

## Safety Information Reporting and Analysis System (SIRAS)



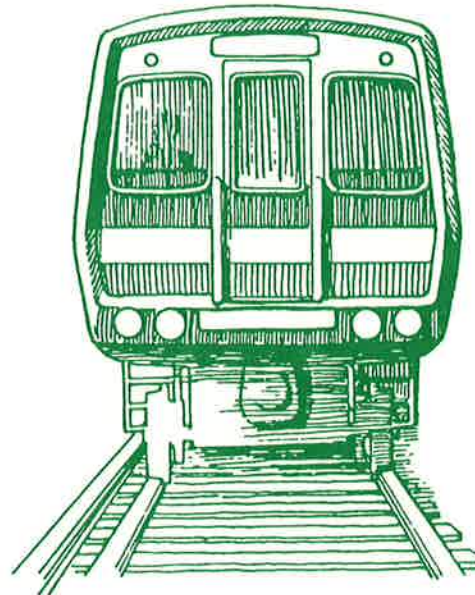
U.S. Department  
of Transportation

**Urban Mass  
Transportation  
Administration**

# HEAVY RAIL TRANSIT SAFETY 1989 Annual Report

Research and Special Programs  
Administration  
Transportation Systems Center  
Cambridge, MA 02142

Urban Mass Transportation  
Administration  
Office of Technical Assistance  
Washington, DC 20590



**UMTA Technical Assistance Program**

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| 16. Abstract<br><br><p>The <u>Heavy Rail Transit Safety 1989 Annual Report</u> is a compendium and analysis of heavy rail transit accident and casualty statistics reported by the thirteen heavy rail transit systems in the United States during 1989, under UMTA's Safety Information Reporting and Analysis System (SIRAS).</p> |                                                             |                                                                                                                                                                     |           |
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## INTRODUCTION

The Safety Information Reporting and Analysis System (SIRAS) is a voluntary safety reporting system, developed by the Urban Mass Transportation Administration (UMTA) in cooperation with the American Public Transit Association (APTA) and the heavy rail transit (RRT) systems operating in the United States. Since its implementation on January 1, 1983, the operating RRT systems have been reporting transit safety data to UMTA on a monthly basis. New reporting thresholds were established and implemented on January 1, 1986. Up to four transit data reports are submitted: a Statistical Data Report, a Train Accident Report, a Casualty Report and a Fire Report. All transit systems submit a monthly Statistical Data Report containing the total number of car miles and number of passengers in the reporting month. The Train Accident Report, the Casualty Report and a Fire Report are submitted only during those months when reportable (according to specific SIRAS thresholds contained in Appendix A-1) train accidents, fires, or casualties occur.

To assist in understanding the terms used in this report, a glossary has been provided in Section 1.

**Note:** Column and row entries may not sum to the total shown due to rounding.

## **I. GLOSSARY**

The following definitions are to be used as a reference in understanding the terms in this report.

### **AUTHORIZED PERSON IN STATION OR OTHER**

**AUTHORIZED LOCATION** - A person legally on a transit system's property in a location deemed licit.

**CAR MILES** - Distances traveled by each rail transit car of a transit system in both revenue and non-revenue service during a reporting period.

**CASUALTY** - A fatality or injury in accordance with SIRAS thresholds.\*

**CASUALTY REPORT** - A SIRAS report containing specific information on individual casualties (fatalities or injuries) submitted to UMTA by rail transit systems on a monthly basis, when applicable.

**COLLISION WITH OBSTACLE** - A SIRAS train accident type involving the collision of a rail transit revenue train with obstacles (e.g., shopping carts, foreign objects, etc.) other than trains and persons.\*

**COLLISION WITH PERSON** - A SIRAS train accident type involving the collision of a rail transit revenue train with a person on a track or platform.\*

**COLLISION WITH OTHER TRAIN** - A SIRAS train accident type involving the collision of a rail transit revenue train with another rail transit train (e.g., revenue or non-revenue train, work train, etc.).\*

**DERAILMENT** - A SIRAS train accident type involving a rail transit revenue train's leaving the rails.\*

**FATALITY** - A death confirmed within 30 days after an incident which occurs under the train accident, fire and casualty thresholds.\*

**FIRE** - A fire incident involving the phenomenon of combustion manifested in light, flame and heat.\*

**FIRE REPORT** - A SIRAS report containing specific information on individual fires (station fires, train in revenue service fires, and right-of-way fires) submitted to UMTA by rail transit systems on a monthly basis, when applicable.

**NON-AUTHORIZED PERSON IN NON-AUTHORIZED LOCATION** - A person illegally on a transit system's property in a location deemed illicit.

**PASSENGER IN UNAUTHORIZED AREA** - A person on, boarding or alighting from a rail transit revenue train in a location deemed illicit.

**PASSENGER IN VEHICLE, BOARDING OR ALIGHTING** - A person on, boarding or alighting from a rail transit revenue train in a location deemed licit.

**RAIL-HIGHWAY CROSSING** - A SIRAS train accident type involving the intersection of an otherwise exclusive (rail transit) right-of-way and a highway where motor vehicle and pedestrian traffic safety is enhanced by one or more crossing warning mechanisms.\*

**TRAIN ACCIDENT** - An event involving one or more revenue trains resulting in any casualty or property damage in accordance with SIRAS thresholds.\*

**TRAIN ACCIDENT REPORT** - A SIRAS report containing specific information on individual train accidents (collisions with trains, collisions with obstacles, collisions with persons, derailments, or rail-highway crossings) submitted to UMTA by rail transit systems on a monthly basis, when applicable.

**STATISTICAL DATA REPORT** - A SIRAS report containing total car miles and total passengers submitted to UMTA by rail transit systems on a monthly basis.

