

INTERSTATE COMMERCE COMMISSION

REPORT

OF THE

SECTION OF RAILROAD SAFETY
BUREAU OF SAFETY AND SERVICE
TO THE INTERSTATE COMMERCE
COMMISSION

FOR THE FISCAL YEAR
ENDED JUNE 30, 1957



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**REPORT OF THE SECTION OF RAILROAD SAFETY,
BUREAU OF SAFETY AND SERVICE
TO THE
INTERSTATE COMMERCE COMMISSION**

WASHINGTON, December 1, 1957.

To the Commission:

I have the honor to present herewith the annual report of the Section of Railroad Safety, Bureau of Safety and Service, for the fiscal year ended June 30, 1957. This report contains information concerning results of inspection of safety appliance equipment of railroads, hours of service of railroad employees, installation and inspection of signal systems, interlocking and automatic train-stop and train-control devices, investigation of railroad accidents, transportation of explosives and other dangerous articles, and prosecutions for violations of laws administered by the Section, as well as other Section activities.

SAFETY APPLIANCES

Increased travel appropriations for fiscal year 1957 have permitted field personnel assigned to safety appliance work to broaden and better balance their activities, resulting in a more effective program to carry out the Section's objectives. The following table which compares 1957 with 1956 reflects the reapportionment of time devoted during the current year to each type of activity.

The total days consumed by agents assigned to safety appliance work were as follows:

Year	Regular inspection	Violation work	Accident investigation	Special investigation
1956.....	9,295	871	699	611
1957.....	8,454	1,267	893	1,540
	-841	+396	+194	+929

Table 1 in the appendix shows separately for the individual railroads the number of freight cars, passenger-train cars, and locomotives inspected, the number found with defective safety appliances, the percentage defective, and data for comparison with the preceding

year. A total of 1,059,689 freight cars were inspected; 60,247, or 5.69 percent, of these had defective safety appliances, and 71,951 defects were reported. There were 31,756 passenger-train cars inspected; 1,327, or 4.18 percent, of these had defective safety appliances, and 1,567 defects were reported. A total of 13,391 locomotives were inspected; 411, or 3.07 percent, of these had defective safety appliances, and 564 defects were reported. The total number of cars and locomotives inspected was 1,104,836, the percentage defective was 5.61, and the number of defects per 1,000 units inspected was 67.05, as compared with 60.80 for the preceding fiscal year.

The following statement shows the results of inspections of safety appliances for the years ended June 30, 1953, to 1957, inclusive.

	1953	1954	1955	1956	1957
Freight cars inspected.....	1,253,590	1,347,710	1,208,586	1,157,816	1,059,689
Percent defective.....	3.68	4.38	4.65	5.33	5.69
Passenger-train cars inspected.....	38,115	42,342	41,040	39,953	31,756
Percent defective.....	3.41	3.69	3.37	4.36	4.18
Locomotives inspected.....	14,303	15,741	14,177	13,797	13,391
Percent defective.....	1.97	2.26	2.21	2.03	3.07
Number of defects per 1,000 units inspected.....	43.21	50.85	53.34	60.80	67.05

The following table shows the number of freight cars, passenger-train cars, and locomotives inspected, the number found with defective safety appliances, and the percentage with defective safety appliances, each year for the past 10 years.

Fiscal year	Inspected	Defective	Percentage defective	Fiscal year	Inspected	Defective	Percentage defective
1948.....	1,108,122	41,098	3.71	1953.....	1,306,008	47,720	3.65
1949.....	1,111,744	35,863	3.23	1954.....	1,405,793	60,963	4.34
1950.....	1,192,059	40,315	3.38	1955.....	1,263,803	57,878	4.58
1951.....	1,200,565	43,398	3.61	1956.....	1,211,566	63,787	5.26
1952.....	1,227,938	44,913	3.67	1957.....	1,104,836	61,985	5.61

Tables 2 and 2a in the appendix contain the results of train-brake tests made by agents of this Section. Table 2 covers tests of air brakes made prior to departure of trains from terminals. It shows the roads on which the tests were made, the number of trains on which brakes were tested, the total number of cars in such trains, the total number and percentage of cars which were controlled by air brakes, and the number of brakes with impaired efficiency because of excessive brake-cylinder piston travel. It also shows the number of cars set out and the number of cars on which brakes were repaired after inspection began, in order to procure the percentage of operative

brakes shown by the report of tests. During the year, air-brake tests were made on 2,246 trains, consisting of 105,324 cars, prior to departure from terminals. A total of 7,051, or 6.7 percent, of these cars were found with defective air brakes. After these defects were called to the attention of the carriers by our agents, 2,905 of the cars found with defective air brakes were set out and the remaining 4,146 cars had their brakes repaired in these trains. As a result of our air-brake inspections, 105,234, or 99.9 percent, of the cars departed with operative brakes. These trains had been prepared for departure, yet when afterward tested by our agents it was necessary to set out cars or repair the brakes on an average of 3.14 cars per train. Had these trains departed prior to inspection by the Commission's agents, the percentage of operative brakes would have been only 93.3. Table 2a contains similar information concerning the condition of air brakes on trains at the time of arrival at terminals. Air-brake tests were made on 1,342 trains, consisting of 85,944 cars, upon arrival at terminals, and brakes on 84,037 cars, or 97.8 percent of the total, were operative; however, of those brakes considered operative, 6,956, or 8.09 percent, were of impaired efficiency due to excessive piston travel.

The following statement, covering the year ended June 30, 1957, and the preceding 4 years, shows the number of cars set out and the number on which brakes were repaired after terminal air-brake tests had been made by our agents:

Fiscal year	Trains	Cars	After inspection began	
			Cars set out	Cars repaired in train
1953.....	2,754	121,710	2,500	2,158
1954.....	2,978	138,302	3,557	4,865
1955.....	2,500	123,418	2,883	4,504
1956.....	2,484	117,399	3,221	4,634
1957.....	2,246	105,324	2,905	4,146

In the 1,342 trains tested, covered by table 2a, 1,907 cars, or an average of 1.4 cars per train, were not controlled by power brakes.

The average consist of trains tested prior to departure from terminals was 48.2 cars, an increase of 0.9 car per train as compared with the preceding year. The average consist of trains tested on arrival at terminals was 64.0 cars, an increase over last year of 2.9 cars per train.

During the year, 100 complaints were investigated, compared with 61 for the preceding year; 52 involved power brakes and 48 involved

other safety appliances. In 36 of these investigations, evidence of violation of law was obtained and prosecution on 256 counts was instituted. In many other instances, our investigation resulted in the unsatisfactory conditions complained of being corrected.

All complaints which warranted action were promptly investigated, while during the preceding year each complaint had to be carefully screened and only the most flagrant were investigated because of the lack of travel funds.

