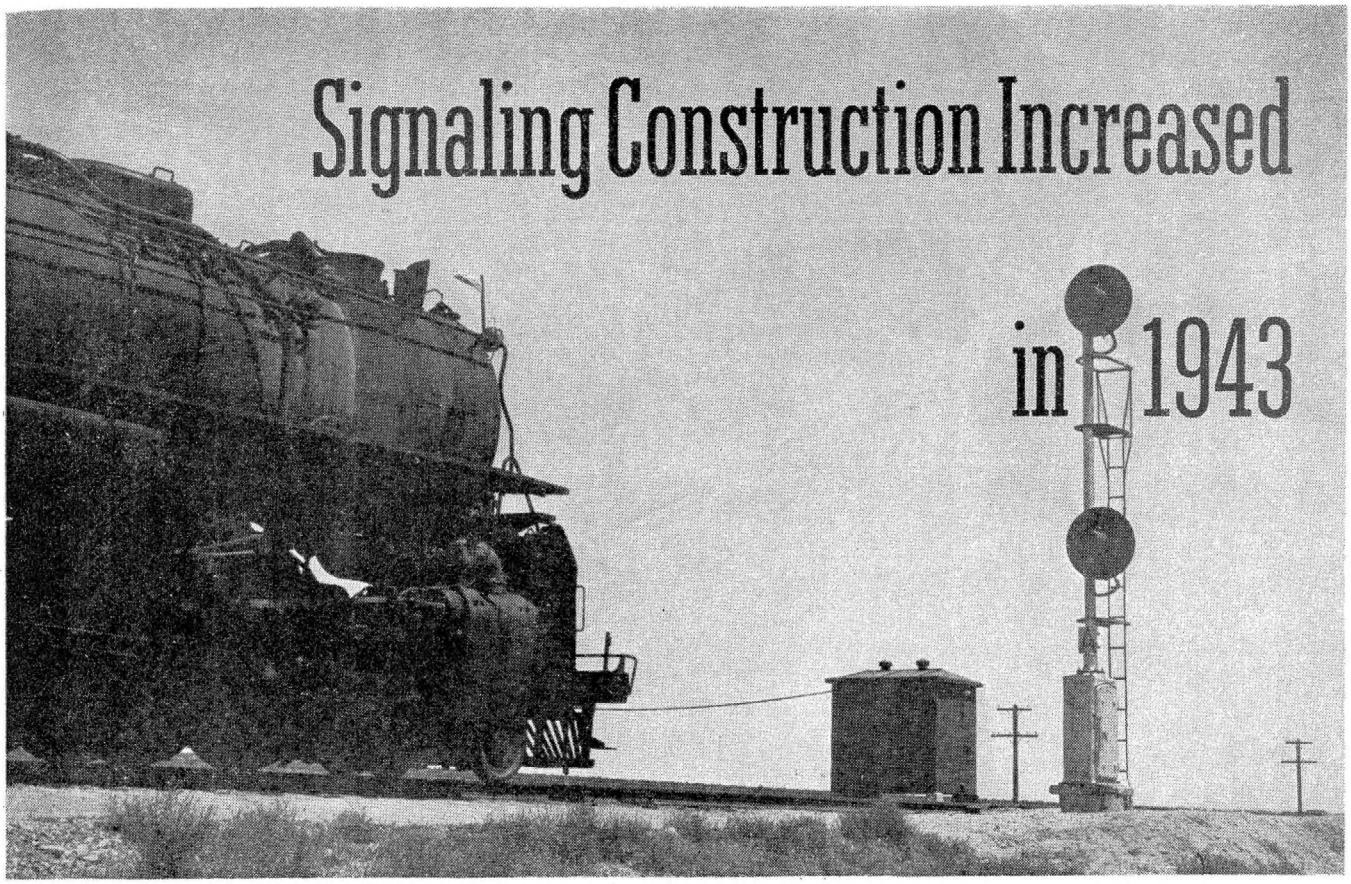
Signaling Construction Increased in 1943



More interlocking, spring switches and centralized traffic control but less highway crossing signal protection installed

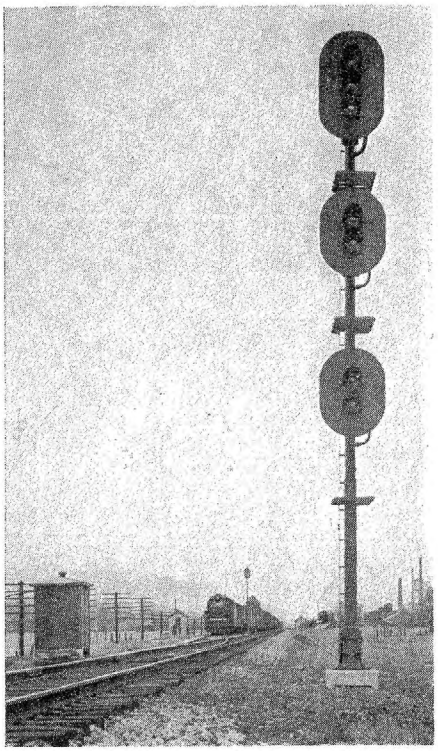
THE railroads of the United States and Canada placed more signaling facilities in service during 1943 than in any of the ten previous years, a total of 8,752 units in 1943, as compared with 6,381 units in 1942; 6,966 units in 1941 and 7,259 units in 1940. The fact that so large a volume of signaling was placed in service in 1943 results from two circumstances. In the first place, many of the larger projects, especially interlockings, had been under way for some time and the materials, to a large extent, were manufactured before the war began. A second consideration is that many new signaling projects, especially centralized traffic control, have been planned and rushed to completion since we entered the war because of the assistance that these facilities could give in facilitating train operations on lines which are now handling an unusually heavy war traffic. On the other hand, some construction, such as highway crossing protection, has been held to a minimum.

Interlocking Construction

In 1943, the number of operative signal units and interlocked switches installed at new interlockings, or as additions to existing plants, totaled 2,313 units, compared with 1,417 units completed in 1942 and 1,291 units in 1941. However, unless properly analyzed, these figures may create an erroneous impression that a great deal of new interlocking construction was done in 1943. With respect to the larger projects, the fact is that only those plants were constructed which were necessary. The extensive interlockings at Montreal, Que., and St. Lambert on the Canadian National were required in order to utilize the tracks leading to the new Central Station in Montreal. The new interlocking at Birmingham, Ala., was part of a project to replace two old interlockings and to relay the rail throughout the terminal; practically the same statements apply with reference to the electric interlocking on the Illinois Central at Chicago. The interlocking on the New York Central at Herkimer, N.Y., was installed as a part of a section of new line which had been planned and was well under way prior to our entry into the war. In view of the fact that many of the interlockings placed in service during 1943 were carryovers from pre-war, it would appear that the number of

COMPARISON OF ANNUAL SIGNALING CONSTRUCTION

	1943	1942	1941	1940
Automatic Block Signals	.....	1,421	1,407	1,017
Signals on new projects	1,139	.....	.....	.....
Signals installed as replacements	1,551	.....	.....	.....
Interlockings				
Signals and switches at new plants	1,498	785	518	1,024
Signals and switches added at rebuilt plants	760	554	693	734
Signals and switches at automatic plants	55	78	80	125
Spring Switches				
Spring buffer mechanisms	448	284	275	294
Mechanical facing-point locks	88	126	159	97
Signals at spring switches	498	384	354	336
Centralized Traffic Control				
Power switch machines	463	263	190	121
Semi-automatic signals	1,775	1,030	675	375
Classification Yards				
Car retarders	.....	51	.....	11
Power switch machines	.....	108	.....	19
Highway Crossing Protection				
Protective units	477	1,297	2,615	3,006
Totals	8,752	6,381	6,966	7,159



