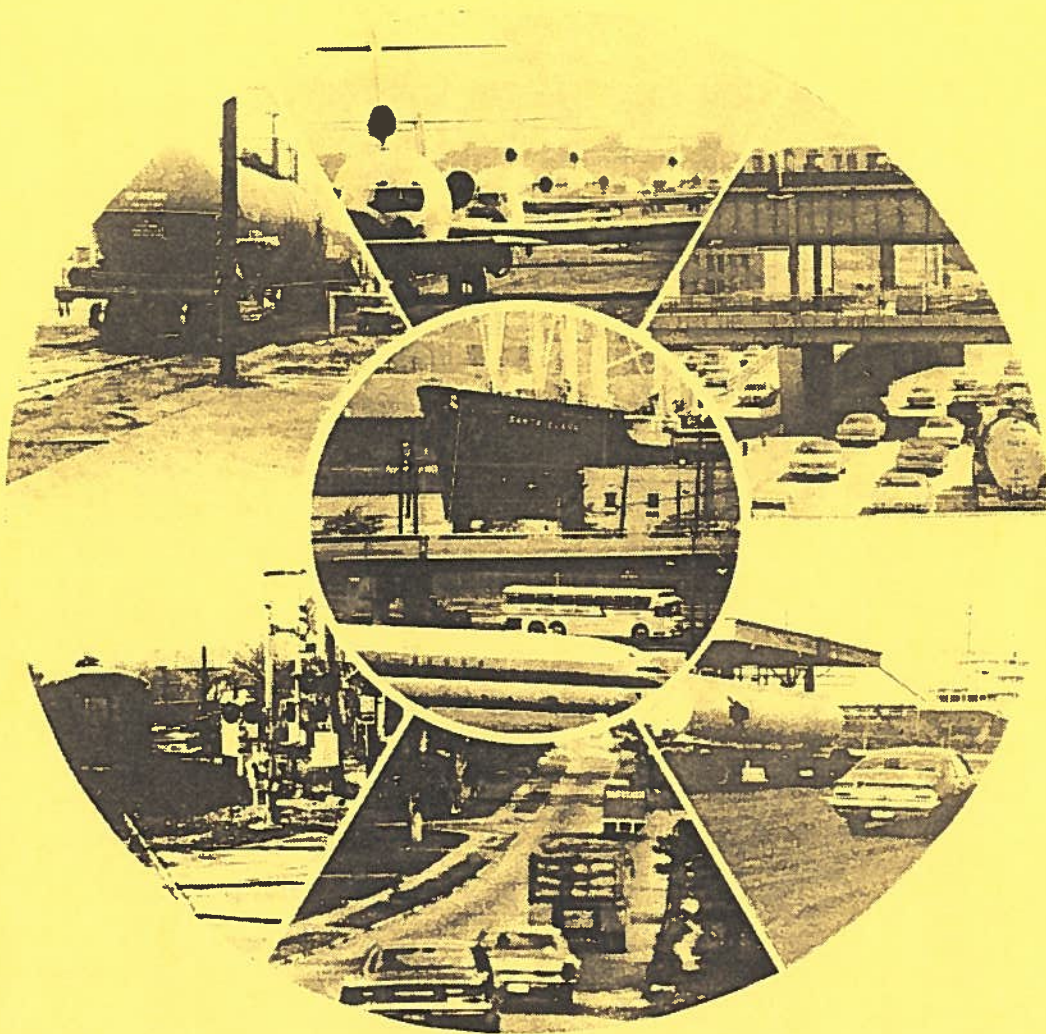


DOT-VNTSC-RSPA-90-4



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

Transportation Safety Information Report 1989 Annual Summary



John A. Volpe National Transportation Systems Center



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|--|--|---|----------------------------|---|-----------|
| 1. Report No. DOT-VNTSC-RSPA-90-4 | | 2. Government Accession No. | | 3. Recipient's Catalog No. | |
| 4. Title and Subtitle TRANSPORTATION SAFETY INFORMATION REPORT 1989 Annual Summary | | | | 5. Report Date October 1990 | |
| 7. Author(s) Task Manager: Kathleen Bradley, 617-494-2614 | | | | 6. Performing Organization Code DTS-44 | |
| 9. Performing Organization Name and Address U.S. Department of Transportation Research and Special Programs Administration Volpe National Transportation Systems Center Center for Transportation Information, Cambridge, MA 02142 | | | | 8. Performing Organization Report No. DOT-VNTSC-RSPA-90-4 | |
| | | | | 10. Work Unit No. (TRAVIS) | |
| 12. Sponsoring Agency Name and Address U.S. Department of Transportation Research and Special Programs Administration Office of Program Management and Administration Washington, DC 20590 | | | | 11. Contract or Grant No. | |
| | | | | 13. Type of Report and Period Covered Annual Summary, 1979-1989 | |
| | | | | 14. Sponsoring Agency Code DMA-1 | |
| 15. Supplementary Notes | | | | | |
| 16. Abstract The <i>Transportation Safety Information Report</i> is a compendium of selected national-level transportation safety statistics for all modes of transportation and for multimodal transportation of hazardous materials. The report presents and compares data for transportation accidents, fatalities, and injuries for the years 1979-1989. The report is based on data input to the Transportation Safety Information System (TRANSIS) by representatives in each of DOT's modal administrations and the National Transportation Safety Board. | | | | | |
| 17. Key Words Transportation, Statistics, Safety, Accidents, Fatalities, Injuries | | | 18. Distribution Statement | | |
| 19. Security Classif. (of this report) Unclassified | | 20. Security Classif. (of this page) Unclassified | | 21. No. of Pages 64 | 22. Price |

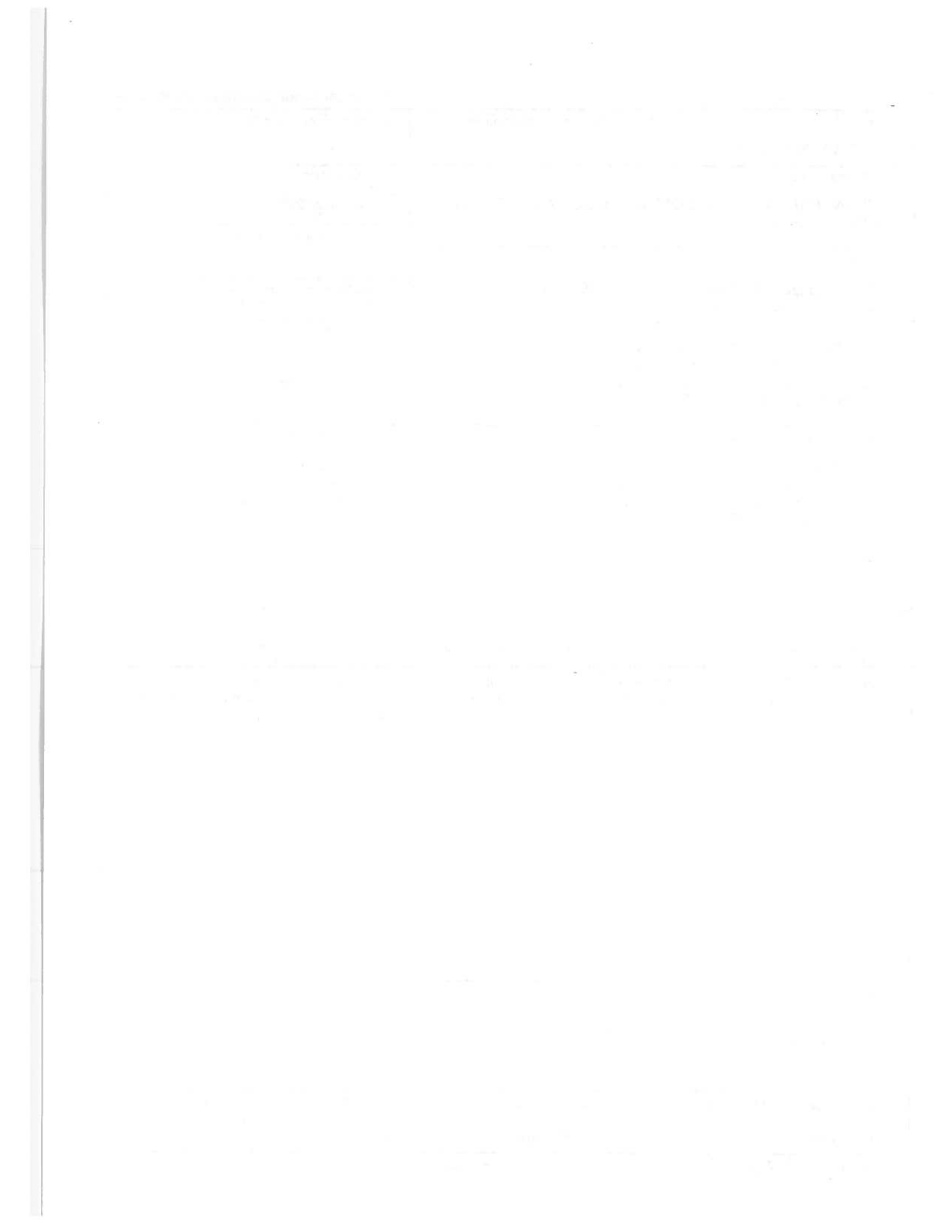


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INTRODUCTION

The purpose of the *Transportation Safety Information Report* is to provide a summary of statistics on safety data for individual transportation modes, and for hazardous material transportation by any mode.

The report is based on data input to the Transportation Safety Information System (TRANSIS) by representatives in each of the U.S. Department of Transportation's (DOT) modal administrations and the National Transportation Safety Board. Offices and publications cited as sources can provide additional detail and in-depth discussion of the use and interpretation of data.

The TRANSIS report is used by DOT policy makers, state and local safety officials, and private research organizations.

The TRANSIS system was established in 1972 in response to a growing requirement for a base of multimodal safety data, both within DOT and from other agencies. A need was perceived for a system that would provide timely reporting of transportation safety statistics and related information on a modal and multimodal basis, and for monitoring current transportation safety problems, activities and accident trends.

This report is published on an annual basis. A related publication, *National Transportation Statistics*, is also available on an annual basis from the Superintendent of Documents, Government Printing Office, Washington, DC.

The *Transportation Safety Information Report* is prepared by the DOT's Research and Special Programs Administration's (RSPA) Volpe National Transportation Systems Center (VNTSC) under the sponsorship of RSPA's Office of Program Management and Administration.

Ms. Francine Butler of the VNTSC's Center for Transportation Information provided valuable assistance in the preparation of this report.

STATISTICAL SUMMARY of TRANSPORTATION SAFETY, 1988-1989

Fatalities

The total number of transportation fatalities recorded in 1989 decreased 2.8 percent when compared with 1988, as shown in Table 1. General Aviation, Motor Vehicle Traffic, Waterborne Transport, Recreational Boating, and Hazardous Materials operations exhibited a decline in 1989. Air Carrier, Railroad, Rail-Highway Grade Crossings, Rail Rapid Transit, and Pipeline operation rates were, however, elevated.

During 1989, an estimated 45,555 people died in Motor Vehicle traffic accidents, down 3.3 percent from the 47,087 fatalities reported in 1988. The fatality rate per 100 million vehicle-miles of travel was 2.19 in 1989, the lowest rate recorded in the past 13-year period. In addition, passenger car occupant fatalities fell from 25,808 in 1988 to 25,046 in 1989.

Air Carrier fatalities, scheduled and nonscheduled, ebbed in 1989 when compared with 1988, 285 to 278. Commuter carrier and on-demand air taxi fatalities increased in 1989. Thus, total air carrier fatalities, including commuter carriers and on-demand air taxis, show an increase from 364 during 1988 to 389 in 1989. General Aviation fatalities fell to a 14-year low in 1989, from 781 to 763.

Waterborne Transport fatalities decreased from 81 in 1988 to 79 in 1989. Recreational Boating fatalities receded to 896 in 1989 from 946 in 1988 which dropped the fatality rate per 100,000 estimated boats from 5.5 to 5.0, during the same period.

Railroad fatalities rose from 510 in 1988 to 523 in 1989. Rail-Highway Grade Crossing fatalities escalated to 801 during 1989 versus 689 in 1988. Rail Rapid Transit fatalities rose from 19 in 1988 to 45 in 1989. Pipeline fatalities grew from 20 in 1988 to 39 in 1989, while deaths resulting from incidents involving transportation of Hazardous Materials lowered to 8 during 1989 from 19 in 1988.

Injuries

The total number of injuries for all modes of transportation decreased from 1,834,576 in 1988 to 1,734,278 in 1989. Air Carrier, General Aviation, Motor Vehicle Traffic, Railroad, and Rail Rapid Transit operation injuries dropped in 1989. Waterborne Transport, Recreational Boating, Rail-Highway Grade Crossings, Pipeline, and Hazardous Materials, all showed a gain in injuries.

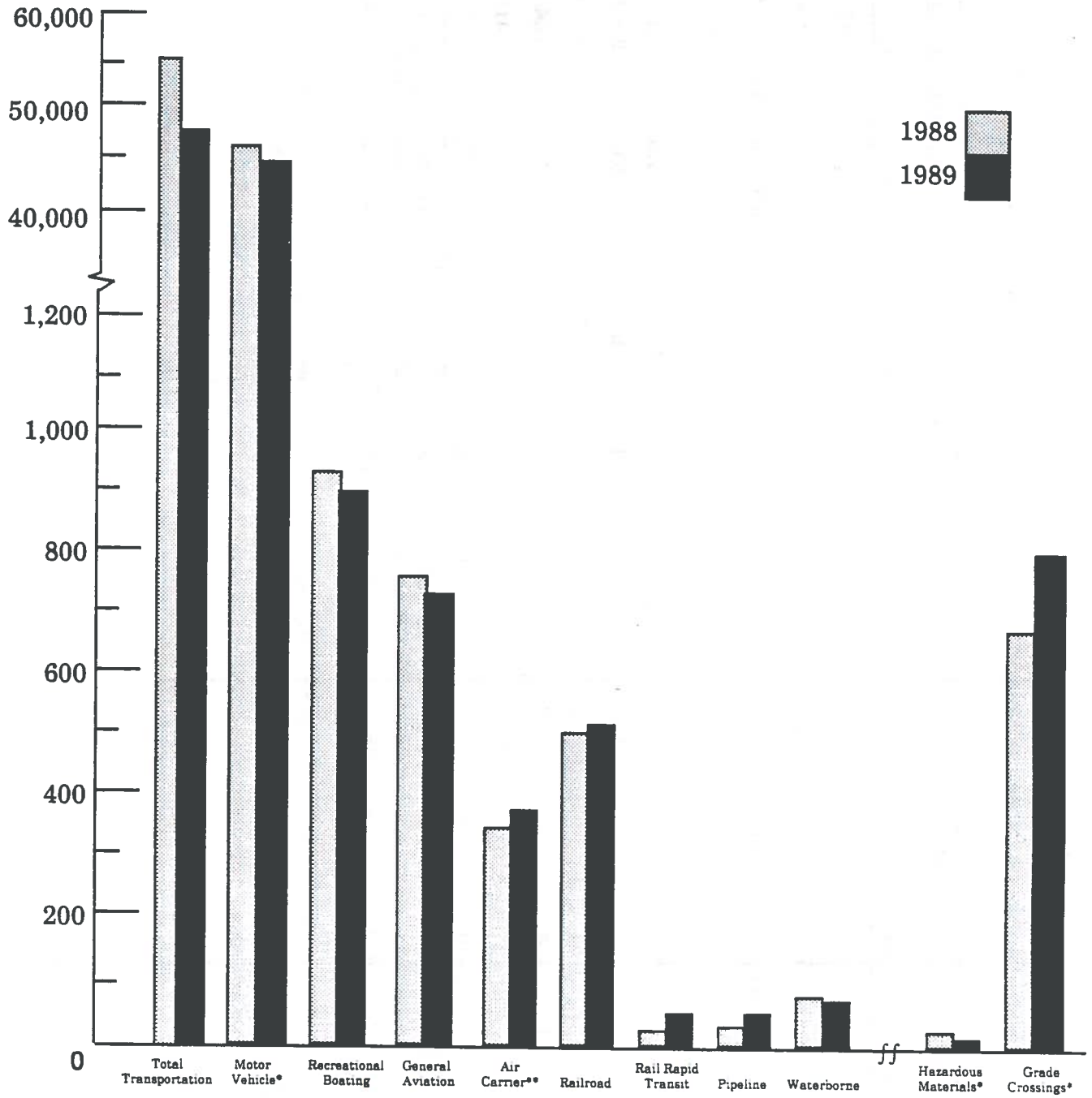
Accidents/Incidents

Accidents decreased in General Aviation, Motor Vehicle Traffic, Waterborne Transport, Recreational Boating, Rail-Highway Grade Crossings, Rail Rapid Transit, and Pipeline operations. Air Carrier, Railroad and Hazardous Materials operations, however, all had a growth in the number of accidents.

General Aviation accidents dropped 8.3 percent. Waterborne Transport also decreased in 1989 by 9 percent. Recreational Boating accidents decreased by 9.8 percent, from 6,718 in 1988 to 6,063 in 1989. Rail-Highway Grade Crossings declined 1.4 percent, while Rail Rapid Transit operations decreased 5.8 percent. Pipeline accidents/incidents also lowered from 454 in 1988 to 418 in 1989.

Accidents increased in Air Carrier operations by 2.7 percent in 1989. Railroad operation accidents rose 1.5 percent and Hazardous Materials operation accidents grew 21 percent.

Chart 1. Transportation Fatalities by Mode, 1988 and 1989



* U.S. DOT/NHTSA estimates based on a 30-day definition (see Glossary).
 ** Includes Commuter Carriers and Air Taxis.

SAFETY STATISTICS by MODE

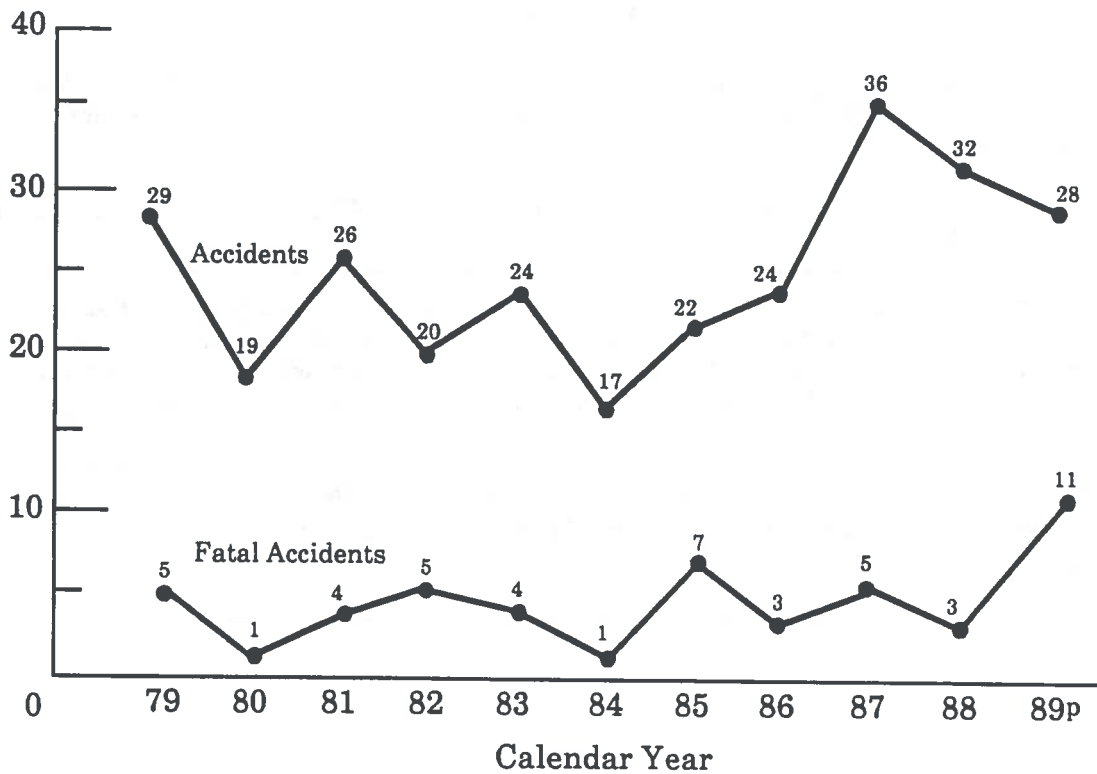
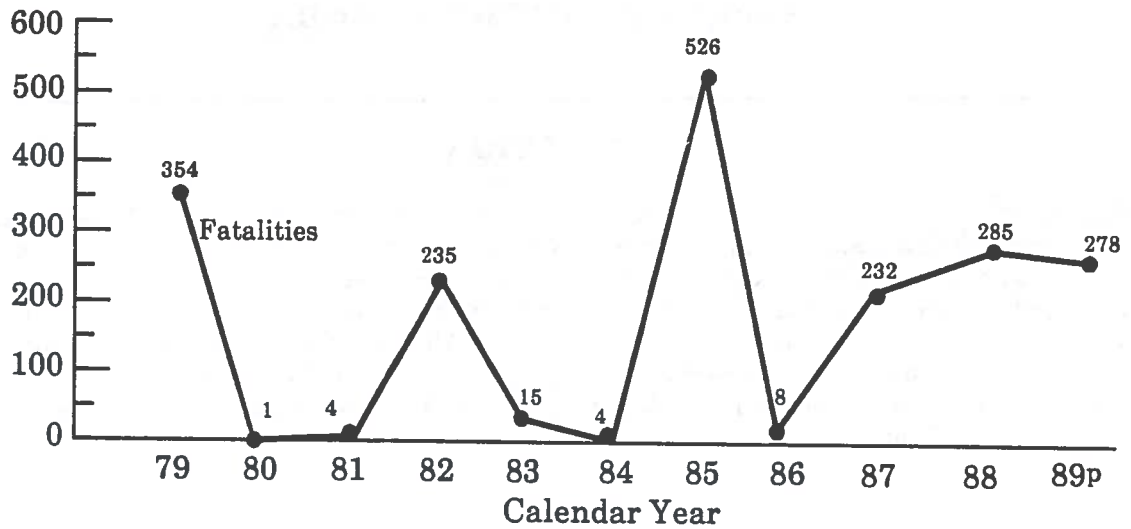
AVIATION

Beginning in January 1982, the National Transportation Safety Board (NTSB) began reporting aviation accident data according to the Federal Aviation Regulations (FAR) under which the aircraft was operated at the time of an accident. Revenue operations of Air Carriers, Commercial Operators and deregulated All Cargo Carriers, using large aircraft, are conducted under FAR 14 CFR 121. Commuter Air Carriers (scheduled) and On-Demand Air Taxi Operators (unscheduled) revenue operations (using small aircraft) are conducted under FAR 14 CFR 135. Accidents involving flights not being conducted under either FAR 14 CFR 121 or 14 CFR 135 are grouped by the NTSB into the "General Aviation" category.

