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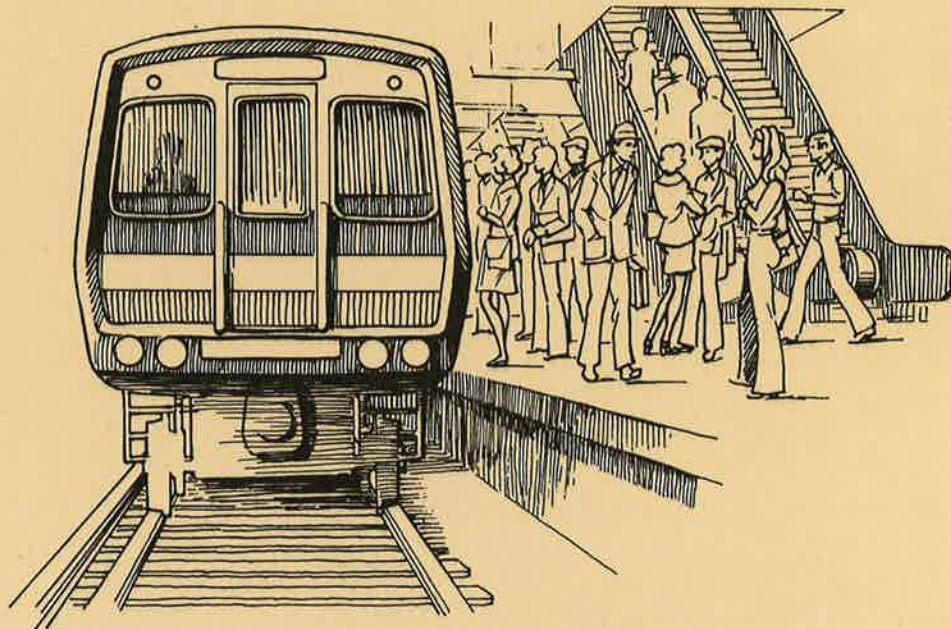
**U.S. Department of
Transportation**

Rail Transit Safety

Research and Special Programs
Administration
Transportation Systems Center
Cambridge MA 02142

Urban Mass Transportation
Administration
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Washington DC 20590

1981 Annual Report



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16. Abstract The <u>Rail Transit Safety 1981 Annual Report</u> 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 1981..					
17. Key Words Safety, Statistics, Transportation, Fatalities, Injuries, Casualties, Accidents, Incidents, Rail Transit, Rapid Rail Transit, RRT			18. Distribution Statement DOCUMENT IS AVAILABLE TO THE PUBLIC THROUGH THE NATIONAL TECHNICAL INFORMATION SERVICE, SPRINGFIELD, VIRGINIA 22161		
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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 1981 Annual Report is the fourth annual issuance by UMTA on rapid rail transit safety. The 1982 Report will also be based on information submitted by transit authorities to the FRA.

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.

NOTE: Safety statistics contained in previous editions of the Rail Transit Safety annual reports have been updated to reflect additional RRT accident and casualty data received during 1981.

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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.

DEFINITIONS

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 an 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 1981 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 of 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, Nonresponders - 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 the 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, signals, 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 or 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.

- 1,523,087,357 passengers were carried by eleven (11) RRT properties.
- Fifty-seven (57) injuries and two (2) fatalities were attributed to train accidents.
- 87% of all train accidents resulted in zero (0) personal casualties.
- Passenger car miles totaled 409,506,474.
- 44,773 RRT employees accounted for 91,493,048 employee hours.

RRT HIGHLIGHTS

CASUALTIES

- There were a total of 6,419 casualty occurrences in 1981. Included were 103 fatalities, 6,282 injuries and thirty-four (34) occupational illnesses.
- There were 1,028 passenger casualties in 1981. Included were ten (10) fatalities and 1,018 injuries. 626 passengers (61%) suffered bruises and contusions.
- There were 3,199 employee casualties in 1981. Included were four (4) fatalities, 3,161 injuries and thirty-four (34) occupational illnesses.
- Seventy-eight (78) trespasser fatalities and eleven (11) nontrespasser fatalities accounted for 86% of the RRT fatalities occurring in 1981.
- A total of 2,103 injuries were reported for trespassers, nontrespassers and contractor personnel in 1981.
- The most frequent cause (39%) of casualties in 1981 was stumbling, slipping and falling.
- The most frequent cause (54%) of the 103 RRT fatalities in 1981 was being struck by or running into locomotives or cars.

ACCIDENTS

- There were seventy-six (76) train accidents, 950 train incidents, and 5,244 non-train incidents in 1981.
- Thirty-five (35) accidents were main track related and forty-one (41) were yard and siding track related in 1981.
- The most frequent cause (20%) of train accidents in 1981 was human factors - rules and instructions.
- Derailments (36), the most frequent type of accident in 1981, accounted for 47% of all train accidents.
- Total property and equipment dollar damage for train accidents in 1981 was \$3,909,108. Of this, \$2,278,733 was from main track accidents and \$1,630,375 was from yard and siding track accidents.

RRT PROPERTY STATISTICS, 1975-1981

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

RRT ACCIDENTS, INCIDENTS, INJURIES AND FATALITIES, 1975-1981

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

Figures are based on one million passenger car miles.

