Signaling to Cut Expenses in '58

- **Automatic or consolidated interlockings to eliminate levermen**
- **Automation control for yards to eliminate retarder operators**
- **CTC to cut off operators and remove main track not needed**

SIGNAL CONSTRUCTION should continue at a high level of 7,000 to 7,500 units during 1958, and for five years or more beyond that. The total for 1957 was about 7,549, which is less than that for 1956 but more than 7,227, the average for 1954-1957 inclusive. During 1957 about 2,000 track miles of new CTC was installed as compared with an average of 1,616 miles annually in the 10 years 1947-1957.

The basic reason why construction will continue at a high level is that modern signal systems improve train and yard operations, and reduce operating expenses by; (1) securing more efficient utilization of locomotives; (2) removing main tracks that are not needed; and (3) eliminating numerous levermen, telegraph operators, crossing watchmen and retarder operators.

Any reduction in traffic in 1958 should be an incentive to install more of those signal projects which eliminate operating expenses for wages in positions that are not reduced by less traffic. For this reason, whether traffic is good or bad, signal construction should continue in good volume, approximately 7,000 to 7,500 units annually.

Wages for one leverman on duty three tricks every day, based on 40-hour week, including paid holidays, vacation, retirement, insurance etc., range from $21,066 to $23,500 annually, depending on local circumstances. On the same basis, annual wages for a crossing gateman on duty round the clock everyday, at a single crossing, range from $17,225 to $19,500 annually.

Those roads which have limited ready cash, and acceptable credit rating, can arrange with signal manufacturers to furnish equipment for certain projects, on conditional sales agreements. This method of financing is much the same as used by railroads for the purchase of cars and locomotives. This permits railroads to obtain the operating savings of signal installations promptly. The savings, in most instances should more than offset the monthly installment payments to the signal manufacturers.

With diesel locomotives, trains are fewer, and are operated at higher average speeds. Therefore track occupancy time is less. Thus, with the same gross ton-miles, fewer main tracks may now suffice on extended mileages. When one track is removed, the installation of CTC on the remaining single track provides capacity for present-day traffic. This has been done in recent years on extended sections of the Milwaukee; the GTW, Erie and the Wabash. On the NYC this change was made on 125 miles in 1957. For 1958 this change is planned for more than 300 miles on the NYC, about 300 miles on the Pennsylvania, 170 miles on the C&NW, over 300 miles on the Milwaukee, and on four sections of the B&M totaling over 200 miles.

An important factor, when planning CTC on single track, is to locate the sidings on a time-distance basis, as is being done on the Southern Pacific. Also, the sidings should be 9,000 ft. or longer to permit trains to meet without either one being required to stop. High-speed turnouts and signals to tell enginemen how to

SIGNAL CONSTRUCTION INSTALLED 1955 - 1957

	1957	1956	1955
Automatic block signals	423	864	754
Interlocking construction			
Signals and Switches			
At new plants and added in plant rebuilt	1,417	1,303	1,433
At automatic plants	171	269	147
Spring switches			
Spring buffer mechanisms	127	147	107
Mechanical facing-poing locks	59	41	35
Signals at spring switches	208	268	183
Centralized traffic control			
Power Switch machines	586	819	305
Lever-controlled signals	1,454	1,948	885
Intermediate signals in CTC territory	1,030	1,453	483
Classification yards			
Car retarders	61	69	54
Power switch machines	383	254	247
Highway crossing protection			
Number of crossings at which new installations were made in year	1,630	1,320	1,146
Totals	7,549	8,755	5,779

POWER CLASSIFICATION YARD PROJECTS COMPLETED IN 1957

Railroads & Locations	Number of Retarders	Rail Feet of Retarders	Number of Power Switches	Number Class Tracks	Mfg
AT&SF					
Corwith, Ill	5	513	34	32	Union
C&O					
Russell, Ky	5	962	33	32	Union
CB&Q					
Cicero, Ill	7	610	44	43	Union
CRI&P					
Silvis, Ill	--	---	--	--	✝ Federal
L&N					
Atlanta, Ga	4	749	23	24	Union
NYC					
Elkhart, Ind	10	2,184	75	72	G R S
Pennsylvania					
Conway, Pa. WB	14	2,522	55	53	Union
St.L-SF					
Memphis, Tenn	6	1,374	50	50	G R S
Southern					
Altanta, Ga	11	1,155	69	65	*G R S *Reeves
Totals	61	10,029	383		