In C.T.C. territory on the Nickel Plate

Centralized Traffic Control Completed in 1943

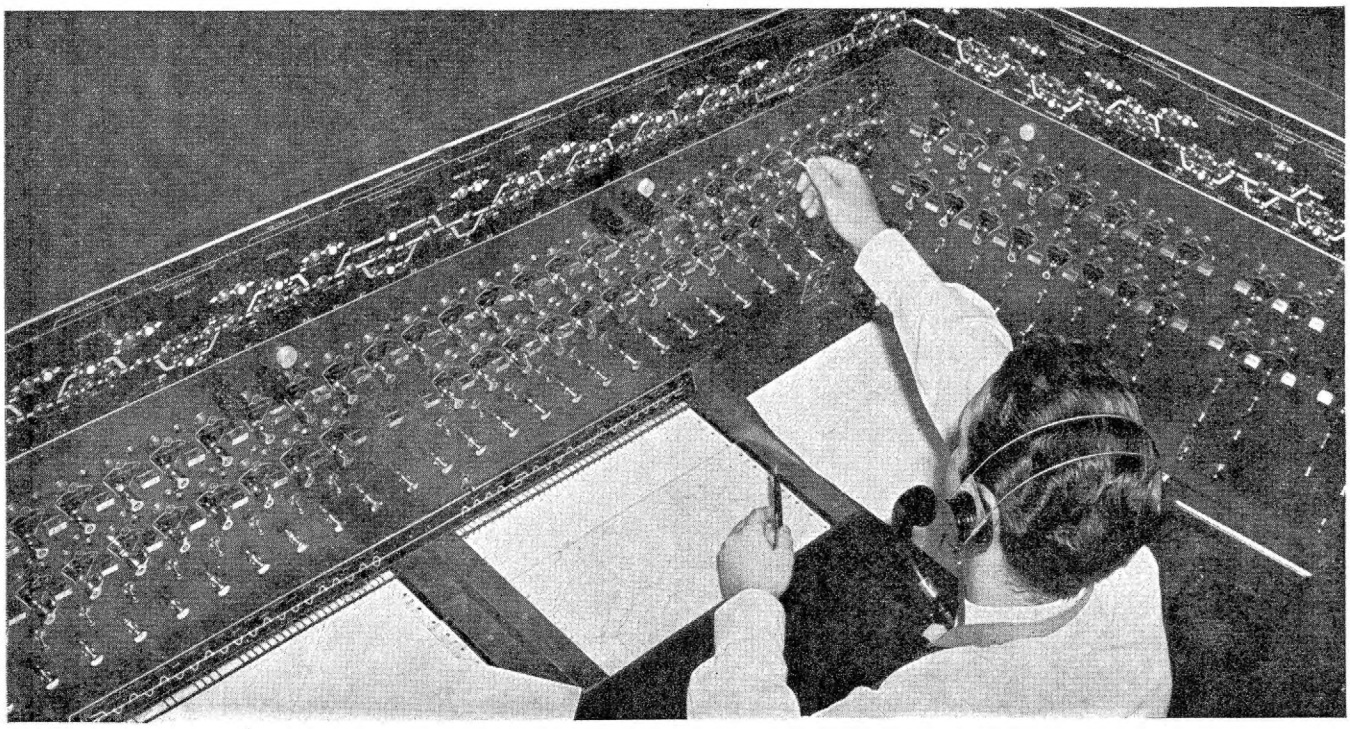
Railroad	Location	Miles of Road	Direct Wire or Coded Control	No. of Levers	No. of Power Switches	No. of Semi-Auto. Signals	Manufacturer
A. C. L.	Dunlop, Va.-No. Petersburg	3.1d	DW-C	16	8	18	Union
C. & O.	East Fulton, Va.-Fulton	2.0s	DW	5	2*	8	Union
C. M. St. P. & P.	Island, Minn.-Indio	3.5s	DW	4	2	8	Union
	Madrid, Ia.-Woodward	3.6s	DW	4	2	8	Union
C. R. I. & P.	Blue Island, Ill.-Morris	48.4d	C	29	12	41	Union
	Spring Valley, Ill.-Bureau	12.8d	C	26	13	57	Union
	Atkinson, Ill.-Silvis	23.9d	C	21	9	31	Union
D. & R. G. W.	Agate, Utah-Helper	127.0s	C	115	51	214	G.R.S.
D. M. & I. R.	Keenan, Minn.-Wolf	5.0d	C	29	16	87	Union
	Iron Jct., Minn.-Sparta	6.5s					
L. & N.	Patio, Ky.-Irvine	24.0s	C	16	6	30	G.R.S.
	Miles, Ala.-Sibert	55.0s	C	45	16	73	G.R.S.
	Welka, Ala.-Bolling	62.0s	C	46	17	78	G.R.S.
M. P.	Peach Orchard, Ark.-Walnut Ridge	21.5s	C	21	10	40	G.R.S.
	Walnut Ridge-Hoxie	4.9d	DW	16	6	12	G.R.S.
	Hoxie, Ark.-Diaz	30.6s	C	25	12	51	G.R.S.
	Etta, Ark.-Curtis	26.5s	C	20	8	35	G.R.S.
	Bierne, Ark.-Prescott	14.9s	C	10	4	19	G.R.S.
N. C. & St. L.	Hills Park, Ga.-Junta	41.2s	C	56	29	102	Union
		1.6d					
N. Y. C. & St. L.	Brocton, N. Y.-Westfield	8.5s	C	13	7	28	Union
		0.2d					
N. Y. O. & W.	Olyphant, N. Y.	0.7s	C	1	.....	2	Union
N. & W.	Roanoke, Va.-Stuarts Draft	73.7s	C	80	39	146	Union
		10.5d	C				
	Shenandoah, Va.-Bentonville	33.7s	C	29	13	52	Union
Penna.	Red Bank, Pa.-Oil City	52.8s	C	.....	8	24	Union
St. L.-S. F.	Dillon, Mo.-Swedeborg	47.1s	C	46	22	69	Union
St. L.-S.	Illmo, Mo.-Dexter Jct.	31.9s	C	38	13	77	Union
		13.2d					
S. A. L.	Youngville, N. C.-Raleigh	13.5s	C	17	18	33	Union
		7.0d					
S. P.	Bena, Cal.-Tehachapi	32.3s	.....	.....	28	111	Union
	Colton, Cal., Eastward	28.0s	.....	.....	23	82	Union
T. & P.	Longview, Tex.-Willow Springs	4.1s	.....	.....	.....	.....	.....
U. P.	Las Vegas, Nev.-Yermo, Cal.	171.0s	C	147	69	239	Union
Totals		915.6s		875	461	1,775	
		130.6d			2*		
Road Miles		1,046.2			463		
Track Miles		1,176.8					

Legend:
In "Miles of Road" column: s = Single track, d = Double track.
In "Direct Wire or Coded Control" column: C = Coded control, DW = Direct wire control, DW-C = Direct wire and code.
In "No. of Power Switches" column: * = Electric switch lock.

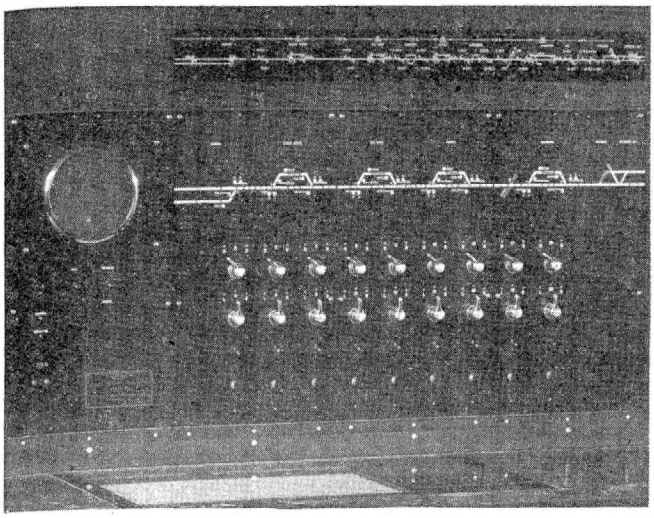
large interlockings to be constructed in 1944 will be much smaller than for any recent year.

Centralized Traffic Control Increases

During 1943, centralized traffic control was placed in service on 1,177 miles of tracks, including 463 power switches and 1,775 semi-automatic signals, which compare with 807 track miles, 263 switches and 1,030 signals installed in 1942, which was the maximum record up to that time. The most extensive single centralized traffic control project completed in 1943 was on 171 miles of single track between Las Vegas, Nev., and Yermo, Cal., on the Union Pacific. On a project 178 miles long, between Montgomery, Ala., and Mobile, the Louisville & Nashville completed 117 miles during 1943. The Denver & Rio Grande Western installed C.T.C.



