

Ref



U.S. Department of  
Transportation

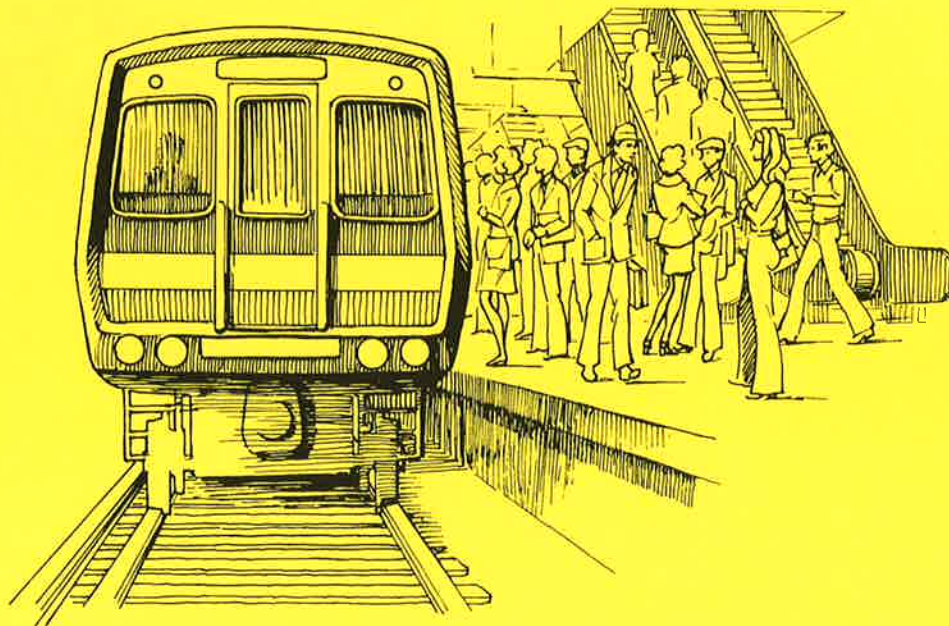
# Rail Transit Safety

Research and Special Programs  
Administration  
Transportation Systems Center  
Cambridge MA 02142

Urban Mass Transportation  
Administration  
Office of Technology  
Development and Deployment  
Washington D C 20590

---

## 1980 Annual Report



NOTICE

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

DOCUMENT IS AVAILABLE TO THE PUBLIC  
THROUGH THE NATIONAL TECHNICAL  
INFORMATION SERVICE, SPRINGFIELD,  
VIRGINIA 22161

1. Report No. UMTA-MA-06-0098-81-1		2. Government Accession No.		3. Recipient's Catalog No. •	
4. Title and Subtitle  RAIL TRANSIT SAFETY 1980 ANNUAL REPORT				5. Report Date September 1981	
				6. Performing Organization Code DTS-722	
				8. Performing Organization Report No. DOT-TSC-UMTA-81-57	
7. Author(s) David M. Daley, Eugene T. Leonard				10. Work Unit No. (TRAIS) R1729/UM147	
9. Performing Organization Name and Address U.S. Department of Transportation Research and Special Programs Administration Transportation Systems Center Cambridge MA 02142				11. Contract or Grant No.	
				13. Type of Report and Period Covered Annual Report 1 Jan. '80 - 31 Dec. '80	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Urban Mass Transportation Administration Office of Technology Development and Deployment Office of Safety and Product Qualification Washington DC 20590				14. Sponsoring Agency Code UTD-50	
15. Supplementary Notes					
16. Abstract  The <u>Rail Transit Safety 1980 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 1980.					
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		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 36	22. Price



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 1980 Annual Report is the third annual issuance by UMTA on rapid rail transit safety. The 1981 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.



<u>Section</u>	<u>Page</u>
EDITORIAL NOTES.....	vii
DEFINITIONS.....	ix
TRANSIT SERVICE EXPERIENCE, 1980.....	1
RRT HIGHLIGHTS.....	2
RRT PROPERTY STATISTICS, 1975-1980.....	3
RRT ACCIDENTS, INCIDENTS, INJURIES AND FATALITIES, 1975-1980.....	4
RRT PASSENGER STATISTICS, 1980.....	5
NATURE OF RRT PASSENGER CASUALTIES, 1980.....	6
RRT EMPLOYEE STATISTICS, 1980.....	7
RRT NONRESPASSER, TRESPASSER, AND CONTRACTOR STATISTICS, 1980.....	8
CASUALTIES BY CATEGORY OF PERSONS, 1980.....	9
CASUALTIES BY OCCURRENCE, 1980.....	10
RRT FATALITIES, 1980.....	11
MAIN TRACK RRT TRAIN ACCIDENTS, 1980.....	12
YARD AND SIDING TRACK RRT TRAIN ACCIDENTS, 1980.....	13
SUMMARY OF RRT TRAIN ACCIDENTS, 1980.....	14
SUMMARY DATA FOR ALL REPORTING PROPERTIES, 1975-1980.....	15
SUMMARY DATA FOR BART, 1975-1980.....	16
SUMMARY DATA FOR CTA, 1975-1980.....	17
SUMMARY DATA FOR GCRTA, 1975-1980.....	18
SUMMARY DATA FOR MARTA, 1975-1980.....	19
SUMMARY DATA FOR MBTA, 1975-1980.....	20
SUMMARY DATA FOR NYCTA, 1975-1980.....	21
SUMMARY DATA FOR PATCO, 1975-1980.....	22
SUMMARY DATA FOR PATH, 1975-1980.....	23
SUMMARY DATA FOR SEPTA, 1975-1980.....	24
SUMMARY DATA FOR SIRT, 1975-1980.....	25
SUMMARY DATA FOR WMATA, 1975-1980.....	26





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 \$2900\* 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 \$2900\* 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;

- 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.

