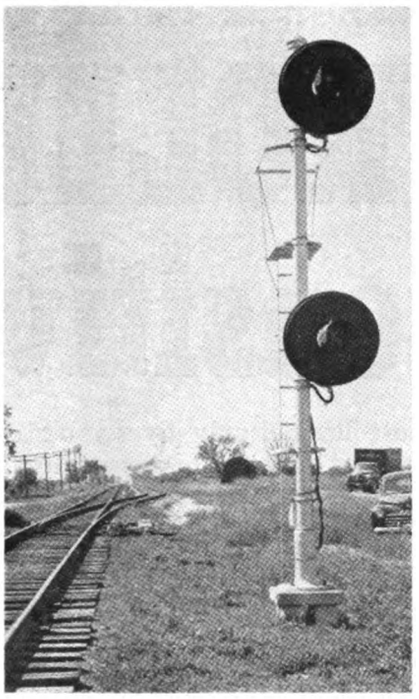

Increase in Signal Failures

Reported by ICC Bureau of Safety

THE BUREAU OF SAFETY and Service of the Interstate Commerce Commission has issued a report for the fiscal year ended June 30, 1956. This report, abstracted herewith, includes several tables and explanations pertinent to the results of inspections of railroad safety appliances; investigation of railroad accidents; signal, interlocking, automatic train stop, train control and cab signal installations; train communication systems; highway grade crossing accidents; and other Bureau of Safety and Service activities. The entire report is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C.

Performance Each Year

	False Restrictive Failures	False Proceed Failures
1947	39,990	227
1948	42,282	223
1949	35,860	156
1950	32,918	143
1951	33,758	140
1952	32,885	119
1953	29,509	109
1954	27,865	69
1955	27,371	70
1956	29,761	76

There were 29,761 restrictive failures, compared with 27,371 during the fiscal year ended June 30, 1955, according to one of the tables.

Restrictive failures of signals, interlockings, train-stop, train control and cab signals, year ending June 30, 1956