With increased travel appropriation for fiscal year 1957, agents were also able to more thoroughly cover their assigned territories outside of headquarters. Safety appliance agents worked 8,853 days away from headquarters during this fiscal year as compared with 5,105 days during the preceding fiscal year. As a result, inspections were made at 1,685 inspection points which they found impossible to inspect the previous year.

HOURS OF SERVICE

During the year ended June 30, 1957, hours-of-service reports were filed by 601 railroads. Of these roads, 135 reported a total of 4,545 instances of all classes of excess service, a decrease of 972 instances as compared with the previous year. The remaining 466 roads reported no excess service during the year.

The reports covered 1,033 instances of excess service performed by train and engine employees subject to the 16-hour provision of the law, and 3,512 instances of excess service by operators, train dispatchers, and other employees subject to the 9-hour and 13-hour provisions of the law, classified as follows: 842 instances of employees who remained on duty longer than 16 consecutive hours; 175 instances of employees who continued on duty after having been on duty 16 hours in the aggregate in a 24-hour period; 14 instances of employees who returned to duty with less than 10 consecutive hours off duty after having been on duty 16 consecutive hours; 2 instances of employees who returned to duty with less than 8 consecutive hours off duty after having been on duty 16 hours in the aggregate in a 24-hour period; 3,481 instances of employees who remained on duty longer than 9 hours in a 24-hour period at continuously operated offices, and 31 instances of employees who remained on duty longer than 13 hours in a 24-hour period at offices operated only during the daytime.

The following table shows the causes of excess service, involving train and engine employees subject to the 16-hour provision of the law, for the years ended June 30, 1953 to 1957, inclusive:

Cause	1953	1954	1955	1956	1957
<i>On duty longer than 16 consecutive hours</i>					
Collisions and derailments.....	125	80	107	179	145
Weather conditions, track defects, floods, obstructions.....	108	69	164	419	354
Congestion of traffic.....	39	10	15	27	28
Mechanical defects; engines and cars.....	137	81	69	100	130
Wrecking and relief service.....	152	146	146	124	109
Miscellaneous.....	200	73	171	96	76
<i>Other</i>					
On duty longer than 16 hours in the aggregate in a 24-hour period.....	153	93	107	150	175
Returned to duty without required 10 hours off duty.....	2	5	8	127	14
Returned to duty without required 8 hours off duty.....	4	0	4	0	2
Total.....	920	557	791	1,222	1,033

The foregoing table shows a decrease of 189 instances of excess service, involving train and engine employees subject to the 16-hour provision of the law, as compared with the number reported last year.

The classes of offices, and the causes of instances in which operators, train dispatchers, or other employees who by the use of the telephone or telegraph handled orders affecting the movement of trains, remained on duty longer than the statutory periods, as indicated by the carriers' monthly reports for the past 5 years, are shown in the following table:

	1953	1954	1955	1956	1957
At continuously operated offices.....	5,562	4,427	3,551	4,182	3,481
At offices operated only during the daytime.....	64	71	65	113	31
Total.....	5,626	4,498	3,616	4,295	3,512
CAUSES					
Train accidents.....	225	206	155	280	219
Weather conditions, floods, fire, landslides.....	210	198	266	610	285
Delayed trains, and held to handle train orders.....	68	53	73	71	55
Misunderstanding of instructions or arrangements.....	30	40	47	107	61
Station or clerical work.....	4	12	4	6	78
Sickness, death, or personal injury.....	4,263	3,376	2,045	2,695	2,212
Relief operator arrived late.....	52	35	34	134	139
Labor shortage.....	0	0	0	1,228	1,108
Miscellaneous.....	774	578	992	164	355
Total.....	5,626	4,498	3,616	4,295	3,512

¹ Previously reported under "Miscellaneous."

An analysis of monthly hours-of-service reports filed by carriers has been compiled and published separately.

During the year, agents made 776 inspections to determine the compliance of carriers with provisions of the Hours of Service Act, and 314 inspections of carriers' accident records to determine whether injuries sustained by employees on duty were reported to the Commission as required by its rules and provisions of the Accident Reports Act. The agents also investigated 63 complaints, compared with 31 investigated during the previous year. As results of these inspections and investigations, evidence was obtained for prosecutions involving

101 violations of the Hours of Service Act, as compared to 29 violations in the preceding year, and for prosecutions on 590 counts for 59 violations of the Accident Reports Act and rules of the Commission, as compared to 228 counts for 27 violations in the previous year. In numerous occasions, objectionable practices were corrected as the result of inspections and investigations, without the initiation of prosecutions.

INVESTIGATION OF ACCIDENTS

Accidents were investigated by the Section of Railroad Safety as follows:

Accidents investigated

	Number	Persons		
		Killed	Injured	
Collisions.....	47	93		423
Derailments.....	19	7		349
Total.....	66	100		772

Of the collisions investigated, 29 occurred on lines operated by the block system, 14 on lines operated by timetable and train-order system and 4 in locations where yard and miscellaneous operating rules were in effect, as shown in the following statement:

	Classes of collisions				Total
	Head end	Rear end	Side	Miscellaneous	
Automatic block system or interlocking.....	7	8	6	8	29
Nonautomatic block system.....	0	0	0	1	1
Timetable and train-order system.....	4	4	2	3	13
Yard or miscellaneous rules.....	1	0	0	3	4
Total.....	12	12	8	15	47

Of the 47 collisions investigated, 9 involved track motorcars; 10, failure to obey signal indications; 6, failure properly to control speed within yard limits; 7, motor vehicles at grade crossings; 3, failure to provide adequate protection for preceding train; 2, switch being opened in front of approaching train; 2, failure to clear opposing superior train; 1, train being operated against the current of traffic on a track which was not clear of opposing train; 1, failure properly to control speed of locomotive returning for rear portion of train; 1, cars moving out of control on grade; 1, failure to deliver a train order; 2, train fouling main track immediately in front of approaching train; 1, rear portion of train running into forward portion of train; and the cause of 1 has not yet been determined.

