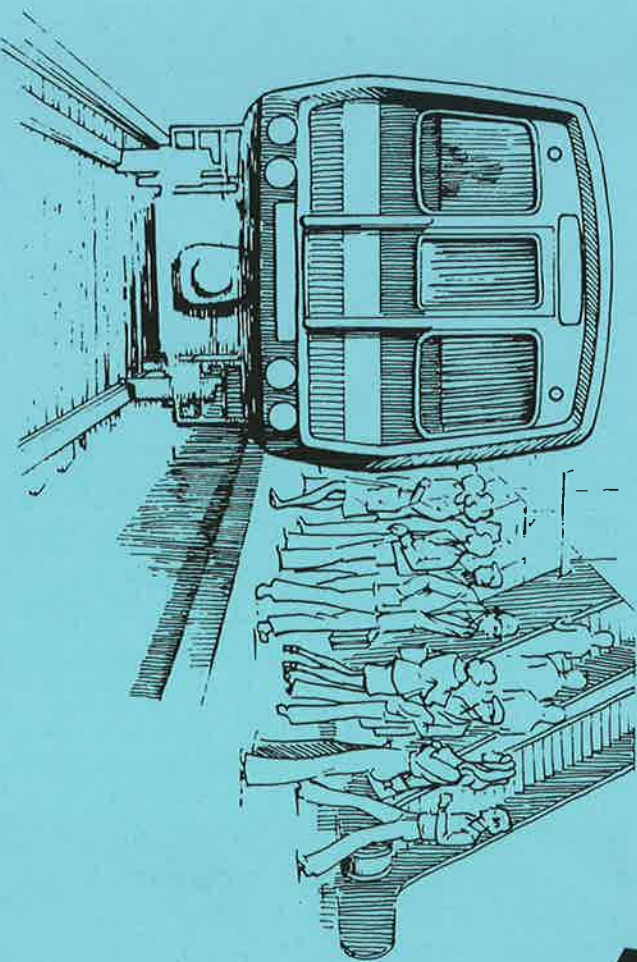


RAIL TRANSIT SAFETY



1979 ANNUAL REPORT

PREPARED BY
U.S. DEPARTMENT OF TRANSPORTATION
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CAMBRIDGE, MA 02142



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16. Abstract The <u>Rail Transit Safety 1979 Annual Report</u> is a compendium and analysis of rail rapid transit accident/incident and casualty statistics reported by the eleven rail rapid transit properties in the United States during 1979.					
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The data used to prepare this report have been taken from information submitted by rail rapid 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 1979 Annual Report is the second annual issuance by UMTA on rail rapid transit safety. The 1980 Report will also be based on information submitted by transit authorities to the FRA.

Beginning in 1981, all reports will be based on information and data submitted to UMTA under its new safety reporting and analysis system.

Light rail transit (LRT) authorities have not been required to report safety information to the FRA. Therefore, no LRT safety data are contained in this report. LRT safety data will first be reported under the new UMTA safety reporting and analysis system.

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The statistics in this report are derived from the Rail Rapid 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 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 reporting. The thresholds for earlier years are lower in proportion to inflationary factors.

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.

- 1,538,806,168 passengers were carried by eleven (11) RRT properties.
- 465 injuries and zero (0) fatalities were attributed to train accidents.
- 82% of all train accidents resulted in zero (0) personal injuries.
- Passenger car miles totaled 377,856,799.
- 41,333 RRT employees accounted for 84,959,456 employee hours.

RRT HIGHLIGHTS

CASUALTIES

- 7,799 casualties occurred in 1979 - sixty-two (62) fatalities, 7,696 injuries, and forty-one (41) occupational illnesses.
- There were 1,372 passenger casualties in 1979 - five (5) fatalities and 1,367 injuries; 573 passengers (42%) suffered bruises and contusions.
- There were 4,298 employee casualties in 1979 - five (5) fatalities, 4,252 injuries, and forty-one (41) occupational illnesses.
- Thirty-nine (39) trespassers and thirteen (13) nontrespassers accounted for 84% of the RRT fatalities occurring in 1979.
- 2,077 injuries were reported for nontrespassers (1,908), trespassers (169), and contractor personnel (0) in 1979.
- The most frequent cause (37%) of casualties in 1979 was stumbling, slipping and falling.
- The most frequent cause (53%) of the sixty-two (62) RRT fatalities in 1979 was being struck by or running into locomotives or cars.

ACCIDENTS

- There were sixty-seven (67) train accidents, 834 train incidents, and 6,276 non-train incidents in 1979.
- Thirty-three (33) accidents were main track related and thirty-four (34) were yard and siding track related in 1979.
- The most frequent cause (18%) of train accidents in 1979 was human factors - rules and instructions.
- Derailments (29), the most frequent type of accident in 1979, accounted for 43% of all train accidents.
- Total property and equipment dollar damage for train accidents in 1979 was \$8,961,208. Of this, \$7,649,890 was from main track accidents and \$1,311,318 was from yard and siding track accidents.
- 77% (\$6,904,674) of total dollar damage in 1979 was due to fires or violent ruptures.
- 88% (409) of the injuries suffered in train accidents in 1979 were a result of three (3) fires or violent ruptures.