AIR CARRIER

- U.S. air carriers flying large aircraft (14 CFR 121) cited three fatal accidents in 1988 compared with eleven in 1989. During the 1988-1989 period, total U.S. air carrier accidents dropped from 32 to 28 accidents.
- There were 278 fatalities in U.S. air carrier operations (14 CFR 121) during 1989 compared with 285 in 1988.
- Commuter carriers had five fatal accidents and 31 fatalities in 1989, compared with two fatal accidents and 21 fatalities in 1988. There were 0.17 fatal accidents for every 100,000 departures in 1989 versus 0.07 in 1988. A total of 18 accidents was recorded by commuter carriers in 1989 compared to 19 in 1988. Serious injuries declined from 4 in 1988 to 3 in 1989.
- The fatal accident rate for on-demand air taxis fell to 23 in 1989, a decrease from 27 in 1988. Fatalities climbed from 58 in 1988 to 80 in 1989. Total on-demand air taxi accidents increased from 98 in 1988 to 110 in 1989, a growth of 11 percent. Serious injuries rose from 32 in 1988 to 35 in 1989.

Chart 2. U.S. Air Carrier* Fatalities, Accidents, and Fatal Accidents, 1979-1989

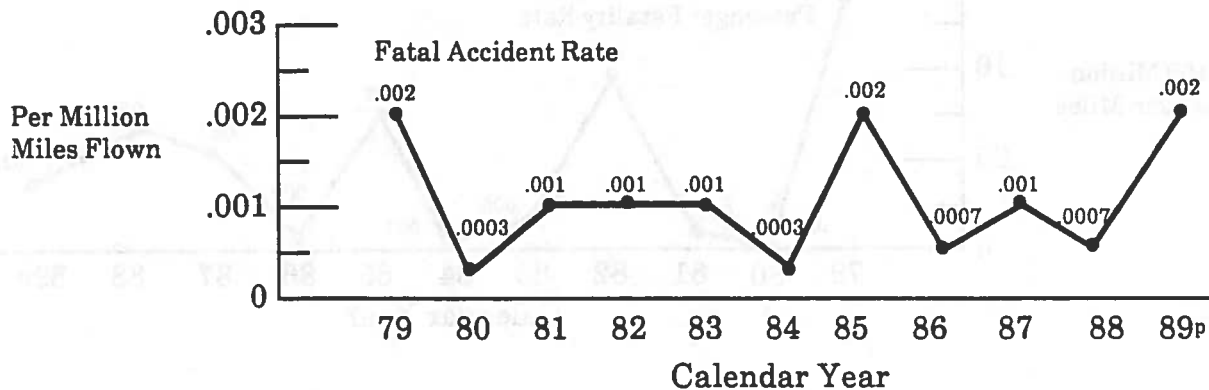
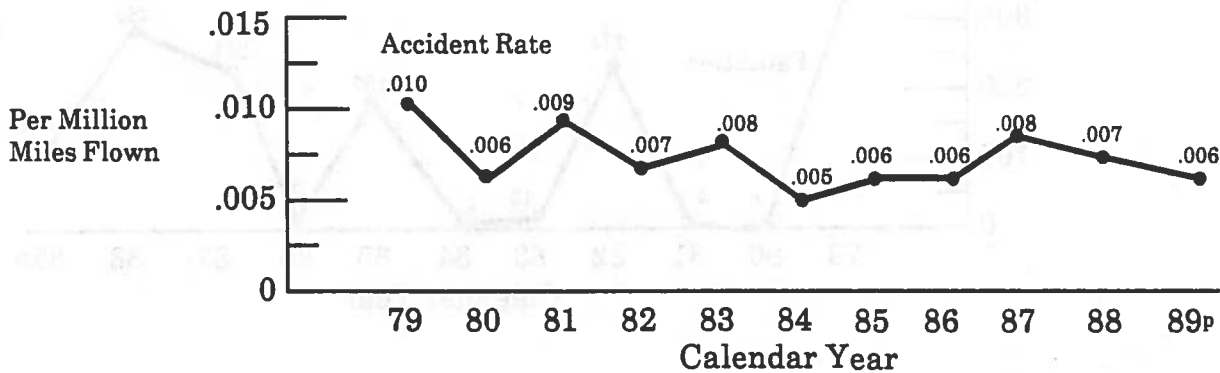
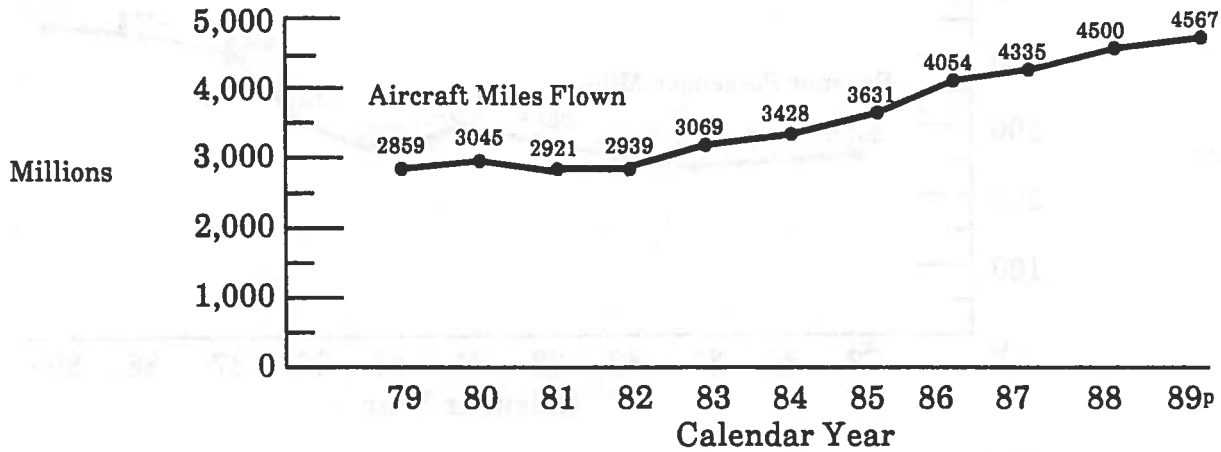


p = preliminary.

* Includes all scheduled and nonscheduled service accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during 14 CFR 121 operations.

Source: National Transportation Safety Board (NTSB), Analysis and Data Division, RE-50.

Chart 3. U.S. Air Carrier* Accident and Fatal Accident Rates per Aircraft Miles Flown, 1979-1989

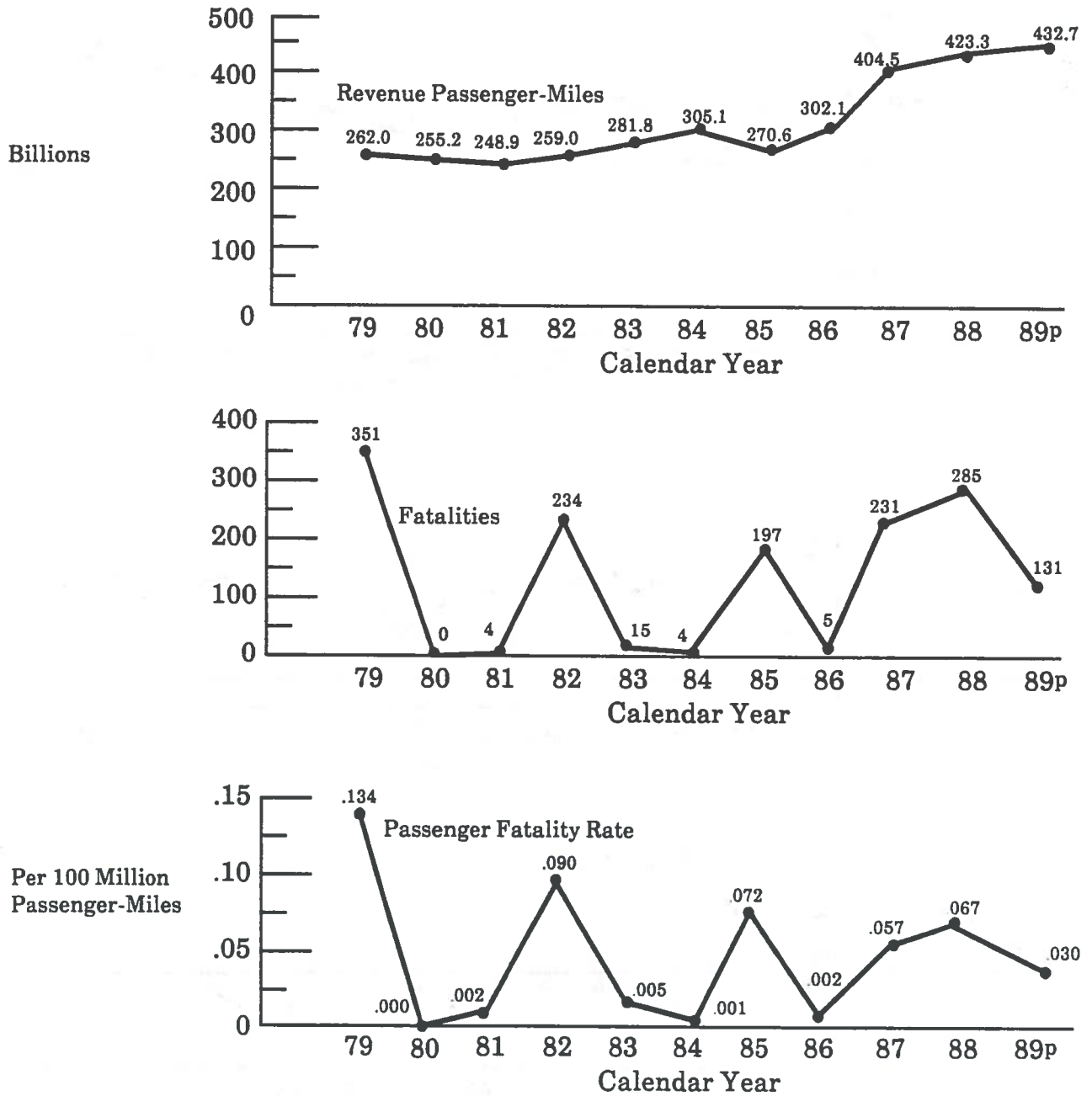


p = preliminary.

* Includes all scheduled and nonscheduled service accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during 14 CFR 121 operations.

Source: NTSB, Analysis and Data Division, SP-30.

Chart 4. U.S. Air Carrier* Passenger Fatality Rates per Passenger-Mile, 1979-1989



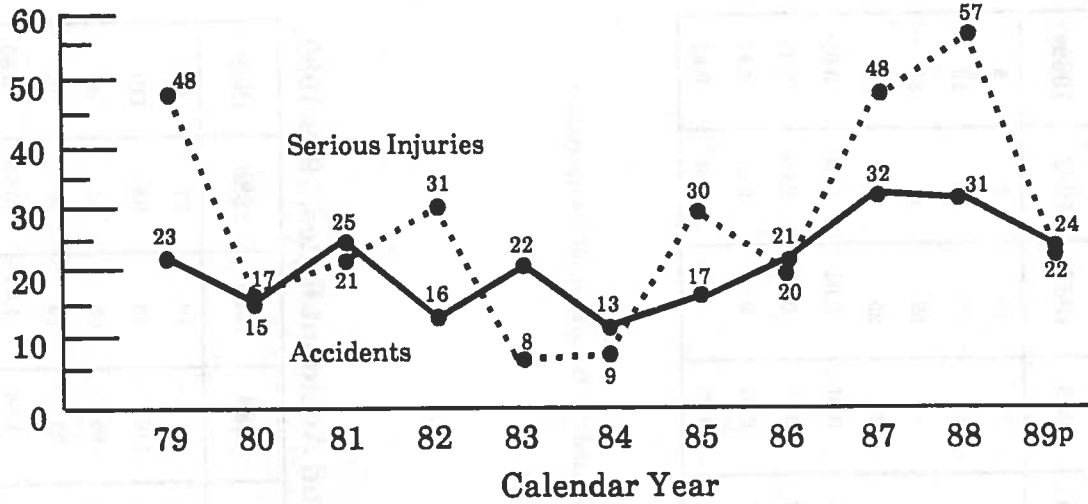
p = preliminary.

* All scheduled revenue passenger service conducted under 14 CFR 121 operations. Nonscheduled service not included.

Source: Fatalities: NTSB, Analysis and Data Division, RE-50.

Revenue Passenger-Miles: U.S.DOT/RSPA/VTSC, *Air Carrier Traffic Statistics*, annual report.

Chart 5. U.S. Carrier Accidents and Serious Injuries, 1979-1989



p = preliminary.

* Includes all scheduled service accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during scheduled 14 CFR 121 operations. Nonscheduled service is not included.

Source: NTSB, Analysis and Data Division, RE-50.

Table 2. Commuter Air Carrier* Accidents, Fatalities, Injuries, and Accident Rates, 1979-1989

| | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 ^p |
|------------------------|------|------|------|------|------|------|------|------|------|------|-------------------|
| Fatal Accidents | 15 | 8 | 9 | 5 | 2 | 7 | 7 | 2 | 10 | 2 | 5 |
| Total Accidents | 52 | 38 | 31 | 26 | 17 | 22 | 21 | 15 | 32 | 19 | 18 |
| Fatalities | 66 | 37 | 34 | 14 | 11 | 48 | 37 | 4 | 59 | 21 | 31 |
| Serious Injuries | 45 | 14 | 24 | 28 | 12 | 23 | 16 | 12 | 20 | 4 | 3 |
| Fatal Accident Rate*** | 0.08 | 0.04 | 0.05 | 0.02 | 0.01 | 0.02 | 0.02 | 0.01 | 0.03 | 0.01 | 0.01 |
| Total Accident Rate*** | 0.27 | 0.20 | 0.16 | 0.12 | 0.07 | 0.08 | 0.07 | 0.05 | 0.10 | 0.05 | 0.05 |
| Fatal Accident Rate# + | 0.80 | 0.45 | 0.49 | 0.25 | 0.09 | 0.26 | 0.27 | 0.07 | 0.35 | 0.07 | 0.17 |
| Total Accident Rate# + | 2.76 | 2.14 | 1.69 | 1.28 | 0.73 | 0.82 | 0.82 | 0.55 | 1.12 | 0.65 | 0.62 |

^p = preliminary.

* All scheduled service conducted under 14 CFR 135.

** Per million aircraft miles flown.

+ Rates are based on all accidents including some involving operators not reporting traffic data to the U.S. Department of Transportation.

Per 100,000 departures.

Source: NTSB, Analysis and Data Division, RE-50.

Table 3. On-Demand Air Taxi* Accidents, Fatalities, Injuries, and Accident Rates, 1979-1989

| | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 ^p |
|-----------------------|------|------|------|------|------|------|------|------|------|------|-------------------|
| Fatal Accidents | 30 | 46 | 40 | 31 | 27 | 23 | 35 | 31 | 30 | 27 | 23 |
| Total Accidents | 160 | 171 | 157 | 132 | 141 | 146 | 152 | 116 | 98 | 98 | 110 |
| Fatalities | 77 | 105 | 94 | 72 | 62 | 52 | 76 | 65 | 65 | 58 | 80 |
| Serious Injuries | 32 | 43 | 37 | 39 | 29 | 35 | 43 | 33 | 19 | 32 | 35 |
| Fatal Accident Rate** | 0.81 | 1.27 | 1.38 | 0.95 | 1.05 | 0.75 | 1.26 | 1.06 | 1.04 | 0.95 | 0.80 |
| Total Accident Rate** | 4.34 | 4.73 | 5.42 | 4.05 | 5.48 | 4.74 | 5.46 | 3.98 | 3.41 | 4.5 | 3.83 |

^p = preliminary.

* Nonscheduled service conducted under 14 CFR 135.

** Per 100,000 aircraft hours.

Source: NTSB, Analysis and Data Division, RE-50.

GENERAL AVIATION

- U.S. General Aviation accidents, fatal accidents, and fatalities all decreased during 1989 compared with 1988. There were 2,167 accidents, 420 fatal accidents and 763 fatalities in 1989 versus 2,363 accidents, 449 fatal accidents and 781 fatalities in 1988. Serious injuries also fell during the same period, with a total of 393 serious injuries in 1989 compared with 497 in 1988.

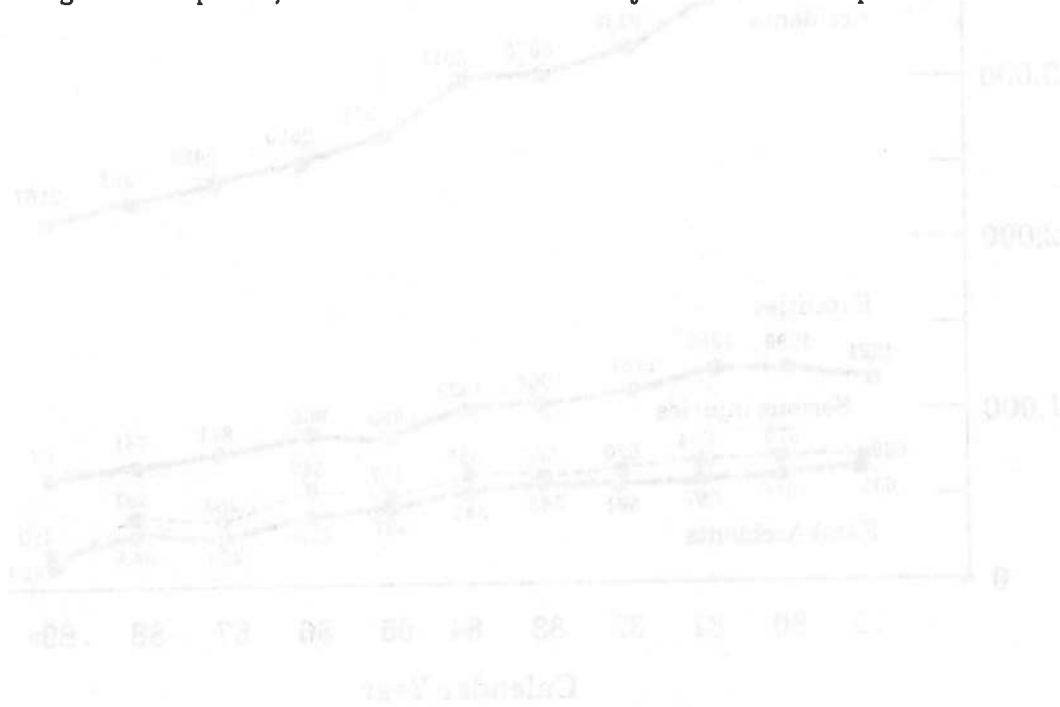
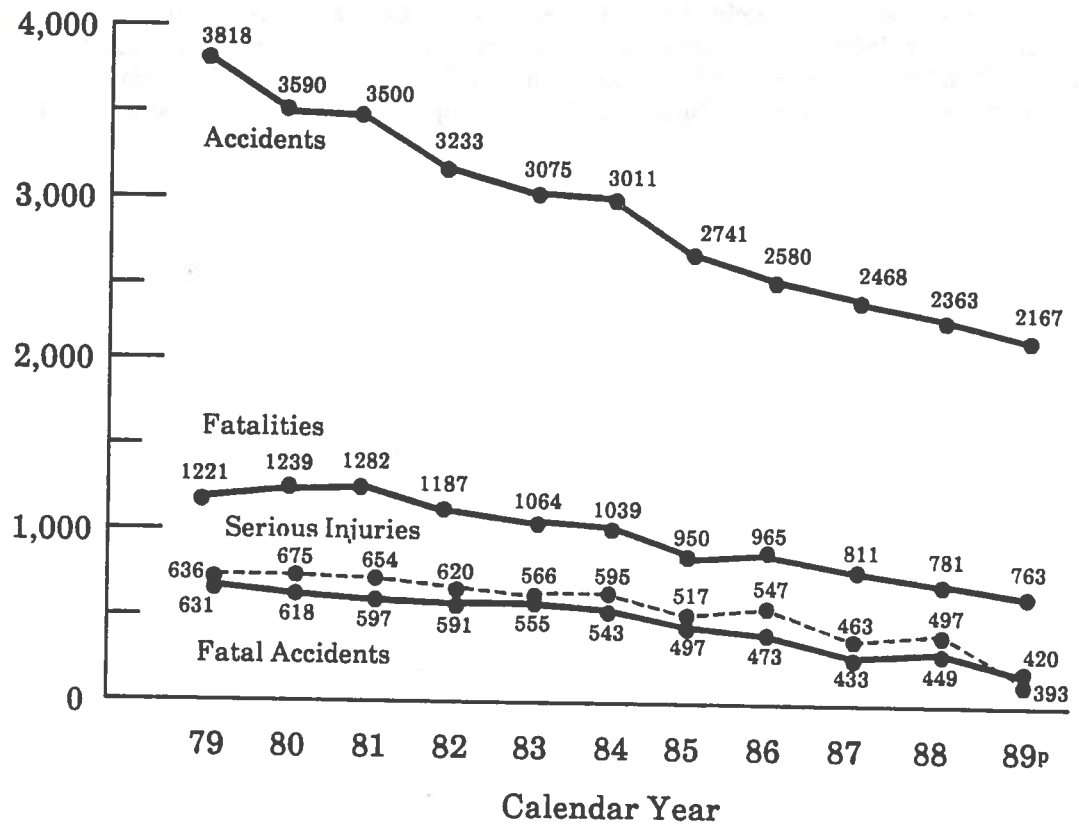
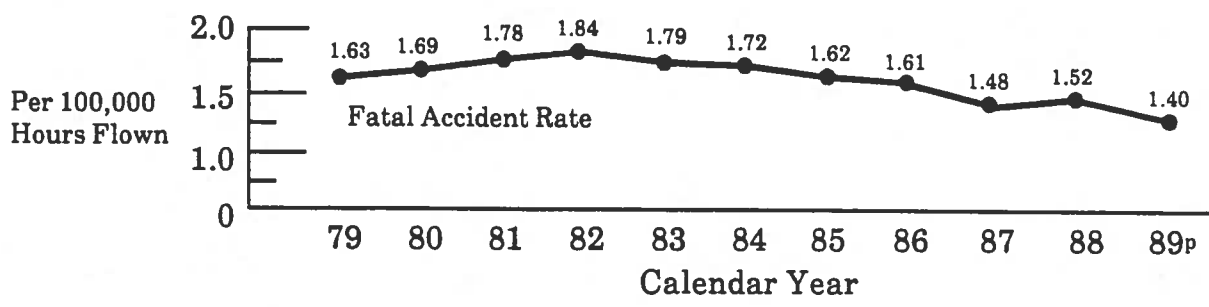
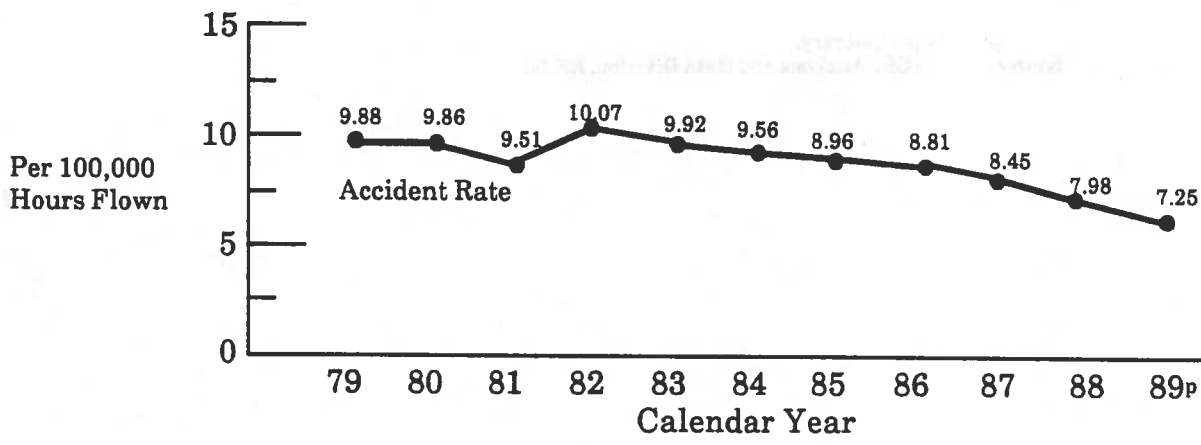
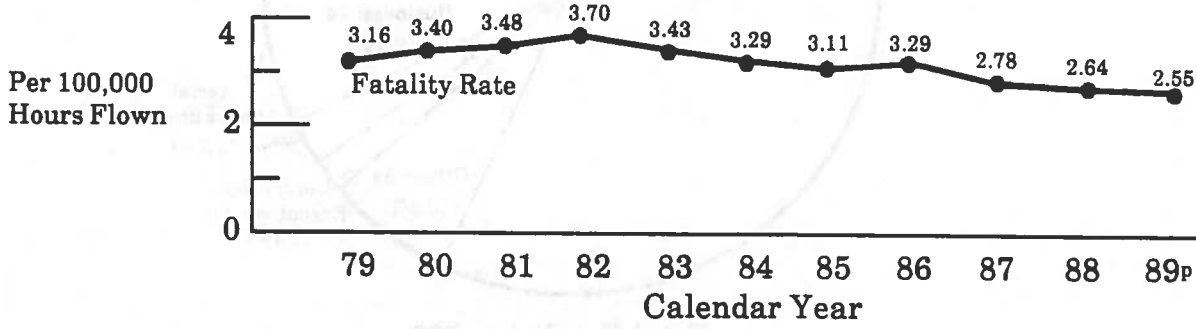
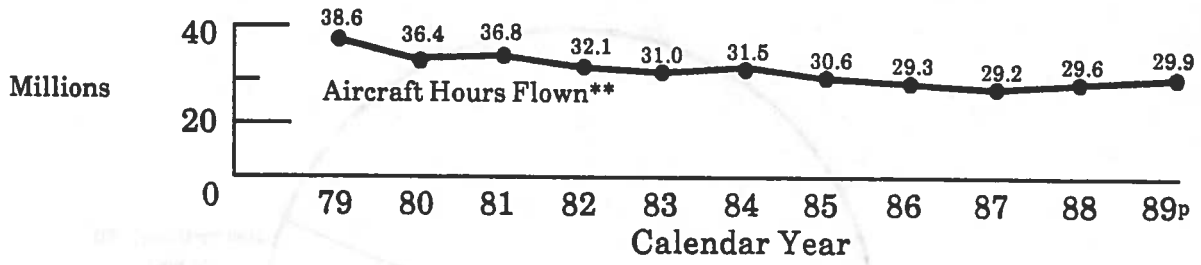