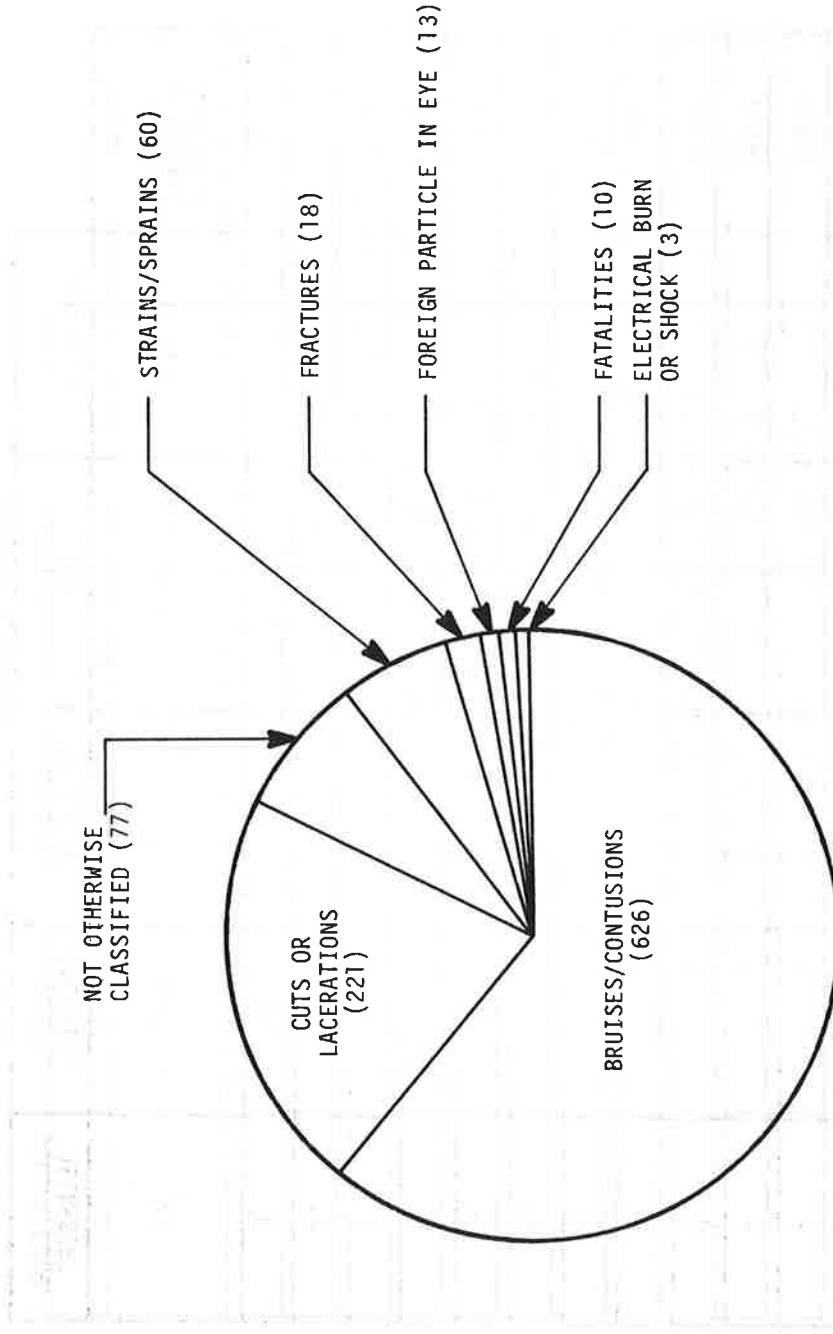
RRT PASSENGER STATISTICS, 1981

TOTAL FOR ALL REPORTING PROPERTIES	PASSENGERS	PASSENGER CAR MILES	PASSENGER FATALITIES	PASSENGER INJURIES
	1,523,087,357	409,506,474	10*	1,018
BART	50,127,035	28,188,937	0	23
CTA	149,375,815	50,469,385	3	64
GCRTA	10,083,726	3,232,603	0	7
MARTA	20,549,000	3,945,729	0	21
MBTA	88,113,388	10,712,148	0	41
NYCTA	1,005,946,154	268,071,683	7	721
PATCO	11,295,119	4,294,385	0	28
PATH	46,676,144	9,251,273	0	11
SEPTA	57,076,367	12,300,088	0	100
SIRTA	5,933,755	1,913,773	0	0
WMATA	77,910,854	17,126,470	0	2

*Four (4) passenger fatalities were due to assault, three (3) were due to getting on or off cars or locomotives, and three (3) were due to stumbling, slipping, and falling.