\*This is the threshold value for 1979 and 1980 reporting. The thresholds for earlier years were lower in proportion to inflationary factors.

## DEFINITIONS

Class D, Nontrespassers - 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.

- 1,521,714,658 passengers were carried by eleven (11) RRT properties.
- Forty-four (44) injuries and one (1) fatality were attributed to train accidents.
- 78% of all train accidents resulted in zero (0) personal casualties.
- Passenger car miles totaled 386,734,058.
- 41,946 RRT employees accounted for 85,307,968 employee hours.

## RRT HIGHLIGHTS

### CASUALTIES

- There were a total of 6,933 casualty occurrences in 1980. Included were eighty-three (83) fatalities, 6,795 injuries and fifty-five (55) occupational illnesses.
- There were 875 passenger casualties in 1980. Included were eighteen (18) fatalities and 857 injuries. 513 passengers (59%) suffered bruises and contusions.
- There were 4,064 employee casualties in 1980. Included were six (6) fatalities, 4,003 injuries and fifty-five (55) occupational illnesses.
- Forty-three (43) trespasser fatalities and sixteen (16) nontrespasser fatalities accounted for 71% of the RRT fatalities occurring in 1980.
- A total of 1,935 injuries were reported for trespassers, nontrespassers and contractor personnel in 1980.
- The most frequent cause (38%) of casualties in 1980 was stumbling, slipping and falling.
- The most frequent cause (49%) of the eighty-three (83) RRT fatalities in 1980 was being struck by or running into locomotives or cars.

### ACCIDENTS

- There were forty-one (41) train accidents, 744 train incidents, and 6,002 non-train incidents in 1980.
- Thirteen (13) accidents were main track related and twenty-eight (28) were yard and siding track related in 1980.
- The most frequent cause (41%) of train accidents in 1980 was human factors - rules and instructions.
- Derailments (20), the most frequent type of accident in 1980, accounted for 49% of all train accidents.
- Total property and equipment dollar damage for train accidents in 1980 was \$1,660,997. Of this, \$905,156 was from main track accidents and \$755,841 was from yard and siding track accidents.

RRT PROPERTY STATISTICS, 1975-1980

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

RRT ACCIDENTS, INCIDENTS, INJURIES AND FATALITIES, 1975-1980

	1975	1976	1977	1978	1979	1980
TRAIN ACCIDENTS	0.11	0.19	0.18	0.16	0.18	0.11
TRAIN INCIDENTS	2.73	3.76	2.41	2.19	2.21	1.92
NON-TRAIN INCIDENTS	15.78	15.22	17.53	16.86	16.60	15.52
FATALITIES	0.16	0.20	0.20	0.14	0.16	0.21
INJURIES	19.42	20.52	21.53	19.36	20.36	17.57

Figures are based on one million passenger car miles.