RRT PROPERTY STATISTICS, 1975-1979

The number of passengers carried in each year is measured by the "number of passengers transported" as reported in item 8C of FRA Form 6180-55. The number of passenger car miles is measured by the number of "locomotive train miles" as reported in item 7A of FRA Form 6180-55.

	1975	1976	1977	1978	1979
TRANSIT PROPERTIES REPORTING	8	10	10	10	11
PASSENGERS CARRIED	1,277M	1,365M	1,358M	1,461M	1,539M
PASSENGER CAR MILES	356M	392M	347M	346M	378M

RRT ACCIDENTS, INCIDENTS, INJURIES AND FATALITIES, 1975-1979

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

Figures are based on one million passenger car miles.

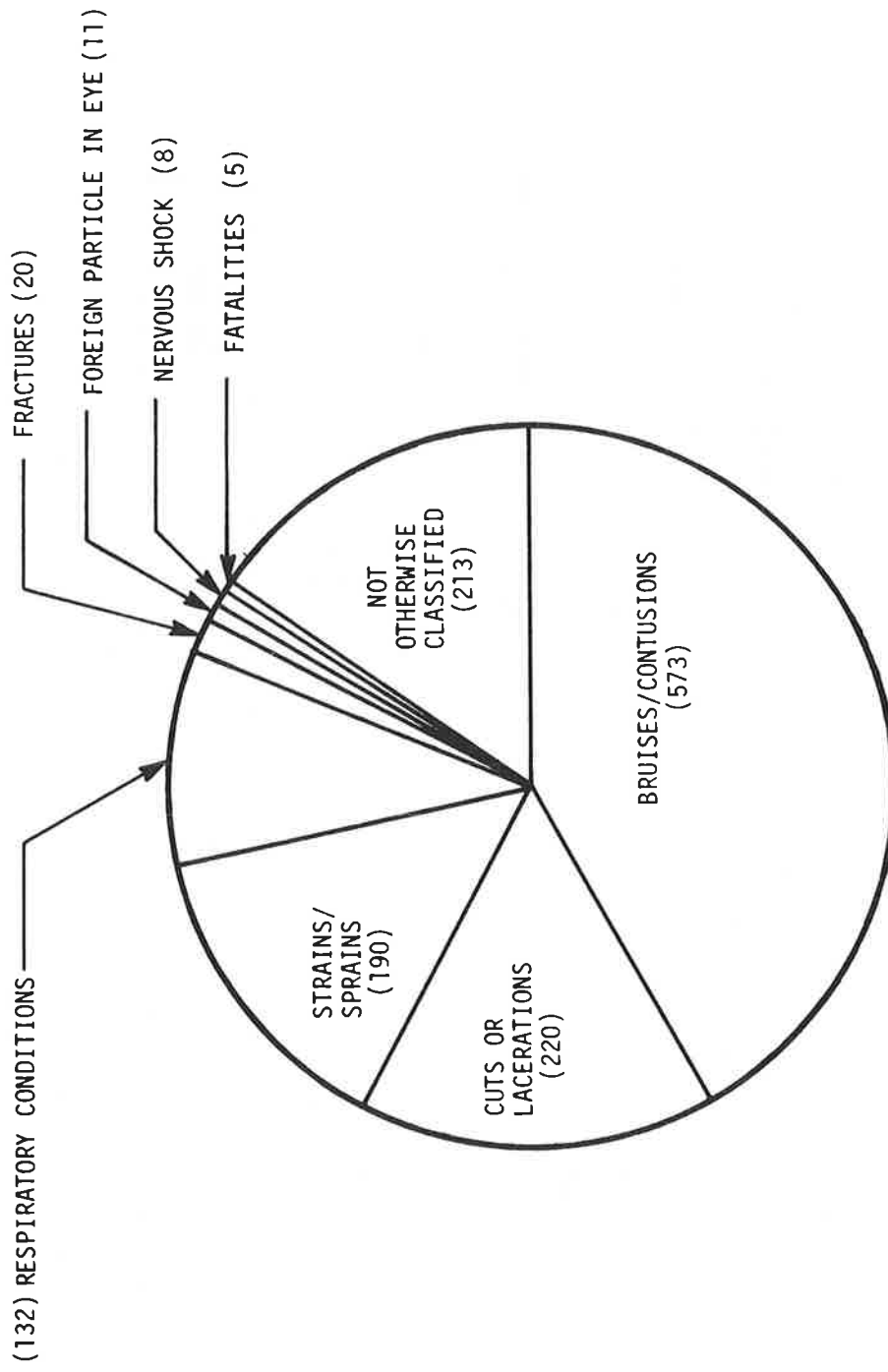
RRT PASSENGER STATISTICS, 1979

TOTAL FOR ALL REPORTING PROPERTIES	PASSENGERS	PASSENGER CAR MILES	PASSENGER FATALITIES	PASSENGER INJURIES
	1,538,806,168	377,856,799	5	1,367
BART	32,019,416	20,332,890	0	56
CTA	140,566,862	48,597,373	1*	89
GCRTA	10,739,077	3,046,971	0	3
MARTA	2,661,300	739,701	0	2
MBTA	83,916,778	10,496,391	0	35
NYCTA	1,076,535,062	247,863,363	4*	573
PATCO	11,107,062	3,982,990	0	47
PATH	44,261,025	9,203,253	0	47
SEPTA	67,295,321	16,585,326	0	503
SIRTA	5,449,618	1,939,507	0	0
WMATA	64,254,647	15,069,034	0	12

*Three (3) passenger fatalities were due to stumbling, slipping, falling (between cars, and between cars and structures), one (1) was due to assault and one (1) was due to other causes.