This C.T.C. machine controls 171 miles of single track on the Union Pacific



C.T.C. machine for the 40 miles of single track on the C.B.&Q. between, Aurora, Ill. and Steward Jct.

New Automatic Block Signaling Placed in Service During 1943

Railroad	Location	Miles of Road	Number of Signals	Manufacturer	Power Supply
A. T. & S. F.	Raton, N. M.-Dillon	1.0s	3s	Union	Prim.
	Texico, N. M.-Clovis	5.0d	6s	Union	Prim.
	Belen, N. M.-Dalies	10.0d	18c	Union	ACF
	Hobart, Cal.-Fullerton	16.0d	34c	Union	ACP
B. & O.	Pt. Rocks, Md.-St. Denis	58.5*	32s	Union	Prim.
			2cp	Union	Prim.
	St. Denis, Md.-Daniels	11.1*	6s	Union	Prim.
	Hyattsville, Md.-Potomac Yd.	10.4s	32cp	G.R.S.	ACF
		3.0d			
	Columbus, Ohio	1.8d	5cp	Union	ACF
B. & G.	Jacino, Utah-Harker	0.0	2c	G.R.S.	ACF
B. & M.	Lincoln Sq., Mass.-Barber	1.0d	2c	G.R.S.	ACF
	Barber, Mass.-Harvard	22.0d	29c	G.R.S.	Prim.
	Ballardvale, Mass.-Lawrence	4.6d	7c	G.R.S.	ACF
	Portsmouth, N. H.	0.0	1c	G.R.S.	ACF
	West Cambridge, Mass.	0.0	2c	G.R.S.	ACF
	Newburyport, Mass.	1.3*	2c	G.R.S.	ACF
	Newburyport, Mass.-Salisbury	3.6s	3c	G.R.S.	ACF
	Wilmington Jct., Mass.-Reading	4.0d	6c	G.R.S.	Prim.
	Reading, Mass.-Wakefield	1.5d	3c	G.R.S.	Prim.
	Worcester, Mass.-Barber	0.9s	1c	G.R.S.	ACF
C. N.	Monk, Que.	.....	2c	Union	ACF
	Val Royal, Que.	1.0s	2c	Union	ACF
	Truro, N. S.	.....	1c	G.R.S.	Prim.
C. P.	Chapleau, Ont.-White River	130.0s	225c	Union	ACF
	White River, Ont.-Schreiber	120.0s	210c	G.R.S.	ACF
	Delamere, Ont.	6.1s	4c	Union	Prim.
	Almonte, Ont.	3.7s	2c	G.R.S.	ACF
C. & W. I.	Chicago	.....	2c	G.R.S.	ACF
Chi. Sub.	Chicago	5.0d	153c	Union	AC
F. E. C.	Smyrna Beach Yard	0.0	1c	G.R.S.	AC
	Miami Yard	0.0	1c	G.R.S.	AC
G. N.	Blaine, Wash.-Westminster, B. C.	21.0s	32c	G.R.S.	ACF*
L. V.	Raven Run, Pa.-Kohinoor Jct.	2.3d	2s	G.R.S.	ACF
	Hudsondale, Pa.-Black Creek	1.0s	1s	G.R.S.	ACF
L. & N.	Birmingham, Ala.-Calera	33.0d	31c	G.R.S.	Prim.
M-K-T.	Weldon Spring, Mo.-Matson	10.1s	12s	Union	Prim.
	Alvarado, Tex.	0.0	1c	Union	ACF
M. P.	Dexter, Mo.-Dexter Jct.	3.7s	11c	G.R.S.	ACF
	McGehee, Ark.-McArthur	6.4s	5c	G.R.S.	Prim.
N. Y. C. B. & A.	Boston, Mass.-Allston	0.6d	18c	G.R.S.	ACF
		0.5t			
		5.0f			
P. E.	Wilmington, Cal.-Gaspur	2.1d	16c	Union	AC
	Island Jct., Cal.-Ship Yd.	2.5d	18c	Union	AC
	Mission Rd., Cal.-Macy St.	0.2d	3c	Union	AC
Penna.	Bengies, Md.-North Point	6.6*	2pl	Union	AC
	Bengies, Md.-North Point	6.6*	2pl	Union	AC
	Bowie, Md.-Seabrook	4.1*	2pl	Union	AC
	Oakington, Md.-Short Lane	4.2*	3pl	Union	AC
	Denholm, Pa.	0.7*	1pl	Union	AC
	Severn, Md.	1.3*	1pl	Union	AC
	Machais, N. Y.-Hinsdale	18.8d	10pl	Union	Prim.
	Red Bank, Pa.-Oil City	52.8s	23pl	Union	ACF
	Greenville, Ill.-Pierron	9.0d	7pl	Union	ACF
	Morrisville, Pa.-Rahway, N. J.	38.7*	51pl	Union	AC
	W. Newark, N. J.-Newark	1.8*	9pl	Union	AC
Union	Hall, Pa.-Universal	3.0d	5c	Union	AC
	"J" Tower, Pa.-Munhall	2.0d	11c	Union	AC
Virginian	Mullens, W. Va.-Elmore	s	19c	G.R.S.	ACF
Wab.	Bluffs, Ill.-Kinderhook	37.5s	37c	Union	Prim.
W. M.	Williamsport, Md.-Hagerstown	6.4d	4s	Union	Prim.
	Hagerstown Yard, Md.	0.6s	1s	Union	Prim.
W. P.	M. P. 27-Cal.	2.1s	2c	Union	Prim.
Totals		411.9s	67s		
		153.8d	922c		
		0.5t	39cp		
		5.0f	111pl		
		134.9*			
Road Miles		706.1	1,139		
Track Miles		870.9			

Legend:
In "Miles of Road" column: s = single track, d = double tracks, t = three tracks, f = four tracks, * = miles of track on multiple track on which signaling was added for one direction of train operation.
In "Number of Signals" column: s = semaphore, c = color-light, cp = color position, pl = position light.
In "Power Supply" column: AC = alternating current, ACF = a-c. floating, ACF* = a-c. floating with primary battery for track circuits, ACP = a-c. primary, Prim. = primary.

on 127 miles of single track between Agate, Utah, and Helper. This latter project, with that under construction between Grand Junction, Colo., and Agate, 49 miles, and 108 miles between Grand Junction and Dotsero, Colo., which was completed in 1942, makes a total of 284 miles of C.T.C.

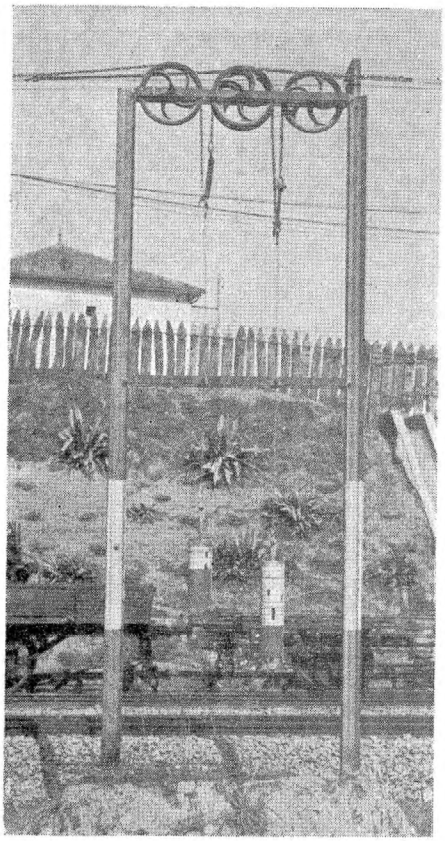
Automatic Interlockings Installed in 1943

Railroad	Location	Number of Signals	Manufacturer
A. & S.	East St. Louis, Ill.	8	Union
A. T. & S. F.	Garland, Tex.	7	Union
B. & M.	Greenfield, Mass.	1*	G.R.S.
C. M. St. P. & P.	Green Bay, Wis.	4	Union
G. M. & O.	Percy, Ill.	6	G.R.S.
G. N.	Gassmen Bridge, N. D.	1*	G.R.S.
M-K-T.	Whitewright, Tex.	6	Union
U. P.	Parker, Wash.	4	Union
W. & L. E.	Massillon, Ohio	7	Union
W. P.	Globe, Cal.	7	Union
Totals		53	
		2*	
		55	

Legend:
* = Electric switch machines.

continuous between Dotsero and Helper.

