

INTERSTATE COMMERCE COMMISSION

FIFTY-FOURTH ANNUAL REPORT
OF THE
SECTION OF LOCOMOTIVE INSPECTION

FISCAL YEAR ENDED
JUNE 30, 1965



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1966

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 - Price 15 cents

ANNUAL REPORT OF THE SECTION OF LOCOMOTIVE INSPECTION

This is the Fifty-fourth Annual Report of the Section of Locomotive Inspection, covering the work of the fiscal year ended June 30, 1965.

Summaries are given, by railroads, of all accidents which resulted in serious injury or death to one or more persons due to the failure of parts and appurtenances of locomotives, as reported and investigated under section 8 of the Locomotive Inspection Act. Accidents which occurred as a result of failure of parts and appurtenances of locomotives, and which resulted in damage to property or equipment but not serious injury or death, are not included in this report. For additional information concerning railroad accidents, see Accident Bulletin, prepared by the Bureau Economics.

Tables in the report show the results of inspection of locomotives, the number of accidents and resultant casualties caused by failure of some part or appurtenance of individual locomotives, and the parts and appurtenances which caused accidents and casualties. The tabulated inspection data cover the number of locomotives for which reports were filed, the number inspected, the number and percentage found defective, the number for which written notices for repairs were issued in accordance with section 6 of the act, and the total number of defects found and reported. Tables are included to show, by railroads, all locomotive defects found by district locomotive inspectors. Data for preceding years are given where possible, for comparative purposes.

GENERAL CONDITIONS OF LOCOMOTIVES AND INVESTIGATION OF ACCIDENTS

During the year, 12.3 percent of the locomotives inspected by our inspectors were found with defects or errors in inspection that should have been corrected before the locomotives were put into use. Six hundred and forty-six locomotives were ordered withheld from service by our inspectors because of the presence of defects that rendered the locomotives immediately unsafe; this is an increase of 67 locomotives compared with the preceding year.

Results of locomotive inspections made by district locomotive inspectors in performance of duties prescribed under section 6 of the act are shown in the following table:

Reports and inspections—steam locomotives, locomotive units other than steam, and multiple operated electric locomotive units

	Year ended June 30--					
	1960	1961	1962	1963	1964	1965
Number of locomotives for which reports were filed.....	35,645	35,074	34,789	34,473	34,350	34,072
Number inspected.....	108,629	98,332	94,592	79,781	79,682	76,044
Number found defective.....	11,126	9,399	9,050	8,497	8,852	9,391
Percent of inspected found defective.....	10.2	9.6	9.6	10.7	11.1	12.3
Number ordered out of service.....	531	504	488	420	579	646
Number of defects found.....	32,830	28,308	26,032	25,718	28,453	31,596

As indicated in the preceding table there was a decrease in the number of locomotives for which carriers were filing reports on June 30, 1965, as compared to June 30, 1964. The decrease resulted from 14 steam locomotives being retired during the year, and a decrease of 264 in the number of other than steam and multiple operated electric locomotive units for which reports were filed during the previous period.

District locomotive inspectors devoted 8,093½ days to regular inspections of locomotives, 457½ days making shop inspections to determine that repairs and tests were being made to meet the requirements of the law and rules, 486 days investigating accidents, 475½ days on special assignment relating to locomotive inspection including investigating complaints regarding possible violation of the law and rules, 593 days conferring with carrier representatives and officials, 2,491½ days at their respective headquarters reviewing and processing inspection and repair reports filed by the carriers and performing other office work.

Tables I, II, and III in the appendix show details of defective parts and appurtenances of steam locomotives, locomotive units other than steam, and multiple operated electric locomotive units reported, inspected, found defective, and ordered out of service. If the reported defective parts shown by the tables are considered, those parts which may be expected to require most maintenance will be indicated, and inspection and repair programs may be set up accordingly.

Detailed results of inspections of steam locomotives, locomotive units other than steam, and multiple operated electric locomotive units are shown, by carriers, in tables IV, V, and VI in the appendix.

INVESTIGATION OF ACCIDENTS

Accidents reported under requirements of the law and Commission rules were investigated and appropriate action taken to prevent re-

currence so far as possible. All district inspectors were advised of details and causes of unusual accidents to better assist them in their safety promotion programs. The dissemination of such information combined with the active enforcement of the requirements is directed toward promoting locomotive operational safety. However, along with the apparent deteriorating condition of the locomotives, as reflected by the increased number of defects reported and number of locomotives ordered out of service by the district inspectors, the number of accidents has also increased.

Eighty-seven accidents of 111 reported and investigated occurred in connection with all types of locomotives caused by the failure of some part or appurtenance in which 93 persons were injured. Compared with the preceding year this was an increase of 11 accidents and a decrease of 3 casualties.

Of the 87 accidents, 16 were caused by the defective condition of floors, steps, and passageways of diesel-electric locomotives. This was a decrease of one accident compared with the preceding year.

Fifteen accidents were caused by the defective condition of cab seats, compared with 12 in the previous year.

Nine accidents were caused by diesel engine crankcase explosions, same as in the previous year.

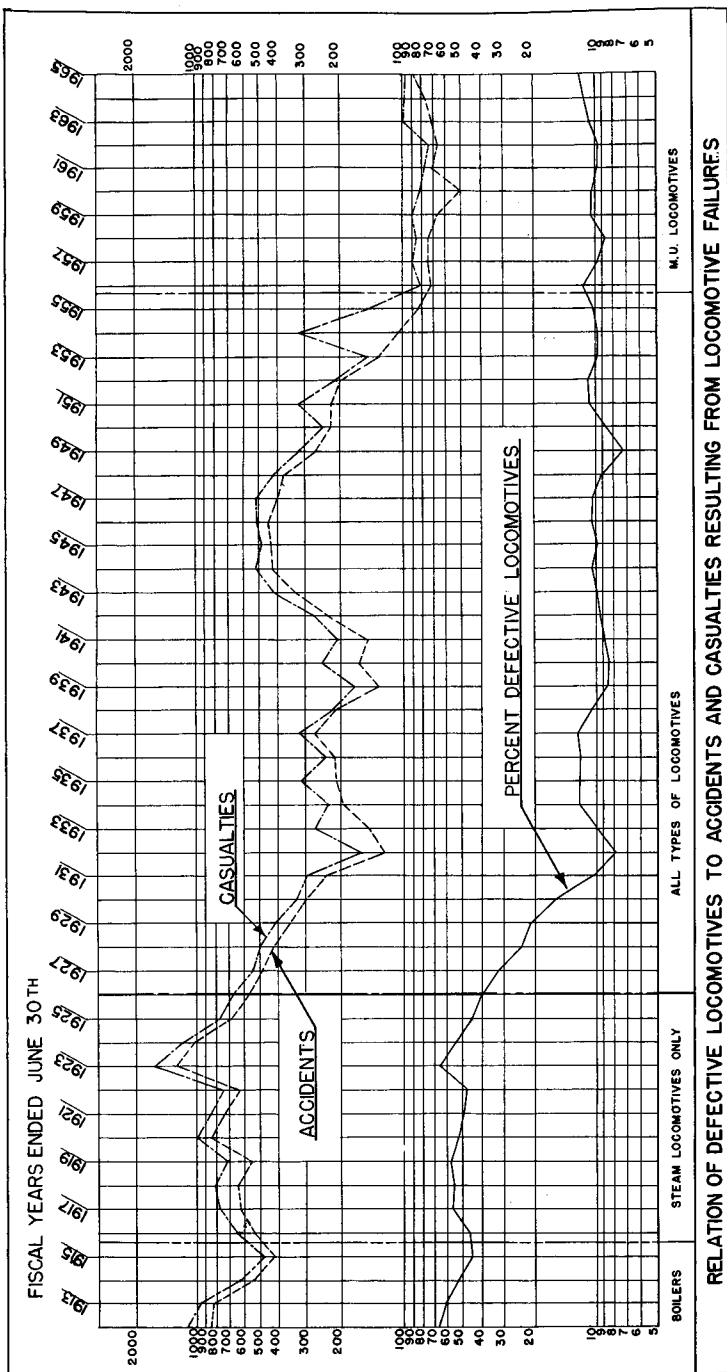
The following table provides details of the accidents and casualties during the past 6 years caused by failure of some part or appurtenance of locomotives, and indicates increases or decreases in accidents and casualties:

Accidents and casualties caused by failure of some part or appurtenance of steam locomotives, locomotive units other than steam, and multiple operated electric locomotive units

	Year ended June 30--					
	1960	1961	1962	1963	1964	1965
Number of accidents.....	50	71	67	71	76	87
Percent increase or decrease from previous year.....	24.2	142.0	5.6	15.9	17.0	114.5
Number of persons killed.....	0	0	0	0	1	0
Percent increase or decrease from previous year.....	0	0	0	0	100	100
Number of persons injured.....	81	77	73	98	96	93
Percent increase or decrease from previous year.....	10.0	4.9	5.2	134.2	2.0	3.1

↑ Increase.

The chart on page 4 shows the relation between the percentage of defective locomotives and the number of accidents and casualties which have resulted from defective parts and appurtenances and illustrates the effect of operating locomotives in defective condition.



Data are given for the past 5 years on the distribution of casualties among railroad personnel by occupations and nonemployees in the following table:

Number of casualties classified according to occupation—steam locomotives, locomotive units other than steam, and multiple operated electric locomotive units

	Year ended June 30—									
	1961		1962		1963		1964		1965	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Member of train crews:										
Engineers.....		14		23		17		20		22
Firemen.....	44		37		36		35		40	
Brakemen.....	11		8		9		18		15	
Conductors.....	3		2		5		1		4	
Switchmen.....	2		1		1		2		4	
Maintenance employees.....			2				4		1	
Other employees.....	3				2		0		3	
Nonemployees.....							1	16		4
Total.....	0	77	0	73	0	98	1	96	0	93

The following table illustrates the parts or appurtenances of locomotives that caused the accidents which occurred during the past fiscal year:

Accidents and casualties resulting from failure of steam locomotives, tenders, locomotives other than steam, multiple operated electric locomotive units and their appurtenances

Part or appurtenance which caused accident	Year ended June 30, 1965		
	Accidents	Killed	Injured
Air compressors.....	1	0	1
Air reservoirs, fittings, safety and check valves.....	0	0	0
Boiler:			
Explosions.....	0	0	0
Fuel explosion in firebox.....	0	0	0
Steam valves, piping and blowers.....	2	0	2
Brakes and brake rigging.....	6	0	8
Cab:			
Doors and windows.....	6	0	6
Seats.....	15	0	15
Control equipment—mechanical, electrical, pneumatic, or electropneumatic.....	0	0	0
Couplers, draft and drawgear.....	0	0	0
Electrical equipment:			
Armature journals and bearings.....	0	0	0
Energized electrical parts.....	3	0	4
Insulation, short circuits, or electrical flashes.....	10	0	10
Fans and shutters.....	0	0	0
Fires due to liquid fuel or debris.....	0	0	0
Floors, steps, and passageways.....	16	0	16
Handholds.....	1	0	1
Internal combustion engines and turbines:			
Crankcase or air-box explosions.....	9	0	10
Exhaust and cooling systems.....	5	0	5
Fuel injectors and connections.....	1	0	1
Miscellaneous.....	12	0	14
Total.....	87	0	93

SPECIFICATIONS AND ALTERATION REPORTS

In compliance with rule 54 of the Rules and Instructions for Inspection and Testing of Steam Locomotives, 12 specifications for steam locomotives were submitted by carriers. Under rules 328 and 329 of the Rules and Instructions for Inspection and Testing of Locomotives Other Than Steam, 1,501 specifications and 648 alteration reports for locomotive units, and 63 specifications and 234 alteration reports for heating boilers mounted in locomotive units were submitted by carriers. As required by rule 449 for Multiple Operated Electric Locomotive Units Designed to Carry Freight and/or Passenger Traffic, 58 specifications and 2 alteration reports were submitted by carriers. The information contained in these specifications and reports was analyzed and corrective measures were taken when discrepancies were found.

INSPECTION AND REPAIR REPORTS

Inspection and repair reports filed with district inspectors during the year totaled 1,765 under rules 51 and 53 of the Rules and Instructions for Inspection and Testing of Steam Locomotives; 408,744 under rules 331 and 332 of the Rules and Instructions for Inspection and Testing of Locomotives Other Than Steam; and 30,382 under rule 451 for Multiple Operated Electric Locomotive Units Designed to Carry Freight and/or Passenger Traffic.

EXTENSION OF TIME FOR REMOVAL OF FLUES

Under rule 10 of the Rules and Instructions for Inspection and Testing of Steam Locomotives, 16 applications for extension of time for removal of flues were submitted. After investigation, extensions were granted for the full period requested in 11 applications, of which 1 extension was granted after defects disclosed by our investigation were repaired. An extension was granted on one locomotive for 12 months of service provided such service was performed within 2 years. One extension was denied and a shorter extension than requested was granted for one locomotive because of conditions disclosed by our investigations. Two applications were pending. An extension was granted for the full period requested in the one application pending on July 1, 1964.

SUITS FOR PENALTIES

During the year, 8 cases involving 17 counts for alleged violations of the Locomotive Inspection Act and rules prescribed thereunder were transmitted to U.S. attorneys for prosecution. Judgment was con-

fessed in 6 cases on 14 counts. One case of two counts was dismissed and one case of one count was decided in favor of the railroad. Penalties totaling \$3,500 were assessed. One case, involving 39 counts was pending in the district court at the end of the year. The following is a brief summary of the cases.

CASES INSTITUTED AND DISPOSED OF DURING THE YEAR

U.S. v. Erie-Lackawanna Railroad Company, consisting of one count, involved the failure to immediately report by wire, an accident resulting in serious injury to an employee when said employee slipped on oil on the passageway floor, in violation of rule 335. Defendant confessed judgment and a penalty of \$250 and costs was assessed.

U.S. v. Louisville and Nashville Railroad Company, consisting of nine counts, involved the uses of a diesel-electric locomotive unit when its right No. 3 wheel was in defective condition, in violation of rule 227(f). Defendant confessed judgment and a penalty of \$2,250 and costs was assessed.