Name of railroad	False restrictive failures				
	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total
Alabama Great Southern	82	36	14		132
Alton & Southern		10			10
Ann Arbor	1	13			14
Arkansas & Memphis Ry. Bridge & Terminal Co.		9			9
Atchison, Topeka & Santa Fe	474	504	470		1,448
Atlanta & West Point	47				47
Atlanta Terminal		29			29
Atlantic Coast Line	377	328	83		788
Baltimore & Ohio	331	207	79		617
Bamberger	7				7
Bangor & Aroostook	48	6		59	113
Belt Railway of Chicago		8			8
Bessemer & Lake Erie	94				94
Birmingham Terminal		28			28
Boston & Maine	217	161	28		406
Boston Terminal		100			100
Butte, Anaconda & Pacific	17				17
Canadian National		1			1
Canadian Pacific	7				7
Central of Georgia	82	3			85
Central R. R. of New Jersey	67	113	3		183
Charleston & Western Carolina		5			5
Chesapeake & Ohio	285	154	54		493
Chicago & Eastern Illinois	137	257	6		400
Chicago & Illinois Midland	34	2			36
Chicago & North Western	380	94	203		677
Chicago & Western Indiana	21	28			49
Chicago, Burlington & Quincy	441	15	20		476
Chicago Great Western	181	21			202
Chicago, Indianapolis & Louisville	136	41			177
Chicago, Milwaukee, St. Paul & Pacific	890	148	69		1,107
Chicago, North Shore & Milwaukee	46	29			75
Chicago, Rock Island & Pacific	575	165	26		766
Chicago, St. Paul, Minneapolis & Omaha	40	6			46
Chicago, South Shore & South Bend	109	6	1		116
Chicago Union Station		5			5
Cincinnati, New Orleans & Texas Pacific	36	59	18	3	116
Cincinnati Union Terminal		133			133
City of St. Louis Municipal Bridge	19	22			41
Clinchfield	35				35
Dayton Union		15			15
Delaware & Hudson	165	91			256
Delaware, Lackawanna & Western	177	60	7		244
Denver & Rio Grande Western	414	54			468
Denver Union Terminal		106			106
Detroit & Toledo Shore Line	13				13
Detroit, Toledo & Ironton		8			8
Duluth, Missabe & Iron Range	20	32			52
Elgin, Joliet & Eastern	37	147			184
Erie	162	34	52	4	252
Florida East Coast	271				271
Fort Dodge, Des Moines & Southern		5			5
Georgia	105				105
Georgia Southern & Florida	51	1	34	1	87
Grand Trunk Western	224	57		1	282
Great Northern	529	58			587
Green Bay & Western	9	2			11
Gulf, Mobile & Ohio	117	36	7		160
Houston Belt & Terminal		11			11
Hudson & Manhattan	120	90	8		218
Illinois Central	383	87	253		723
Illinois Terminal	178	16			194
Indianapolis Union		34			34
Jacksonville Terminal	3	134			137
Kansas City Southern	143	111			254
Kansas City Terminal		280			280
Kentucky & Indiana Terminal		40			40
Lake Superior & Ishpeming		1			1
Lehigh & Hudson River	5				5
Lehigh & New England		1			1
Lehigh Valley	49	20	4		73
Litchfield & Madison	7				7
Long Island	41	49	629		719
Louisville & Nashville	538	88	205		831
Maine Central	100	8		1	109
Memphis Union Station		28			28
Minneapolis, St. Paul & Sault Ste. Marie	144	31			175
Missouri-Kansas-Texas	212	20			232
Missouri-Kansas-Texas of Texas	174	18			192
Missouri Pacific	436	135			571
Monongahela	45				45
Monongahela Connecting	41	3			44
Nashville, Chattanooga & St. Louis	210	35			245
Newburgh & South Shore		21			21
New Orleans & Northeastern	35	4	12	2	53
New Orleans Public Belt	5	2			7
New Orleans Union Passenger Terminal	2	23			25
New York Central	881	704	279		1,864
New York, Chicago & St. Louis	249	337	19		605
New York, New Haven & Hartford	175	261	30		466
New York, Ontario & Western	59				59
New York, Susquehanna & Western	14				14
Norfolk & Western	216	246	104		566
Northern Pacific	953	57			1,010
Northwestern Pacific	1				1
Pacific Electric	33	53			86
Pennsylvania	413	611	1,505	10	2,539
Pennsylvania-Reading Seashore Lines	23	12	17		52
Peoria & Pekin Union	10	23		2	35
Pittsburgh & West Virginia	62				62
Portland Terminal		4			4
Portland Traction	111				111
Reading	61	57	2	6	126
Richmond, Fredericksburg & Potomac	50	62	13		125
River Terminal		90			90
Rutland		5			5
Sacramento Northern	9	5			14
St. Louis-San Francisco	396	24			420
St. Louis Southwestern	162				162
Seaboard Air Line	554				554
Southern	636	54	128	6	824
Southern Illinois & Missouri Bridge	1				1
Southern Pacific	431	152	43		626
Spokane, Portland & Seattle	64	1			65
Terminal R. R. Assn. of St. Louis	31	57			88
Texas & New Orleans	133	43			176
Texas & Pacific	262	1			263
Toledo, Peoria & Western		20		6	26
Union	1	9			10
Union Pacific	458	23	17		498
Utah	19				19
Virginian	51	21		7	79
Wabash	165	36			201
Western Maryland	108	54			162
Washington Terminal		105	1		106
Western Pacific	121	5			126
Western Ry. of Alabama	42				42
Total	17,336	7,874	4,443	108	29,761

A total of 76 false proceed failures occurred, compared with 70 the year previous, and there were 11 potential false proceed conditions, as compared with 22 in 1955.

During the year, 242 applications for approval of modification of block signal systems and interlockings were filed by the carriers, and at the beginning of the year action was pending on 18 applications previously filed. During the year action was taken upon 225 applications, and at the end of the year action was pending on 33 applications.

According to reports submitted by carriers, as of January 1, 1956, train communications systems were in service for operation over a total of 86,189 miles of road on line of road of 78 railroads. In addition to radio and inductive installations, these systems included end-to-end communication installations employing physical wire connections through the train, and installations providing radiotelephone service through commercial telephone company radio facilities, operating over 6,503 miles of road. Considering only radio and inductive systems used in connection with railroad operation, such systems were in service on 79,686 miles of road on 76 railroads. Total number of wayside stations as of January 1, 1956, are 902; total number of locomotives, 5,562; total number of cabooses and other mobile units, 2,883; and number of portable packsets, 2,015. There were 457 installations in service in yards and terminals, including 602 wayside locations, 2,498 locomotives, 2,498 cabooses and other mobile equipment, and 729 portable packsets.