NATURE OF RRT PASSENGER CASUALTIES, 1979

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



RRT EMPLOYEE STATISTICS, 1979

	EMPLOYEES	EMPLOYEE HOURS	EMPLOYEE FATALITIES	EMPLOYEE INJURIES	OCCUPATIONAL ILLNESSES
TOTAL FOR ALL REPORTING PROPERTIES	41,333	84,959,456	5	4,252	41
BART	2,022	3,204,370	0	517	7
CTA	3,523	7,676,231	0	767	8
GCRTA	230	603,000	0	14	0
MARTA	271	295,872	0	3	0
MBTA	1,890	3,405,819	0	210	3
NYCTA	28,254	58,767,441	5	2,194	19
PATCO	309	643,706	0	41	0
PATH	1,001	2,252,397	0	129	1
SEPTA	1,650	3,577,500	0	119	0
SIRTA	247	506,088	0	37	0
WMATA	1,936	4,027,032	0	221	3

RRT NONTRESPASSER, TRESPASSER, AND CONTRACTOR STATISTICS, 1979

	FATALITIES				INJURIES			
	N	T	C	TOT.	N	T	C	TOT.
NONTRESPASSERS (N)				13				1,908
TRESPASSERS (T)				39				169
CONTRACTORS (C)				0				0
TOTAL				<u>52</u>				<u>2,077</u>
BART	0	0	0	0	87	1	0	88
CTA	3	8	0	11	117	1	0	118
GCRTA	0	0	0	0	10	0	0	10
MARTA	0	0	0	0	20	0	0	20
MBTA	0	0	0	0	121	0	0	121
NYCTA	10	27	0	37	1,215	162	0	1,377
PATCO	0	1	0	1	52	0	0	52
PATH	0	1	0	1	32	0	0	32
SEPTA	0	2	0	2	190	5	0	195
SIRTA	0	0	0	0	0	0	0	0
WMATA	0	0	0	0	64	0	0	64

CASUALTIES BY CATEGORY OF PERSONS, 1979

PROPERTY	TYPE PERSON	EMPLOYEE ON DUTY	EMPLOYEE NOT ON DUTY	PASSENGER	NON-TRESPASSER	TRESPASSER	CONTRACTOR	TOTAL
BART		524	0	56	87	1	0	668
CTA		775	0	90	120	9	0	994
GCRTA		14	0	3	10	0	0	27
MARTA		3	0	2	20	0	0	25
MBTA		212	1	35	121	0	0	369
NYCTA		2,218	0	577	1,225	189	0	4,209
PATCO		41	0	47	52	1	0	141
PATH		128	2	47	32	1	0	210
SEPTA		108	11	503	190	7	0	819
SIRTA		37	0	0	0	0	0	37
MMATA		224	0	12	64	0	0	300
TOTAL CASUALTIES		4,284	14	1,372	1,921	208	0	7,799