The causes of the collisions are summarized as follows:

Causes	Number of collisions investigated
<i>Head-end collisions</i>	
Opening switch in front of approaching train.....	2
Failure properly to control speed of train moving within yard limits.....	2
Train moving against the current of traffic on track not clear of opposing train.....	1
Failure to take required precautions in operation of track motorcar.....	2
Trains admitted to block occupied by track motorcar.....	1
Occupying main track on time of opposing train.....	2
Failure to deliver a train order.....	1
Failure to operate train in accordance with signal indications.....	1
<i>Rear-end collisions</i>	
Failure properly to control speed of following train moving within yard limits.....	2
Failure to provide protection for preceding train.....	3
Failure to take required precautions in operation of track motorcar.....	2
Failure to operate train in accordance with signal indications.....	2
Failure to maintain lookout ahead.....	1
Failure to provide protection for track motorcar.....	1
Track motorcar occupying main track on time of opposing train.....	1
<i>Side collisions</i>	
Failure to provide adequate protection for preceding train.....	1
Failure to operate train in accordance with signal indications.....	6
Train fouling main track.....	1
<i>Miscellaneous collisions</i>	
Failure to stop motortruck short of train moving over rail-highway grade crossing.....	2
Derailed cars obstructing adjacent track in front of an opposing train.....	1
Motortruck occupying rail-highway grade crossing in front of an approaching train.....	5
Unauthorized use of track motorcar.....	1
Failure to line a route through an interlocking.....	1
Failure to take required precautions in operation of track motorcar.....	1
Failure to control speed of locomotive returning for rear portion of train.....	1
Cars moving out of control on grade.....	2
Separation of train.....	1

Of the 19 derailments investigated, 7 involved defective equipment; 6, defective track; 3, obstructions on the track; 2, excessive speed; and 1, washout.

The causes of the derailments investigated are summarized as follows:

Causes	Number of derailments investigated
<i>Track</i>	
Insecure condition of track.....	4
Obstruction on track.....	2
Irregularities in surface and alinement of track.....	1
Washout.....	1
Landslide.....	1
Broken rail.....	1
<i>Operating conditions and practices</i>	
Excessive speed.....	1
Failure to control speed of train approaching end of track.....	1
<i>Defective equipment</i>	
Broken truck side frame.....	1
Broken journal.....	4
Loose wheel.....	1
False flange on slid-flat wheel.....	1

The following is a summary of the recommendations with respect to specific corrective or preventive measures contained in accident investigation reports issued by the Commission during the year:

Number of reports	Recommendations
1.....	Recommended that the carrier install interlocking protection at crossing.

Under the Accident Reports Act, approved May 6, 1910, we have investigated the more serious accidents during the past 5 years as follows:

Year ended June 30—	Number of accidents investigated			Persons	
	Collisions	Derailments	Total	Killed	Injured
1953.....	36	17	53	92	1,041
1954.....	39	10	49	35	920
1955.....	36	22	58	34	971
1956.....	48	11	59	134	1,612
1957.....	47	19	66	100	772

Under existing law the Commission is authorized to investigate accidents and to make reports on such investigations, including such recommendations as are deemed proper.

SIGNAL SYSTEMS, INTERLOCKING, AUTOMATIC TRAIN-STOP, TRAIN-CONTROL, AND CAB-SIGNAL DEVICES

According to reports submitted by the carriers, block-signal systems, interlocking, and automatic train-stop, train-control, and cab-signal devices were in use on January 1, 1957, as follows:

	Plants	Miles of—		Locomotives
		Road	Track	
Block-signal systems:				
Automatic.....		81,622.2	111,136.8	
Nonautomatic.....		28,212.0	29,083.4	
Total.....		109,834.2	140,220.2	
Corresponding totals, Jan. 1, 1956.....		110,122.9	141,289.8	
Interlocking:				
Number of plants.....	4,247			
Automatic train-stop, train-control, and cab-signal devices:				
Train-stop.....		9,297.3	15,084.1	5,289
Train-control.....		1,025.3	1,951.1	828
Cab-signal.....		3,877.5	8,559.9	3,577
Total.....	4,247	14,200.1	25,595.1	9,694
Corresponding totals, Jan. 1, 1956.....	4,177	14,257.4	26,037.7	9,805

Detailed information concerning these installations is contained in the annual statistics bulletin, compiled separately.

During the year, 223 applications for approval of modifications of block-signal systems and interlockings were filed by the carriers. At the beginning of the year action was pending on 33 applications previously filed. During the year, 229 applications were acted upon, 2 applications were withdrawn, and at the close of the year action was pending on 25 applications. Public hearings were held on 7 of the applications.

During the year, 51 applications were filed in connection with the rules, standards, and instructions prescribed by the Commission's order of June 29, 1950. At the beginning of the year action was pending on 14 applications previously filed. During the year, 61 applications were acted upon, 1 application was withdrawn, and at the close of the year action was pending on 3 applications. Public hearing was held on 1 application for relief from the requirements of the rules.

The following table shows for a 5-year period information with regard to applications for approval of modifications of block-signal systems and interlockings, as well as applications for relief from or modifications of the rules, standards, and instructions prescribed by the Commission's orders:

Applications

BLOCK SIGNAL

Period	Number filed	Pending at beginning of year	Acted upon	Withdrawn	Pending at close of year
Year 1953.....	558	57	565	6	44
Year 1954.....	376	44	402	0	18
Year 1955.....	197	18	197	0	13
Year 1956.....	242	18	225	2	33
Year 1957.....	223	33	229	2	25

RULES, STANDARDS, AND INSTRUCTIONS

Period	Number filed	Pending at beginning of year	Acted upon	Withdrawn	Pending at close of year
Year 1953.....	48	33	72	3	6
Year 1954.....	17	6	21	0	2
Year 1955.....	33	2	33	0	2
Year 1956.....	64	2	51	1	14
Year 1957.....	51	14	61	1	3

Monthly signal failure reports filed by the carriers are summarized in tables 3 and 3a of the appendix, the totals being as follows:

False restrictive failures.....	28,065
False proceed failures.....	74
Potential false proceed conditions.....	12

During the year, inspections were made as follows:

System	Number of inspections	Including inspection of--				
		Signals	Switches	Other appliances	Devices on locomotives	Records of tests
Automatic block-signal.....	793	10,220	6,578	2,271	-----	2,995
Interlockings.....	1,873	16,032	11,712	6,797	-----	4,042
Traffic-control.....	740	8,365	4,948	3,791	-----	2,240
Automatic train-control.....	32	-----	-----	134	124	144
Automatic train-stop.....	346	-----	-----	3,865	902	200
Automatic cab-signal.....	157	-----	-----	357	452	273
Total.....	3,941	34,617	23,238	17,215	1,478	9,894

These inspections have resulted in bringing to the attention of the railroad managements, for necessary corrective action, a large number of unsatisfactory maintenance conditions which have been found to exist. The 3,941 systems inspected during the year is an increase of 224 systems inspected over the previous year.

TRAIN COMMUNICATION SYSTEMS

According to reports submitted by the carriers, as of January 1, 1957, train communication systems were in service for operation over a total of 95,240 miles of road on line of road of 91 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 5,313 miles of road.