NATURE OF RRT PASSENGER CASUALTIES, 1981

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



RRT EMPLOYEE STATISTICS, 1981

TOTAL FOR ALL REPORTING PROPERTIES	EMPLOYEES	EMPLOYEE HOURS	EMPLOYEE FATALITIES	EMPLOYEE INJURIES	OCCUPATIONAL ILLNESSES
	44,773	91,493,048	4	3,161	34
BART	2,065	4,208,978	0	542	5
CTA	3,615	7,360,322	0	730	14
GCRTA	212	513,836	0	26	0
MARTA	751	759,099	0	44	0
MBTA	1,720	3,403,383	2	241	2
NYCTA	31,063	62,758,629	2	931	7
PATCO	336	760,850	0	43	0
PATH	998	2,104,655	0	130	5
SEPTA	1,650	3,424,240	0	221	0
SIRTA	280	523,816	0	10	0
WMATA	2,083	5,675,240	0	243	1

RRT NONTRESPASSER, TRESPASSER, AND CONTRACTOR STATISTICS, 1981

	FATALITIES					INJURIES				
	N	T	C	TOT.		N	T	C	TOT.	
NONTRESPASSERS (N)			11							1,852
TRESPASSERS (T)		1	0	1		102	2	0	104	251
CONTRACTORS (C)			0							0
TOTAL			89							2,103
BART	0	1	0	1		102	2	0	104	
CTA	1	12	0	13		83	5	0	88	
GCRTA	0	1	0	1		3	0	0	3	
MARTA	0	0	0	0		71	0	0	71	
MBTA	0	0	0	0		166	2	0	168	
NYCTA	7	62	0	69		1,173	240	0	1,413	
PATCO	1	0	0	1		51	2	0	53	
PATH	0	2	0	2		26	0	0	26	
SEPTA	2	0	0	2		174	0	0	174	
SIRTA	0	0	0	0		0	0	0	0	
WMATA	0	0	0	0		3	0	0	3	

CASUALTIES BY CATEGORY OF PERSONS, 1981

PROPERTY TYPE PERSON	EMPLOYEE ON DUTY	EMPLOYEE NOT ON DUTY	PASSENGER	NON-TRESPASSER	TRESPASSER	CONTRACTOR	TOTAL
BART	543	4	23	102	3	0	675
CTA	744	0	67	84	17	0	912
GCRTA	25	1	7	3	1	0	37
MARTA	44	0	21	71	0	0	136
MBTA	245	0	41	166	2	0	454
NYCTA	940	0	728	1,180	302	0	3,150
PATCO	43	0	28	52	2	0	125
PATH	131	4	11	26	2	0	174
SEPTA	221	0	100	176	0	0	497
SIRTA	10	0	0	0	0	0	10
WMATA	244	0	2	3	0	0	249
TOTAL CASUALTIES	3,190	9	1,028	1,863	329	0	6,419

