



U.S. Department  
of Transportation

Research and  
Special Programs  
Administration

# National Transportation Statistics

Annual Report

June 1992

- ★ Air Carrier
- ★ General Aviation
- ★ Modal Profiles
- ★ Passenger Miles



- ★ Truck ★ Highway
- ★ Bus
- ★ Cargo Operation
- ★ Vehicle Miles



- ★ Railroads
- ★ Cost Data ★ Amtrak
- ★ Operating Expenses / Revenue
- ★ Local Transit



- ★ Automobile
- ★ Transportation Energy
- ★ Economic Data
- ★ Inventory



- ★ Water Transit
- ★ Recreational Boating
- ★ Transportation Trends
- ★ Safety Statistics



- ★ Oil Pipeline
- ★ Natural Gas Pipeline
- ★ Energy Cost and Consumption
- ★ Pipeline Mileage



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U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

# **NATIONAL TRANSPORTATION STATISTICS**

Annual Report, 1992

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**Secretary of Transportation**

*Andrew H. Card, Jr.*



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# TABLE OF CONTENTS

	Page
INTRODUCTION .....	1
TREE DISPLAYS .....	3
MODAL PROFILES - 1980, 1989, and 1990 .....	11
Air Carrier Profile .....	12
General Aviation Profile .....	16
Highway Profile .....	18
Automobile Profile .....	21
Bus Profile .....	24
Truck Profile .....	26
Local Transit Profile .....	29
Water Transport Profile .....	31
Rail Profile, A. Class I Railroads .....	34
Rail Profile, B. Amtrak .....	36
Oil Pipeline Profile .....	37
Natural Gas Pipeline Profile .....	38
TRANSPORTATION TRENDS .....	41
Section I: Performance .....	41
Section II: Safety .....	67
Section III: Motor Vehicle Sales, Production, and Costs .....	85
SUPPLEMENTARY DATA .....	93
Section I: Transportation and the Economy .....	93
Section II: Energy in Transportation .....	109
Part 1. Energy Consumption .....	111
Part 2. Energy Intensiveness .....	129
Part 3. Energy Transport .....	139
Part 4. Energy Supply and Demand .....	147
Section III: 1990 Nationwide Personal Transportation Survey (NPTS) .....	153
APPENDIX A - Source Information .....	A-1
● Figure References .....	A-2
● Profile References .....	A-9
● Table References .....	A-11
APPENDIX B - Glossary .....	B-1
APPENDIX C - Index .....	C-1
APPENDIX D - Bibliography .....	D-1
CONVERSION FACTORS .....	Inside Backcover

## TABLES

Table	Page
<b>TRANSPORTATION TRENDS</b>	
<b>Section I: Performance</b>	
1.	Average Passenger Revenue per Passenger-Mile, 1980-1990 ..... 42
2.	Average Freight Revenue per Ton-Mile, 1980-1990 ..... 44
3.	Average Passenger Fare, 1980-1990 ..... 46
4.	Total Operating Revenues, 1980-1990 ..... 48
5.	Vehicle-Miles, 1980-1990 ..... 50
6.	Passenger-Miles, 1980-1990 ..... 52
7.	Revenue Ton-Miles of Freight, 1980-1990 ..... 54
8.	Basic Intercity Mileage Within the Continental United States, 1980-1990 ..... 56
9.	Average Length of Haul, Domestic Interstate Freight and Passenger Modes, 1980-1990 ..... 58
10.	Number of Vehicles, 1980-1990 ..... 59
11.	Number of New Vehicles Purchased by Mode, 1980-1990 ..... 60
12.	U.S. Automobiles in Fleets by Type of Use, 1980-1990 ..... 61
13.	Speed Trend Characteristics, FY 1981-1990 ..... 62
14.	Air Travel Arrivals Between the United States and Foreign Countries, 1980-1990 ..... 63
15.	Air Travel Departures Between the United States and Foreign Countries, 1980-1990 ..... 64
16.	Top 50 Airports, Large Scheduled Certificated Air Carriers, 1990 ..... 65
<b>Section II: Safety</b>	
17.	Number of Fatalities by Mode, 1980-1990 ..... 68
18.	Reported Near Midair Collisions, 1980-1990 ..... 70
19.	Airline Passenger Screening Results, 1980-1990 ..... 71
20.	Restraint Usage and Injury Severity of Passenger Car Occupants, 1981-1990 ..... 76
21.	Fatalities by Highest Blood Alcohol Concentration (BAC) in the Crash, 1982-1990 ... 78
<b>Section III: Motor Vehicle Sales, Production and Costs</b>	
22.	U.S. Retail Passenger Car Sales, 1980-1991 ..... 86
23.	Annual U.S. Motor Vehicle Production and Factory Sales, 1980-1991 ..... 86
24.	U.S. Retail Sales of New Cars by Sector, 1980-1991 ..... 87
25.	Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Automobiles, Model Years 1980-1991 ..... 88
26.	Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Light Trucks, Model Years 1980-1991 ..... 89
27.	World Motor Vehicle Production, 1980 and 1990 ..... 90
28.	Cost of Owning and Operating Automobiles, Vans, and Light Trucks, 1991 ..... 91
<b>SUPPLEMENTARY DATA</b>	
<b>Section I: Transportation and the Economy</b>	
29.	Personal Consumption Expenditures by Transportation Sector, 1980-1990 ..... 94
30.	Personal Consumption Expenditures by Type, 1980-1991 ..... 96
31.	National Income by Transportation Sector, 1980-1990 ..... 98
32.	Wages and Salaries per Full-Time Employee by Transportation Sector, 1980-1990 ..... 100
33.	Wages and Salaries by Transportation Sector, 1980-1990 ..... 102



## TABLES (cont'd)

Table	Page
34. Employment in Transportation and Related Industries, 1980-1990 .....	104
35. National Transportation and Economic Trends, 1980-1990 .....	105
36. Passenger and Freight Transportation Expenditures, 1980-1990 .....	106
37. U.S. Government Transportation Research, Planning and R&D Outlays, 1970-1990. .	107
<b>Section II: Energy in Transportation</b>	
<b>Part I. Energy Consumption</b>	
38. Consumption of Energy by Sector, 1955-1991 .....	112
39. U.S. Energy Consumption by the Transportation Sector, 1955-1991 .....	113
40. U.S. Government Energy Consumption, Fiscal Years 1980-1991 .....	115
41. U.S. Government Energy Use by Agency and Source, Fiscal Years 1980 and 1991 .....	116
42. Fuel Consumption by Mode of Transportation, 1980-1990 .....	117
43. Fuel Consumption by Certificated Air Carriers, 1980-1990 .....	118
44. Total Motor Vehicle Fuel Consumption and Travel, 1980-1990 .....	119
45. Fuel Consumption and Travel by Personal Passenger Vehicles, 1980-1990.....	120
46. Fuel Consumption and Travel by Buses, 1980-1990 .....	121
47. Fuel Consumption and Travel by Trucks, 1980-1990 .....	122
48. Motor Fuel and Total Energy Consumption by the U.S. Transit Industry, 1955-1990 ..	123
49. Average Retail Price of Transportation Fuel, 1980-1991 .....	124
50. Gasoline Cost per Mile at Various Gasoline Prices, 1991 .....	125
51. Price Trend of Gasoline vs. Other Consumer Goods and Services, 1955-1991 .....	126
52. Average Fuel Efficiency of U.S. Passenger Cars, 1955-1992 .....	127
<b>Part 2. Energy Intensiveness</b>	
53. Energy Intensiveness of Certificated Air Carriers, 1980-1990 .....	130
54. Energy Intensiveness of General Aviation, 1980-1990 .....	131
55. Energy Intensiveness of Passenger Cars and Motorcycles, 1980-1990 .....	132
56. Energy Intensiveness of Trucks, 1980-1990.....	133
57. Energy Intensiveness of Local Transit Buses and School Buses, 1980-1990.....	134
58. Energy Intensiveness of Class I Intercity Buses, 1980-1990.....	135
59. Energy Intensiveness of Class I Railroad Freight, 1980-1990 .....	135
60. Energy Intensiveness of Amtrak Service, 1980-1990 .....	136
<b>Part 3. Energy Transport</b>	
61. Crude Oil Transported in the U.S. by Mode of Transportation, 1980-1990 .....	140
62. Refined Petroleum Products Transported in the U.S. by Mode of Transportation, 1980-1990 .....	141
63. Crude Petroleum and Petroleum Products Transported in the U.S. by Mode of Transportation, 1980-1990 .....	142
64. U.S. Gas Utility Industry Miles of Pipeline and Main, by Type, 1955-1990 .....	144
65. U.S. Tanker Fleet, 1955-1990 .....	145

## TABLES (cont'd)

Table	Page
<b>Part 4. Energy Supply and Demand</b>	
66.	Petroleum Products Supplied by Sector (million barrels per day), 1955-1991 ..... 148
67.	Domestic Demand for Refined Petroleum Products Supplied by Sector (trillion Btu's per day), 1955-1991 ..... 149
68.	Petroleum Products Supplied by Type and Sector, 1980 and 1991 ..... 150
69.	Domestic Demand for Gasoline, 1955-1990 ..... 151
<b>Section III: Nationwide Personal Transportation Survey (NPTS)</b>	
70.	Summary Statistics on Demographic Characteristics and Total Travel, 1969-1990 ... 155
71.	Household Travel Rates and Demographic Indicators, 1969-1990 ..... 156
72.	Vehicle Miles of Travel (VMT) by Purpose, 1969-1990 ..... 158
73.	Average Vehicle Trip Length in Miles by Purpose, 1969-1990 ..... 159
74.	Vehicle Trips by Purpose, 1969-1990 ..... 160
75.	Person Trips Taken by Women by Mode and Purpose, 1983 and 1990 ..... 161

# ILLUSTRATIONS

Figure

Page

## TREE DISPLAYS

1.	Expenditures and Revenues (\$ millions) - 1990.....	4
2.	Vehicle-Miles (millions) - 1990 .....	5
3.	Passenger-Miles (millions) - 1990 .....	6
4.	Revenue Ton-Miles of Freight (millions) - 1990 .....	7
5.	Number of Vehicles - 1990 .....	8
6.	Number of Fatalities - 1990 .....	9
7.	Energy Consumed in Transportation - 1990 .....	10

## TRANSPORTATION TRENDS

### Section I: Performance

8.	Average Passenger Revenue per Passenger-Mile, 1980-1990 .....	43
9.	Average Freight Revenue per Ton-Mile, 1980-1990 ..	45
10.	Average Passenger Fare, 1980-1990 .....	47
11.	Total Operating Revenues, 1980-1990 .....	49
12.	Vehicle-Miles, 1980-1990 .....	51
13.	Passenger-Miles, 1980-1990 .....	53
14.	Revenue Ton-Miles of Freight, 1980-1990 .....	55
15.	Basic Intercity Mileage Within the Continental United States, 1980-1990 .....	57

### Section II: Safety

16.	Number of Fatalities by Mode, 1980-1991 .....	69
17.	U.S. Air Carrier Fatalities and Accidents, 1980-1991 .....	72
18.	General Aviation Fatalities and Accidents, 1980-1991 .....	73
19.	U.S. and Foreign Air Carrier Aircraft Hijackings, 1980-1990 .....	74
20.	Bomb Threats Against U.S. Aircraft and U.S. Airports, 1983-1990 .....	75
21.	Traffic Fatalities by Major Categories, 1980-1991 .....	79
22.	Waterborne Fatalities, Accidents, and Injuries, 1980-1990 .....	80
23.	Recreational Boating Fatalities, Accidents, and Injuries, 1980-1991 .....	81
24.	Railroad Fatalities and Accidents, and Grade Crossing Fatalities, 1980-1991 .....	82
25.	Liquid and Gas Pipeline Fatalities, 1980-1991 .....	83
26.	Hazardous Materials Fatalities, 1980-1991 .....	83

## SUPPLEMENTARY DATA

### Section I: Transportation and the Economy

27.	Personal Consumption Expenditures by Transportation Sector, 1980-1990 .....	95
28.	Personal Consumption Expenditures by Type, 1980 and 1991 .....	97
29.	National Income by Transportation Sector, 1980-1990 .....	99
30.	Wages and Salaries per Full-Time Employee by Transportation Sector, 1980 and 1990 .....	101
31.	Wages and Salaries by Transportation Sector, 1980 and 1990 .....	103

### Section II: Energy in Transportation

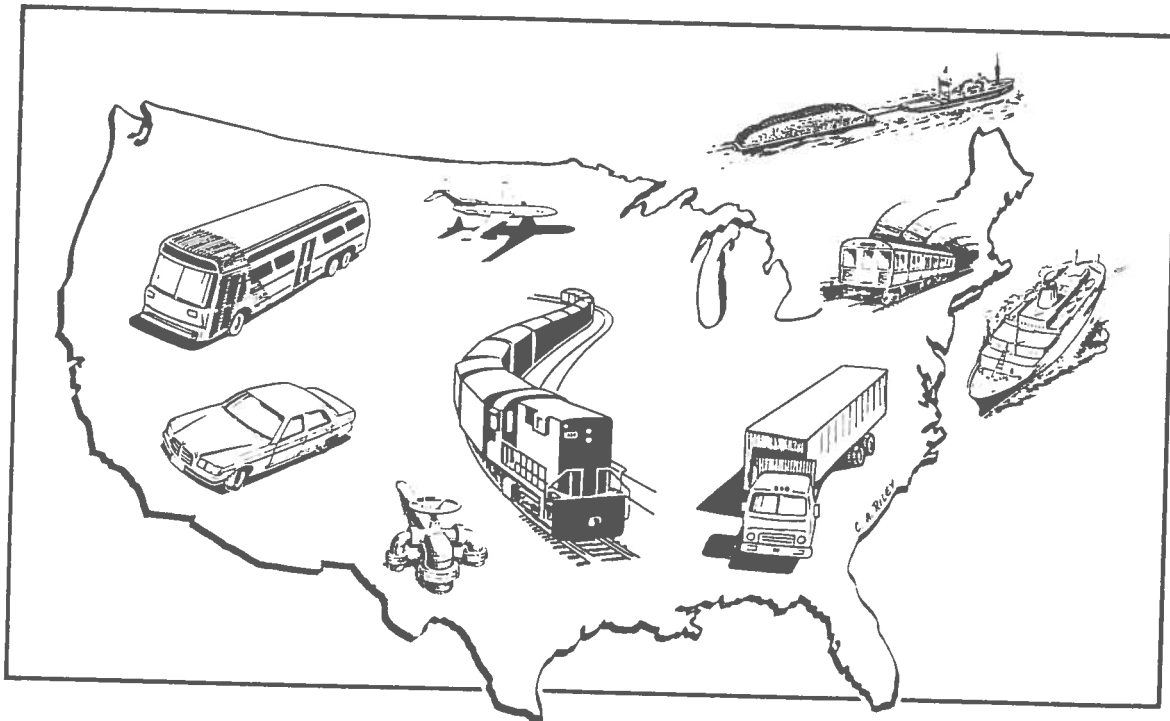
#### Part 1. Energy Consumption

32.	U.S. Energy Consumption by the Transportation Sector, 1980-1991 .....	114
33.	Price Trend of Regular Grade Gasoline Prices, 1955-1991 .....	128
34.	Average Fuel Efficiency of U.S. Passenger Cars, 1955-1991 .....	128

## ILLUSTRATIONS (cont'd)

Figure		Page
	<b>Part 2. Energy Intensiveness</b>	
35.	Energy Intensiveness by Passenger Mode, 1980-1990.....	137
	<b>Part 3. Energy Transport</b>	
36.	Crude Petroleum and Petroleum Products Transported in the U.S. by Modal Share, 1980-1990 .....	143
	<b>Section III: Nationwide Personal Transportation Survey (NPTS)</b>	
37.	Average Annual Miles per Licensed Driver, 1969-1990 .....	157

# INTRODUCTION



## INTRODUCTION

Developing and maintaining vital transportation statistics is one of the missions of the U.S. Department of Transportation's (DOT) Research and Special Programs Administration's Volpe National Transportation Systems Center (RSPA/Volpe Center). The *National Transportation Statistics* (NTS) Annual Report is produced to support this mission and is intended to disseminate national transportation and energy statistics to the transportation and energy communities. This publication should prove to be a valuable and convenient source of information for the Department of Transportation and other governmental agencies, as well as non-governmental organizations interested in transportation.

This report contains summary statistics for the years 1980-1990, and 1991 when available, for the transportation industry. Energy data, in relation to the transportation sector, cover the same period, and in some instances extend back to 1955.

The compilation of statistical materials is usually a tedious and time consuming process. Consequently, reliable sources often represent a one to two year time lag. This report incorporates the latest available information at the time of publication.

While most of these statistics are available from various sources such as government agencies and trade associations, they are presented here in one convenient and comprehensive report. Particular attention has been taken in documenting the sources of all data. These sources are noted either on the same page as the data or in Appendix A -- Source Information.

The reader is urged to utilize the Source Information, and those who may want additional information or an explanation regarding the data in this publication, should check with the source(s).

Three different formats are used -- 1) Tree Displays, 2) Modal Profiles, and 3) Transportation Trends -- to spotlight various aspects of the major transportation modes. In addition, two supplemental data sections detail the role of transportation in the economy and the relationship of energy to transportation. The third supplemental data section presents information from DOT's 1990 *Nationwide Personal Transportation Survey (NPTS)*.

Three new tables have been added to this year's report. They include the following: 'Fatalities by Highest Blood Alcohol Concentration in the Crash', 'Cost of Owning and Operating Automobiles, Vans, and Light Trucks, 1991', and 'Gasoline Cost per Mile at Various Gasoline Prices, 1991.'

In order to clarify definitions, Appendix B contains a glossary that has been assembled and organized according to each transportation mode. Also, to assist the reader in locating specific data, an index is included in Appendix C.

The *National Transportation Statistics* Annual Report is prepared by the RSPA/Volpe Center's Center for Transportation Information.

