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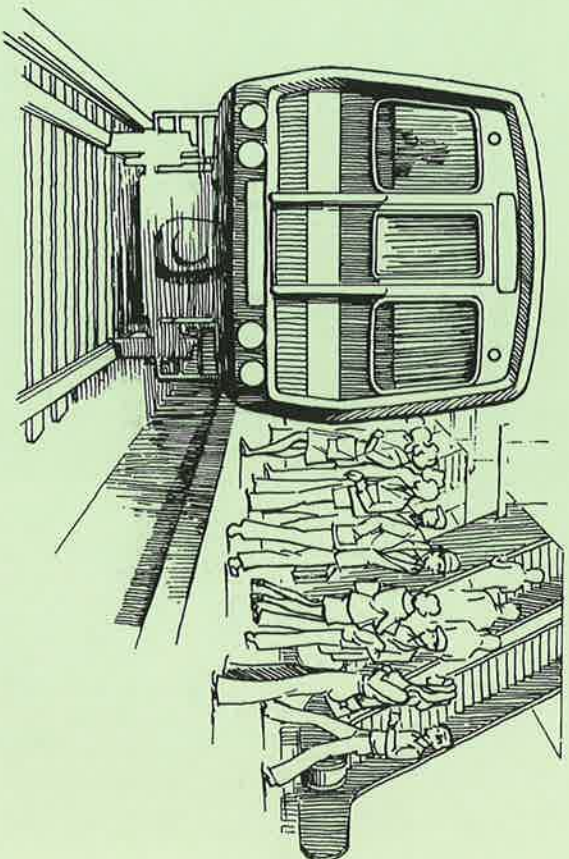
**U.S. Department of
Transportation**

Rail Transit Safety

Research and Special Programs
Administration
Transportation Systems Center
Cambridge MA 02142

Urban Mass Transportation
Administration
Office of Technical Assistance
Washington DC 20590

1982 Annual Report



UMTA Technical Assistance Program

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16. Abstract The Rail Transit Safety 1982 Annual Report is a compendium and analysis of rapid rail transit accident/incident and casualty statistics reported by the eleven rapid rail transit properties in the United States during 1982.					
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The data used to prepare this report have been taken from information submitted by rapid rail transit authorities, at the request of the Urban Mass Transportation Administration (UMTA), to the Federal Railroad Administration (FRA) using the Railroad Accident/Incident Reporting System. This 1982 Annual Report is the fifth annual issuance by UMTA on rapid rail transit safety.

Beginning in 1983, all reports will be based on information and data submitted to UMTA under its new safety information reporting and analysis system (SIRAS).

Light rail transit (LRT) authorities have not been requested to report safety information to the FRA. Therefore, no LRT safety data are contained in this report.

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The statistics in this report are derived from the Rapid Rail Transit (RRT) properties' reporting of accidents/incidents to the Federal Railroad Administration (FRA). Suicides are not included in the data.

RRT property acronyms used extensively throughout this report are the following:

- BART Bay Area Rapid Transit District
- CTA Chicago Transit Authority
- GCRTA Greater Cleveland Regional Transit Authority
- MARTA Metropolitan Atlanta Regional Transit Authority
- MBTA Massachusetts Bay Transportation Authority
- NYCTA New York City Transit Authority
- PATCO Port Authority Transit Corporation
- PATH Port Authority Trans-Hudson Corporation
- SEPTA Southeastern Pennsylvania Transportation Authority
- SIRTA Staten Island Rapid Transit Operating Authority
- WMATA Washington Metropolitan Area Transit Authority.

The official source of definitions used by rail transit properties for submitting the individual accident/incident reports that are summarized in this document is the FRA Guide for Preparing Accident/Incident Reports. Following is and abridged version of definitions of the most frequently used terms in this document.

A train accident is any collision, derailment, fire, explosion, act of God, or any other event involving operation of rail transit on-track equipment (standing or moving) which results in more than \$3700* in damages to rail transit on-track equipment, signals, track, track structures, and roadbed.

A train incident is any event arising from the movement of an equipment consist, which results in a reportable death, injury or illness, but not more than \$3700* in damages to rail transit on-track equipment, signals, track, track structures, and roadbed.

A non-train incident is any event arising from the operation of a rail transit system but not from the movement of an equipment consist, which results in a reportable death, injury, or illness.

A reportable fatality, injury, or occupational illness is any event arising from the operation of a rail transit system which results in:

- a. death of one or more persons;
- b. injury to one or more persons, other than rail transit employees, that requires medical treatment;

*This is the threshold value for 1982 reporting. The thresholds for earlier years were lower in proportion to inflationary factors.

- c. injury to one or more employees that requires medical treatment or results in restriction of work or motion for one or more days, one or more lost workdays, transfer to another job, termination of employment, or loss of consciousness; or
- d. any occupational illness of a rail transit employee, as diagnosed by a physician.

A casualty is a reportable fatality, injury, or occupational illness as defined above.

CLASSIFICATION OF PERSONS

Class A, Employees on Duty - Those persons who are engaged in the operation of a rail transit system. Ordinarily, the fact that the employee is or is not under pay will determine whether he or she is or is not "on duty." However, employees on railroad property, while on rest or meal periods, "trading time," or doing work which they are expected to do but actually perform before pay starts or after pay stops, must be considered as "employees on duty."

An employee in deadhead transportation is considered an "employee on duty" regardless of the mode of transportation.

Class B, Employees Not on Duty - Those employees who are on rail transit system property for purposes connected with their employment or with other rail transit system permission, but who are not "on duty" as defined above.

NOTE: Employees trespassing should be included in Class E, Trespassers

Class C, Passengers - Persons who are on, or boarding, or alighting from, rail transit cars for the purpose of travel.