Chart 6. General Aviation* Accidents, Fatalities, Serious Injuries, and Fatal Accidents, 1979-1989



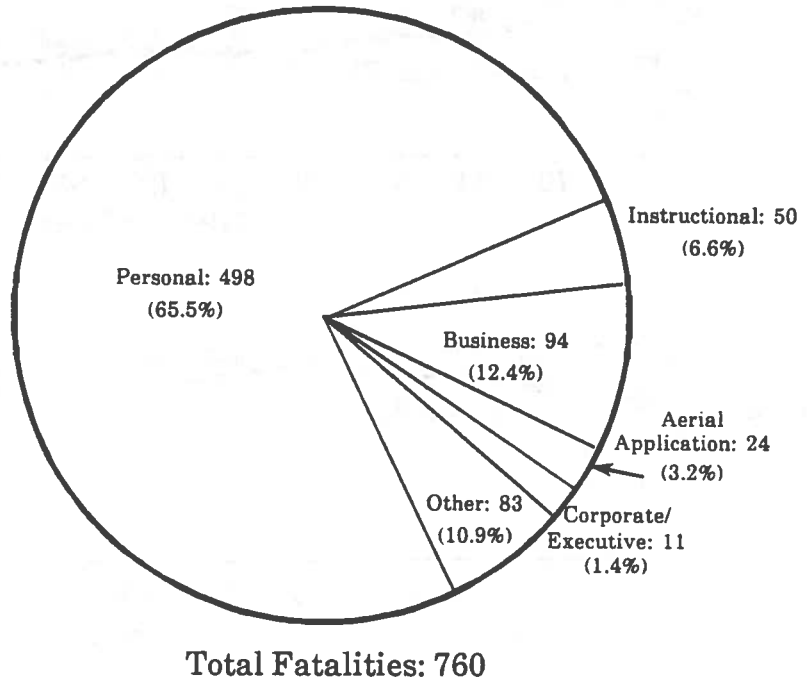
p = preliminary.
 * All operations other than those conducted under 14 CFR 121 or 14 CFR 135.
 Source: NTSB, Analysis and Data Division, RE-50.

Chart 7. General Aviation* Fatality and Accident Rates Per Aircraft Hours Flown, 1979-1989



p = preliminary.
 * All operations other than those conducted under 14 CFR 121 or 14 CFR 135.
 ** Estimated by Federal Aviation Administration.
 Note: Suicide/sabotage accidents excluded from rates as follows (1980-1, 1982-3, 1983-1, 1984-3, 1985-3, 1987-1, 1988-1, and 1989-2). Suicide/Sabotage fatal accidents excluded from rates as follows (1980-1, 1984-2, 1985-2, 1987-1, and 1989-1).
 Source: NTSB, Analysis and Data Division, RE-50.

Chart 8. General Aviation Fatalities by Type of Aircraft, 1989p



p = preliminary.
Source: NTSB, Analysis and Data Division, RE-50.

HIGHWAY

- The 1989 fatality rate dipped to 2.2 deaths per 100 million miles of travel, a remarkable improvement from the 3.3 figure registered in 1979.
- There were 45,555 traffic fatalities in 1989, a 3% decline from the 47,087 killed in 1988. Preliminary estimates of travel show an increase of 4% over 1988.
- An estimated 49% of the 45,555 traffic fatalities were in accidents in which a driver or nonoccupant has some presence of alcohol. There has been a steady decline in alcohol-related fatalities since 1982 when the proportion of fatalities which were in alcohol-related crashes was 57%.
- Among front seat passenger vehicle occupants over four years old, safety belts have saved about 4,575 lives in 1989 - 3,656 associated with belt use laws.
- Occupant fatalities of passenger cars decreased by 3% over 1988, while light truck occupant fatalities showed an increase of 3%.
- Nonoccupant fatalities (pedestrians and pedalcyclists) has an overall decrease of 5% from 1988.

Table 4. Motor Vehicle Traffic Data Comparisons*, 1979, 1988-1989

| | 1979 | 1988 | 1989 ^e | 1979-1989 Average Annual % Change | 1988-1989 % Change |
|--|---------|---------|-------------------|--|-----------------------|
| Total Registered Motor Veh (000)† | 159,621 | 184,397 | 188,669 | 2.19 | 2.32 |
| Automobiles | 120,248 | 141,252 | 144,375 | 1.88 | 2.21 |
| Trucks | 33,350 | 42,529 | 43,661 | 2.90 | 2.66 |
| Buses | 520 | 616 | 633 | 2.15 | 2.76 |
| Motorcycles | 5,502 | 4,584 | 4,376 | -0.96 | -4.54 |
| Licensed Drivers (000) | 143,284 | 162,853 | 164,912 | 1.53 | 1.26 |
| Percent under 25 years old | 21.6 | 16.5 | 16.5 | -2.88 | 0.00 |
| Percent over 64 years old | 10.4 | 12.7 | 12.7 | 1.97 | 0.00 |
| Vehicle Mileage (Billions) | 1,529 | 2,026 | 2,082 | 2.49 | 2.76 |
| Traffic Fatalities | 51,290 | 47,093 | 45,555 | -1.14 | -3.27 |
| Traffic Fatality Rate** | 3.35 | 2.32 | 2.19 | -3.53 | -5.60 |

e = estimate.

* Data include the 50 States and the District of Columbia.

** Per 100 million vehicle-miles.

† Excludes motorcycles.

Note: Totals may not add due to rounding.

Source: Registered Vehicles, Licensed Drivers and Vehicle Mileage 1979, 1988: U.S.DOT/FHWA, *Highway Statistics*, 1979, 1988, Tables MV-1, DL-20, VM-1.

Registered Vehicles, Licensed Drivers and Vehicle Mileage, 1989: U.S.DOT/FHWA, Office of Highway Information Management, HPM-40.

Fatalities: U.S.DOT/NHTSA, National Center for Statistics and Analysis, Fatal Accident Reporting System (FARS).

Table 5. Traffic Fatalities by Major Category, 1979, 1988-1989

Occupant Fatalities by Vehicle Type

| | 1979 | 1988 | 1989 ^p | 1979-1989 Average Annual % Change | 1988-1989 % Change |
|-----------------------------------|---------------|---------------|-------------------|--|-----------------------|
| Passenger Cars | 27,808 | 25,808 | 25,046 | -1.0 | -3.0 |
| Subcompact | 6,468 | 8,769 | 8,266 | 2.5 | -5.7 |
| Compact | 833 | 4,764 | 4,987 | 19.6 | 4.7 |
| Intermediate | 3,206 | 5,016 | 4,943 | 4.4 | -1.5 |
| Full | 12,111 | 5,744 | 5,103 | -8.3 | -11.2 |
| Unknown | 5,190 | 1,515 | 1,747 | -10.3 | 15.3 |
| Trucks | 8,610 | 9,217 | 9,402 | 0.9 | 2.0 |
| Light Trucks | 7,178 | 8,306 | 8,545 | 1.8 | 2.9 |
| Heavy Trucks | 1,088 | 786 | 729 | -3.9 | -7.3 |
| Other Trucks | 344 | 125 | 128 | -9.4 | 2.4 |
| Motorcycles | 4,894 | 3,662 | 3,143 | -4.3 | -14.2 |
| Other and Unknown Vehicle Type | 618 | 483 | 474 | -2.6 | -1.9 |
| Total | 41,930 | 39,170 | 38,065 | -1.0 | -2.8 |

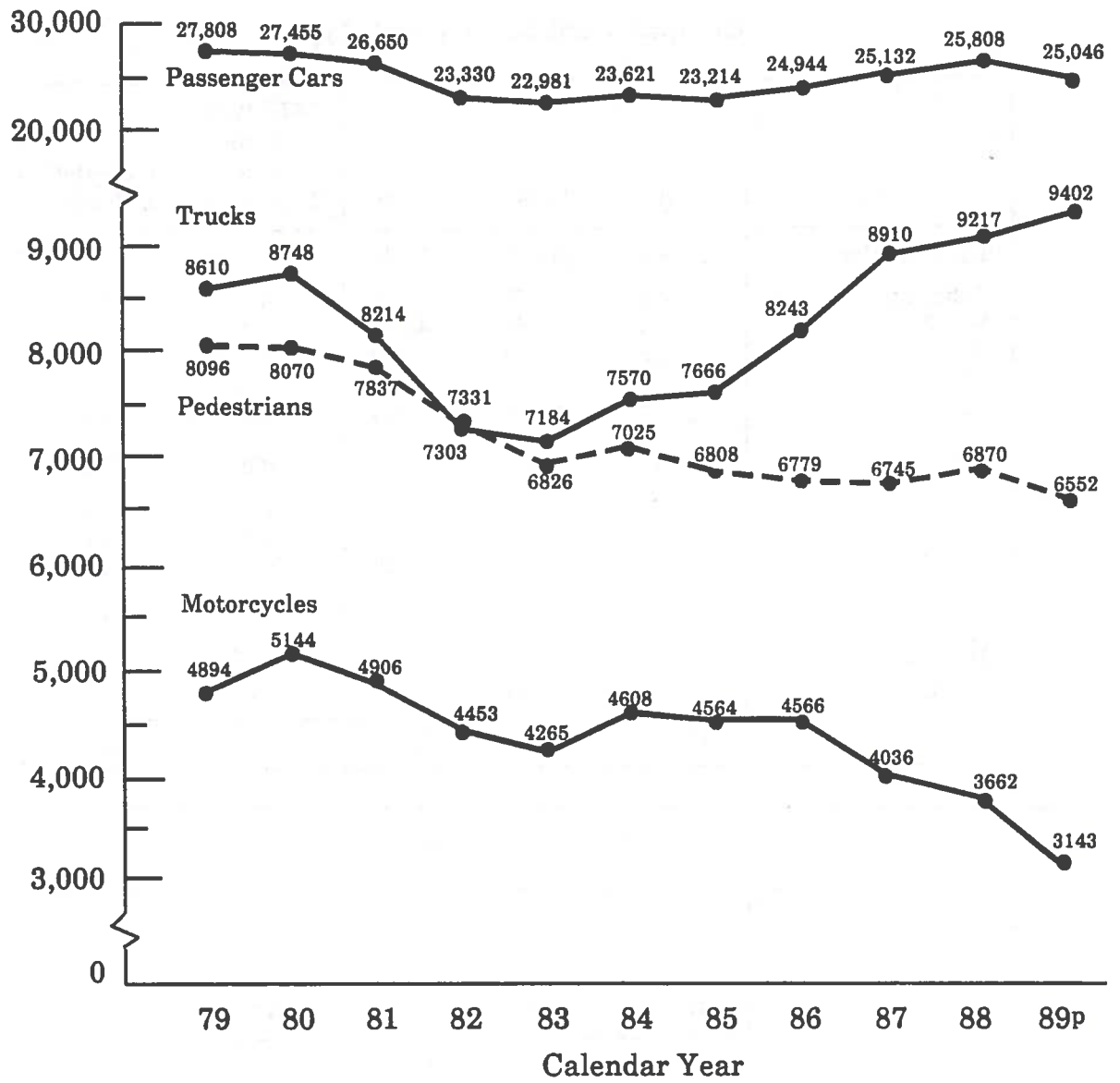
Non-Occupant Fatalities

| | 1979 | 1988 | 1989 ^p | 1979-1989 Average Annual % Change | 1988-1989 % Change |
|--------------|--------------|--------------|-------------------|--|-----------------------|
| Pedestrian | 8,096 | 6,870 | 6,552 | -2.1 | -4.6 |
| Pedalcyclist | 932 | 911 | 831 | -1.1 | -8.8 |
| Other | 135 | 136 | 107 | -2.3 | -21.3 |
| Total | 9,163 | 7,917 | 7,490 | -2.0 | -5.4 |

^p = preliminary.

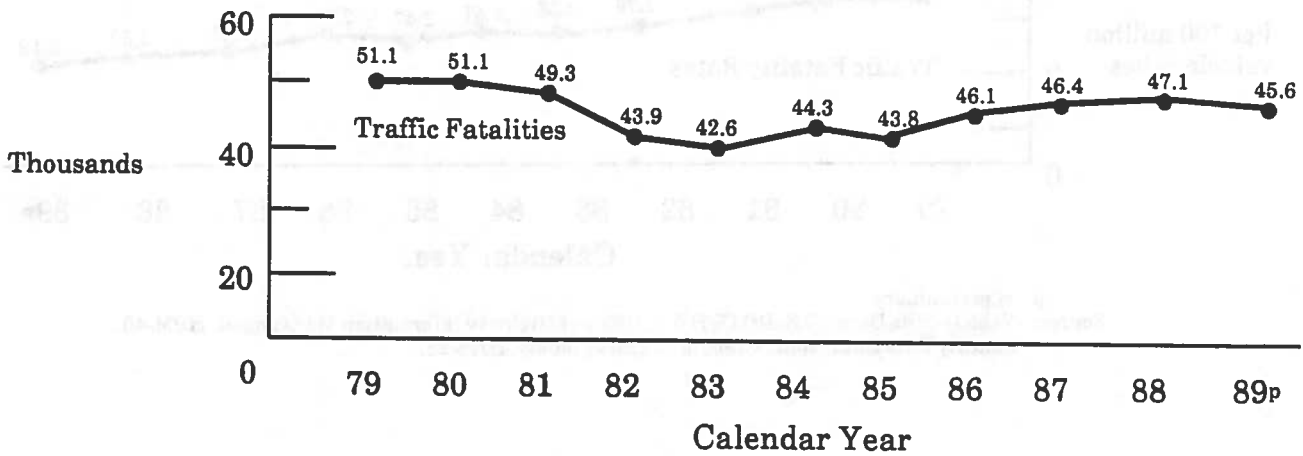
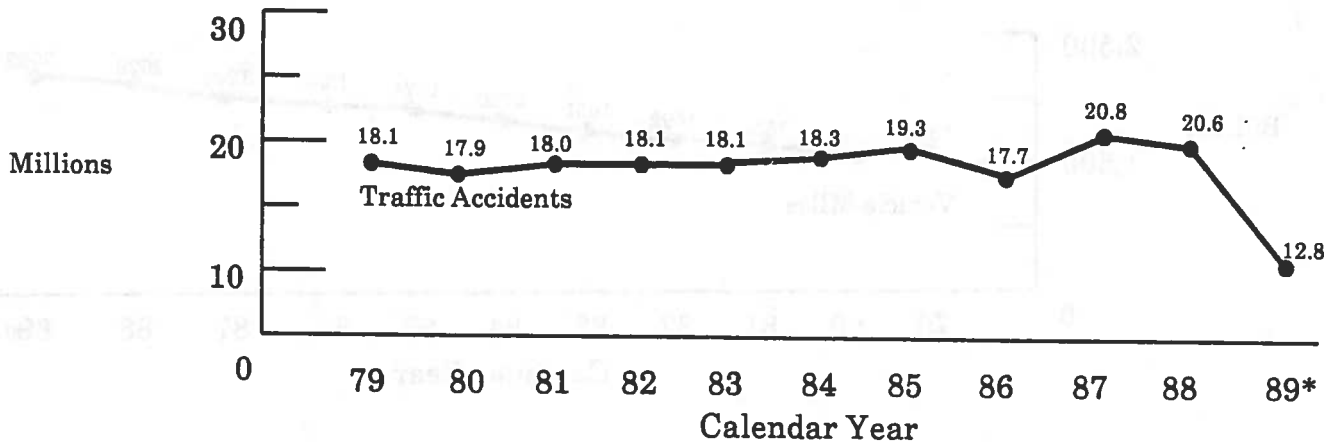
Source: U.S.DOT/NHTSA, National Center for Statistics and Analysis, Fatal Accident Reporting System (FARS).

Chart 9. Traffic Fatalities by Major Category, 1979-1989



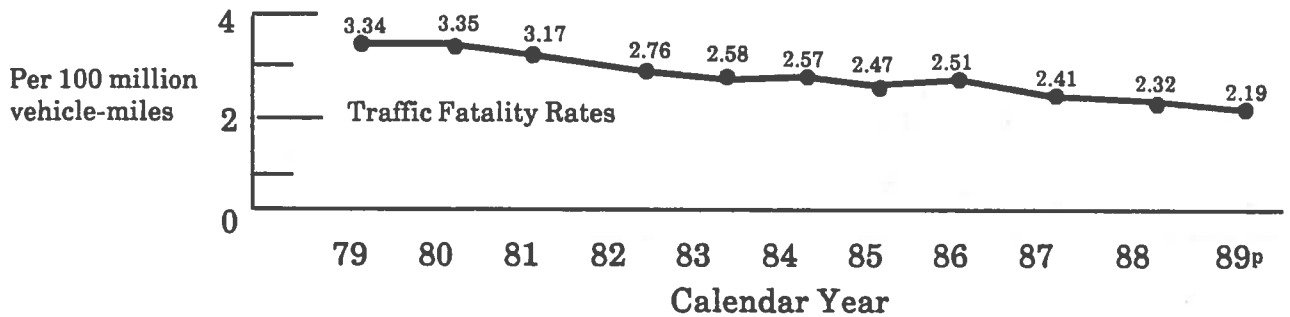
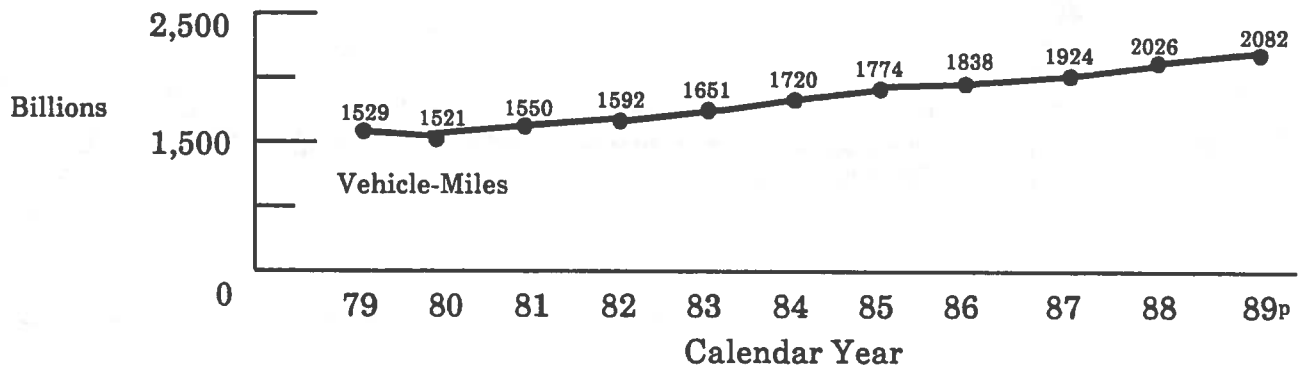
p = preliminary.
 Source: U.S.DOT/NHTSA, National Center for Statistics and Analysis, Fatal Accident Reporting System (FARS).