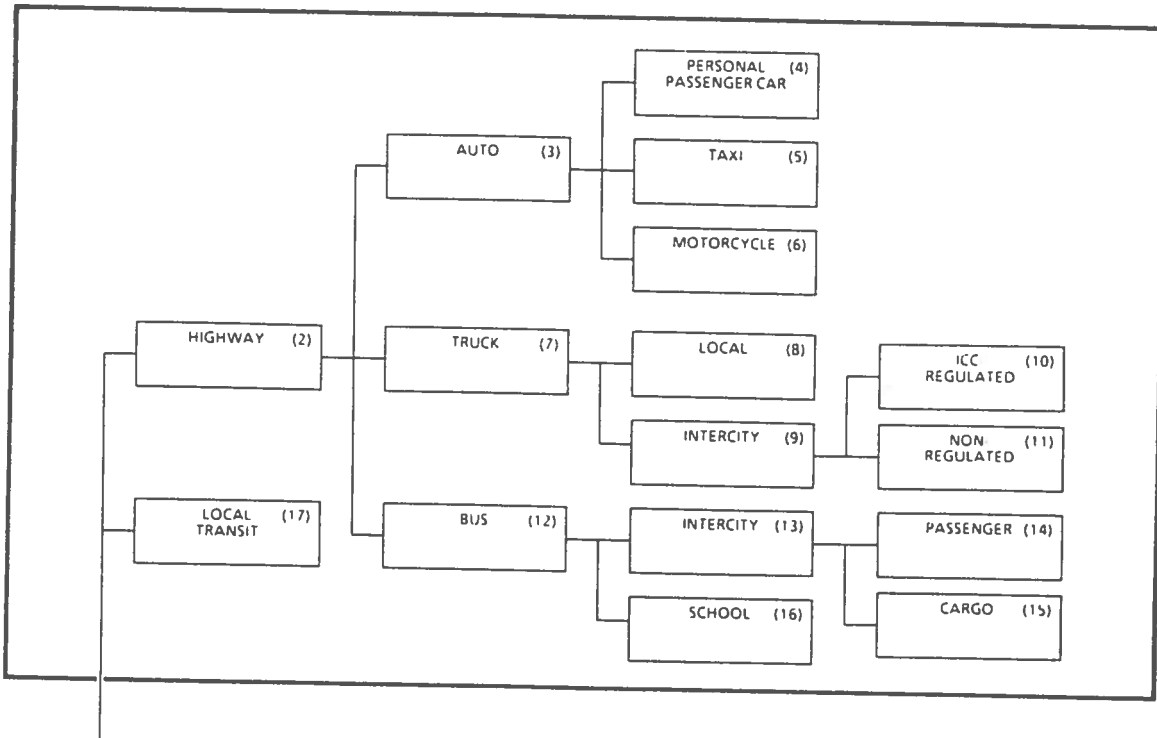
Ms. Francine Butler of the Volpe Center's, Center for Transportation Information provided valuable assistance in the preparation of this report.

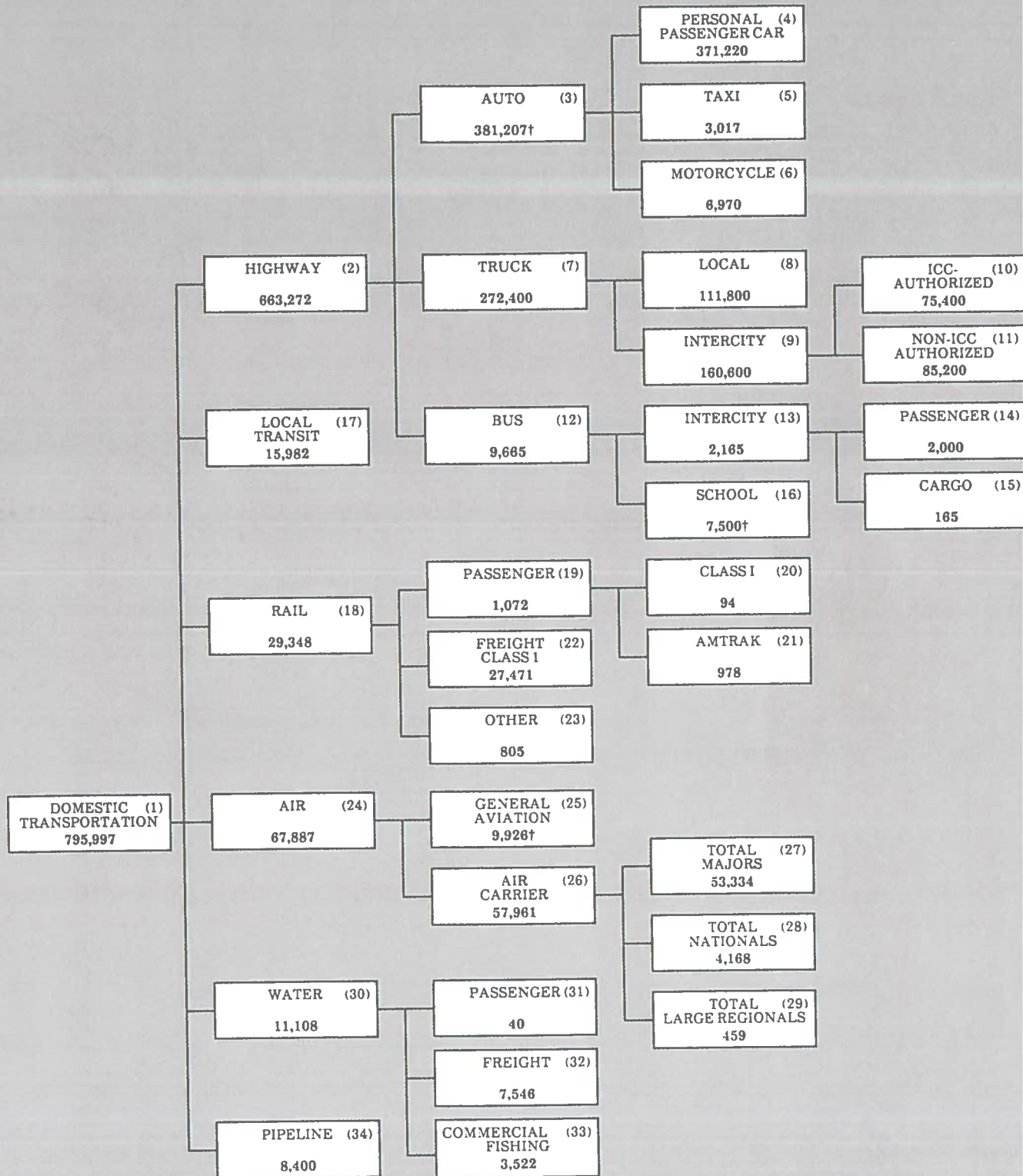
# TREE DISPLAYS 1990

The interrelationships of the various modes are presented here via tree displays. These displays illustrate the relationship between and within each transportation mode for the following areas:

- Expenditures and Revenues
- Vehicle-Miles
- Passenger-Miles
- Revenue Ton-Miles of Freight
- Number of Vehicles
- Number of Fatalities
- Energy Consumed in Transportation

Because of the variety of data sources, the totals may not always equal the sum of the subordinate data. Sources for each statistic may be found by locating its parenthetical reference number in Appendix A - Source Information.

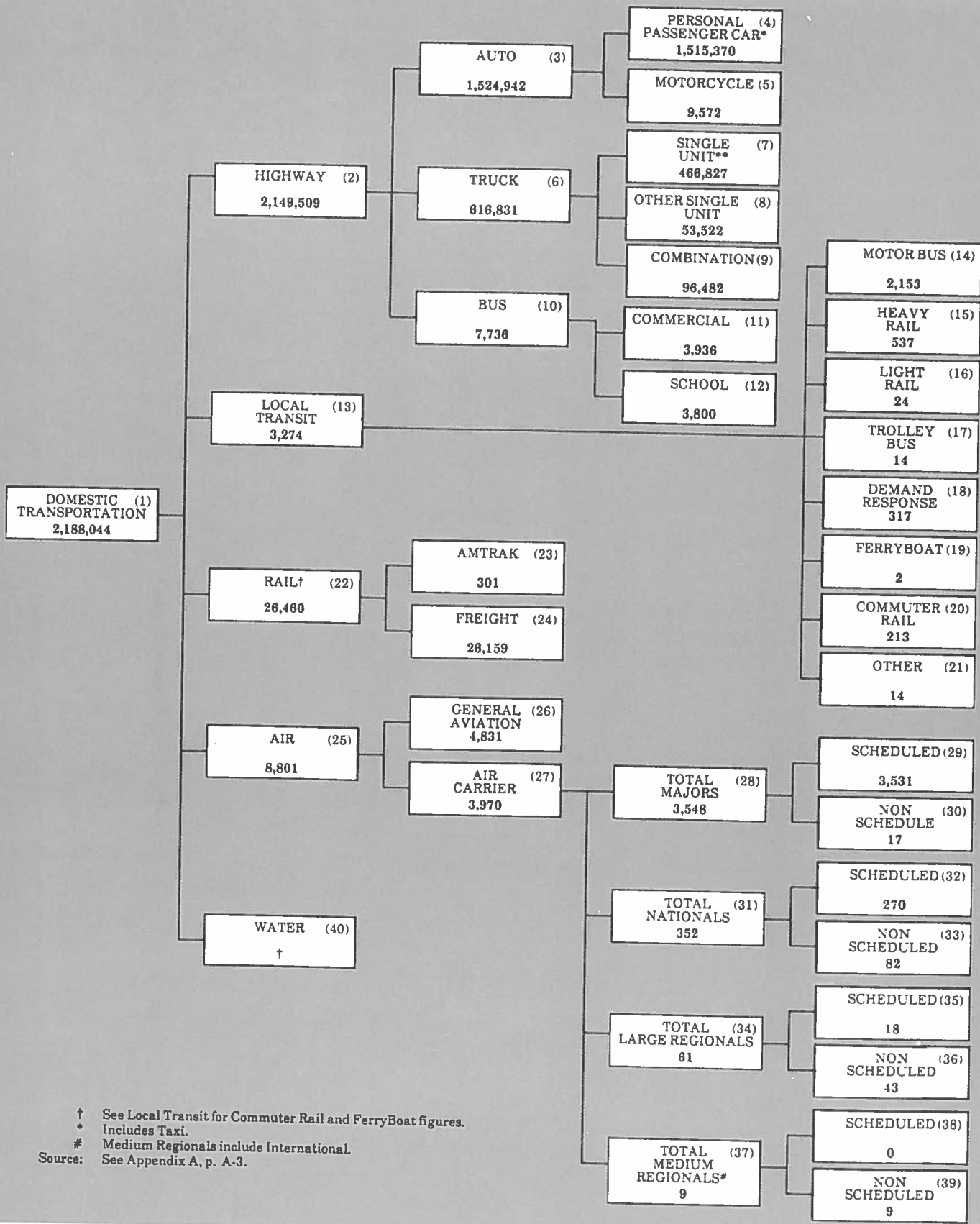




† Represents Expenditures.  
 Source: See Appendix A, p. A-2.

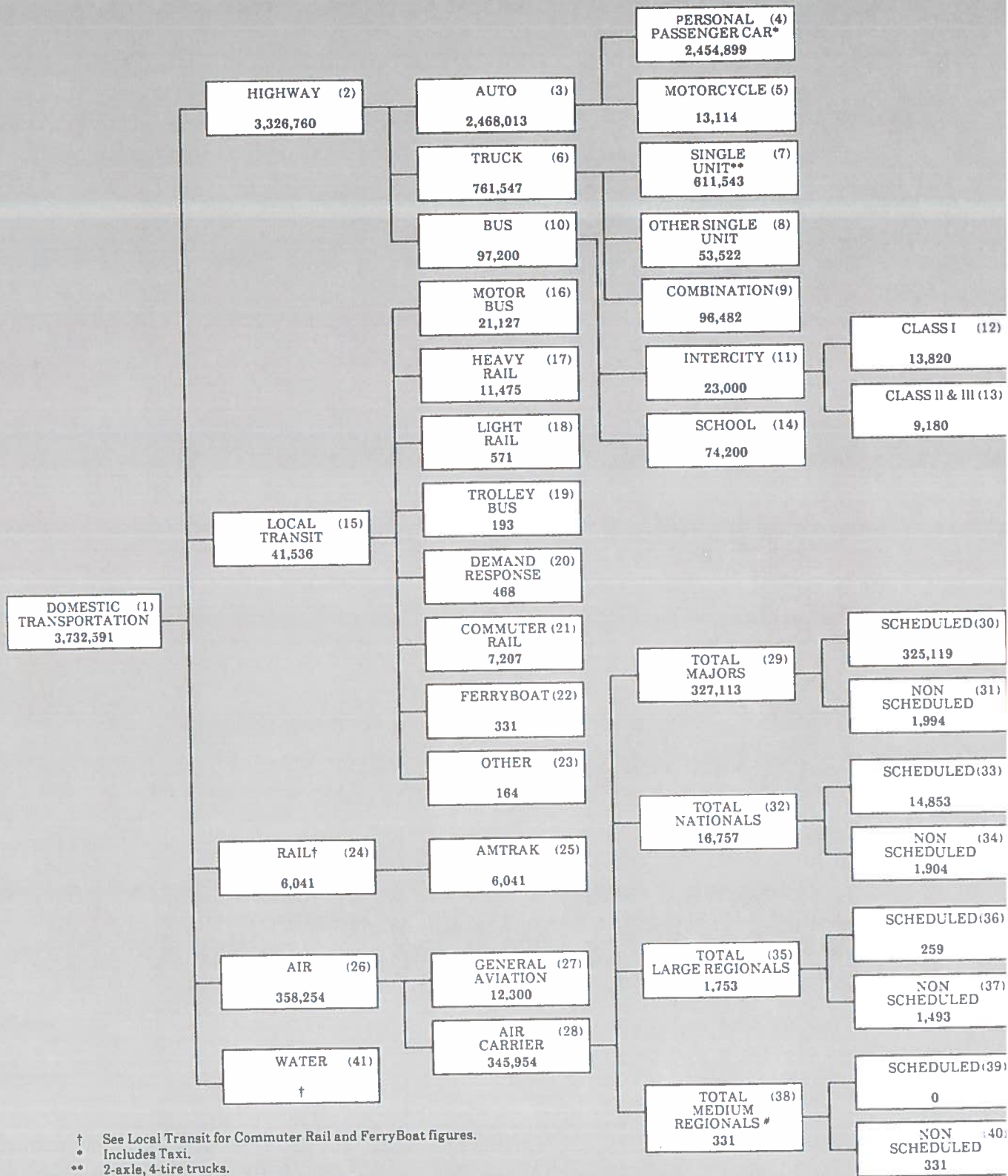
Figure 1. Expenditures and Revenues (\$ millions) - 1990





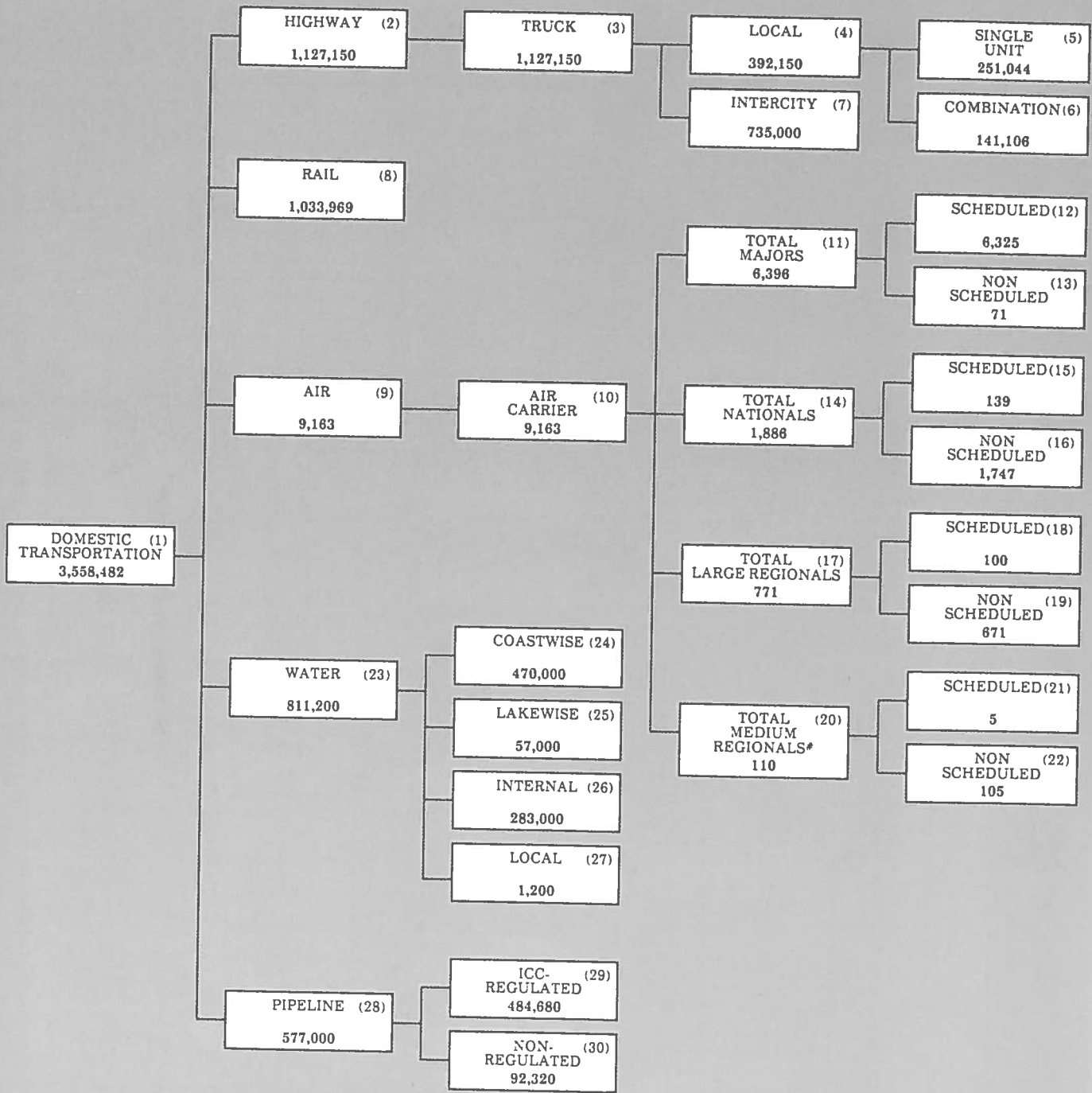
† See Local Transit for Commuter Rail and FerryBoat figures.  
 \* Includes Taxi.  
 # Medium Regionals include International.  
 Source: See Appendix A, p. A-3.