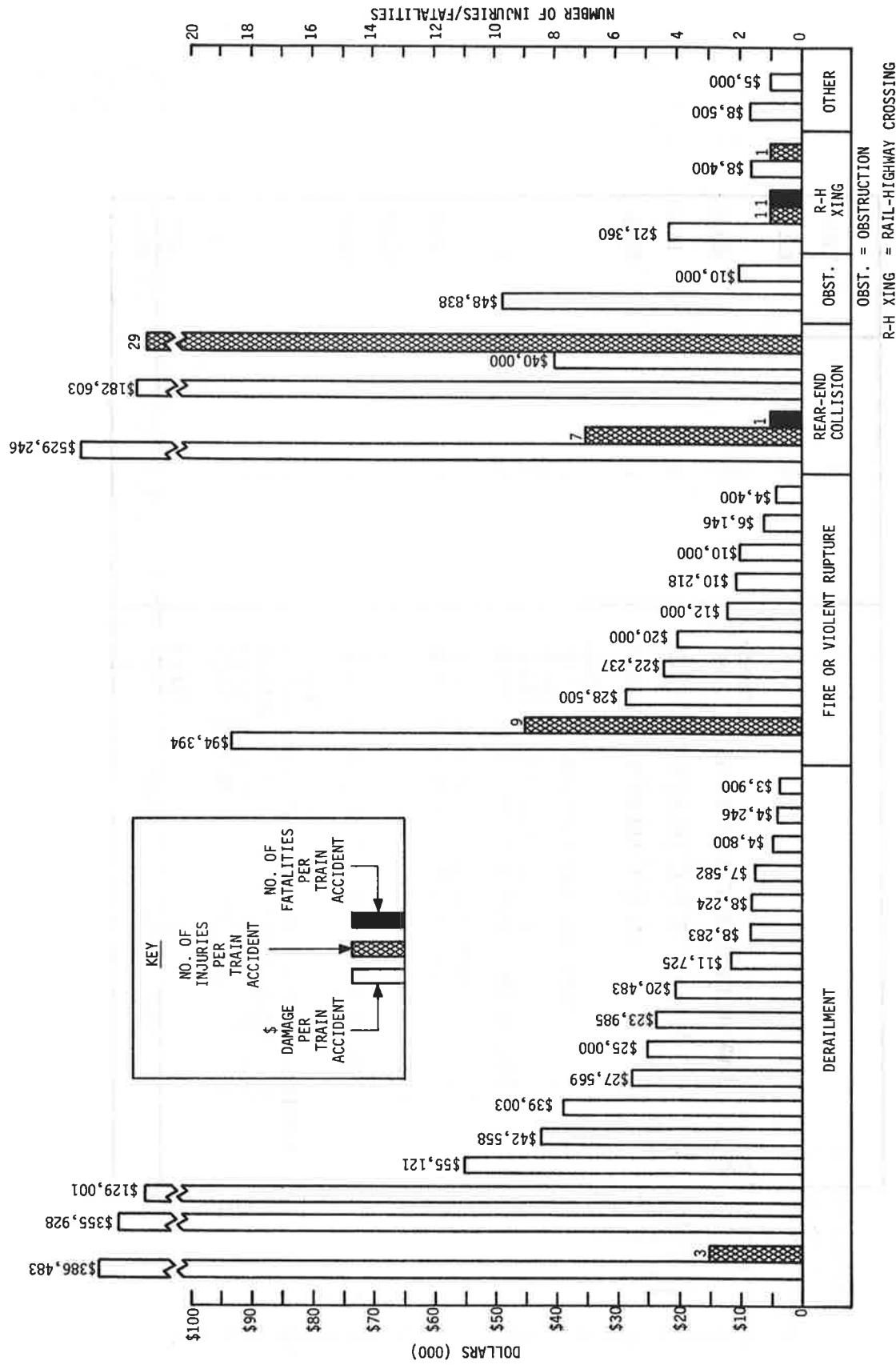
CASUALTIES BY OCCURRENCE, 1981

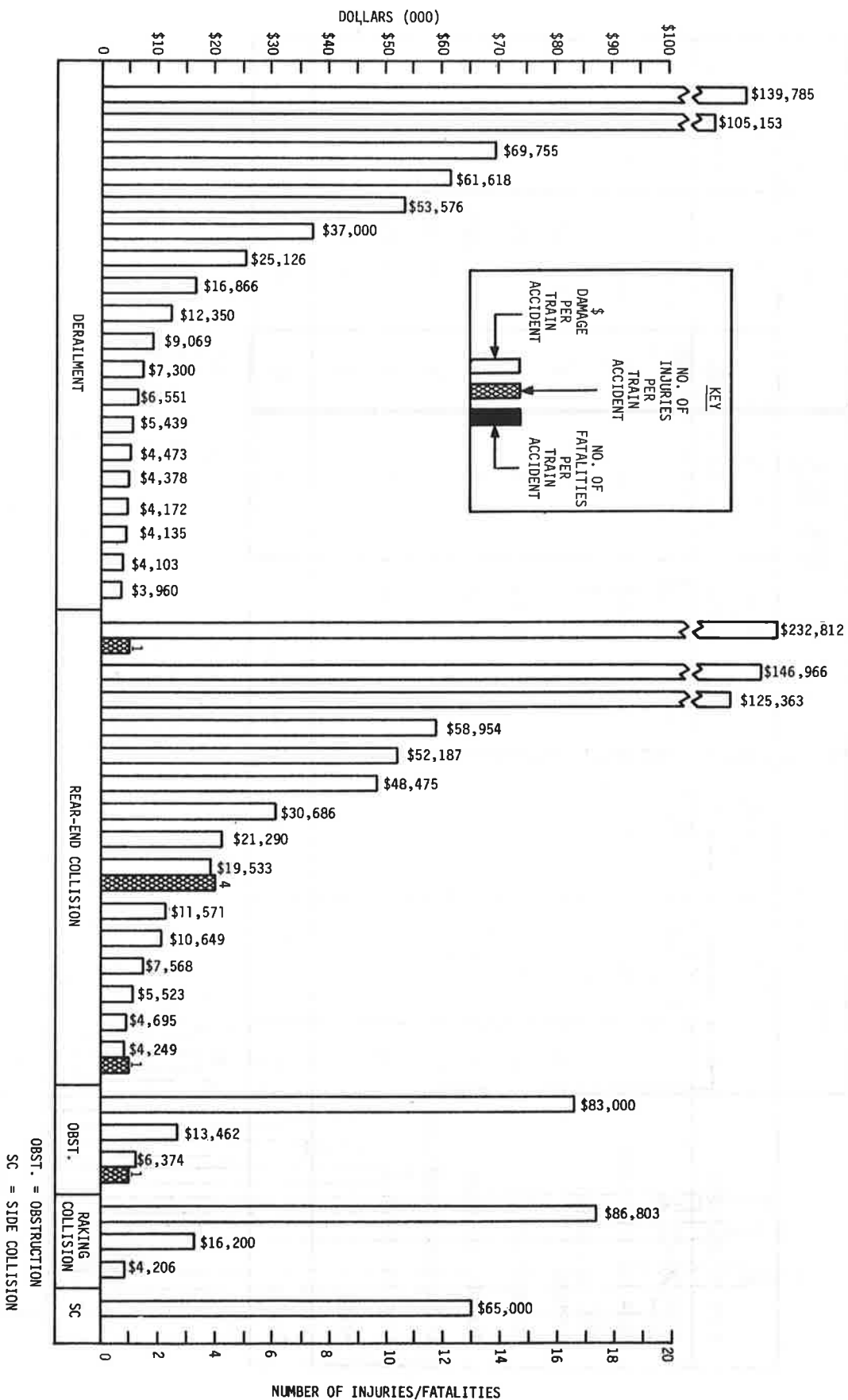
CATEGORY	TRAIN ACCIDENTS	TRAIN INCIDENTS	NON-TRAIN INCIDENTS	OCCUPATIONAL ILLNESSES	TOTAL
PROPERTY					
BART	1	38	631	5	675
CTA	12	142	744	14	912
GCRTA	0	16	21	0	37
MARTA	0	21	115	0	136
MBTA	0	49	403	2	454
NYCTA	17	653	2,473	7	3,150
PATCO	0	19	106	0	125
PATH	0	25	144	5	174
SEPTA	29	31	437	0	497
SIRTA	0	3	7	0	10
WMATA	0	5	243	1	249
TOTAL	59	1,002	5,324	34	6,419