DEFINITIONS

Class D, Montrespassers - Persons who are lawfully on that part of a rail transit system property which is used in rail transit operation (other than those herein defined as employees, passengers, or trespassers) and persons adjacent to rail transit system premises when injured as a result of the operation of a rail transit system. This class also includes other persons on vessels or buses whose use arises from the operation of a rail transit system.

Class E, Trespassers - Persons who are on that part of rail transit system property used in rail transit operation and whose presence is prohibited, forbidden, or unlawful.

NOTE: A person on a rail-highway grade crossing should not be classed as a trespasser unless the crossing is protected by gates or other similar barriers which were closed when the person went on the crossing, or unless the person attempted to pass over or under trains or cars at the crossing.

Class F, Contractor Employees - Persons who are employed by a contractor engaged by a rail transit system to perform normal maintenance work to rail transit system rolling stock, track structure, bridges, buildings, etc.

TYPES OF RAIL EQUIPMENT ACCIDENT/INCIDENT

Derailments - A derailment is when a train or car leaves the rails caused by other than a collision, explosion, or fire to equipment superstructures.

Head-On Collision - A collision in which the trains involved are bound in opposite directions on the same track.

Rear-End Collision - A collision in which the trains involved are bound in the same direction on the same track.

Side Collision - A collision at a turnout where a train or car strikes the side of another train or car.

Raking Collision - A collision caused by parts of a train or car on the rails of one track coming in contact with parts of a train or car on the rails of an adjacent track or with a structure.

Broken Train Collision - A collision in which a moving train breaks into parts and an impact of two or more of the uncoupled parts of the same train occurs, or one or more of the parts collide with another train or car.

Rail-Highway Crossing Collision - Any impact between rail transit system on-track equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, or a pedestrian at a rail-highway grade crossing which results in more than the monetary threshold for damages to rail transit on-track equipment, signal, track, track structure, and roadbed.

Rail Crossing Collision - A collision of a train or car with another train or car at a rail crossing at grade.

Obstruction Accident/Incident - An accident/incident in which a train or car strikes:

- a. a bumping post or other end-of-track restraint
- b. other on-track obstacles such as shopping carts, paint cans, etc.

Fire or Violent Rupture Accident/Incident - This is an accident/incident of the type caused by the combustion of material or violent release of material being carried or transported on a train or car. Incidents of this type include, but are not limited to, fuel and electrical equipment fires and violent release of compressed gas.

"Other" Rail Equipment Accidents/Incidents - Accidents/Incidents not classified under the preceding categories.

TRANSIT SERVICE EXPERIENCE, 1982

- 1,527,612,311 passengers were carried by eleven (11) RRT properties.
- 149 injuries and four (4) fatalities were attributed to train accidents.
- 78% of all train accidents resulted in zero (0) personal casualties.
- Passenger car miles totaled 416,986,274.
- 46,088 RRT employees accounted for 92,580,714 employee hours.

RRT HIGHLIGHTS

CASUALTIES

- There were a total of 5,083 casualty occurrences in 1982. Included were eighty-seven (87) fatalities, 4,931 injuries and sixty-five (65) occupational illnesses.
- There were 844 passenger casualties in 1982. Included were eight (8) fatalities and 836 injuries. 416 passengers (49%) suffered bruises and contusions.
- There were 2,263 employee casualties in 1982. Included were two (2) fatalities, 2,196 injuries and sixty-five (65) occupational illnesses.
- Sixty-five (65) trespasser fatalities and eleven (11) nontrespasser fatalities accounted for 87% of the RRT fatalities occurring in 1982.
- A total of 1,899 injuries were reported for trespassers, nontrespassers and contractor personnel in 1982.
- The most frequent cause (40%) of casualties in 1982 was stumbling, slipping and falling.
- The most frequent cause (53%) of the 87 RRT fatalities in 1982 was being struck by or running into locomotives or cars.

ACCIDENTS

- There were ninety-one (91) train accidents, 702 train incidents, and 4,132 non-train incidents in 1982.
- Fifty-six (56) accidents were main track related and thirty-five (35) were yard and siding track related in 1982.
- The most frequent cause (32%) of train accidents in 1982 was mechanical/electrical - locomotives.
- Fires or violent ruptures (36), the most frequent type of accident in 1982, accounted for 40% of all train accidents.
- Total property and equipment dollar damage for train accidents in 1982 was \$4,127,928. Of this, \$2,725,593 was from main track accidents and \$1,402,335 was from yard and siding track accidents.

RRT PROPERTY STATISTICS, 1975-1982

TRANSIT PROPERTIES REPORTING PASSENGERS CARRIED (IN MILLIONS) PASSENGER CAR MILES (IN MILLIONS)	1975	1976	1977	1978	1979	1980	1981	1982
		8	10	10	10	11	11	11
	1,277	1,365	1,358	1,461	1,539	1,522	1,523	1,528
	356	392	347	346	378	387	410	417

RRT ACCIDENTS, INCIDENTS, INJURIES AND FATALITIES, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982
TRAIN ACCIDENTS	0.11	0.19	0.18	0.18	0.18	0.14	0.19	0.22
TRAIN INCIDENTS	2.73	3.76	2.40	2.18	2.22	1.93	2.32	1.68
NON-TRAIN INCIDENTS	15.78	15.22	17.21	16.91	16.69	15.51	12.79	9.91
FATALITIES	0.16	0.20	0.20	0.14	0.16	0.21	0.25	0.21
INJURIES	19.42	20.51	21.20	19.45	20.35	17.57	15.32	11.82

Figures are based on one million passenger car miles.