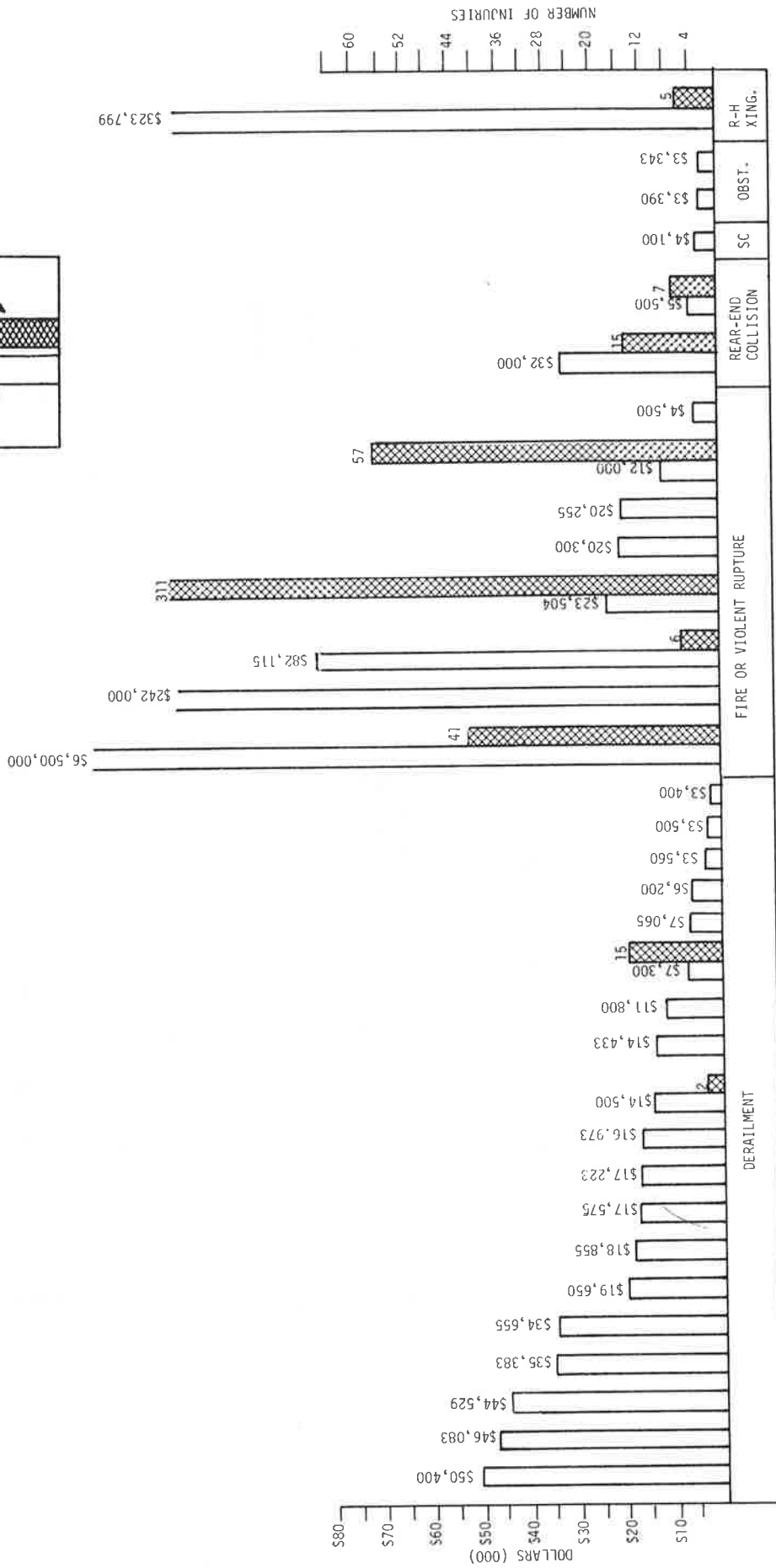
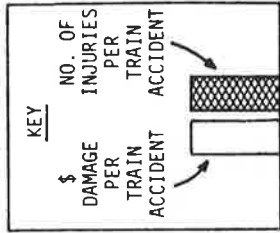
CASUALTIES BY OCCURRENCE, 1979

CATEGORY		TRAIN ACCIDENTS	TRAIN INCIDENTS	NON-TRAIN INCIDENTS	OCCUPATIONAL ILLNESSES	TOTAL
PROPERTY						
BART	41	23	597	7	668	
CTA	16	140	830	8	994	
GCRTA	0	4	23	0	27	
MARTA	0	3	22	0	25	
MBTA	0	36	330	3	369	
NYCTA	3	536	3,651	19	4,209	
PATCO	0	37	104	0	141	
PATH	15	27	167	1	210	
SEPTA	383	134	302	0	819	
SIRTA	0	8	29	0	37	
WMATA	7	9	281	3	300	
TOTAL	465	957	6,336	41	7,799	