Figure 2. Vehicle-Miles (millions) - 1990



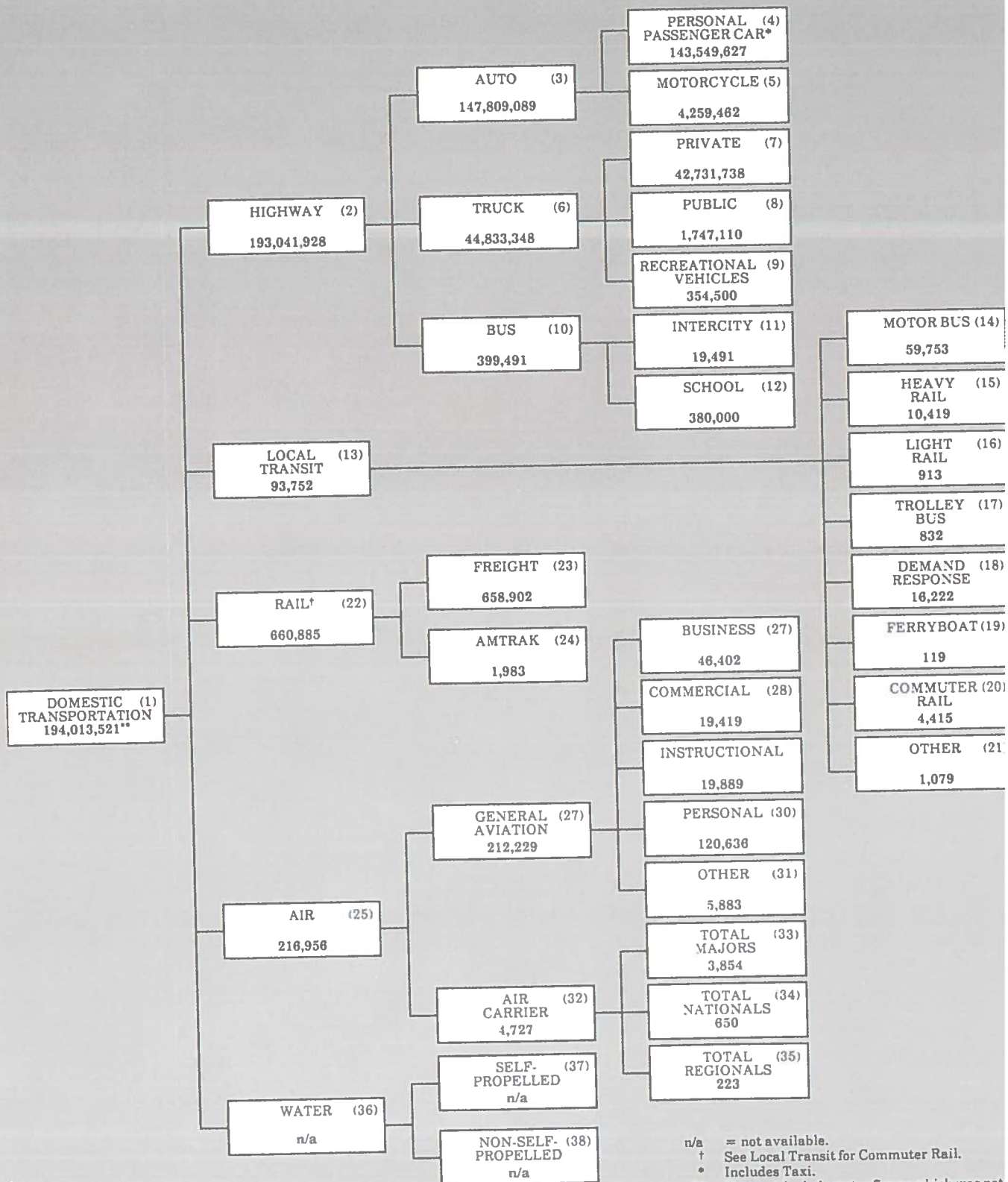
† See Local Transit for Commuter Rail and FerryBoat figures.  
 \* Includes Taxi.  
 \*\* 2-axle, 4-tire trucks.  
 # Medium Regionals include International.  
 Source: See Appendix A, p. A-4.

Figure 3. Passenger-Miles (millions) - 1990



\* Medium Regionals include International.  
 Source: See Appendix A, p. A-5.

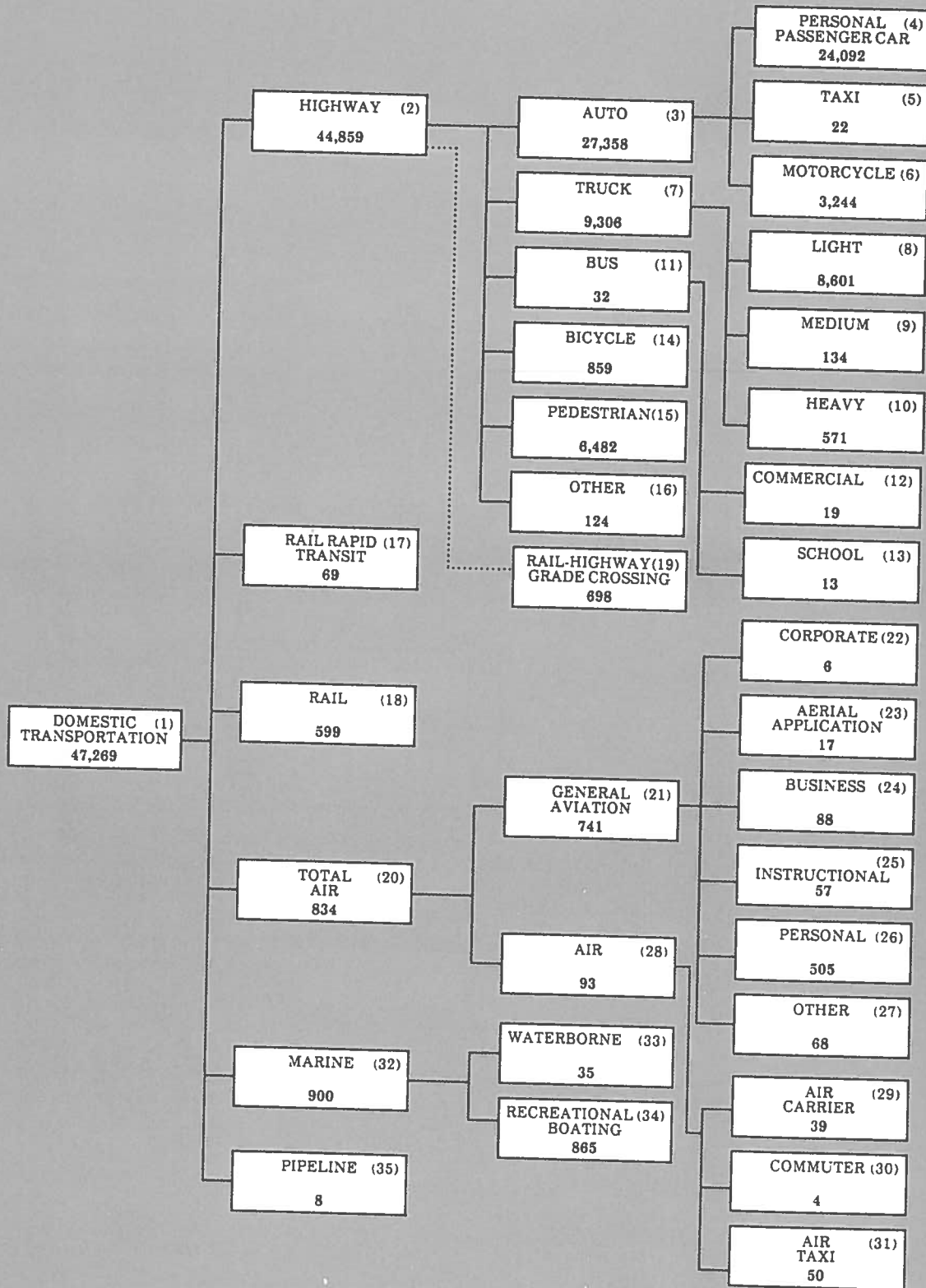
Figure 4. Revenue Ton-Miles of Freight (millions) - 1990



n/a = not available.  
 † See Local Transit for Commuter Rail.  
 \* Includes Taxi.  
 \*\* Does not include water figure which was not available at time of publication.

Source: See Appendix A, pp. A-5, A-6.

Figure 5. Number of Vehicles - 1990



Source: See Appendix A, pp. A-6, A-7.

Figure 6. Number of Fatalities - 1990

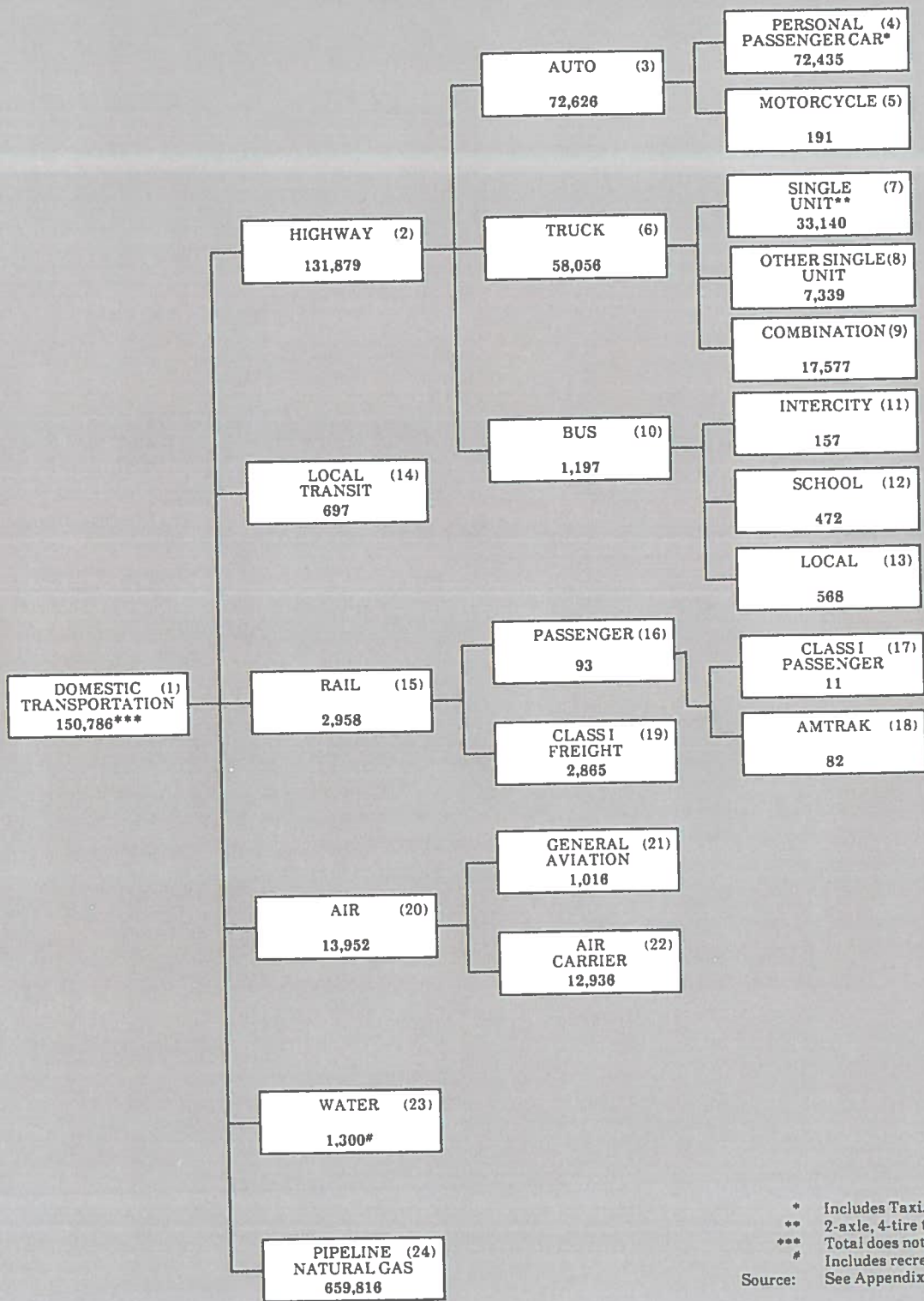


Figure 7. Energy Consumed in Transportation - 1990

# MODAL PROFILES

## 1980, 1989, and 1990

The Modal Profiles present financial, inventory, and performance data comparisons for 1980, 1989, and 1990. In some cases, not all of the types of data in these profiles are available for every mode, nor are they always applicable. The following list indicates the type of data usually included in each group:

- |      |                                 |                                   |  |
|------|---------------------------------|-----------------------------------|--|
| I.   | Financial                       |                                   |  |
|      | A. Expenditures (private modes) | D. Federal expenditures           |  |
|      | B. Revenue (for-hire modes)     | E. State and local expenditures   |  |
|      | C. Operating expenses           |                                   |  |
| II.  | Inventory                       |                                   |  |
|      | A. Number of companies          | C. Number of employees            |  |
|      | B. Number of vehicles           | D. Mileage                        |  |
| III. | Performance                     |                                   |  |
|      | A. Vehicle -miles               | E. Tons of freight hauled         |  |
|      | B. Passenger-miles              | F. Average passenger trip length  |  |
|      | C. Number of passengers carried | G. Average length of freight haul |  |
|      | D. Ton-miles                    | H. Fatality and accident rates    |  |

Specific source references are obtained as follows: the letter directly to the right of the data element applies to all subsequent data elements in that column until the next letter appears. In some cases, data are shown that may not appear directly in the sources listed. These were obtained by addition/subtraction of referenced data or of other data in its column, and are marked with an asterisk.

For example: General Aviation Profile

	<u>1980</u>	
	2,853 <sup>a</sup>	reference letter 'a'
	5,200	also applies to the two
	8,053	subsequent data elements
	14,860 <sup>c</sup>	reference letter 'c' refers to
	43,391	a different data source.

The specific source number and page or table reference may then be found at the end of each modal profile. All sources are listed in Appendix A--Source Information.

The 1989-1990 percent change column refers to the percent difference between 1989 data and 1990 data. The 1980-1990 average annual percent change is equal to  $C \times 100$ , where C is obtained from the following relationship:  $D_{90} = D_{80} (1 + C)^{10}$ . (Note  $D_{80}$  and  $D_{90}$  refer to 1980 and 1990 data, respectively; C is the change, and the relationship is derived from the compound interest formula.)

## AIR CARRIER PROFILE

	<u>1980<sup>1</sup></u>	<u>1989<sup>1</sup></u>	<u>1990<sup>1</sup></u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Operating Revenues (\$ thousands)					
Domestic					
Majors, all services	23,012,073 <sup>a</sup>	49,780,384 <sup>e</sup>	53,333,552 <sup>e</sup>	8.8	7.1
Nationals, all services	3,182,418	3,823,555 <sup>f</sup>	4,167,552 <sup>f</sup>	2.7	9.0
Large Regionals, all services	245,806	674,159 <sup>d</sup>	459,404 <sup>d</sup>	6.5	-31.9
International					
Majors, all services	5,976,221 <sup>b</sup>	14,075,981 <sup>e</sup>	16,761,376 <sup>e</sup>	10.9	19.1
Nationals, all services	465,923	566,715 <sup>f</sup>	901,352 <sup>f</sup>	6.8	59.0
Large Regionals, all services	n/a	268,217 <sup>d</sup>	327,627 <sup>d</sup>	-	22.1
Total Certificated*	32,882,441	69,189,011	75,950,863	8.7	9.8
Operating Expenses (\$ thousands)					
Domestic					
Majors, all services	23,150,527 <sup>a</sup>	47,926,869 <sup>e</sup>	54,209,401 <sup>e</sup>	8.9	13.1
Nationals, all services	3,058,289	3,830,577 <sup>f</sup>	4,297,823 <sup>f</sup>	3.5	12.2
Large Regionals, all services	257,183	677,475 <sup>d</sup>	445,862 <sup>d</sup>	5.7	-34.2
International					
Majors, all services	6,171,366 <sup>b</sup>	14,185,310 <sup>e</sup>	17,746,006 <sup>e</sup>	11.1	25.1
Nationals, all services	470,729	506,652 <sup>f</sup>	853,361 <sup>f</sup>	6.1	68.4
Large Regionals, all services	n/a	261,571 <sup>d</sup>	315,113 <sup>d</sup>	-	20.5
Total Certificated*	33,108,094	67,388,454	77,867,566	8.9	15.6
<b>II. INVENTORY<sup>2</sup></b>					
Number of Carriers					
Total Domestic and International	72 <sup>h</sup>	60 <sup>h</sup>	62 <sup>h</sup>	-1.5	3.3
Majors	12	10	12	0.0	20.0
Nationals	17	15	16	-0.6	6.6
Regionals	43	35	34	-2.3	-2.9
Number of Aircraft Available for Service					
Total Domestic and International	2,818	4,345	4,727	5.3	8.8
Majors	2,071	3,388	3,854	6.4	13.8
Nationals	432	695	650	4.2	-6.5
Regionals	315	262	223	-3.4	-14.9
Number of Employees					
Total Domestic and International	354,264	555,714	588,926	5.2	6.0
Majors	318,973	499,936	549,100	5.6	9.8
Nationals	29,922	48,120	32,077	0.7	-33.3
Regionals	5,369	7,658	7,749	3.7	1.2
<b>III. PERFORMANCE</b>					
Aircraft Revenue-Miles (thousands)					
Domestic					
Certificated, all services*	2,523,375 <sup>g</sup>	3,748,139 <sup>i</sup>	3,963,263 <sup>j</sup>	4.6	5.7
Majors, all services*	2,113,669	3,315,172 <sup>k</sup>	3,547,339 <sup>k</sup>	5.3	7.0
Nationals, all services*	330,528	334,283 <sup>l</sup>	351,946 <sup>l</sup>	0.6	5.3
Large Regionals, all services*	56,995	95,423 <sup>m</sup>	60,542 <sup>m</sup>	0.6	-36.6



## AIR CARRIER PROFILE (cont'd)

	<u>1980<sup>1</sup></u>	<u>1989<sup>1</sup></u>	<u>1990<sup>1</sup></u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>International</b>					
Certificated, all services*	400,791 <sup>i</sup>	693,887 <sup>n</sup>	760,338 <sup>n</sup>	6.6	9.6
Majors, all services*	330,391	596,338 <sup>o</sup>	666,231 <sup>o</sup>	7.3	11.7
Nationals, all services*	66,499	49,101 <sup>p</sup>	48,812 <sup>p</sup>	-3.0	-0.6
Large Regionals, all services*	2,948	40,889 <sup>q</sup>	60,542 <sup>q</sup>	35.3	48.1
Medium Regionals, all services					
Domestic and International*	23,204	10,820 <sup>r</sup>	9,017 <sup>r</sup>	-9.0	-16.7
Total Certificated*	2,947,370	4,452,846	4,732,618	4.9	6.3
<b>Aircraft Revenue-Hours</b>					
<b>Domestic</b>					
Certificated, all services*	6,247,795 <sup>g</sup>	9,222,252 <sup>j</sup>	9,717,375 <sup>j</sup>	4.5	5.4
Majors, all services*	4,941,327	7,953,706 <sup>k</sup>	8,524,236 <sup>k</sup>	5.6	7.2
Nationals, all services*	919,187	996,209 <sup>l</sup>	1,016,491 <sup>l</sup>	1.0	2.0
Large Regionals, all services*	267,522	264,410 <sup>m</sup>	167,826 <sup>m</sup>	-4.6	-36.5
<b>International</b>					
Certificated, all services*	819,518 <sup>i</sup>	1,426,410 <sup>n</sup>	1,556,760 <sup>n</sup>	6.6	9.1
Majors, all services*	668,199	1,214,365 <sup>o</sup>	1,351,349 <sup>o</sup>	7.3	11.3
Nationals, all services*	140,239	105,303 <sup>p</sup>	101,533 <sup>p</sup>	-3.2	-3.6
Large Regionals, all services*	7,583	86,420 <sup>q</sup>	88,641 <sup>q</sup>	27.9	2.6
Medium Regionals, all services					
Domestic and International*	123,411	28,249 <sup>r</sup>	24,059 <sup>r</sup>	-15.1	-14.8
Total Certificated*	7,190,724	10,676,911	11,298,194	4.6	5.8
<b>Revenue Passenger-Miles (thousands)</b>					
<b>Domestic</b>					
Certificated, all services	204,367,599 <sup>g</sup>	335,214,077 <sup>j</sup>	345,872,950 <sup>j</sup>	5.4	3.2
Majors, all services	182,984,795	314,276,953 <sup>k</sup>	327,112,620 <sup>k</sup>	6.0	4.1
Nationals, all services	20,466,712	17,792,141 <sup>l</sup>	16,756,818 <sup>l</sup>	-2.0	-5.8
Large Regionals, all services	711,868	3,035,379 <sup>m</sup>	1,752,615 <sup>m</sup>	9.4	-42.3
<b>International</b>					
Certificated, all services	63,354,387 <sup>i</sup>	112,266,344 <sup>n</sup>	126,362,697 <sup>n</sup>	7.2	12.6
Majors, all services	54,318,160	102,784,507 <sup>o</sup>	118,268,507 <sup>o</sup>	8.1	15.1
Nationals, all services	8,659,592	6,633,347 <sup>p</sup>	6,794,533 <sup>p</sup>	-2.4	2.4
Large Regionals, all services	330,288	2,559,679 <sup>q</sup>	1,219,706 <sup>q</sup>	14.0	-52.3
Medium Regionals, all services					
Domestic and International*	250,571	398,415 <sup>r</sup>	330,848 <sup>r</sup>	2.8	-17.0
Total Certificated*	267,972,557	447,878,836	472,566,495	5.8	5.5
<b>Revenue Passenger Enplanements (thousands)</b>					
<b>Domestic</b>					
Certificated, all services*	275,182 <sup>g</sup>	421,305 <sup>j</sup>	428,767 <sup>j</sup>	4.5	1.8
Majors, all services*	223,237	385,188 <sup>k</sup>	393,927 <sup>k</sup>	5.8	2.3
Nationals, all services*	47,145	31,571 <sup>l</sup>	32,015 <sup>l</sup>	-3.8	1.4
Large Regionals, all services*	3,748	4,404 <sup>m</sup>	2,566 <sup>m</sup>	-3.7	-41.7
<b>International</b>					
Certificated, all services*	26,514 <sup>i</sup>	42,218 <sup>n</sup>	46,126 <sup>n</sup>	5.7	9.3
Majors, all services*	23,949	37,415 <sup>o</sup>	42,207 <sup>o</sup>	5.8	12.8
Nationals, all services*	2,343	3,009 <sup>p</sup>	2,632 <sup>p</sup>	1.2	-1.5
Large Regionals, all services*	149	1,500 <sup>q</sup>	1,246 <sup>q</sup>	23.7	-16.9
Medium Regionals, all services					
Domestic and International*	1,125	436 <sup>r</sup>	300 <sup>r</sup>	-12.4	-31.2
Total Certificated*	302,821	463,959	475,193	4.6	2.4