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\* For additional information, please see Appendix A. RRT Thresholds



## II. STATISTICAL DATA

### (A) PASSENGERS

|               | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>PERCENT<br>OF TOTAL | 1988<br>TOTAL |
|---------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|-----------------------------|---------------|
| <b>BART</b>   | 14,813,795               | 15,696,103                | 16,028,949               | 19,400,142                | 65,938,989    | 3.68                        | 58,810,422    |
| <b>CTA</b>    | 35,963,541               | 38,011,333                | 36,981,162               | 34,138,641                | 145,094,677   | 8.11                        | 141,783,606   |
| <b>GCRTA</b>  | 1,333,692                | 1,383,337                 | 1,322,959                | 1,383,242                 | 5,423,230     | 0.30                        | 5,686,027     |
| <b>MARTA</b>  | 16,072,000               | 16,361,000                | 17,676,000               | 16,861,000                | 66,970,000    | 3.74                        | 62,760,000    |
| <b>MBTA</b>   | 30,843,400               | 32,188,800                | 32,125,400               | 30,954,800                | 126,112,400   | 7.05                        | 126,826,000   |
| <b>MDTA</b>   | 3,129,500                | 3,085,000                 | 3,132,100                | 3,197,089                 | 12,543,689    | 0.70                        | 10,541,514    |
| <b>MTAMD</b>  | 3,369,280                | 3,504,289                 | 3,435,743                | 3,425,192                 | 13,734,504    | 0.77                        | 13,898,082    |
| <b>NYCTA</b>  | 263,707,749              | 276,393,269               | 258,422,766              | 271,439,240               | 1,069,963,024 | 59.77                       | 1,068,892,588 |
| <b>PATCO</b>  | 2,739,451                | 2,768,743                 | 2,703,840                | 2,820,364                 | 11,032,398    | 0.62                        | 10,967,244    |
| <b>PATH</b>   | 13,859,046               | 14,307,526                | 14,021,230               | 14,142,612                | 56,330,414    | 3.15                        | 56,868,171    |
| <b>SEPTA</b>  | 17,137,847               | 17,050,496                | 15,387,939               | 16,353,547                | 65,929,829    | 3.68                        | 70,451,410    |
| <b>SIRTOA</b> | 1,537,646                | 1,658,527                 | 1,414,279                | 1,546,376                 | 6,156,828     | 0.34                        | 6,239,121     |
| <b>WMATA</b>  | 34,811,402               | 38,216,688                | 37,073,430               | 34,726,999                | 144,828,519   | 8.09                        | 140,093,933   |
| <b>TOTAL</b>  | 439,318,349              | 460,625,111               | 439,725,797              | 450,389,244               | 1,790,058,501 | 100.0                       | 1,773,818,138 |

## II. STATISTICAL DATA

### (B) CAR MILES

|               | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>PERCENT<br>OF TOTAL | 1988<br>TOTAL |
|---------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|-----------------------------|---------------|
| <b>BART</b>   | 8,011,056                | 8,298,907                 | 8,485,821                | 11,318,690                | 36,114,474    | 6.87                        | 31,995,148    |
| <b>CTA</b>    | 13,287,646               | 13,372,802                | 13,341,643               | 13,215,638                | 53,217,729    | 10.13                       | 52,704,607    |
| <b>GCRTA</b>  | 544,316                  | 515,834                   | 523,385                  | 553,126                   | 2,136,661     | 0.41                        | 2,184,216     |
| <b>MARTA</b>  | 3,699,000                | 3,709,000                 | 3,896,000                | 3,853,000                 | 15,157,000    | 2.88                        | 14,435,000    |
| <b>MBTA</b>   | 3,905,910                | 3,998,295                 | 4,028,184                | 4,042,765                 | 15,975,154    | 3.04                        | 15,302,087    |
| <b>MDTA</b>   | 728,600                  | 736,800                   | 691,500                  | 779,400                   | 2,936,300     | 0.56                        | 2,615,200     |
| <b>MTAMD</b>  | 858,200                  | 866,400                   | 814,000                  | 827,000                   | 3,365,600     | 0.64                        | 4,199,000     |
| <b>NYCTA</b>  | 80,606,852               | 81,322,116                | 81,313,085               | 81,669,238                | 324,911,291   | 61.82                       | 318,093,046   |
| <b>PATCO</b>  | 1,046,327                | 1,033,427                 | 1,059,869                | 1,072,065                 | 4,211,688     | 0.80                        | 4,045,553     |
| <b>PATH</b>   | 3,300,392                | 3,317,243                 | 3,423,553                | 3,193,981                 | 13,235,169    | 2.52                        | 12,761,109    |
| <b>SEPTA</b>  | 4,065,787                | 3,999,697                 | 3,993,416                | 4,023,891                 | 16,082,791    | 3.06                        | 16,785,638    |
| <b>SIRTOA</b> | 561,131                  | 561,947                   | 564,984                  | 556,536                   | 2,244,598     | 0.43                        | 2,080,422     |
| <b>WMATA</b>  | 8,745,595                | 9,091,734                 | 9,210,547                | 8,968,240                 | 36,016,116    | 6.85                        | 35,412,763    |
| <b>TOTAL</b>  | 129,360,812              | 130,824,202               | 131,345,987              | 134,073,570               | 525,604,571   | 100.00                      | 512,613,789   |