During 1943, the Chicago, Rock Island & Pacific has been installing centralized traffic control and continuously-controlled cab signaling on 165 miles of double track between Blue Island, Ill., (Chicago) and Rock

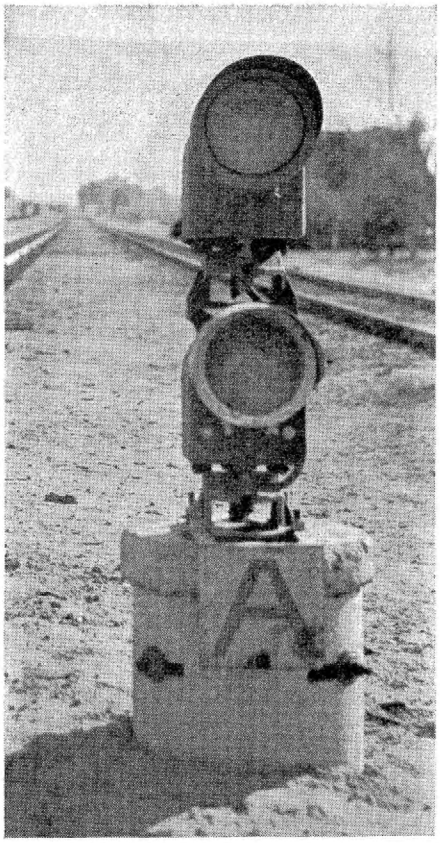


Compensators in wire lines on railroad in Africa

Highway-Railroad Grade Crossing Protection Installed During 1943

Railroad	No. of Crossings	Source of Funds: Railroad	Source of Funds: Public Funds of Any Source	Source of Funds: Joint Railroad and Public Funds	Total No. of Protective Units	No. of Wig-Wag Signals	No. of Flashing-Light Signals	No. of Rotating Disk Stop Sign Signals and Flashing Lights	No. of Traffic Type Stop-and-Go Crossing Signals	No. of Electrically Operated Gates
Alton	5	1	4	.....	20	.....	12	.....	.....	8
A. & S.	1	.....	1	.....	2	.....	2	.....	.....	.....
A. T. & S. F.	17	2	15	.....	34	1	31	.....	.....	2
A. C. L.	5	.....	5	.....	14	.....	12	.....	.....	2
B. & O.	14	8	6	.....	36	.....	30	.....	.....	6
B. & M.	2	1	1	.....	3	.....	2	.....	1	.....
C. P.	5	.....	.....	5	10	2	8	.....	.....	.....
C. N.	7	2	4	1	17	1	16	.....	.....	.....
G. T. W.	2	.....	2	.....	8	.....	4	.....	.....	4
C. of G.	3	3	.....	.....	6	.....	6	.....	.....	.....
C. R. R. of N. J.	1	1	.....	.....	2	.....	2	.....	.....	.....
C. V.	1	.....	1	.....	2	.....	2	.....	.....	.....
C. & O.	2	.....	2	.....	4	.....	4	.....	.....	.....
C. & E. I.	1	.....	1	.....	2	.....	.....	.....	.....	2
C. & N. W.	2	2	.....	.....	4	.....	.....	4	.....	.....
C. B. & Q.	4	1	3	.....	8	.....	6	.....	.....	.....
C. I. & L.	2	2	.....	.....	4	.....	4	.....	.....	.....
C. M. St. P. & P.	12	9	3	.....	23	5	9	3	.....	6
C. R. I. & P.	6	2	4	.....	10	.....	5	1	.....	4
C. St. P. M. & O.	1	1	.....	.....	2	.....	.....	2	.....	.....
C. & S.	1	1	.....	.....	2	.....	2	.....	.....	.....
D. & R. G. W.	3	1	2	.....	16	.....	8	.....	8	.....
Erie	3	1	2	.....	7	.....	7	.....	.....	.....
G. N.	6	3	3	.....	12	.....	.....	12	.....	.....
I. C.	17	8	9	.....	37	5	24	.....	.....	8
G. & S. I.	1	1	.....	.....	2	.....	2	.....	.....	.....
Y. & M. V.	1	.....	1	.....	2	.....	2	.....	.....	.....
I. T.	1	1	.....	.....	2	.....	2	.....	.....	.....
L. & H.	1	1	.....	.....	8	.....	8	.....	.....	.....
L. & N.	5	3	2	.....	14	.....	10	.....	.....	4
M. St. P. & S. S. M.	1	1	.....	.....	1	1	.....	.....	.....	.....
M-K-T.	1	.....	1	.....	2	.....	2	.....	.....	.....
M. P.	8	.....	8	.....	17	.....	15	.....	.....	2
N. C. & St. L.	1	.....	1	.....	2	.....	2	.....	.....	.....
N. Y. C.	1	.....	1	.....	2	.....	2	.....	.....	.....
C. C. C. & St. L.	4	.....	4	.....	6	.....	4	.....	.....	2
P. & E. I.	1	.....	1	.....	4	.....	2	.....	.....	2
N. Y. C. & St. L.	4	.....	4	.....	8	.....	8	.....	.....	.....
N. Y. N. H. & H.	2	1	1	.....	6	.....	2	.....	.....	4
N. P.	1	1	.....	.....	2	.....	2	.....	.....	.....
N. & W.	2	2	.....	.....	5	4	1	.....	.....	.....
P. E.	9	4	5	.....	18	8	10	.....	.....	.....
Penna.	7	4	3	.....	24	.....	14	.....	.....	10
P. M.	1	.....	.....	1	2	.....	2	.....	.....	.....
S. P.	11	3	8	.....	23	9	10	2	.....	2
T. & N. O.	4	2	2	.....	8	.....	8	.....	.....	.....
Southern	3	3	.....	.....	6	.....	6	.....	.....	.....
N. O. T.	1	.....	1	.....	4	.....	4	.....	.....	.....
T. & P.	1	1	.....	.....	2	.....	2	.....	.....	.....
U. P.	6	2	4	.....	12	2	10	.....	.....	.....
Virginian	1	1	.....	.....	2	.....	.....	.....	.....	2
W. M.	2	1	.....	1	4	.....	4	.....	.....	.....
W. P.	1	.....	1	.....	2	.....	2	.....	.....	.....
W. & L. E.	1	.....	1	.....	2	.....	2	.....	.....	.....
Total	206	81	117	8	477	38	334	24	9	70

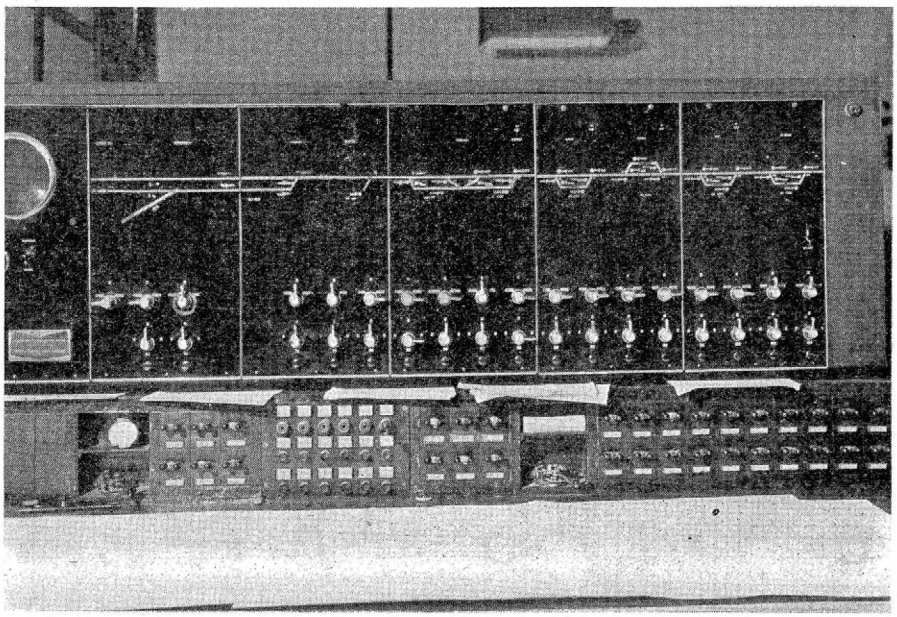
Island. A feature of this project is that both tracks are signaled for train movements in both directions, to further increase the track capacity. Of the entire project, work had been completed and placed in service on 85.1 road miles at the end of 1943. On other railroads, activities in train control and cab signaling consisted of applying equipment to new locomotives.