✝ Automatic switching controls, made by Federal Telephone & Radio Div. IT&T, added in existing retarder yard

* Switch machines, and retarders furnished by General Railway Signal Co., and the automatic control equipment by Reeves Instrument Corporation

CENTRALIZED TRAFFIC CONTROL INSTALLED IN 1957

Railroads & Locations	Miles	Power Switches	Lever Controlled Signals	Auto-matic Signals	Mfg
ACL					
Jesup, Ga-Waycross	38.5 S	9	25	19	Union
Shocco, Ala-Pelham	45.9 S	9	27	19	Union
AT&SF					
Olathe, Kan-Gardner	8.0 D	11	21	6	Union
Ottawa, Kan-W.Ottawa	4.2 S	3	5	--	Union
Ottawa, Kan-Wiggam	47.0 D	16	23	61	Union
B&O					
Mitchell, Ind-Washington	43.0 S	11	33	26	G R S
BAR					
Maine Jct, Me-S.LaGrange	15.5 S	2	14	2	G R S
CN					
Winnepeg, Man	4.1 S 12.0 D 0.8 T	30	34	19	G R S
GTW					
Inlay City, Mich-Lapeer	17.5 S	4	12	10	Union
CP					
Glen Tay, Ont-Wilkinson	37.5 S	10	28	18	G R S
C&O					
Bremo, Va-Shores	4.0 D	7	15	--	Union
MP219-Staunton, Va	1.3 S	--	2	--	Union
McDougal, W.Va-Cabin Creek	28.1 D	44	67	29	Union
Plymouth, Mich-Grand Blanc	40.9 S	9	38	18	G R S
Pelton, Ont-Blenheim	68.0 S	14	54	31	G R S
C&NW					
Sioux City, Ia-Ferry, Neb	1.5 S	2	10	2	G R S
CB&Q					
Hannibal, Mo-Mark	14.2 S	6	16	8	Union
Mark, Mo-Macon	62.9 S 1.9 D	12	56	42	Union
CRI&P					
Comus, Minn-Albert Lea	54.0 S	7	30	24	Union
CMStP&P					
Bouton, Ia-Indian Creek	78.0 S 50.0 D	18	55	104	Union
Summit, ND-Twin Brooks	17.0 S	3	9	6	Union
D&H					
Afton, NY-Grover	2.1 D	4	4	4	G R S
State Line, Pa-Starruca	7.4 S 2.3 D	4	12	4	G R S
DT&I					
Flat Rock, Mich-Carleton	4.8 S	--	4	2	Union
DM&IR					
Largo, Minn-Wolf	3.0 S	3	14	2	Union
Wyman, Minn-Aurora	7.6 S	12	41	6	Union
ERIE					
Bergen, NJ-Jersey City	2.4 S	7	9	4	G R S
GN					
Lyndale, Minn-MW Jct	1.6 S	1	5	2	G R S
Wapeton Jct, Minn-Breckenridge	3.5 S 1.2 D	9	27	4	G R S
Endot, BC-Brownsville	5.8 S	3	14	8	G R S
JC					
White Haven, Pa-Mountain Park	7.0 D 16.0 S	6	17	15	G R S
L&N					
Bowling Green, Ky-Montfort, Tenn	59.3 S 2.6 D	19	60	28	G R S
MP					
Leeds, Mo	----	2	4	--	G R S
NYC					
Rochester, NY-Sanborn	76.0 S	12	30	30	G R S
Nasby, O-Elkhart, Ind	133.0 D	53	100	142	G R S
Elkhart "B"-West Tower	5.0 D	25	21	4	G R S
Pana, Ill-Lenox	69.5 S	13	36	25	G R S
N&W					
Petersburg, Va-Fleet St	----	1	3	--	Union
Petersburg, Va-Poe	0.3 S	4	1	--	Union
Montvale, Va-East End	2.2 D	4	4	4	Union
Roanoke, Va-"WB"	3.8 S 0.6 D	22	22	--	Union
"WB"-Elliston, Va	5.6 S 8.8 D	8	12	15	Union
Elliston, Va-Arthur	----	--	--	6	Union
Bluefield, W.Va-Mullins	5.6 D	6	8	6	Union
Bluefield-SamSiding	5.2 S	3	12	4	Union
Caretta Fork, W.Va-Cedar Bluff	24.5 S	6	26	12	Union