### III. TRAIN ACCIDENTS

#### (A) TOTAL OF ALL RRT SYSTEMS

|        |                            | Collision with<br>other train |               | Collision with<br>Obstacle |               | Collision with<br>Person |               | Derailment    |               | Rail-Highway<br>Crossing |               | TOTAL         |               |
|--------|----------------------------|-------------------------------|---------------|----------------------------|---------------|--------------------------|---------------|---------------|---------------|--------------------------|---------------|---------------|---------------|
|        |                            | 1989<br>TOTAL                 | 1988<br>TOTAL | 1989<br>TOTAL              | 1988<br>TOTAL | 1989<br>TOTAL            | 1988<br>TOTAL | 1989<br>TOTAL | 1988<br>TOTAL | 1989<br>TOTAL            | 1988<br>TOTAL | 1989<br>TOTAL | 1988<br>TOTAL |
| BART   | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 1             | N/A                      | N/A           | 0             | 1             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | .03           | N/A                      | N/A           | 0             | .01           |
| CTA    | NUMBER                     | 2                             | 1             | 0                          | 3             | 10                       | 9             | 3             | 1             | 2                        | 2             | 17            | 16            |
|        | Per 1,000,000<br>Car Miles | .04                           | .02           | 0                          | .02           | .19                      | .06           | .06           | .01           | .04                      | .01           | .32           | .11           |
| GCRTA  | NUMBER                     | 0                             | 0             | 0                          | 4             | 1                        | 4             | 1             | 0             | N/A                      | N/A           | 2             | 8             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | .07           | .48                      | .07           | .48           | 0             | N/A                      | N/A           | .95           | 1.42          |
| MARTA  | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | 0                        | 0             | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | 0                        | 0             | 0             | 0             |
| MBTA   | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
| MDTA   | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
| MTAMD  | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
| NYCTA  | NUMBER                     | 3                             | 1             | 1                          | 2             | 69                       | 53            | 1             | 5             | N/A                      | N/A           | 74            | 61            |
|        | Per 1,000,000<br>Car Miles | .01                           | .003          | 0.0                        | .001          | .21                      | .04           | 0.0           | .004          | N/A                      | N/A           | .23           | .06           |
| PATCO  | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 1             | 0             | N/A                      | N/A           | 1             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | .24           | 0             | N/A                      | N/A           | .24           | 0             |
| PATH   | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 3             | 0                        | 0             | 0             | 3             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | .05           | 0                        | 0             | 0             | .05           |
| SEPTA  | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
| SIRTOA | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
| WMATA  | NUMBER                     | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
|        | Per 1,000,000<br>Car Miles | 0                             | 0             | 0                          | 0             | 0                        | 0             | 0             | 0             | N/A                      | N/A           | 0             | 0             |
| TOTAL  | NUMBER                     | 5                             | 2             | 1                          | 9             | 80                       | 66            | 6             | 10            | 2                        | 2             | 94            | 89            |
|        | Per 1,000,000<br>Car Miles | .01                           | .003          | 0.0                        | .02           | .15                      | .13           | .01           | .02           | 0.0                      | .003          | .18           | .17           |

### III. TRAIN ACCIDENTS

#### (B) BY CASUALTIES AND DAMAGE ESTIMATES

|                            | 1989<br>INJURIES | 1989<br>FATALITIES | 1989<br>TRAIN<br>DAMAGE<br>ESTIMATE (\$) | 1989<br>OTHER<br>TRANSIT<br>DAMAGE<br>ESTIMATE (\$) | 1989<br>NON-<br>TRANSIT<br>DAMAGE<br>ESTIMATE (\$) | 1989<br>TOTAL<br>DAMAGE<br>ESTIMATE (\$) | 1988<br>TOTAL<br>DAMAGE<br>ESTIMATE (\$) |
|----------------------------|------------------|--------------------|------------------------------------------|-----------------------------------------------------|----------------------------------------------------|------------------------------------------|------------------------------------------|
| COLLISION WITH OTHER TRAIN | 34               | 0                  | 412,000                                  | 47,400                                              | 0                                                  | 459,400                                  | 17,549                                   |
| COLLISION WITH OBSTACLE    | 30               | 0                  | 37,000                                   | 24,000                                              | 0                                                  | 61,000                                   | 1,128,884                                |
| COLLISION WITH PERSON      | 46               | 30                 | 665                                      | 0                                                   | 0                                                  | 665                                      | 100                                      |
| DERAILMENT                 | 19               | 0                  | 1,285,120                                | 32,200                                              | 0                                                  | 1,317,320                                | 1,018,719                                |
| RAIL-HIGHWAY CROSSING      | 0                | 0                  | 61,000                                   | 0                                                   | 0                                                  | 61,000                                   | 600                                      |
| TOTAL                      | 129              | 30                 | 1,795,785                                | 103,600                                             | 0                                                  | 1,899,385                                | 2,165,852                                |

#### IV. CASUALTIES

##### (A) NON-FATALITIES BY LOCATION

| <u>LOCATION</u>                  | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>PASSENGERS | 1989<br>PERCENT<br>OF TOTAL | 1988<br>TOTAL | FOUR<br>QUARTER<br>MOVING<br>AVERAGE |
|----------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|----------------------------------------|-----------------------------|---------------|--------------------------------------|
| ON PLATFORM                      | 275                      | 301                       | 291                      | 371                       | 1,238         | 0.69                                   | 43.5                        | 1,235         | 309.50                               |
| ON TRACKWAY                      | 31                       | 33                        | 33                       | 28                        | 125           | 0.07                                   | 4.4                         | 211           | 31.25                                |
| ON-BOARD TRAIN                   | 154                      | 222                       | 184                      | 200                       | 760           | 0.42                                   | 26.7                        | 846           | 190.00                               |
| ALIGHTING FROM TRAIN             | 63                       | 80                        | 65                       | 53                        | 261           | 0.15                                   | 9.2                         | 231           | 65.25                                |
| BOARDING TRAIN                   | 80                       | 77                        | 91                       | 66                        | 314           | 0.18                                   | 11.0                        | 351           | 78.50                                |
| IN TRAIN ACCIDENT                | 50                       | 30                        | 11                       | 38                        | 129           | 0.07                                   | 4.5                         | 173           | 32.25                                |
| STATION FIRES                    | 0                        | 1                         | 0                        | 1                         | 2             | 0.00                                   | 0.1                         | 0             | 0.50                                 |
| RIGHT-OF-WAY FIRES               | 1                        | 1                         | 1                        | 1                         | 4             | 0.00                                   | 0.1                         | 0             | 1.00                                 |
| TRAIN FIRES (IN REVENUE SERVICE) | 1                        | 0                         | 0                        | 12                        | 13            | 0.01                                   | 0.5                         | 2             | 03.25                                |
| TOTAL                            | 655                      | 745                       | 676                      | 770                       | 2,846         | 1.59                                   | 100.0                       | 3,049         | 711.50                               |