Considering only radio and inductive systems used in connection with railroad operation, such systems were in service on 89,927 miles of road on 89 railroads. This compares with radio and inductive communication systems in service on 79,686 miles of road on 76 railroads as of January 1, 1956. Summary of the line of road installations in service as of January 1, 1957, follows:

Summary of Line of Road Installations

Type of installation	Miles of road	Wayside stations	Locomotives	Cabooses and other mobile	Portable pack sets
Radio.....	82,188	866	5,075	3,153	2,665
Inductive.....	7,739	258	1,096	344	1
Combination inductive and wire intercommunication.....	87	1	-----	2	-----
Wire intercommunication system.....	2,259	-----	21	17	-----
Commercial radio service used in railroad operation.....	427	-----	12	19	13
Commercial public radio telephone service.....	2,540	-----	-----	15	-----
Total.....	95,240	1,125	6,204	3,550	2,679

There were 569 installations in service in yards and terminals on 109 railroads. This compares with 457 installations in service on 94 railroads as of January 1, 1956. Summary of installations in service in yards and terminals, as of January 1, 1957, follows:

Summary of yard and terminal installations

Type of installation	Number of installations	Wayside stations	Locomotives	Cabooses and other mobile	Portable pack sets
Radio.....	537	634	2,620	377	942
Inductive.....	6	8	20	-----	-----
Commercial leased radio service.....	26	48	319	-----	-----
Total.....	569	690	2,959	377	942

Detailed information concerning train communication installations is contained in the annual statistics bulletin.

TRANSPORTATION OF EXPLOSIVES AND OTHER DANGEROUS ARTICLES

An unusual demand for amendments to the regulations or the issuance of temporary permits to meet the rapidly changing needs for the transport of all types of dangerous goods prevailed since the previous report. Factors contributing to this unprecedented activity are manifold but mainly due to the development of new shipping containers, new products, new methods for fabricating containers, and broader study by technical groups of existing specifications and methods, many of which are undergoing complete revision. The expanding use of cryogenic gases, the development of civilian atomic energy uses, economic changes, and the need for reducing shipping costs have all inspired a greater interest in the controlling regulations.

The specifications for tank cars have undergone a complete revision to eliminate obsolete practices of construction and repair and to incorporate the latest practicable methods. More explicit and helpful details for performing these operations have been adopted and a new system of qualifying shops was also developed in the interest of eliminating delays and long hauls of tank cars requiring repairs. This intensified program promises to continue for some time in order to obtain more efficiency in the use and maintenance of tank cars.

A similar interest has been registered with respect to cargo tanks, for which some materials are difficult to obtain. Several rubber companies are experimenting with large rubber containers for use on flat-bed trucks, and the interest in these is growing because the design will permit their use as storage containers or permit them to be rolled up so carriers can transport other commodities, especially on return trips. Some cargo tanks for liquid gases, such as oxygen,

helium, argon, et cetera, have been developed, and interest in larger containers for rail transport is imminent. Efforts to standardize such equipment are growing.

The need for special permits to provide temporary relief for shippers experimenting with new containers, or pending adoption of amendments to the regulations continues and, in the main, has satisfactorily provided a means of transport without sacrificing reasonable standards of safety or interfering with economic conditions. A total of 512 special permits were issued for the period, and several changes in regulations came as a result of trial shipments that were authorized under the controlled conditions.

Five public notices and orders were published in regard to amendments to the regulations. A total of 756 amendments were proposed, of which 732 were adopted; among them were specifications for 11 new containers for dangerous goods.

The field staff of the Bureau made observations at 825 railroad points, 211 industries, 25 freight forwarders, and 1 truck terminal, to determine the extent of compliance with regulations. Reports from this staff reveal 4,105 violations of varying degree; however, only 9 instances were considered as warranting prosecution. Four cases were pending in the courts at the beginning of the year; 5 cases were disposed of by imposition of fines, and 3 cases were dismissed. As of June 30, 1957, there were 5 cases pending in the courts.

GRADE CROSSING—RAILWAY WITH HIGHWAY

During the calendar year 1956, there were 3,639 accidents at highway grade crossings, which resulted in the death of 1,338 persons and injury of 3,755 persons. Motor vehicles were involved in 3,379 of these accidents, in which 1,202 persons were killed and 3,629 injured. There were 66 derailments of trains at highway crossings involving motor vehicles, which caused the death of 49 persons and the injury of 115 persons. Casualties to persons on trains resulting from derailments and other train accidents at highway crossings consisted of 10 killed and 152 injured. Information concerning highway grade crossing accidents, together with comparable statistics for the preceding 2 years, is shown in the following table:

Accidents at highway grade crossings, years ended Dec. 31, 1954, 1955, and 1956

	1954			1955			1956		
	Number	Number of persons		Number	Number of persons		Number	Number of persons	
		Killed	Injured		Killed	Injured		Killed	Injured
Accidents at highway grade crossings.....	3,336	1,303	3,426	3,846	1,446	4,014	3,639	1,338	3,755
Accidents at highway grade crossings involving motor vehicles.....	3,074	1,151	3,314	3,583	1,313	3,886	3,379	1,202	3,629
Derailments of trains at highway grade crossings involving motor vehicles.....	65	35	72	80	43	72	66	49	115
Miscellaneous train accidents as a result of collisions between trains and motor vehicles.....	315	153	142	307	159	164	347	155	161
Motor vehicles registered.....	58,589,863			62,760,395			65,212,510		
Railroad casualties:									
Passengers.....			21			27			83
Employees on duty.....		9	75		3	68		9	64
Persons carried under contract.....			2			4		1	5
Travelers not on trains.....									
Total.....		9	98		3	99		10	152

MEDALS OF HONOR

The act of February 23, 1905 (45 U. S. C. 44 and 45), authorizes the President to bestow bronze medals of honor upon persons who, by extreme daring, endanger their own lives in saving or endeavoring to save lives from any wreck, disaster, or grave accident upon any railroad within the United States engaged in interstate commerce. During the year, one application for award of medal of honor, as provided in this act, was investigated by this Section and a medal was awarded in the following instance:

Herman J. Schaefer, switchman for the Chicago and Eastern Illinois Railroad Company, rescued a 2½-year-old child from the path of a freight train at Evansville, Ind., on March 29, 1954. The train consisted of 1 diesel-electric locomotive and about 15 cars and was proceeding easterly at between 10 and 15 miles per hour. When the locomotive passed Heidelberg Avenue crossing, a small child was observed standing close to the right rail about 225 feet ahead. Mr. Schaefer, who was seated on the front platform of the locomotive, immediately gave slow and stop signals and then crossed over to the opposite side of the locomotive and dropped down on the front foot-

board. He reached far out, caught the child under the armpit, and shoved him from the rail and clear of the train. He then regained his balance, and neither he nor the child was injured. The front of the locomotive stopped about 30 feet east of the location where the child had been standing.

Since the passage of this act, of the 110 applications for medals of honor filed, 70 medals have been awarded and 40 denied.