CENTRALIZED TRAFFIC CONTROL INSTALLED IN 1957

Railroads & Locations	Miles	Power Switches	Lever Controlled Signals	Auto-Matic Signals	Mfg
NP					
Livingston, Mont-Helena	123.0 S	25	74	76	G R S
PRR					
Glen Loch, Pa-Downington	6.8 S	--	2	2	Union
Columbia, Pa-Middletown	11.5 S	--	1	2	Union
Sunbury, Pa-Halifax	38.7 S	7	21	18	Union
Conpitt Jct, Pa-Derby	17.2 S	--	2	8	Union
QNS&L					
Additions	----	5	15	5	G R S
RDG					
Port Clinton, Pa-Schuylkill Haven	7.5 S	3	7	4	G R S
Reading, Pa-Belt Line Jct	1.5 D	13	12	--	G R S
SAL					
Gary, Fla-Sulfphur Springs	5.5 S	8	22	6	Union
Southern					
Alexandria, Va-Acotink, Va	8.0D	12	26	4	GRS
Constitution, Ga-Army Depot, Ga	5.7S	3	12	2	GRS
T&P					
Ft.Worth, Tex-Judd	62.8 S	16	48	21	G R S
UP					
McCammon, Ida-Montpelier	156.0 S 20.0 D	32	117	84	Union
WAB					
Brisbane, Ill-Palos Park	15.4 S	2	6	6	Union
Ashburn, Ill-Chicago	2.2 S	--	4	--	Union
Montpelier, O-Adrian, Mich	34.0 S 2.4 D	6	25	21	Union
Single track	1,326.6	586	1,454	1,030	
Double track	353.3				
Three track	0.8				
Track miles	2,039.2				

enter and leave sidings at maximum safe speed, are factors that save precious minutes, and eliminate train stops. The Santa Fe, Southern Pacific, Pennsylvania and Boston & Maine, have done a good job in this respect.

Also on Double Track

An important trend today is to install CTC for train operation both ways on each of two main tracks, just like two single tracks side by side. Power crossovers are located about 10 miles apart, so that fast trains can run around slower ones, and all trains keep moving. Total capacity is thereby increased. This has been done successfully on extended sections of the Santa Fe, Rock Island, North Western, Missouri Pacific, Frisco, Union Pacific, and Chesapeake & Ohio.

Using this method, the NYC has cut three-track and four-track back to two-track on several hundred miles, Buffalo to Cleveland, Toledo to Elkhart, and Rochester to Buffalo. More than 85 trains daily are operated on some of these sections.

For Light Traffic Lines Too

Up to now, centralized traffic control has been installed on about 22,000 miles of single track, most of which can be classed as important heavy-traffic through routes. Most of this CTC is the conventional type, including power switch machines and complete arrangements of dispatcher-controlled signals at both ends of sidings. Railroads will continue to install this type of CTC on heavy-traffic single-track lines.

In addition there is a demand for "modified" CTC on nearly 35,000 miles which includes about 10,000 miles not previously signaled, as well as perhaps 25,-

000 miles where existing automatic block can profitably be replaced with CTC. On such lines, the problem [is] to modify the signaling and sidings so that the CTC [ca]n be justified by the traffic volume. Modified CTC [wa]s installed in 1957 on 63 miles of single track on the [Bur]lington, which makes a total of about 500 miles on [th]at road. (See page 15, RS&C Dec., 1956.) Other roads [in]cluding the Canadian National and Boston & Maine [have] projects under way or planned.