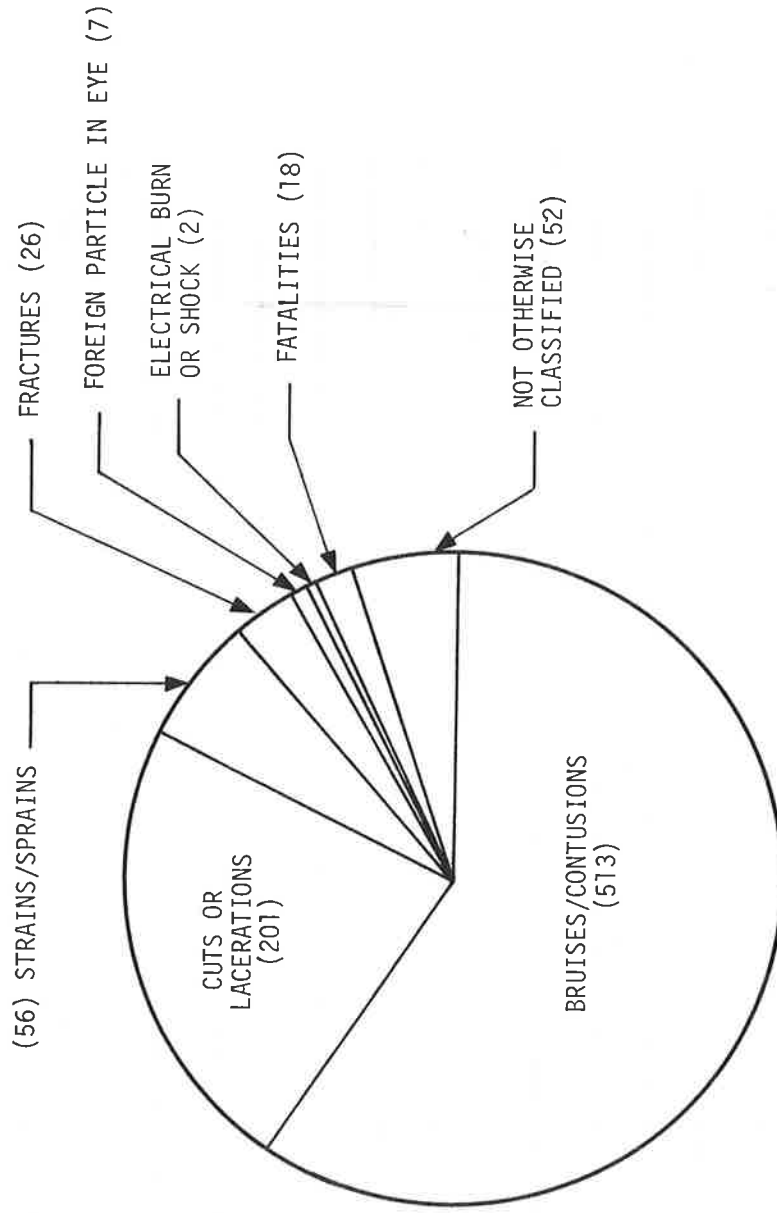
RRT PASSENGER STATISTICS, 1980

TOTAL FOR ALL REPORTING PROPERTIES	PASSENGERS	PASSENGER CAR MILES	PASSENGER FATALITIES	PASSENGER INJURIES
	1,521,714,658	386,734,058	18*	857
BART	45,275,578	26,345,988	0	10
CTA	155,489,514	49,954,098	2	101
GCRTA	11,153,361	3,179,385	0	5
MARTA	20,050,000	4,102,539	0	25
MBTA	87,581,487	11,179,532	0	38
NYCTA	1,008,296,789	247,702,667	14	548
PATCO	11,405,952	4,137,687	0	22
PATH	35,896,027	7,326,479	2	27
SEPTA	65,009,531	13,052,135	0	80
SIRTA	5,918,428	1,964,527	0	0
WMATA	75,637,991	17,789,021	0	1

\*Ten (10) passenger fatalities were due to stumbling, slipping, falling (between cars, and between cars and structures), six (6) were due to assault and two (2) were due to getting on or off cars.

NATURE OF RRT PASSENGER CASUALTIES, 1980

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



RRT EMPLOYEE STATISTICS, 1980

TOTAL FOR ALL REPORTING PROPERTIES	EMPLOYEES	EMPLOYEE HOURS	EMPLOYEE FATALITIES	EMPLOYEE INJURIES	OCCUPATIONAL ILLNESSES
	41,946	85,307,968	6	4,003	55
BART	2,065	4,001,173	0	523	11
CTA	3,578	7,216,434	0	721	11
GCRTA	209	523,736	0	26	0
MARTA	315	698,274	0	92	0
MBTA	1,967	3,688,162	1	226	2
NYCTA	28,805	57,525,444	4	1,881	18
PATCO	315	723,518	0	41	3
PATH	1,002	1,747,099	0	102	2
SEPTA	1,650	3,524,400	1	134	3
SIRTA	247	506,904	0	17	0
WMATA	1,793	5,152,824	0	240	5

RRT NONTRESPASSER, TRESPASSER, AND CONTRACTOR STATISTICS, 1980

	FATALITIES				INJURIES			
	N	T	C	TOT.	N	T	C	TOT.
NONTRESPASSERS (N)				16				1,778
TRESPASSERS (T)				43				157
CONTRACTORS (C)				0				0
TOTAL				<u>59</u>				<u>1,935</u>
BART	0	1	0	1	86	2	0	88
CTA	5	6	0	11	119	4	0	123
GCRTA	0	0	0	0	3	1	0	4
MARTA	0	0	0	0	161	0	0	161
MBTA	1	1	0	2	156	2	0	158
NYCTA	9	34	0	43	1,065	142	0	1,207
PATCO	0	0	0	0	34	0	0	34
PATH	0	1	0	1	3	0	0	3
SEPTA	0	0	0	0	144	6	0	150
SIRTA	0	0	0	0	0	0	0	0
WMATA	1	0	0	1	7	0	0	7

CASUALTIES BY CATEGORY OF PERSONS, 1980

PROPERTY	TYPE PERSON	EMPLOYEE ON DUTY	EMPLOYEE NOT ON DUTY	PASSENGER	NON-TRESPASSER	TRESPASSER	CONTRACTOR	TOTAL
BART		532	2	10	86	3	0	633
CTA		732	0	103	124	10	0	969
GCTRA		26	0	5	3	1	0	35
MARTA		92	0	25	161	0	0	278
MBTA		229	0	38	157	3	0	427
NYCTA		1,901	2	562	1,074	176	0	3,715
PATCO		44	0	22	34	0	0	100
PATH		104	0	29	3	1	0	137
SEPTA		138	0	80	144	6	0	368
SIRTA		17	0	0	0	0	0	17
WMATA		245	0	1	8	0	0	254
TOTAL CASUALTIES		4,060	4	875	1,794	200	0	6,933