OTHER CASES DISPOSED OF DURING THE YEAR

U.S. v. Great Northern Railway Company, consisting of one count, involved the use of diesel-electric locomotive unit when the airbrakes were in a defective condition in violation of section 2 of the Locomotive Inspection Act. Defendant confessed judgment and a penalty of \$250 and costs was assessed.

U.S. v. Great Northern Railway Company, consisting of one count, involved the failure to immediately report by wire, an accident resulting in serious injury to an employee as a result of defective brakes on a diesel-electric locomotive, in violation of rule 335. Defendant confessed judgment and a penalty of \$250 and costs was assessed.

U.S. v. The New York Central Railroad Company, consisting of the one count, involved the use of a diesel-electric locomotive unit when the airbrakes were cut out and inoperative, in violation of rule 204(a). Defendant confessed judgment and a penalty of \$250 and costs was assessed.

U.S. v. The New York Central Railroad Company, consisting of one count, involved the failure to preserve intact the part or parts of a diesel-electric locomotive affected by an accident, as required by section 8 of the Locomotive Inspection Act. Defendant confessed judgment and a penalty of \$250 and costs was assessed.

U.S. v. Union Pacific Railroad Company, consisting of two counts, involved the uses of a diesel-electric locomotive when said locomotive was not in serviceable condition because proper repairs had not been made as required by a form No. 5, in violation of section 6 of the Locomotive Inspection Act. This case was dismissed.

U.S. v. Union Pacific Railroad Company, consisting of one count, involved the use of a diesel-electric locomotive when said locomotive was not in serviceable condition because proper repairs had not been made as required by a form No. 5, in violation of section 6 of the Locomotive Inspection Act. Judgment was entered for the defendant and no appeal was taken.

CASE PENDING AT THE CLOSE OF THE YEAR

U.S. v. The New York Central Railroad Company, consisting of 39 counts, involves the use of a diesel-electric locomotive when daily locomotive inspection reports were not on file as required by rule 203(a).

APPEALS

No formal appeals from decisions of district inspectors were filed by the carriers.

RULE CHANGE PROPOSAL

A petition was received from the Association of American Railroads for amendment of certain rules and instructions for inspecting and testing of locomotives other than steam. As a result of the petition, a proceeding was instituted by the Commission in Ex parte 243. Formal hearing on this petition commenced on June 15, 1965.

R. D. PFAHLER,
Director.

ACCIDENTS AND CASUALTIES RESULTING FROM THE FAILURE OF STEAM LOCOMOTIVES, TENDERS, LOCOMOTIVES OTHER THAN STEAM, MULTIPLE OPERATED ELECTRIC LOCOMOTIVE UNITS AND THEIR APPURTENANCES, DURING THE FISCAL YEAR ENDED JUNE 30, 1965, BY ROADS

ATGHISSION, TOPEKA AND SANTA FE RAILWAY:

November 14, 1964, Unit 233, Montoya, Tex. Employee suffered severe injury when he slipped and fell on oil that he had tracked into the cab of the unit; one employee injured.

One accident; one employee injured.

ATLANTIC COAST LINE RAILROAD:

April 28, 1965, Unit 343-B, Steckert Fla. Crankcase explosion caused by overheated main and connecting rod bearings; two employees injured.

One accident, two employees injured.

BALTIMORE AND OHIO RAILROAD:

April 9, 1965, Unit 1423, Washington, D.C. Cab seat broke loose from the floor causing the engineer to fall backwards striking the wall; one employee injured.

One accident; one employee injured.

BOSTON AND MAINE CORPORATION:

December 31, 1964, Unit 6206, Somerville, Mass. Failure of cab seat post due to defective weld; one employee injured.

March 18, 1965, Unit 1271, East Deerfield, Mass. Employee wrenched his back when he slipped and fell on oil and snow on walkway; one employee injured.

May 8, 1965, Unit 6133, Swampscott, Mass. Undesired opening of trapdoor due to defective latch spring; one employee injured.

June 23, 1965, Unit 6116, Boston, Mass. Failure of weld at cab seat locking lug on bottom of cushion frame causing the seat and the engineer to fall backwards; one employee injured.

Four accidents; four employees injured.

BUTTE, ANACONDA AND PACIFIC RAILWAY:

February 25, 1965, Unit 52, Butte, Mont. Fuse explosion caused by defective blowout coil in high voltage circuit; one employee injured.

One accident; one employee injured.

CHICAGO AND EASTERN ILLINOIS RAILROAD:

July 14, 1964, Unit 127, Danville, Ill. Failure to secure the locking bar of the mounting rack in proper position permitted part of the radio communication equipment to fall from rack striking and injuring the employee; one employee injured.

One accident; one employee injured.

CHICAGO, BURLINGTON AND QUINCY RAILROAD:

July 18, 1964, Unit 9929-B, Lincoln, Nebr. Bonnet blew out of steam line end valve due to deterioration of the bonnet and body threads; one employee injured.

One accident; one employee injured.

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD:

August 6, 1964, Unit 98-B, Chicago, Ill. Bonnet blew out of train line end valve due to deterioration of the valve and bonnet threads; one employee injured.

December 16, 1964, Unit 102-C, Westfield, Iowa. Heating boiler feed water pump piston broken in cylinder caused employee to lose part of his right thumb while attempting to start the boiler; one employee injured.
Two accidents; two employees injured.

CHICAGO RIVER AND INDIANA RAILROAD:

June 18, 1965, Unit NYC 655, Chicago, Ill. Trapdoor in the locomotive cab floor failed causing the employee to fall into the opening; one employee injured.
One accident; one employee injured.

CHICAGO, ROCK ISLAND AND PACIFIC RAILROAD:

September 26, 1964, Unit 129, Partridge, Kans. Crankcase explosion due to damaged piston and overheated piston pin and piston pin carrier bushings; one employee injured.

November 18, 1964, Unit 632, Numa, Iowa. Employee suffered injury from shattered glass from the return waterflow indicator cause by pressure in steam heat boiler return water system; one employee injured.
Two accidents; two employees injured.

DENVER AND RIO GRANDE WESTERN RAILROAD:

September 10, 1964, Unit 5942, Helper, Utah. Cab seat failure due to faulty repair of previously defective swivel pin; one employee injured.
One accident; one employee injured.

ERIE-LACKAWANNA RAILROAD:

October 27, 1964, Unit 445, Jersey City, N.J. Employee slipped on oil and grease that had accumulated on the bottom step of the locomotive from the shoes of the crew using the steps to enter the locomotive; one employee injured.

December 5, 1964, Unit 8054, Griffith, Ind. Defective door hinge and latch caused the employee to crush his finger when closing the nose end door; one employee injured.

December 15, 1964, Unit 2411, Cocheton, N.Y. Broken fuel supply pipe caused employee to be sprayed with oil when he opened the engine hood door to check the overspeed mechanism; one employee injured.

January 11, 1965, Unit 6361, Deposit, N.Y. Flash of undetermined origin occurred in the high-voltage cabinet at cam switch; one employee injured.
Four accidents; four employees injured.

GREAT NORTHERN RAILWAY:

November 21, 1964, Unit 368-C, Mukilteo, Wash. Failure of cab seat backrest; one employee injured.
One accident; one employee injured.

LOUISVILLE AND NASHVILLE RAILROAD:

December 15, 1964, Unit 351, Mannington, Ky. Overheating and failure of piston resulted in crankcase explosion; one employee injured.