INVESTIGATION OF SAFETY DEVICES

During the year, plans and specifications of four devices designed to increase safety in railway operation were examined and opinions transmitted to the proprietors or their agents.

LEGAL

During the year, 247 cases of violation of the safety appliance laws, comprising 1,038 counts, were transmitted to United States attorneys for prosecution. At the beginning of the year 274 counts were pending in the district courts. Judgment was confessed on 853 counts, 4 counts were dismissed, and 28 counts were tried resulting in judgment for the defendant on 20 counts and 8 counts await decision. The two counts reported last year as awaiting decision by the district court were decided in favor of the Government. On June 30, 1957, 98 cases comprising 433 counts were pending in the district courts.

During the year, 23 cases of violation of the hours of service law, comprising 101 counts, were transmitted to United States attorneys for prosecution. At the beginning of the year 17 counts were pending in the district courts. Judgment was confessed on 35 counts, 2 counts were dismissed, and 5 counts were tried, resulting in judgment for defendant on all counts. On June 30, 1957, 12 cases, comprising 76 counts, were pending in the district courts.

During the year, 7 cases of violation of section 25 of the Interstate Commerce Act, known as the Signal Inspection Law, comprising 8 counts were transmitted to United States attorneys for prosecution. At the beginning of the year 6 counts were pending in the district courts. Judgment was confessed on 11 counts. On June 30, 1957, 3 cases, comprising 3 counts, were pending in the district courts.

During the year, 22 cases of violation of the Accident Reports Act, comprising 590 counts were transmitted to United States attorneys for prosecution. At the beginning of the year 160 counts were pending in the district courts. Defendants plead guilty to 236 counts and 154 counts were nol prossed. On June 30, 1957, 10 cases, comprising 360 counts, were pending in the municipal court for the District of Columbia.

STAFF OF THE SECTION

During the year, agents and inspectors of the Section devoted 13,767 days to regular inspection work, 912 days to procuring evidence of violation of law, 24 days in court furnishing testimony for prosecution of cases, 1,406 days to investigation of accidents, 664 days to investigation of applications submitted by carriers for approval of modification of signals and interlockings and 2,601 days to special investigations.

Agents, inspectors, engineers, and other members of the staff of the Section have performed their many and varied duties in a highly satisfactory manner.

Respectfully submitted.

C. W. TAYLOR,
Director.

TABLE 2.—Tests of air brakes on trains departing from terminals from July 1, 1956, to June 30, 1957—Continued

Railroad	Trains	Cars	Brakes cut out	Brakes that did not apply	Cars not controlled by air	Cars controlled by air	Per cent of cars controlled by air	After inspection began		Excessive piston travel
								Cars set out	Cars repaired in train	
Lake Superior & Ishpeming	2	145	0	0	0	145	100	7	0	3
Lake Superior Terminal & Transfer	1	32	0	0	0	32	100	0	0	0
Lehigh Valley	15	382	0	0	0	382	100	6	23	26
Long Island	1	4	0	0	0	4	100	0	0	0
Los Angeles Union Passenger Terminal	1	15	0	0	0	15	100	0	0	0
Louisiana & Arkansas	4	195	0	1	1	194	99	2	8	9
Louisville & Nashville	91	3,454	0	0	0	3,454	100	27	99	63
Macon, Dublin & Savannah	2	30	0	0	0	30	100	3	3	4
Maine Central	3	176	0	0	0	176	100	2	13	13
Maryland & Pennsylvania	1	5	0	0	0	5	100	1	0	1
Massena Terminal	1	33	0	0	0	33	100	2	5	5
Midland Continental	1	5	0	0	0	5	100	0	0	0
Midland Valley	3	86	0	0	0	86	100	1	12	5
Minneapolis & St. Louis	2	67	0	0	0	67	100	1	1	0
Minneapolis, St. Paul & Sault Ste. Marie	30	1,471	0	1	1	1,470	99	44	39	146
Minnesota Western	1	33	0	2	2	31	94	0	0	2
Missouri-Kansas-Texas	34	1,820	0	1	1	1,819	99	30	110	133
Missouri Pacific	90	3,550	0	6	6	3,544	99	137	250	318
Monon	6	185	0	0	0	185	100	1	4	4
Mount Hood	1	7	0	0	0	7	100	0	1	1
Nashville, Chattanooga & St. Louis	50	1,523	0	0	0	1,523	100	13	15	10
New Orleans Public Belt	1	51	0	0	0	51	100	6	0	1
New Orleans Union Passenger Terminal	1	12	0	0	0	12	100	0	0	0
New York Central	70	2,856	0	2	2	2,854	99	85	138	170
New York, Chicago & St. Louis	18	1,086	0	0	0	1,086	100	38	40	59
New York, Ontario & Western	7	170	0	0	0	170	100	1	9	12
New York, New Haven & Hartford	9	261	0	0	0	261	100	0	7	2
Norfolk & Portsmouth Belt Line	2	73	0	0	0	73	100	0	0	0
Norfolk & Western	16	981	0	0	0	981	100	15	39	31
Norfolk Southern	3	100	0	0	0	100	100	1	3	3
Northern Pacific	74	4,472	0	7	7	4,465	99	149	129	91
Northern Pacific Terminal Co.	1	10	0	0	0	10	100	0	0	0
Northwestern Pacific	4	119	0	0	0	119	100	0	3	0
Ogden Union Railway & Depot	4	358	0	0	0	358	100	11	18	17
Oregon, California & Eastern	1	19	0	0	0	19	100	0	3	3
Oregon Pacific & Eastern	2	52	0	0	0	52	100	0	2	0
Pacific Coast	1	3	0	0	0	3	100	0	0	0
Pacific Electric	7	136	0	0	0	136	100	0	0	6
Panhandle & Santa Fe	10	597	0	0	0	597	100	14	47	49
Pecos Valley Southern	1	22	0	0	0	22	100	4	0	3
Pennsylvania	55	2,278	0	4	4	2,274	99	49	172	162
Pennsylvania-Reading Seashore Lines	6	104	0	0	0	104	100	2	4	5
Piedmont & Northern	2	63	0	0	0	63	100	0	0	0
Pittsburgh & Lake Erie	2	196	0	0	0	196	100	0	14	13
Pittsburgh & West Virginia	2	36	0	0	0	36	100	0	8	8
Port Terminal	1	77	0	0	0	77	100	0	1	0
Reading	9	424	0	0	0	424	100	5	17	17
Richmond, Fredericksburg & Potomac	3	381	0	0	0	381	100	6	44	44
Rockdale, Sandow & Southern	1	15	0	0	0	15	100	0	0	4
Roscoe, Snyder & Pacific	1	3	0	0	0	3	100	0	0	0
Rutland	7	156	0	0	0	156	100	2	1	0
St. Clair Tunnel Co.	1	35	0	0	0	35	100	2	1	1
St. Louis-San Francisco	26	866	0	0	0	866	100	26	68	68
St. Louis Southwestern	17	394	0	0	0	394	100	1	16	25
San Diego & Arizona Eastern	5	185	0	0	0	185	100	0	5	0