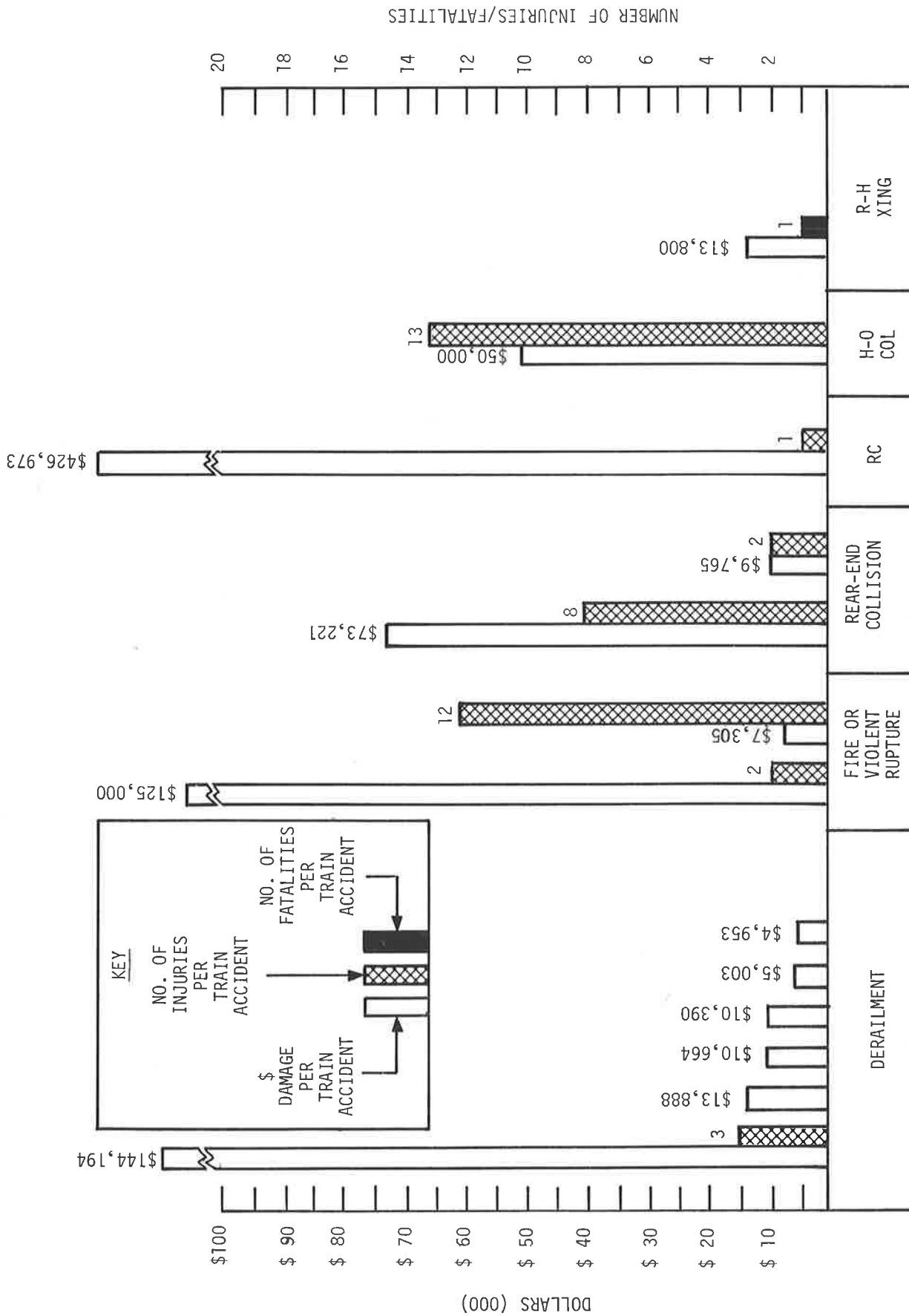
CASUALTIES BY OCCURRENCE, 1980

CATEGORY	TRAIN ACCIDENTS	TRAIN INCIDENTS	NON-TRAIN INCIDENTS	OCCUPATIONAL ILLNESSES	TOTAL
PROPERTY					
BART	0	17	605	11	633
CTA	16	165	777	11	969
GCRTA	2	9	24	0	35
MARTA	0	25	253	0	278
MBTA	0	41	384	2	427
NYCTA	14	476	3,207	18	3,715
PATCO	0	8	89	3	100
PATH	0	17	118	2	137
SEPTA	13	18	334	3	368
SIRTA	0	5	12	0	17
WMATA	0	6	243	5	254
TOTAL	45	787	6,046	55	6,933