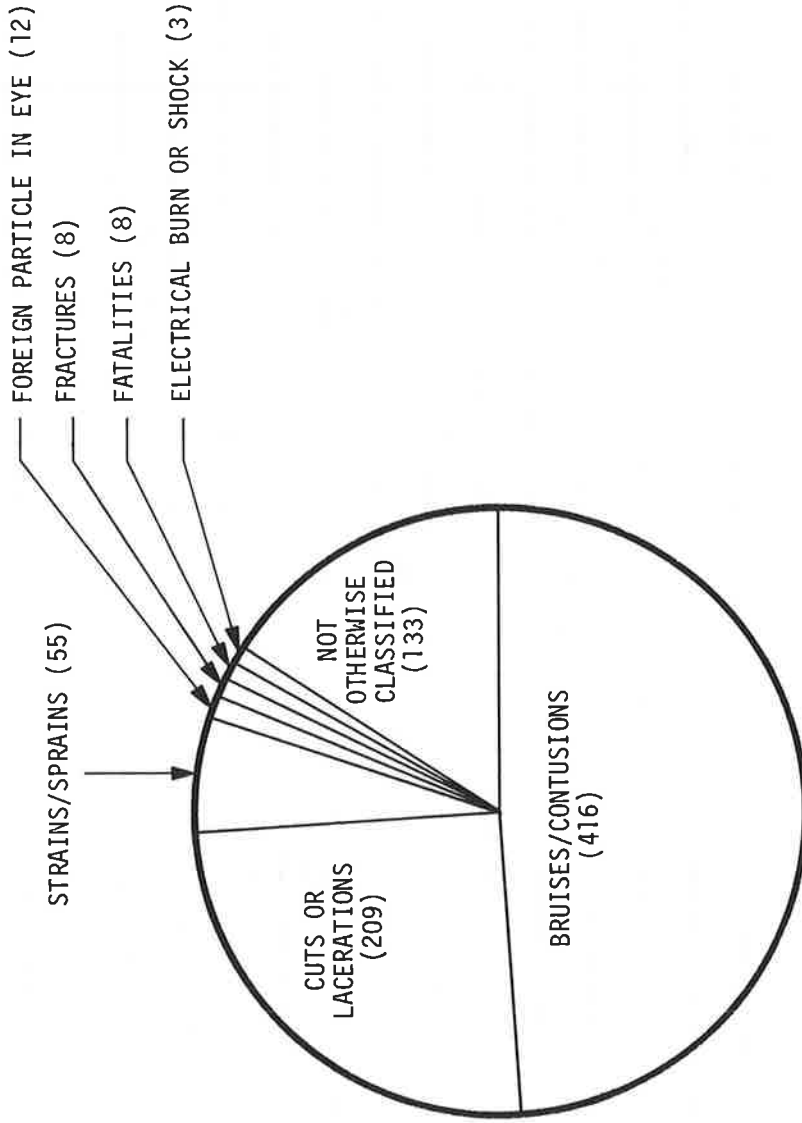
RRT PASSENGER STATISTICS, 1982

TOTAL FOR ALL REPORTING PROPERTIES	PASSENGERS	PASSENGER CAR MILES	PASSENGER FATALITIES	PASSENGER INJURIES
	1,527,612,311	416,986,274	8*	836
BART	54,076,603	28,848,026	0	11
CTA	146,771,844	48,054,552	0	86
GCRTA	8,668,627	2,578,421	1	4
MARTA	23,469,000	4,234,031	0	12
MBTA	92,383,450	12,669,394	0	18
NYCTA	989,349,373	273,586,369	4	523
PATCO	10,981,375	4,313,925	0	16
PATH	52,475,130	9,240,576	0	68
SEPTA	65,009,950	13,435,258	0	92
SIRTA	5,758,218	1,988,962	0	0
WMATA	78,668,741	18,036,760	3	6

*Five (5) passenger fatalities were due to stumbling, slipping, and falling, and three (3) were due to a rail equipment accident.

NATURE OF RRT PASSENGER CASUALTIES, 1982

In general, the severity of casualties is inversely proportional to the number of casualties of a particular category.



RRT EMPLOYEE STATISTICS, 1982

TOTAL FOR ALL REPORTING PROPERTIES	EMPLOYEES	EMPLOYEE HOURS	EMPLOYEE FATALITIES	EMPLOYEE INJURIES	OCCUPATIONAL ILLNESSES
	46,088	92,580,714	2	2,196	65
BART	2,198	4,690,981	1	533	22
CTA	3,605	7,132,483	0	597	16
GCRTA	188	403,480	0	30	0
MARTA	450	876,491	0	29	0
MBTA	1,870	3,665,200	0	206	2
NYCTA	32,420	62,507,794	0	128	1
PATCO	340	759,690	0	36	0
PATH	1,000	2,184,350	0	106	22
SEPTA	1,660	3,676,480	1	310	0
SIRTA	274	520,045	0	10	0
WMATA	2,083	6,163,720	0	211	2

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RRT NONTRESPASSER, TRESPASSER, AND CONTRACTOR STATISTICS, 1982

	FATALITIES				INJURIES			
	N	T	C	TOT.	N	T	C	TOT.
NONTRESPASSERS (N)			11				1,652	
TRESPASSERS (T)		0	65	0	24	0	245	
CONTRACTORS (C)		2	1	15	97	3	2	
TOTAL			77				1,899	
BART	0	0	0	0	24	0	0	24
CTA	2	13	0	15	97	3	0	100
GCRTA	0	0	0	0	1	0	0	1
MARTA	0	0	0	0	121	1	0	122
MBTA	0	0	0	0	170	0	0	170
NYCTA	6	51	1	58	939	238	0	1,177
PATCO	0	1	0	1	40	0	2	42
PATH	1	0	0	1	23	0	0	23
SEPTA	1	0	0	1	234	2	0	236
SIRTA	0	0	0	0	0	0	0	0
WMATA	1	0	0	1	3	1	0	4