#### IV. CASUALTIES

##### (B) FATALITIES BY LOCATION

| LOCATION                         | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>PASSENGERS | 1989<br>PERCENT<br>OF TOTAL | 1988<br>TOTAL | FOUR<br>QUARTER<br>MOVING<br>AVERAGE |
|----------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|----------------------------------------|-----------------------------|---------------|--------------------------------------|
| ON PLATFORM                      | 1                        | 1                         | 0                        | 0                         | 2             | 0.00                                   | 4.4                         | 0             | 0.50                                 |
| ON TRACKWAY                      | 1                        | 2                         | 4                        | 4                         | 11            | 0.01                                   | 24.4                        | 1             | 2.75                                 |
| ON-BOARD TRAIN                   | 1                        | 0                         | 0                        | 1                         | 2             | 0.00                                   | 4.4                         | 0             | 0.50                                 |
| ALIGHTING FROM TRAIN             | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                   | 0.0                         | 0             | 0.00                                 |
| BOARDING TRAIN                   | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                   | 0.0                         | 0             | 0.00                                 |
| IN TRAIN ACCIDENT                | 4                        | 8                         | 8                        | 10                        | 30            | 0.02                                   | 66.7                        | 18            | 7.50                                 |
| STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                   | 0.0                         | 0             | 0.00                                 |
| RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                   | 0.0                         | 0             | 0.00                                 |
| TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                   | 0.0                         | 0             | 0.00                                 |
| TOTAL                            | 7                        | 11                        | 12                       | 15                        | 45            | 0.03                                   | 100.0                       | 19            | 11.25                                |

## (A) TOTAL OF ALL RRT SYSTEMS

|                                                      | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>PERCENT OF<br>TOTAL | 1988<br>TOTAL |
|------------------------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|-----------------------------|---------------|
| <b><u>STATION FIRES</u></b>                          |                          |                           |                          |                           |               |                             |               |
| Non-Public Areas                                     | 8                        | 2                         | 7                        | 4                         | 21            | 0.47                        | 22            |
| Public Areas                                         |                          |                           |                          |                           |               |                             |               |
| Trash Receptacles                                    | 264                      | 223                       | 231                      | 297                       | 1,015         | 22.71                       | 730           |
| Concession                                           | 0                        | 0                         | 1                        | 1                         | 2             | 0.04                        | 2             |
| Other                                                | 48                       | 58                        | 45                       | 60                        | 211           | 4.72                        | 231           |
| <b><u>TRAIN FIRES</u></b> (in revenue service)       |                          |                           |                          |                           |               |                             |               |
| Underfloor                                           | 37                       | 41                        | 26                       | 21                        | 125           | 2.80                        | 178           |
| Roof                                                 | 0                        | 0                         | 0                        | 1                         | 1             | 0.02                        | 0             |
| Passenger Compartment                                | 26                       | 23                        | 0                        | 3                         | 52            | 1.16                        | 134           |
| Operator Compartment                                 | 0                        | 0                         | 29                       | 16                        | 45            | 1.01                        | 11            |
| Other                                                | 259                      | 213                       | 213                      | 150                       | 835           | 18.68                       | 1,036         |
| <b><u>RIGHT-OF-WAY FIRES</u></b>                     |                          |                           |                          |                           |               |                             |               |
| Ties, protection board<br>walkways (wooden elements) | 18                       | 84                        | 88                       | 68                        | 258           | 5.77                        | 362           |
| Traction power distribution                          | 14                       | 14                        | 11                       | 10                        | 49            | 1.10                        | 40            |
| Substation                                           | 6                        | 0                         | 0                        | 1                         | 7             | 0.16                        | 0             |
| Signal System                                        | 2                        | 1                         | 9                        | 5                         | 17            | 0.38                        | 7             |
| Grass, trash, debris                                 | 302                      | 307                       | 300                      | 236                       | 1,145         | 25.62                       | 1,136         |
| Flammable intrusion                                  | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                        | 0             |
| Stored materials                                     | 0                        | 0                         | 1                        | 0                         | 1             | 0.02                        | 1             |
| Track greasers                                       | 1                        | 1                         | 0                        | 1                         | 3             | 0.07                        | 3             |
| Other                                                | 141                      | 208                       | 191                      | 142                       | 682           | 15.26                       | 922           |
| <b>TOTALS</b>                                        | <b>1,126</b>             | <b>1,175</b>              | <b>1,152</b>             | <b>1,016</b>              | <b>4,469</b>  | <b>100.0</b>                | <b>4,815</b>  |