RRT FATALITIES, 1979

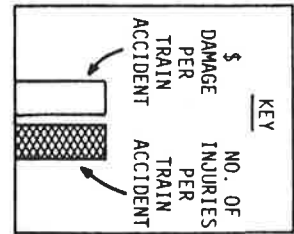
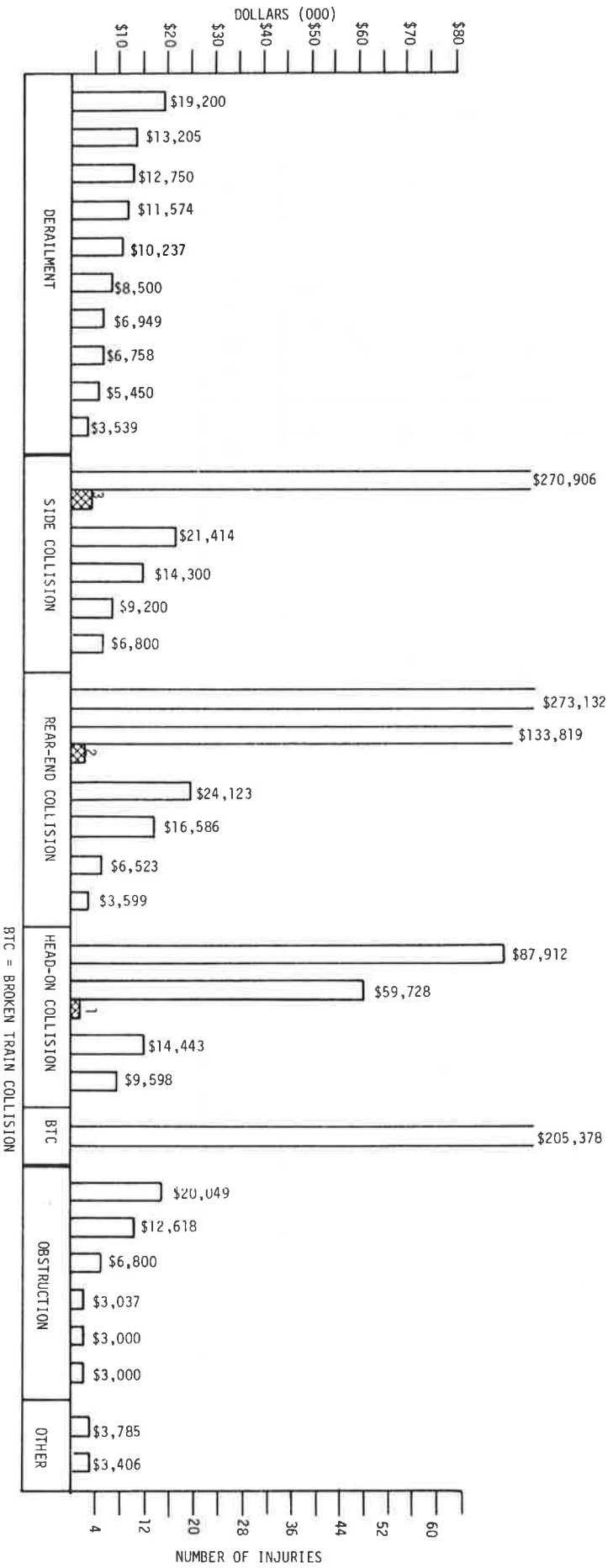
PROPERTY	NO. OF FATALITIES	CASUALTY OCCURRENCE CODES
BART	0	
CTA	5	FLYING/FALLING OBJECTS AND BURNS
	4	ASSAULT
	3	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
GCRTA	0	
MARTA	0	
MBTA	0	
NYCTA	27	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
	10	ASSAULT
	6	STUMBLING, SLIPPING, FALLING
	3	OTHER
PATCO	1	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
PATH	1	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
SEPTA	1	STRUCK BY OR RAN INTO LOCOMOTIVES OR CARS
SIRTA	0	OTHER
WMATA	0	

MAIN TRACK RRT TRAIN ACCIDENTS, 1979



SC = SIDE COLLISION
 OBST. = OBSTRUCTION
 R-H XING = RAIL HIGHWAY CROSSING

YARD AND SIDING TRACK RRT TRAIN ACCIDENTS, 1979



SUMMARY OF RRT TRAIN ACCIDENTS, 1979

TYPE OF ACCIDENT	MAIN TRACK ACCIDENTS (REVENUE)			YARD AND SIDING TRACK ACCIDENTS (NON-REVENUE)			TOTAL ACCIDENTS		
	NO.	TOTAL \$ DAMAGE	TOTAL NO. OF INJURIES	NO.	TOTAL \$ DAMAGE	TOTAL NO. OF INJURIES	NO.	TOTAL \$ DAMAGE	TOTAL NO. OF INJURIES
DERAILMENT	19	373,084	17	10	98,162	0	29	471,246	17
HEAD-ON COLLISION	0	-	-	4	171,681	1	4	171,681	1
REAR-END COLLISION	2	37,500	22	6	457,782	2	8	495,282	24
SIDE COLLISION	1	4,100	0	5	322,620	3	6	326,720	3
BROKEN TRAIN COLLISION	0	-	-	1	205,378	0	1	205,378	0
FIRE OR VIOLENT RUPTURE	8	6,904,674	415	0	-	-	8	6,904,674	415
OBSTRUCTION	2	6,733	0	6	48,504	0	8	55,237	0
RAIL-HIGHWAY CROSSING	1	323,799	5	0	-	-	1	323,799	5
OTHER	0	-	-	2	7,191	0	2	7,191	0
TOTALS	33	7,649,890	459	34	1,311,318	6	67	8,961,208	465

SUMMARY DATA FOR ALL REPORTING PROPERTIES, 1975-1979

Data for the individual rail rapid 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	TOTAL
TRAIN ACCIDENTS	38	75	61	62	67	303
TRAIN INCIDENTS	971	1,475	838	757	834	4,875
NON-TRAIN INCIDENTS	5,619	5,968	6,082	5,834	6,276	29,779
FATALITIES FROM						
— TRAIN ACCIDENTS	1	1	12	0	0	14
— TRAIN INCIDENTS	38	55	43	33	37	206
— NON-TRAIN INCIDENTS	17	24	15	16	25	97
TOTAL FATALITIES	56	80	70	49	62	317
INJURIES FROM						
— TRAIN ACCIDENTS	276	478	227	87	465	1,533
— TRAIN INCIDENTS	994	1,507	850	749	920	5,020
— NON-TRAIN INCIDENTS	5,643	6,059	6,393	5,876	6,311	30,282
TOTAL INJURIES	6,913	8,044	7,470	6,712	7,696	36,835
OCCUPATIONAL ILLNESSES	31	47	54	43	41	216
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-RULES & INSTRUCTIONS	4	4	15	15	12	50
2. HUMAN FACTORS-SPEED	5	13	5	2	4	29
3. MECH/ELEC-LOCOMOTIVES	2	6	7	1	6	22
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	3,485	3,223	3,096	2,710	2,901	15,415
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,483	1,763	916	843	856	5,861
3. MAINTENANCE OF WAYS & STRUCTURES	33	83	1,135	1,052	1,026	3,329