TABLE 2.—Tests of air brakes on trains departing from terminals from July 1, 1956, to June 30, 1957—Continued

Railroad	Trains	Cars	Brakes cut out	Brakes that did not apply	Cars not controlled by air	Cars controlled by air	Per cent of cars controlled by air	After inspection began		Excessive piston travel
								Cars set out	Cars repaired in train	
Seaboard Air Line	52	2,190	0	0	0	2,188	99	48	114	135
Southern Pacific	69	3,468	0	0	0	3,468	100	109	159	47
Southern	90	3,535	0	1	1	3,534	99	63	176	149
Spokane, Portland & Seattle	9	312	0	0	0	312	100	11	9	22
Tennessee	1	73	0	0	0	73	100	0	0	0
Tennessee Central	40	906	0	0	0	906	100	8	2	8
Texas-New Mexico	2	131	0	0	0	131	100	2	33	32
Texas & New Orleans	35	1,665	0	3	4	1,661	99	28	116	127
Texas & Pacific	29	2,142	0	0	0	2,142	100	27	218	214
Toledo, Peoria & Western	1	27	0	0	0	27	100	0	1	1
Toledo Terminal	4	46	0	0	0	46	100	1	1	2
Union (Pittsburgh)	3	124	0	0	0	124	100	6	0	4
Union Pacific	82	4,504	0	0	1	4,503	99	83	110	81
Union Terminal	1	10	0	0	0	10	100	1	0	1
Utah	1	38	0	0	0	38	100	1	1	0
Virginian	6	532	0	0	0	532	100	3	26	25
Wabash	13	647	0	0	0	647	100	16	32	51
Warren & Saline River	1	75	0	0	0	75	100	1	0	0
Washington Terminal	2	17	0	0	0	17	100	0	0	0
Waterloo, Cedar Falls & Northern	2	22	0	0	0	22	100	0	1	1
Weatherford, Mineral Wells & Northwestern	1	9	0	0	0	9	100	0	0	0
Western Maryland	7	480	0	0	0	480	100	2	22	16
Western Pacific	5	255	0	0	0	255	100	4	8	0
Western Railway of Alabama	1	47	0	0	0	47	100	0	3	3
Winston-Salem Southbound	1	4	0	0	0	4	100	0	0	0
Grand total	2,246	105,324	10	77	90	105,234	99	2,905	4,146	4,967

NOTE.—Whenever the sum of cars with "Brakes cut out" and cars with "Brakes that did not apply" is less than the number of "Cars not controlled by air" the difference is the number of nonair cars hauled in the trains tested.

TABLE 2a.—Tests of air brakes on trains arriving at terminals from July 1, 1956, to June 30, 1957

Railroad	Trains	Cars	Brakes cut out	Brakes that did not apply	Cars not controlled by air	Cars controlled by air	Percent of cars controlled by air	Excessive piston travel
Ann Arbor.....	3	220	0	7	7	213	97	25
Apalachicola Northern.....	1	59	0	0	0	59	100	4
Atchison, Topeka & Santa Fe.....	44	3,352	10	43	53	3,299	98	238
Atlantic Coast Line.....	24	1,393	6	16	22	1,371	98	145
Baltimore & Ohio.....	45	2,710	16	89	105	2,605	96	306
Baltimore & Ohio Chicago Terminal.....	2	184	2	4	6	178	97	27
Belt Railway of Chicago.....	1	53	0	2	2	51	96	6
Boston & Maine.....	4	280	0	1	1	279	99	12
Canadian National.....	1	74	0	1	1	73	99	2
Canadian Pacific.....	3	93	0	1	1	92	99	2
Carolina & Northwestern.....	2	59	0	1	1	58	97	9
Central of Georgia.....	9	539	2	13	15	524	97	49
Central Railroad of New Jersey.....	3	67	4	4	8	59	88	2
Central Vermont.....	1	66	1	5	6	60	91	0
Charleston & Western Carolina.....	2	96	0	1	1	95	99	7
Chesapeake & Ohio.....	39	2,872	9	44	53	2,819	98	200
Chicago & North Western.....	54	2,772	9	96	105	2,667	96	241
Chicago, Burlington & Quincy.....	20	1,208	1	22	23	1,185	98	70
Chicago Great Western.....	6	531	1	19	20	511	96	39
Chicago, Milwaukee, St. Paul & Pacific.....	40	3,156	17	86	103	3,053	97	228
Chicago, Rock Island & Pacific.....	24	1,556	5	20	25	1,531	98	109
Clinchfield.....	18	1,351	4	9	13	1,338	99	127
Colorado & Southern.....	1	78	0	0	0	78	100	1
Columbia, Newberry & Laurens.....	3	161	0	0	0	161	100	0
Columbus & Greenville.....	1	6	0	0	0	6	100	0
Delaware & Hudson.....	5	458	0	6	6	452	99	19
Delaware, Lackawanna & Western.....	25	1,782	6	42	48	1,734	97	123
Denver & Rio Grande Western.....	8	578	1	14	15	563	97	16
Detroit Terminal.....	1	39	0	0	0	39	100	4
Detroit & Toledo Shore Line.....	5	320	0	1	1	319	99	57
Detroit, Toledo & Ironton.....	3	189	0	5	5	184	97	3
Duluth, Missabe & Iron Range.....	6	715	1	0	1	714	99	6
Duluth, South Shore & Atlantic.....	2	104	2	0	2	102	98	6
Durham & Southern.....	1	57	0	0	0	57	100	4
Elgin, Joliet & Eastern.....	4	203	0	10	10	193	95	14
Eric.....	26	2,410	8	42	50	2,360	98	144
Florida East Coast.....	8	462	1	7	8	454	98	47
Fort Worth & Denver.....	6	108	0	1	1	107	99	1
Georgia & Florida.....	2	79	0	1	1	78	99	6
Grand Trunk Western.....	26	1,832	5	37	42	1,790	98	217
Great Northern.....	20	1,905	2	13	15	1,890	99	50
Green Bay & Western.....	4	106	0	2	2	104	98	10
Gulf, Colorado & Santa Fe.....	8	287	1	4	5	282	98	26
Gulf, Mobile & Ohio.....	8	774	4	12	16	758	98	61
Illinois Central.....	52	3,240	0	30	30	3,210	99	128
Indiana Harbor Belt.....	3	107	1	1	2	105	98	13
Joplin Union Depot.....	1	15	0	0	0	15	100	0
Kansas City Southern.....	6	395	0	7	7	388	98	29
Kansas City Terminal.....	1	16	0	0	1	15	94	0
Kansas, Oklahoma & Gulf.....	4	403	0	4	4	399	99	37
Lake Superior & Ishpeming.....	2	72	0	1	1	71	99	1
Lake Superior Terminal & Transfer.....	1	27	1	0	1	26	96	0
Lehigh Valley.....	13	808	2	7	9	799	99	33
Los Angeles Junction.....	1	27	0	0	0	27	100	8
Louisiana & Arkansas.....	2	244	0	9	9	235	96	12
Louisville & Nashville.....	102	4,369	8	42	50	4,319	99	280
Macon, Dublin & Savannah.....	2	87	0	3	3	84	97	11
Maine Central.....	2	49	0	1	1	48	98	2
Massena Terminal.....	1	13	0	0	0	13	100	1
Minneapolis & St. Louis.....	2	134	1	1	2	132	99	3
Minneapolis, St. Paul & Sault Ste. Marie.....	22	1,314	5	22	27	1,287	98	104
Minnesota Transfer.....	1	58	0	2	2	56	97	5
Missouri-Kansas-Texas.....	8	547	3	3	6	541	99	53
Missouri Pacific.....	26	2,012	8	54	62	1,950	97	194
Monon.....	2	140	0	0	0	140	100	23
Nashville, Chattanooga & St. Louis.....	47	1,217	0	17	17	1,200	99	80
Nashville Terminals.....	2	118	0	2	2	116	98	11
New Orleans Public Belt.....	2	122	1	5	6	116	95	5
New York Central.....	72	5,865	15	121	136	5,729	81	589
New York, Chicago & St. Louis.....	23	1,460	3	28	31	1,429	98	151
New York, New Haven & Hartford.....	8	413	2	10	12	401	97	17
New York, Ontario & Western.....	1	11	0	0	0	11	100	3
Norfolk & Portsmouth Belt Line.....	2	76	0	3	3	73	96	0
Norfolk & Western.....	14	876	9	14	23	853	97	53
Norfolk Southern.....	2	63	0	0	0	63	100	6