# VI. SYSTEM SPECIFIC OVERVIEW

## (A) TOTAL OF ALL RRT SYSTEMS

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>PER<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <u>TRAIN ACCIDENTS</u>             |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 3                        | 0                         | 1                        | 1                         | 5             | 0.01                                  | 2             |
| ● COLLISION WITH OBSTACLE          | 1                        | 0                         | 0                        | 0                         | 1             | 0.00                                  | 9             |
| ● COLLISION WITH PERSON            | 18                       | 20                        | 18                       | 24                        | 80            | 0.15                                  | 66            |
| ● DERAILMENT                       | 0                        | 2                         | 2                        | 2                         | 6             | 0.01                                  | 10            |
| ● RAIL HIGHWAY CROSSING            | 0                        | 0                         | 0                        | 2                         | 2             | 0.00                                  | 2             |
| TOTAL TRAIN ACCIDENTS              | 22                       | 22                        | 21                       | 29                        | 94            | 0.18                                  | 89            |
| <u>CASUALTIES</u>                  |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 276                      | 302                       | 291                      | 371                       | 1,240         | 0.69                                  | 1,235         |
| ● ON-TRACKWAY                      | 32                       | 35                        | 37                       | 32                        | 136           | 0.08                                  | 212           |
| ● ON-BOARD TRAIN                   | 155                      | 222                       | 184                      | 201                       | 762           | 0.43                                  | 846           |
| ● ALIGHTING FROM TRAIN             | 63                       | 80                        | 65                       | 53                        | 261           | 0.15                                  | 231           |
| ● BOARDING TRAIN                   | 80                       | 77                        | 91                       | 66                        | 314           | 0.18                                  | 351           |
| ● IN TRAIN ACCIDENT                | 54                       | 38                        | 19                       | 48                        | 159           | 0.09                                  | 191           |
| ● STATION FIRES                    | 0                        | 1                         | 0                        | 1                         | 2             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 1                        | 1                         | 1                        | 1                         | 4             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 1                        | 0                         | 0                        | 12                        | 13            | 0.01                                  | 2             |
| TOTAL CASUALTIES                   | 662                      | 756                       | 688                      | 785                       | 2,891         | 1.62                                  | 3,068         |
| INJURIES                           | 655                      | 745                       | 676                      | 770                       | 2,846         | 1.59                                  | 3,049         |
| FATALITIES                         | 7                        | 11                        | 12                       | 15                        | 45            | 0.03                                  | 19            |



# VI. SYSTEM SPECIFIC OVERVIEW

## (B) BAY AREA RAPID TRANSIT DISTRICT (BART)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | PER<br>1,000,000<br>CAR MILES  | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|--------------------------------|---------------|
| <b>TRAIN ACCIDENTS</b>             |                          |                           |                          |                           |               |                                |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 1             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                            | N/A           |
| TOTAL TRAIN ACCIDENTS              | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 1             |
| <b>CASUALTIES</b>                  |                          |                           |                          |                           |               |                                |               |
|                                    |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS |               |
| ● ON-PLATFORM                      | 0                        | 2                         | 6                        | 1                         | 9             | 0.14                           | 9             |
| ● ON-TRACKWAY                      | 0                        | 0                         | 1                        | 2                         | 3             | 0.05                           | 4             |
| ● ON-BOARD TRAIN                   | 0                        | 4                         | 1                        | 7                         | 12            | 0.18                           | 12            |
| ● ALIGHTING FROM TRAIN             | 4                        | 1                         | 3                        | 8                         | 16            | 0.24                           | 19            |
| ● BOARDING TRAIN                   | 6                        | 9                         | 7                        | 6                         | 28            | 0.42                           | 19            |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |
| TOTAL CASUALTIES                   | 10                       | 16                        | 18                       | 24                        | 68            | 1.03                           | 63            |
| INJURIES                           | 10                       | 16                        | 18                       | 24                        | 68            | 1.03                           | 63            |
| FATALITIES                         | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                           | 0             |

NA Not applicable - BART does not have rail-highway crossings.

# VI. SYSTEM SPECIFIC OVERVIEW

## (C) CHICATO TRANSIT AUTHORITY (CTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <u>TRAIN ACCIDENTS</u>             |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 1                        | 0                         | 0                        | 1                         | 2             | 0.04                                  | 1             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 3             |
| ● COLLISION WITH PERSON            | 4                        | 3                         | 1                        | 2                         | 10            | 0.19                                  | 9             |
| ● DERAILMENT                       | 0                        | 1                         | 1                        | 1                         | 3             | 0.06                                  | 1             |
| ● RAIL HIGHWAY CROSSING            | 0                        | 0                         | 0                        | 2                         | 2             | 0.04                                  | 2             |
| TOTAL TRAIN ACCIDENTS              | 5                        | 4                         | 2                        | 6                         | 17            | 0.32                                  | 16            |
| <u>CASUALTIES</u>                  |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 1                        | 0                         | 0                        | 2                         | 3             | 0.02                                  | 5             |
| ● ON-TRACKWAY                      | 0                        | 1                         | 4                        | 0                         | 5             | 0.03                                  | 3             |
| ● ON-BOARD TRAIN                   | 2                        | 2                         | 4                        | 6                         | 14            | 0.10                                  | 10            |
| ● ALIGHTING FROM TRAIN             | 1                        | 4                         | 5                        | 3                         | 13            | 0.09                                  | 17            |
| ● BOARDING TRAIN                   | 2                        | 2                         | 1                        | 4                         | 9             | 0.06                                  | 12            |
| ● IN TRAIN ACCIDENT                | 6                        | 10                        | 2                        | 3                         | 21            | 0.14                                  | 77            |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| TOTAL CASUALTIES                   | 12                       | 19                        | 16                       | 18                        | 65            | 0.45                                  | 124           |
| INJURIES                           | 12                       | 18                        | 11                       | 17                        | 58            | 0.40                                  | 118           |
| FATALITIES                         | 0                        | 1                         | 5                        | 1                         | 7             | 0.05                                  | 6             |