[Mo]re Compact CTC Machines

1957 was noted for the development of a compact [fo]rm of CTC machine. In conventional CTC machines, an illuminated track diagram extends across the upper portion of the control panel, with two rows of levers, one for switches, and the other for signals. Thus the number of levers was a factor in determining the [le]ngth of the panel. For a long territory of 250 to 300 [mil]es, two or more panels, each 5 to 7 ft. long, were [illegible] at angles to form a semi-circle, partly enclosing the [illegible] where the dispatcher's chair is located.

To concentrate the controls for extended mileage of CTC (200 to 300 miles) on a small machine no larger than a double-page spread in this magazine, a new idea was developed. The first control machine of this type, installed in 1957 on the NYC at Toledo, controls the switches and signals on 133 miles of double track CTC. See RS&C Sept 1957 pg 34. The dispatcher manipulates the entire machine from a seated and stationary position, without turning his chair. This compactness is attained by two new practices: (1) removing the illuminated track diagram (including all indications) from the control machine, and placing these indications on a separate large-sized illuminated track diagram mounted on pedestals 5 ft. above floor and about 8 ft. from the dispatcher seated at the console.

Successful accomplishment of this objective, led to the second new practice; (2) use of one set of push buttons, which by selection can be used to control the switches and signals at any one of the 18 layouts on the 133 miles. Thus, controls are concentrated on a panel only 14 in. high by 20 in. wide. A panel this same size, with a few more buttons could be used to control a much longer territory of 200 to perhaps 300 miles or more.

INTERLOCKINGS REBUILT IN 1957

Railroads & Locations	Home Signals	Power Switches	Mfg
B&O			
Grafton, W.Va.	6	6	G R S
Wellsboro, Ind	14	6	G R S
B&M			
Somerville, Mass	3	--	G R S
N. Chelmsford, Mass	8	1	G R S
Winchester	2	1	G R S
CN			
Hamilton, Ont	20	20	G R S
C&O			
Lynchburg, Va	17	10	Union
C&EI			
Watseka, Ill	6	2	G R S
Woodland Jct, Ill	5	5	G R S
CMStP&P			
River Jct, Minn	7	5	Union
Webster, Ill	4	--	Union
West Dana, Ill	4	--	Union
Humrick, Ill	4	1	Union
CRI&P			
Albert Lea, Minn	8	2	Union
DL&W			
E. End, Scranton, Pa	--	12	Union
Mattes St., Scranton	--	4	Union
Jersey City, NJ addition	3	4	Union
Remote control from dispatcher's office			
E. Lincoln Park, N J			
Lincoln Park			
Montville			
Boonton, N J			
West Boonton			
ERIE			
Jersey City, N J	21	--	G R S
Jersey City Terminal	8	--	G R S
GN			
Seattle, Wash	14	13	G R S
JT			
Jacksonville, Fla	--	1	Union
KCT			
Kansas City, Mo., No.6	--	3	Union
Kansas City, Mo., No.5	--	3	Union
LV			
Cementon, Pa	6	2	G R S
Catasauqua, Pa	11	10	G R S
Gracedale, Pa	6	4	G R S
LI			
Floral Park, NY	1	--	Union
Queens Village, NY	8	4	Union
L&N			
Bridgeport, Ala	--	1	Union
Biloxi, Miss	2	--	-----
Spottsville, Ky	2	--	-----
MP			
Kansas City, Kan	5	5	G R S
NYT			
148th Street, NY	24	9	Union
177th Street, NY	11	8	Union
NYC			
Salina Station, NY	10	1	G R S
"SP" Buffalo, NY	3	1	G R S
"FO" Buffalo, NY	10	8	G R S
"49A" Buffalo, NY	12	18	G R S
"EX" Buffalo, NY	11	--	G R S
East Chicago, Ind	6	--	G R S
N&W			
Lovitt Ave., Norfolk, Va	5	2	Union
So. Norfolk, VA, Pullyard	3	1	Union
So. Norfolk, Va-Virgin	2	1	Union
Bedford, Va	2	--	Union
Union, O	5	1	Union
PRR			
Landover, Pa	7	12	Union
Iron Hill, Md	3	1	Union
Seaford, Del	3	1	Union
Dow, Ind	5	1	Union
RDG			
Pottsville Pa	8	7	G R S
SOO			
Stevens Point, Wis	2	1	G R S
SP			
Weso, Nev.	4	2	Union
Alazon, Nev	3	2	Union
UP			
McCammon, Ida	10	4	Union
WABASH			
Lotus, Ill	4	--	Union
Ashburn, Ill	2	3	Union
Totals	350	209	