SUMMARY DATA FOR BART, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	11	11	7	10	7	46
TRAIN INCIDENTS	22	18	7	5	23	75
NON-TRAIN INCIDENTS	481	492	459	493	591	2,516
FATALITIES FROM						
- TRAIN ACCIDENTS	1	0	0	0	0	1
- TRAIN INCIDENTS	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	3	0	0	0	0	3
TOTAL FATALITIES	<u>4</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>4</u>
INJURIES FROM						
- TRAIN ACCIDENTS	3	0	0	0	41	44
- TRAIN INCIDENTS	22	18	7	5	23	75
- NON-TRAIN INCIDENTS	482	528	467	498	597	2,572
TOTAL INJURIES	<u>507</u>	<u>546</u>	<u>474</u>	<u>503</u>	<u>661</u>	<u>2,691</u>
OCCUPATIONAL ILLNESSES	5	8	12	0	7	32
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-USE OF BRAKES	0	1	1	4	1	7
2. MECH/ELEC-LOCOMOTIVES	1	1	2	1	1	6
3. HUMAN FACTORS-RULES & INSTRUCTIONS	1	0	2	1	2	6
MAJOR CAUSES OF CASUALTIES						
1. SERVICING OR MAINTENANCE OF EQUIPMENT	187	247	146	151	161	892
2. STUMBLING, SLIPPING, FALLING	126	114	149	182	157	728
3. FLYING/FALLING OBJECTS	26	45	24	35	82	212

SUMMARY DATA FOR CTA, 1975-1979

	1975*	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS		19	19	13	27	78
TRAIN INCIDENTS		204	167	181	139	691
NON-TRAIN INCIDENTS		570	669	760	827	2,826
FATALITIES FROM						
— TRAIN ACCIDENTS		1	11	0	0	12
— TRAIN INCIDENTS		8	5	2	4	19
— NON-TRAIN INCIDENTS		5	4	7	3	24
TOTAL FATALITIES		14	20	9	12	55
INJURIES FROM						
— TRAIN ACCIDENTS		459	208	13	16	696
— TRAIN INCIDENTS		199	162	180	136	677
— NON-TRAIN INCIDENTS		566	669	758	822	2,815
TOTAL INJURIES		1,224	1,039	951	974	4,188
OCCUPATIONAL ILLNESSES		0	2	6	8	16
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS—RULES & INSTRUCTIONS		0	2	3	5	10
2. HUMAN FACTORS—MISCELLANEOUS		0	0	6	4	10
3. MECH/ELEC—LOCOMOTIVES		3	2	0	4	9
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING		229	272	315	273	1,089
2. SERVICING OR MAINTENANCE OF EQUIPMENT		112	103	114	127	456
3. WINDOWS, DOORS, ETC.		62	87	108	119	376

*Did not report in 1975.

SUMMARY DATA FOR GCRTA, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	0	5	5	0	2	12
TRAIN INCIDENTS	1	7	16	7	4	35
NON-TRAIN INCIDENTS	55	25	29	20	19	148
FATALITIES FROM						
- TRAIN ACCIDENTS	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	0	0	0
- NON-TRAIN INCIDENTS	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0
INJURIES FROM						
- TRAIN ACCIDENTS	0	9	4	0	0	13
- TRAIN INCIDENTS	1	7	16	7	4	35
- NON-TRAIN INCIDENTS	55	29	29	20	23	156
TOTAL INJURIES	56	45	49	27	27	204
OCCUPATIONAL ILLNESSES	2	0	0	0	0	2
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-RULES AND INSTRUCTIONS	0	1	2	0	0	3
2. HUMAN FACTORS-SPEED	0	3	0	0	0	3
3. TRACK-SIGNAL & COMMUNICATION FAILURES	0	0	2	0	0	2
4. MECH/ELEC-GENERAL FAILURE	0	0	1	0	1	2
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	25	20	24	10	14	93
2. FLYING/FALLING OBJECTS	10	3	3	2	1	19
3. GETTING ON OR OFF CARS	2	3	3	6	2	16
4. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	2	2	4	16

SUMMARY DATA FOR MARTA, 1975-1979

	1975	1976	1977	1978	1979*	TOTAL
TRAIN ACCIDENTS					0	0
TRAIN INCIDENTS					3	3
NON-TRAIN INCIDENTS					22	22
FATALITIES FROM						
- TRAIN ACCIDENTS					0	0
- TRAIN INCIDENTS					0	0
- NON-TRAIN INCIDENTS					0	0
TOTAL FATALITIES					0	0
INJURIES FROM						
- TRAIN ACCIDENTS					0	0
- TRAIN INCIDENTS					3	3
- NON-TRAIN INCIDENTS					22	22
TOTAL INJURIES					25	25
OCCUPATIONAL ILLNESSES					0	0
MAJOR CAUSES OF TRAIN ACCIDENTS						
N/A						
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING					21	21
2. WINDOWS, DOORS, ETC.					1	1
3. OPERATING LOCOMOTIVES					1	1

*Initiated rapid transit service on June 30, 1979.