Searchlight dwarf in C.T.C. territory

Automatic Block

The most extensive automatic block signal project placed in service during 1943 was on 250 miles of single track between Chapleau, Ont., and Schreiber, on the Canadian Pacific. This installation was planned and the

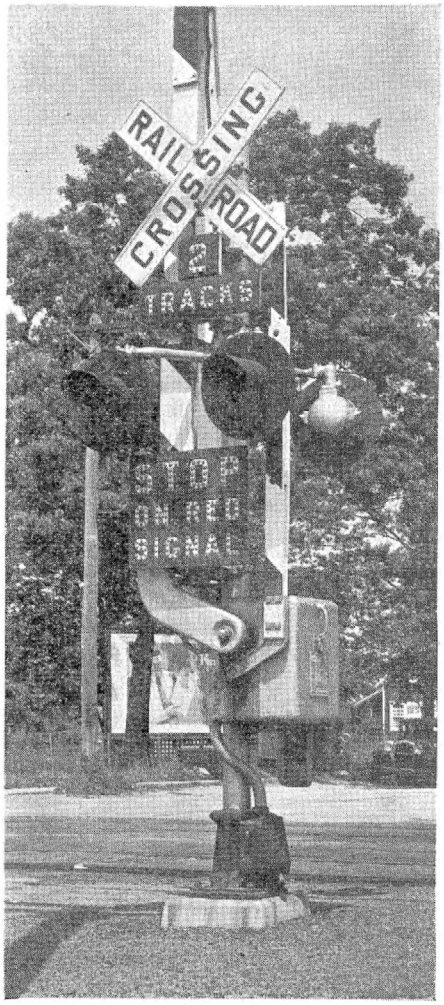


This C.T.C. machine is one of the two which control a 117-mile territory on the D. & R. G. W.

New Interlockings Constructed in 1943 Including Remote Control Plants Controlled by Machine Using Miniature Levers or Push Buttons With No Mechanical Locking

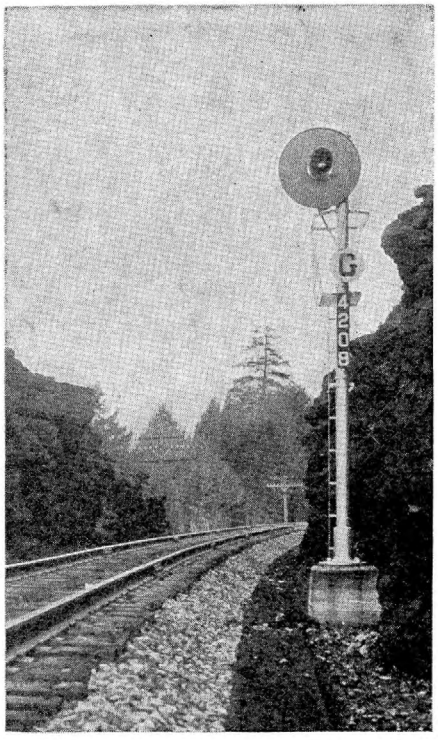
Railroad	Location	Number of Signal Operative Units	Number of Switches or Derails Operated by Electric Machines	Number of Switches or Derails Operated by Electro-Pneumatic	Manufacturer
A. T. & S. F.	Texico, N. M.	22	12	.....	Union
	Clovis, N. M.	8	4	.....	Union
B. T.	Birmingham, Ala.	52	52	.....	G.R.S.
C. N.	Montreal, Que.	247	115	.....	Union
	St. Lambert	76	31	.....	G.R.S.
	Prescott, Ont.	4	1	.....	G.R.S.
C. of G.	Henry Allen, Ala.	5	1	.....	G.R.S.
C. R. I. & P.	Dalhart, Tex.	4	1	.....	Union
Chi. Sub.	17th St., Chicago	17	.....	9	Union
	13th St., Chicago	10	.....	3	Union
	Armitage Ave., Chicago	34	.....	18	Union
G. N.	Hibbing, Minn.	9	3	.....	G.R.S.
N. Y. C.	Herkimer, N. Y.	47	18	.....	G.R.S.
C. C. C. & St. L.	Paris, Ill.	4	1	.....	G.R.S.
	Kansas, Ill.	5	1	.....	G.R.S.
	Starr, Ill.	5	2	.....	G.R.S.
P. E.	Island Jct., Cal.	26	7	.....	Union
B. & M.	East Switch, Mass.	9	3*	.....	G.R.S.
	Ayer, Mass.	9	4*	.....	G.R.S.
	Lawrence, Mass.	6	.....	.....	G.R.S.
	Sprague, Mass.	.....	14*	.....	Union
	Draw No. 8, Mass.	.....	2*	.....	G.R.S.
Penna	Tome, Md.	6	1	.....	Union
	River, Md.	12	11	.....	Union
	Columbia, Pa.	.....	2	.....	Union
	Madison, Pa.	3	1	.....	Union
	Parker, Pa.	4	2	.....	.....
	Birch, Pa.	3	1	.....	.....
	Woods, Pa.	3	2	.....	.....
	Sandy, Pa.	4	1	.....	.....
	Drake, Pa.	3	4	.....	.....
	Van Wert, Ohio	14	4	.....	.....
	Pierron, Ill.	12	4	.....	Union
	Greenfield, Ind.	5	2	.....	Union
	Crestline, Ohio	4	3	.....	Union
	Charlotteville, Ind.	9	3	1	Union
S. A. L.	Colon, N. C.	2	1	.....	Union
	Sanford, N. C.	2	1	.....	Union
	Vass, N. C.	2	1	.....	Union
	Franklinton, N. C.	4	2	.....	Union
	Henderson, N. C.	4	2	.....	Union
S. P.	Eder, Cal.	5	2	.....	Union
	Saugns, Cal.	8	2	.....	Union
Southern	Leadvale, Tenn.	6	1	.....	G.R.S.
Virginian	Jarratt, Va.	10	1	.....	G.R.S.
Totals		724	303 23*	31	
			326		

Legend:
In "Electric Machines" column: *=electric locks on hand-throw switches.



Highway crossing protection on the Long Island

signals at the turnouts were so located that centralized traffic control can be added with a minimum of changes. The 52.8 miles of automatic block installed between Red Bank, Pa., and Oil City on the Pennsylvania is a part of a centralized traffic control project. The various other automatic signaling projects on the Penn-