RRT FATALITIES, 1980

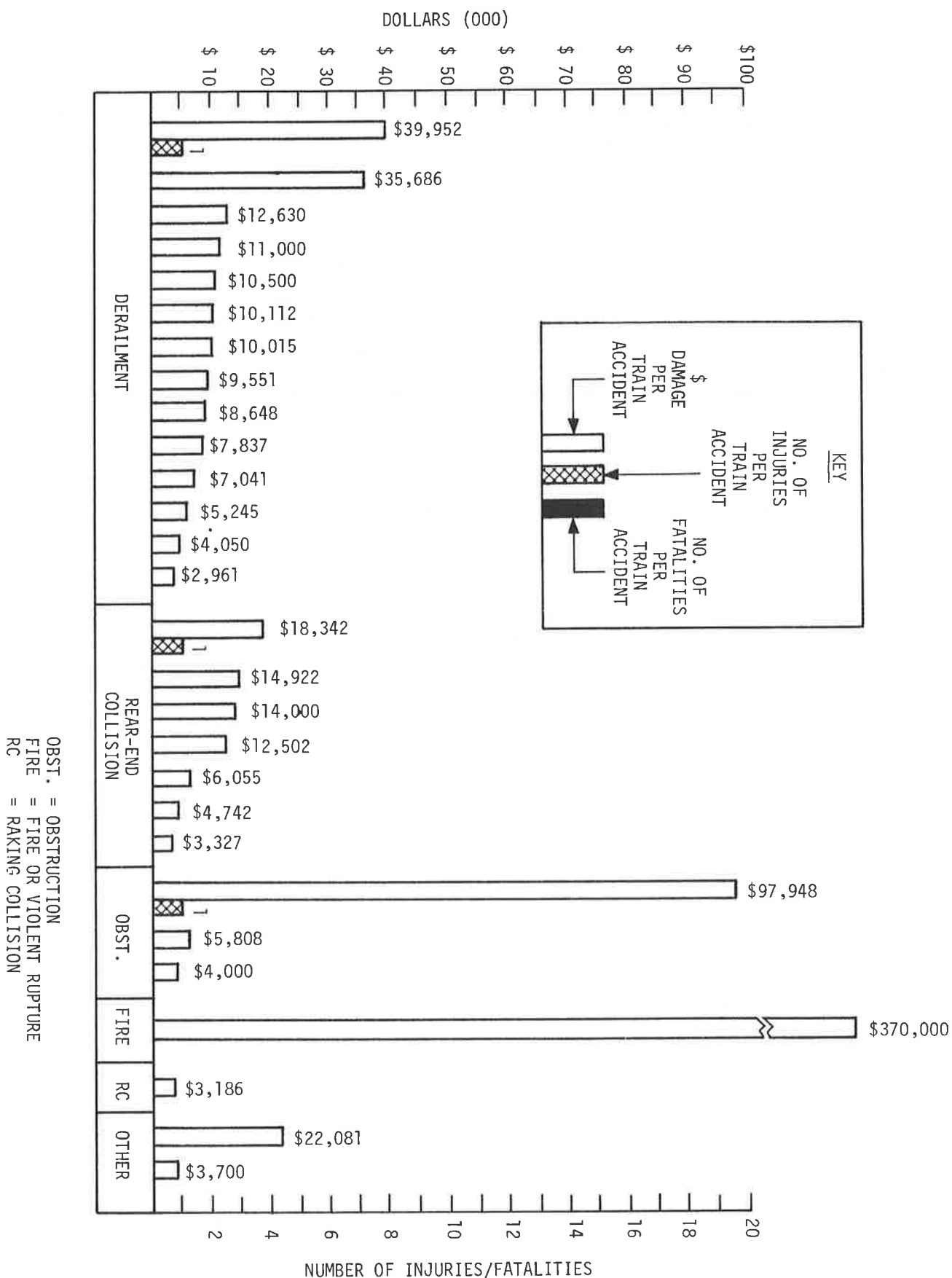
PROPERTY	NO. OF FATALITIES	CASUALTY OCCURRENCE CODES
BART	1	STUMBLING, SLIPPING, FALLING
CTA	5	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
	3	ASSAULT
	2	GETTING ON OR OFF CARS OR LOCOMOTIVES
	1	FLYING/FALLING OBJECTS AND BURNS
	1	RAIL-HIGHWAY GRADE CROSSING ACCIDENTS/INCIDENTS
GCRTA	0	STUMBLING, SLIPPING,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

MAIN TRACK RRT TRAIN ACCIDENTS, 1980



RC = RAKING COLLISION  
H-O COL = HEAD-ON COLLISION  
R-H XING = RAIL HIGHWAY CROSSING





SUMMARY OF RRT TRAIN ACCIDENTS, 1980

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	6	199,092	3	14	175,228	1	20	374,320	4
REAR-END COLLISION	2	82,986	10	7	73,890	1	9	156,876	11
OBSTRUCTION	0	-	-	3	107,756	1	3	107,756	1
FIRE OR VIOLENT RUPTURE	2	132,305	14	1	370,000	0	3	502,305	14
RAKING COLLISION	1	426,973	1	1	3,186	0	2	430,159	1
HEAD-ON COLLISION	1	50,000	13	0	-	-	1	50,000	13
RAIL-HIGHWAY CROSSING	1	13,800	1	0	-	-	1	13,800	1
OTHER	0	-	-	2	25,781	0	2	25,781	0
TOTALS	13	905,156	42	28	755,841	3	41	1,660,997	45

SUMMARY DATA FOR ALL REPORTING PROPERTIES, 1975-1980

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	TOTAL
TRAIN ACCIDENTS	38	75	61	62	67	41	344
TRAIN INCIDENTS	971	1,475	838	757	834	744	5,619
NON-TRAIN INCIDENTS	5,619	5,968	6,082	5,834	6,276	6,002	35,781
FATALITIES FROM							
— TRAIN ACCIDENTS	1	1	12	0	0	1	15
— TRAIN INCIDENTS	38	55	43	33	37	49	255
— NON-TRAIN INCIDENTS	17	24	15	16	25	33	130
TOTAL FATALITIES	56	80	70	49	62	83	400
INJURIES FROM							
— TRAIN ACCIDENTS	276	478	227	87	465	44	1,577
— TRAIN INCIDENTS	994	1,507	850	749	920	738	5,758
— NON-TRAIN INCIDENTS	5,643	6,059	6,393	5,876	6,311	6,013	36,295
TOTAL INJURIES	6,913	8,044	7,470	6,712	7,696	6,795	43,630
OCCUPATIONAL ILLNESSES	31	47	54	43	41	55	271
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-RULES & INSTRUCTIONS	4	4	15	15	12	17	67
2. HUMAN FACTORS-SPEED	5	13	5	2	4	1	30
3. MECH/ELEC-LOCOMOTIVES	2	6	7	1	6	2	24
4. TRACK-FROGS & SWITCHES	5	1	6	4	5	3	24
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	3,485	3,223	3,096	2,710	2,901	2,638	18,053
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,483	1,763	916	843	856	980	6,841
3. MAINTENANCE OF WAYS & STRUCTURES	33	83	1,135	1,052	1,026	933	4,262