Chart 10. Motor Vehicle Traffic Accidents and Traffic Fatalities, 1979-1989



* National Safety Council procedures for estimating the number of accidents were changed with the 1989 figures. Thus, 1989 data are not comparable to previous years.
 p = preliminary.
 Note: Fatalities in this chart are based on a 30-day definition, and include 50 states and the District of Columbia.
 Source: Fatality Data: U.S. DOT/NHTSA, Fatal Accident Reporting System (FARS).
 Accident Data: National Safety Council, *Accident Facts*, annual report.

Chart 11. Motor Vehicle Traffic Fatality Rates per Vehicle-Miles, 1979-1989



p = preliminary.

Source: Vehicle-Mile Data: U.S. DOT/FHWA, Office of Highway Information Management, HPM-40.
 Fatality Rate Data: *Ibid.*, Office of Highway Safety, HHS-22.

Table 6. Motor Vehicle Fatal Accidents by Posted Speed Limit, 1979, 1988-1989

| Post Speed | 1979 | 1988 | 1989 ^p | 1979-1989 Average Annual % Change | 1988-1989 % Change |
|--------------------|--------|--------|-------------------|--|-----------------------|
| 0-25 MPH | 2,935 | 2,337 | 2,329 | -2.3 | -0.3 |
| 26-35 MPH | 8,145 | 8,429 | 7,945 | 0.3 | -5.7 |
| 36-45 MPH | 6,148 | 7,146 | 7,077 | 1.4 | -1.0 |
| 46-54 MPH | 2,454 | 2,209 | 2,128 | -1.4 | -3.7 |
| Total Under 55 MPH | 19,682 | 20,121 | 19,479 | -0.1 | -3.2 |
| 55 MPH | 20,234 | 18,883 | 18,069 | -1.1 | -4.3 |
| 60 MPH | n/a | 8 | 16 | - | 100.0 |
| 65 MPH | n/a | 2,053 | 2,081 | - | 1.4 |
| Unknown | 5,307 | 1,065 | 1,073 | -14.8 | 0.8 |
| Total | 45,223 | 42,130 | 40,718 | -1.0 | -4.6 |

p = preliminary.

n/a = not applicable.

Source: U.S.DOT/NHTSA, National Center for Statistics and Analysis, Fatal Accident Reporting System (FARS).

Table 7. Motor Carrier* Accidents, Fatalities, and Injuries by Type of Carrier, 1979-1988

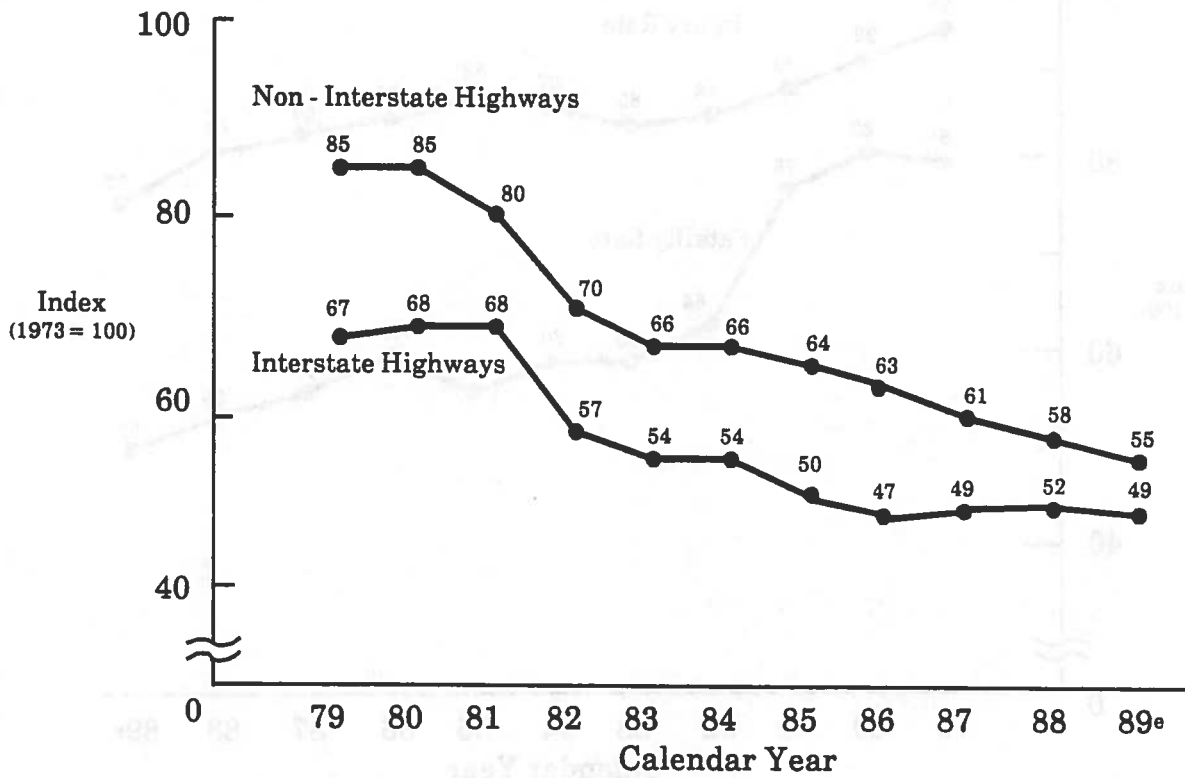
| Classification | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Motor Carriers of Property | | | | | | | | | | |
| Accidents | 32,322 | 28,220 | 27,772 | 27,001 | 26,032 | 29,579 | 29,068 | 26,229 | 27,479 | 32,778 |
| Fatalities | 3,072 | 2,528 | 2,810 | 2,456 | 2,528 | 2,721 | 2,646 | 2,616 | 2,907 | 3,309 |
| Injuries | 32,126 | 27,149 | 28,533 | 26,117 | 26,692 | 29,149 | 28,988 | 25,106 | 28,018 | 31,295 |
| Motor Carriers of Passengers | | | | | | | | | | |
| Accidents | 719 | 748 | 832 | 855 | 711 | 628 | 676 | 400 | 89p | 64p |
| Fatalities | 60 | 74 | 95 | 76 | 67 | 57 | 62 | 100 | 558p | 660p |
| Injuries | 1,977 | 1,711 | 2,041 | 1,970 | 1,827 | 1,505 | 1,825 | 1,176 | 2,059p | 2,042p |
| All Motor Carriers | | | | | | | | | | |
| Accidents | 33,041 | 28,968 | 28,604 | 27,856 | 26,743 | 30,207 | 29,744 | 26,629 | 28,037p | 33,438p |
| Fatalities | 3,132 | 2,602 | 2,905 | 2,532 | 2,595 | 2,778 | 2,708 | 2,716 | 2,996p | 3,373p |
| Injuries | 34,103 | 28,860 | 30,574 | 28,087 | 28,519 | 30,654 | 30,813 | 26,282 | 30,077p | 33,337p |

p = preliminary.

* Includes only those motor carriers operating in interstate or foreign commerce.

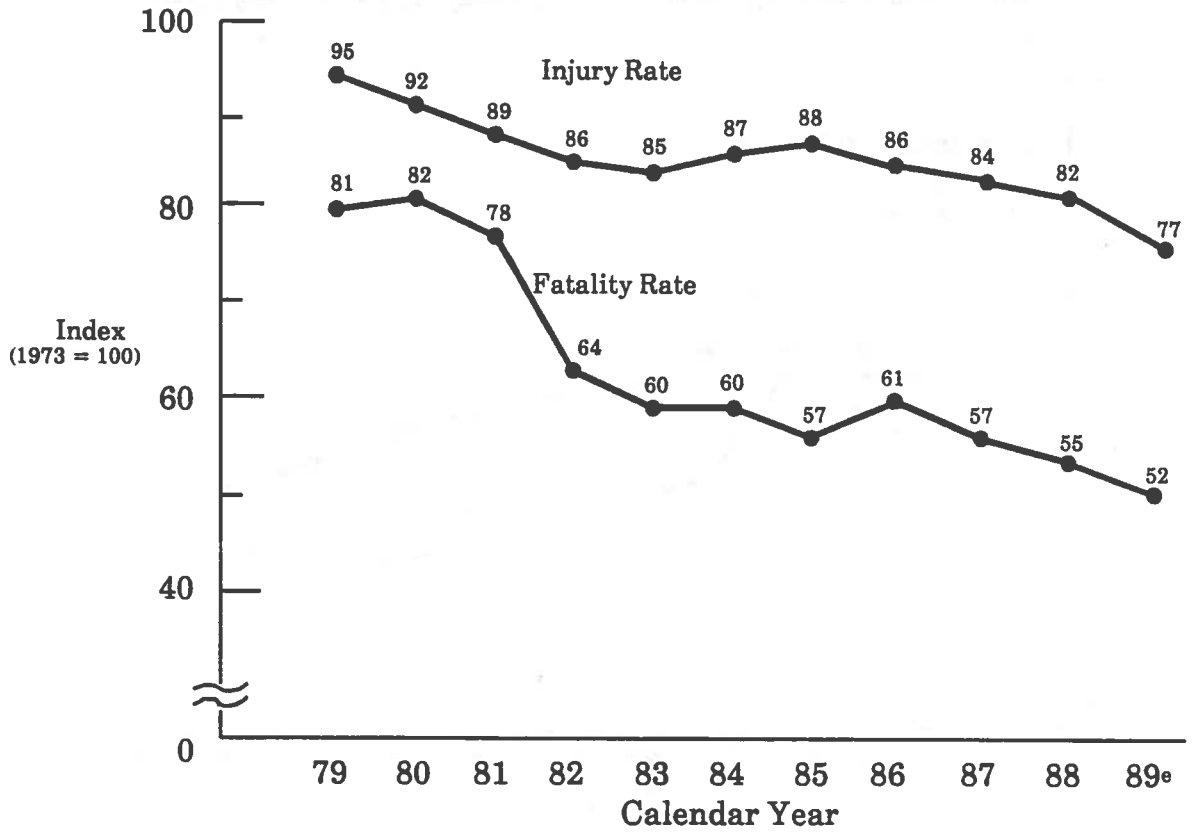
Source: U.S. DOT/FHWA, Motor Carrier Information Division, HIA-10.

Chart 12. Fatality Rates by Highway Type, 1979-1989



e = estimate.
 Note: Index based on number of fatalities per 100 million vehicle-miles of travel.
 Source: U.S.DOT/FHWA, Office of Highway Safety, HHS-22.

Chart 13. Highway Fatality and Injury Rates, 1979-1989



^e = estimate.

Note: Index based on number of persons killed or injured per 100 million vehicle-miles of travel.
Source: U.S. DOT/FHWA, Office of Highway Safety, HHS-22.

RAILROAD

- The year 1989 saw 2,898 railroad accidents compared to 2,854 in 1988, an increase of 1.5 percent.
- The total number of rail-related fatalities grew from 1,199 in 1988 to 1,324 in 1989, representing a 9.5 percent increase. Of the total number of fatalities reported last year, 60 percent occurred in rail-highway grade crossing accidents. Rail-highway grade crossing accidents increased by 16 percent in 1989, rising from 689 to 801. Fatalities resulting from other accidents/incidents increased by 2.5 percent in 1989, rising from 510 to 523.
- Total injuries fell from 27,054 in 1988 to 26,715 in 1989, a decrease of 1.3 percent. Injuries resulting from grade-crossing accidents elevated from 2,589 in 1988 to 2,868 in 1989, an increase of 11 percent.

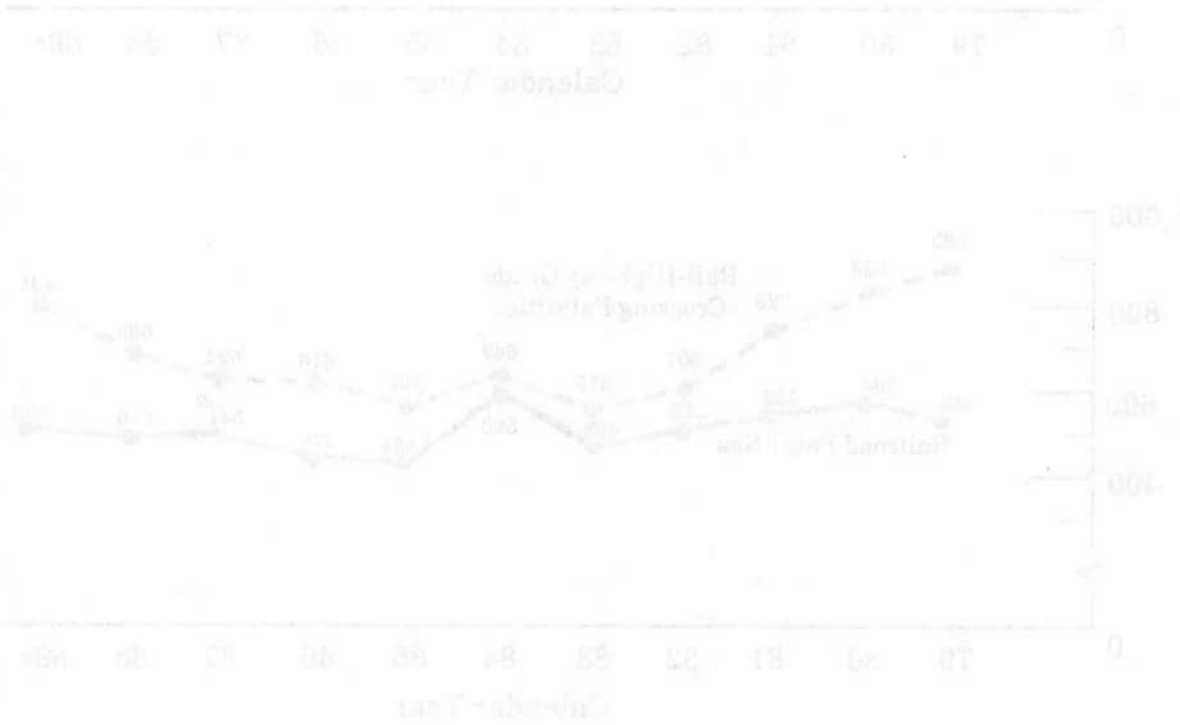
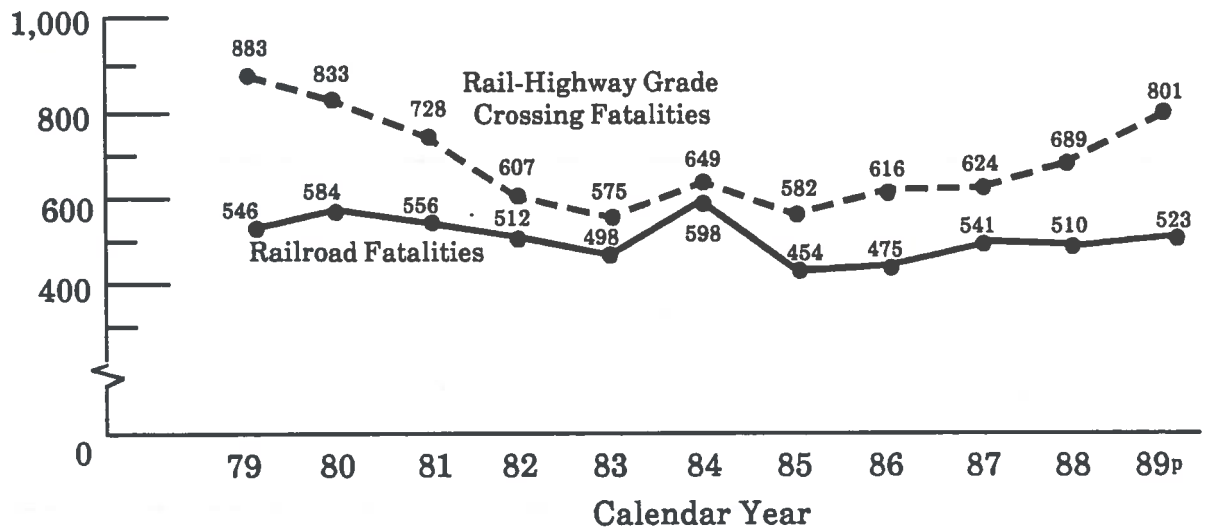
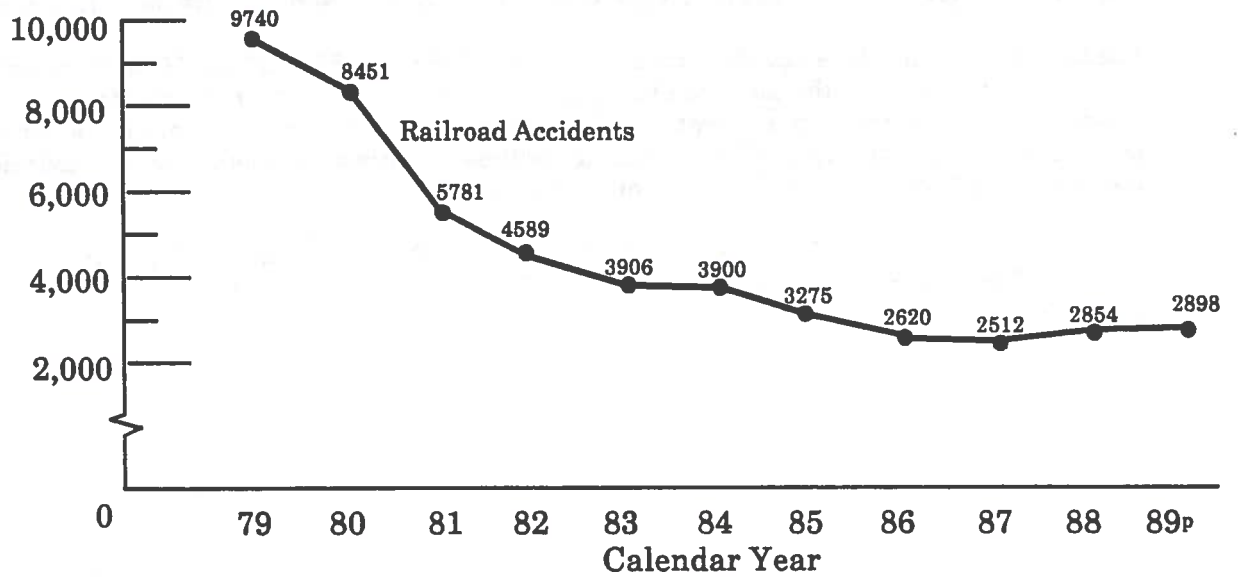
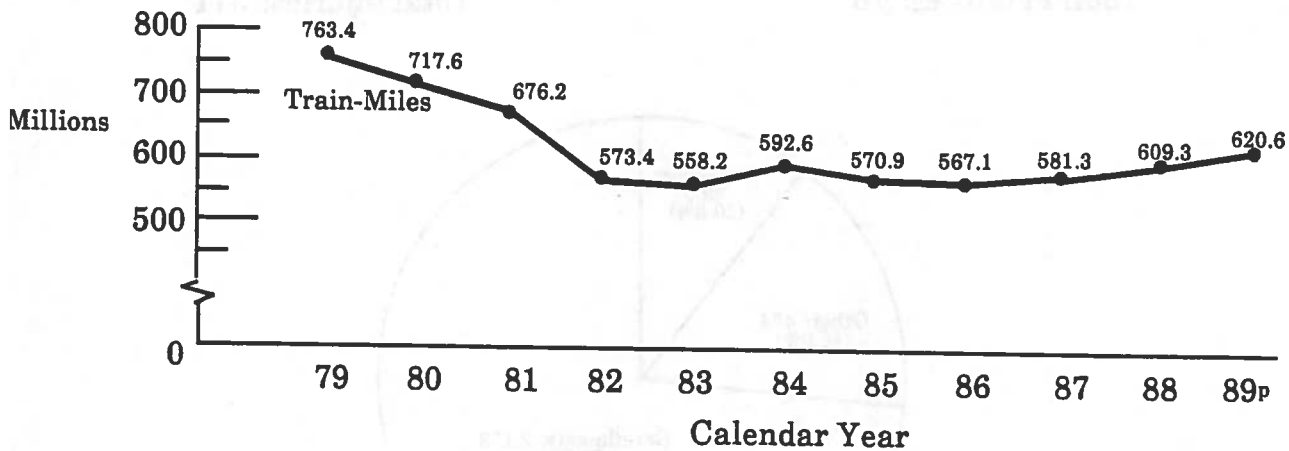
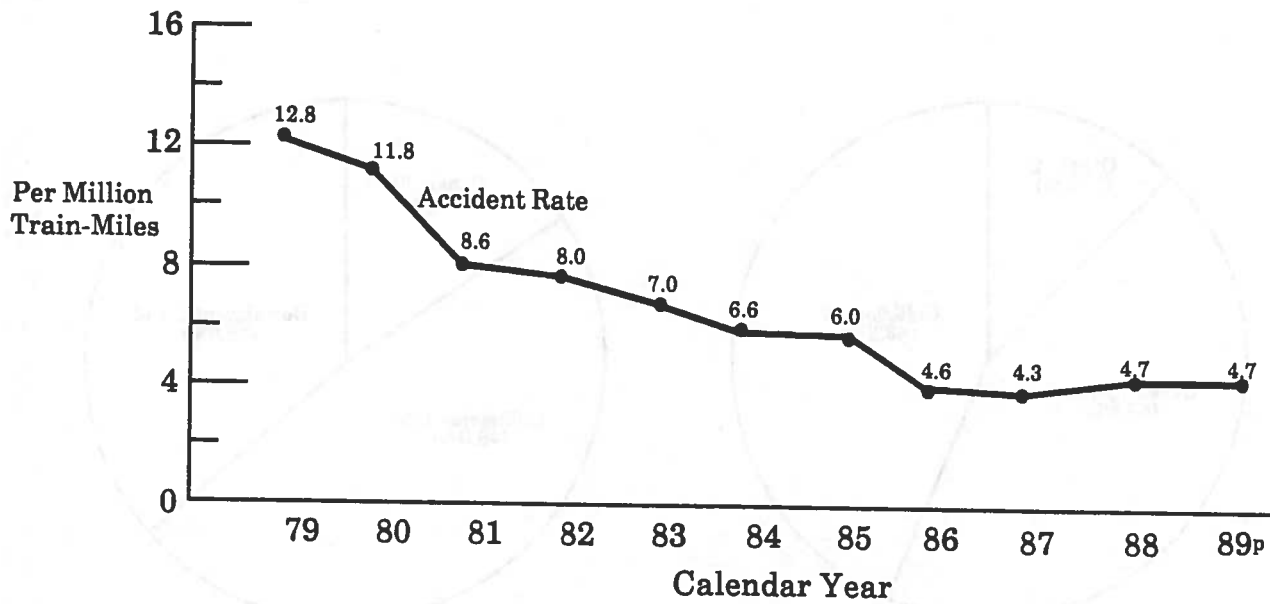


Chart 14. Railroad Accidents and Fatalities, and Rail-Highway Grade Crossing Fatalities, 1979-1989



P = preliminary.
 * Train accidents only--also includes those Rail-Highway Grade Crossing accidents which have been classified as Train accidents.
 ** Fatalities resulting from train accidents, train incidents and nontrain incidents.
 Note: Reporting threshold for Train accidents was raised to \$2,900 in 1979, \$3,700 in 1981, \$4,500 in 1983, \$4,900 in 1985, \$5,200 in 1987, and 5,700 in 1989
 Source: U.S.DOT/FRA, Office of Safety Analysis, RRS-20.

