



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 from 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.

### Grade Crossing Accidents

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.

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,

	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		
<b>Railroad casualties:</b>									
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.....		9	98		3	99		10	152
<b>Total.....</b>									

229 applications were acted upon, two applications were withdrawn, and at the close of the year action was pending on 25 applications. Public hearings were held on seven.

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 radio-tele-

phone 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. 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.

### Causes of false-proceed failures, year ending June 30, 1957

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
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		4
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	9
New York Central.....				7	1				8
Pennsylvania.....	4		4						8
Pittsburgh & West Virginia.....	1							1	2
Richmond, Fredericksburg & Potomac.....							1		1
St. Louis-San Francisco.....	1				1	1			3
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
<b>Total.....</b>	<b>18</b>	<b>4</b>	<b>13</b>	<b>11</b>	<b>12</b>	<b>5</b>	<b>9</b>	<b>2</b>	<b>74</b>