SUMMARY DATA FOR BART, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	11	11	7	10	7	2	48
TRAIN INCIDENTS	22	18	7	5	23	17	92
NON-TRAIN INCIDENTS	481	492	459	493	591	592	3,108
FATALITIES FROM							
- TRAIN ACCIDENTS	1	0	0	0	0	0	1
- TRAIN INCIDENTS	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	3	0	0	0	0	1	4
TOTAL FATALITIES	<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>5</u>
INJURIES FROM							
- TRAIN ACCIDENTS	3	0	0	0	41	0	44
- TRAIN INCIDENTS	22	18	7	5	23	17	92
- NON-TRAIN INCIDENTS	482	528	467	498	597	604	3,176
TOTAL INJURIES	<u>507</u>	<u>546</u>	<u>474</u>	<u>503</u>	<u>661</u>	<u>621</u>	<u>3,312</u>
OCCUPATIONAL ILLNESSES	5	8	12	0	7	11	43
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-USE OF BRAKES	0	1	1	4	1	0	7
2. HUMAN FACTORS-RULES & INSTRUCTIONS	1	0	2	1	2	1	7
3. MECH/ELEC-LOCOMOTIVES	1	1	2	1	1	0	6
MAJOR CAUSES OF CASUALTIES							
1. SERVICING OR MAINTENANCE OF EQUIPMENT	187	247	146	151	161	204	1,096
2. STUMBLING, SLIPPING, FALLING	126	114	149	182	157	154	882
3. FLYING/FALLING OBJECTS	26	45	24	35	82	39	251

SUMMARY DATA FOR CTA, 1975-1980

	1975*	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS		19	19	13	27	14	92
TRAIN INCIDENTS		204	167	181	139	157	848
NON-TRAIN INCIDENTS		570	669	760	827	777	3,603
FATALITIES FROM							
— TRAIN ACCIDENTS		1	11	0	0	1	13
— TRAIN INCIDENTS		8	5	2	4	7	26
— NON-TRAIN INCIDENTS		5	4	7	8	5	29
TOTAL FATALITIES		14	20	9	12	13	68
INJURIES FROM							
— TRAIN ACCIDENTS		459	208	13	16	15	711
— TRAIN INCIDENTS		199	162	180	136	158	835
— NON-TRAIN INCIDENTS		566	669	758	822	772	3,587
TOTAL INJURIES		1,224	1,039	951	974	945	5,133
OCCUPATIONAL ILLNESSES		0	2	6	8	11	27
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-RULES & INSTRUCTIONS		0	2	3	5	7	17
2. MECH/ELEC-LOCOMOTIVES		3	2	0	4	2	11
3. HUMAN FACTORS-MISCELLANEOUS		0	0	6	4	0	10
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING		229	272	315	273	281	1,370
2. SERVICING OR MAINTENANCE OF EQUIPMENT		112	103	114	127	124	580
3. MAINTENANCE OF WAYS & STRUCTURES		35	90	113	118	139	495

\*Did not report in 1975.

SUMMARY DATA FOR GCRTA, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	0	5	5	0	2	1	13
TRAIN INCIDENTS	1	7	16	7	4	9	44
NON-TRAIN INCIDENTS	55	25	29	20	19	24	172
FATALITIES FROM							
- TRAIN ACCIDENTS	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0	0
INJURIES FROM							
- TRAIN ACCIDENTS	0	9	4	0	0	2	15
- TRAIN INCIDENTS	1	7	16	7	4	9	44
- NON-TRAIN INCIDENTS	55	29	29	20	23	24	180
TOTAL INJURIES	56	45	49	27	27	35	239
OCCUPATIONAL ILLNESSES	2	0	0	0	0	0	2
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-RULES & INSTRUCTIONS	0	1	2	0	0	0	3
2. HUMAN FACTORS-SPEED	0	3	0	0	0	0	3
3. TRACK-SIGNAL & COMMUNICATION FAILURES	0	0	2	0	0	0	2
4. MECH/ELEC-GENERAL FAILURE	0	0	1	0	1	0	2
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	25	20	24	10	14	11	104
2. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	2	2	4	10	26
3. FLYING/FALLING OBJECTS	10	3	3	2	1	2	21

SUMMARY DATA FOR MARTA, 1975-1980

	1975	1976	1977	1978	1979*	1980	TOTAL
TRAIN ACCIDENTS					0	0	0
TRAIN INCIDENTS					3	25	28
NON-TRAIN INCIDENTS					22	253	275
FATALITIES FROM							
— TRAIN ACCIDENTS					0	0	0
— TRAIN INCIDENTS					0	0	0
— NON-TRAIN INCIDENTS					0	0	0
TOTAL FATALITIES					0	0	0
INJURIES FROM							
— TRAIN ACCIDENTS					0	0	0
— TRAIN INCIDENTS					3	25	28
— NON-TRAIN INCIDENTS					22	253	275
TOTAL INJURIES					25	278	303
OCCUPATIONAL ILLNESSES					0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS							
N/A							
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING					21	134	155
2. GETTING ON OR OFF CARS					0	18	18
3. WINDOWS, DOORS, ETC.					1	0	1
4. OPERATING LOCOMOTIVES					1	0	1

\*Initiated rapid transit service on June 30, 1979.