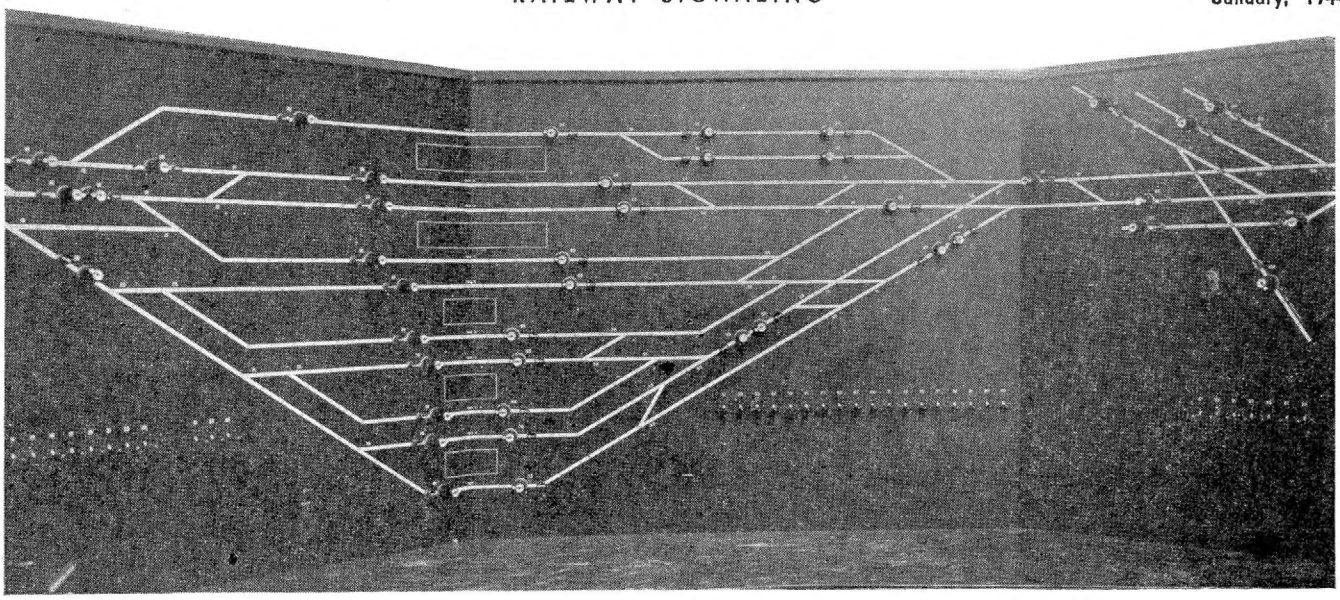


An intermediate signal on the Virginian

Territories of Automatic Block on Which Old Signals Were Replaced With Modern Signals

Railroad	Location	Miles of Road	Number of Signals	Manufacturer	Power Supply
D. L. & W.	Moscow, Pa.-Scranton	11.9t	18c	Union	ACF
	Lincoln Park, N. J.-Boonton	5.0t	12c	Union	ACF
Me. C.	Pittsfield, Me.-Harmon Pond	23.7d	26c		Prim.
N. Y. C.	Hoffmans, N. Y.-Amsterdam	5.0f	20c	G.R.S.	AC Rect.
	Herkimer, N. Y.	2.5f	10c	G.R.S.	AC Rect.
M. C.	Wayne Jct., Mich.-Jackson	55.0d	95c	G.R.S.	
P. & L. E.	New Castle, Pa.-Edenburg	5.6d	8c	Union	ACP
	Edenburg, Pa.-Struthers	8.1t	18c	Union	ACP
	Struthers, Ohio-Youngstown	3.9d	3c	Union	ACP
Reading	Norristown, Pa.-Abrams	2.6f	5c	G.R.S.	ACF*
	Perkiomen, Pa.-Birdsboro	4.5d 4.3t 12.7f	49c	G.R.S.	ACF*
	Lansdale, Pa.-Telford	6.5d	10c	G.R.S.	AC
	Williamsport, Pa.-Newberry	3.5d	6c	G.R.S.	AC
U. P.	No. Platte, Neb.-Cheyenne, Wyo.	224.0d	298c	Union	ACF*
	Kansas City, Kan.-Topeka	65.0d	125c	Union	ACF*
	Green River, Wyo.-Ogden, Utah	176.0d	279c	Union	ACF*
	Topeka, Kan.-Manhattan	50.0s	76c	Union	ACF*
	Salt Lake City, Utah-Lynndyl	129.0s	197c	Union	Prim.
	Los Angeles, Cal.-Riverside	56.0s	134c	Union	ACF*
	Portland, Ore.-Dalles	80.0s 4.0d	162c	Union	ACF*
Totals		315.0s 571.7d 29.3t 22.8f	1,551		
Road Miles		938.8			
Track Miles		1,637.5			

Legend:
In "Miles of Road" column: s=single track, d=double track, t=three track, f=four track.
In "No. of Signals" column: c=color-light.
In "Power Supply" column: AC=alternating current, ACF=a-c. floating, ACF*=a-c. floating with primary battery for track circuits, Prim.=primary, AC Rect.=a-c. rectified, ACP=a-c. primary.



Control machine of new interlocking at the Birmingham Terminal, Birmingham, Ala.

sylvania and on the Baltimore & Ohio, which are marked with an asterisk in the accompanying table, consist of the addition of signaling to permit train movements in both directions on tracks of multiple-track lines on which signaling was previously in service for one direction only. Aside from the projects discussed above, the

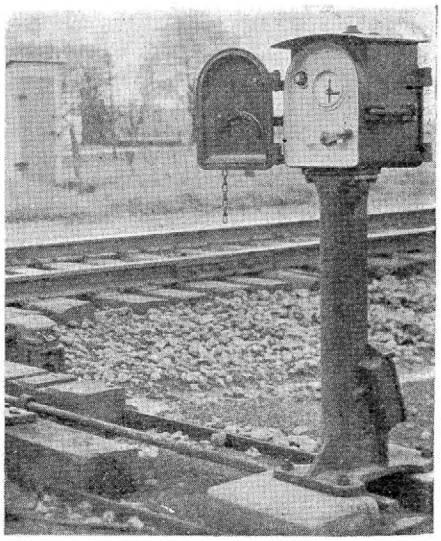
The "Banner Blue" on the Wabash

Rebuilt Interlockings Constructed in 1943 Including Remote Control Plants Controlled by Machines Including Mechanical Locking Between Levers

Railroad	Location	Number of Signal Operative Units	Number of Switches or Derails Operated by			Manufacturer
			Electric Machine	Electro-Pneumatic	Mechanical Connections	
B. & M.	Barber, Mass.	11	.....	.....	.....	G.R.S.
C. & O.	Fulton, Va.	13	4	4	.....	Union
C. M. St. P. & P.	Lake, Wis.	6	1	.....	.....	G.R.S.
	Linby, Ia.	2	.....	.....	3	Union
G. N.	Surrey, N. D.	7	4	.....	.....	G.R.S.
G. M. & O.	Cairo, Ill.	5	.....	.....	4	G.R.S.
L. & N.	Black Creek, Ala.	12	.....	.....	7	G.R.S.
N. & W.	Suffolk, Va.	2	.....	.....	.....	Union
	Roanoke, Va.	1	.....	.....	.....	Union
	Kenova, W. Va.	5	.....	.....	.....	Union
P. E.	Badger Ave., Cal.	2	2	.....	.....	G.R.S.
Penna.	Odenton, Md.	11	.....	10	.....	Union
	Leetsdale, Pa.	15	.....	15	.....	Union
	Hobart, Ind.	10	2	.....	4	Union
	Indiana Harbor, Ind.	1	1	.....	.....	G.R.S.
	Wanatah, Ind.	3	1	.....	.....	Union
	Hamlet, Ind.	4	1	.....	.....	Union
	Bucyrus, Ohio.	5	5	.....	.....	Union
	Dunkirk, Ohio.	8	2	.....	1	Union
	Tiffin, Ohio.	5	.....	.....	2	Union
	Indianapolis, Ind.	1	.....	.....	1	Union
	Loveland, Ohio.	3	.....	.....	.....	Union
	Calumet Park, Ill.	1	.....	.....	1	Union
T. & P.	Ft. Worth, Tex.	83	60	.....	.....	G.R.S
W. M.	Baltimore, Md.	8	.....	.....	10	Union
Totals		218	83	29	33	

New Interlockings Constructed in 1943 Including Remote Control Plants Controlled by Machines Including Mechanical Locking Between Levers

Railroad	Location	Number of Signal Operative Units	Number of Switches or Derails Operated by			Manufacturer
			Electric Machine	Electro-Pneumatic	Mechanical Connections	
A. T. & S. F.	Stockton, Cal.	24	29	.....	.....	G.R.S.
A. C. L.	McBeth, S. C.	6	.....	.....	.....	Union
B. & O.	Potomac River, D. C.	6	.....	.....	.....	G.R.S.
	Aiken, Md.	8	.....	.....	7	.....
	Boyd, Md.	8	.....	.....	6	Union
	Hyattsville, Md.	14	5	.....	.....	G.R.S.
	Keyser, W. Va.	11	.....	.....	11	.....
	Ft. Meade Jct., Md.	6	.....	.....	4	.....
C. & O.	Ewell, Va.	13	9	.....	.....	.....
I. C.	Weldon, Ill.	21	28	.....	.....	G.R.S.
L. & H. R.	Andover, N. J.	5	.....	.....	.....	G.R.S.
N. Y. C. & St. L.	Blasdell, N. Y.	17	.....	.....	.....	Union
Penna.	Quarry, Md.	5	1	.....	.....	Union
	Severn, Md.	8	.....	4	.....	Union
	Short Lane, Md.	8	.....	3	.....	Union
	Bay View, Md.	6	.....	32	.....	Union
	Urban, Ohio.	8	.....	.....	4	Union
Totals		174	72	39	32	



Electric lock on hand-throw switch in C.T.C. territory on the N.Y.C. & St. L.