Yard Construction Increases

Eight new gravity classification yards, all including automatic retarder and switch controls, were completed in 1957. At least four more, including automatic control, are under construction or planned for 1958. Also, big savings can be made by adding automatic controls in many of the 40 manual-control yards which were built prior to the development of automatic controls; 1950-53.

In a yard with 40 to 48 tracks, using manual control, a typical arrangement includes three towers for control of power switches and retarders. Operators on duty all the time require a total of 9 men. Yards with 75 to 80 tracks may required 4 towers. With the addition of complete automatic control only one tower, with only one man, who serves as a monitor operator, is required. The annual wage saving for one retarder operator position round-the-clock every day including vacations, pensions etc., totals about $25,900 annually.

In 1956 the Rock Island added automatic controls in its manual yard at Silvis, Ill. Likewise the RF&P is now installing automatic controls in Potomac yard at Alexandria, Va.

NEW INTERLOCKINGS CONSTRUCTED IN 1957

Railroads & Locations	Home Signals	Power Switches	Mfg
AT&SF			
E. Galesburg, Ill	4	4	Union
ACL			
Burroughs, Ga	7	4	Union
Alafia Bridge, Fla	2	--	Union
B&M			
Castle Hill, Mass	9	9	G R S
Greenfield, Mass	2	--	G R S
Boston, Mass	3	9	Union
Worcester, Mass	8	3	Union
CN			
Hamilton, Ont	16	11	G R S
Joffre-Walsh, Que	11	10	Union
St. Boniface, Man	8	10	G R S
CV			
St. Albans, Vt	15	12	G R S
CP			
Calgary, Alta	70	59	G R S
C&O			
Cabin Creek, W. Va	8	4	Union
CMSt. P&P			
Dunn, Minn	4	2	Union
DL&W			
Tobyahanna, Pa	5	3	Union
Cheektowaga, NY	3	1	Union
IC			
Belleville, Ill	7	2	-----
Wilderman, Ill	6	3	-----
Chicago, Ash St	5	6	-----
KCT			
Kansas City, Mo, Tower 2	82	78	Union
MP			
Leavenworth, Kan	3	1	G R S
NY Transit			
Culver Rd, New York	60	30	G R S
NYC			
Buffalo, NY, "HA"	6	8	G R S
Buffalo, NY, "UR"	9	7	G R S
Buffalo, NY, "RB"	8	5	G R S
Buffalo, NY, BC	21	2	G R S
NH			
North Haven, Ct	9	4	Union
N&W			
Weller, Va	10	9	Union
NP			
Hoquiam, Wash	3	5	G R S
PRR			
Chestnut Hill, Pa	5	4	Union
Billmeyer, Pa	3	1	Union
Middletown, Pa	7	8	Union
SP&S			
Celilo Bridge, Wash	3	4	G R S
SP			
Winnemucca, Nev	7	--	Union
Salem, Ore	3	1	Union
Willsburg Jct, Ore	3	1	Union
Houston, Tex "207"	14	6	Union
Houston, Tex "Br. 5A"	4	2	Union
TRAStL			
St. Louis, Mo	30	22	Union
WABASH			
Detroit, Mich	3	1	Union
Totals	486	351	