SUMMARY DATA FOR MBTA, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	7	11	4	8	3	33
TRAIN INCIDENTS	23	31	64	43	36	197
NON-TRAIN INCIDENTS	399	451	365	377	326	1,918
FATALITIES FROM						
- TRAIN ACCIDENTS	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	0	3	0	3
- NON-TRAIN INCIDENTS	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	3	0	3
INJURIES FROM						
- TRAIN ACCIDENTS	269	3	0	4	0	276
- TRAIN INCIDENTS	23	31	64	40	36	194
- NON-TRAIN INCIDENTS	399	453	365	377	330	1,924
TOTAL INJURIES	691	487	429	421	366	2,394
OCCUPATIONAL ILLNESSES	4	4	3	4	3	18
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-SPEED	2	0	1	1	1	5
2. MECH/ELEC-DOORS	1	3	0	0	0	4
3. TRACK-FROGS & SWITCHES	1	0	1	1	0	3
4. TRACK-ROADBED DEFECTS	0	1	0	1	1	3
5. MECH/ELEC-LOCOMOTIVES	1	2	0	0	0	3
6. MECH/ELEC-TRACK COMPONENTS	0	0	0	2	1	3
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	414	199	186	204	172	1,175
2. SERVICING OR MAINTENANCE OF EQUIPMENT	96	95	47	31	41	310
3. ASSAULT	51	36	44	40	39	210

SUMMARY DATA FOR NYCTA, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	13	16	18	28	21	96
TRAIN INCIDENTS	844	1,136	497	428	519	3,424
NON-TRAIN INCIDENTS	4,153	3,760	3,733	3,477	3,611	18,734
FATALITIES FROM						
-- TRAIN ACCIDENTS	0	0	0	0	0	0
-- TRAIN INCIDENTS	37	45	30	26	30	168
-- NON-TRAIN INCIDENTS	14	15	10	9	16	64
TOTAL FATALITIES	51	60	40	35	46	232
INJURIES FROM						
-- TRAIN ACCIDENTS	1	5	9	21	3	39
-- TRAIN INCIDENTS	868	1,174	522	426	506	3,496
-- NON-TRAIN INCIDENTS	4,175	3,815	4,037	3,512	3,635	19,174
TOTAL INJURIES	5,044	4,994	4,568	3,959	4,144	22,709
OCCUPATIONAL ILLNESSES	9	23	28	16	19	95
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS- RULES & INSTRUCTIONS	1	0	8	11	4	24
2. TRACK-TRACK GEOMETRY DEFECTS	4	4	0	3	1	12
3. MECH/ELEC-WHEELS	0	0	3	3	5	11
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	2,664	2,374	1,973	1,604	1,814	10,429
2. SERVICING OR MAINTENANCE OF EQUIPMENT	1,037	1,075	507	466	362	3,447
3. MAINTENANCE OF WAYS AND STRUCTURES	1	0	787	697	692	2,177

SUMMARY DATA FOR PATCO, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	2
TRAIN INCIDENTS	7	0	12	10	36	65
NON-TRAIN INCIDENTS	89	78	80	79	104	430
FATALITIES FROM						
- TRAIN ACCIDENTS	0	0	0	0	0	0
- TRAIN INCIDENTS	0	0	1	0	1	2
- NON-TRAIN INCIDENTS	0	0	0	0	0	0
TOTAL FATALITIES	0	0	1	0	1	2
INJURIES FROM						
- TRAIN ACCIDENTS	3	0	0	0	0	3
- TRAIN INCIDENTS	7	0	11	10	36	64
- NON-TRAIN INCIDENTS	90	78	80	79	104	431
TOTAL INJURIES	100	78	91	89	140	498
OCCUPATIONAL ILLNESSES	1	2	0	0	0	3
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-USE OF SWITCHES	1	0	0	0	0	1
2. MISCELLANEOUS CAUSES	0	1	0	0	0	1
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	43	38	44	40	61	226
2. SERVICING OR MAINTENANCE OF EQUIPMENT	17	17	12	12	9	67
3. ASSAULT	1	3	4	7	18	33