## VI. SYSTEM SPECIFIC OVERVIEW

### (D) GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY (GCRTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 4             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 1                         | 1             | 0.48                                  | 4             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 1                         | 1             | 0.48                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| TOTAL TRAIN ACCIDENTS              | 0                        | 0                         | 0                        | 2                         | 2             | 0.95                                  | 8             |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               |                                       |               |
|                                    |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 3                        | 1                         | 0                        | 0                         | 4             | 0.74                                  | 3             |
| ● ON-TRACKWAY                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● ON-BOARD TRAIN                   | 0                        | 1                         | 0                        | 0                         | 1             | 0.19                                  | 6             |
| ● ALIGHTING FROM TRAIN             | 0                        | 2                         | 0                        | 0                         | 2             | 0.37                                  | 4             |
| ● BOARDING TRAIN                   | 2                        | 1                         | 1                        | 1                         | 5             | 0.93                                  | 3             |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 25                        | 25            | 4.63                                  | 12            |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 10                        | 10            | 1.85                                  | 0             |
| TOTAL CASUALTIES                   | 5                        | 5                         | 1                        | 36                        | 47            | 8.70                                  | 28            |
| INJURIES                           | 5                        | 5                         | 1                        | 36                        | 47            | 8.70                                  | 28            |
| FATALITIES                         | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - GCRTA does not have rail-highway crossings.

# VI. SYSTEM SPECIFIC OVERVIEW

## (E) METROPOLITAN ATLANTA REGIONAL TRANSIT AUTHORITY (MARTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <u>TRAIN ACCIDENTS</u>             |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| TOTAL TRAIN ACCIDENTS              | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <u>CASUALTIES</u>                  |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 2                        | 3                         | 3                        | 6                         | 14            | 0.21                                  | 14            |
| ● ON-TRACKWAY                      | 1                        | 0                         | 0                        | 1                         | 2             | 0.03                                  | 7             |
| ● ON-BOARD TRAIN                   | 1                        | 7                         | 1                        | 0                         | 9             | 0.13                                  | 6             |
| ● ALIGHTING FROM TRAIN             | 3                        | 4                         | 2                        | 1                         | 10            | 0.15                                  | 11            |
| ● BOARDING TRAIN                   | 0                        | 0                         | 0                        | 1                         | 1             | 0.01                                  | 14            |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| TOTAL CASUALTIES                   | 7                        | 14                        | 6                        | 9                         | 36            | 0.54                                  | 52            |
| INJURIES                           | 6                        | 14                        | 6                        | 9                         | 35            | 0.52                                  | 52            |
| FATALITIES                         | 1                        | 0                         | 0                        | 0                         | 1             | 0.01                                  | 0             |

# VI. SYSTEM SPECIFIC OVERVIEW

## (F) MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b>TRAIN ACCIDENTS</b>             |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| TOTAL TRAIN ACCIDENTS              | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>CASUALTIES</b>                  |                          |                           |                          |                           |               |                                       |               |
| ● ON-PLATFORM                      | 11                       | 6                         | 5                        | 10                        | 32            | 0.25                                  | 34            |
| ● ON-TRACKWAY                      | 4                        | 3                         | 3                        | 2                         | 12            | 0.10                                  | 18            |
| ● ON-BOARD TRAIN                   | 5                        | 4                         | 8                        | 0                         | 17            | 0.13                                  | 19            |
| ● ALIGHTING FROM TRAIN             | 7                        | 13                        | 14                       | 4                         | 38            | 0.30                                  | 26            |
| ● BOARDING TRAIN                   | 11                       | 8                         | 12                       | 8                         | 39            | 0.31                                  | 48            |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| TOTAL CASUALTIES                   | 38                       | 34                        | 42                       | 24                        | 138           | 1.09                                  | 145           |
| INJURIES                           | 38                       | 34                        | 42                       | 24                        | 138           | 1.09                                  | 145           |
| FATALITIES                         | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - MBTA does not have rail-highway crossings.

# VI. SYSTEM SPECIFIC OVERVIEW

## (G) METRO DADE COUNTY TRANSIT AGENCY (MDTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        |                           | 0             | 0.00                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 2                        | 1                         | 1                        | 0                         | 4             | 0.32                                  | 2             |
| ● ON-TRACKWAY                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 2             |
| ● ON-BOARD TRAIN                   | 2                        | 0                         | 1                        | 0                         | 3             | 0.24                                  | 4             |
| ● ALIGHTING FROM TRAIN             | 1                        | 0                         | 1                        | 0                         | 2             | 0.16                                  | 2             |
| ● BOARDING TRAIN                   | 1                        | 0                         | 2                        | 0                         | 3             | 0.24                                  | 6             |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 6                        | 1                         | 5                        | 0                         | 12            | 0.96                                  | 16            |
| <b>INJURIES</b>                    | 6                        | 1                         | 5                        | 0                         | 12            | 0.96                                  | 16            |
| <b>FATALITIES</b>                  | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - MDTA does not have rail-highway crossings.

## VI. SYSTEM SPECIFIC OVERVIEW

### (H) MASS TRANSIT ADMINISTRATION OF MARYLAND (MTAMD)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               |                                       |               |
| ● ON-PLATFORM                      | 0                        | 0                         | 1                        | 0                         | 1             | 0.07                                  | 0             |
| ● ON-TRACKWAY                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● ON-BOARD TRAIN                   | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 1             |
| ● ALIGHTING FROM TRAIN             | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● BOARDING TRAIN                   | 0                        | 1                         | 0                        | 0                         | 1             | 0.07                                  | 1             |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 0                        | 1                         | 1                        | 0                         | 2             | 0.15                                  | 2             |
| <b>INJURIES</b>                    | 0                        | 1                         | 1                        | 0                         | 2             | 0.15                                  | 2             |
| <b>FATALITIES</b>                  | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - MTAMD does not have rail-highway crossings.