May 20, 1965, Unit 1754, Perth, Ky. Fire in vee of diesel engine caused by defective exhaust stack base gaskets; one employee injured.

May 22, 1965, Unit 143, Covington, Ky. Overcharging and subsequent overheating of locomotive batteries caused a breakdown of the battery electrolyte components releasing gas and fumes; one employee injured.
Three accidents; three employees injured.

MISSOURI-KANSAS-TEXAS RAILROAD:

January 9, 1965, Unit 47, Bellmead, Tex. Employee slipped on wet footboard and fell to the ground due to missing portion of the footboard backstop; one employee injured.

January 16, 1965, Unit 88-A, Kimball, Kans. Crankcase explosion caused by ignition of gases from overheated main bearings; one employee injured.
Two accidents; two employees injured.

MISSOURI PACIFIC RAILROAD:

October 14, 1964, Unit 181, near Retta, Tex. Fire in vee of diesel engine at base of exhaust manifolds resulted in overheating and crankcase explosion; one employee injured.

November 4, 1964, Unit 321, near Higginville, Mo. Wood screws fastening cab seat cushion to seat base pulled out permitting seat cushion and backrest to fall; one employee injured.
Two accidents; two employees injured.

NEW YORK CENTRAL RAILROAD:

July 6, 1964, Unit 5811, Colling, Mich. Weld failure of backrest frame of fireman's cab seat; one employee injured.

July 12, 1964, Unit 1769, Fairview, Pa. Electrical flash occurred when employee opened the door of the high voltage cabinet to inspect for malfunction; one employee injured.

October 12, 1964, Unit 1798, Pine Valley, N.Y. Overheated air compressor resulting in fire and subsequent separating of pipe in main reservoir pressure pipe causing explosion effect; one employee injured.

November 22, 1964, Unit 5689, Collinwood, Ohio. Lock body of cab door failed causing employee to lose his footing and fall when he attempted to enter operating cab; one employee injured.

December 11, 1964, Unit 239, Highbridge, N.Y. Failure of cab seat backrest causing the employee to fall to the floor; one employee injured.

December 17, 1964, Unit 8525, Springfield, Mass. Failure of securing bolts permitted the cab sliding window to fall out striking the employee; one employee injured.

January 12, 1965, Unit 1717, Lyons, N.Y. Employee slipped on accumulation of oil on passageway and was thrown violently to the ground; one employee injured.

January 14, 1965, Unit 3364, Amsterdam, N.Y. Excessive leak in main reservoir automatic drain valve caused undesired emergency brake application resulting in the brakeman being thrown from his seat; one employee injured.

February 15, 1965, Unit 6043, Clyde, N.Y. Crankcase explosion caused by overheated main bearings and fracture of crankshaft; one employee injured.

March 17, 1965, Unit 911, New York, N.Y. Failure of cab seat backrest positioning device; one employee injured.

May 12, 1965, Unit 1739, Greencastle, Ind. Employee slipped on accumulation of oil on passageway floor; one employee injured.

May 28, 1965, Unit 953, Buffalo, N.Y. Failure of exciter generator causing the engine to surge forward throwing the conductor against the front wall of the caboose; one employee injured.

June 10, 1965, Unit 1629, Ravena, N.Y. Oil of undetermined origin picked up on brakeman's shoes caused him to slip and fall from step when alighting from cab; one employee injured.

June 15, 1965, Unit 4003, between Buffalo and Sandusky, Ohio. RPO clerk suffered from inhalation of smoke and fumes which entered the mail car due to broken piston and exhaust valve; one RPO clerk injured.

June 16, 1965, Unit 602, Albany, N.Y. Defective exhaust manifold emitting fumes into engine compartment and cab, causing the fireman to become ill from inhalation; one employee injured.

June 21, 1965, Unit 8219, Benson Mines, N.Y. Raw diesel oil leaking from cracked fuel tank accumulated on the rear compartment floor emitting fumes which entered the engineman's cab causing the employee to become ill; one employee injured.
Sixteen accidents; 15 employees and 1 RPO clerk injured.

NEW YORK, NEW HAVEN AND HARTFORD RAILROAD:

July 13, 1964, Unit 2025, Botanical Gardens, New York City. Broken right hinge and spring on buffer crosswalk apron permitted the apron to move out of place and bend upward causing the employee to strike his foot when walking between units; one employee injured.

October 9, 1964, Unit MU 4081, New York City, N.Y. Fires from flashover at third rail mechanism resulted in two injuries; one employee and one passenger injured.

October 16, 1964, Unit 0421, Danbury, Conn. Employee slipped and fell to the ground from the cab steps when alighting from the unit because of oil picked up on his shoes from oily and greasy walkways; one employee injured.

December 3, 1964, Unit 2042, East Bridgeport, Conn. Employee suffered inhalation of smoke and fumes which entered the engineroom and operating cab due to defective power assembly; one employee injured.
Four accidents; four employees and one passenger injured.

NORFOLK AND WESTERN RAILWAY:

March 6, 1965, Unit 3473, Montvale, Va. Collision occurred because the brakes could not be applied from the controlling unit account train line angle cock was closed between the fourth and fifth units; three employees injured.

June 1, 1965, Unit 1006, Huntington, Ind. Oil from broken air box drain line pipe leaked on to the engine room walkway causing the employee to slip and fall; one employee injured.

Two accidents; four employees injured.

PENNSYLVANIA RAILROAD:

July 12, 1964, Unit 8886, Weirton, W. Va. Employee fell to floor when cab seat backrest became detached from the backrest frame due to missing screws; one employee injured.

July 14, 1964, Unit 8773, Baltimore, Md. Employee fell to the ground from running board of standing locomotive; one employee injured.

August 3, 1964, Unit 9847A, East Ferry, Pa. Flashover at electrical cabinet while unit was under load; one employee injured.

August 13, 1964, Unit MU 586, Philadelphia, Pa. Defective hinge pivot securing the back of the cab seat to the wall permitted the seat to collapse; one employee injured.

September 9, 1964, Unit 9648-A, Johnstown, Pa. Main hatch cover plate became dislodged and fell striking the employee; one employee injured.

September 17, 1964, Unit 9056, Akron, Ohio. Employee slipped on oil which had accumulated on cab floor due to a ruptured expansion tube of the fuel oil gage, permitting the oil to be discharged onto the cab floor; one employee injured.

September 22, 1964, Unit 2413, between Crestline and Toledo, Ohio. Acid fumes entering the operating cab from overcharged storage batteries caused the employee to become ill; one employee injured.

September 26, 1964, Unit 7134, St. Paris, Ohio. Defective seat locking device permitting undesired movement of cab seat at coupling impact; one employee injured.

October 3, 1964, Unit 8555, Cresson, Pa. Crankcase explosion; one employee injured.

October 15, 1964, Unit 2521, Cresson, Pa. Engineer slipped and fell on oil accumulation on running board; one employee injured.

October 27, 1964, Unit 9114, West York, Pa. Brake pipe air hose parted due to worn coupling head; one employee injured.

November 4, 1964, Unit 8837, Manor, Pa. Employee suffered from inhalation of smoke and fumes which entered the cab from the diesel engine due to defective turbosupercharger and power assemblies; two employees injured.