## AIR CARRIER PROFILE (cont'd)

	<u>1980<sup>1</sup></u>	<u>1989<sup>1</sup></u>	<u>1990<sup>1</sup></u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>Revenue Passenger Load Factor (%)</b>					
Domestic					
Certificated, scheduled services	58.0 <sup>g</sup>	62.3 <sup>j</sup>	60.4 <sup>l</sup>	0.4	-3.0
Majors, scheduled services	58.1	62.4 <sup>k</sup>	60.6 <sup>k</sup>	0.4	-2.9
Nationals, scheduled services	58.4	59.1 <sup>l</sup>	56.6 <sup>l</sup>	-0.3	-4.2
Large Regionals, scheduled services	47.7	60.2 <sup>m</sup>	48.7 <sup>m</sup>	0.2	-19.1
International					
Certificated, scheduled services	62.8 <sup>i</sup>	66.6 <sup>n</sup>	69.1 <sup>n</sup>	1.0	3.8
Majors, scheduled services	62.8	66.5 <sup>o</sup>	69.1 <sup>o</sup>	1.0	3.9
Nationals, scheduled services	65.5	76.1 <sup>p</sup>	73.4 <sup>p</sup>	1.2	-3.4
Large Regionals, scheduled services	73.9	52.4 <sup>q</sup>	66.5 <sup>q</sup>	-1.1	26.9
Medium Regionals, all services			0.0 <sup>r</sup>		
Domestic and International*	46.7	48.9 <sup>r</sup>			
<b>U.S. International Passenger Travel</b>					
<b>Total Passenger-Arrivals (thousands)</b>					
Flag of Carrier:					
United States	10,031 <sup>s</sup>	17,174 <sup>s</sup>	19,145 <sup>s</sup>	6.7	11.5
Foreign	10,231	16,044	17,269	5.6	7.6
<b>Total Passenger-Departures (thousands)</b>					
Flag of Carrier:					
United States	9,369	15,687	17,628	6.5	12.4
Foreign	9,886	15,466	16,418	5.2	6.1
<b>Total Revenue Ton-Miles (thousands)*</b>					
Domestic					
Certificated, all services	24,964,907 <sup>g</sup>	42,475,761 <sup>j</sup>	43,651,162 <sup>j</sup>	5.8	2.8
Majors, all services	21,427,534	37,567,916 <sup>k</sup>	39,107,033 <sup>k</sup>	6.2	4.1
Nationals, all services	3,336,057	3,643,138 <sup>l</sup>	3,561,283 <sup>l</sup>	0.7	-2.2
Large Regionals, all services	180,042	1,221,381 <sup>m</sup>	945,929 <sup>m</sup>	18.1	-2.3
International					
Certificated, all services	9,689,067 <sup>i</sup>	18,619,610 <sup>n</sup>	19,975,915 <sup>n</sup>	7.5	7.3
Majors, all services	7,377,733	16,142,123 <sup>o</sup>	17,803,825 <sup>o</sup>	9.2	10.3
Nationals, all services	2,261,534	1,353,434 <sup>p</sup>	1,229,849 <sup>p</sup>	-5.9	-9.1
Large Regionals, all services	44,438	998,232 <sup>q</sup>	835,701 <sup>q</sup>	34.1	-16.3
Medium Regionals, all services					
Domestic and International*	28,178	169,147 <sup>r</sup>	143,457 <sup>r</sup>	17.7	-15.2
Total Certificated*	34,682,153	61,264,518	63,770,534	6.3	4.1
<b>Revenue Ton-Miles of Freight (thousands)</b>					
Domestic					
Certificated, all services	4,528,316 <sup>g</sup>	8,954,288 <sup>j</sup>	9,063,864 <sup>j</sup>	7.2	1.2
Majors, all services	3,129,087	6,140,215 <sup>k</sup>	6,395,767 <sup>k</sup>	7.4	4.2
Nationals, all services	1,289,510	1,863,924 <sup>l</sup>	1,885,600 <sup>l</sup>	3.9	1.2
Large Regionals, all services	108,864	917,784 <sup>m</sup>	770,670 <sup>m</sup>	21.6	-16.0
International					
Certificated, all services	3,353,371 <sup>i</sup>	7,393,006 <sup>n</sup>	7,339,660 <sup>n</sup>	8.2	-0.7
Majors, all services	1,945,660	5,863,676 <sup>o</sup>	5,976,973 <sup>o</sup>	11.9	1.9
Nationals, all services	1,395,575	690,100 <sup>p</sup>	550,409 <sup>p</sup>	-8.9	-20.2
Large Regionals, all services	11,409	742,290 <sup>q</sup>	713,733 <sup>q</sup>	51.2	-3.8
Medium Regionals, all services					
Domestic and International*	3,124	129,305 <sup>r</sup>	110,372 <sup>r</sup>	42.8	-14.6
Total Certificated*	7,884,811	16,476,599	16,513,896	7.7	0.2

## AIR CARRIER PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>Air Carrier Accidents</b>					
Operating under 14 CFR 121 (airlines)					
Scheduled services	15 <sup>t</sup>	24 <sup>t</sup>	25 <sup>t</sup>	5.2	4.2
Nonscheduled services	4	5	2	-6.7	-60.0
Operating under 14 CFR 135					
Scheduled services (commuters)	38	16	15	-8.9	-6.3
Nonscheduled services (on-demand air taxis)	171	107	107	-4.6	0.0
<b>Total*</b>	<b>228</b>	<b>152</b>	<b>149</b>	<b>-4.2</b>	<b>-2.0</b>
<b>Fatal Air Carrier Accidents</b>					
Operating under 14 CFR 121 (airlines)					
Scheduled services	0	8	6	-	-25.0
Nonscheduled services	1	0	0	-	0.0
Operating under 14 CFR 135					
Scheduled services (commuters)	8	5	2	-12.9	-60.0
Nonscheduled services (on-demand air taxis)	46	25	29	-4.5	16.0
<b>Total*</b>	<b>55</b>	<b>38</b>	<b>37</b>	<b>-3.9</b>	<b>-2.6</b>
<b>Air Carrier Fatalities</b>					
Operating under 14 CFR 121 (airlines)					
Scheduled services	0	131	39	-	-70.2
Nonscheduled services	1	0	0	-	0.0
Operating under 14 CFR 135					
Scheduled services (commuters)	37	31	4	-20.0	-87.1
Nonscheduled services (on-demand air taxis)	105	83	50	-7.2	-39.8
<b>Total*</b>	<b>143</b>	<b>245</b>	<b>93</b>	<b>-4.2</b>	<b>-62.0</b>

n/a = not available.

\* Data derived by addition/subtraction and may not appear directly in the data source.

# Total Revenue Ton-Miles includes Passenger, Freight, Express and Mail.

1 Domestic encompasses operations within and between the 50 states of the United States, the District of Columbia, Puerto Rico and the Virgin Islands. It also encompasses Canadian and Mexican transborder operations. All other operations are considered International.

2 Includes scheduled and nonscheduled (charter) operators. By Sec. 2 of the Airline Deregulation Act of 1978 "charter air carrier" and "charter air transportation" replaced supplemental air carriers and supplemental air transportation which were formerly Sec. 101(36) and (37) of the Act. The 24 pre-deregulation supplemental carriers now have scheduled service authority.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
a	8) pp. 3/28,44
b	8) pp. 4/28, 44
d	39)pp. 48, 50
e	39)p. 3
f	39)pp. 34, 37
g	7) pp. 2/5/46/84
h	40)personal communication
i	7) pp.3/6/47/85/115
j	38)p. 2
k	38)p. 5
l	38)p. 54/61
m	38)p. 90/99
n	38)p. 3
o	38)p. 6
p	38)p. 55/62
q	38)p. 91/100
r	38)p. 143/165
s	43)Tables IIa and II d
t	16)Tables 2/3/4/5/6

## GENERAL AVIATION PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Expenditures (\$ millions)					
Aircraft	2,853 <sup>b</sup>	3,007 <sup>b</sup>	3,046 <sup>b</sup>	0.6	1.3
Operating Costs	5,200	6,479	6,880	2.8	6.2
Total	8,053	9,486	9,926	2.1	4.6
<b>II. INVENTORY</b>					
Number of Active Aircraft					
Corporate	14,860 <sup>c</sup>	12,285 <sup>c</sup>	10,906 <sup>c</sup>	-3.1	-11.2
Business	49,391	37,507	35,496	-3.3	-5.4
Commuter Carrier	944	1,444	1,242	2.8	-14.0
Instructional	14,862	17,780	19,889	3.0	11.9
Personal	96,222	124,786	120,636	2.3	-3.3
Aerial Application	7,294	7,093	6,687	-0.9	-5.7
Aerial Observation	n/a	5,784	5,302	-	-8.3
Air Taxi	7,615	7,115	6,188	-2.1	-13.0
Other Work#	2,813	2,139	1,525	-5.9	-28.7
Other	17,045	3,802	4,358	-12.8	14.6
Total	211,046	219,737	212,229	0.1	-3.4
<b>III. PERFORMANCE</b>					
Number of Hours Flown (thousands)					
Corporate	5,332 <sup>d</sup>	3,739 <sup>d</sup>	3,155 <sup>d</sup>	-5.1	-15.6
Business	8,434	4,689	4,784	-5.5	2.0
Commuter Carrier	961	1,508	1,444	4.2	-4.2
Instructional	5,748	6,489	7,847	3.2	20.9
Personal	8,894	10,328	10,048	1.2	-2.7
Aerial Application	2,044	2,023	2,028	-0.1	0.3
Aerial Observation	n/a	1,861	1,891	-	1.6
Air Taxi	3,535	3,270	2,436	-3.7	-25.5
Other Work#	1,053	560	619	-5.2	10.5
Other	4,925	549	514	-20.2	-6.4
Total	40,926	35,012	34,767	-1.6	-0.7
Number of Fatalities					
Corporate	66 <sup>e</sup>	9 <sup>e</sup>	6 <sup>e</sup>	-21.3	-33.3
Business	126	94	88	-3.5	-6.4
Instructional	73	53	57	-2.4	7.6
Personal	803	509	505	-4.5	-0.8
Aerial Application	32	24	17	-6.1	-29.2
Other	152	87	68	-7.7	-21.8
Total	1,252	776	741	-5.1	-4.5
Number of Accidents					
Fatal	618 <sup>f</sup>	424 <sup>f</sup>	435 <sup>f</sup>	-3.5	2.6
Total	3,590	2,216	2,187	-4.8	-1.3
Accident Rate per 100,000 Aircraft Hours Flown					
Fatal	1.7	1.4	1.4	-1.9	0.0
Total	9.9	7.3	7.1	-3.3	-2.7

## GENERAL AVIATION PROFILE (cont'd)

n/a = not available.

# In 1980, classified as "Industrial".

Source: The following data references are listed in Appendix A, p. A-9.

<u>Source</u>	<u>Reference Number/Location</u>
b	9) p. 9
c	30) Tables 2-9, 3.1
d	30) Tables 2-4, 3.2
e	15) personal communication
f	16) Tables 6, 7

## HIGHWAY PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Government Receipts (\$ millions)					
Federal					
Highway Trust Fund	7,496 <sup>b</sup>	15,018 <sup>b</sup>	13,303 <sup>b</sup>	5.9	-11.4
Other*	2,553	1,517	1,205	-7.2	-20.6
Total Federal	10,049	16,535	14,508	3.7	-12.3
State and Local					
State and D.C.	19,435	36,906	39,381	7.3	6.7
Local*	9,104	20,192	20,030	8.2	-0.8
Total State and Local*	28,539	57,098	59,411	7.6	4.1
Total	38,588	73,633	73,919	6.7	0.4
Government Expenditures (\$ millions)					
Federal					
Highway Trust Fund	375	428	431	1.4	0.7
Other*	576	580	315	-5.9	-45.7
Total Federal	951	1,008	746	-2.4	-30.0
State and Local					
State and D.C.	25,936	43,020	45,609	5.8	6.0
Local*	14,168	27,168	28,530	7.3	5.0
Total State and Local*	40,104	70,188	74,139	6.3	5.6
Total	41,055	71,196	74,885	6.2	5.2
Highway User Tax Revenues (\$ millions)					
Motor Fuel Tax	9,485 <sup>g</sup>	18,581 <sup>g</sup>	19,708 <sup>g</sup>	7.6	6.1
Other Motor Fuel Receipts <sup>1</sup>	9,577	18,868	19,911	7.6	5.5
Motor Vehicle Registration Fees	5,159 <sup>h</sup>	10,095 <sup>h</sup>	10,257 <sup>h</sup>	7.1	1.6
Other Motor Vehicle Fees <sup>2</sup>	2,907	3,239	3,353	1.4	3.5
Motor Carrier Taxes <sup>3</sup>	323	723	695	8.0	-3.9
Miscellaneous Fees	627	1,469	1,761	10.9	19.9
Total	28,078	52,975	55,685	7.1	5.1
<b>II. INVENTORY</b>					
Rural/Urban Mileage by Jurisdiction					
Rural Mileage					
Under State Control	701,846 <sup>d</sup>	706,404 <sup>d</sup>	702,562 <sup>d</sup>	0.0	-0.5
Under Federal Control <sup>†</sup>	262,010	178,212	178,196	-3.8	0.0
Under Local Control					
County Roads	1,686,693	1,616,266	1,617,051	-0.4	0.1
Town and Township Roads	507,856	438,521	437,493	-1.5	-0.2
Other Local Roads	75,221	183,321	187,486	9.6	2.3
Total Rural Mileage	3,233,626	3,122,724	3,122,788	-0.4	0.0
Urban Mileage					
Under State Control	79,359	96,782	95,790	1.9	1.0
Under Federal Control <sup>†</sup>	753	1,028	1,024	3.1	-0.4
Under Local Control					
County Roads	27,515	93,812	95,985	13.3	2.3
Town and Township Roads	19,474	43,511	42,772	8.2	-1.7
Other Local Roads	496,131	518,644	521,792	0.5	-0.6
Total Urban Mileage	623,232	753,777	757,363	2.0	0.5
Total Rural and Urban Mileage	3,856,858	3,876,501	3,880,151	0.1	0.1

## HIGHWAY PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>Rural/Urban Mileage by Functional System</b>					
<b>Rural Mileage</b>					
Interstate	31,997 <sup>a</sup>	33,378 <sup>a</sup>	33,547 <sup>a</sup>	0.5	0.5
Other Principal Arterial	82,732	80,951	83,802	0.1	3.5
Minor Arterial	149,089	147,327	144,735	-0.3	-1.8
Major Collector	439,050	436,184	436,365	-0.1	0.0
Minor Collector	299,557	294,424	293,912	-0.2	-0.2
Local	2,231,201	2,130,460	2,130,427	-0.5	0.0
<b>Total Rural Mileage</b>	<b>3,233,626</b>	<b>3,122,724</b>	<b>3,122,788</b>	<b>-0.4</b>	<b>0.0</b>
<b>Urban Mileage</b>					
Interstate	9,219	11,471	11,527	2.3	0.5
Other Freeways and Expressways	6,713	7,582	7,670	1.3	1.2
Other Principal Arterial	44,338	51,489	51,987	1.6	1.0
Minor Arterial	66,581	74,746	74,656	1.2	-0.1
Collector	68,213	78,474	78,248	1.4	-0.3
Local	428,168	530,015	533,275	2.2	0.6
<b>Total Urban Mileage</b>	<b>623,232</b>	<b>753,777</b>	<b>757,363</b>	<b>2.0</b>	<b>0.5</b>
<b>Total Rural and Urban Mileage</b>	<b>3,856,858</b>	<b>3,876,501</b>	<b>3,880,151</b>	<b>0.1</b>	<b>0.1</b>
<b>U.S. Roads and Streets</b>					
<b>Surfaced Mileage</b>					
State Control	753,000 <sup>l</sup>	619,000 <sup>l</sup>	619,000 <sup>l</sup>	-1.9	0.0
County and Local Control	2,605,000	2,888,000	2,899,000	1.1	0.4
<b>Total</b>	<b>3,358,000</b>	<b>3,507,000</b>	<b>3,518,000</b>	<b>0.5</b>	<b>0.3</b>
Percent Surfaced	84.9	90.5	90.7	0.7	0.2
<b>Non-Surfaced Mileage</b>					
State Control	28,000	1,000	1,000	-28.3	0.0
County and Local Control	569,000	369,000	361,000	-4.5	-2.2
<b>Total</b>	<b>597,000</b>	<b>370,000</b>	<b>362,000</b>	<b>-4.9</b>	<b>-2.2</b>
<b>Total Mileage</b>					
State Control	781,000	620,000	620,000	-2.3	0.0
County and Local Control	3,174,000	3,257,000	3,266,000	0.3	0.3
<b>Total</b>	<b>3,955,000</b>	<b>3,877,000</b>	<b>3,886,000</b>	<b>-0.2</b>	<b>0.2</b>
<b>Number of Employees</b>					
Highways - State & Local Govt.	532,000 <sup>f</sup>	563,000 <sup>f</sup>	568,000 <sup>f</sup>	0.7	0.9
Highway and Street Construction	268,400 <sup>k</sup>	233,900 <sup>k</sup>	240,600 <sup>k</sup>	-1.1	2.9
Intercity & Rural Bus Transportation <sup>4</sup>	37,900	30,800	26,100	-3.7	-15.3

### III PERFORMANCE

#### Vehicle-Miles of Travel by Highway

##### Class (millions)

##### Rural

Interstate	134,513 <sup>a</sup>	191,085 <sup>a</sup>	200,573 <sup>a</sup>	4.1	5.0
Other Principal Arterial	135,527	165,859	175,382	2.6	5.7
Minor Arterial	132,409	156,646	155,844	1.6	-0.5
Major Collector	150,575	187,195	191,302	2.4	2.2
Minor Collector	40,226	48,714	50,462	2.3	3.6
Local	84,236	97,726	96,846	1.4	-0.9
<b>Total Rural</b>	<b>677,486</b>	<b>847,225</b>	<b>870,409</b>	<b>2.5</b>	<b>2.7</b>

## HIGHWAY PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
Urban					
Interstate	159,347 <sup>a</sup>	270,735 <sup>a</sup>	278,404 <sup>a</sup>	5.7	2.8
Other Freeways and Expressways	88,328	122,024	127,431	3.7	4.4
Other Principal Arterial	227,123	327,151	335,687	4.0	2.6
Minor Arterial	172,356	234,768	235,036	3.2	0.1
Collector	82,623	101,872	103,756	2.3	1.8
Local	123,146	192,681	196,778	4.8	2.1
Total Urban	852,923	1,249,231	1,277,092	4.1	2.2
Total Rural and Urban	1,530,409	2,096,456	2,147,501	3.5	2.4
Highway Demand for Petroleum (thousand barrels)					
Motor Fuel	2,737,139 <sup>†</sup>	3,139,639 <sup>†</sup>	3,132,929 <sup>m</sup>	1.4	-0.2
Asphalt Paving Products	123,542	164,338	175,458 <sup>n</sup>	3.6	6.8
Road oils	1,498	826	882	-5.2	6.8
Total	2,862,179	3,304,803	3,309,269	1.5	0.1

\* Figures obtained by addition/subtraction and may not appear directly in data source.