Chart 15. Railroad* Accident Rates per Train-Miles, 1979-1989



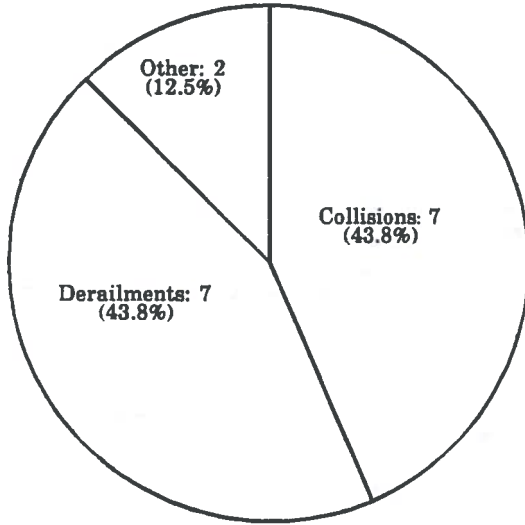
^p = preliminary.

* Train accidents only--also includes those Rail-Highway Grade Crossing accidents which have been classified as Train accidents.

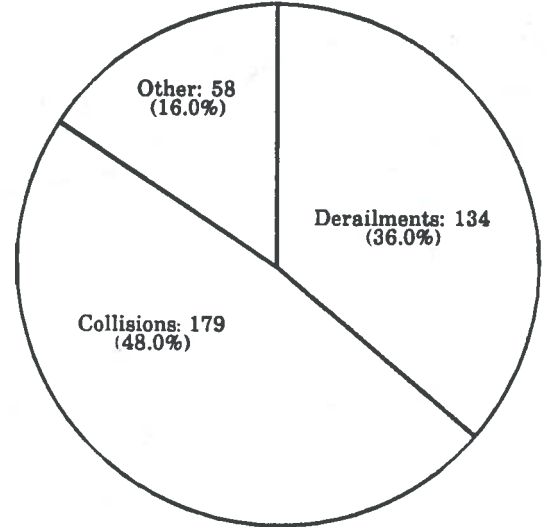
Note: Reporting threshold for Train accidents was raised to \$2,900 in 1979, \$3,700 in 1981, \$4,500 in 1983, \$4,900 in 1985, \$5,200 in 1987, and 5,700 in 1989.

Source: U.S.DOT/FRA, Office of Safety Analysis, RRS-20.

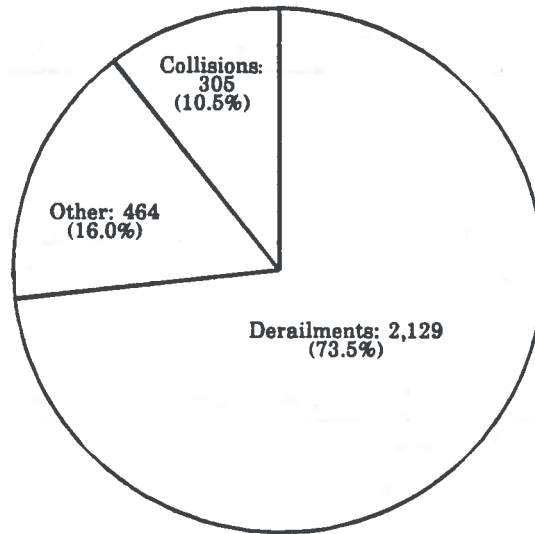
Chart 16. Train Accident Fatalities, Injuries, and Accidents by Type, 1989



Total Fatalities: 16



Total Injuries: 371



Total Accidents: 2,898

Source: U.S DOT/FRA, Office of Safety Analysis, RRS-20.

Table 8. Railroad Fatalities and Injuries by Type of Person, 1988 and 1989

| Classification | Fatalities | | Injuries** | |
|------------------------------------|--------------|--------------|---------------|---------------|
| | 1988 | 1989 | 1988 | 1989 |
| Employees on Duty | 43 | 49 | 22,573 | 22,183 |
| Employees Not on Duty | 1 | 1 | 427 | 407 |
| Passengers on Trains | 2 | 8 | 337 | 399 |
| Nontrespassers | 554 | 621 | 2,575 | 2,579 |
| Trespassers | 598 | 641 | 920 | 898 |
| Contractor Employees | 1 | 4 | 222 | 249 |
| Railroad and Grade Crossing | 1,199 | 1,324 | 27,054 | 26,715 |
| Railroad only* | 510 | 523 | 24,465 | 23,847 |
| Grade Crossing Only | 689 | 801 | 2,589 | 2,868 |

* Includes train and non-train data.

** Includes occupational illness.

Source: U.S. DOT/FRA, Office of Safety Analysis, RRS-20.

1947 - 1948 - 1949 - 1950 - 1951 - 1952 - 1953 - 1954 - 1955 - 1956 - 1957 - 1958 - 1959 - 1960 - 1961 - 1962 - 1963 - 1964 - 1965 - 1966 - 1967 - 1968 - 1969 - 1970 - 1971 - 1972 - 1973 - 1974 - 1975 - 1976 - 1977 - 1978 - 1979 - 1980 - 1981 - 1982 - 1983 - 1984 - 1985 - 1986 - 1987 - 1988 - 1989 - 1990 - 1991 - 1992 - 1993 - 1994 - 1995 - 1996 - 1997 - 1998 - 1999 - 2000 - 2001 - 2002 - 2003 - 2004 - 2005 - 2006 - 2007 - 2008 - 2009 - 2010 - 2011 - 2012 - 2013 - 2014 - 2015 - 2016 - 2017 - 2018 - 2019 - 2020 - 2021 - 2022 - 2023 - 2024 - 2025

RAIL RAPID TRANSIT

Users of Rail Rapid Transit (RRT) statistics should use caution when comparing 1989 data to data for years prior to 1986. In 1986, the Urban Mass Transportation Administration (UMTA) in conjunction with the transit operators, revised the reporting system categories and new thresholds were instituted. The figures shown in this section represent data received from all 13 Rail Rapid Transit systems as reported in the Safety Information Reporting and Analysis System (SIRAS). SIRAS is a voluntary reporting system, developed by UMTA in cooperation with the American Public Transit Association (APTA) and the heavy rail transit (RRT) systems operating in the United States.

- During 1989, there were 94 Rail Rapid Transit (RRT) revenue train accidents. These RRT train accidents resulted in 129 injuries and 30 fatalities. The following summarizes train accidents by type.

| | 1988 | 1989p |
|-----------------------------|-----------|-----------|
| Collision with other train | 2 | 5 |
| Collision with obstacle | 9 | 1 |
| Collision with person | 66 | 80 |
| Derailment | 10 | 6 |
| Rail-Highway Grade Crossing | <u>2</u> | <u>2</u> |
| Total | 89 | 94 |

- Of the 3,068 train and non-train casualties (injuries and fatalities) reported in 1988, a total of 1,235 (35%) occurred on the platform.
- Of the 2,891 train and non-train casualties (injuries and fatalities) reported in 1989, a total of 1,240 (40%) occurred on the platform.

p = preliminary.

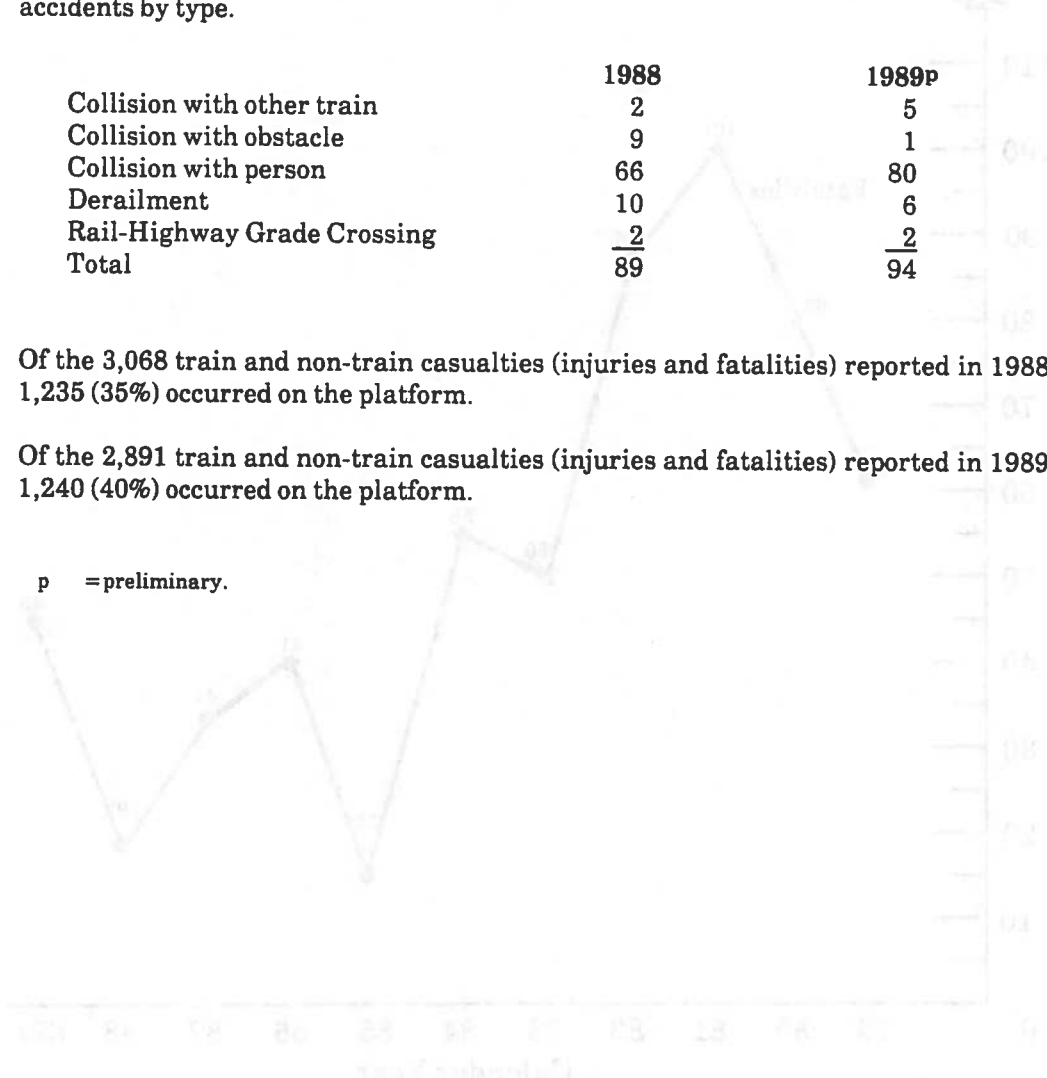
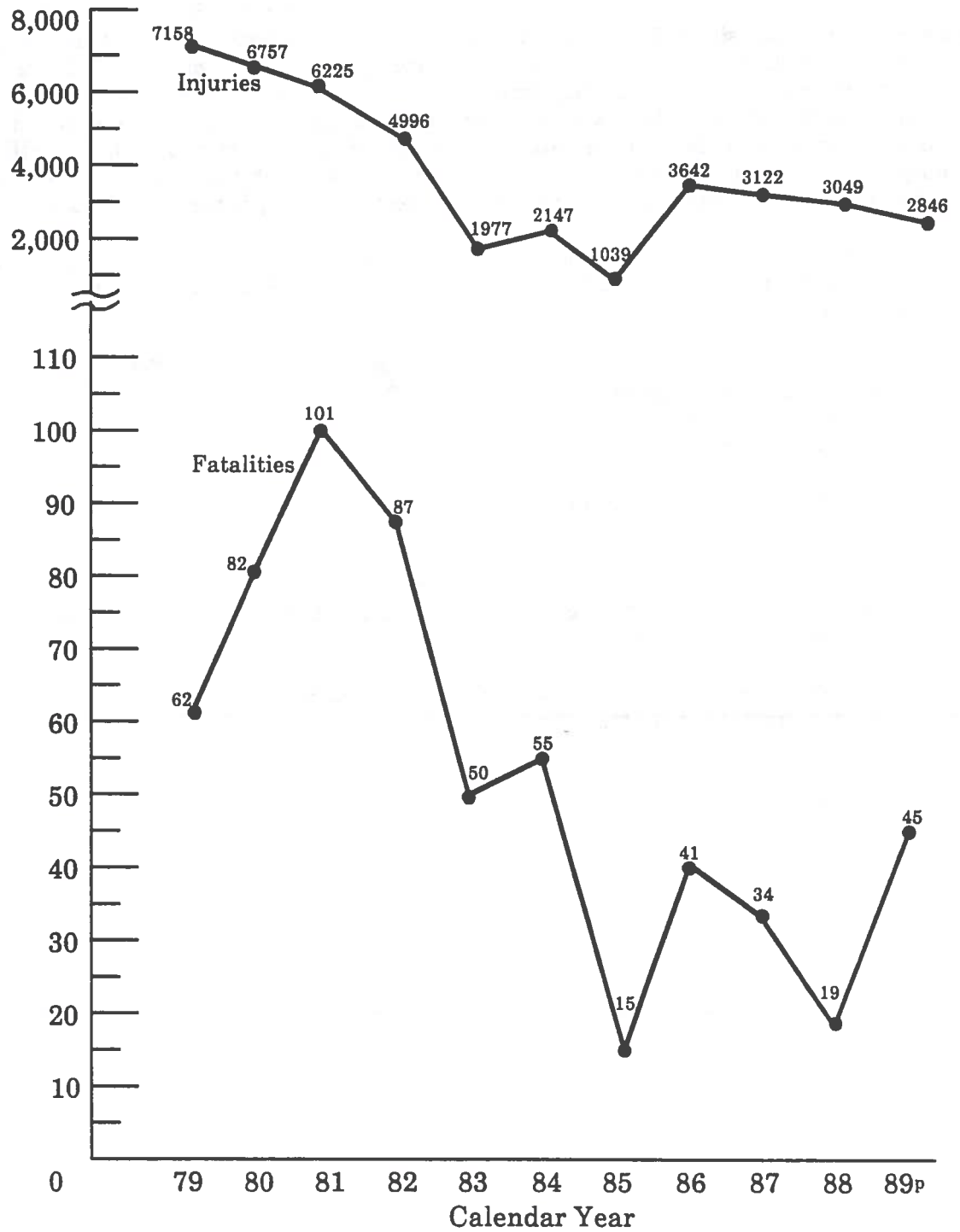


Chart 17. Rail Rapid Transit Train and Non-Train Fatalities and Injuries, 1979-1989



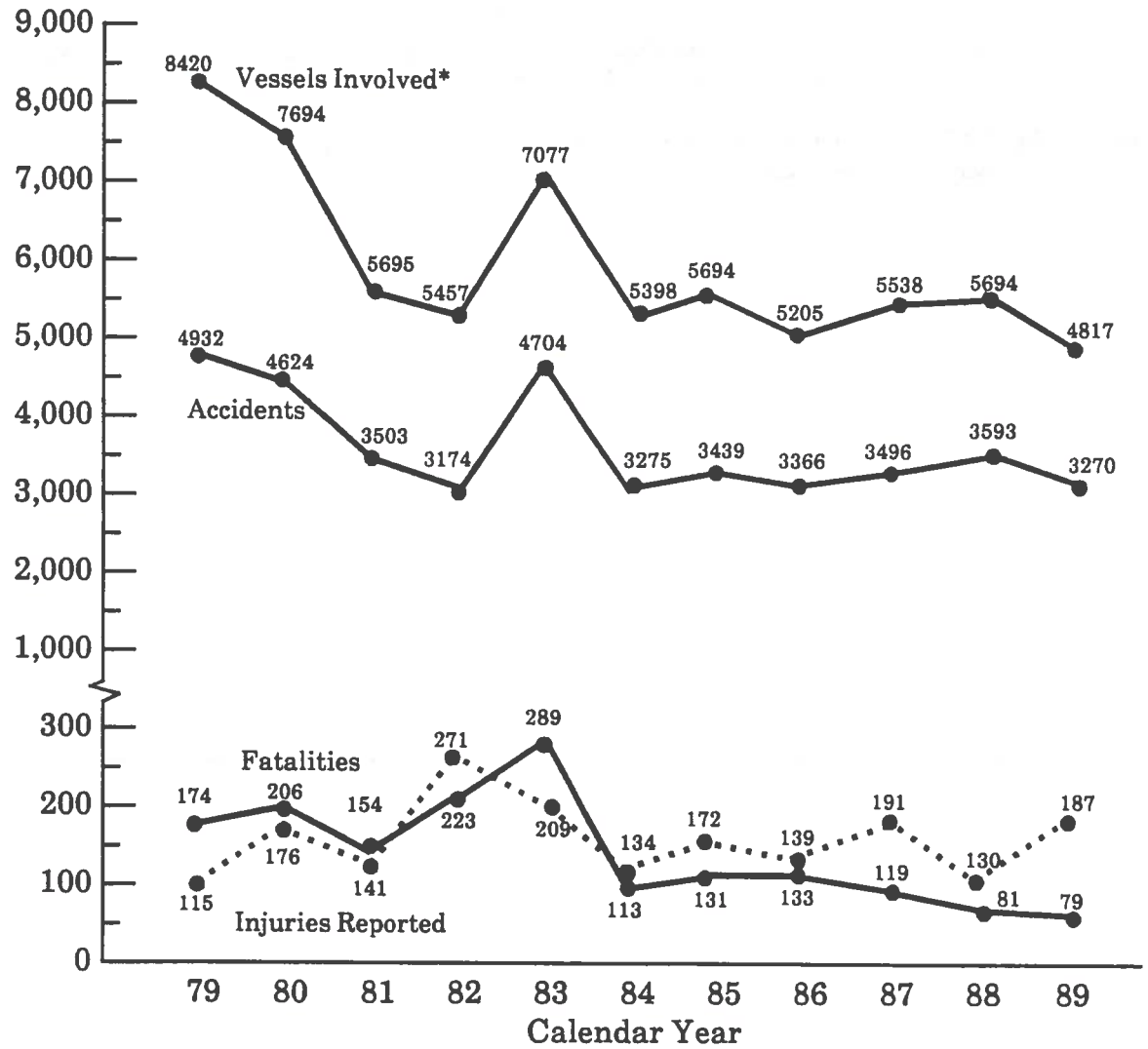
^p = preliminary.
 Source: U.S. DOT/RSPA/VTSC, Safety and Security Systems Division, DTS-43.

WATERBORNE TRANSPORT

- A total of 3,270 waterborne transport accidents involving 4,817 vessels occurred in 1989. As a result of these accidents, 79 fatalities and 187 injuries have been reported.
- In 1989, 383 vessels were lost. Approximately 92 percent of all U.S. vessel losses were uninspected vessels. Fishing vessels accounted for 54 percent of the total number of losses.
- In 1989, 103 fatalities were reported as a result of non-vessel-related accidents. Of this number, 40 (39 percent) resulted from falls overboard.

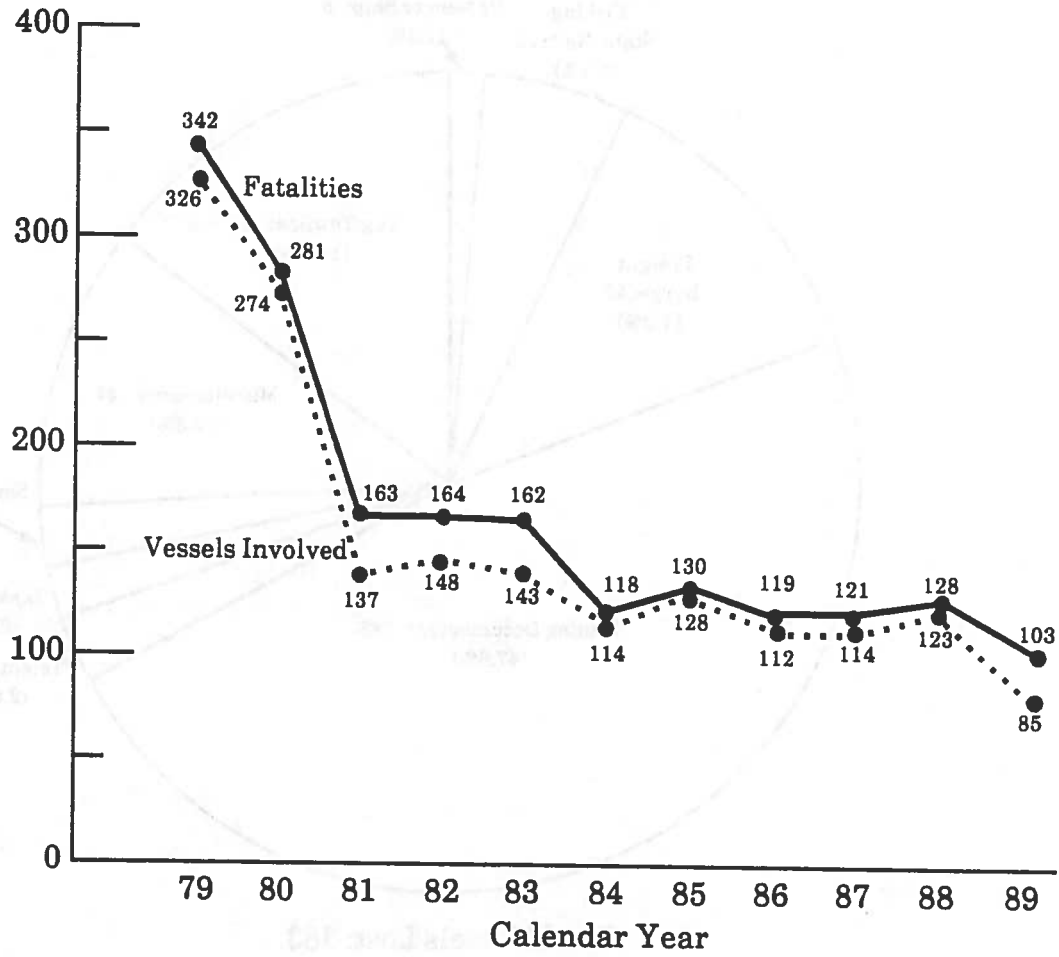


Chart 18. Waterborne Transport Accidents, Fatalities and Injuries Resulting from Vessel Casualties, 1979-1989



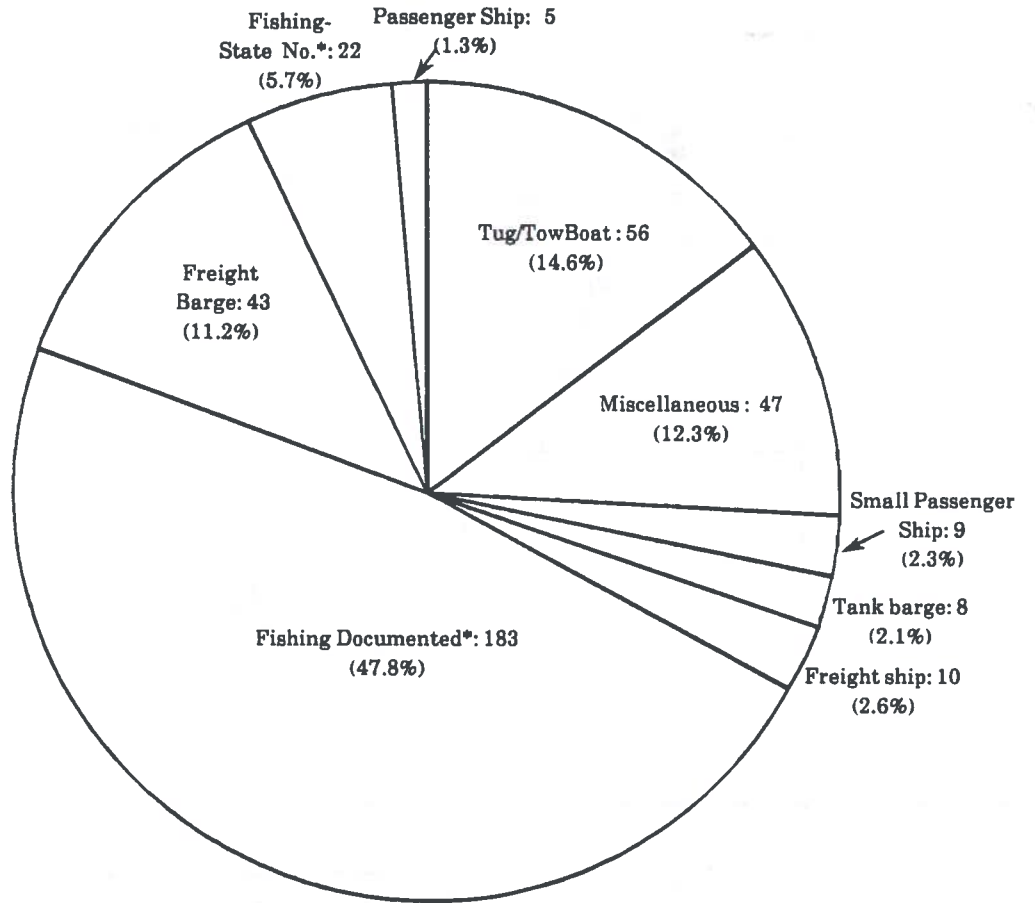
* More than one vessel may be involved in a marine accident.
 Note: All deaths and injuries cited result from vessel casualties.
 Source: United States Coast Guard, Marine Investigation Division, G-MMI-3.