AUTOMATIC INTERLOCKINGS INSTALLED IN 1957

Railroads & Locations	Home Signals	Mfg
ACL		
Drifton, Fla	4	Union
B & M		
Reading, Mass	2	Union
Pinkham, Mass	5	G R S
CN		
St. Cloud, Ont	4	-----
McArthur cut-offs, Man	4	G R S
S. Edmonton, Alta	2	G R S
Alix, Alta	4	G R S
Lyalta, Alta	4	G R S
Yorkton, Sask	4	G R S
Shelton, Minn	4	G R S
C&NW		
Waxdale, Wis	6	G R S
Superior, Wis	5	G R S
CGW		
Mason City, Ia	5	Union
CSS&SB		
Shearson, Ind	6	Union
ERIE		
Peoria, Ohio	4	Union
GN		
Seattle, Wash	9	G R S
IC		
Webster City, Ia	6	-----
Rockwell City, Ia	8	-----
M&StL		
Waseca, Minn	4	Union
MKT		
Oswego, Kan	4	Union
Celeste, Tex	4	Union
Bells, Tex	4	Union
Alvarado, Tex	4	Union
Taylor, Tex	4	Union
MP		
Nepesta, Colo	2	G R S
Dodson, Mo	3	G R S
College Station, Tex	2	G R S
Navasota, Tex	3	G R S
NYT		
Gun Hill Rd, New York, NY	11 8*	Union
NYC&StL		
Knox, Ind	4 4*	Union
PE		
Claremont, Cal	6	Union
SAL		
Auburndale, Fla	5	Union
Winter Haven, Fla	4	Union
NP		
Bemidji	5	G R S
PRR		
Reed City, Mich	4	G R S
Signals	159	
* Switch Machines	12	

Information from the Southern Railway was received too late for inclusion in some of these tables as follows:—New interlockings: at Hayne, S. C., 2 home signals and 5 switch machines: at Monroe, Va., 2 signals, 2 switch machines. Interlocking rebuilt at Austell, Ga., 4 signals, 6 switch machines.

Improvement in Yard Automation

Further improvements are being made in the equipment for automatic controls in classification yards. Adaptation of higher frequency radar for more accurate measurement of car speeds in the low speed ranges; use of high speed electronic analog computers; and improvement in other measuring devices, have characterized the 1957 progress in yard automation.

The trend towards yard automation is continuing

SPRING SWITCHES INSTALLED IN 1957

Railroads	Spring Switches	Facing-Point Locks	Signals at Spring Switches
A&S	2	2	2
AT&SF	12	--	27
B&O	4	--	6
BAR	2	2	6
B&M	1	1	3
CN	2	--	6
CV	3	--	2
CB&Q	10	10	--
CMStP&P	3	3	--
CNS&M	1	--	--
CRI&P	2	2	6
DT&I	2	--	4
GN	18	18	61
GM&O	1	--	1
IC	7	--	11
J. Term	1	--	--
KCS	1	--	1
N&W	5	5	25
NP	1	1	3
PRR	3	--	--
RDG	2	2	2
STL-SF	3	--	3
SAL	3	3	6
SOO	1	--	1
SP	15	11	9
T&P	6	--	--
UP	13	1	13
Vgn	1	--	1
WP	2	1	9
Totals	127	61	208

with practically all new yards authorized during 1957 having new automatic features—all designed to meet the demand for better and faster car handling at important terminals. The object of automatic retarder control is to substitute accurately computed factors for the judgment of retarder operators, who had only the weight of the car and their visual appraisal of the car moving towards them to guide them in selection of the proper amount of retardation to apply.

The principal measurements of car characteristics and performance which are fed into the computer to determine the speed at which the car or cut is to be released from the last retarder in its route are: relative weight, rollability on tangent, rollability on curve, length of cut, characteristic of route and destination track fullness. These factors are fed into the electronic analog computer at the proper time, and result in automatic operation of the retarder to achieve the desired coupling speed or distance of car travel beyond the last retarder. The computer is self-checking and gives warning at once if it is not operating properly.

Some yards completed in 1957 include programmed automatic switch control in which the switch list is punched in paper tape, the same as for printing telegraph. As cars go over the hump, the tape feeds through a telegraph printing transceiver which initiates control for the switches. A further advance, to go in service soon, uses magnetic memory cores, rather than tape, these memory cores being the same as used in Teleregister electronic ticket reservation systems.

Inert Retarder at Far End

In order to stop the first car at the proper place at the far end of each classification track, two methods have been used. One uses track skates, and the other was to have a field man board the car and apply the brakes. Both methods required communication and definite understanding between men in the control tower and men at the departure end of classification tracks. Even so, cars sometimes went too far.