CASUALTIES BY CATEGORY OF PERSONS, 1982

PROPERTY	TYPE PERSON	EMPLOYEE ON DUTY	EMPLOYEE NOT ON DUTY	PASSENGER	NON-TRESPASSER	TRESPASSER	CONTRACTOR	TOTAL
BART		551	5	11	24	0	0	591
CTA		613	0	86	99	16	0	814
GCRTA		30	0	5	1	0	0	36
MARTA		29	0	12	121	1	0	163
MBTA		208	0	18	170	0	0	396
NYCTA		129	0	527	945	289	1	1,891
PATCO		36	0	16	40	1	2	95
PATH		128	0	68	24	0	0	220
SEPTA		311	0	92	235	2	0	640
SIRTA		10	0	0	0	0	0	10
WMATA		213	0	9	4	1	0	227
TOTAL CASUALTIES		2,258	5	844	1,663	310	3	5,083

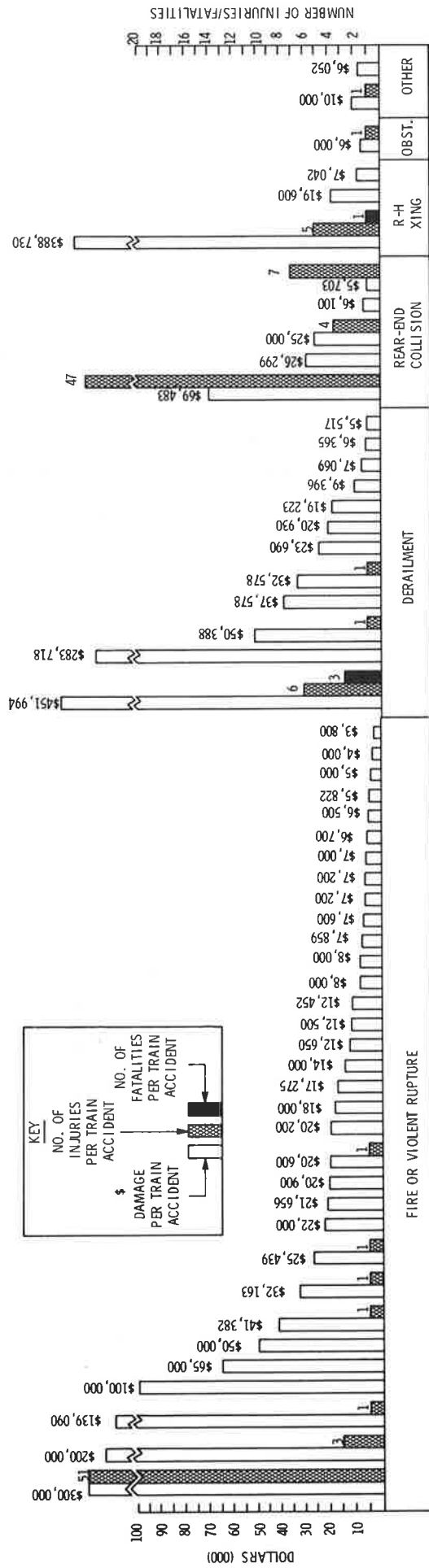
CASUALTIES BY OCCURRENCE, 1982

CATEGORY	TRAIN ACCIDENTS	TRAIN INCIDENTS	NON-TRAIN INCIDENTS	OCCUPATIONAL ILLNESSES	TOTAL
PROPERTY					
BART	0	32	537	22	591
CTA	61	139	598	16	814
GCRTA	5	10	21	0	36
MARTA	0	18	145	0	163
MBTA	0	34	360	2	396
NYCTA	5	414	1,471	1	1,891
PATCO	0	9	86	0	95
PATH	67	14	117	22	220
SEPTA	6	51	583	0	640
SIRTA	0	3	7	0	10
WMATA	9	5	211	2	227
TOTAL	153	729	4,136	65	5,083