## VI. SYSTEM SPECIFIC OVERVIEW

### (I) NEW YORK CITY TRANSIT AUTHORITY (NYCTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 2                        | 0                         | 1                        | 0                         | 3             | 0.01                                  | 1             |
| ● COLLISION WITH OBSTACLE          | 1                        | 0                         | 0                        | 0                         | 1             | 0.00                                  | 2             |
| ● COLLISION WITH PERSON            | 14                       | 17                        | 17                       | 21                        | 69            | 0.21                                  | 53            |
| ● DERAILMENT                       | 0                        | 1                         | 0                        | 0                         | 1             | 0.00                                  | 5             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 17                       | 18                        | 18                       | 21                        | 74            | 0.23                                  | 61            |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 217                      | 254                       | 252                      | 323                       | 1,046         | 0.98                                  | 1,053         |
| ● ON-TRACKWAY                      | 24                       | 28                        | 24                       | 21                        | 97            | 0.09                                  | 153           |
| ● ON-BOARD TRAIN                   | 136                      | 189                       | 150                      | 173                       | 648           | 0.61                                  | 708           |
| ● ALIGHTING FROM TRAIN             | 34                       | 33                        | 25                       | 27                        | 119           | 0.11                                  | 95            |
| ● BOARDING TRAIN                   | 47                       | 41                        | 51                       | 35                        | 174           | 0.16                                  | 159           |
| ● IN TRAIN ACCIDENT                | 48                       | 28                        | 17                       | 20                        | 113           | 0.11                                  | 102           |
| ● STATION FIRES                    | 0                        | 1                         | 0                        | 1                         | 2             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 1                        | 1                         | 1                        | 1                         | 4             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 1                        | 0                         | 0                        | 2                         | 3             | 0.00                                  | 2             |
| <b>TOTAL CASUALTIES</b>            | 508                      | 575                       | 520                      | 603                       | 2,206         | 2.06                                  | 2,272         |
| <b>INJURIES</b>                    | 503                      | 565                       | 513                      | 591                       | 2,172         | 2.03                                  | 2,259         |
| <b>FATALITIES</b>                  | 5                        | 10                        | 7                        | 12                        | 34            | 0.03                                  | 13            |

N/A Not applicable - NYCTA does not have rail-highway crossings.



## VI. SYSTEM SPECIFIC OVERVIEW

### (J) PORT AUTHORITY TRANSIT CORPORATION (PATCO)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 1                        | 0                         | 1             | 0.24                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 1                        | 0                         | 1             | 0.24                                  | 0             |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               |                                       |               |
|                                    |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 1                        | 0                         | 0                        | 2                         | 3             | 0.27                                  | 5             |
| ● ON-TRACKWAY                      | 0                        | 0                         | 1                        | 0                         | 1             | 0.09                                  | 0             |
| ● ON-BOARD TRAIN                   | 2                        | 1                         | 1                        | 5                         | 9             | 0.82                                  | 7             |
| ● ALIGHTING FROM TRAIN             | 2                        | 0                         | 2                        | 1                         | 5             | 0.45                                  | 2             |
| ● BOARDING TRAIN                   | 4                        | 4                         | 1                        | 2                         | 11            | 1.00                                  | 7             |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 9                        | 5                         | 5                        | 10                        | 29            | 2.63                                  | 21            |
| <b>INJURIES</b>                    | 9                        | 5                         | 5                        | 10                        | 29            | 2.63                                  | 21            |
| <b>FATALITIES</b>                  | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - PATCO does not have rail-highway crossings.

## VI. SYSTEM SPECIFIC OVERVIEW

### (K) PORT AUTHORITY TRANS-HUDSON CORPORATION (PATH)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 3             |
| ● RAIL HIGHWAY CROSSING            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 3             |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 3                        | 2                         | 4                        | 1                         | 10            | 0.18                                  | 15            |
| ● ON-TRACKWAY                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 1             |
| ● ON-BOARD TRAIN                   | 4                        | 3                         | 1                        | 3                         | 11            | 0.20                                  | 12            |
| ● ALIGHTING FROM TRAIN             | 1                        | 2                         | 0                        | 0                         | 3             | 0.05                                  | 0             |
| ● BOARDING TRAIN                   | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 8             |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 8                        | 7                         | 5                        | 4                         | 24            | 0.43                                  | 36            |
| <b>INJURIES</b>                    | 7                        | 7                         | 5                        | 4                         | 23            | 0.41                                  | 36            |
| <b>FATALITIES</b>                  | 1                        | 0                         | 0                        | 0                         | 1             | 0.02                                  | 0             |

## VI. SYSTEM SPECIFIC OVERVIEW

### (L) SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY (SEPTA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b>TRAIN ACCIDENTS</b>             |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>CASUALTIES</b>                  |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 27                       | 25                        | 17                       | 20                        | 89            | 1.35                                  | 58            |
| ● ON-TRACKWAY                      | 3                        | 3                         | 4                        | 6                         | 16            | 0.24                                  | 18            |
| ● ON-BOARD TRAIN                   | 2                        | 8                         | 16                       | 5                         | 31            | 0.47                                  | 39            |
| ● ALIGHTING FROM TRAIN             | 7                        | 12                        | 9                        | 5                         | 33            | 0.50                                  | 38            |
| ● BOARDING TRAIN                   | 5                        | 8                         | 11                       | 7                         | 31            | 0.47                                  | 48            |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 44                       | 56                        | 57                       | 43                        | 200           | 3.03                                  | 201           |
| <b>INJURIES</b>                    | 44                       | 56                        | 57                       | 41                        | 198           | 3.00                                  | 201           |
| <b>FATALITIES</b>                  | 0                        | 0                         | 0                        | 2                         | 2             | 0.03                                  | 0             |

N/A Not applicable - SEPTA does not have rail-highway crossings.