REBUILT INTERLOCKINGS CONSTRUCTED IN 1943 INCLUDING REMOTE CONTROL PLANTS CONTROLLED BY MACHINE USING MINIATURE LEVERS OR PUSH BUTTONS WITH NO MECHANICAL LOCKING

Railroad	Location	Number of Signal Operative Units	Number of Switches or Derails Operated by		Manufacturer
			Electric Machines	Electro-Pneumatic	
D. L. & W.	Nay Aug, Pa.	4	4	.....	Union
	Lincoln Park	8	3	.....	Union
N. Y. C.	P. & B. Jct., N. Y.	9	3	.....	G.R.S.
	Utica, N. Y.	87	62	.....	G.R.S.
	Schenectady, N. Y.	36	18	.....	G.R.S.
C. C. C. & St. L.	Sanford, Ind.	4	1	.....	G.R.S.
	Vermillion, Ill.	4	1	.....	G.R.S.
	Paris, Ill.	4	1	.....	G.R.S.
	Dudley, Ill.	4	1	.....	G.R.S.
	Kansas, Ill.	4	1	.....	G.R.S.
	Ashmore, Ill.	4	1	.....	G.R.S.
	Starr, Ill.	5	2	.....	G.R.S.
	Windsor, Ill.	4	1	.....	G.R.S.
	Middlesworth, Ill.	4	1	.....	G.R.S.
	Moulton, Ill.	4	1	.....	G.R.S.
	Tower Hill, Ill.	5	2	.....	G.R.S.
N. & W.	Devon, W. Va.	12	.....	2	Union
	Gallia Street, Ohio	4	.....	1	Union
Penna.	Brady, Pa.	9	4	.....	Union
	Logansport, Ind.	8	8	.....	Union
	Smithboro, Ill.	12	8	.....	Union
	Vandalia, Ill.	13	6	.....	Union
	Summit, Ind.	4	2	.....	Union
	Anderson, Ind.	4	.....	.....	Union
	Davis, Ind.	4	2	.....	Union
Reading	Ewing, N. J.	.....	1	.....	Union
Totals		260	134	3	

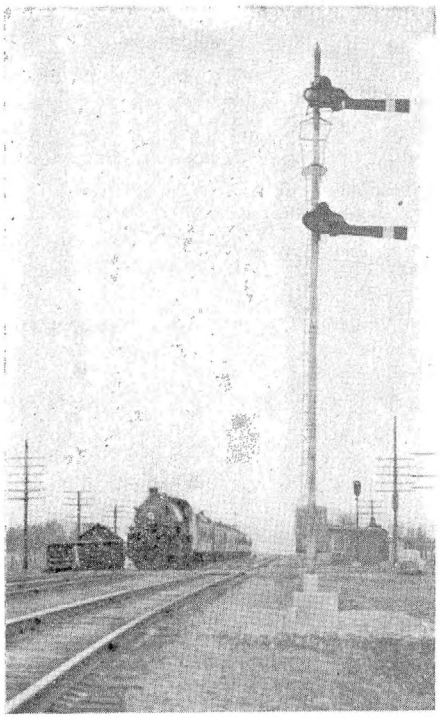
longest "straight" automatic block project completed in 1943 was on 38.7 miles of single track on the Wabash between Bluffs, Ill., and Kinderhook.

On a total of approximately 1,580 track miles, various railroads replaced old semaphore automatic block signals with modern light signals. These projects cannot, of course, be considered as new signaled mileage, and the amounts of new signaling equipment involved may vary between wide extremes. For example, in some programs, the semaphore mechanisms may be removed, and the light signals installed on the same masts, with a minimum of changes in circuits. On the other hand, as was the case on the New York Central, all of the old semaphore signaling, including line control circuits, were removed, and the new color-light signals are controlled by the most modern form of coded track circuits with no line control wires. Thus the replacement program is equivalent to new construction throughout. On account of the restriction on materials, this type of reconstruction has been held to a minimum, but much work of this character, which has already been postponed too long, will be scheduled for early attention after the war.

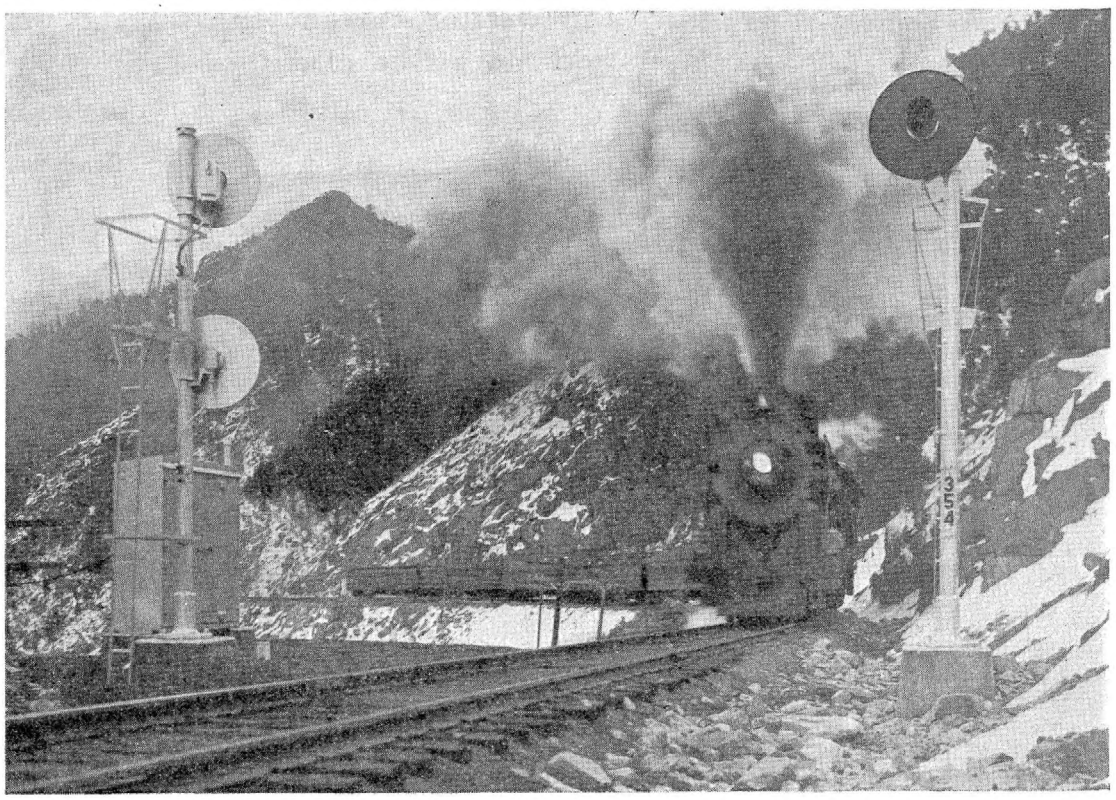
Based on the fact that the volume of highway traffic had been reduced by the rationing of tires and gasoline, the War Production Board adopted the policy of not allocating materials for new crossing protection projects except for crossings in the vicinity of war industries or military camps where traffic had increased. As a result, protection was installed at only 206 crossings in 1943, as compared with 530 crossings in 1942.