SUMMARY DATA FOR MBTA, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	7	11	4	8	3	2	35
TRAIN INCIDENTS	23	31	64	43	36	41	238
NON-TRAIN INCIDENTS	399	451	365	377	326	384	2,302
FATALITIES FROM							
- TRAIN ACCIDENTS	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	3	0	1	4
- NON-TRAIN INCIDENTS	0	0	0	0	0	2	2
TOTAL FATALITIES	<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>3</u>	<u>6</u>
INJURIES FROM							
- TRAIN ACCIDENTS	269	3	0	4	0	0	276
- TRAIN INCIDENTS	23	31	64	40	36	40	234
- NON-TRAIN INCIDENTS	399	453	365	377	330	382	2,306
TOTAL INJURIES	<u>691</u>	<u>487</u>	<u>429</u>	<u>421</u>	<u>366</u>	<u>422</u>	<u>2,816</u>
OCCUPATIONAL ILLNESSES	4	4	3	4	3	2	20
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-SPEED	2	0	1	1	1	0	5
2. MECH/ELEC-DOORS	1	3	0	0	0	0	4
3. TRACK-FROGS & SWITCHES	1	0	1	1	0	0	3
4. TRACK-ROADBED DEFECTS	0	1	0	1	1	0	3
5. MECH/ELEC-LOCOMOTIVES	1	2	0	0	0	0	3
6. MECH/ELEC-TRACK COMPONENTS	0	0	0	2	1	0	3
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	414	199	186	204	172	193	1,368
2. SERVICING OR MAINTENANCE OF EQUIPMENT	96	95	47	31	41	45	355
3. ASSAULT	51	36	44	40	39	51	261



SUMMARY DATA FOR NYCTA, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	13	16	18	28	21	19	115
TRAIN INCIDENTS	844	1,136	497	428	519	442	3,866
NON-TRAIN INCIDENTS	4,153	3,760	3,733	3,477	3,611	3,185	21,919
FATALITIES FROM							
TRAIN ACCIDENTS	0	0	0	0	0	0	0
TRAIN INCIDENTS	37	45	30	26	30	38	206
NON-TRAIN INCIDENTS	14	15	10	9	16	23	87
TOTAL FATALITIES	<u>51</u>	<u>60</u>	<u>40</u>	<u>35</u>	<u>46</u>	<u>61</u>	<u>293</u>
INJURIES FROM							
TRAIN ACCIDENTS	1	5	9	21	3	14	53
TRAIN INCIDENTS	868	1,174	522	426	506	438	3,934
NON-TRAIN INCIDENTS	<u>4,175</u>	<u>3,815</u>	<u>4,037</u>	<u>3,512</u>	<u>3,635</u>	<u>3,184</u>	<u>22,358</u>
TOTAL INJURIES	5,044	<u>4,994</u>	<u>4,568</u>	<u>3,959</u>	<u>4,144</u>	<u>3,636</u>	<u>26,345</u>
OCCUPATIONAL ILLNESSES	9	23	28	16	19	18	113
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS- RULES & INSTRUCTIONS	1	0	8	11	4	8	32
2. TRACK-TRACK GEOMETRY DEFECTS	4	4	0	3	1	2	14
3. MECH/ELEC-WHEELS	0	0	3	3	5	1	12
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	2,664	2,374	1,973	1,604	1,814	1,537	11,966
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,037	1,075	507	466	362	385	3,832
3. MAINTENANCE OF WAYS & STRUCTURES	1	0	787	697	692	579	2,756

SUMMARY DATA FOR PATCO, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	0	2
TRAIN INCIDENTS	7	0	12	10	36	8	73
NON-TRAIN INCIDENTS	89	78	80	79	104	88	518
FATALITIES FROM							
- TRAIN ACCIDENTS	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	1	0	1	0	2
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	1	0	1	0	2
INJURIES FROM							
- TRAIN ACCIDENTS	3	0	0	0	0	0	3
- TRAIN INCIDENTS	7	0	11	10	36	8	72
- NON-TRAIN INCIDENTS	90	78	80	79	104	89	520
TOTAL INJURIES	100	78	91	89	140	97	595
OCCUPATIONAL ILLNESSES	1	2	0	0	0	3	6
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-USE OF SWITCHES	1	0	0	0	0	0	1
2. MISCELLANEOUS CAUSES	0	1	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	43	38	44	40	61	36	262
2. SERVICING OR MAINTENANCE OF EQUIPMENT	17	17	12	12	9	11	78
3. MAINTENANCE OF WAYS & STRUCTURES	0	0	10	4	12	18	44