Chart 19. Waterborne Transport Fatalities not Related to Vessel Casualties, 1979-1989



Source: United State Coast Guard, Marine Investigation Division, G-MMI-3.

Chart 20. Number of U.S. Vessels Lost by Type, 1989



Total Vessels Lost: 383

* All commercial fishing vessels over 5 net tons are documented by the Coast Guard; if less than 5 net tons, commercial fishing vessels are registered in the state.

Source: United States Coast Guard, Marine Investigation Division, G-MMI-3.

Chart 21. Fatalities Resulting from Loss of U.S. Vessels, 1989

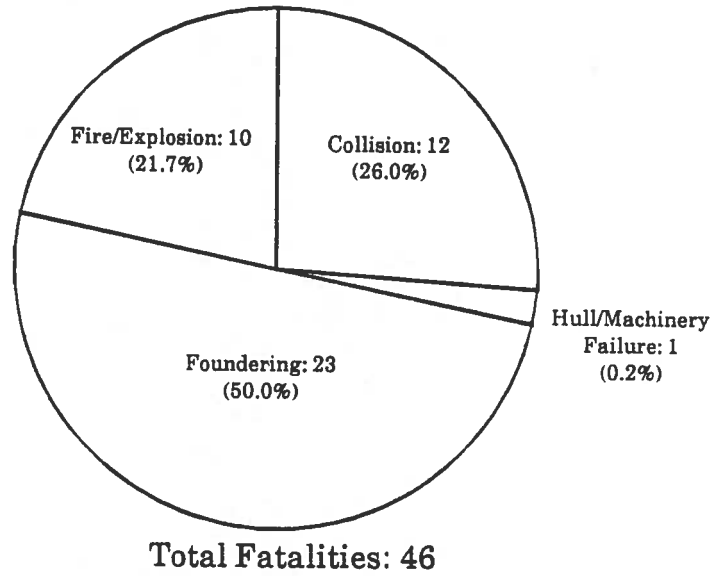
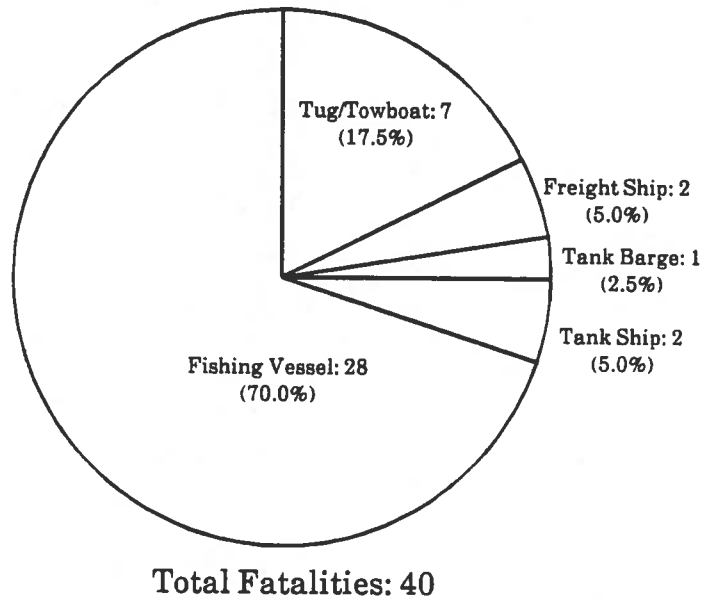


Chart 22. Accidental Deaths Resulting from Falls Overboard by Type of Vessel, (No Vessel Accident), 1989



Source: United States Coast Guard, Marine Investigation Division, G-MM1-3.

CHAPTER 10: THE HISTORY OF THE UNITED STATES

The history of the United States is a complex and multifaceted one, spanning from the early colonial period to the present day. It is a story of exploration, settlement, and the struggle for independence, followed by a period of westward expansion and the Civil War. The United States has emerged as a global superpower, with a significant impact on the world stage.

The early years of the United States were marked by the struggle for independence from British rule. The American Revolution (1775-1783) was a pivotal moment in the nation's history, leading to the signing of the Declaration of Independence in 1776 and the adoption of the Constitution in 1787. The new nation faced numerous challenges, including the struggle to establish a federal government and the issue of slavery.

The 19th century was a period of rapid growth and expansion for the United States. The westward movement of settlers led to the discovery of gold in California and the opening of the transcontinental railroads. The Civil War (1861-1865) was a defining moment in the nation's history, as it resolved the issue of slavery and preserved the Union. The Reconstruction period (1865-1877) followed, as the nation sought to rebuild and integrate the newly freed slaves.

The 20th century has been a period of significant change and progress for the United States. The nation emerged as a global superpower after World War II, with a significant impact on the world stage. The Civil Rights Movement (1950s-1960s) was a defining moment in the nation's history, as it led to the passage of the Civil Rights Act of 1964 and the Voting Rights Act of 1965. The space race (1950s-1960s) was another defining moment, as the United States and the Soviet Union competed for dominance in space exploration.

RECREATIONAL BOATING

- The number of fatalities in 1989 was the lowest the annual total has been since 1961, when fatalities were first counted completely. Fatalities dropped to 896 during 1989. The fatality rate also dropped to a record low of 5.0 fatalities per 100,000 boats. Several factors have contributed to the reduction in fatalities and the fatality rate, including safer boats, wider selection of personal flotation devices, safety education and publicity including greater awareness of the dangers of alcohol, and better emergency care following boating accidents. The estimated number of recreational boats reached 17.8 million in 1989.
- The decrease in the number of reported accidents is due to a change in the requirements for reporting. Beginning in January 1989, an accident involving no injured or fatal victims is reportable only if the damage to property exceeds \$500. The number of injuries and the amount of damage to property increased, perhaps reflective of an increase in the use of recreational boating.
- The number of reported injuries rose to 3,635 in 1989 from the 3,476 reported in 1988.
- Property damage reported reached a record high of \$25.2 million in 1989. Only a small fraction of property damages are reported to the Coast Guard.

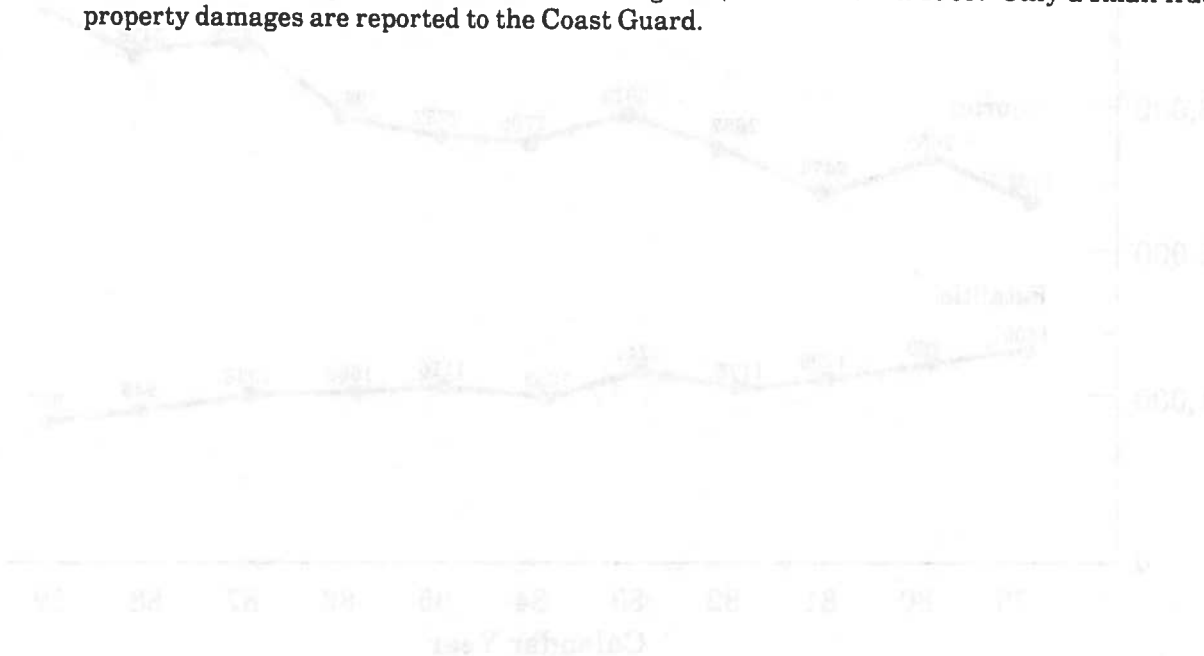
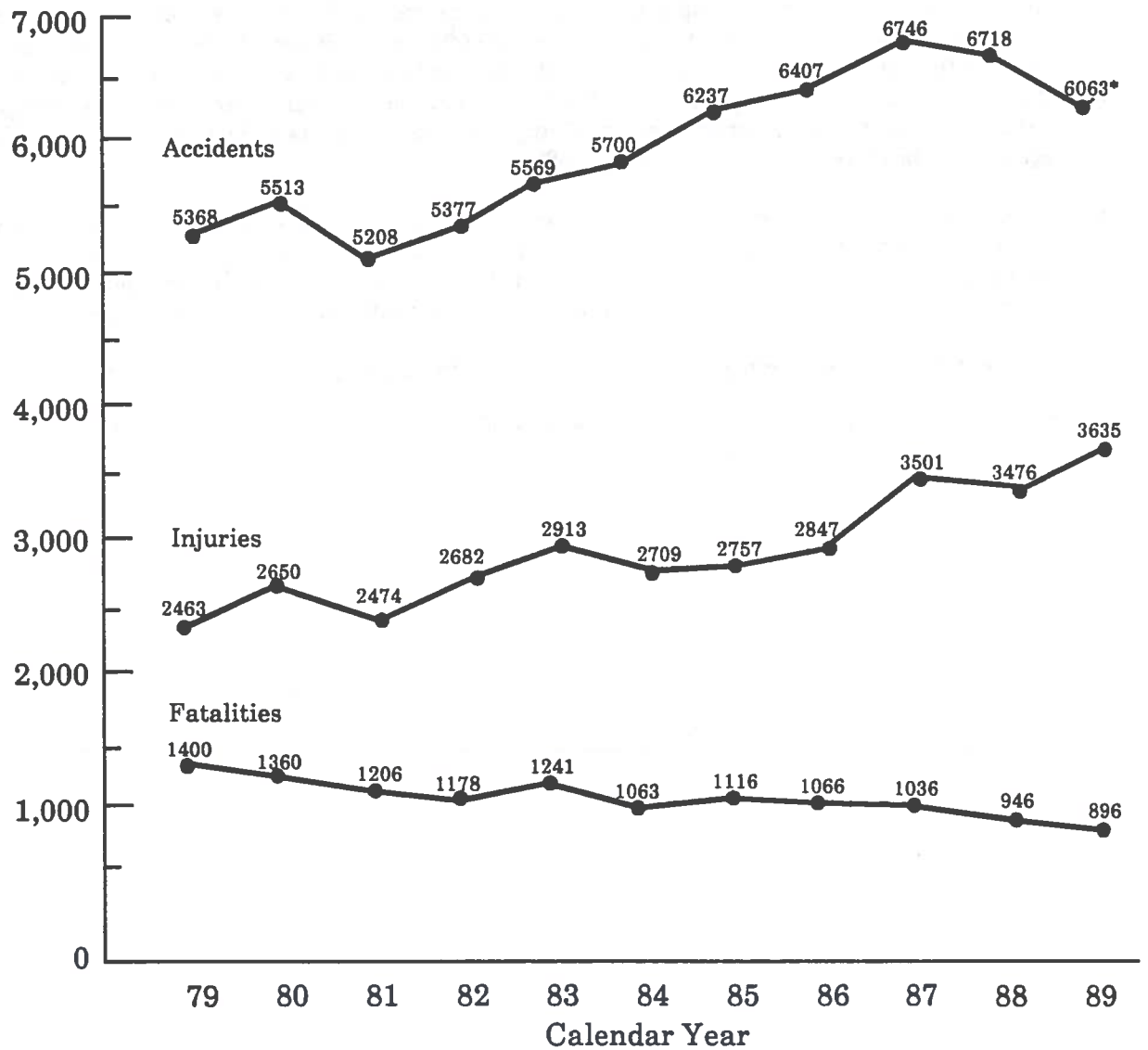
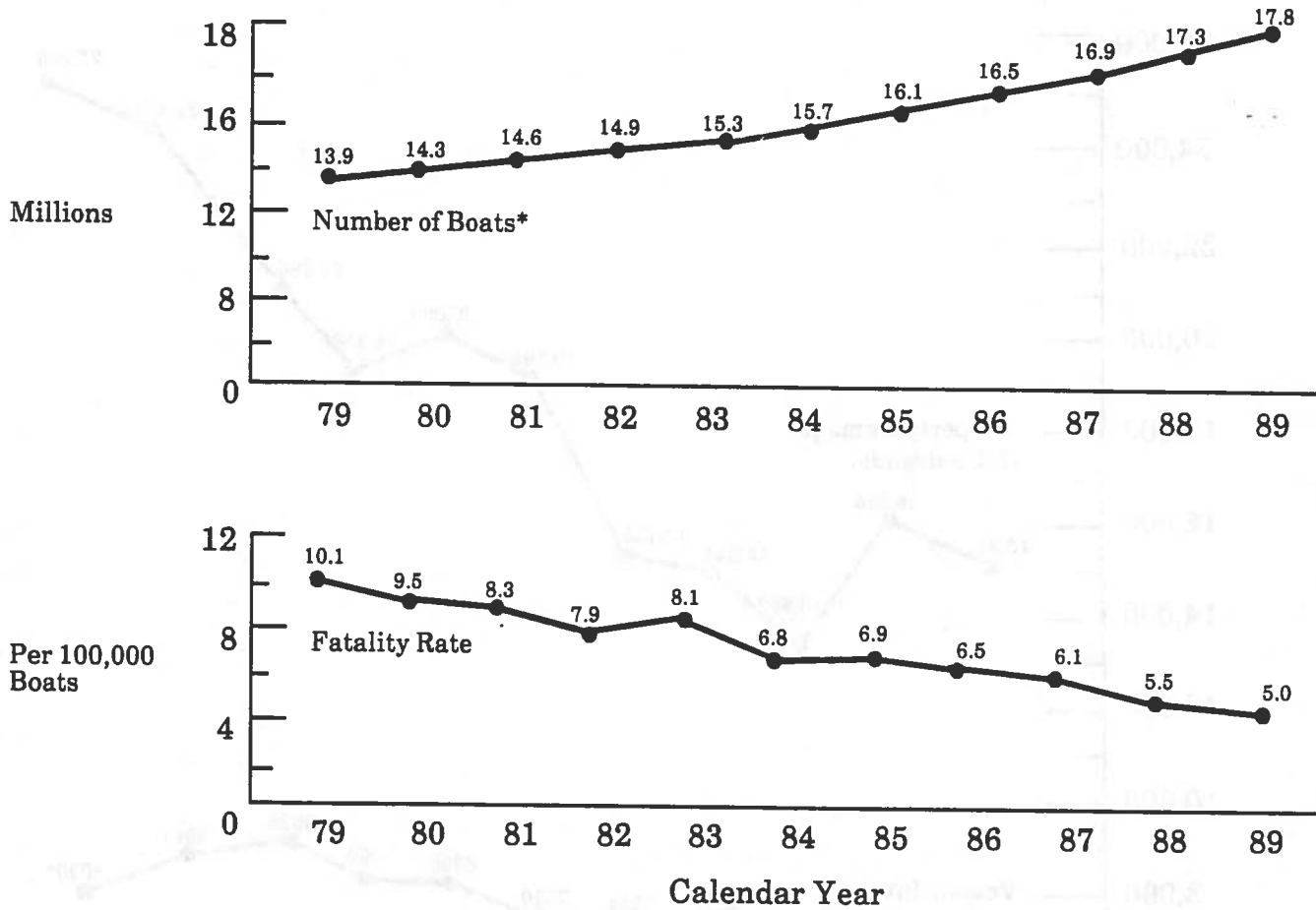


Chart 23. Recreational Boating Accidents, Injuries, and Fatalities, 1979-1989



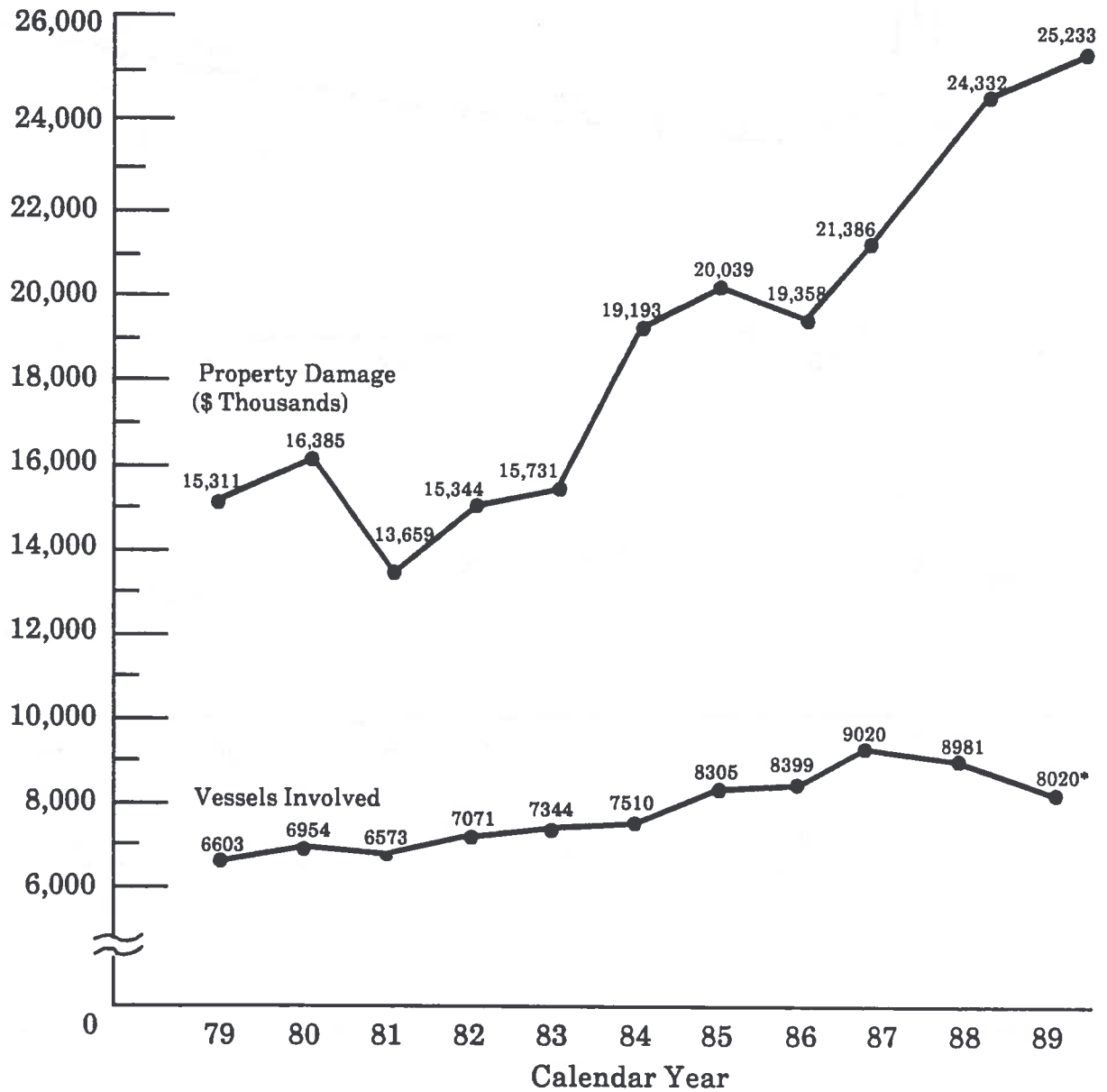
* Threshold for reporting property damage-only increased from \$200 to \$500 in 1989.
 Note: Only a small fraction of property damages and non-fatal accidents are reported to the Coast Guard.
 Source: United States Coast Guard, Auxiliary, Boating, and Consumer Affairs Division, G-NAB, *Boat Accident Report (BAR) File*.