The railroads installed 448 spring

(Continued on page 37)



An all-relay control machine replaced a mechanical plant on the G.N.

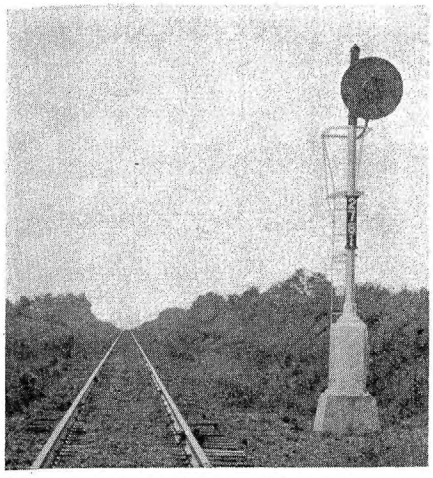


Automatic block signaling is now being extended on D. & S.L. in Rocky Mountains

1943 Signal Construction

(Continued from page 25)

switch mechanisms in 1943, as compared with 284 in 1942 and 275 in 1941. One reason for the increase in the number of these installations during war time is that numerous train stops can be avoided by a minimum of new equipment and construction



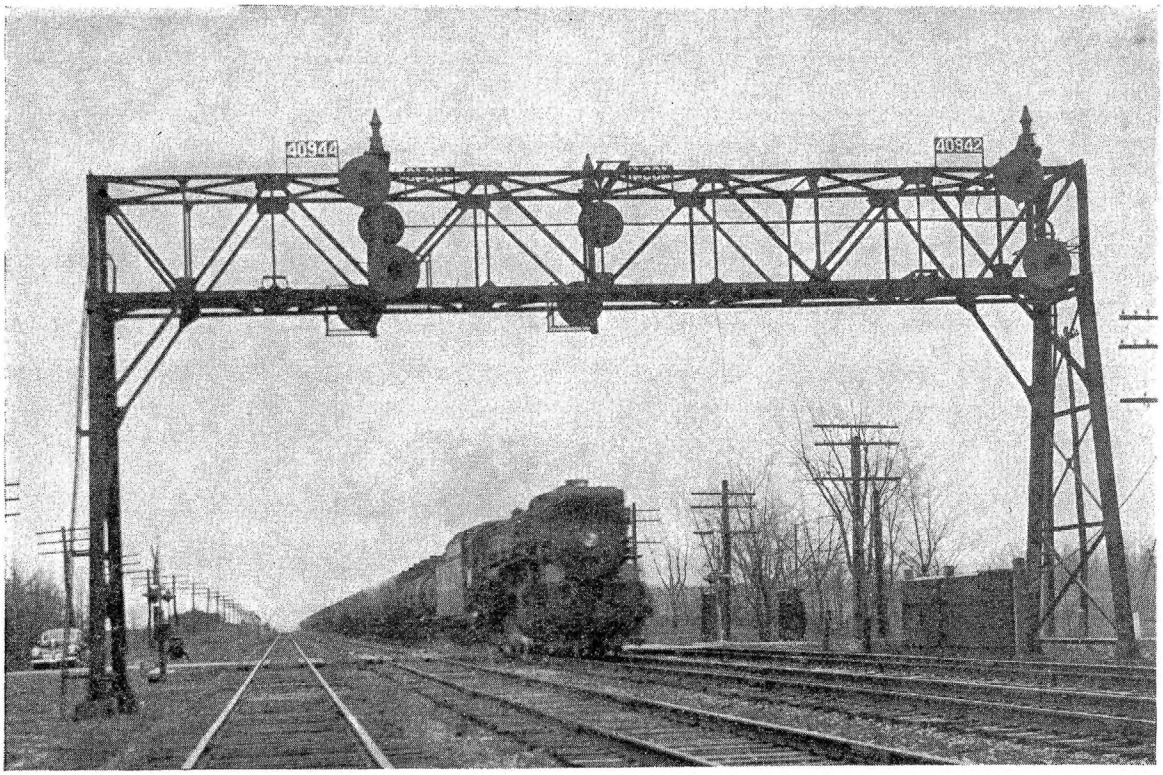
In C.T.C. territory on the L. & N.

work. Of the spring switches placed in service during 1943, about 363 are at the ends of passing tracks, 29 at the ends of double tracks, 29 at junctions, 26 at yard leads, and one is on a derail.* The installations at 88 spring switches included automatic facing-point locks. As protection at spring switch layouts, a total of 396 high signals and 102 dwarfs were installed.

Spring Switches Installed During 1943

Railroad	Total No. of Spring Switches Installed	Classification as to Application				Total No. Equipped with Facing Point Lock	Signal Protection	
		End of Passing Track	End of Double Track	Junction	Yard Track		High Signals	Low Signals
A. & S.	1	1	....	....	....	....	.....	.....
A. T. & S. F.	23	22	....	....	1	....	8	6
A. C. L.	2	.....	....	....	2	2	2	.....
B. & O.	5	1	4	....	....	....	4	2
B. & G.	1	1	....	....	....	....	1	.....
B. & M.	1	.....	....	....	1	....	.....	1
C. N.	14	13	....	....	1	....	1	14
C. P.	1	.....	....	....	1	1	1	.....
C. of G.	3	2	....	1	....	2	5	1
C. R. R. of N. J.	1	.....	1	....	....	....	.....	.....
C. & I. M.	2	2	....	....	....	....	.....	2
C. & N. W.	4	.....	....	3	1	....	8	5
C. B. & Q.	10	8	....	....	2	....	18	2
C. I. & L.	10	10	....	....	....	....	.....	.....
C. M. St. P. & P.	7	5	2	....	....	....	7	.....
C. N. S. & M.	2	2	....	....	....	1	1	1
C. R. I. & P.	3	3	....	....	....	3	1	5
D. & H.	1	.....	1	....	....	1	2	.....
D. L. & W.	3	.....	....	3	....	....	6	1
D. & R. G.	5	4	1	....	....	1	3	5
D. M. & I. R.	2	.....	....	2	....	....	.....	.....
Erie	1	1	....	....	....	1	.....	1
G. N.	15	13	1	....	1	15	29	1
I. C.	30	25	2X	1	2	....	26	4
Y. & M. V.	25	23	....	2	....	....	23	2
L. & N.	59	59	....	....	1	....	116	3
M. C.	1	.....	1	....	....	....	2	.....
M. St. P. & S. S. M.	2	2	....	....	....	1	3	1
M-K-T.	2	2	....	....	....	....	.....	.....
M. P.	5	2	....	1	2	5	6	.....
N. C. & St. L.	2	.....	1	....	1	....	.....	2
N. Y. C. & St. L.	2	2	....	....	....	2	2	.....
N. Y. O. & W.	1	.....	1	....	....	....	1	.....
N. & W.	3	.....	....	....	3	2	8	.....
N. P.	8	.....	4	3	1	....	2	3
N. W. P.	1	.....	....	1	....	....	.....	1
P. E.	13	2X	2	9	....	1	3	4
Penna.	5	5	....	....	....	4	7	.....
R. F. & P.	3	.....	....	....	3	....	.....	.....
St. L. S.	3	3	....	....	....	3	4	.....
S. A. L.	7	7	....	....	....	7	13	1
Southern	59	58	....	1	....	....	2	.....
C. N. O. & T. P.	2	2	....	....	....	....	.....	.....
A. G. S.	2	2	....	....	....	....	.....	.....
G. S. & F.	32	32	....	....	....	....	.....	6
N. O. & N.	3	3	....	....	....	....	.....	.....
N. O. T.	2	2	....	....	....	....	1	1
S. P.	35	31	2	....	2	34	72	12
N. P.	1	.....	....	1	....	....	.....	1
T. & N. O.	7	4	2	1	....	....	.....	.....
T. & P.	7	7	....	....	....	....	7	8
T. H. & B.	1	.....	....	....	1*	....	.....	1
U. P.	4	4	....	....	....	2	.....	4
Virginian	4	.....	4	....	....	....	1	1
Totals	448	365	29	29	26	88	396	102

Legend:
X = Crossover.
* = Spring mechanism on derail.



New search light signals with coded track circuits and no line circuits replace semaphores on the New York Central