RRT FATALITIES, 1981

PROPERTY	NO. OF FATALITIES	CASUALTY OCCURRENCE CODES
BART	1	STUMBLING, SLIPPING, FALLING
CTA	6	FLYING/FALLING OBJECTS AND BURNS
	5	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
	3	GETTING ON OR OFF CARS OR LOCOMOTIVES
	1	RAIL-HIGHWAY GRADE CROSSING ACCIDENTS/INCIDENTS
	1	ASSAULT
GCRTA	1	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
MARTA	0	
MBTA	1	MAINTENANCE OF WAY AND STRUCTURES
	1	FLYING/FALLING OBJECTS AND BURNS
NYCTA	49	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
	18	STUMBLING, SLIPPING, FALLING
	9	ASSAULT
	1	RAIL EQUIPMENT ACCIDENTS/INCIDENTS
	1	HORSEPLAY
PATCO	1	STUMBLING, SLIPPING, FALLING
PATH	2	STUMBLING, SLIPPING, FALLING
SEPTA	1	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
SIRTA	0	ASSAULT
WMATA	0	

MAIN TRACK RRT TRAIN ACCIDENTS, 1981





SUMMARY OF RRT TRAIN ACCIDENTS, 1981

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
DERAILMENT	17	1,153,891	3	19	574,809	0	36	1,728,700	3
REAR-END COLLISION	3	814,849	37	15	780,521	6	18	1,595,370	43
FIRE OR VIOLENT RUPTURE	9	207,895	9	0	-	-	9	207,895	9
OBSTRUCTION	2	58,838	0	3	102,836	1	5	161,674	1
RAKING COLLISION	0	-	-	3	107,209	0	3	107,209	0
RAIL-HIGHWAY CROSSING	2	29,760	3	0	-	-	2	29,760	3
SIDE COLLISION	0	-	-	1	65,000	0	1	65,000	0
OTHER	2	13,500	0	0	-	-	2	13,500	0
TOTALS	35	2,278,733	52	41	1,630,375	7	76	3,909,108	59

SUMMARY DATA FOR ALL REPORTING PROPERTIES, 1975-1981

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	TOTAL
TRAIN ACCIDENTS	38	76	61	62	68	53	76	434
TRAIN INCIDENTS	971	1,475	834	755	839	746	950	6,570
NON-TRAIN INCIDENTS	5,619	5,966	5,973	5,850	6,310	6,002	5,244	40,964
FATALITIES FROM								
- TRAIN ACCIDENTS	1	1	12	0	0	1	2	17
- TRAIN INCIDENTS	38	55	43	33	37	49	73	328
- NON-TRAIN INCIDENTS	17	24	15	16	25	33	28	158
TOTAL FATALITIES	<u>56</u>	<u>80</u>	<u>70</u>	<u>49</u>	<u>62</u>	<u>83</u>	<u>103</u>	503
INJURIES FROM								
- TRAIN ACCIDENTS	276	477	225	87	471	43	57	1,636
- TRAIN INCIDENTS	994	1,507	846	746	878	742	929	6,642
- NON-TRAIN INCIDENTS	5,643	6,057	6,284	5,896	6,345	6,015	5,296	41,536
TOTAL INJURIES	6,913	8,041	7,355	6,729	7,694	6,800	6,282	49,814
OCCUPATIONAL ILLNESSES	31	45	55	41	41	55	34	302
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - RULES & INSTRUCTIONS	4	4	15	15	12	11	15	76
2. HUMAN FACTORS - SPEED	5	13	5	2	3	3	9	40
3. TRACK - FROGS & SWITCHES	5	1	6	4	5	5	8	34
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	3,485	3,210	2,962	2,707	2,901	2,504	2,525	20,294
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,483	1,739	891	851	856	980	744	7,544
3. MAINTENANCE OF WAYS & STRUCTURES	33	81	1,108	1,052	1,026	933	769	5,002

SUMMARY DATA FOR BART, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	11	11	7	10	7	2	8	56
TRAIN INCIDENTS	22	18	7	5	23	17	38	130
NON-TRAIN INCIDENTS	481	492	459	533	591	592	620	3,768
FATALITIES FROM								
- TRAIN ACCIDENTS	1	0	0	0	0	0	0	1
- TRAIN INCIDENTS	0	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	3	0	0	0	0	1	1	5
TOTAL FATALITIES	<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>6</u>
INJURIES FROM								
- TRAIN ACCIDENTS	3	0	0	0	41	0	1	45
- TRAIN INCIDENTS	22	18	7	5	23	17	38	130
- NON-TRAIN INCIDENTS	482	528	467	540	597	604	630	3,848
TOTAL INJURIES	<u>507</u>	<u>546</u>	<u>474</u>	<u>545</u>	<u>661</u>	<u>621</u>	<u>669</u>	<u>4,023</u>
OCCUPATIONAL ILLNESSES	5	8	12	0	7	11	5	48
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - RULES & INSTRUCTIONS	1	0	2	1	2	1	4	11
2. HUMAN FACTORS - USE OF BRAKES	0	1	1	4	1	0	0	7
3. MECH/ELEC - LOCOMOTIVES	1	1	2	1	1	0	0	6
4. MECH/ELEC - BRAKES	3	1	0	0	0	1	1	6
MAJOR CAUSES OF CASUALTIES								
1. SERVICING OR MAINTENANCE OF EQUIPMENT	187	247	146	159	161	204	161	1,265
2. STUMBLING, SLIPPING, FALLING	126	114	149	201	157	154	175	1,076
3. FLYING/FALLING OBJECTS	26	45	24	35	82	39	28	279