TABLE 2a.—Tests of air brakes on trains arriving at terminals from July 1, 1956, to June 30, 1957—Continued

Railroad	Trains	Cars	Brakes cut out	Brakes that did not apply	Cars not controlled by air	Cars controlled by air	Percent of cars controlled by air	Excessive piston travel
Northern Pacific.....	23	1,765	2	15	17	1,748	99	69
Northwestern Pacific.....	1	78	0	1	1	77	99	1
Ogden Union Railway & Depot.....	1	116	3	3	6	110	95	6
Pacific Electric.....	2	22	0	1	1	21	95	5
Pennsylvania.....	93	6,565	13	226	239	6,326	96	707
Pennsylvania-Reading Seashore Lines.....	2	10	0	0	0	10	100	0
Piedmont & Northern.....	1	56	0	2	2	54	96	1
Pittsburgh & Lake Erie.....	2	267	0	7	7	260	97	12
Pittsburgh & West Virginia.....	5	305	2	2	4	301	99	65
Quanah, Acme & Pacific.....	1	34	0	1	1	33	97	0
Reading.....	7	240	0	7	7	233	97	11
Richmond, Fredericksburg & Potomac.....	6	561	1	6	7	554	99	55
Rutland.....	5	119	0	4	4	115	97	5
St. Louis-San Francisco.....	14	761	3	13	16	745	98	98
St. Louis Southwestern.....	8	507	0	4	4	503	99	43
Savannah & Atlanta.....	1	96	0	3	3	93	97	9
Seaboard Air Line.....	14	1,023	2	18	20	1,003	98	160
Southern.....	76	3,409	9	64	73	3,336	98	287
Southern Pacific.....	36	2,807	8	48	56	2,751	98	359
Spokane, Portland & Seattle.....	8	627	2	13	15	612	98	58
Tennessee, Alabama & Georgia.....	1	51	0	1	1	50	98	12
Texas & New Orleans.....	9	870	2	21	23	847	97	94
Texas & Pacific.....	4	79	0	0	0	79	100	11
Tucson, Cornelia & Gila Bend.....	1	14	1	0	1	13	93	2
Union Pacific.....	52	4,146	15	90	105	4,041	97	145
Utah.....	1	46	0	2	2	44	96	6
Valley & Siletz.....	1	26	1	0	1	25	96	2
Wabash.....	14	1,188	6	29	35	1,153	97	123
Western Maryland.....	3	250	0	8	8	242	97	13
Western Pacific.....	4	264	1	1	2	262	99	15
Grand total.....	1,342	85,944	250	1,657	1,907	84,037	98	6,956

NOTE.—Wherever the sum of cars with "Brakes cut out" and cars with "Brakes that did not apply" is less than the number of "Cars not controlled by air" the difference is the number of nonair cars hauled in the trains tested.

TABLE 3.—Failures of signals, interlocking, automatic train-stop, train-control, and cab-signal devices, and other systems for the year ended June 30, 1957, as reported by the carriers pursuant to section 25 of the Interstate Commerce Act

Name of railroad	False restrictive failures					False proceed failures					Potential false proceed conditions				
	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total
Alabama Great Southern	76	47	25		148										
Alton & Southern		17			17										
Ann Arbor	2	15			17		1			1					
Arkansas & Memphis Ry. Bridge & Terminal Co.	2	3			5										3
Atchison, Topeka & Santa Fe	308	347	488		1,203	2	1	2		5	3				
Atlanta & West Point	59				59										
Atlanta Terminal		35			35										
Atlantic Coast Line	305	315	97		717		1			1					
Baltimore & Ohio	365	147	98		610		1								
Bamberger	9				9										
Bangor & Aroostook	92			66	158										
Belt Railway of Chicago	2	6			8										
Bessemer & Lake Erie	132				132										
Birmingham Terminal		48			48										
Boston & Maine	188	158	31		377	1				1					
Boston Terminal		81			81										
Butte, Anaconda & Pacific	17				17										
Canadian National		5			5										
Canadian Pacific	14				14										
Central of Georgia	111	9			120	1				1					
Central R. R. of New Jersey	70	135	2		207		1			1			1		1
Charleston & Western Carolina		2			2										
Chesapeake & Ohio	180	188	44		412		1			1					
Chicago & Eastern Illinois	182	171	6		359										
Chicago & Illinois Midland	34	2			36										
Chicago & North Western	217	91	195		503										
Chicago & Western Indiana	22	28			50										
Chicago, Burlington & Quincy	394	26	11		431	2	1			3					
Chicago Great Western	164	20			184										
Chicago, Milwaukee, St. Paul & Pacific	747	82	99		928	1				1					
Chicago North Shore & Milwaukee	52	34			86	1				1					
Chicago, Rock Island & Pacific	413	93	19		525										
Chicago South Shore & South Bend	117	5			122										
Chicago Union Station		5			5										
Cincinnati, New Orleans & Texas Pacific	48	59	14	4	125										
Cincinnati Union Terminal		125			125										
City of St. Louis Municipal Bridge		75			75										
Clinchfield	39				39										
Dayton Union		27			27										