November 10, 1964, Unit 9105, Jersey City, N.J. Failure of slide window top runner securing bolts permitted the window to fall out striking the employee as he attempted to open it; one employee injured.

December 21, 1964, Unit 5864-B, Gallitzin, Pa., to South Fork, Pa. Employee suffered inhalation of gas and fumes due to malfunction of the steam generator; one employee injured.

January 4, 1965, Unit 4854, Long Island City, N.Y. Flashback result of unexpected ignition occurring in firebox of vertical firetube boiler; one employee injured.

February 1, 1965, Unit 8850, East Conway, Pa. Undesired application of airbrakes actuated by train control system; one employee injured.

February 2, 1965, Unit 5841-A, Valparaiso, Ind. Employee suffered electrical shock by coming in contact with an energized high-tension electrical conductor; one employee injured.

March 2, 1965, Unit 9101, Philadelphia, Pa. Handrail gave away due to defective weld forcing the engineer to jump to the ground as he was descending from the cab of the unit; one employee injured.

May 25, 1965, Unit 5713-A, South Fork, Pa. Engineer injured from inhalation of smoke and fumes while assisting in extinguishing fire in engine air-intake filters; one employee injured.

Nineteen accidents; 20 employees injured.

PENNSYLVANIA READING SEASHORE LINES:

September 30, 1964, Unit 6025, West Berlin, N.J. Lower part of traction motor gearcase became loose and fell to the track resulting in derailment of one pair of wheels; two passengers injured.

One accident; two passengers injured.

PITTSBURGH AND LAKE ERIE RAILROAD:

January 21, 1965, Unit 8642, Struthers, Ohio. Screws fastening the cab seat base to the floor were loose and missing permitting the seat to overturn; one employee injured.

One accident; one employee injured.

READING COMPANY:

December 21, 1964, Unit 3600, Tamaqua, Pa. Engineman sprained his back when handbrake released suddenly while being applied; one employee injured. One accident; one employee injured.

ST. LOUIS-SAN FRANCISCO RAILWAY:

July 15, 1964, Unit 5210, between Tulsa and Oklahoma City, Okla. Employee inhaled exhaust gases which entered the cab compartment due to leaks in diesel engine exhaust system; one employee injured.

July 25, 1964, Unit 2020, between Tulsa and Oklahoma City, Okla. Employee inhaled gas and fumes which entered the boiler compartment from oil fired steam generator due to leaking coil inspection cover gaskets; one employee injured.

Two accidents; two employees injured.

SOO LINE RAILROAD:

July 15, 1964, Unit 2552, between Noyes and Orleans, Minn. Electrical flash occurred in high-voltage cabinet when employee attempted to cut out traction motor while unit was under load; one employee injured.

One accident; one employee injured.

SOUTHERN RAILWAY SYSTEM:

July 19, 1964, Unit 6204, Osgood, Ga. Flash in high-voltage cabinet; one employee injured.

October 11, 1964, Unit 4179 Dayton, Tenn. Cab seat pulled loose from the floor and fell to the ground causing the employee to fall and injure his back; one employee injured.

February 1, 1965, Unit 2186, Knoxville, Tenn. Employee suffered severe injury when descending from the unit due to defective front platform step which had been damaged prior to this accident and not repaired before unit was put back in service; one employee injured.

April 8, 1965, Unit 6952, Kings Mountain, Ky. Crankcase explosion resulting from overheated main bearings; one employee injured.

Four accidents; four employees injured.

SOUTHERN PACIFIC COMPANY:

November 20, 1964, Unit TNO 537, Lewis Springs, Ariz. Employee lost his balance and fell when climbing into the unit due to oil on walkway and oil and frost on handholds; one employee injured.

February 15, 1965, Unit 1410, Los Angeles, Calif. Employee was struck on head by unfastened trapdoor when he entered the pit to check cutout valve account defective automatic brake valve; one employee injured.

May 9, 1965, Unit 7725, Surf, Calif. Oil on step caused the brakeman to slip and fall as he attempted to board the locomotive; one employee injured.

June 24, 1965, Unit 1578, San Jose, Calif. Employee fell to floor when cab seat broke off due to failure of weld in the plate that supports the seat cushion; one employee injured.

Four accidents; four employees injured.

UNION PACIFIC RAILROAD:

December 15, 1964, Unit 733, near Topeka, Kans. Electrical flash occurred when employee opened the door of the high-voltage cabinet to inspect for malfunction; one employee injured.

June 13, 1965, Unit 958-B, Omaha, Nebr. Employee suffered severe burns due to rupture of train line and valve; one employee injured.

Two accidents; two employees injured.

WABASH RAILROAD:

July 4, 1964, Unit 622, Buck Creek, Ind. Crankcase explosion due to defective main and connecting rod bearings. The cooling fans were inoperative; one employee injured.

August 3, 1964, Unit 638, Milan, Mich. Employee suffered flash burns while inspecting the electrical cabinet for malfunction; one employee injured.

Two accidents; two employees injured.

TABLE I.—Number of steam locomotives reported, inspected, found defective, and ordered out of service

Parts defective, inoperative or missing, or in violation of the rules	Year ended June 30—					
	1960	1961	1962	1963	1964	1965
1 Air compressors.....	4	2			2	
2 Arch tubes.....						
3 Ashpans and mechanism.....						
4 Axles.....						
5 Blowoff cocks.....						
6 Boiler checks.....	3	2				
7 Boiler shell.....					1	1
8 Brake equipment.....	19	16	7	5	5	4
9 Cabs, cab windows, and curtains.....	3	2	2	1	1	
10 Cab aprons and decks.....		2	1		1	
11 Cab cards.....	2	3	8	2		2
12 Coupling and uncoupling devices.....	1					
13 Crossheads, guides, pistons, and piston rods.....	6	3				1
14 Crown bolts.....						
15 Cylinders, saddles, and steam chests.....	2					
16 Cylinder cocks and rigging.....	3	1	1			1
17 Domes and dome caps.....	1		1			1
18 Draft gear.....	6	2	1	1	2	2
19 Draw gear.....	1	1	1			
20 Driving boxes, shoes, wedges, pedestals, and braces.....	1	1				
21 Firebox sheets.....		1				
22 Flues.....	1					
23 Frames, tail pieces, and braces, locomotive.....		2	1	2		
24 Frames, tender.....						
25 Gages and gage fittings, air.....	3		1		1	
26 Gages and gage fittings, steam.....	1	2		2		
27 Gage cocks.....	2	5		3		1
28 Grate shakers and fire doors.....	1					2
29 Handholds.....	5	5	3	2		
30 Injectors, inoperative.....	1	1		1		
31 Injectors and connections.....	9	4	2	1		1
32 Inspections and tests not made as required.....		8	8	3	3	2
33 Lateral motion.....	1		2			
34 Lights, cab and classification.....	1	1				
35 Lights, headlight.....	1					
36 Lubricators and shields.....						
37 Mud rings.....			1			1
38 Packing nuts.....	4	1				
39 Packing, piston rod, and valve stem.....						
40 Pilots and pilot beams.....	1		1		1	
41 Plugs and studs.....		1		1		
42 Reversing gear.....	1					
43 Rods, main and side, crankpins, and collars.....	6	2				
44 Safety valves.....		1		1	1	1
45 Sanders.....	7	3	2	1		
46 Springs and spring rigging.....	4	2		1	1	2
47 Squirt hose.....						
48 Staybolts.....	1	6	3		1	
49 Staybolts, broken.....	8		1	1	1	1
50 Steam pipes.....	2	1				
51 Steam valves.....	1		1	1		
52 Steps.....	6	3	2	1	1	1
53 Tanks and tank valves.....	3			2	1	1
54 Teillite holes.....						
55 Throttle and throttle rigging.....	5			2		
56 Trucks, engine and trailing.....	2		1		1	1
57 Trucks, tender.....	7		1			4
58 Valve motion.....						
59 Washout plugs.....	7		1			
60 Stokers.....						
61 Water glasses, fittings, and shields.....	3			3	1	2
62 Wheels.....	1	1	1	6	1	4
63 Miscellaneous—Signal appliances, badge plates, brakes (hand).....	2	1				3
Number of defects.....	149	89	52	44	26	39
Locomotives reported.....	788	367	257	192	159	145
Locomotives inspected.....	356	243	195	157	104	97
Locomotives defective.....	38	27	14	16	12	13
Percentage of inspected found defective.....	10.7	11.1	7.2	10.2	11.5	13.4
Locomotives ordered out of service.....	3	4	3	3	2	3