† Mileage in Federal parks, forests, and reservations that are not a part of the state and local highway system.

<sup>1</sup> Includes distributors and dealers licenses, inspection fees, fines and penalties, and miscellaneous receipts.

<sup>2</sup> Includes drivers licenses, title fees, special titling taxes, fines and penalties, estimated services charges and local collections.

<sup>3</sup> Includes gross receipt taxes; mileage, ton-mile and passenger-mile taxes; special license fees and franchise taxes; and certificate or permit fees.

<sup>4</sup> 1980 figure - Intercity Highway Transportation.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
a	32) Table VM-2
b	32) Table HF-10
d	32) Table HM-10
e	32) Table HM-20
f	9) p. 61
g	32) Table MF-1
h	32) Table MV-2
j	9) p. 57
k	29) SIC 161/413
l	13) p. 84
m	32) Table VM-1
n	27) Table 2



## AUTOMOBILE PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Personal Auto Expenditures (\$ millions)					
New and Used Cars*	61,300 <sup>b</sup>	141,353 <sup>b</sup>	139,781 <sup>b</sup>	8.6	-1.1
Tires, Tubes, Accessories and Parts	16,684	32,483	34,188	7.4	5.3
Gasoline and Oil	83,721	83,804	93,663	1.1	11.8
Tolls	1,061	1,741	1,895	6.0	8.9
Insurance Premiums less Claims Paid	9,383	16,954	18,242	6.9	7.6
Repair, Greasing, Washing, Parking, Storage, Rental	32,327	69,621	76,759	9.0	10.3
Auto Registration Fees	2,892 <sup>c</sup>	5,942 <sup>c</sup>	6,054 <sup>c</sup>	7.7	1.9
Driver's License Fees	370	620	638	5.6	2.9
Total*	214,399	352,518	371,220	5.6	5.3
Taxi Expenditures (\$ millions)	2,857 <sup>b</sup>	2,841 <sup>b</sup>	3,017 <sup>b</sup>	0.6	6.2
Business Auto Expenditures (\$ millions)	20,771 <sup>d</sup>	49,471 <sup>d</sup>	55,010 <sup>d</sup>	10.2	10.7
Government Auto Expenditures (\$ millions)	766	1,621	1,858	9.3	14.6
Total Business/Government Auto Expenditures*	21,537	51,335	56,868	10.2	10.8
<b>II. INVENTORY</b>					
Number of Vehicle Registrations					
Passenger Cars and Taxis	121,723,650 <sup>k</sup>	143,025,658 <sup>k</sup>	143,549,627 <sup>k</sup>	1.7	0.4
Motorcycles	5,724,602	4,433,915	4,259,462	-2.9	-3.9
Motor Vehicle Licensed					
Drivers (thousands)	145,299 <sup>f</sup>	165,555 <sup>f</sup>	167,015 <sup>f</sup>	1.4	0.9
Number of Employees	52,500 <sup>l</sup>	33,500 <sup>l</sup>	32,600 <sup>l</sup>	-4.7	-2.7
Taxicabs	1,688,500 <sup>m</sup>	2,097,800 <sup>m</sup>	2,081,300 <sup>m</sup>	2.1	-0.8
Automotive Dealers and Service Stations	786,600	956,400	931,500	1.7	-2.6
New and Used Car Dealers	417,500 <sup>n</sup>	456,000 <sup>n</sup>	459,800 <sup>n</sup>	1.0	0.8
Motor Vehicles, Parts and Supplies	570,900 <sup>o</sup>	887,500 <sup>o</sup>	927,900 <sup>o</sup>	5.0	4.6
Auto Repair, Services, and Parking					
<b>III. PERFORMANCE</b>					
Vehicle-Miles (millions) <sup>1</sup>					
Rural Highway					
Interstate Rural	90,823 <sup>k</sup>	122,940 <sup>k</sup>	130,220 <sup>k</sup>	3.7	5.9
Other Arterial Rural	299,258	214,299	217,380	-3.2	1.4
Other Rural	69,125	213,933	218,754	12.2	2.3
All Rural	459,206	551,172	566,354	2.1	2.8
Urban Highway <sup>2</sup>					
Interstate Urban	132,347	203,152	209,056	4.7	2.9
Other Urban	538,334	733,816	749,532	3.4	2.1
All Urban	670,681	936,968	958,588	3.6	2.3
Total Rural and Urban Highway	1,129,887	1,488,140	1,524,942	3.0	2.5
Vehicle-Miles (millions)					
Passenger Cars and Taxis	1,111,596	1,477,769	1,515,370	3.2	2.5
Motorcycles	10,214	10,371	9,572	-0.7	-7.7
Total	1,129,887	1,488,140	1,524,942	3.0	2.5
Passenger-Miles (millions)					
Total Travel, Passenger Cars and Taxis <sup>3</sup>	2,000,872	2,512,207	2,454,899	2.1	-2.3
Total Travel, Motorcycles <sup>4</sup>	11,235	12,756	13,114	1.6	2.8
Average Miles Traveled per Vehicle					
Passenger Cars and Taxis	9,135	10,332	10,556	1.5	2.2
Motorcycles	3,144	2,339	2,247	-3.3	-3.9
Fuel Consumed (million gallons)					
Passenger Cars and Taxis	73,375	72,749	72,435	-0.1	-0.4
Motorcycles	360	207	191	-6.1	-7.7

## AUTOMOBILE PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1989-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>Average Annual Fuel Consumption per Vehicle (gallons)</b>					
Passenger Cars and Taxis	603 <sup>k</sup>	509 <sup>k</sup>	505 <sup>k</sup>	-1.8	-0.8
Motorcycles	63	47	45	-3.3	-4.3
<b>Average Miles Traveled Per Gallon of Fuel Consumed</b>					
Passenger Cars and Taxis	15.2	20.3	20.9	2.8	2.9
Motorcycles	50.0	50.0	50.0	0.0	0.0
<b>Number of Vehicles in All Accidents</b>					
Passenger Cars	22,800,000	15,310,000 <sup>a</sup>	14,320,000 <sup>a</sup>	-4.5	-6.5
Taxis	230,000	8,000	25,000	-19.9	212.5
Motorcycles	510,000	200,000	160,000	-11.0	-20.0
<b>Number of Vehicles in Fatal Accidents</b>					
Passenger Cars	39,059 <sup>j</sup>	35,410 <sup>j</sup>	34,085 <sup>j</sup>	-1.4	-3.7
Taxis	81	69	78	-0.4	13.0
Motorcycles	5,194	3,192	3,276	-4.5	2.6
<b>Number of Occupant &amp; Non Occupant Fatalities</b>					
<b>Motor Vehicles</b>					
Passenger Cars	51,091	45,582	44,599	-1.4	-2.2
Taxis	27,449	25,063	24,092	-1.3	-3.9
Motorcycles, total	23	26	22	-0.4	-15.4
Motorcycles	5,144	3,141	3,244	-4.5	3.3
Mopeds	4,961	3,036	3,129	-4.5	3.1
Other and Unknown	118	42	49	-8.4	16.7
Bicycles <sup>5</sup>	65	63	66	0.2	4.8
Pedestrians <sup>5</sup>	965	832	859	-1.2	3.3
<b>Fatalities in Vehicular Accidents<sup>6</sup></b>					
Passenger Cars	8,070	6,556	6,482	-2.3	-1.1
Motorcycles	36,373	32,136	31,132	-1.5	-3.1
<b>Occupant Fatality Rate</b>					
<b>Per 100 Million Vehicle-Miles</b>					
Passenger Cars	5.339	3,261	3,356	-4.5	2.9
Motorcycles	2.5	1.7	1.6	-4.4	-5.9
<b>Per 10,000 Registered Vehicles</b>					
Passenger cars	50.4	30.3	33.9	-3.9	11.9
Motorcycles	2.3	1.8	2.4	0.4	33.3
<b>Vehicle Involvement Rate</b>					
<b>Per 100 Million Vehicle-Miles</b>					
Passenger Cars	9.0	7.1	7.6	-1.7	7.0
Motorcycles	3.5	2.4	2.2	-4.5	-8.3
<b>Per 10,000 Registered Vehicles</b>					
Passenger Cars	50.4	30.8	34.2	-3.8	11.0
Motorcycles	3.2	2.5	2.4	-2.8	-4.0
Motorcycles	9.0	7.1	7.6	-1.7	7.0

\* Figures obtained by addition/subtraction and may not appear directly in data source.

1 Includes passenger cars, taxis, and motorcycles.

2 Urban consists of travel on all roads and streets in urban places of 5,000 or greater population.

3 Derived by multiplying passenger car and taxi vehicle-miles by an average occupancy rate of 1.8 (1980), 1.7 (1989) and 1.62 (1990).

4 Derived by multiplying motorcycle vehicle-miles by an average occupancy rate of 1.1 (1980), 1.23 (1989), and 1.37 (1990).

5 Involvement only with motor vehicle.

6 Includes all fatalities in the accident in which the vehicle types listed were involved.

## AUTOMOBILE PROFILE (cont'd)

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
a	14) p. 64
b	24) Table 2.4
c	32) Table MV-2
d	23) personal communication
f	32) Table DL-22
i	14) p. 56
j	36) personal communication
k	32) Table VM-1
l	29) SIC 412
m	29) SIC 55/551
n	29) SIC 501
o	29) SIC 75

## BUS PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Expenditures (\$ thousands)					
School Bus	3,833,000 <sup>a</sup>	7,330,000 <sup>a</sup>	7,500,000 <sup>a</sup>	6.9	2.3
Operating Revenues (\$ thousands)					
Intercity Bus, total	1,709,000	2,185,000	2,000,000	1.6	-8.5
Intercity Bus, Class I	1,397,378 <sup>b</sup>	1,213,137 <sup>b</sup>	943,268 <sup>b</sup>	-3.9	-22.3
Operating Expenses (\$ thousands)					
Intercity Bus, total	1,810,900	n/a	n/a	-	-
Intercity Bus, Class I	1,318,372	1,141,538	1,026,213	-2.5	-10.1
<b>II. INVENTORY</b>					
Number of Operating Companies					
Intercity Bus, total	1,283 <sup>a</sup>	3,628 <sup>a</sup>	3,925 <sup>a</sup>	11.8	8.2
Intercity Bus, Class I	61 <sup>b</sup>	21 <sup>b</sup>	21 <sup>b</sup>	-10.1	0.0
Number of Vehicles					
Intercity Bus, total	21,400	19,688	19,491	-0.9	-1.0
Intercity Bus, Class I	8,427	6,568	6,502	-2.6	-1.0
School Bus	380,000	380,000 <sup>c</sup>	380,000 <sup>c</sup>	0.0	0.0
Number of Employees of Operating Companies					
Intercity Bus, total	38,000 <sup>h</sup>	31,000 <sup>h</sup>	26,000 <sup>h</sup>	-3.7	-16.1
Intercity Bus, Class I	29,723 <sup>b</sup>	n/a	n/a	-	-
School Bus	79,900 <sup>h</sup>	109,400	117,200	3.9	7.1
Miles of Highway Served					
Intercity Bus, total	279,000	224,000	213,000	-2.7	-4.9
Intercity Bus, Class I	193,000	154,000	146,000	-2.8	-5.2
<b>III. PERFORMANCE</b>					
Vehicle-Miles (millions)					
All Buses					
Rural Highway					
Interstate Rural	533 <sup>f</sup>	529 <sup>d</sup>	568 <sup>d</sup>	0.6	7.4
Other Arterial Rural	991	928	996	0.1	7.3
Other Rural	1,511	1,760	1,889	2.3	7.3
All Rural	3,035	3,217	3,453	1.3	7.3
Urban Highway <sup>1</sup>					
Interstate Urban	560	485	452	-2.1	-6.8
Other Urban	2,464	1,957	1,823	-3.0	-6.9
All Urban	3,024	2,442	2,275	-2.8	-6.8
Total Rural and Urban Highway	6,059	5,659	5,728	-0.6	1.2
School Buses	3,000 <sup>c</sup>	4,000 <sup>c</sup>	3,800 <sup>c</sup>	2.4	-5.0
Revenue Passenger-Miles (millions)					
Intercity Bus, total	27,400 <sup>a</sup>	24,000 <sup>a</sup>	23,000 <sup>a</sup>	-1.7	-4.2
Intercity Bus, Class I	16,500	13,221	13,820 <sup>a</sup>	-1.8	4.5
Number of Revenue Passengers (thousands)					
Intercity Bus, total	370,000	343,000	322,000 <sup>a</sup>	-1.4	-6.1
Intercity Bus, Class I	132,000	101,748	104,699	-2.3	2.9

**BUS PROFILE (cont'd)**

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
Average Passenger Trip Length (miles)					
Intercity Bus, total	74.1 <sup>a</sup>	70.0 <sup>a</sup>	71.4 <sup>a</sup>	-0.4	2.0
Intercity Bus, Class I	125.0	130.0	132.0	0.6	1.5
Average Miles Traveled per Vehicle					
Commercial	32,765 <sup>e</sup>	40,921 <sup>e</sup>	41,540 <sup>e</sup>	2.4	1.5
School and Nonrevenue Bus	7,592	10,526	10,000	2.8	-5.0
All Buses	11,458 <sup>d</sup>	9,054 <sup>d</sup>	9,136 <sup>d</sup>	-2.2	0.9
Average Revenue per Passenger-Mile (cents)	7.3 <sup>a</sup>	11.2 <sup>a</sup>	11.6 <sup>a</sup>	4.7	3.6
Number of Fatalities					
School Bus-related	150 <sup>g</sup>	142 <sup>g</sup>	115 <sup>g</sup>	-2.6	-19.0
School Bus Occupants	14	33	13	-0.7	-60.6
Other Vehicle Occupants	96	72	64	-4.0	-11.1
Non-Occupants	53	33	40	-2.8	21.2
Occupant Fatalities					
All Buses	46	50	32	-3.6	-36.0
School Buses	14	33	13	-0.7	-60.6
Cross Country Buses	23	3	2	-21.7	-33.3
Transit Buses	6	1	3	-6.7	200.0
Other and Unknown	3	13	14	16.7	7.7
Fatalities in Vehicular Accidents <sup>2</sup>					
All Buses	390	366	340	-1.4	-7.1
Occupant Fatality Rate					
Per 100 Million Vehicle-Miles					
All Buses	0.8	0.9	0.6	-2.8	-33.3
Per 10,000 Registered Vehicles					
All Buses	0.9	0.8	0.5	-5.7	-37.5
Vehicle Involvement Rate					
Per 100 Million Vehicle-Miles					
All Buses	5.4	5.5	5.0	-0.8	-9.1
Per 10,000 Registered Vehicles					
All Buses	6.2	5.0	4.6	-2.9	-8.0

<sup>1</sup> Urban consists of travel on all roads and streets in urban places of 5,000 or greater population.