SUMMARY DATA FOR CTA, 1975-1981

	1975*	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS		20	19	13	29	14	15	110
TRAIN INCIDENTS		204	167	181	139	157	141	989
NON-TRAIN INCIDENTS		570	669	760	827	777	743	4,346
FATALITIES FROM								
- TRAIN ACCIDENTS		1	11	0	0	1	1	14
- TRAIN INCIDENTS		8	5	2	4	7	8	34
- NON-TRAIN INCIDENTS		5	4	7	8	5	7	36
TOTAL FATALITIES		<u>14</u>	<u>20</u>	<u>9</u>	<u>12</u>	<u>13</u>	<u>16</u>	<u>84</u>
INJURIES FROM								
- TRAIN ACCIDENTS		453	208	13	16	15	11	721
- TRAIN INCIDENTS		199	162	180	136	158	134	969
- NON-TRAIN INCIDENTS		566	669	758	822	774	737	4,326
TOTAL INJURIES		<u>1,223</u>	<u>1,039</u>	<u>951</u>	<u>974</u>	<u>947</u>	<u>882</u>	<u>6,016</u>
OCCUPATIONAL ILLNESSES		0	2	6	8	11	14	41
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - RULES & INSTRUCTIONS		0	2	3	5	7	5	22
2. MECH/ELEC - LOCOMOTIVES		3	2	0	4	2	4	15
3. HUMAN FACTORS - MISCELLANEOUS		0	0	6	4	0	0	10
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING		229	272	315	273	281	256	1,626
2. SERVICING OR MAINTENANCE OF EQUIPMENT		112	103	114	127	124	122	702
3. MAINTENANCE OF WAYS & STRUCTURES		35	90	113	118	139	161	656

*Did not report in 1975.

SUMMARY DATA FOR GCRTA, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	0	5	5	0	1	1	0	12
TRAIN INCIDENTS	1	7	16	7	4	9	16	60
NON-TRAIN INCIDENTS	55	25	29	20	19	24	20	192
FATALITIES FROM								
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0	1	1
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0	1	1
INJURIES FROM								
- TRAIN ACCIDENTS	0	9	4	0	0	2	0	15
- TRAIN INCIDENTS	1	7	16	7	4	9	15	59
- NON-TRAIN INCIDENTS	55	29	29	20	23	24	21	201
TOTAL INJURIES	56	45	49	27	27	35	36	275
OCCUPATIONAL ILLNESSES	2	0	0	0	0	0	0	2
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - RULES & INSTRUCTIONS	0	1	2	0	0	0	0	3
2. HUMAN FACTORS - SPEED	0	3	0	0	0	0	0	3
3. TRACK - SIGNAL & COMMUNICATION FAILURES	0	0	2	0	0	0	0	2
4. MECH/ELEC - GENERAL FAILURE	0	0	1	0	1	0	0	2
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	25	20	24	10	14	11	11	115
2. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	2	2	4	10	0	26
3. OPERATING RAIL MOTORCARS	1	4	6	0	3	4	7	25

SUMMARY DATA FOR MARTA, 1975-1981

	1975	1976	1977	1978	1979*	1980	1981	TOTAL
TRAIN ACCIDENTS					0	0	0	0
TRAIN INCIDENTS					3	25	21	49
NON-TRAIN INCIDENTS					22	253	115	390
FATALITIES FROM								
- TRAIN ACCIDENTS					0	0	0	0
- TRAIN INCIDENTS					0	0	0	0
- NON-TRAIN INCIDENTS					0	0	0	0
TOTAL FATALITIES					0	0	0	0
INJURIES FROM								
- TRAIN ACCIDENTS					0	0	0	0
- TRAIN INCIDENTS					3	25	21	49
- NON-TRAIN INCIDENTS					22	253	115	390
TOTAL INJURIES					25	278	136	439
OCCUPATIONAL ILLNESSES					0	0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS								
N/A								
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING					21	134	75	230
2. MAINTENANCE OF WAYS & STRUCTURES					0	0	42	42
3. GETTING ON OR OFF CARS					0	18	9	27

*Initiated rapid transit service on June 30, 1979.

