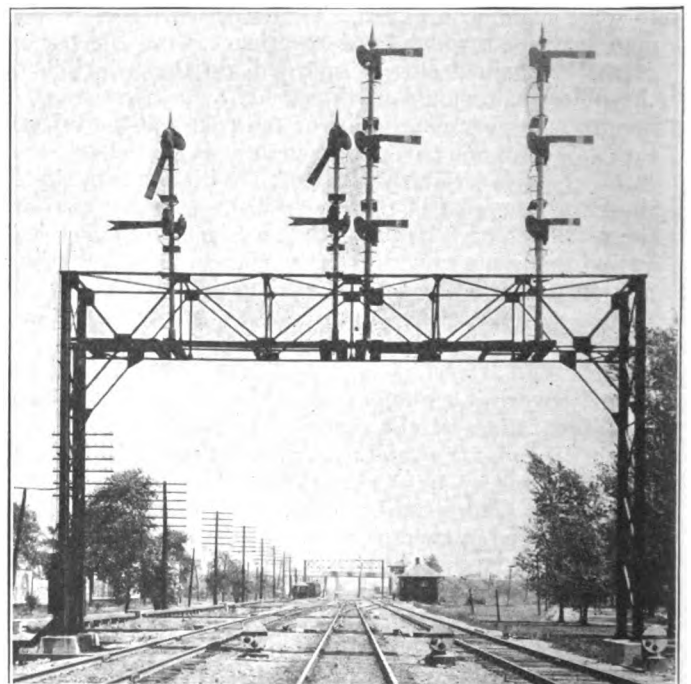
Alternating current for indicating purposes is supplied to the tower switchboard from a supply furnished by the railroad. To provide against failure of this supply a small d. c.-a. c. motor-generator has been installed. This set may be operated from the storage battery and its a. c. terminals switched to the tower switchboard. The tower switchboard is equipped with a main indication transformer, which is connected to the indication common, run-



The Machine, Indicator Board and Chart

necessary to add an additional story to provide a good view in each direction.

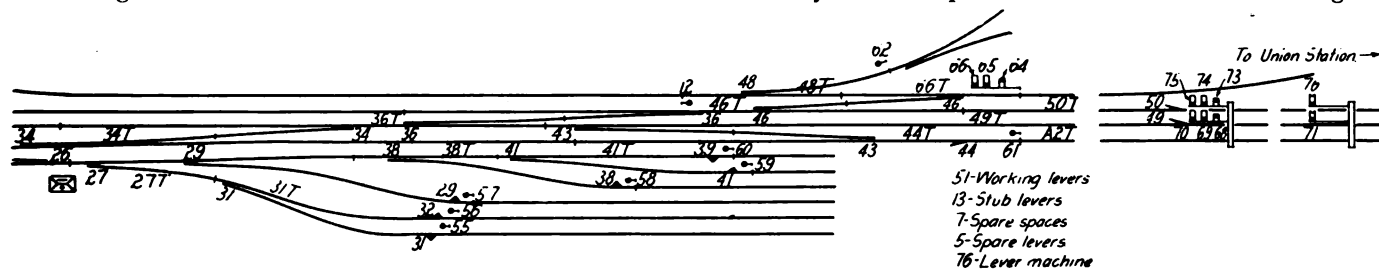
All wires except to the new yard switches are taken across the tracks in underground single conductor tile conduit and is then carried in built-up trunking supported on concrete piers and distributed to the different functions from concrete junction boxes located in the main runs of trunking.



Standard Signal Bridge Showing Mounting of Signals

ning throughout the plant, and to the operating busses of the interlocker so that under the proper conditions this source of energy may be connected to the operating circuits for the control and release of the indication magnets. No additional wires for the operation of the indication other than the indication common are required, since the idle control wires are connected to the indication circuit. Thus, for switches, the normal control wire is used for reverse indication and the reverse control wire is used for normal indication and on signals the reverse control wire is used for normal indication, no indication for reverse being required.