TABLE II.—Number of locomotive units other than steam reported, inspected, found defective, and ordered out of service

Parts defective, inoperative or missing, or in violation of the rules	Year ended June 30—					
	1960	1961	1962	1963	1964	1965
1 Air compressors.....	290	208	203	189	289	289
2 Axles, truck and driving.....	126	91	71	61	100	120
4 Batteries.....	21	25	29	22	18	23
5 Boilers.....	284	213	190	231	165	271
6 Brake equipment.....	3,617	3,066	2,658	2,810	3,278	3,726
8 Cabs and cab windows.....	1,407	840	801	878	971	1,018
9 Cab cards.....	274	181	166	166	150	168
10 Cab floors, aprons, and deck plates.....	2,461	2,235	2,276	1,982	2,491	2,858
11 Clntches.....	6	4	4		2	
12 Controllers, relays, circuit breakers, magnet valves, and switch groups.....	704	565	504	458	372	410
13 Coupling and uncoupling devices.....	131	144	97	106	71	89
14 Current-collecting apparatus.....	11	5	6	4	5	12
16 Draft gear.....	420	402	349	326	405	420
17 Draw gear.....	160	108	123	133	139	114
18 Driving boxes, shoes, and wedges.....	223	148	169	153	168	144
20 Frames or frame braces.....	19	55	81	80	82	183
22 Fuel system.....	2,702	2,193	2,184	2,205	2,452	2,530
23 Gages or fittings, air.....	254	163	142	109	107	135
24 Gages or fittings, steam.....	37	28	28	19	24	31
25 Gears and pinions.....	25	156	505	629	515	683
26 Handholds.....	244	210	181	158	172	214
28 Inspections and tests not made as required.....	1,063	847	685	602	632	626
29 Insulation and safety devices.....	209	163	179	179	252	329
30 Internal-combustion engine defects, parts and appurtenances.....	7,184	6,124	5,880	6,459	6,859	8,187
32 Jack shafts.....		1	1		1	3
33 Jumpers and cable connectors.....	350	434	346	321	306	296
35 Lateral motion, wheels.....	49	28	63	67	77	110
36 Lights, cab and classification.....	404	269	151	134	226	258
37 Lights, headlight.....	34	18	19	18	15	13
39 Meters, volt and ampere.....	30	22	18	10	22	38
40 Motors and generators.....	821	759	780	704	770	948
42 Pilots and pilot beams.....	64	54	43	27	37	24
43 Plugs and studs.....						
44 Quills.....	24	5	17	9	39	67
46 Rods, main, side, and drive shafts.....	5		2	2	4	5
48 Sanders.....	3,602	3,131	2,351	2,319	2,505	2,730
49 Springs and spring rigging, driving and truck.....	512	415	397	391	373	394
51 Staybolts, broken or defective.....						
53 Steam pipes.....	131	93	113	54	56	59
54 Steps, footboards, et cetera.....	372	307	256	298	329	303
55 Switches, hand-operated, and fuses.....	17	16	16	13	7	14
56 Transformers, resistors, and rheostats.....	4	6	3	2	6	9
57 Trucks.....	765	692	657	716	1,022	1,158
59 Water tanks.....	30	25	22	20	20	9
60 Water glasses, fittings, and shields.....	1	1	3			1
61 Warning signal appliances.....	142	148	127	103	142	132
62 Wheels.....	798	805	755	924	1,057	860
63 Miscellaneous.....	1,400	1,210	997	1,229	1,325	1,207
Number of defects.....	31,427	26,614	24,648	25,320	28,052	31,218
Locomotive units reported.....	32,186	32,074	31,917	31,793	31,651	31,410
Locomotive units inspected.....	105,702	95,689	91,493	78,066	77,368	74,344
Locomotive units defective.....	10,638	9,000	8,702	8,310	8,645	9,231
Percentage of inspected found defective.....	10.1	9.4	9.5	10.6	11.2	12.4
Locomotive units ordered out of service.....	517	469	467	413	569	635

TABLE III.—Number of multiple operated electric locomotive units reported, inspected, found defective, and ordered out of service

Parts defective, inoperative or missing, or in violation of the rules	Year ended June 30—					
	1960	1961	1962	1963	1964	1965
1 Air compressors	4		2	1	2	1
2 Axles, truck and driving	53	40	34	6	5	16
4 Batteries						
5 Boilers						
6 Brake equipment	491	951	835	141	80	102
8 Cabs and cab windows	28	11	12	4	10	20
9 Cab cards	8	9	4	5	2	4
10 Cab floors, aprons, and deck plates		1		1		4
11 Clutches						
12 Controllers, relays, circuit breakers, magnet valves, and switch groups	9	8	16			3
13 Coupling and uncoupling devices		1	2			
14 Current-collecting apparatus	115	151	99	58	89	41
16 Draft gear	11	22	9	2	4	8
17 Draw gear	20	16	16	4	11	5
18 Driving boxes, shoes, and wedges	3	3	5	2	16	3
20 Frames or frame braces					1	1
22 Fuel system						
23 Gages or fittings, air	5	4	1			4
24 Gages or fittings, steam						
25 Gears and pinions	5	9	4	5	17	21
26 Handholds	61	14	11	2		14
28 Inspections and tests not made as required	52	61	55	29	23	9
29 Insulation and safety devices	87	78	29	1	4	4
30 Internal-combustion engine defects, parts and appurtenances						
32 Jack shafts						
33 Jumpers and cable connectors	16	13	10	17	13	11
35 Lateral motion, wheels						
36 Lights, cab and classification	42	23	16		1	1
37 Lights, headlight	29	5	2		1	7
39 Meters, volt and ampere						
40 Motors and generators	23	15	21	8	13	7
42 Pilots and pilot beams	1					
43 Plugs and studs						
44 Quills						
46 Rods, main, side, and drive shafts						
48 Sanders	1					
49 Springs and spring rigging, driving and truck	17	8	28	20	23	17
51 Staybolts, broken or defective						
53 Steam pipes						
54 Steps, footboards, et cetera						
55 Switches, hand-operated, and fuses	3	5	20		1	7
56 Transformers, resistors, and rheostats	14	19	7	2	2	2
57 Trucks	152	98	66	34	39	18
59 Water tanks						
60 Water glasses, fittings, and shields						
61 Warning signal appliances						
62 Wheels	5	37	23	6	6	8
63 Miscellaneous	1	3	5	6	12	1
Number of defects	1,254	1,605	1,332	354	375	339
Locomotive units reported	2,671	2,633	2,615	2,488	2,540	2,517
Locomotive units inspected	2,571	2,400	2,904	1,558	2,210	1,603
Locomotive units defective	450	372	334	171	195	147
Percentage of inspected found defective	17.5	15.5	11.5	11.0	8.8	9.2
Locomotive units ordered out of service	11	31	18	4	8	8