SUMMARY DATA FOR MBTA, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	7	11	4	8	3	2	1	36
TRAIN INCIDENTS	23	31	64	43	36	41	49	287
NON-TRAIN INCIDENTS	399	451	365	377	326	384	403	2,705
FATALITIES FROM								
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	3	0	1	1	5
- NON-TRAIN INCIDENTS	0	0	0	0	0	2	1	3
TOTAL FATALITIES	0	0	0	3	0	3	2	8
INJURIES FROM								
- TRAIN ACCIDENTS	269	3	0	4	0	0	0	276
- TRAIN INCIDENTS	23	31	64	40	36	40	48	282
- NON-TRAIN INCIDENTS	399	453	365	377	330	382	402	2,708
TOTAL INJURIES	691	487	429	421	366	422	450	3,266
OCCUPATIONAL ILLNESSES	4	4	3	4	3	2	2	22
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - SPEED	2	0	1	1	1	0	0	5
2. MECH/ELEC - DOORS	1	3	0	0	0	0	0	4
3. TRACK - FROGS & SWITCHES	1	0	1	1	0	0	0	3
4. TRACK- ROADBED DEFECTS	0	1	0	1	1	0	0	3
5. MECH/ELEC - LOCOMOTIVES	1	2	0	0	0	0	0	3
6. MECH/ELEC - TRACK COMPONENTS	0	0	0	2	1	0	0	3
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	414	199	186	204	172	193	215	1,583
2. SERVICING OR MAINTENANCE OF EQUIPMENT	96	95	47	31	41	45	47	402
3. ASSAULT	51	36	44	40	39	51	30	291

SUMMARY DATA FOR NYCTA, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	13	16	18	28	21	31	41	168
-- TRAIN INCIDENTS	844	1,136	497	429	520	444	605	4,475
-- NON-TRAIN INCIDENTS	4,153	3,760	3,733	3,477	3,611	3,185	2,414	24,333
FATALITIES FROM								
-- TRAIN ACCIDENTS	0	0	0	0	0	0	1	1
-- TRAIN INCIDENTS	37	45	30	26	30	38	61	267
-- NON-TRAIN INCIDENTS	14	15	10	9	16	23	16	103
TOTAL FATALITIES	<u>51</u>	<u>60</u>	<u>40</u>	<u>35</u>	<u>46</u>	<u>61</u>	<u>78</u>	<u>371</u>
INJURIES FROM								
-- TRAIN ACCIDENTS	1	5	9	21	0	13	16	65
-- TRAIN INCIDENTS	868	1,174	522	426	508	442	592	4,532
-- NON-TRAIN INCIDENTS	4,175	3,815	4,037	3,512	3,635	3,184	2,457	24,815
TOTAL INJURIES	5,044	4,994	4,568	3,959	4,143	3,639	3,065	29,412
OCCUPATIONAL ILLNESSES	9	23	28	16	19	18	7	120
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - RULES & INSTRUCTIONS	1	0	8	11	4	2	5	31
2. TRACK - TRACK GEOMETRY DEFECTS	4	4	0	3	1	3	3	18
3. TRACK - FROGS & SWITCHES	3	0	0	3	2	3	7	18
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	2,664	2,374	1,973	1,604	1,814	1,537	1,411	13,377
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,037	1,075	507	466	362	385	150	3,982
3. MAINTENANCE OF WAYS & STRUCTURES	1	0	787	697	692	579	348	3,104

SUMMARY DATA FOR PATCO, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	0	0	2
TRAIN INCIDENTS	7	0	12	10	36	8	19	92
NON-TRAIN INCIDENTS	89	78	80	79	104	88	106	624
FATALITIES FROM								
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	1	0	1	0	0	2
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	1	1
TOTAL FATALITIES	0	0	1	0	1	0	1	3
INJURIES FROM								
- TRAIN ACCIDENTS	3	0	0	0	0	0	0	3
- TRAIN INCIDENTS	7	0	11	10	36	8	19	91
- NON-TRAIN INCIDENTS	90	78	80	79	104	89	105	625
TOTAL INJURIES	100	78	91	89	140	97	124	719
OCCUPATIONAL ILLNESSES	1	2	0	0	0	3	0	6
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - USE OF SWITCHES	1	0	0	0	0	0	0	1
2. MISCELLANEOUS CAUSES	0	1	0	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	43	38	44	40	61	36	48	310
2. SERVICING OR MAINTENANCE OF EQUIPMENT	17	17	12	12	9	11	16	94
3. ASSAULT	1	3	4	7	18	6	18	57

SUMMARY DATA FOR PATH, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	2	8	2	1	2	0	3	18
TRAIN INCIDENTS	24	36	24	41	27	16	23	191
NON-TRAIN INCIDENTS	110	150	191	147	167	118	144	1,027
FATALITIES FROM								
- TRAIN ACCIDENTS	0	0	1	0	0	0	0	1
- TRAIN INCIDENTS	1	0	2	1	0	2	1	7
- NON-TRAIN INCIDENTS	0	1	0	0	1	1	1	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>12</u>
INJURIES FROM								
- TRAIN ACCIDENTS	0	2	0	0	15	0	0	17
- TRAIN INCIDENTS	23	36	22	40	27	15	24	187
- NON-TRAIN INCIDENTS	110	149	191	151	166	117	143	1,027
TOTAL INJURIES	<u>133</u>	<u>187</u>	<u>213</u>	<u>191</u>	<u>208</u>	<u>132</u>	<u>167</u>	<u>1,231</u>
OCCUPATIONAL ILLNESSES	1	1	8	14	1	2	5	32
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - SPEED	0	5	0	1	0	0	0	6
2. HUMAN FACTORS - RULES & INSTRUCTIONS	1	2	1	0	0	0	0	4
3. TRACK - TRACK GEOMETRY DEFECTS	0	1	0	0	1	0	0	2
4. TRACK - FROGS & SWITCHES	1	0	0	0	1	0	0	2
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	44	36	71	58	72	40	40	361
2. SERVICING OR MAINTENANCE OF EQUIPMENT	39	74	26	19	26	37	37	258
3. MAINTENANCE OF WAYS & STRUCTURES	8	4	72	69	46	12	29	240