Causes of false-proceed failures, year ending June 30, 1956

Name of railroad	Sand, rust, or other deposit on rails	Failure of relays and similar devices	Circuits open, crossed or grounded, foreign current, et cetera	Apparatus broken, defective, or out of adjustment	Failure of apparatus due to ice, sleet, snow wet track, weather, or lightning	Failure of apparatus due to obstruction	Errors in making connections or adjustments	Undetermined	Total
Alton & Southern			2						2
Atchison, Topeka & Santa Fe			1	1					2
Atlantic Coast Line									
Baltimore & Ohio	2			1			1		4
Boston & Maine			1						1
Central Railroad of New Jersey							1		1
Chesapeake & Ohio							1		1
Chicago, Burlington & Quincy	2								2
Chicago, Indianapolis & Louisville			1		3				4
Chicago, Milwaukee, St. Paul & Pacific			1						1
Erie			2	1					3
Illinois Central			2	1			1		4
Long Island								1	1
Louisville & Nashville	1			1					2
Monongahela				1					1
New York Central		1	5	2				3	12
Pennsylvania	4		1	1			3		9
Peoria & Pekin Union			1						1
Pittsburgh & West Virginia					1				1
St. Louis-San Francisco							4		4
St. Louis Southwestern		1							1
Seaboard Air Line		1					1		2
Southern		1			1	1	1	1	5
Southern Pacific				1				2	3
Texas & New Orleans		1							1
Union							1		1
Union Pacific					1		3		4
Wabash							1		1
Washington Terminal				1					1
Total	9	5	18	11	7	1	16	7	76

Accidents at highway-railroad crossings

	1955			1954			1953		
	Number	Number of persons		Number	Number of persons		Number	Number of persons	
		Killed	Injured		Killed	Injured		Killed	Injured
Accidents at highway grade crossings	3,846	1,446	4,014	3,336	1,303	3,426	3,675	1,494	3,815
Accidents at highway grade crossings involving motor vehicles	3,583	1,313	3,886	3,074	1,151	3,314	3,383	1,319	3,688
Derailments of trains at highway grade crossings involving motor vehicles	80	43	72	65	35	72	65	34	98
Miscellaneous train accidents as a result of collisions between trains and motor vehicles	307	159	164	315	153	142	298	166	163
Motor vehicles registered	[1] 62,760,395			[1] 58,589,863			[2] 55,592,664		
Railroad casualties:									
Passengers			27			21			42
Employees on duty		3	68		9	75		10	71
Persons carried under contract			4			2			7
Travelers not on trains									
Total		3	99		9	98		10	120

[1] Totals include publicly owned vehicles.
[2] Totals do not include publicly owned vehicles.

PRODUCT NEWS

High Performance Guy Strand

Copperweld Steel Company, Glassport, Pa., has introduced a new line of guy strand, called Copperweld Type M, selling at lower prices but retaining all the high performance characteristics of the former product. These lower prices, the company reports, result from Copperweld research developments, making it possible to meet strength specifications with smaller diameter wires, and also from new guy strand production techniques which appreciably reduce the cost of manufacture. Like all Copperweld strand, the Type M utilizes wires having a heavy copper sheath inseparably molten-welded to an alloy steel core.

Type M strand is currently offered in five strengths: 3-wire strand in strengths of 2,200 and 4,000 lb.; 7-wire strand in strengths of 6,000, 10,000 and 16,000 lb. In every strength it is pliable—easy to handle. It can be readily bent, served, moused or clamped—and the molten-weld gives full assurance that the copper covering will not crack, flake or peel.

The strand is put up in easy-to-handle coils of 250, 500 and 1,000 ft., depending on size. Reels of 2,500, 5,000 and 10,000 ft. are also available. More information can be obtained from Copperweld Steel Company, Dept. RSC, 322 Frick Building, Pittsburgh 19, Pa.

Non-Acid Solder Flux

Wetoil is a newly improved stable non-acid flux for soldering copper, brass, steel and terneplate. This flux is fortified with spirits of metal which reacts on solder to increase the fluidity and spread factor. It contains alkaline buffers which not only increase the stability of the flux but reduce its own residual attack to marked degree, thereby making for a safer flux for general soldering. Further information is available from Farrelloy Company, Dept. RSC, 1242-A North 26th St., Philadelphia 21, Pa.

Protective Coating

A new coating, known as Maintz, which is said to provide excellent protection against severe chemical and weather exposure, is being in-

(*Continued on page* 52)