<sup>2</sup> Includes all fatalities in the accident in which the vehicle types listed were involved.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
a	9) pp. 9,11,12
b	11) Tables 6,7
c	14) p. 71
d	32) Table VM-1
e	18) personal communication.
f	33) Table VM-201
g	36) personal communication
h	29) SIC 415/413

## TRUCK PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Revenues (\$ millions)					
Local	60,545 <sup>b</sup>	105,500 <sup>b</sup>	111,800 <sup>b</sup>	6.3	6.0
Intercity					
ICC-authorized	43,000	70,490	75,400	5.8	7.0
Non-ICC-authorized	51,551	80,800	85,200	5.2	5.5
Operating Revenues of Class I Intercity Motor Carriers of Property (\$ millions)					
Freight, Intercity, Common Carriers	26,691 <sup>c</sup>	34,828 <sup>d</sup>	36,974 <sup>d</sup>	3.3	6.2
Freight, Intercity, Contract Carriers	1,139	4,663	5,212	16.4	11.8
Freight, Local Cartage	340	544	792	8.8	45.6
Trans. for other Classes I and II Carriers	187	180	186	-0.1	3.3
Others	1,981	3,240	3,556	6.0	9.8
Total	30,338	43,454	46,710	4.4	7.5
Operating Expenses of Class I Intercity Motor Carriers of Property (\$ millions)	29,012	41,848	44,827	4.5	7.1
<b>II. INVENTORY</b>					
Number of Truck Registrations					
Private and Commercial	32,238,223 <sup>f</sup>	41,871,007 <sup>f</sup>	42,731,738 <sup>f</sup>	2.9	2.1
Federal	209,101	257,175	276,293	2.8	7.4
State, County, Municipal	1,189,917	1,425,882	1,470,817	2.1	3.2
Total	33,637,241	43,554,064	44,478,848	2.8	2.1
Number of Recreational Vehicles					
Motorized Homes	99,900 <sup>a</sup>	261,600 <sup>a</sup>	226,500 <sup>a</sup>	8.5	-13.4
Travel Trailers	52,000	90,300	80,400	4.5	-11.0
Folding Camping Trailers	24,500	33,900	30,700	2.3	-9.4
Truck Campers	5,000	9,900	9,700	6.9	-2.0
Total	181,400	395,700	354,500	6.9	-10.4
Number of Employees					
Trucking and Truck Terminals	1,189,000 <sup>g</sup>	1,538,000 <sup>g</sup>	1,534,000 <sup>g</sup>	2.6	-0.3
Truck Drivers and Deliverymen	1,931,000 <sup>b</sup>	2,190,000 <sup>b</sup>	2,189,000 <sup>b</sup>	1.3	-0.1
Number of Employees, Class I Intercity Motor Carriers of Property	471,458 <sup>c</sup>	602,903 <sup>d</sup>	607,098 <sup>d</sup>	2.6	0.7
Number of Companies, Class I Intercity Motor Carriers of Property	835	681	728	-1.4	6.9
<b>III. PERFORMANCE</b>					
Vehicle-Miles (millions)					
Rural Highway					
Interstate Rural	45,063 <sup>k</sup>	67,616 <sup>j</sup>	69,785 <sup>j</sup>	4.5	3.2
Other Arterial Rural	80,926	107,278	112,850	3.4	5.2
Other Rural	92,347	117,942	117,967	2.5	0.0
All Rural	218,336	292,836	300,602	3.3	2.7
Urban Highway <sup>l</sup>					
Interstate Urban	36,202	67,098	68,896	6.7	2.7
Other Urban	144,888	242,723	247,333	5.5	1.9
All Urban	181,090	309,821	316,229	5.7	2.1
Total Rural and Urban Highway	399,426	602,657	616,831	4.4	2.4

## TRUCK PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>Vehicle-Miles</b>					
Single-Unit Trucks	290,935	454,339	466,827	4.8	2.8
Other Single-Unit Trucks	39,813	52,969	53,522	3.0	1.0
Combination Trucks	68,678	95,349	96,482	3.5	1.2
All Trucks	399,426	602,657	616,831	4.4	2.4
<b>Average Miles Traveled per Vehicle</b>					
Single-Unit Trucks*	10,437 <sup>h</sup>	11,982	12,078	1.5	0.8
Other Single-Unit Trucks	9,103	12,910	12,683	3.4	
Combination Trucks	48,472	59,995	60,032	2.2	0.1
All Trucks	11,864	13,819	13,868	1.6	0.4
<b>Ton-Miles (millions)</b>					
Intercity	555,000 <sup>b</sup>	716,000 <sup>b</sup>	735,000 <sup>b</sup>	2.9	2.7
<b>Fuel Consumed (million gallons)</b>					
Single-Unit Trucks*	23,594 <sup>h</sup>	33,005 <sup>j</sup>	33,140 <sup>j</sup>	3.5	0.4
Other Single-Unit Trucks	5,557	7,412	7,339	2.8	-1.0
Combination Trucks	12,703	17,495	17,577	3.3	0.5
All Trucks	41,854	57,912	58,056	3.3	0.3
<b>Average Fuel Consumption per Vehicle (gallons)</b>					
Single-Unit Trucks*	846	870	857	0.1	-1.5
Other Single-Unit Trucks	1,271	1,807	1,739	3.0	-3.8
Combination Trucks	8,966	11,008	10,936	2.0	-0.7
All Trucks	1,243	1,328	1,305	0.5	-1.7
<b>Average Miles Traveled per Gallon of Fuel Consumed</b>					
Single-Unit Trucks*	12.33	13.77	14.09	1.3	2.3
Other Single-Unit Trucks	7.16	7.15	7.29	0.2	2.0
Combination Trucks	5.41	5.45	5.49	0.2	0.7
All Trucks	9.54	10.41	10.62	1.1	2.0
<b>Passenger-Miles<sup>2</sup></b>					
Single-Unit Trucks*	378,216	590,641	611,543	4.9	3.5
Other Single-Unit Trucks	39,813	52,969	53,522	3.0	1.0
Combination Trucks	68,678	95,349	96,482	3.5	1.2
<b>Taxes Assignable to Operations (\$ millions)</b>					
State Highway-User Taxes	6,731 <sup>s</sup>	13,894 <sup>s</sup>	12,691 <sup>s</sup>	6.6	-8.7
Federal Highway-User Taxes	3,157	8,784	6,665	7.8	-24.1
Total Highway-User Taxes	9,888	22,678	19,356	7.0	-14.6
<b>Average Length of Haul (statute miles)</b>					
Class I Intercity Common Motor Carriers	490 <sup>b</sup>	558 <sup>b</sup>	571 <sup>b</sup>	1.5	2.3
<b>Total Fatalities, Motor Carriers of Property</b>	2,528 <sup>q</sup>	3,451 <sup>q</sup>	3,281 <sup>q</sup>	2.6	-4.9
<b>Total Accidents</b>	31,389	35,341	35,735	1.3	1.1
<b>Total Injuries</b>	27,149	34,653	34,178	2.3	-1.4
<b>Property Damage (\$ thousands)</b>	311,191	230,674	502,221	4.9	117.7
<b>Occupant Fatalities</b>					
Light Trucks	7,486 <sup>m</sup>	8,551 <sup>m</sup>	8,593 <sup>m</sup>	1.4	0.5
Medium Trucks	285	128	133	-7.3	3.9
Heavy Trucks	977	730	571	-5.2	-21.8
All Trucks	8,748	9,409	9,297	0.6	-1.2
<b>Fatalities in Vehicular Accidents<sup>3</sup></b>					
Light Trucks	13,639	16,324	16,238	1.8	-0.5
Medium Trucks	1,228	750	704	-5.4	-6.1
Heavy Trucks	4,825	4,791	4,614	-0.5	-3.4
All Trucks	17,489	18,773	18,406	0.5	-2.0
<b>Occupant Fatality Rate</b>					
Per 100 Million Vehicle-Miles					
Single-Unit Trucks*	2.4	1.7	1.7	-3.4	0.0
Combination Trucks	1.3	0.7	0.5	-9.1	-28.6
All Trucks	2.2	1.6	1.5	-3.8	-6.3

## TRUCK PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>Per 10,000 Registered Vehicles</b>					
Single-Unit Trucks*	2.4 <sup>m</sup>	2.1 <sup>m</sup>	2.0 <sup>m</sup>	-1.8	-4.8
Combination Trucks	6.4	4.2	3.2	-6.7	-23.8
All Trucks	2.6	2.2	2.1	-2.1	-4.6
<b>Vehicle Involvement Rate</b>					
<b>Per 100 Million Vehicle-Miles</b>					
Single-Unit Trucks*	4.3	3.3	3.2	-2.9	-3.0
Combination Trucks	5.8	4.1	3.9	-3.9	-4.9
All Trucks	4.5	3.4	3.3	-3.1	-2.9
<b>Per 10,000 Registered Vehicles</b>					
Single-Unit Trucks*	4.4	4.0	3.9	-1.2	-2.5
Combination Trucks	28.0	24.6	23.5	-1.7	-4.5
All Trucks	5.4	4.7	4.6	-1.6	-2.1

\* 2-axle, 4-tire trucks.

<sup>1</sup> Urban consists of travel on all roads and streets in urban places of 5,000 or greater population.

<sup>2</sup> Derived by multiplying single-unit vehicle-miles by an average occupancy rate of 1.3 (1980, 1989) and 1.31 (1990). An average occupancy rate of 1.0 is used to derive passenger-miles for other single-unit trucks and combination trucks.

<sup>3</sup> Includes all fatalities in the accident in which the vehicle types listed were involved.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>References Number/Location</u>
b	9) pp. 8, 10, 61
c	11) Appendix E, Table 6, 96 <sup>th</sup> edition
d	11) Appendix E, Table 5, 105 <sup>th</sup> edition
f	32) Table MV-9
g	29) SIC 421, 3
h	33) Table VM-201A
j	32) Table VM-1
k	33) Table VM-201
m	36) personal communication
q	35) personal communication
s	13) pp. 12, 80



## LOCAL TRANSIT PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Operating Revenues (\$ thousands)					
Passenger	2,556,800 <sup>a</sup>	5,419,900 <sup>a</sup>	5,858,200 <sup>a</sup>	8.6	8.1
Other	248,300	836,700	904,300	13.8	8.1
Total Operating Revenues	2,805,100	6,256,600	6,762,500	9.2	8.1
Operating Assistance					
State & Local	2,611,200	7,791,700	8,356,900	12.3	7.3
Federal	1,093,900	936,600	862,800	-2.4	-7.9
Total Operating Assistance	3,705,100	8,728,300	9,219,700	9.5	5.6
Total Revenues	6,510,200	14,984,900	15,982,200	9.4	6.7
Operating Expenses (\$ thousands)					
Vehicle Operations	3,248,200 <sup>b</sup>	6,275,300 <sup>b</sup>	6,767,700 <sup>b</sup>	1.5	7.9
Vehicle Maintenance	1,274,300	2,942,300	3,074,500	9.2	4.5
Non-Vehicle Maintenance	499,700	1,550,500	1,607,400	12.4	3.7
General Administration	1,224,300	3,251,000	3,492,900	11.1	7.4
Purchased Transportation*	-	953,200	1,115,800	-	17.1
Total Operating Expenses	6,246,500	14,972,300	16,058,300	9.9	7.3
Depreciation and Amortization	277,600	1,502,500	1,625,200	19.3	8.2
Other Reconciling Items	186,500	693,900	656,700	13.4	-5.4
Total Expenses	6,710,600	17,168,700	18,340,200	10.6	6.8
<b>II. INVENTORY</b>					
Number of Systems					
Motor Bus	1,022 <sup>d</sup>	2,665 <sup>d</sup>	2,686 <sup>d</sup>	10.2	0.8
Heavy Rail	11	12	12	0.9	0.0
Light Rail	9	17	17	6.6	0.0
Trolley Bus	5	5	5	0.0	0.0
Demand Response	n/a	3,867	3,894	-	0.7
Ferryboat	16	26	28	5.8	7.7
Commuter Rail	18	13	13	-3.2	0.0
Other**	5	31	34	21.1	9.7
Total#	1,055	5,046	5,073	17.0	0.5
Number of Vehicles					
Motor Bus	59,411	58,919	59,753	0.1	1.4
Heavy Rail	9,693	10,506	10,419	0.7	-0.8
Light Rail	1,013	755	913	-1.0	20.9
Trolley Bus	823	725	832	0.1	14.8
Demand Response	n/a	15,856	16,222	-	2.3
Ferryboat	68	108	119	5.8	10.2
Commuter Rail	4,448	4,472	4,415	-0.1	-1.3
Other**	90	952	1,079	28.2	13.3
Total	75,546	92,293	93,752	2.2	1.6
Number of Employees					
Motor Bus	n/a	162,990	164,499	-	0.9
Heavy Rail	n/a	46,690	46,102	-	-1.3
Light Rail	n/a	3,952	4,089	-	3.5
Trolley Bus	n/a	2,013	1,924	-	-4.4
Demand Response	n/a	21,453	23,260	-	8.4
Ferryboat	n/a	2,722	2,871	-	5.5
Commuter Rail	n/a	22,215	21,452	-	-3.4
Other**	n/a	882	1,213	-	37.5
Total	189,300 <sup>c</sup>	262,917	265,410	3.4	10.0

## LOCAL TRANSIT PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>198-1990 % Change</u>
<b>III. PERFORMANCE</b>					
<b>Revenue Vehicle-Miles (millions)</b>					
Motor Bus	1,677 <sup>e</sup>	2,109 <sup>d</sup>	2,153 <sup>d</sup>	2.5	2.1
Heavy Rail	385	532	537	3.4	0.9
Light Rail	18	21	24	2.9	14.3
Trolley bus	13	15	14	0.7	-6.7
Demand Response	n/a	300	317	-	5.7
Ferryboat	2	3	2	0.0	-33.3
Commuter Rail	179	210	213	1.8	1.4
Other**	13	13	14	0.7	7.7
<b>Total</b>	<b>2,287</b>	<b>3,203</b>	<b>3,274</b>	<b>3.7</b>	<b>2.2</b>
<b>Unlinked Passenger Trips (millions)</b>					
Motor Bus	5,731 <sup>d</sup>	5,620	5,754	0.1	2.4
Heavy Rail	2,290	2,542	2,346	0.2	-7.7
Light Rail	107	162	176	5.1	8.6
Trolley Bus	85	130	126	4.0	-3.1
Demand Response	n/a	70	62	-	-11.4
Ferryboat	63	50	50	-2.3	0.0
Commuter Rail	285	330	329	1.5	-0.3
Other**	1	27	30	40.5	11.1
<b>Total</b>	<b>8,577</b>	<b>8,931</b>	<b>8,873</b>	<b>0.3</b>	<b>-0.7</b>
<b>Passenger-Miles (millions)</b>					
Motor Bus	21,790 <sup>f</sup>	20,768	21,127	-0.3	1.7
Heavy Rail	10,558	12,030	11,475	0.8	-4.6
Light Rail	381	509	571	4.1	12.2
Trolley Bus	219	199	193	-1.3	-3.0
Demand Response	n/a	428	468	-	9.4
Ferryboat	335	322	331	-0.1	2.8
Commuter Rail	6,516	7,211	7,207	1.0	-0.1
Other**	50	136	164	12.6	20.6
<b>Total</b>	<b>39,854</b>	<b>41,603</b>	<b>41,536</b>	<b>0.4</b>	<b>-0.2</b>

n/a = not available.

\* 1980 figure included in General Administration.

\*\* Figure obtained by addition/subtraction.

# Total is not sum of all modes since many systems operate more than one mode.

Source: The following data references are listed in Appendix A, p. A-9.

<u>Source</u>	<u>References Number/Location</u>
a	2) Table 15
b	2) Table 11
c	2) Table 18
d	2) Table 1
e	2) Table 32
f	2) Table 31

## WATER TRANSPORT PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Operating Revenues (\$ millions)					
Domestic Freight*	7,219 <sup>b</sup>	7,515 <sup>b</sup>	7,546 <sup>b</sup>	0.4	0.4
Coastal Waterways	3,155	3,049	3,008	-0.5	-1.3
Inland Waterways	2,395	2,752	2,865	1.8	4.1
Great Lakes	513	580	576	1.2	-0.7
Locks, Channels	1,156	1,134	1,097	-0.5	-3.3
International Freight	8,279	12,267	13,118	4.7	7.0
Total Passengers*	304	863	936	4.9	8.5
Domestic Passengers, Intercity	21	36	40	6.7	11.1
International Passengers <sup>1</sup>	283	827	890	12.1	8.3
Revenues of U.S. Commercial Fishing Fleet					
U.S. Commercial Landings (\$ millions)	2,237 <sup>r</sup>	3,238 <sup>r</sup>	3,522 <sup>r</sup>	4.6	8.8
<b>II. INVENTORY</b>					
Number of Companies, Class A & B Carriers Inland and Coastal Waterways					
	82 <sup>a</sup>	327 <sup>a</sup>	327 <sup>a</sup>	14.8	0.0
Number of Companies, Maritime Carriers					
	4 <sup>r</sup>	6 <sup>r</sup>	6 <sup>r</sup>	4.1	0.0
Number of Employees					
Ships, Boat Building, and Repairing	220,500 <sup>f</sup>	194,100 <sup>f</sup>	187,100 <sup>f</sup>	-1.6	-3.6
Water Transportation	212,700	172,900	173,700	-2.0	0.4
Number of Employees <sup>2</sup>					
Passenger/Combo	618 <sup>u</sup>	648 <sup>u</sup>	642 <sup>u</sup>	0.4	-0.9
Cargo	9,878	4,774	7,019	-3.4	47.0
Tankers	8,722	4,443	4,471	-6.5	0.6
Total	19,218	9,865	12,132	-4.5	23.0
Mileage of Commercially Navigable Waterways					
	25,543 <sup>b</sup>	25,777 <sup>b</sup>	25,777 <sup>b</sup>	0.1	0.0
Number of Vessels					
Total Non-Self-Propelled					
Dry Cargo Barges and Scows	31,662 <sup>j</sup>	31,081 <sup>j</sup>	n/a	-	-
Tankers	27,426	27,073	n/a	-	-
Railroad Car Floats	4,166	3,978	n/a	-	-
Total Self-Propelled	70	30	n/a	-	-
Total Self-Propelled					
Dry Cargo/Passenger	7,130	8,128	n/a	-	-
Ferries, Railroad Car	2,036	2,468	n/a	-	-
Tankers	67	134	n/a	-	-
Towboats/tugs	330	227	n/a	-	-
Sailing Vessels	4,693	5,242	n/a	-	-
Total	4	57	n/a	-	-
U.S. Merchant Marine (over 1,000 gross tons)					
Total U.S. Flag					
Passenger/Cargo	864 <sup>i</sup>	655 <sup>i</sup>	636 <sup>i</sup>	-3.0	-2.9
Freighters	65	19	10	-17.1	-47.4
Bulk Carriers	310	204	199	-4.3	-2.5
Tankers	20	26	26	2.7	0.0
Intermodal	308	239	233	-2.8	-2.5
Privately Owned	161	167	168	0.4	0.5
Government Owned	578	407	408	-3.4	0.2
Total	286	248	228	-2.2	-8.1
Number of Recreational Boats (thousands)					
	14,600 <sup>k</sup>	19,000 <sup>k</sup>	19,500 <sup>k</sup>	2.9	2.6

## WATER TRANSPORT PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>III. PERFORMANCE</b>					
Ton-Miles (thousands)					
Domestic Waterfreight					
Coastwise	631,149,247 <sup>a</sup>	483,888,605 <sup>a</sup>	470,000,000 <sup>b</sup>	-2.9	-2.9
Internal	227,342,991	272,157,415	283,000,000	2.2	4.0
Lakewise	61,747,114	58,307,596	57,000,000	-0.8	-2.2
Local	1,596,412	1,196,319	1,200,000 <sup>d</sup>	-2.8	0.3
Total*	921,835,764	815,549,935	811,200,000	-1.3	-0.5
Tons of Freight Hauled (thousands)					
Domestic Water					
Coastwise	329,609 <sup>n</sup>	302,027 <sup>n</sup>	293,000 <sup>b</sup>	-1.2	-3.0
Internal	534,979	606,006	627,000	1.6	3.5
Lakewise	115,124	109,086	108,000	-0.6	-1.0
Local	94,184	80,208	82,000 <sup>d</sup>	-1.4	2.2
Total*	1,073,896	1,097,327	1,110,000	0.3	1.2
Exports					
Great Lakes Ports*	45,077	37,068	n/a	-	-
Coastal Ports	358,806	411,338	n/a	-	-
Total	403,883	448,406	n/a	-	-
Imports					
Great Lakes Ports*	15,515	17,771	n/a	-	-
Coastal Ports	502,006	571,733	n/a	-	-
Total	517,521	589,504	n/a	-	-
Tons of Freight, Intraterritorial (thousands)					
	3,588 <sup>q</sup>	5,205 <sup>q</sup>	n/a	-	-
Average Haul, Domestic System (miles-per-ton)					
Coastwise	1,915 <sup>a</sup>	1,602 <sup>a</sup>	1,604 <sup>c</sup>	-1.8	0.1
Internal	405	449	451	1.1	0.5
Lakewise	536	535	533	-0.1	-0.4
Local	17	15	15	-1.2	0.0
Cargo Capacity (short tons)					
Total Non-Self-Propelled Vessels					
Dry Cargo Barges and Scows	44,875,116 <sup>j</sup>	48,835,117 <sup>j</sup>	n/a	-	-
Tankers	34,486,851	38,124,034	n/a	-	-
Total Self-Propelled Vessels	10,388,265	10,711,083	n/a	-	-
Dry Cargo/Passenger	23,906,346	19,905,464	n/a	-	-
Tankers	8,011,587	6,935,078	n/a	-	-
Total	15,894,753	12,962,289	n/a	-	-
Fuel Consumption (thousand barrels)					
Diesel Fuel and Distillate	35,201 <sup>b</sup>	56,106 <sup>b</sup>	52,310 <sup>o</sup>	4.0	-6.8
Residual Fuel Oil	213,131	128,816	148,764	-3.5	15.5
Gasoline	25,048	29,808	30,962 <sup>t</sup>	2.1	3.9
Total	273,380	214,730	232,036	-1.6	8.1
Total Number of Vessels Involved in Marine Accidents <sup>3</sup>					
	5,738 <sup>l</sup>	5,533 <sup>l</sup>	4,776 <sup>l</sup>	-1.8	-13.7
Number of Fatalities in Waterborne Transport					
Freight	8	0	0	-	0.0
Tankship	4	3	0	-	-
Passenger Vessel	5	8	0	-	-