TABLE IV.—Number of steam locomotives reported, inspected, found defective, and ordered out of service, et cetera—by carriers

Parts defective, inoperative or missing, or in violation of the rules	Denver & Rio Grande Western	Marquette & Hiron Mountain	Roads with less than 10 locomotives	Total
2 Arch tubes				
3 Ashpans and mechanism				
4 Axles				
5 Blowoff cocks				
6 Boiler checks				
7 Boiler shell	1			1
8 Brake equipment			3	4
9 Cabs, cab windows, and curtains	1			
10 Cab aprons and decks				
11 Cab cards			2	2
12 Coupling and uncoupling devices				
13 Crossheads, guides, pistons, and piston rods			1	1
14 Crown bolts				
15 Cylinders, saddles, and steam chests				
16 Cylinder cocks and rigging			1	1
17 Domes and dome caps			1	1
18 Draft gear			2	2
19 Draw gear				
20 Driving boxes, shoes, wedges, pedestals, and braces				
21 Firebox sheets				
22 Flues				
23 Frames, tail pieces, and braces, locomotive				
24 Frames, tender				
25 Gages and gage fittings, air				
26 Gages and gage fittings, steam			1	1
27 Gage cocks			2	2
28 Grate shakers and fire doors				
29 Handholds				
30 Injectors, inoperative				
31 Injectors and connections			1	1
32 Inspections and tests not made as required			2	2
33 Lateral motion				
34 Lights, cab and classification				
35 Lights, headlight				
36 Lubricators and shields				
37 Mud rings	1			1
38 Packing nuts				
39 Packing, piston rod and valve stem				
40 Pilots and pilot beams				
41 Plugs and studs				
42 Reversing gear				
43 Rods, main and side, crankpins, and collars				
44 Safety valves			1	1
45 Sanders				
46 Springs and spring rigging	1		1	2
47 Squirt hose				
48 Staybolts				
49 Staybolts, broken			1	1
50 Steam pipes				
51 Steam valves				
52 Steps			1	1
53 Tanks and tank valves			1	1
54 Telltale holes				
55 Throttle and throttle rigging				
56 Trucks, engine and trailing			1	1
57 Trucks, tender			4	4
58 Valve motion				
59 Washout plugs				
60 Stokers				
61 Water glasses, fittings, and shields			2	2
62 Wheels			4	4
63 Miscellaneous—Signal appliances, badge plates, brakes (hand)			3	3
Number of defects	4		35	39
Locomotives reported	22	11	112	145
Locomotives inspected	13	2	82	97
Locomotives defective	2		11	13
Percentage of inspected found defective	15.4		13.4	13.4
Locomotives ordered out of service			3	3

TABLE V.—Number of locomotive units other than steam reported, inspected,

Parts defective, inoperative or missing, or in violation of the rules	Lake Superior & Ishpeming	Lake Terminal	Lehigh and Hudson River	Lehigh Valley	Long Island	Louisiana & Arkansas	Louisville & Nashville	Maine Central	Minneapolis, Northfield & Southern	Minnesota Transfer	Missouri-Kansas-Texas
1 Air compressors.....							27				11
2 Axles, truck and driving.....				2			1				1
4 Batteries.....				1			1				
5 Boilers.....				11	8	9	179	9			85
6 Brake equipment.....	1		3	8	6	2	37				21
8 Cabs and cab windows.....				1	1		6	1			2
9 Cab cards.....				35	3	10	89	12			41
10 Cab floors, aprons and deck plates.....	2		4				6				41
11 Clutches.....				2			34				23
12 Controllers, relays, circuit breakers, magnet valves, and switch groups.....			1				1	2			2
13 Coupling and uncoupling devices.....							7	1			16
14 Current-collecting apparatus.....				6	2	2	2	2			8
16 Draft gear.....				2			3				14
17 Draw gear.....				1			1				8
18 Driving boxes, shoes, and wedges.....				2			2	1			8
20 Frames or frame braces.....				1			3				14
22 Fuel system.....	2		6	68	11	10	58	10			39
23 Gages or fittings, air.....				4			4	2			4
24 Gages or fittings, steam.....				8	1	1	23	1			21
25 Gears and pinions.....				1	1	1	1				5
26 Handholds.....				4	1	1	23	2			17
28 Inspections and tests not made as required.....				1	1	4	6	1			13
29 Insulation and safety devices.....				1	1		380	25			72
30 Internal-combustion engine defects, parts and appurtenances.....	3		45	191	11	20					
32 Jack shafts.....							2				14
33 Jumpers and cable connectors.....				1		1	13				3
35 Lateral motion, wheels.....							1				6
36 Lights, cab and classification.....							13	1			6
37 Lights, headlight.....							3	1			3
39 Meters, volt and ampere.....							1				16
40 Motors and generators.....				18		4	43	1			
42 Pilots and pilot beams.....							1				
43 Plugs and studs.....											
44 Quills.....											
46 Rods, main, side, and drive shafts.....											
48 Sanders.....	5		1	28	3	7	179	4		1	165
49 Springs and spring rigging, driving and truck.....				4		4	10	1			19
51 Staybolts, broken or defective.....											
53 Steam pipes.....							1	7			9
54 Steps, footboards, et cetera.....				1	1	1	5				
55 Switches, hand-operated, and fuses.....											
56 Transformers, resistors and rheostats.....											
57 Trucks.....	1			1	2	8	22	5		1	14
59 Water tanks.....							2				
60 Water glasses, fittings and shields.....											
61 Warning signal appliances.....	1						5				11
62 Wheels.....				10		7	66				33
63 Miscellaneous.....				16		4	29				21
Number of defects.....	15		60	420	50	104	1,306	79		2	714
Locomotive units reported.....	18	13	15	191	80	17	777	72	15	12	206
Locomotive units inspected.....	20	5	58	550	65	141	2,609	273	26	15	678
Locomotive units defective.....	4		14	100	16	25	387	28		2	158
Percentage of inspected found defective.....	20.0		24.1	18.2	24.6	17.7	14.8	10.3		13.2	23.3
Locomotive units ordered out of service.....				4	2	4	42	2			34