Power for operating the plant is supplied from 90 cells of type A-6 Edison storage battery, which are charged from the Burlington's 4,400 a. c. transmission line from current generated at the power house 1½ mi. from the tower through the medium of a 10 to 1 transformer and a motor-generator. All track circuits are d. c. and the



energy for operating them is supplied by B. S. C. O. battery. All main route signals are semi-automatic with approach and route locking.

When the plant was placed in service, only main line switches leading to the yard were included. Since the date of service, it has been found desirable to add a number of yard switches to the plant and work is now under way to add a 16-lever section to the existing machine. The final layout will be as shown and will include approach and sectional route locking, no detector bars being

respect to cost as compared with manual signals, while safety of operation is enhanced by the elimination of the human factor in their working.

An illustration of the economy effected by the introduction of automatic signaling is given in the following statement. It shows that in a stretch of 108 automatic sections 46 additional interlocking towers provided with the necessary operators would have been necessary in order to give equivalent facilities:

	Automatic Sections.	Additional Towers Which Would Have Been Required.
Main suburban lines.....	40	14
Illawarra Suburban and Bankstown..	31	10
Thornleigh to Hornsby.....	5	3
Bay Road to Lavender Bay.....		
East to West Maitland.....	8	3
Country lines.....	24	16

For the 46 additional interlockings a staff of 138 signalmen would be required, whose wages would aggregate not less than \$116,640 per annum.

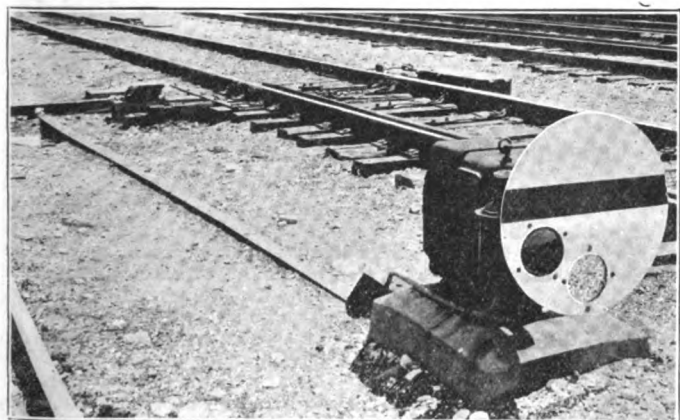
The total number of switches in passenger lines has been reduced to 16.69 per cent as compared with 18.76 per cent, ending June 30, 1916.

The total mileage of double track road now operated by means of automatic signaling is 108 miles.

The following table shows the various signal schemes in use in 1916 and 1917:

	1916, Miles.	1917, Miles.
Double Line—		
By automatic signaling with track block working	79.94	108.66
By absolute manual block system.....	476.36	487.76
By permissive manual block system.....	6.34	6.34
By telephone	0.41	0.41
Single Line—		
By electric tablet	290.1	357.9
By electric train staff	1,170.45	1,369.26
By train staff and ticket with line clear reports	1,505.94	1,451.48
By train staff and ticket, without line clear reports	682.0	677.85
By train staff and one engine only.....	6.17	2.9
	<u>3,654.72</u>	<u>3,859.36</u>

—South African Railways and Harbours Magazine.



Dwarf Signal with Trunking Run and Flexible Conduit

used; lever lights on all switch levers and 10 sec. time releases on certain dwarf signal levers. All engineering and installation work was performed by Burlington forces under the direction of J. B. Latimer, signal engineer.

DISASTROUS COLLISION AT DRESDEN—A press despatch of September 24 reports a collision at Dresden, Germany, between an eastbound express train and another train, in which 31 persons were killed and 50 injured. This is the second collision of the first magnitude reported from Germany within two weeks, the former collision having resulted in 33 fatalities.

Buy Bonds to Your UTMOST