## WATER TRANSPORT PROFILE (cont'd)

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
Tug/Towboat	14 <sup>1</sup>	8 <sup>1</sup>	6 <sup>1</sup>	-8.1	-25.0
Offshore Supply	n/a	8	0	-	-
Fishing Vessel	60	43	23	-9.1	-46.5
State Numbered	n/a	10	0	-	-
MODU <sup>4</sup>	n/a	0	0	-	0.0
Platform	n/a	0	0	-	0.0
Freight Barge	n/a	0	0	-	0.0
Tank Barge	n/a	0	1	-	-
Miscellaneous	56	3	5	-21.5	66.6
<b>Total</b>	<b>147</b>	<b>83</b>	<b>35</b>	<b>-13.4</b>	<b>-57.8</b>
<b>Number of Injuries in Waterborne Transport</b>					
Freighter	8	14	2	-12.9	-85.7
Tankship	9	14	1	-19.7	-92.9
Passenger Vessel	10	48	27	10.4	-43.6
Tug/Towboat	27	34	9	-10.4	-73.5
Offshore Supply	n/a	17	3	-	-82.4
Fishing Vessel	28	60	24	-1.5	-60.0
State Numbered	n/a	5	0	-	-
MODU <sup>4</sup>	n/a	19	1	-	-94.7
Platform	n/a	13	0	-	-
Freight Barge	n/a	1	0	-	-
Tank Barge	n/a	2	0	-	-
Miscellaneous	98	29	21	-14.3	-27.6
<b>Total</b>	<b>180</b>	<b>256</b>	<b>88</b>	<b>-6.9</b>	<b>-65.6</b>
<b>Number of Fatalities in Recreational Boating</b>					
Inboard	100 <sup>k</sup>	46 <sup>k</sup>	50 <sup>k</sup>	-6.7	8.7
Outboard	609	435	454	-2.9	4.4
Inboard/Outboard	47	65	53	1.2	-18.5
Jet	10	11	25	9.6	127.3
Sail	43	26	20	-7.4	-23.1
Manual (oars, paddle)	272	230	182	-3.9	-20.9
Other	14	0	5	-9.8	-
Propulsion Unknown	265	83	76	-11.7	-8.4
<b>Total</b>	<b>1,360</b>	<b>896</b>	<b>865</b>	<b>-4.4</b>	<b>-3.5</b>

- \* Figures obtained by addition/subtraction and may not appear directly in data source.  
<sup>1</sup> Revenues paid by American travelers to U.S. and foreign flag carriers.  
<sup>2</sup> Number of shipboard jobs on oceangoing commercial ships, 1,000 gross tons and over.  
<sup>3</sup> Casualties to commercial vessels under USCG jurisdiction.  
<sup>4</sup> Mobile Offshore Drilling Units.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
a	20) Part 5, Section 3, Table 1
b	9) pp. 8, 9, 10, 57, 64
c	18) personal communication
d	estimate
e	11) Appendix E, Table 1
f	29) SIC 373 and SIC 44
i	34) Table 6
j	19) annual issues, Table 1
k	21) p. 7, 20, 21
l	22) personal communication
n	20) Part 5, Section 1, Table 1A/B
o	28) Tables 2,4
q	20) Part 5, Section 3, Table 18
r	35) personal communication
t	32) Table MF-24
u	35) Seafaring Employment, pp. 5, 6

**RAIL PROFILE  
A. CLASS I RAILROADS**

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL<sup>1</sup></b>					
Operating Revenues, Class I Line-Haul Railroads (\$ millions)					
Passenger	446 <sup>a</sup>	91 <sup>a</sup>	94 <sup>a</sup>	-14.4	3.3
Freight	26,350	27,059	27,471	0.4	1.5
Other	1,462	806	805	-5.8	-0.1
Total	28,258	27,956	28,370	0.1	1.5
Operating Expenses, Class I Line-Haul Railroads <sup>2</sup> (\$ millions)					
	26,355	25,038	24,652	-0.7	-1.5
<b>II. INVENTORY</b>					
Number of Vehicles, Class I Railroads					
Freight Cars	1,168,114	682,270	658,902	-5.6	-3.4
Locomotives <sup>2</sup>	28,094	19,015	18,835	-3.9	-1.0
Number of Companies, Class I Railroads					
	38 <sup>b</sup>	15 <sup>b</sup>	14 <sup>b</sup>	-9.5	-6.7
Number of Employees, Class I Railroads					
	458,994 <sup>a</sup>	227,548 <sup>a</sup>	216,424 <sup>a</sup>	-7.2	-4.9
Line Mileage, Class I Line-Haul Railroads					
	164,822	124,236	119,758	-3.1	-3.6
<b>III. PERFORMANCE</b>					
Car Mileage, Class I Railroads (thousands)					
Freight	29,277,000	26,196,000	26,159,000	-1.1	-0.1
Train Mileage, Class I Railroads (thousands)					
Freight	428,498	382,661	379,582	-1.2	-0.8
Locomotive Mileage, Class I Railroads (thousands)					
Freight	1,319,010 <sup>c</sup>	1,170,647 <sup>c</sup>	1,144,559 <sup>c</sup>	-1.4	-2.2
Train and Yard Switching	212,040	142,923	135,806	-4.4	-5.0
Total	1,531,050	1,313,569	1,280,365	-1.8	-2.5
Revenue Passengers Carried, Class I Railroads (thousands)					
Commutation	279,400 <sup>e</sup>	330,000 <sup>e</sup>	335,000 <sup>e</sup>	1.8	1.5
Revenue Passenger-Miles, Class I Railroads (thousands)					
Commutation	6,516,000	7,222,000	7,330,000	1.2	1.5
Average Passenger Trip Length, Class I Railroads (miles)					
Commutation <sup>*</sup>	23.6	21.9	21.9	-0.7	0.0
Revenue Ton-Miles, Class I Railroads (millions)					
Freight	918,958 <sup>a</sup>	1,013,841 <sup>a</sup>	1,033,969 <sup>a</sup>	1.2	2.0
Average Haul per Ton, Class I Railroads (miles)					
Freight	616	723	726	1.7	0.4
Average Revenue per Passenger-Mile (cents)					
	6.7 <sup>e</sup>	12.3 <sup>e</sup>	12.4 <sup>e</sup>	6.4	0.8

**RAIL PROFILE**  
**A. CLASS I RAILROADS (cont'd)**

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
Number of Fatalities, Railroads and Grade Crossings					
Passengers on Trains	4 <sup>g</sup>	8 <sup>h</sup>	3 <sup>h</sup>	-2.8	-62.5
Employees on Duty	97	49	40	-8.5	-18.4
Employees Not on Duty	4	1	0	-	-100.0
Trespassers	566	641	700	2.2	9.2
Non-Trespassers	739	621	551	-2.9	-11.3
Contractor Employees	7	4	3	-8.1	-25.0
Total Railroad and Grade Crossing	1,417	1,324	1,297	-0.9	-2.0
Grade Crossing only	833	801	698	-1.8	-12.9
Railroad only	584	523	599	0.3	14.5

\* Figures may not appear directly in data source.

1 Operating expenses include equipment, joint facility rents, leased roads and equipment, and all taxes except Federal income.

2 Excludes Amtrak.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>References Number/Location</u>
a	4) pp. 10, 33, 34, 36, 40, 44, 48, 50, 56
b	4) p. 3
c	5) Series 3, Series 13
e	9) pp. 11, 12
g	42) Tables 7, 10
h	37) personal communication

**RAIL PROFILE  
B. AMTRAK**

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Operating Revenues (\$ thousands)					
Passenger	368,240 <sup>d</sup>	910,734 <sup>a</sup>	978,213 <sup>a</sup>	10.3	7.4
Other*	85,273	358,359	330,187	14.5	-7.9
Total	453,513	1,269,070	1,308,400	11.2	3.1
Operating Expenses (\$ thousands)	1,081,239	1,934,500 <sup>b</sup>	2,011,800 <sup>b</sup>	6.4	4.0
<b>II. INVENTORY</b>					
Number of Vehicles					
Passenger Train-Cars	2,128	1,912	1,983	-0.7	3.7
Locomotives	419	312	318	-2.7	1.9
Number of Employees	21,416	23,696	24,000	1.2	1.3
Average Line Mileage	23,940	24,000	24,000	0.0	0.0
<b>III. PERFORMANCE</b>					
Passenger Train-Car Miles(thousands)	235,200	289,925 <sup>a</sup>	300,855 <sup>a</sup>	2.5	3.8
Passenger Train Miles (thousands)	29,500	30,821	32,892	1.1	6.7
Passenger Locomotive Miles (thousands)	40,600	47,209	49,403	2.0	4.7
Revenue Passengers Carried (thousands)	20,800	21,293	22,126	0.6	3.9
Revenue Passenger-Miles (thousands)	4,503,200	5,840,236	6,040,768	3.0	3.4
Average Revenue per Passenger (dollars)	17.7	39.9 <sup>c</sup>	39.6 <sup>c</sup>	8.4	-0.8
Average Revenue per Passenger-Mile (cents)	8.2	14.5	14.5	5.9	0.0
Average Trip per Passenger (miles)	217.0	274.3	272.5	2.3	-0.7

\* Figures obtained by addition/subtraction and may not appear directly in data source.

Source: The following data references are listed in Appendix A, p. A-9.

<u>Source</u>	<u>Reference Number/Location</u>
a	3) Train Information System Reports
b	3) Annual Reports
c	3) Train Earnings Reports
d	4) p. 61



## OIL PIPELINE PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Operating Revenues (\$ millions)					
FERC-regulated	6,340 <sup>j</sup>	6,579 <sup>j</sup>	7,056 <sup>j</sup>	1.1	7.3
Non-regulated	1,208 <sup>f</sup>	1,253 <sup>f</sup>	1,344 <sup>f</sup>	1.1	7.3
Total	7,548	7,832 <sup>j</sup>	8,400 <sup>j</sup>	1.1	7.3
Operating Expenses (\$ millions)					
FERC-regulated	n/a <sup>#</sup>	5,550 <sup>#</sup>	6,063 <sup>#</sup>	-	9.2
<b>II. INVENTORY</b>					
Number of FERC-regulated Companies	n/a	150 <sup>b</sup>	150 <sup>b</sup>	-	0.0
Number of Employees,					
FERC-regulated Companies	21,300 <sup>c</sup>	18,500 <sup>c</sup>	18,500 <sup>c</sup>	-1.4	0.0
Miles of Pipeline (statute miles) <sup>1</sup>					
Crude lines					
Trunk	71,568 <sup>d</sup>	63,969 <sup>f</sup>	63,216 <sup>f</sup>	-1.2	-1.2
Gathering	58,263	58,929	62,337	0.7	5.8
Product Lines	88,562	91,268	87,982	-0.1	-3.6
All Lines	218,393	214,166	213,535	-0.2	-0.3
<b>III. PERFORMANCE</b>					
Intercity Ton-Miles					
Crude Petroleum	362,600 <sup>k</sup>	338,700 <sup>k</sup>	333,700 <sup>k</sup>	-0.8	-1.5
Petroleum Products	225,600	245,500	249,300	1.0	1.6
Total	588,200	584,200	583,000	-0.1	-0.2
Tons Transported (millions)					
Crude Petroleum	416.1 <sup>f</sup>	407.8 <sup>f</sup>	415.8 <sup>f</sup>	0.0	2.0
Petroleum Products					
(delivered from lines)	544.7	645.5	629.6	1.5	-2.5
Total	960.8	1,053.3	1,045.4	0.9	-0.8
Average Length of Haul					
(statute miles)					
Crude Petroleum	871 <sup>i</sup>	831 <sup>i</sup>	809	-0.7	-2.7
Petroleum Products	414	380	396	-0.4	4.2
Total Liquid Pipeline Fatalities	3 <sup>g</sup>	3 <sup>h</sup>	3 <sup>h</sup>	0.0	0.0

n/a = not available.

FERC = Federal Energy Regulatory Commission.

# Figures represent balance after deducting income from Operating Revenues, as reported by Oil Pipeline Research Institute, Inc. for 1989-1990.

<sup>1</sup> Regulated plus unregulated mileage of crude oil trunk and gathering lines, plus refined oil trunk lines.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
b	10) personal communication
c	29) SIC 46
d	9) p. 64
f	18) personal communication
g	42) p. 44
i	9) p. 71
j	9) p. 40
k	9) p. 59
h	41) personal communication

## NATURAL GAS PIPELINE PROFILE

	<u>1980</u>	<u>1989</u>	<u>1990</u>	<u>1980-1990 Average Annual % Change</u>	<u>1989-1990 % Change</u>
<b>I. FINANCIAL</b>					
Transmission Pipeline Companies					
Total Operating Revenues (\$ millions)	41,604 <sup>b</sup>	23,883 <sup>b</sup>	21,756 <sup>b</sup>	-6.3	-8.9
Operating Expenses (\$ millions)					
Operating Expenses	36,075	18,920	16,429	-7.6	-13.2
Maintenance Expenses	405	594	629	4.5	5.9
Total Operating and Maintenance Expenses	36,480	19,514	17,058	-7.3	-12.6
Taxes					
Federal Taxes*	1,327	523	768	-5.3	46.9
State and Local Taxes*	664	458	477	-3.3	4.2
Total Taxes	1,991	981	1,245	-4.6	26.9
Total Operating Expenses	39,709	21,723	19,484	-6.9	-10.3
Distribution Pipeline Companies					
Total Operating Revenues(\$ millions)	13,984 <sup>c</sup>	18,761 <sup>d</sup>	18,532 <sup>d</sup>	2.9	-1.2
Operating Expenses (\$ millions)					
Operating Expenses	11,517	14,142	13,865	1.9	-2.0
Maintenance Expenses	251	515	518	7.5	0.6
Total Operating and Maintenance Expenses	11,768	14,657	14,383	2.0	-1.9
Taxes					
Federal Taxes*	349	599	574	5.1	-4.2
State and Local Taxes*	783	1,021	1,028	2.8	0.7
Total Taxes	1,132	1,620	1,602	3.5	-1.1
Total Operating Expenses	13,236	17,116	16,927	2.5	-1.1
<b>II. INVENTORY</b>					
Transmission Pipeline Companies					
Number of Employees	45,200 <sup>f</sup>	37,100 <sup>f</sup>	37,400 <sup>f</sup>	-1.9	0.8
Miles of Transmission Pipeline					
Steel Pipe	262,200 <sup>g</sup>	273,100 <sup>g</sup>	276,900 <sup>g</sup>	0.6	1.4
Plastic Pipe**	4,400	3,100	3,100	-3.4	0.0
Other	300	100	100	-10.4	0.0
Total	266,900	276,300	280,100	0.5	1.4
Distribution Pipeline Companies					
Number of Employees	52,100 <sup>f</sup>	64,100 <sup>f</sup>	64,100 <sup>f</sup>	2.1	0.0
Miles of Distribution Pipeline					
Steel Pipe	560,100 <sup>g</sup>	581,300 <sup>g</sup>	581,900 <sup>g</sup>	0.4	0.2
Plastic Pipe**	78,100	182,800	202,100	10.0	10.6
Other	61,900	54,400	52,600	-1.6	-3.3
Total	700,100	818,400	836,700	1.8	2.3
Number of Interstate Natural Gas Pipeline Companies	91 <sup>h</sup>	132 <sup>h</sup>	132 <sup>h</sup>	3.8	0.0
<b>III. PERFORMANCE</b>					
Total Marketed Production					
(million cubic feet)	20,179,724 <sup>i</sup>	18,095,147 <sup>i</sup>	18,561,596 <sup>i</sup>	-0.8	2.6
Total Delivered to Consumers					
(million cubic feet)	18,216,233 <sup>j</sup>	17,101,615 <sup>j</sup>	16,826,244 <sup>j</sup>	-0.8	-1.6
Total Consumed (million cubic feet)	19,877,293	18,800,826	18,271,389	-0.8	-2.8
Total Gas Used as a Pipeline Fuel (million cubic feet)					
	634,622	629,308	659,816	0.4	4.9
Total Gas Pipeline Fatalities	11 <sup>l</sup>	36 <sup>l</sup>	5 <sup>m</sup>	-7.6	-86.1

## NATURAL GAS PIPELINE PROFILE (cont'd)

- \* Figures obtained by addition/subtraction and may not appear directly in data source.
- \*\* Includes fiberglass.

Source: The following data references are listed in Appendix A, pp. A-9, A-10.