Chart 24. Recreational Boating Fatality Rates per Number of Boats, 1979-1989



* The total number of boats are estimated by the United States Coast Guard each year.
 Source: United States Coast Guard, Auxiliary, Boating and Consumer Affairs Division, G-NAB, *Boat Accident Report (BAR) File*.

Chart 25. Number of Vessels Involved in Recreational Boating Accidents and Reported Property Damage, 1979-1989



* Threshold for reporting property damage-only increased from \$200 to \$500 in 1989.
 Note: Only a small fraction of property damage-only accidents is reported to the Coast Guard.
 Source: United States Coast Guard, Auxiliary, Boating, and Consumer Affairs Division, G-NAB, *Boat Accident Report (BAR) File*.

PIPELINES

- During 1989, liquid pipeline failures decreased 17.9 percent when compared with 1988. A total of 161 failures were reported in 1989 versus 196 in 1988. Gas pipeline failures also decreased from 258 to 257 during the same period.
- Injuries resulting from incidents involving the transport of natural gas dropped from 87 during 1988 to 78 during 1989. Liquid pipeline injuries, however, increased from 19 in 1988 to 38 in 1989.
- Gas pipeline fatalities escalated from 18 in 1988 to 36 in 1989, while liquid pipeline fatalities rose slightly from 2 in 1988 to 3 in 1989.

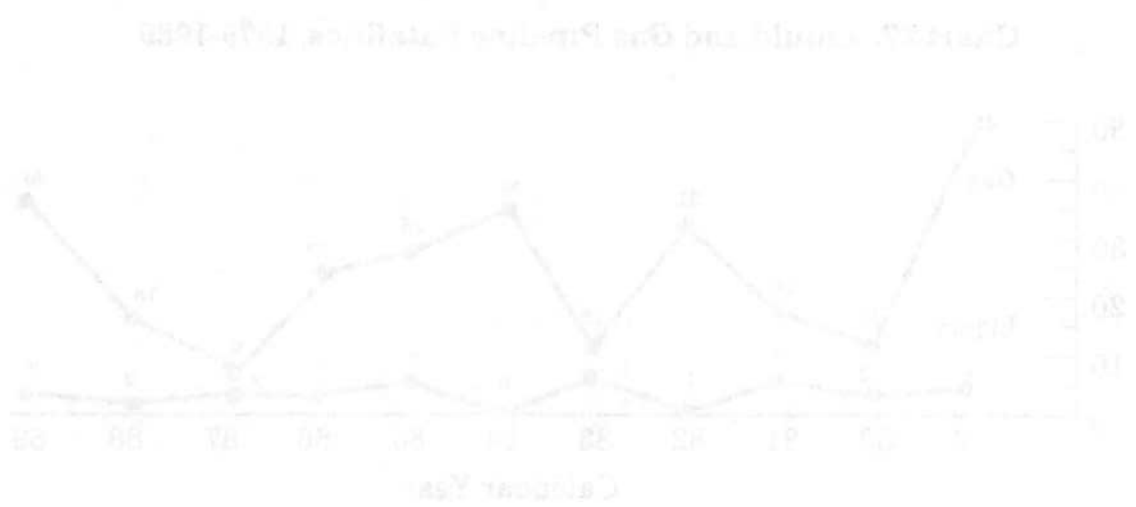
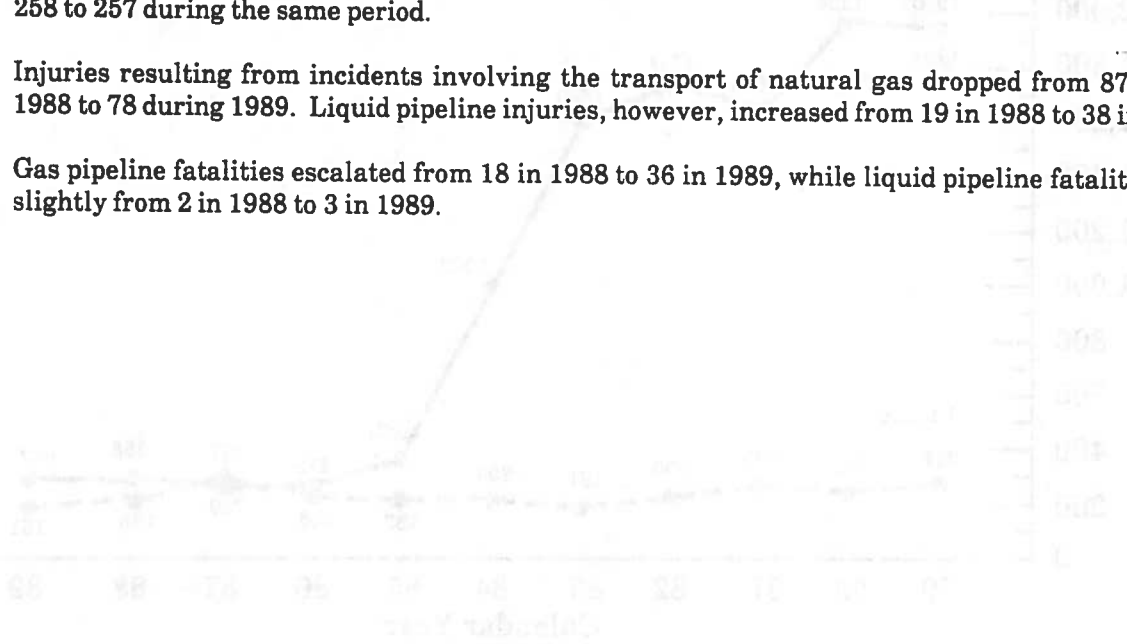


Chart 26. Liquid and Gas Pipeline Failures, 1979-1989

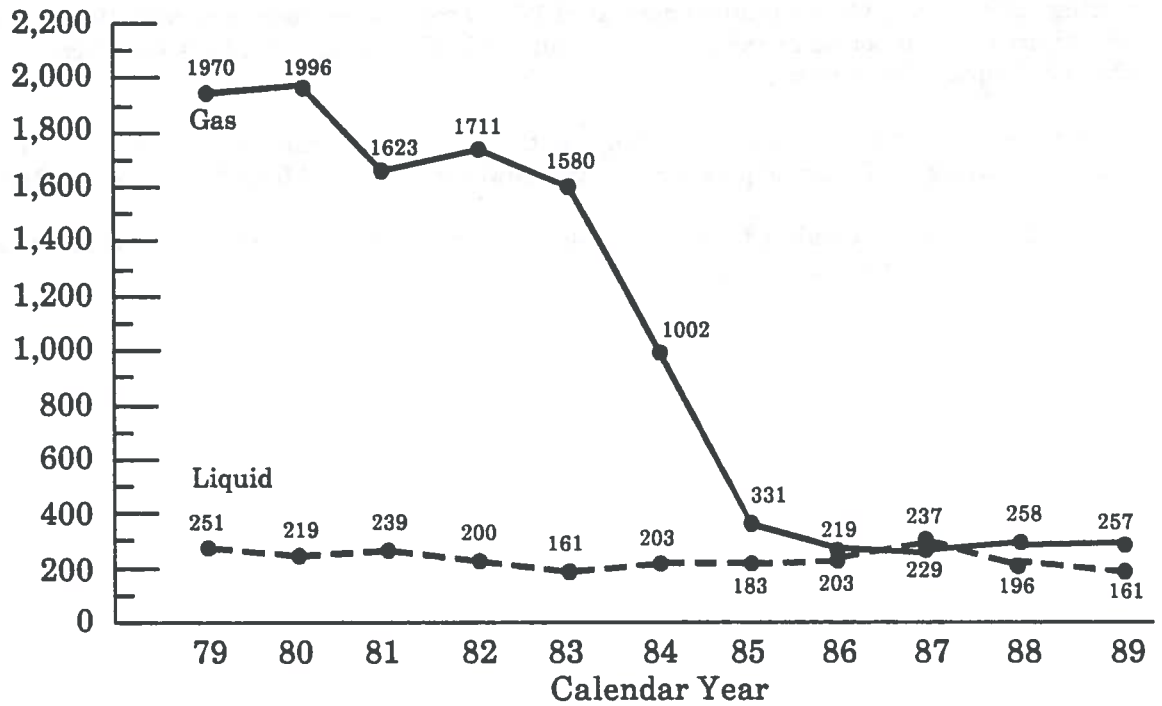
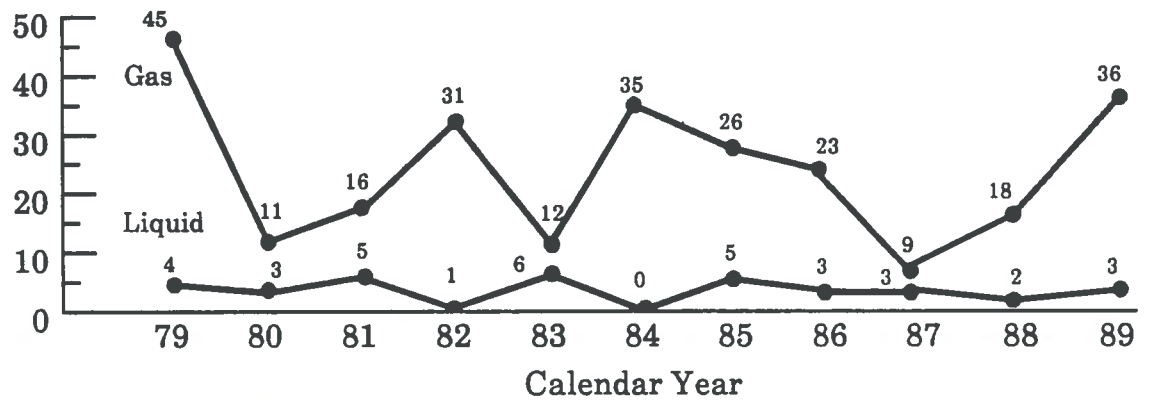
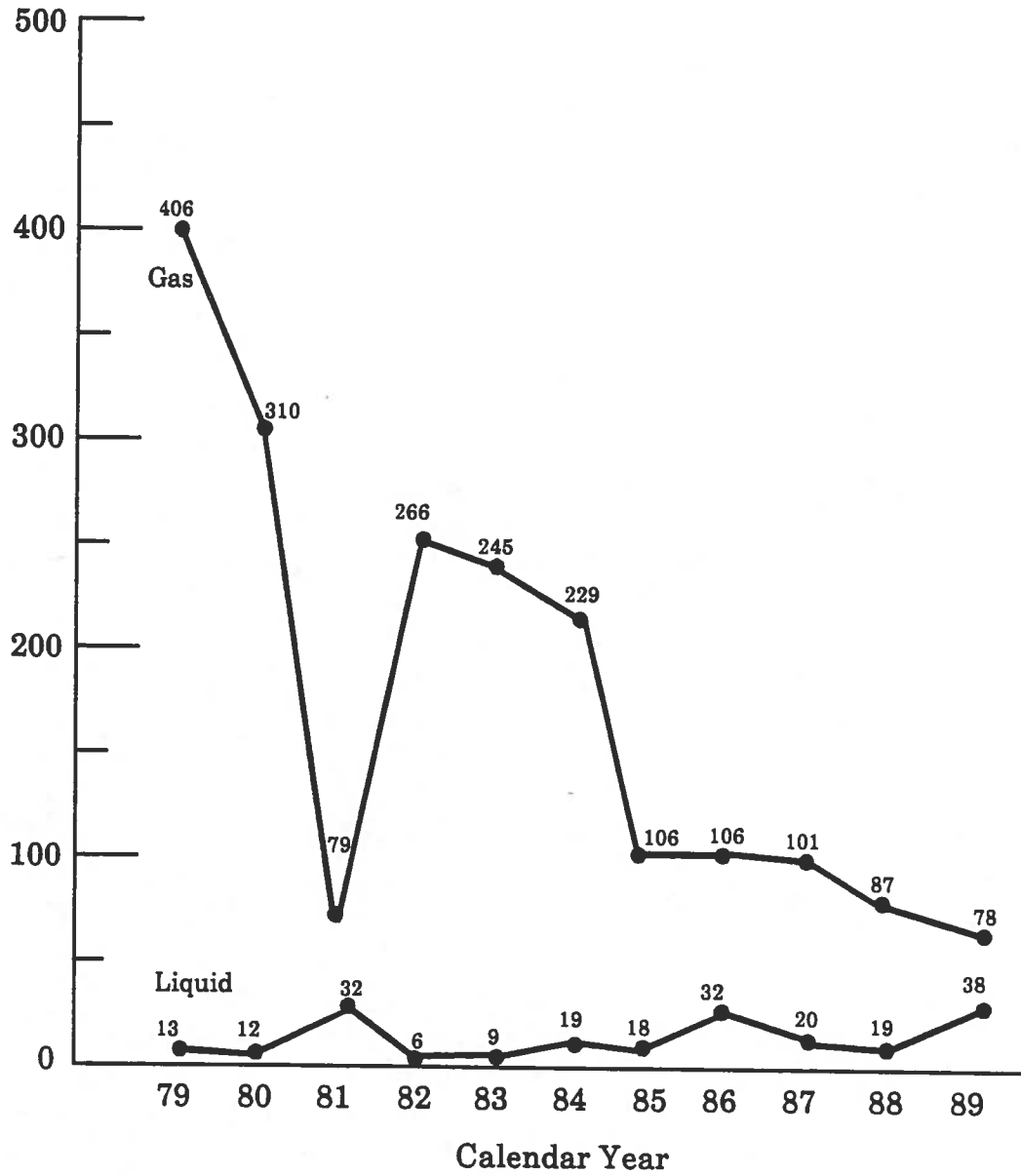


Chart 27. Liquid and Gas Pipeline Fatalities, 1979-1989

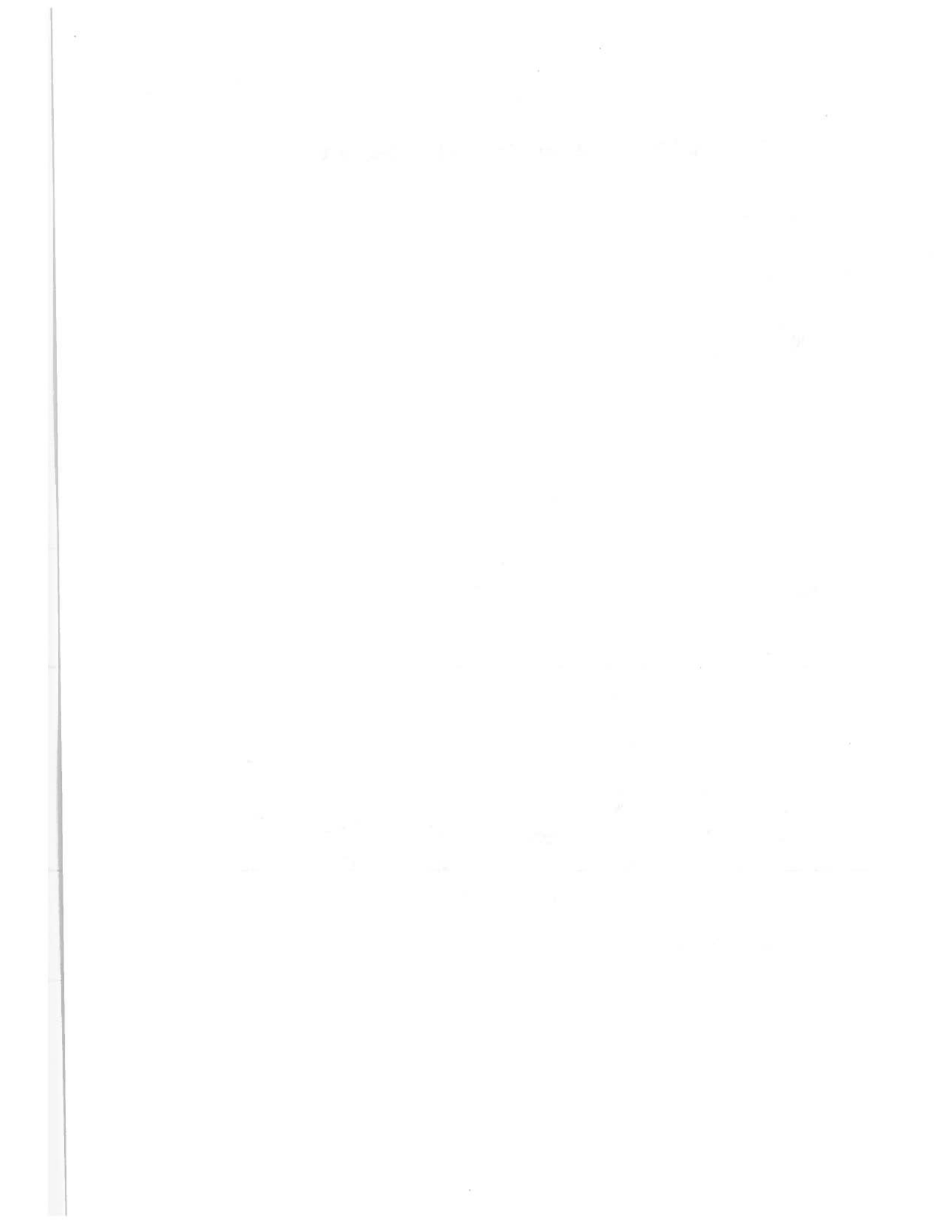


Note: Beginning with 1983 data, pipeline incidents are credited to the year in which they occurred, not the year in which the report was received.
Source: U.S.DOT/RSPA, Office of Pipeline Safety, DPS-21.1.

Chart 28. Liquid and Gas Pipeline Injuries, 1979-1989



Source: U.S.DOT/RSPA, Office of Pipeline Safety, DPS-21.1.



HAZARDOUS MATERIALS

- Hazardous materials fatalities decreased in 1989 when compared with 1988. A total of 8 fatalities were reported in 1989 compared with 19 for 1988. Most fatalities occurred while transporting gasoline.
- In 1989, the number of incidents involving the transport of hazardous materials increased when compared with 1988. There were 7,494 incidents reported in 1989 and 6,192 in 1988.
- Hazardous materials injuries increased from 171 in 1988 to 326 in 1989.
- Total damages resulting from hazardous materials incidents rose to \$25,724,636 in 1989. Transporting gasoline caused more damages than any other single hazardous material.