## VI. SYSTEM SPECIFIC OVERVIEW

### (M) STATEN ISLAND RAPID TRANSIT OPERATING AUTHORITY (SIRTOA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b><u>TRAIN ACCIDENTS</u></b>      |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 1             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 1             |
| <b><u>CASUALTIES</u></b>           |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 13            |
| ● ON-TRACKWAY                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 4             |
| ● ON-BOARD TRAIN                   | 1                        | 0                         | 0                        | 0                         | 1             | 0.16                                  | 12            |
| ● ALIGHTING FROM TRAIN             | 1                        | 0                         | 0                        | 0                         | 1             | 0.16                                  | 9             |
| ● BOARDING TRAIN                   | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 5             |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 2                        | 0                         | 0                        | 0                         | 2             | 0.32                                  | 43            |
| <b>INJURIES</b>                    | 2                        | 0                         | 0                        | 0                         | 2             | 0.32                                  | 43            |
| <b>FATALITIES</b>                  | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - SIRTOA does not have rail-highway crossings.

## VI. SYSTEM SPECIFIC OVERVIEW

### (N) WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY (WMATA)

|                                    | 1989<br>FIRST<br>QUARTER | 1989<br>SECOND<br>QUARTER | 1989<br>THIRD<br>QUARTER | 1989<br>FOURTH<br>QUARTER | 1989<br>TOTAL | 1989<br>Per<br>1,000,000<br>CAR MILES | 1988<br>TOTAL |
|------------------------------------|--------------------------|---------------------------|--------------------------|---------------------------|---------------|---------------------------------------|---------------|
| <b>TRAIN ACCIDENTS</b>             |                          |                           |                          |                           |               |                                       |               |
| ● COLLISION WITH OTHER TRAIN       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH OBSTACLE          | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● COLLISION WITH PERSON            | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● DERAILMENT                       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RAIL HIGHWAY CROSSING            | N/A                      | N/A                       | N/A                      | N/A                       | N/A           | N/A                                   | N/A           |
| <b>TOTAL TRAIN ACCIDENTS</b>       | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>CASUALTIES</b>                  |                          |                           |                          |                           |               |                                       |               |
|                                    |                          |                           |                          |                           |               | PER<br>1,000,000<br>PASSENGERS        |               |
| ● ON-PLATFORM                      | 9                        | 8                         | 2                        | 6                         | 25            | 0.17                                  | 24            |
| ● ON-TRACKWAY                      | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 2             |
| ● ON-BOARD TRAIN                   | 0                        | 3                         | 1                        | 2                         | 6             | 0.04                                  | 10            |
| ● ALIGHTING FROM TRAIN             | 2                        | 9                         | 4                        | 4                         | 19            | 0.13                                  | 8             |
| ● BOARDING TRAIN                   | 2                        | 3                         | 5                        | 2                         | 12            | 0.08                                  | 20            |
| ● IN TRAIN ACCIDENT                | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● STATION FIRES                    | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● RIGHT-OF-WAY FIRES               | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| ● TRAIN FIRES (IN REVENUE SERVICE) | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |
| <b>TOTAL CASUALTIES</b>            | 13                       | 23                        | 12                       | 14                        | 62            | 0.43                                  | 64            |
| <b>INJURIES</b>                    | 13                       | 23                        | 12                       | 14                        | 62            | 0.43                                  | 64            |
| <b>FATALITIES</b>                  | 0                        | 0                         | 0                        | 0                         | 0             | 0.00                                  | 0             |

N/A Not applicable - WMATA does not have rail-highway crossings.



## RRT THRESHOLDS

### TRAIN ACCIDENT REPORTING THRESHOLDS

A “reportable train accident” is any accident which satisfies the following threshold levels:

#### A. TRAIN COLLISIONS

1. All collisions of trains in revenue service involving other rail transit equipment (such as revenue or non-revenue trains, work trains or work equipment), persons and/or rail highway crossings are to be reported.
2. Collisions between trains in revenue service and other obstacles (end of track barriers, shopping carts, foreign objects, etc.) which result in \$5,000 or greater property damage or casualties are to be reported.

“Property Damage” refers to the estimated cost to repair or replace damaged property (vehicles, equipment, right-of-way, etc.) to a state equivalent to that which existed prior to the accident. Property damage does not include the cost of clearing wreckage.

#### B. TRAIN DERAILMENTS

1. All derailments of trains in revenue service regardless of severity.

#### C. EXCLUSIONS

1. Accidents (collisions or derailments) occurring in yards and non-revenue service areas which do not involve trains in revenue service are excluded.
2. Accidents (collisions or derailments) which involve only work trains and servicing equipment are excluded.
3. Collisions between train cars resulting from coupling operations which do not involve passenger casualties are excluded.

### CASUALTY REPORTING THRESHOLDS

A “reportable casualty” is any casualty which satisfies one or more of the following threshold levels:

#### A. PASSENGER AND OTHER CASUALTIES

Reportable casualties are casualties involving passengers or other personnel (contractors, etc.) which occur on station platforms, on trackways, boarding, alighting and/or on-board trains which result in fatalities or personnel injuries, regardless of severity.

#### B. EXCLUSIONS

1. Assaults
2. Attempted suicides
3. Suicides and injury resulting from illness
4. Trespassers

### FIRE REPORTING THRESHOLDS

Reportable fires are all fires in stations, on trains in revenue service or on the right-of-way when the fire requires extinguishment by fire suppression system or person.

Each fire is reported regardless of damage.