SUMMARY DATA FOR PATH, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	2	8	2	1	2	0	15
TRAIN INCIDENTS	24	36	24	41	27	16	168
NON-TRAIN INCIDENTS	110	150	191	147	167	118	883
FATALITIES FROM							
- TRAIN ACCIDENTS	0	0	1	0	0	0	1
- TRAIN INCIDENTS	1	0	2	1	0	2	6
- NON-TRAIN INCIDENTS	0	1	0	0	1	1	3
TOTAL FATALITIES	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>10</u>
INJURIES FROM							
- TRAIN ACCIDENTS	0	2	0	0	15	0	17
- TRAIN INCIDENTS	23	36	22	40	27	15	163
- NON-TRAIN INCIDENTS	110	149	191	151	166	117	884
TOTAL INJURIES	<u>133</u>	<u>187</u>	<u>213</u>	<u>191</u>	<u>208</u>	<u>132</u>	<u>1,064</u>
OCCUPATIONAL ILLNESSES	1	1	8	14	1	2	27
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-SPEED	0	5	0	1	0	0	6
2. HUMAN FACTORS-RULES & INSTRUCTIONS	1	2	1	0	0	0	4
3. TRACK-TRACK GEOMETRY DEFECTS	0	1	0	0	1	0	2
4. TRACK-FROGS & SWITCHES	1	0	0	0	1	0	2
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	44	36	71	58	72	40	321
2. SERVICING OR MAINTENANCE OF EQUIPMENT	39	74	26	19	26	37	221
3. MAINTENANCE OF WAYS & STRUCTURES	8	4	72	69	46	12	211

SUMMARY DATA FOR SEPTA, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	3	3	2	2	4	1	15
TRAIN INCIDENTS	49	41	35	37	30	18	210
NON-TRAIN INCIDENTS	310	410	345	317	301	332	2,015
FATALITIES FROM							
- TRAIN ACCIDENTS	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	2	5	1	2	0	10
- NON-TRAIN INCIDENTS	0	3	1	0	0	1	5
TOTAL FATALITIES	<u>0</u>	<u>5</u>	<u>6</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>15</u>
INJURIES FROM							
- TRAIN ACCIDENTS	0	0	2	49	383	13	447
- TRAIN INCIDENTS	49	40	30	36	132	18	305
- NON-TRAIN INCIDENTS	310	408	344	317	302	333	2,014
TOTAL INJURIES	<u>359</u>	<u>448</u>	<u>376</u>	<u>402</u>	<u>817</u>	<u>364</u>	<u>2,766</u>
OCCUPATIONAL ILLNESSES	9	7	0	0	0	3	19
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. HUMAN FACTORS-SPEED	0	2	1	0	0	0	3
2. HUMAN FACTORS-USE OF SWITCHES	1	1	0	0	0	0	2
3. HUMAN FACTORS-SIGNALS	0	0	0	0	1	1	2
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING	160	196	221	235	223	194	1,229
2. RAIL EQUIPMENT AND RAIL	0	0	2	49	438	0	489
3. HIGHWAY GRADE CROSSING							
3. SERVICING OR MAINTENANCE OF	93	114	25	22	31	53	338
EQUIPMENT							

SUMMARY DATA FOR SIRTA, 1975-1980

	1975	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	0	2
TRAIN INCIDENTS	1	1	7	0	8	5	22
NON-TRAIN INCIDENTS	22	18	16	3	29	12	100
FATALITIES FROM							
- TRAIN ACCIDENTS	0	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	0	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0	0
INJURIES FROM							
- TRAIN ACCIDENTS	0	0	0	0	0	0	0
- TRAIN INCIDENTS	1	1	7	0	8	5	22
- NON-TRAIN INCIDENTS	22	19	16	3	29	12	101
TOTAL INJURIES	23	20	23	3	37	17	123
OCCUPATIONAL ILLNESSES	0	0	0	0	0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. TRACK-FROGS & SWITCHES	0	1	0	0	0	0	1
2. HUMAN FACTORS-RULES & INSTRUCTIONS	1	0	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES							
1. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	10	3	10	1	32
2. STUMBLING, SLIPPING, FALLING	9	3	0	0	3	4	19
3. FLYING/FALLING OBJECTS	3	5	3	0	5	1	17

SUMMARY DATA FOR WMATA, 1975-1980

	1975*	1976	1977	1978	1979	1980	TOTAL
TRAIN ACCIDENTS		0	4	0	1	2	7
TRAIN INCIDENTS		1	9	5	9	6	30
NON-TRAIN INCIDENTS		14	195	161	279	237	886
FATALITIES FROM							
- TRAIN ACCIDENTS		0	0	0	0	0	0
- TRAIN INCIDENTS		0	0	0	0	1	1
- NON-TRAIN INCIDENTS		0	0	0	0	0	0
TOTAL FATALITIES		0	0	0	0	1	1
INJURIES FROM							
- TRAIN ACCIDENTS		0	4	0	7	0	11
- TRAIN INCIDENTS		1	9	5	9	5	29
- NON-TRAIN INCIDENTS		14	195	161	281	243	894
TOTAL INJURIES		15	208	166	297	248	934
OCCUPATIONAL ILLNESSES		2	1	3	3	5	14
MAJOR CAUSES OF TRAIN ACCIDENTS							
1. MECH/ELEC-LOCOMOTIVES		0	3	0	0	0	3
2. MISCELLANEOUS CAUSES		0	1	0	0	1	2
3. HUMAN FACTORS-RULES & INSTRUCTIONS		0	0	0	1	0	1
4. HUMAN FACTORS-MISCELLANEOUS		0	0	0	0	1	1
MAJOR CAUSES OF CASUALTIES							
1. STUMBLING, SLIPPING, FALLING		14	156	63	112	54	399
2. SERVICING OR MAINTENANCE OF EQUIPMENT		27	38	23	85	110	283
3. MAINTENANCE OF WAYS & STRUCTURES		2	56	49	42	53	202

\*Not yet in service in 1975.  
 Note: Initiated Red Line service March 26, 1976; initiated Blue Line service, July 1, 1977.

300 copies