SUMMARY DATA FOR SEPTA, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	3	3	2	2	4	1	5	20
- TRAIN INCIDENTS	49	41	35	37	34	18	30	244
- NON-TRAIN INCIDENTS	310	410	345	317	335	332	435	2,484
FATALITIES FROM								
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	2	5	1	2	0	1	11
- NON-TRAIN INCIDENTS	0	3	1	0	0	1	1	6
TOTAL FATALITIES	0	5	6	1	2	1	2	17
INJURIES FROM								
- TRAIN ACCIDENTS	0	0	2	49	393	13	29	486
- TRAIN INCIDENTS	49	40	30	36	88	18	30	291
- NON-TRAIN INCIDENTS	310	408	344	317	336	333	436	2,484
TOTAL INJURIES	359	448	376	402	817	364	495	3,261
OCCUPATIONAL ILLNESSES	9	7	0	0	0	3	0	19
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. HUMAN FACTORS - SPEED	0	2	1	0	0	0	0	3
2. HUMAN FACTORS - SIGNALS	0	0	0	0	1	1	1	3
3. HUMAN FACTORS - USE OF SWITCHES	1	1	0	0	0	0	0	2
4. MECH/ELEC - LOCOMOTIVES	0	0	0	0	1	0	1	2
MAJOR CAUSES OF CASUALTIES								
1. STUMBLING, SLIPPING, FALLING	160	196	221	235	223	194	253	1,482
2. RAIL EQUIPMENT AND RAIL-HIGHWAY GRADE CROSSING	0	0	2	49	438	0	31	520
3. SERVICING OR MAINTENANCE OF EQUIPMENT	93	114	25	22	31	53	65	403

SUMMARY DATA FOR SIRT A, 1975-1981

	1975	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	0	0	2
TRAIN INCIDENTS	1	1	7	0	8	5	3	25
NON-TRAIN INCIDENTS	22	18	16	3	29	12	7	107
FATALITIES FROM								
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0	0	0
INJURIES FROM								
- TRAIN ACCIDENTS	0	0	0	0	0	0	0	0
- TRAIN INCIDENTS	1	1	7	0	8	5	3	25
- NON-TRAIN INCIDENTS	22	19	16	3	29	12	7	108
TOTAL INJURIES	23	20	23	3	37	17	10	133
OCCUPATIONAL ILLNESSES	0	0	0	0	0	0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. TRACK - FROGS & SWITCHES	0	1	0	0	0	0	0	1
2. HUMAN FACTORS - RULES & INSTRUCTIONS	1	0	0	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES								
1. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	10	3	10	1	2	34
2. STUMBLING, SLIPPING, FALLING	9	3	0	0	3	4	0	19
3. MAINTENANCE OF WAYS & STRUCTURES	2	1	4	0	5	4	3	19

SUMMARY DATA FOR WMATA, 1975-1981

	1975*	1976	1977	1978	1979	1980	1981	TOTAL
TRAIN ACCIDENTS			4	0	1	2	3	10
TRAIN INCIDENTS		1	5	2	9	6	5	28
NON-TRAIN INCIDENTS		12	86	137	279	237	237	988
FATALITIES FROM								
- TRAIN ACCIDENTS		0	0	0	0	0	0	0
- TRAIN INCIDENTS		0	0	0	0	1	0	1
- NON-TRAIN INCIDENTS		0	0	0	0	0	0	0
TOTAL FATALITIES		0	0	0	0	1	0	1
INJURIES FROM								
- TRAIN ACCIDENTS		0	2	0	6	0	0	8
- TRAIN INCIDENTS		1	5	2	9	5	5	27
- NON-TRAIN INCIDENTS		12	86	139	281	243	243	1,004
TOTAL INJURIES		13	93	141	296	248	248	1,039
OCCUPATIONAL ILLNESSES		0	2	1	3	5	1	15
MAJOR CAUSES OF TRAIN ACCIDENTS								
1. MECH/ELEC - LOCOMOTIVES		0	3	0	0	0	3	6
2. MISCELLANEOUS CAUSES		0	1	0	0	1	0	2
3. HUMAN FACTORS - RULES & INSTRUCTIONS		0	0	0	1	0	0	1
4. HUMAN FACTORS - MISCELLANEOUS		0	0	0	0	1	0	1
MAJOR CAUSES OF CASUALTIES								
1. SERVICING OR MAINTENANCE OF EQUIPMENT		3	13	23	85	110	143	377
2. STUMBLING, SLIPPING, FALLING		1	22	40	112	54	41	270
3. MAINTENANCE OF WAYS & STRUCTURES		0	29	49	42	53	37	210

*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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