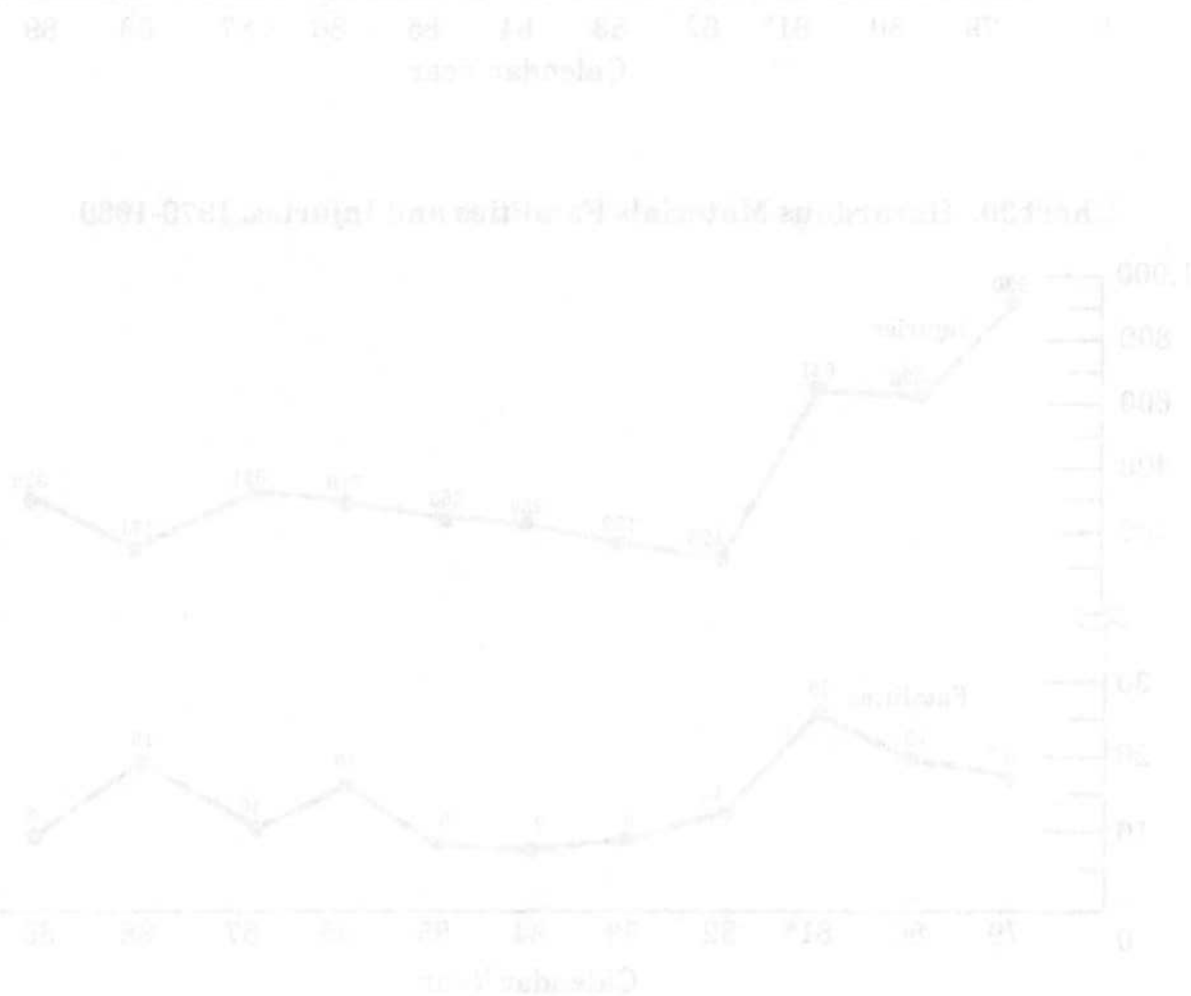


Chart 29. Hazardous Materials Incidents, 1979-1989

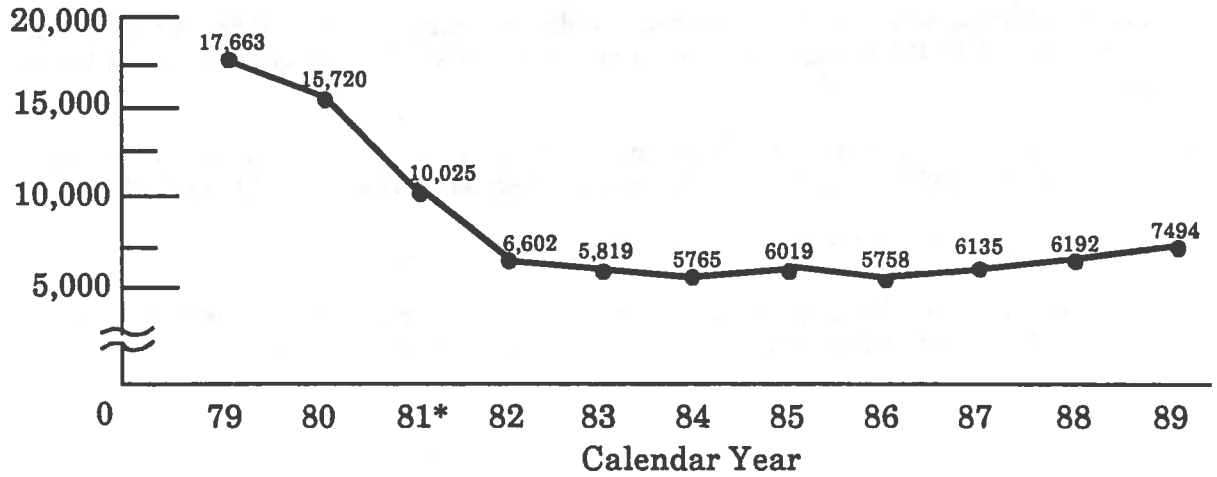
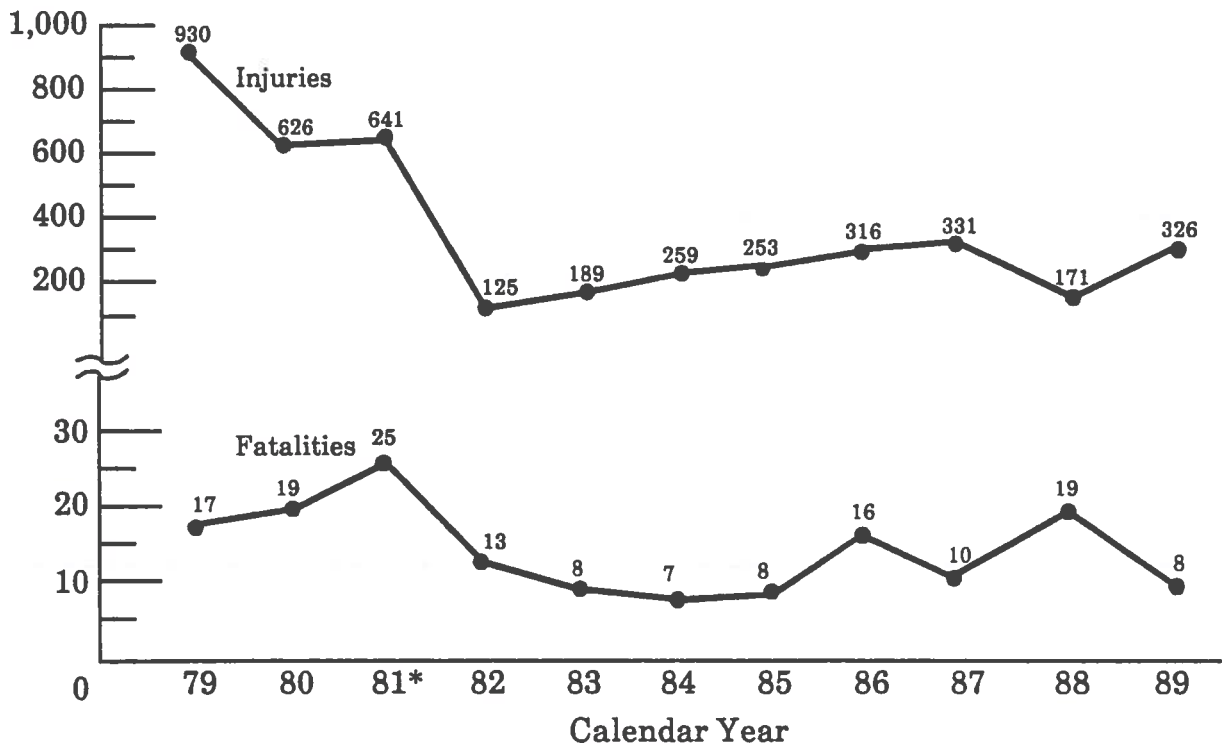


Chart 30. Hazardous Materials Fatalities and Injuries, 1979-1989

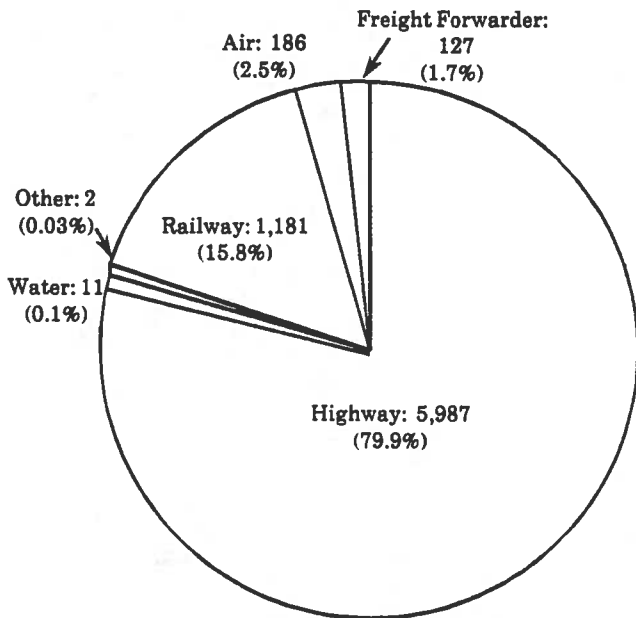


* = preliminary.

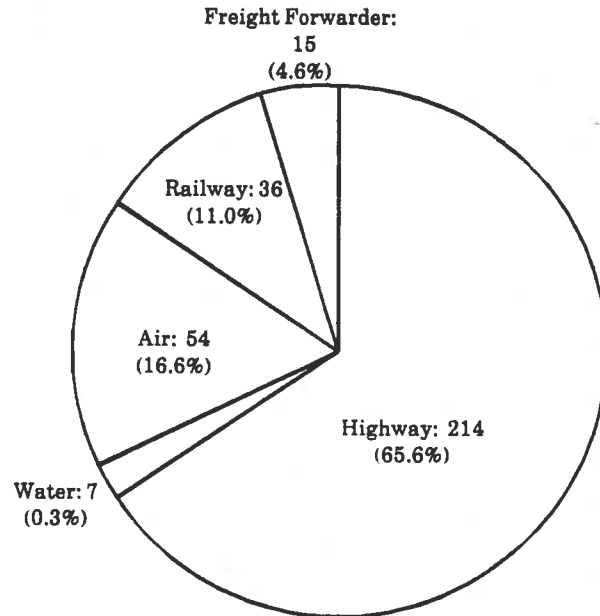
Effective January 1, 1981, the reporting requirements were changed to exclude incidents involving consumer commodities, wet electric storage batteries, or paint, enamel, lacquer, stain, shellac, etc., in packagings of 5 gallons or smaller unless the incident results in death, injury or property damage over \$50,000; the material is being transported by air or the material is classified as a hazardous waste.

Source: U.S.DOT/RSPA, Office of Hazardous Materials Transportation, DHM-63.

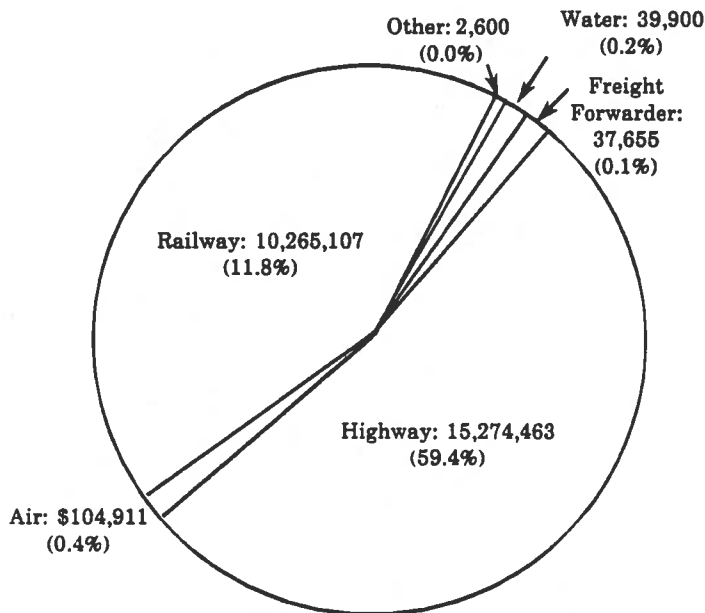
Chart 31. Hazardous Materials Incidents, Injuries, Fatalities and Damages by Mode, 1989



Total Incidents: 7,494



Total Injuries: 326



Total Damages: 25,724,636



Total Fatalities: 8

Source: U.S.DOT/RSPA, Office of Hazardous Materials Transportation, DHM-63.



GLOSSARY

AVIATION

AIR CARRIER - the commercial system of air transportation consisting of certificated air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs. The following define several types of air carriers:

- **Certificated Air Carrier** - one of a class of air carriers holding a Certificate of Public Convenience and Necessity issued by the U.S. Department of Transportation (DOT) to conduct scheduled services interstate. Nonscheduled or charter operations may also be conducted by these carriers. These carriers operate large (30 seats or more for a maximum load of 7,500 pounds or more) in accordance with FAR Part 121.
- **Supplemental Air Carrier** - one of a class of air carriers holding a Certificate of Public Convenience and Necessity issued by the U.S. DOT, authorizing performance of passenger and cargo interstate charter services supplementing the scheduled service of the certificated air carriers.
- **Commercial Operator (of large aircraft)** - one of a class of air carriers operating on a private for-hire basis, as distinguished from a public or common air carrier, holding a commercial operator certificate, issued by the Administrator of the Federal Aviation Administration (pursuant to Part 45 of the Civil Air Regulations) authorizing it to operate (large) aircraft in air commerce for the transportation of goods or passengers for compensation or hire.
- **Air Travel Club** - a person who engages in the carriage by airplanes of persons who are required to qualify for that carriage by payment of an assessment, dues, membership fee, or other similar types of remittance.

AIR TAXI - the classification of air carriers that transport persons, property, and mail using small aircraft (under 30 seats or a maximum load of less than 7,500 pounds). An air taxi does not hold a Certificate of Public Convenience.

AIRCRAFT ACCIDENT - as defined by the National Transportation Safety Board, an aircraft accident is "an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage."

COMMUTER AIR CARRIER - any operator who performs, pursuant to published schedule, at least five round trips per week between two or more points or carries mail (see Paragraph 298.2 of FAR 38).

FATAL INJURY - any injury which results in death within seven days of the accident.

GENERAL AVIATION - all civil aircraft operations except those classified as air carrier operations. The following define several types of general aviation aircraft:

- **Personal** - any use of an aircraft for personal purposes not associated with business or profession, and not for hire. This includes maintenance of pilot proficiency.
- **Business** - any use of an aircraft, not for compensation or hire, by an individual for the purposes of transportation required by a business in which they are engaged.
- **Executive/Corporate** - any use of an aircraft by a corporation, company or other organization for the purposes of transporting its employees and/or property not for compensation or hire and employing professional pilots for the operation of the aircraft.
- **Instructional** - any use of an aircraft for the purposes of formal flight instruction with or without the flight instructor aboard, or within the maneuvers on the particular flight(s) specified by the flight instructor; excludes proficiency flying.
- **Aerial Application** - any use of an aircraft for work purposes that concerns the production of foods, fibers, and health control in which the aircraft is used in lieu of farm implements or ground vehicles for the particular task accomplished. This includes firefighting operations, the distribution of chemicals or seeds in agriculture, reforestation, or insect control.

AVIATION (cont'd)

- **Other** - any use of an aircraft not specified in the preceding uses. It includes research and development, demonstration, sport parachuting, ferry flight and industrial/special.

NONSCHEDULED SERVICE - revenue flights, such as charter flights, not operated in regular scheduled service and all nonrevenue flights incident to such flights.

REVENUE PASSENGER-MILE - one revenue passenger transported one mile (5,280 feet) in revenue service. Revenue passenger-miles are computed by summation of the products of the revenue aircraft-miles flown on each inter-airport hop multiplied by the number of revenue passengers carried on that hop.

SCHEDULED SERVICE - transport service operated pursuant to published flight schedules, including extra sections and related nonrevenue flights.

SERIOUS INJURY - an injury on any aircraft that:

- requires hospitalization for more than 48 hours commencing within seven days from the date when the injury was received;
- results in a fracture of any bone except simple fractures of fingers, toes or nose;
- involves a laceration which causes a severe hemorrhage, nerve, tendon or muscle damage;
- involves injury to any internal organ; or
- involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

14 CFR 121 - revenue operations of air carriers, commercial operators and deregulated all cargo carriers, using large aircraft.

14 CFR 135 - commuter air carriers (scheduled) and on-demand air taxi operators (unscheduled) revenue operations, using small aircraft.

HIGHWAY

BUS - includes school buses, intercity buses, transit buses, and other large motor vehicles used to carry more than ten passengers.

COMPACT CAR - an automobile designation usually consisting of cars with a wheelbase between 100 and 104 inches.

FULL-SIZE CAR - an automobile industry designation usually consisting of cars with a wheelbase between 110 and 114 inches.

INTERMEDIATE CAR - an automobile designation usually consisting of cars with a wheelbase between 105 and 109 inches.

LIGHT TRUCK - trucks under 10,000 pounds gross vehicle weight (e.g., pickups, vans, and station wagons).

HEAVY TRUCK - 1. single-unit truck with gross vehicle weight greater than 26,000 pounds; 2. tractor-trailer combination; 3. truck with cargo trailers; 4. truck-tractor pulling no trailer.

MOTOR VEHICLE OCCUPANT - any person who is in or upon a motor vehicle in transport and includes the driver, passengers and person riding on the exterior of a motor vehicle (e.g., a skateboard rider who is set in motion by holding onto a vehicle).

MOTOR VEHICLE TRAFFIC ACCIDENT - an accident that involves a motor vehicle in transport on a trafficway or that occurs after the motor vehicle runs off the roadway but before events are stabilized.

MOTOR VEHICLE TRAFFIC FATALITY - death resulting from motor vehicle accident injuries occurring on a trafficway within 30 days of the accident.

MOTORCYCLE - two- or three-wheeled motor vehicle having one or more riding saddles, designed to transport one or two people.

PEDALCYCLIST - person on a vehicle that is powered solely by pedals.

PEDESTRIAN - any person not traveling in or upon a motor vehicle or other vehicle.

HIGHWAY (cont'd)

TRAFFICWAY - the entire width between property lines, or other boundary lines, of every way or place, of which any part is open to the public for purposes of vehicular travel as a matter of right or custom.

VEHICLE-MILES - automobile vehicle-miles are estimated by calculating the number of gallons of gas sold from gasoline tax receipts and multiplying by the average number of miles per gallon.

WATERBORNE TRANSPORTATION

CASUALTY - casualties involving commercial vessels are required to be reported to the Coast Guard whenever the casualty results in:

- actual physical damage to property in excess of \$25,000;
- material damage affecting the seaworthiness or efficiency of a vessel;
- stranding or grounding;
- loss of life; or
- injury causing any person to remain incapacitated for a period in excess of 72 hours, except injury to harbor workers not resulting in death and not resulting from vessel casualty or vessel equipment casualty.

FATALITY - all deaths and missing persons resulting from a vessel casualty.

FREIGHTERS - general cargo carriers, full containerships, partial containerships, roll-on/roll-off ships, and barge carriers.

INJURY - all personal injuries resulting from a vessel casualty.

NON-VESSEL-CASUALTY-RELATED DEATH - death that occurs onboard a commercial vessel, but not as a result of a vessel casualty, such as collision, fire, or explosion.

TANKSHIP - carries liquid cargo in bulk, stowed in cargo tanks within vessel hull. Cargo is pumped aboard by a shore terminal and unloaded using the vessel's installed pumping system. Sizes range from 16,000 to 190,000 deadweight tons.

TUG - a strongly built, self-propelled boat used for towing and pushing.

VESSEL-CASUALTY-RELATED DEATH - death that occurs onboard a commercial vessel as a result of a vessel casualty, such as collision, fire, or explosion.

WATERBORNE TRANSPORTATION - transport of freight and/or people by commercial vessels under USCG jurisdiction.

RECREATIONAL BOATING

ACCIDENT - occurrences involving recreational vessels or their equipment are required to be reported whenever they result in 1. a death; 2. a person is injured and requires medical treatment beyond first aid; 3. damage to the vessel and other property damage totaling more than \$200; or 4. a person's disappearing from the vessel under circumstances indicating death or injury.

FATALITY - all deaths (other than deaths by natural causes) and missing persons resulting from an occurrence that involves a vessel or its equipment.

INJURY - all injuries meeting the criteria set forth above, resulting from an occurrence that involves a vessel or its equipment.

RAILROAD

FATALITY - 1. death of any person from an injury within 365 days of the accident/incident; or 2. death of a railroad employee from occupational illness within 365 days after the occupational illness was diagnosed by a physician.

INJURY - 1. injury to any person other than a railroad employee that requires medical treatment; or 2. injury to a railroad employee that requires medical treatment or results in restriction of work or motion for one or more workdays, one or more lost workdays, termination of employment, transfer to another job, or loss of consciousness.

NONTRESPASSERS - persons who are lawfully on that part of railroad property that is used in railroad operation and persons adjacent to railroad premises and injured as the result of the operation of a railroad.

RAIL-HIGHWAY GRADE CROSSING - a location where one or more railroad tracks cross a public highway, road, or street or a private roadway at grade, including sidewalks and pathways at, or associated with, the crossing.

RAIL-HIGHWAY GRADE-CROSSING ACCIDENT - any impact between railroad on-track equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, or pedestrian, at a rail-highway grade crossing.

RAILROAD (cont'd)

TRAIN ACCIDENT - a collision, derailment, fire, explosion, act of God, or other event involving operation of railroad on-track equipment which, while it does not necessarily result in a reportable death, injury, or illness, results in more than \$4,900 in damages to railroad on-track equipment, signals, track, track structures, or roadbed. Prior to 1985, this threshold stood at \$4,500; prior to 1983, at \$3,700; prior to 1981, at \$2,900.

TRESPASSERS - persons who are on that part of railroad property used in railroad operation, and whose presence is prohibited, forbidden or unlawful. A person on a rail-highway grade crossing is classified as a trespasser if the crossing is protected by gates or other similar barriers which were closed when the person entered the crossing. He is also a trespasser if he attempts to pass over or under trains or cars at the crossings.

RAIL RAPID TRANSIT

ACCIDENT - any accident which satisfies the following threshold levels:

1. **Train Collisions**
 - a. All rail transit revenue train collisions involving other rail transit equipment (such as revenue or non-revenue trains, work trains or work equipment), persons and/or rail-highway crossings.
 - b. Collisions between revenue trains and other obstacles (shopping carts, foreign objects, etc.) which result in \$5,000 or greater property damage, or casualties. "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.
2. Train derailments that result in \$5,000 or greater property damage.
3. Fires/Explosions that involve the participation of the local fire department in the firefighting, and/or which cause the evacuation of passengers onto the system right-of-way.
4. Exclusions: Accidents (collisions, derailments or fires/explosions) occurring in yards and non-revenue service areas that do not involve revenue trains; accidents (collisions, derailments or fires/explosions) that involve only work trains and servicing equipment; and collisions between train cars resulting from coupling operations that do not involve passenger casualties are excluded.

CASUALTY - any casualty that satisfies the following threshold levels:

1. **Employee Casualties** - employees who are on-duty and who are killed or sustain lost workdays resulting from reportable train accidents. "Lost workday" means any full day or part of a day (consecutive or not), other than the day of the injury, that an employee is away from work because of the injury. The day of the reportable train accident is not to be reported as a lost workday even though the injured employee does not complete the work assignment that day.
2. **Passenger and Other Casualties** - casualties involving passengers or other personnel (off-duty employees, contractors, etc.) that occur at or in exclusive approaches to or from faregates, or equivalent, or within the normal "paid" area, and which result in fatalities or personal injuries which require immediate medical treatment beyond first aid. "Medical treatment" means treatment requiring the attention of a physician or registered professional medical personnel. "Medical treatment" as used here, does not refer to minor first aid treatment (one-time treatment), precautionary measures such as tetanus shots, or subsequent observation of minor scratches, cuts, bruises or splinters.

Assaults, attempted suicides, and suicides are excluded.

PIPELINES

GAS DISTRIBUTION - pipelines transporting natural gas, flammable gas or gas which is toxic or corrosive in distribution operations. (Injury, fatality or accident definitions as shown under "Gas Transmission" below.)

GAS TRANSMISSION - pipelines transporting natural gas, flammable gas or gas which is toxic or corrosive in transmission or gathering operations.

- **Accident** - 1. an event that involves the release of gas from a pipeline or of liquefied natural gas or gas from an LNG facility resulting in a death, or personal injury necessitating in-patient hospitalization; or estimated property damage, including cost of gas lost, of the operator or others, or both, of \$50,000 or more; 2. an event that results in an emergency shutdown of an LNG facility; or 3. an event that is significant, in the judgment of the operator, even though it did not meet the criteria of (1.) or (2.).

PIPELINES (cont'd)

- **Fatality** - death resulting from the failure or escape of gas.
- **Injury** - an injury involving lost time or other than on-site medical treatment.

LIQUID TRANSMISSION - pipelines carrying hazardous material, petroleum and petroleum products in liquid form.

- **Accident** - release of the commodity transported as presented in 49 CFR Section 195.50.
- **Fatality** - death resulting from the escape of liquid.
- **Injury** - an injury requiring medical treatment other than on-site first aid.

HAZARDOUS MATERIALS

FATALITY - death that was due to a hazardous material.

HAZARDOUS MATERIAL - a substance or material which has been designated by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.

INCIDENT - any unintentional release of hazardous material while in transit or storage.

MAJOR INJURY - 1. injuries requiring hospitalization; 2. injuries involving second- or third-degree burns; or 3. injury-related lost time at work of one or more days such as would be caused by inhalation of strong, irritating vapors are classified as major injuries. All other reported injuries are considered minor.