To correct this "missing link", some railroads are now installing a short retarder near the clearance point at the departure end of each classification track. Such a retarder is set normally so that any car, approaching at yard speed, will be stopped within the length of the retarder.

Robot Car Pusher

In yards which handle a wide variation of commodities and types of cars in all kinds of weather and variations of temperature, there may be instances in which cars, "played for the safe side" will stop short on classification tracks. In the old days such as situation would be taken care of by letting the next car down at higher speed to "bang" the standing car along on the track. In an automatic yard, this could be done by cancelling automatic control and using monitor manual control. However, "banging" cars is not the way to do it in any yard.

Two roads have solved this problem. A machine, which operates on standard gage track, is power operated by electric motors fed by storage batteries carried on the machine. Normally this machine can be parked on a special spur just below the hump. The machine is remotely controlled by radio carrier from a panel in the tower.

When a car stops short on a classification track, humping operations are stopped, and the special "robot" is controlled remotely to run down the proper route in the yard to push the car to where it should

AUTOMATIC BLOCK SIGNALING INSTALLED IN 1957

Railroads	Miles	Signals	Mfg
A&S			
MP11-13	2.0 D	10	Union
B&M			
Salem, Mass	0.3 D	1	Union
Castle Hill, Mass	0.8 D	1	G R S
Salem, Mass	0.7 S	2	G R S
CP			
Delamere, Ont-Romford	26.0 S	36	Union
Red Deer, Alta-Wetaskiwin	56.8 S	72	G R S
Ft. William, Ont	2.0 D	3	G R S
CN			
Cornwall, Ont-Cardinal	40.0 D	50	G R S
Hamilton, Ont-Bayview	1.0 S 3.0 D	6	G R S
Joffre, Que-Walsh	5.0 S	5	Union
C&NW			
Limestone, Ill-Kickapoo	1.5 S	6	G R S
CNS&M			
Rockland Road, Ill	0.5 S	1	Union
DL&W			
E. Buffalo, NY-Cheektowaga	2.4 D	4	Union
Lancaster, NY-Dellwood	3.9 D	4	Union
KCS			
Pittsburg, Kan-Gulfton, Mo	17.4 S	19	G R S
MTA			
Boston, Mass	1.6 D	15	Union
NYTA			
Gun Hill Road-149th St	3.7 D	60	Union
N&W			
Norfolk, Va-Lovitt Ave	0.2 S	5	Union
Jacobs Fork Jct, Va	0.5 S	2	Union
Beech Fork Jct, Va	0.5 S	2	Union
Stric, VA-Thomas	1.2 S	3	Union
NP			
Northtown, Minn-Big Lake	36.0 D	36	G R S
Childs, Mont-Heron	18.0 S	23	G R S
ON			
Temagami, Ont-North Bay	42.0 S	55	G R S
SP&S			
Wishram, Wash	0.1 S	2	G R S
Totals	170.0 S 95.4 D	423	

be on its classification track. Then the machine is returned to its parking track. The robot is used only for pushing cars, in fact it has no coupler. This device has been in service in one yard for a year or more, and is being installed in a yard on the New York Central at Elkhart, Ind.

Safety Detectors in 1958

By using ten forms of automatic apparatus at numerous locations on the road and in yards, hazardous conditions of tracks and bridges, as well as defects on passing cars and locomotives, can be detected automatically, and can control signals to stop trains. From now on there will be increasing need for these automatic safety detectors, not only because they are much more effective than previous practice of depending on train crews and men working along the wayside to see the defects, but also because fewer men are now working on the wayside.

A manufacturer, working with the cooperation of the C&O, N&W and Reading, developed an infra-red ray bolometer hot-box detector using inert magnetic devices to control electronic application for "shutter" control which has no moving parts.

A device to detect broken flanges on car wheels has been under development and test for several years on four railroads. In 1957 this device was installed on two more roads, and shipments have been made for installation on two more. A set of these detectors installed on the NP September 5, has detected broken wheel flanges as follows: One 5-in.; five 8-in.; one 10-in. and one 22-in.; as well as one wheel with 3 in. gone and a 36-in. crack in the flange.