found defective, and ordered out of service, et cetera—by carriers—Continued

Missouri Pacific	Monongahela Connecting	Monongahela	Monon	Montour	Newburgh & South Shore	New Orleans Public Belt	New York Central	New York, New Haven & Hartford	New York, Susquehanna & Western	Norfolk & Portsmouth Belt Line	Norfolk & Western	Norfolk Southern	Northern Pacific	Northern Pacific Terminal	Northwestern Pacific	Pacific Electric	Pataasco & Back Rivers	Pennsylvania	Pennsylvania-Reading Seashore Lines	Peoria & Pekin Union	Philadelphia, Bethlehem & New England	Piedmont & Northern	
14							49	18			5		2					14					1
2							11	2			1							36					2
6							6	2										4					4
7			1				13	34	3		5		2					8					5
82			2				498	116		1	170		8		4			236	10	2		6	
57							197	76	3		13					2		89				8	
2							12	9			2				1	1		10				9	
77			6				591	187			96		3		1	1		232	12			10	
8							37	23			12		1					18				11	
4							11				1							3				12	
3							4	7										1				13	
2							63	11			17							24	5			14	
3		1	1				17							1				4				16	
4							24	1			3							16				17	
1							30	4			11		1					25	3			18	
48			9				300	199	1		84		8		1	2		206	10			20	
2							21	16			4				1	1		9				22	
29			5				82	2			4							3				23	
5			1				42	5			15		1					103	8			24	
18							58	25			10							18	1			25	
8							33	31			11		5	1				49				26	
216		2	3				1,626	581	10		19		6					17	1			28	
5							28	21			10			1				25				29	
12							17	2			9							8				30	
2							19	42			18							8				31	
25							1	1										3				32	
1							2				4							107				33	
99			1				175	74			14		1	2				1				34	
7			1				1											67				35	
1							454	83			130		31					110				36	
27							47	3			16		5	1				51	2			37	
1							2	28			1							2				38	
1							49	8			8		1	1				29	5			39	
27							3	1			1							3				40	
1							154	59	1		40		7					123	4			41	
2							2				2							4				42	
12							12	2			9							4				43	
30							34	2			12		3					120	10			44	
814		3	48				131	106			17		2					113				45	
752	30	23	63	12	13	18	2,027	421	20	15	1,415	45	628	14	36	45	58	2,608	44	16	25	16	
2,355	6	59	143	5	6	38	3,638	928	9	30	2,842	78	1,729	55	105	47	3	3,935	142	30	112	41	
234		2	22				1,153	391	6	1	338		56	3	5	4		715	36	1			
9.9		3.4	15.4				31.7	42.1	66.7	3.3	11.9		3.2	5.5	4.8	8.5		18.2	25.4	3.3			
18			3				94	21			1		5					58					

TABLE VI.—Number of multiple operated electric locomotive units reported, inspected, found defective, and ordered out of service, et cetera—by carriers

Parts defective, inoperative or missing, or in violation of the rules	Baltimore & Ohio	Chicago South Shore & South Bend	Erie-Lackawanna	Illinois Central	Long Island	New York Central	New York, New Haven & Hartford	Pennsylvania	Port Authority Trans-Hudson	Reading	Roads with less than 10 locomotives	Total
1 Air compressors.....						1						1
2 Axles, truck and driving.....					7	4		5				16
4 Batteries.....												
5 Boilers.....												
6 Brake equipment.....			10		29	48	1	14				102
8 Cab and cab windows.....						3		13		4		20
9 Cab cards.....			1			2		1				4
10 Cab floors, aprons and deck plates.....								4				4
11 Clutches.....												
12 Controllers, relays, circuit breakers, magnet valves and switch groups.....						3						3
13 Coupling and uncoupling devices.....												
14 Current collecting apparatus.....					28	11	2					41
16 Draft gear.....						3		5				8
17 Draw gear.....					1			4				5
18 Driving boxes, shoes and wedges.....			1					2				3
20 Frames or frame braces.....					1							1
22 Fuel system.....												
23 Gages or fittings, air.....						4						4
24 Gages or fittings, steam.....												
25 Gears and pinions.....					4	4	2	11				21
26 Handholds.....								14				14
28 Inspections and tests not made as required.....					1	7		1				9
29 Insulation and safety devices.....					1	2		1				4
30 Internal-combustion engine defects, parts and appurtenances.....												
32 Jack shafts.....												
33 Jumpers and cable connectors.....			1			10						11
35 Lateral motion, wheels.....												
36 Lights, cab and classification.....						1						1
37 Lights, headlight.....						2		5				7
39 Meters, volt and ampere.....												
40 Motors and generators.....					1			6				7
42 Pilots and pilot beams.....												
43 Plugs and studs.....												
44 Quills.....												
46 Rods, main, side, and drive shafts.....												
48 Sanders.....												
49 Springs and spring rigging, driving and truck.....	2		6		1			8				17
51 Staybolts, broken or defective.....												
53 Steam pipes.....												
54 Steps, footboards, et cetera.....												
55 Switches, hand-operated, and fuses.....					4	3						7
56 Transformers, resistors and rheostats.....								2				2
57 Trucks.....		1	1		3			13				18
59 Water tanks.....												
60 Water glasses, fittings and shields.....												
61 Warning signal appliances.....												
62 Wheels.....		3	1		1			1		2		8
63 Miscellaneous.....			1									1
Number of defects.....	2	4	22		82	108	5	110		6		339
Locomotive units reported.....	48	65	248	280	660	246	192	414	219	142	3	2,517
Locomotive units inspected.....	28	30	289	98	291	185	113	348	42	179		1,603
Locomotive units defective.....	1	2	12		43	36	4	47		2		147
Percentage of inspected found defective.....	3.6	6.7	4.2		14.8	19.5	3.5	13.5		1.1		9.2
Locomotive units ordered out of service.....		2	1		1	2		1		1		8

ILLUSTRATIONS OF LOCOMOTIVE DEFECTS THAT HAVE BEEN RESPONSIBLE FOR INJURIES TO EMPLOYEES, AND TYPES OF DEFECTS ON LOCOMOTIVES ORDERED OUT OF SERVICE BY OUR INSPECTORS

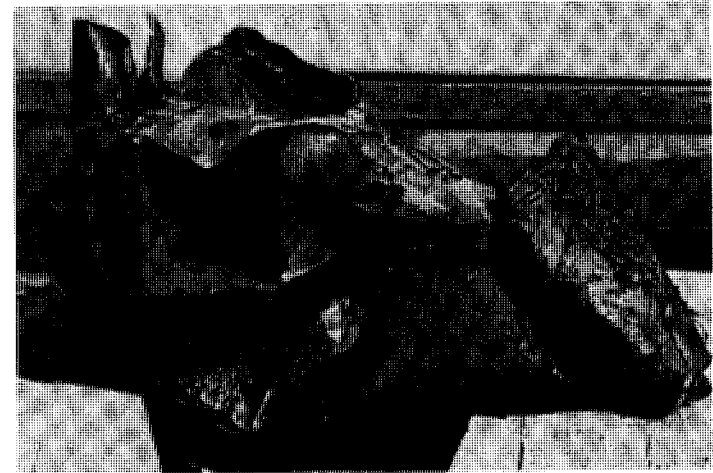


Plate No. 1

Plate 1 shows a traction motor lower gearcase which became loose and fell to the track resulting in derailment of one pair of wheels. Two passengers were injured as result of emergency stop.