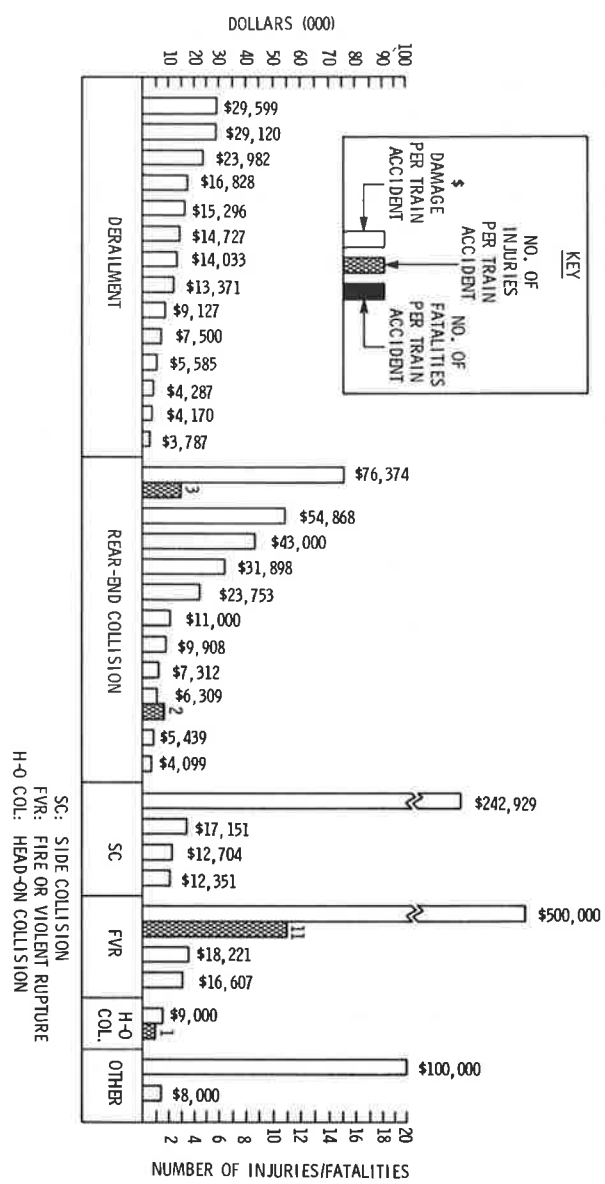
RRT FATALITIES, 1982

PROPERTY	NO. OF FATALITIES	CASUALTY OCCURRENCE CODES
BART	1	Maintenance of way and structures
CTA	9	Struck by or ran into locomotives or cars
	4	Flying/falling objects and burns
	2	Stumbling, slipping, falling
GCRTA	1	Stumbling, slipping, falling
MARTA	0	
MBTA	0	
NYCTA	35	Struck by or ran into locomotives or cars
	10	Assault
	9	Stumbling, slipping, falling
	5	Getting on or off cars or locomotives
	2	Horseplay
	1	Miscellaneous
PATCO	1	Struck by or ran into locomotives or cars
PATH	1	Struck by or ran into locomotives or cars
SEPTA	2	Rail equipment accidents/incidents
SIRTA	0	
WMATA	4	Rail equipment accidents/incidents

MAIN TRACK RRT TRAIN ACCIDENTS, 1982



YARD AND SIDING TRACK RRT TRAIN ACCIDENTS, 1982



SUMMARY OF RRT TRAIN ACCIDENTS, 1982

TYPE OF ACCIDENT	MAIN TRACK ACCIDENTS (REVENUE)			YARD AND SIDING TRACK ACCIDENTS (NON-REVENUE)			TOTAL ACCIDENTS		
	NO.	TOTAL \$ DAMAGE	TOTAL NO. OF CASUALTIES	NO.	TOTAL \$ DAMAGE	TOTAL NO. OF CASUALTIES	NO.	TOTAL \$ DAMAGE	TOTAL NO. OF CASUALTIES
FIRE OR VIOLENT RUPTURE	33	1,229,988	59	3	534,828	11	36	1,764,816	70
DERAILMENT	12	948,396	11	14	191,412	0	26	1,139,808	11
REAR-END COLLISION	5	132,585	58	11	273,960	5	16	406,545	63
SIDE COLLISION	0	-	-	4	285,135	0	4	285,135	0
RAIL-HIGHWAY CROSSING	3	415,372	6	0	-	-	3	415,372	6
HEAD-ON COLLISION	0	-	-	1	9,000	1	1	9,000	1
OBSTRUCTION	1	6,000	1	0	-	-	1	6,000	1
OTHER	2	16,052	1	2	108,000	0	4	124,052	1
TOTALS	56	2,748,393	136	35	1,402,335	17	91	4,150,728	153

SUMMARY DATA FOR ALL REPORTING PROPERTIES, 1975-1982

Data for the individual rapid rail transit properties are presented in the pages following this summary chart. These charts summarize the number of train accidents, train incidents, non-train incidents, fatalities, injuries, and occupational illnesses. The major cause codes (as listed in Appendix C of the 1979 FRA Guide) for train accidents and the major occurrence codes (as listed in Appendix F of the 1979 FRA Guide) for casualties, are also presented.

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	38	76	61	62	68	53	76	91	525
TRAIN INCIDENTS	971	1,475	834	755	839	746	950	702	7,272
NON-TRAIN INCIDENTS	5,619	5,966	5,973	5,850	6,310	6,002	5,244	4,132	45,096
FATALITIES FROM									
— TRAIN ACCIDENTS	1	1	12	0	0	1	2	4	21
— TRAIN INCIDENTS	38	55	43	33	37	49	73	59	387
— NON-TRAIN INCIDENTS	17	24	15	16	25	33	28	24	182
TOTAL FATALITIES	56	80	70	49	62	83	103	87	590
INJURIES FROM									
— TRAIN ACCIDENTS	276	477	225	87	471	43	57	149	1,785
— TRAIN INCIDENTS	994	1,507	846	746	878	742	929	670	7,317
— NON-TRAIN INCIDENTS	5,643	6,057	6,284	5,896	6,345	6,015	5,296	4,112	45,648
TOTAL INJURIES	6,913	8,041	7,355	6,729	7,694	6,800	6,282	4,931	54,745
OCCUPATIONAL ILLNESSES	31	45	55	41	41	55	34	65	367
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - RULES & INSTRUCTIONS	4	4	15	15	12	11	15	25	101
2. MECH/ELEC - LOCOMOTIVES	2	6	7	1	6	2	9	29	62
3. HUMAN FACTORS - SPEED	5	13	5	2	3	3	9	3	43
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	3,485	3,210	2,962	2,707	2,901	2,504	2,525	2,044	22,338
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,483	1,739	891	851	856	980	744	514	8,058
3. MAINTENANCE OF WAYS & STRUCTURES	33	81	1,108	1,052	1,026	933	769	487	5,489