Devices to detect defective equipment hanging or dragging from passing trains have proven their worth on a dozen or more roads during the past 20 years. Other devices to detect roadway hazards such as floods, rock slides, earthquakes, falling snow and freezing rain have been developed years ago and are in service on numerous roads. All these forms of detector were discussed in illustrated articles in Railway Signaling & Communications, a list of references will be sent on request to the editor.

HIGHWAY-RAILROAD GRADE CROSSING PROTECTION INSTALLED IN 1957

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	Number of Crossings Equipped				
			Sources of Funds		
Railroads	Flashing Light Signals	Gates and Flashers	Railroad	Public Funds	Joint
AT&SF	64	24	20	18	50
ACL	30	9	15	1	23
A&StAB	1	--	1	--	--
A&WP	1	1	--	--	2
WA	2	--	--	--	2
B&O	15	10	18	--	7
B&A	14	--	2	--	12
B&M	9	6	7	6	2
CP	84	22	--	7	99
CN	105	15	4	17	84
GTW	5	2	1	3	3
CV	1	--	--	1	--
CG	12	--	5	--	8
C&O	16	6	2	1	20
C&EI	3	--	1	--	2
C&NW	71	58	68	--	61
C&IM	1	--	--	--	1
CB&Q	23	8	2	--	29
CGW	5	0	--	1	4
CMSP&P	28	15	4	2	37
CNS&M	--	6	--	--	6
CRI&P	24	5	9	1	19
CSS&SB	1	1	2	--	--
CTA	--	12	2	10	--
C&S	1	--	--	--	1
D&H	3	14	12	--	5
DL&W	6	4	6	--	4
D&RGW	8	--	1	4	3
DT&I	7	1	6	2	--
DM&IR	3	1	2	--	2
EJ&E	2	3	2	--	3
ERIE	8	10	14	1	3
FEC	5	15	15	5	--
FtW&DC	3	--	1	1	1
GN	8	21	13	2	2
	14				
GB&W	1	--	1	--	--
GM&O	7	8	1	1	13
IC	27	4	2	6	23
IT	3	1	--	--	4
JT	1	--	1	--	--
JC	3	7	10	--	--
KCT	4	--	4	--	--
KCS	10	1	3	2	6
L&HR	1	--	--	--	1
LV	9	4	2	4	7
LI	2	11	5	--	8
L&N	10	5	5	2	8
MC	5	--	--	1	4
M&StL	1	--	1	--	--
MKT	6	--	1	--	5
MP	45	5	27	20	3
Monon	1	1	1	--	1
NYC	34	22	18	16	22
NYC&StL	16	1	6	1	10
NH	11	12	19	3	1
N&W	12	10	9	7	6
NS	6	--	--	--	6
NP	24	9	17	5	11
ON	2	--	--	---	2
PE	17	1	3	10	5
PRR	25	17	20	5	17
P&PU	1	--	--	--	1
QC	2	--	1	1	--
QNS&L	3	--	1	2	--
Reading	8	10	18	--	--
StL-SF	30	6	13	2	21
SSW	8	--	2	--	6
SAL	28	6	10	8	16
SOO	22	1	2	--	21
Spo. Int.	2	--	--	--	2
SP&S	2	--	--	--	2
SP	97	17	25	21	68
T&NO	26	1	10	2	15
TRAStL	1	2	3	--	--
T&P	9	2	4	1	6
TP&W	2	--	--	--	2
TH&B	1	--	--	--	1
UP	20	6	10	1	15
WAB	11	7	9	8	1
WP	9	--	--	3	6
VIRG	4	2	--	--	6
WM	3	--	3	--	--
Southern	19	7	8	4	14
Totals	1,175	455	510	219	867

More Crossing Protection

Modern crossing gates, with flashing light signals, controlled automatically, provides improved protection, round-the-clock. Therefore this form of protection is being installed at many grade crossings to replace manually-controlled gates or watchmen. Annual wage costs for crossing gatemen, 24 hours every day at a single crossing, totals about $19,000 annually. Thus the saving will pay for the change to power gates with automatic control, within two years, in many instances.