SUMMARY DATA FOR PATH, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	2	8	2	1	2	15
TRAIN INCIDENTS	24	36	24	41	27	152
NON-TRAIN INCIDENTS	110	150	191	147	167	765
FATALITIES FROM						
- TRAIN ACCIDENTS	0	0	1	0	0	1
- TRAIN INCIDENTS	1	0	2	1	0	4
- NON-TRAIN INCIDENTS	0	1	0	0	1	2
TOTAL FATALITIES	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>7</u>
INJURIES FROM						
- TRAIN ACCIDENTS	0	2	0	0	15	17
- TRAIN INCIDENTS	23	36	22	40	27	148
- NON-TRAIN INCIDENTS	110	149	191	151	166	767
TOTAL INJURIES	<u>133</u>	<u>187</u>	<u>213</u>	<u>191</u>	<u>208</u>	<u>932</u>
OCCUPATIONAL ILLNESSES	1	1	8	14	1	25
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-SPEED	0	5	0	1	0	6
2. HUMAN FACTORS-RULES & INSTRUCTIONS	1	2	1	0	0	4
3. TRACK-TRACK GEOMETRY DEFECTS	0	1	0	0	1	2
4. TRACK-FROGS & SWITCHES	1	0	0	0	1	2
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	44	36	71	58	72	281
2. MAINTENANCE OF WAYS & STRUCTURES	8	4	72	69	46	199
3. SERVICING OR MAINTENANCE OF EQUIPMENT	39	74	26	19	26	184

SUMMARY DATA FOR SEPTA, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	3	3	2	2	4	14
TRAIN INCIDENTS	49	41	35	37	30	192
NON-TRAIN INCIDENTS	310	410	345	317	301	1,683
FATALITIES FROM						
- TRAIN ACCIDENTS	0	0	0	0	0	0
- TRAIN INCIDENTS	0	2	5	1	2	10
- NON-TRAIN INCIDENTS	0	3	1	0	0	4
TOTAL FATALITIES	0	5	6	1	2	14
INJURIES FROM						
- TRAIN ACCIDENTS	0	0	2	49	383	434
- TRAIN INCIDENTS	49	40	30	36	132	287
- NON-TRAIN INCIDENTS	310	408	344	317	302	1,681
TOTAL INJURIES	359	448	376	402	817	2,402
OCCUPATIONAL ILLNESSES	9	7	0	0	0	16
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. HUMAN FACTORS-SPEED	0	2	1	0	0	3
2. HUMAN FACTORS-USE OF SWITCHES	1	1	0	0	0	2
3. MISCELLANEOUS CAUSES	2	0	0	0	0	2
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING	160	196	221	235	223	1,035
2. RAIL EQUIPMENT AND RAIL HIGHWAY GRADE CROSSING	0	0	2	49	438	489
3. SERVICING OR MAINTENANCE OF EQUIPMENT	93	114	25	22	31	285

SUMMARY DATA FOR SIRTA, 1975-1979

	1975	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS	1	1	0	0	0	2
TRAIN INCIDENTS	1	1	7	0	8	17
NON-TRAIN INCIDENTS	22	18	16	3	29	88
FATALITIES FROM						
— TRAIN ACCIDENTS	0	0	0	0	0	0
— TRAIN INCIDENTS	0	0	0	0	0	0
— NON-TRAIN INCIDENTS	0	0	0	0	0	0
TOTAL FATALITIES	0	0	0	0	0	0
INJURIES FROM						
— TRAIN ACCIDENTS	0	0	0	0	0	0
— TRAIN INCIDENTS	1	1	7	0	8	17
— NON-TRAIN INCIDENTS	22	19	16	3	29	89
TOTAL INJURIES	<u>23</u>	<u>20</u>	<u>23</u>	<u>3</u>	<u>37</u>	<u>106</u>
OCCUPATIONAL ILLNESSES	0	0	0	0	0	0
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. TRACK-FROGS & SWITCHES	0	1	0	0	0	1
2. HUMAN FACTORS-RULES & INSTRUCTIONS	1	0	0	0	0	1
MAJOR CAUSES OF CASUALTIES						
1. SERVICING OR MAINTENANCE OF EQUIPMENT	7	1	10	3	10	31
2. FLYING/FALLING OBJECTS	3	5	3	0	5	16
3. STUMBLING, SLIPPING, FALLING	9	3	0	0	3	15

SUMMARY DATA FOR WMATA, 1975-1979

	1975*	1976	1977	1978	1979	TOTAL
TRAIN ACCIDENTS		0	4	0	1	5
TRAIN INCIDENTS		1	9	5	9	24
NON-TRAIN INCIDENTS		14	195	161	279	649
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		0	0	0	0	0
INJURIES FROM						
- TRAIN ACCIDENTS		0	4	0	7	11
- TRAIN INCIDENTS		1	9	5	9	24
- NON-TRAIN INCIDENTS		14	195	161	281	651
TOTAL INJURIES		15	208	166	297	686
OCCUPATIONAL ILLNESSES		2	1	3	3	9
MAJOR CAUSES OF TRAIN ACCIDENTS						
1. MACH/ELEC-LOCOMOTIVES		0	3	0	0	3
2. HUMAN FACTORS-RULES & INSTRUCTIONS		0	0	0	1	1
3. MISCELLANEOUS CAUSES		0	1	0	0	1
MAJOR CAUSES OF CASUALTIES						
1. STUMBLING, SLIPPING, FALLING		14	156	63	112	345
2. SERVICING OR MAINTENANCE OF EQUIPMENT		27	38	23	85	173
3. MAINTENANCE OF WAYS & STRUCTURES		2	56	49	42	149

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