SUMMARY DATA FOR BART, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	11	11	7	10	7	2	8	6	62
TRAIN INCIDENTS	22	18	7	5	23	17	38	32	162
NON-TRAIN INCIDENTS	481	492	459	533	591	592	620	537	4,305
FATALITIES FROM									
- TRAIN ACCIDENTS	1	0	0	0	0	0	0	0	1
- TRAIN INCIDENTS	0	0	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	3	0	0	0	0	1	1	1	6
TOTAL FATALITIES	4	0	0	0	0	1	1	1	7
INJURIES FROM									
- TRAIN ACCIDENTS	3	0	0	0	41	0	1	0	45
- TRAIN INCIDENTS	22	18	7	5	23	17	38	32	162
- NON-TRAIN INCIDENTS	482	528	467	540	597	604	630	536	4,384
TOTAL INJURIES	507	546	474	545	661	621	669	568	4,591
OCCUPATIONAL ILLNESSES	5	8	12	0	7	11	5	22	70
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - RULES & INSTRUCTIONS	1	0	2	1	2	1	4	2	13
2. HUMAN FACTORS - USE OF BRAKES	0	1	1	4	1	0	0	1	8
3. MECH/ELEC - BRAKES	3	1	0	0	0	1	1	1	7
MAJOR CAUSES OF CASUALTIES									
1. SERVICING OR MAINTENANCE OF EQUIPMENT	187	247	146	159	161	204	161	153	1,418
2. STUMBLING, SLIPPING, FALLING	126	114	149	201	157	154	175	91	1,167
3. FLYING/FALLING OBJECTS	26	45	24	35	82	39	28	35	314

SUMMARY DATA FOR CTA, 1976-1982

	1975*	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS		20	19	13	29	14	15	27	137
TRAIN INCIDENTS		204	167	181	139	157	141	138	1,127
NON-TRAIN INCIDENTS		570	669	760	827	777	743	598	4,944
FATALITIES FROM									
- TRAIN ACCIDENTS		1	11	0	0	1	1	0	14
- TRAIN INCIDENTS		8	5	2	4	7	8	9	43
- NON-TRAIN INCIDENTS		5	4	7	8	5	7	6	42
TOTAL FATALITIES		<u>14</u>	<u>20</u>	<u>9</u>	<u>12</u>	<u>13</u>	<u>16</u>	<u>15</u>	<u>99</u>
INJURIES FROM									
- TRAIN ACCIDENTS		458	208	13	16	15	11	61	782
- TRAIN INCIDENTS		199	162	180	136	158	134	130	1,099
- NON-TRAIN INCIDENTS		566	669	758	822	774	737	592	4,918
TOTAL INJURIES		<u>1,223</u>	<u>1,039</u>	<u>951</u>	<u>974</u>	<u>947</u>	<u>882</u>	<u>783</u>	<u>6,799</u>
OCCUPATIONAL ILLNESSES		0	2	6	8	11	14	16	57
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. MECH/ELEC - LOCOMOTIVES		3	2	0	4	2	4	13	28
2. HUMAN FACTORS - RULES & INSTRUCTIONS		0	2	3	5	7	5	5	27
3. HUMAN FACTORS - USE OF BRAKES		4	0	1	2	0	0	3	10
4. HUMAN FACTORS - MISCELLANEOUS		0	0	6	4	0	0	0	10
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING		229	272	315	273	281	256	211	1,837
2. SERVICING OR MAINTENANCE OF EQUIPMENT		112	103	114	127	124	122	111	813
3. MAINTENANCE OF WAYS & STRUCTURES		35	90	113	118	139	161	129	785

*Did not report in 1975

SUMMARY DATA FOR GCRTA, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	0	5	5	0	1	1	0	4	16
TRAIN INCIDENTS	1	7	16	7	4	9	16	10	70
NON-TRAIN INCIDENTS	55	25	29	20	19	24	20	21	213
FATALITIES FROM									
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0	1	1	2
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0	1	1	2
INJURIES FROM									
- TRAIN ACCIDENTS	0	9	4	0	0	2	0	5	20
- TRAIN INCIDENTS	1	7	16	7	4	9	15	9	68
- NON-TRAIN INCIDENTS	55	29	29	20	23	24	21	21	222
TOTAL INJURIES	56	45	49	27	27	35	36	35	310
OCCUPATIONAL ILLNESSES	2	0	0	0	0	0	0	0	2
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - RULES & INSTRUCTIONS	0	1	2	0	0	0	0	0	3
2. HUMAN FACTORS - SPEED	0	3	0	0	0	0	0	0	3
3. TRACK - SIGNAL & COMMUNICATION FAILURES	0	0	2	0	0	0	0	1	3
4. MECH/ELEC - GENERAL FAILURE	0	0	1	0	1	0	0	1	3
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	25	20	24	10	14	11	11	11	126
2. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	2	2	4	10	0	3	29
3. OPERATING RAIL MOTORCARS	1	4	6	0	3	4	7	0	25

SUMMARY DATA FOR MARTA, 1979-1982

	1975	1976	1977	1978	1979*	1980	1981	1982	TOTAL
TRAIN ACCIDENTS					0	0	0	0	0
TRAIN INCIDENTS					3	25	21	18	67
NON-TRAIN INCIDENTS					22	253	115	145	535
FATALITIES FROM									
— TRAIN ACCIDENTS					0	0	0	0	0
— TRAIN INCIDENTS					0	0	0	0	0
— NON-TRAIN INCIDENTS					0	0	0	0	0
TOTAL FATALITIES					<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
INJURIES FROM									
— TRAIN ACCIDENTS					0	0	0	0	0
— TRAIN INCIDENTS					3	25	21	18	67
— NON-TRAIN INCIDENTS					<u>22</u>	<u>253</u>	<u>115</u>	<u>145</u>	<u>535</u>
TOTAL INJURIES					<u>25</u>	<u>278</u>	<u>136</u>	<u>163</u>	<u>602</u>
OCCUPATIONAL ILLNESSES					0	0	0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS									
N/A									
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING					21	134	75	129	359
2. MAINTENANCE OF WAYS & STRUCTURES					0	0	42	8	50
3. GETTING ON OR OFF CARS					0	18	9	0	27

*Initiated rapid transit service on June 30, 1979.