Delaware & Hudson	141	99			240	2				2					
Delaware, Lackawanna & Western	179	44	4		227										
Denver & Rio Grande Western	410	14			424										
Denver Union Terminal		32			32										
Detroit & Toledo Shore Line	5	1			6										
Detroit, Toledo & Ironton		2		6	8										
Duluth, Missabe & Iron Range	8	34		1	43										
Elgin, Joliet & Eastern	33	141			174										
Erie	113	91	40	3	247	2				2					
Florida East Coast	272				272										
Fort Dodge, Des Moines & Southern		2		4	6										
Fort Worth and Denver	81				81	1				1					
Galveston, Houston & Henderson		1			1										
Georgia	121				121										
Georgia Southern & Florida	83	7	26	5	121										
Grand Trunk Western	206	93		28	327										
Great Northern	496	58			554										
Green Bay & Western	5	4		1	10										
Gulf, Mobile & Ohio	137	28	9		174										
Houston Belt & Terminal	7	12			19										
Hudson & Manhattan	81	59	6	12	158	1	2	1		4	2		1		3
Illinois Central	399	97	160		656	4				4					
Illinois Terminal	200	30			230										
Indianapolis Union		22			22					1					
Jacksonville Terminal		92			92		1			1					
Kansas City Southern	141	109			250										
Kansas City Terminal		251			251										
Kentucky & Indiana Terminal		34			34										
Lake Superior & Ishpeming		1			1										
Lehigh & Hudson River	7				7										
Lehigh & New England	1	2			3										
Lehigh Valley	33	13	5		51						1				1
Litchfield & Madison	5				5										
Long Island	42	43	495		580		1			1					
Louisville & Nashville	584	133	195		912	3				3					
Maine Central	84	20			104	1				1					
Memphis Union Station		38			38										
Minneapolis, St. Paul & Sault Ste. Marie	129	30			159										
Missouri-Kansas-Texas	279	19			298										
Missouri-Kansas-Texas of Texas	210	22			232										
Missouri Pacific	500	135			635						2				2
Monon	165	15			180		1			1					
Monongahela	37				37										
Monongahela Connecting	50				50										
Nashville, Chattanooga & St. Louis	167	34			201										
Newburgh & South Shore		7			7										
New Orleans & Northeastern	50	8	8	1	67										
New Orleans Public Belt	3	1			4										
New Orleans Union Passenger Terminal		21			21										
New York Central	840	846	236		1,922	1		8		9	1				1
New York, Chicago & St. Louis	211	292	32		535										
New York, New Haven & Hartford	159	243	19		421										
New York, Ontario & Western	30				30										

Name of railroad	False restrictive failures					False proceed failures					Potential false proceed conditions				
	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total	Block systems	Interlocking	ATS, ATC, ACS	Other systems	Total
New York, Susquehanna & Western	12				12										
Norfolk & Western	228	205	26		459										
Northern Pacific	813	45			858										
Northwestern Pacific	6				6										
Pacific Electric	33	61			94										
Paducah and Illinois	1				1										
Pennsylvania	439	571	1,326	8	2,344	2	3	3		8					
Pennsylvania-Reading Seashore Lines	31	4	19		54										
Peoria & Pekin Union	25	26		8	59										
Pittsburgh & West Virginia	61				61	2				2					
Portland Terminal		1			1										
Portland Traction					84										
Reading	83	57		2	142										
Richmond, Fredericksburg & Potomac	54	62	2		118		1			1					
River Terminal		67			67										
Rutland		14			14										
Sacramento Northern	7	7			14										
St. Louis-San Francisco	397	29			426	3				3					
St. Louis Southwestern	200				200										
Seaboard Air Line	480				480	1	1			2					
Southern	701	114	161	14	990	1				1	1				1
Southern Illinois & Missouri Bridge	3				3										
Southern Pacific	319	107	30		456	3	1			4					
Spokane, Portland & Seattle	74	1			75										
Terminal R. R. Assn. of St. Louis	12	84			96	1				1					
Texas & New Orleans	128	57			185										
Texas & Pacific	242	1			243										
Texas Pacific-Missouri Pacific Terminal Railroad of New Orleans		1			1										
Toledo, Peoria & Western		15		1	16										
Union Pacific	434	20	19		473										
Utah	9				9										
Virginian	31	22		9	62										
Wabash	175	36			211	1				1					
Washington Terminal		88			88										
Western Maryland		27			111		5			5					
Western Pacific	182	6			188										
Western Ry. of Alabama	63				63										
Total	16,536	7,409	3,947	173	28,065	37	23	14		74	10		2		12

TABLE 3a.—Causes of false-proceed failures reported by carriers for the year ended June 30, 1957, as listed in table 3

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
Ann Arbor							1		1
Achison, Topeka & Santa Fe			3	1			1		5
Baltimore & Ohio							1		1
Boston & Maine						1			1
Central of Georgia		1							1
Central R. R. of New Jersey	1								1
Chesapeake & Ohio	1								1
Chicago, Burlington & Quincy			1	1		1			3
Chicago, Milwaukee, St. Paul & Pacific						1			1
Chicago North Shore & Milwaukee	1								1
Delaware & Hudson	1		1						2
Erie				1	1				2
Fort Worth and Denver			1						1
Hudson & Manhattan		2	1				1		4
Illinois Central		1				1			2
Indianapolis Union	1								1
Jacksonville Terminal	1								1
Long Island			1						1
Louisville & Nashville	1					1	1		3
Maine Central						1			1
Monon					1				1
New York Central				7		1		1	9
Pennsylvania	4		4						8
Pittsburgh & West Virginia	1							1	2
Richmond, Fredericksburg & Potomac							1		1
St. Louis-San Francisco	1					1			2
Seaboard Air Line			1				1		2
Southern						1			1
Southern Pacific						3	1		4
Terminal R. R. Association of St. Louis							1		1
Wabash							1		1
Washington Terminal	5								5
Total	18	4	13	11	12	5	9	2	74

TABLE 3b.—Causes of potential false-proceed conditions reported by carriers for the year ended June 30, 1957, as listed in table 3

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
Atchison, Topeka & Santa Fe.....			1		1	1			3
Central R. R. of New Jersey.....				1					1
Hudson & Manhattan.....		3							3
Lehigh Valley.....				1					1
Missouri Pacific.....	2								2
New York Central.....						1			1
Southern.....				1					1
Total.....	2	3	1	3	1	2			12

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