SUMMARY DATA FOR MBTA, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	7	11	4	8	3	2	1	0	36
- TRAIN INCIDENTS	23	31	64	43	36	41	49	34	321
- NON-TRAIN INCIDENTS	399	451	365	377	326	384	403	357	3,062
FATALITIES FROM									
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	3	0	1	1	0	5
- NON-TRAIN INCIDENTS	0	0	0	0	0	2	1	0	3
TOTAL FATALITIES	0	0	0	3	0	3	2	0	8
INJURIES FROM									
- TRAIN ACCIDENTS	269	3	0	4	0	0	0	0	276
- TRAIN INCIDENTS	23	31	64	40	36	40	48	34	316
- NON-TRAIN INCIDENTS	399	453	365	377	330	382	402	360	3,068
TOTAL INJURIES	691	487	429	421	366	422	450	394	3,660
OCCUPATIONAL ILLNESSES	4	4	3	4	3	2	2	2	24
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - SPEED	2	0	1	1	1	0	0	0	5
2. MECH/ELEC - DOORS	1	3	0	0	0	0	0	0	4
3. TRACK - FROGS & SWITCHES	1	0	1	1	0	0	0	0	3
4. TRACK - ROADBED DEFECTS	0	1	0	1	1	0	0	0	3
5. MECH/ELEC - LOCOMOTIVES	1	2	0	0	0	0	0	0	3
6. MECH/ELEC - TRACK COMPONENTS	0	0	0	2	1	0	0	0	3
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	414	199	186	204	172	193	215	209	1,792
2. SERVICING OR MAINTENANCE OF EQUIPMENT	96	95	47	31	41	45	47	17	419
3. ASSAULT	51	36	44	40	39	51	30	4	295

SUMMARY DATA FOR NYCTA, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	13	16	18	28	21	31	41	31	199
TRAIN INCIDENTS	844	1,136	497	429	520	444	605	391	4,866
NON-TRAIN INCIDENTS	4,153	3,760	3,733	3,477	3,611	3,185	2,414	1,455	25,788
FATALITIES FROM									
— TRAIN ACCIDENTS	0	0	0	0	0	0	1	0	1
— TRAIN INCIDENTS	37	45	30	26	30	38	61	46	313
— NON-TRAIN INCIDENTS	14	15	10	9	16	23	16	16	119
TOTAL FATALITIES	<u>51</u>	<u>60</u>	<u>40</u>	<u>35</u>	<u>46</u>	<u>61</u>	<u>78</u>	<u>62</u>	<u>433</u>
INJURIES FROM									
— TRAIN ACCIDENTS	1	5	9	21	0	13	16	5	70
— TRAIN INCIDENTS	868	1,174	522	426	508	442	592	368	4,900
— NON-TRAIN INCIDENTS	4,175	3,815	4,037	3,512	3,635	3,184	2,457	1,455	26,270
TOTAL INJURIES	<u>5,044</u>	<u>4,994</u>	<u>4,568</u>	<u>3,959</u>	<u>4,143</u>	<u>3,639</u>	<u>3,065</u>	<u>1,828</u>	<u>31,240</u>
OCCUPATIONAL ILLNESSES	9	23	28	16	19	18	7	1	121
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - RULES & INSTRUCTIONS	1	0	8	11	4	2	5	18	39
2. TRACK - TRACK GEOMETRY DEFECTS	4	4	0	3	1	3	3	2	20
3. TRACK - FROGS & SWITCHES	3	0	0	3	2	3	7	0	18
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	2,664	2,374	1,973	1,604	1,814	1,537	1,411	933	14,310
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,037	1,075	507	466	362	385	150	2	3,984
3. MAINTENANCE OF WAYS & STRUCTURES	1	0	787	697	692	579	348	70	3,174

SUMMARY DATA FOR PATCO, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	0	0	0	2
TRAIN INCIDENTS	7	0	12	10	36	8	19	9	101
NON-TRAIN INCIDENTS	89	78	80	79	104	88	106	86	710
FATALITIES FROM									
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	1	0	1	0	0	1	3
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	1	0	1
TOTAL FATALITIES	0	0	1	0	1	0	1	1	4
INJURIES FROM									
- TRAIN ACCIDENTS	3	0	0	0	0	0	0	0	3
- TRAIN INCIDENTS	7	0	11	10	36	8	19	8	99
- NON-TRAIN INCIDENTS	90	78	80	79	104	89	105	86	711
TOTAL INJURIES	100	78	91	89	140	97	124	94	813
OCCUPATIONAL ILLNESSES	1	2	0	0	0	3	0	0	6
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - USE OF SWITCHES	1	0	0	0	0	0	0	0	1
2. MISCELLANEOUS CAUSES	0	1	0	0	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	43	38	44	40	61	36	48	41	351
2. SERVICING OR MAINTENANCE OF EQUIPMENT	17	17	12	12	9	11	16	6	100
3. ASSAULT	1	3	4	7	18	6	18	1	58

SUMMARY DATA FOR PATH, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	2	8	2	1	2	0	3	5	23
TRAIN INCIDENTS	24	36	24	41	27	16	23	14	205
NON-TRAIN INCIDENTS	110	150	191	147	167	118	144	135	1,162
FATALITIES FROM									
— TRAIN ACCIDENTS	0	0	1	0	0	0	0	0	1
— TRAIN INCIDENTS	1	0	2	1	0	2	1	1	8
— NON-TRAIN INCIDENTS	0	1	0	0	1	1	1	0	4
TOTAL FATALITIES	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>13</u>
INJURIES FROM									
— TRAIN ACCIDENTS	0	2	0	0	15	0	0	67	84
— TRAIN INCIDENTS	23	36	22	40	27	15	24	13	200
— NON-TRAIN INCIDENTS	110	149	191	151	166	117	143	117	1,144
TOTAL INJURIES	<u>133</u>	<u>187</u>	<u>213</u>	<u>191</u>	<u>208</u>	<u>132</u>	<u>167</u>	<u>197</u>	<u>1,428</u>
OCCUPATIONAL ILLNESSES	1	1	8	14	1	2	5	22	54
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - SPEED	0	5	0	1	0	0	0	0	6
2. HUMAN FACTORS - RULES & INSTRUCTIONS	1	2	1	0	0	0	0	0	4
3. MECH/ELEC - LOCOMOTIVES	0	0	0	0	0	0	1	3	4
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	44	36	71	58	72	40	40	30	391
2. SERVICING OR MAINTENANCE OF EQUIPMENT	39	74	26	19	26	37	37	30	288
3. MAINTENANCE OF WAYS & STRUCTURES	8	4	72	69	46	12	29	39	279

SUMMARY DATA FOR SEPTA, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	3	3	2	2	4	1	5	1	21
— TRAIN INCIDENTS	49	41	35	37	34	18	30	49	293
NON-TRAIN INCIDENTS	310	410	345	317	335	332	435	582	3,066
FATALITIES FROM									
— TRAIN ACCIDENTS	0	0	0	0	0	0	0	1	1
— TRAIN INCIDENTS	0	2	5	1	2	0	1	1	12
— NON-TRAIN INCIDENTS	0	3	1	0	0	1	1	0	6
TOTAL FATALITIES	0	5	6	1	2	1	2	2	19
INJURIES FROM									
— TRAIN ACCIDENTS	0	0	2	49	393	13	29	5	491
— TRAIN INCIDENTS	49	40	30	36	88	18	30	50	341
— NON-TRAIN INCIDENTS	310	408	344	317	336	333	436	583	3,067
TOTAL INJURIES	359	448	376	402	817	364	495	638	3,899
OCCUPATIONAL ILLNESSES	9	7	0	0	0	3	0	0	19
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. HUMAN FACTORS - SPEED	0	2	1	0	0	0	0	0	3
2. HUMAN FACTORS - SIGNALS	0	0	0	0	1	1	1	0	3
3. HUMAN FACTORS - USE OF SWITCHES	1	1	0	0	0	0	0	0	2
4. MECH/ELEC - LOCOMOTIVES	0	0	0	0	1	0	1	0	2
MAJOR CAUSES OF CASUALTIES									
1. STUMBLING, SLIPPING, FALLING	160	196	221	235	223	194	253	357	1,839
2. RAIL EQUIPMENT AND RAIL-HIGHWAY GRADE CROSSING	0	0	2	49	438	0	31	11	531
3. SERVICING OR MAINTENANCE OF EQUIPMENT	93	114	25	22	31	53	65	52	455

SUMMARY DATA FOR SIRTA, 1975-1982

	1975	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	0	0	0	2
TRAIN INCIDENTS	1	1	7	0	8	5	3	3	28
NON-TRAIN INCIDENTS	22	18	16	3	29	12	7	7	114
FATALITIES FROM									
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0	0	0	0
INJURIES FROM									
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	1	1	7	0	8	5	3	3	28
- NON-TRAIN INCIDENTS	22	19	16	3	29	12	7	7	115
TOTAL INJURIES	<u>23</u>	<u>20</u>	<u>23</u>	<u>3</u>	<u>37</u>	<u>17</u>	<u>10</u>	<u>10</u>	<u>143</u>
OCCUPATIONAL ILLNESSES	0	0	0	0	0	0	0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. TRACK - FROGS & SWITCHES	0	1	0	0	0	0	0	0	1
2. HUMAN FACTORS - RULES & INSTRUCTIONS	1	0	0	0	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES									
1. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	10	3	10	1	2	2	36
2. MAINTENANCE OF WAYS & STRUCTURES	2	1	4	0	5	4	3	3	22
3. STUMBLING, SLIPPING, FALLING	9	3	0	0	3	4	0	0	19

SUMMARY DATA FOR WMATA, 1976-1982

	1975*	1976	1977	1978	1979	1980	1981	1982	TOTAL
TRAIN ACCIDENTS		0	4	0	1	2	3	17	27
TRAIN INCIDENTS		1	5	2	9	6	5	4	32
NON-TRAIN INCIDENTS		12	86	137	279	237	237	209	1,197
FATALITIES FROM									
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	3	3
- TRAIN INCIDENTS	0	0	0	0	0	1	0	0	1
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0	1	1
TOTAL FATALITIES	0	0	0	0	0	1	0	4	5
INJURIES FROM									
- TRAIN ACCIDENTS	0	2	2	0	6	0	0	6	14
- TRAIN INCIDENTS	1	5	2	2	9	5	5	5	32
- NON-TRAIN INCIDENTS	12	86	139	139	281	243	243	210	1,214
TOTAL INJURIES	13	93	141	141	296	248	248	221	1,260
OCCUPATIONAL ILLNESSES	0	2	1	1	3	5	1	2	14
MAJOR CAUSES OF TRAIN ACCIDENTS									
1. MECH/ELEC - LOCOMOTIVES	0	3	0	0	0	0	3	16	22
2. MISCELLANEOUS CAUSES	0	1	0	0	0	1	0	0	2
3. HUMAN FACTORS - MISCELLANEOUS	0	0	0	0	0	1	0	1	1
MAJOR CAUSES OF CASUALTIES									
1. SERVICING OR MAINTENANCE OF EQUIPMENT	3	13	23	23	85	110	143	138	515
2. STUMBLING, SLIPPING, FALLING	1	22	40	40	112	54	41	32	302
3. MAINTENANCE OF WAYS & STRUCTURES	0	29	49	49	42	53	37	13	223

* Not yet in service in 1975.

NOTE: Initiated Red Line Service March 26, 1976; initiated Blue Line Service, July 1, 1977.

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