<u>Source</u>	<u>Reference Number/Location</u>
b	1) Table 12-3
c	1) Table 133
d	1) Table 12-2
e	1) Table 44
f	1) Table 17-2
g	1) Table 5-1
h	26) preface
i	25) Table 13
j	25) Table 14
l	42) Chart 27
m	41) personal communication

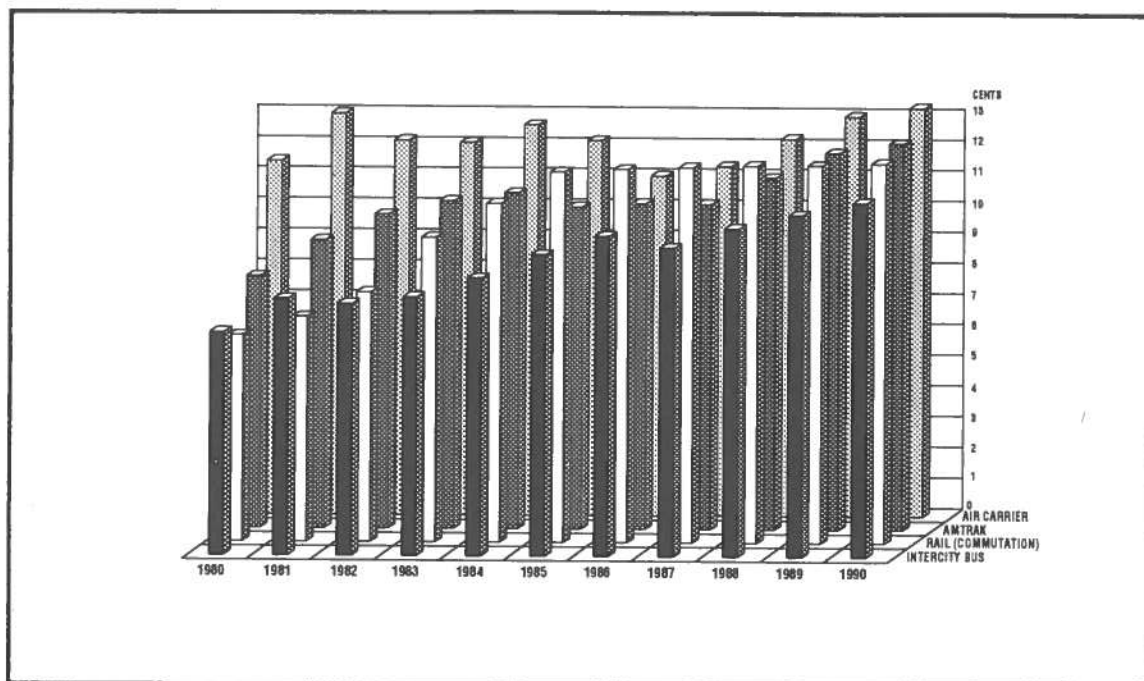


# TRANSPORTATION TRENDS

Transportation Trends includes transportation statistics from 1980 through 1990/1991, using tables and graphs to indicate shifts in performance, inventory, safety, production and cost data.

## Section I: Performance

This section includes basic transportation descriptors such as operating revenues and expenses, vehicle statistics, and passenger and freight data.



**Table 1. Average Passenger Revenue per Passenger-Mile, 1980-1990**  
(cents)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, scheduled service											
Total	11.49 (100)	13.08 (114)	12.18 (106)	12.10 (105)	12.70 (111)	12.21 (106)	11.08 (96)	11.42 (99)	12.31 (107)	13.08 (114)	13.43 (117)
First class	14.29 (100)	15.01 (105)	14.06 (98)	16.10 (113)	17.70 (124)	17.58 (123)	14.51 (102)	18.28 (128)	19.90 (139)	20.97 (147)	21.87 <sup>e</sup> (153)
Coach plus economy	10.82 (100)	12.51 (116)	11.66 (108)	11.50 (106)	12.20 (113)	10.71 (99)	10.39 (96)	10.61 (98)	11.51 (106)	12.20 (113)	12.46 <sup>e</sup> (115)
Rail (commutation)											
(Index)*	6.70 (100)	7.28 (109)	8.13 (121)	9.94 (148)	11.01 (164)	12.08 (180)	12.14 (181)	12.20 (182)	12.26 <sup>e</sup> (183)	12.58 <sup>e</sup> (184)	13.21 <sup>e</sup> (185)
Amtrak											
(Index)**	8.18 (100)	9.38 (115)	10.19 (125)	10.65 (130)	10.91 (133)	10.48 (128)	10.60 (130)	10.58 (129)	11.46 (140)	14.50 (177)	14.50 (177)
Class I Bus, intercity <sup>1</sup>											
(Index)*	7.26 (100)	8.35 (115)	8.18 (113)	8.40 (116)	9.05 (125)	9.91 (137)	10.45 (144)	10.07 (139)	10.73 (148)	11.18 (154)	11.57 <sup>e</sup> (159)
Consumer Price Index**											
(Index)*	82.4 (100)	90.9 (110)	96.5 (117)	99.6 (121)	103.9 (126)	107.6 (131)	109.6 (133)	113.6 (138)	118.3 (144)	124.0 (150)	130.7 (159)

e = estimate.

<sup>1</sup> Regular route intercity service.

\* Index (1980 = 100).

\*\* Index (1982-1984 = 100).

Source: See Appendix A, p. A-11.

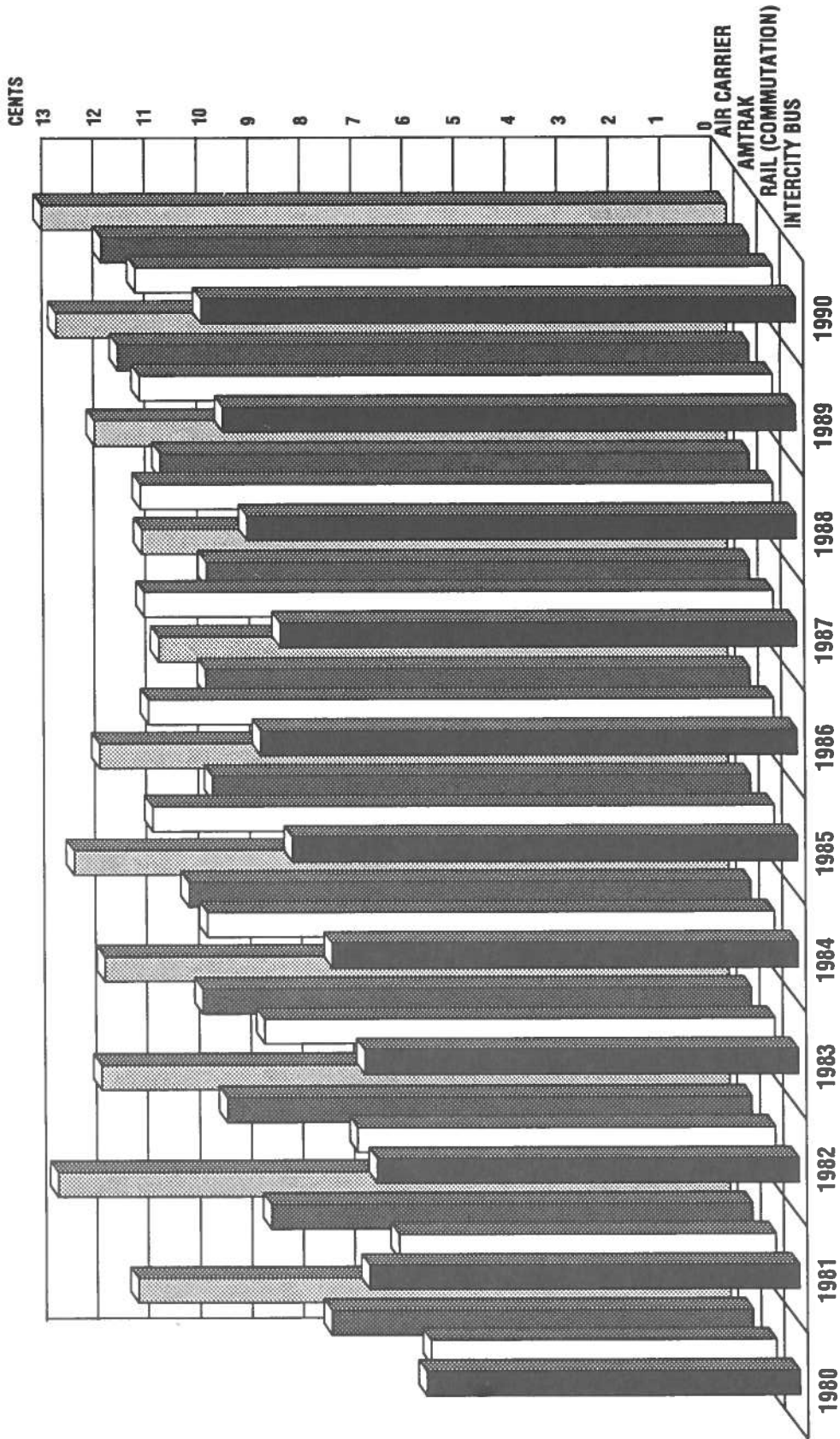


Figure 8. Average Passenger Revenue Per Passenger-Mile, 1980-1990

**Table 2. Average Freight Revenue per Ton-Mile, 1980-1990**  
(cents)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, scheduled service (Index)*	46.31 (100)	50.15 (108)	49.69 (107)	49.30 (106)	50.20 (108)	48.77 (105)	105.43† (228)	109.79 (237)	113.66 (245)	96.84 (209)	59.96 (129)
Class I Rail (Index)*	2.87 (100)	3.18 (111)	3.21 (112)	3.12 (109)	3.09 (108)	3.04 (106)	2.92 (102)	2.73 (95)	2.72 (95)	2.67 (93)	2.66 (93)
Class I Intercity Motor Carriers of Property <sup>1</sup> Common Carriers (Index)*	18.00 (100)	20.00 (111)	20.77 (115)	21.23 (118)	21.54 (120)	22.90 (127)	21.63 (120)	22.48 (125)	23.17 (129)	23.91 (133)	24.38P (135)
Oil Pipeline (Index)*	1.33 (100)	1.45 (110)	1.45 (109)	1.62 (122)	1.62 (122)	1.57 (118)	1.50 (113)	1.45 (110)	1.36 (103)	1.33 (100)	1.44 (109)
Inland Waterway Carrier <sup>2</sup> (Index)*	0.77 (100)	0.85 (110)	0.84 (109)	0.82 (106)	0.82 (106)	0.80 (104)	0.76 (99)	0.73 (95)	0.75 (97)	0.76 (98)	0.77P (100)
Producer Price Index** (Index)*	88.0 (100)	96.1 (109)	100.0 (114)	101.6 (115)	103.7 (118)	104.7 (119)	103.2 (117)	105.4 (120)	108.0 (123)	113.6 (129)	119.2 (135)

P = preliminary.

<sup>1</sup> Intercity service excluding carriers of household goods.

<sup>2</sup> Barge lines operating on Mississippi River and Tributaries.

\* Index (1980 = 100).

\*\* Index (1982 = 100).

† Increase due to inclusion of Federal Express and other freight carriers.

Source: See Appendix A, p. A-11.



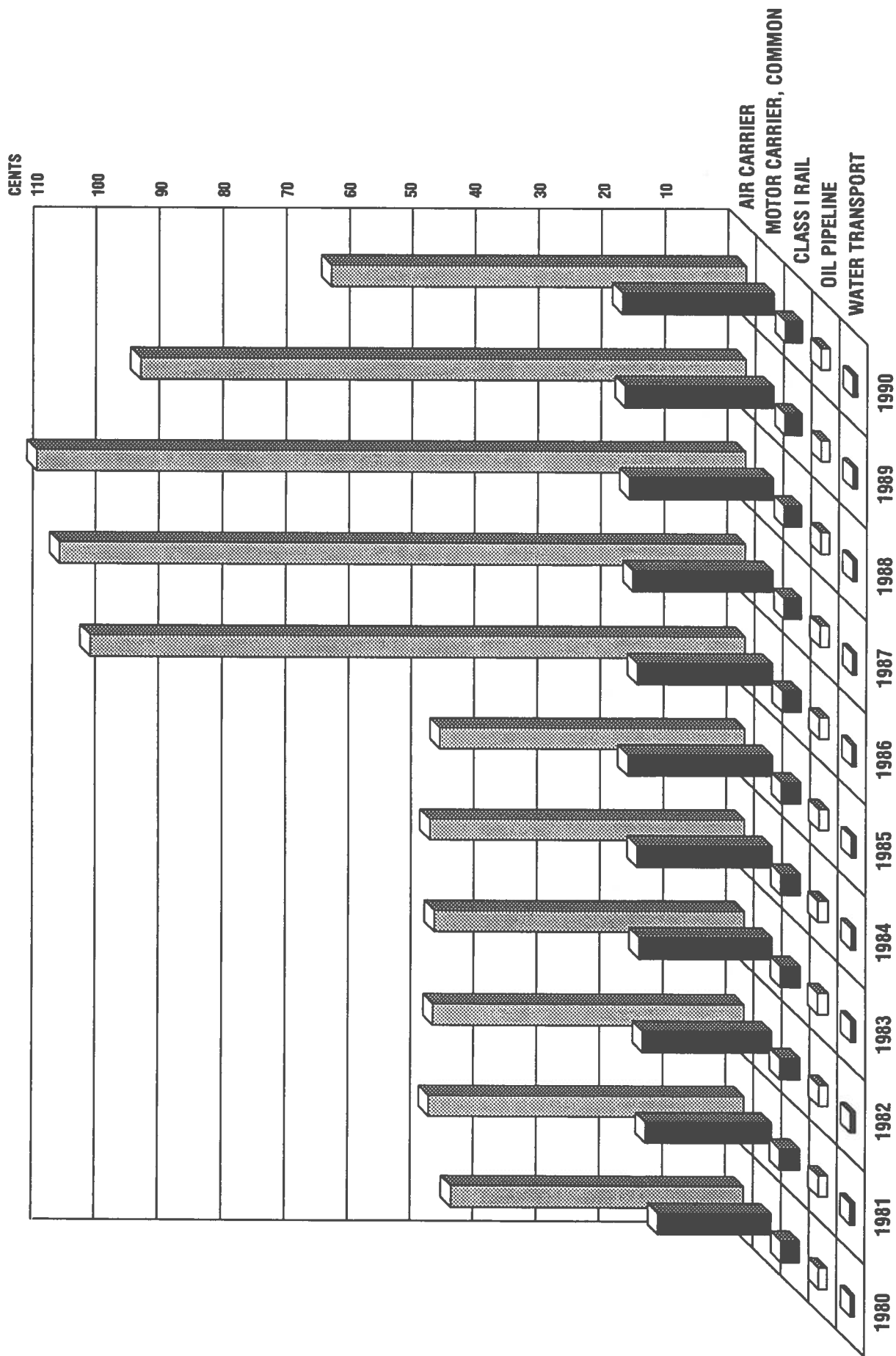


Figure 9. Average Freight Revenue Per Ton-Mile, 1980-1990

**Table 3. Average Passenger Fare, 1980-1990  
(dollars)**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, scheduled service	84.55	95.42	92.08	92.17	97.10	92.53	84.99	88.95	96.67	103.65	107.86
Class I Bus, intercity <sup>1</sup>	10.57	10.30	10.90	10.66	11.09	11.02	12.35	12.28	17.15 <sup>r</sup>	18.62	20.18
Local Transit, all modes (unlinked)	0.31	0.34	0.40	0.40	0.50	0.53	0.58	0.58 <sup>r</sup>	0.60	0.61	0.66 <sup>p</sup>
Rail (commutation)	1.41	1.70	1.89	2.31	2.92	2.85	3.07	3.18	3.35	3.41	3.70
Amtrak	17.72	21.25	22.38	23.78	24.80	25.78	26.35	27.39	34.80	39.90	39.60

r = revised.

p = preliminary.

<sup>1</sup> Regular route intercity service.

Source: See Appendix A, p. A-12.

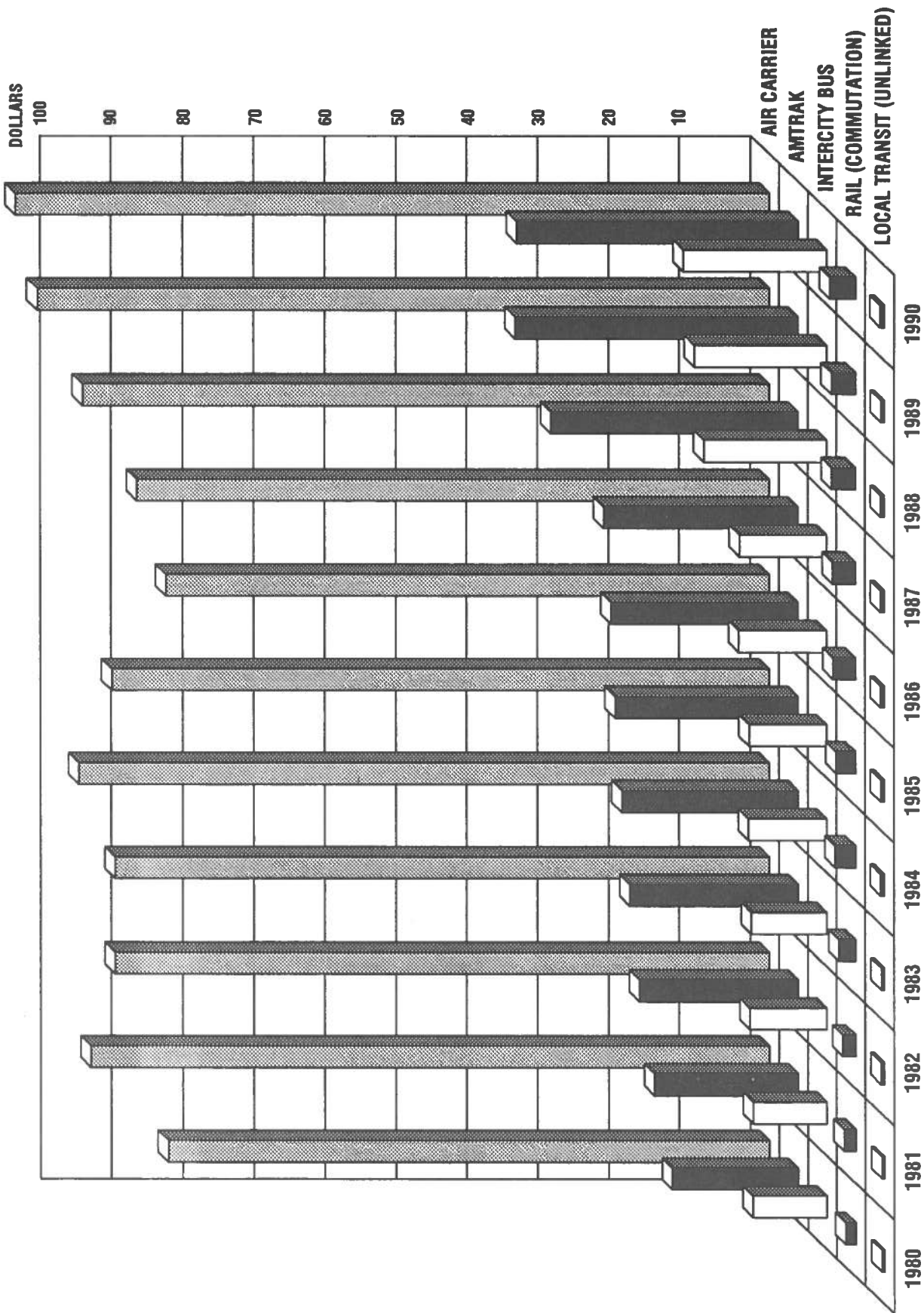


Figure 10. Average Passenger Fare, 1980-1990

**Table 4. Total Operating Revenues, 1980-1990**  
(million dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, all services	33,728	28,788	28,728	31,014	35,373	37,629	41,043	45,658	50,155	54,314	57,994
Class I Bus, intercity	1,397	1,466	1,439	1,276	1,255	1,233	1,394	1,079	1,122	1,213	943
Local Transit	6,510	7,366	8,044	8,526	11,623	12,195 <sup>r</sup>	13,342 <sup>r</sup>	14,091 <sup>r</sup>	14,536 <sup>r</sup>	14,985	15,982 <sup>p</sup>
Oil Pipeline * - total	7,548	7,950	8,489	8,895	9,343	8,910	8,698	8,463	8,224	7,832	8,400
Regulated <sup>r</sup>	6,340	6,678	7,131	7,472	7,848	7,484	7,306	7,109	6,908	6,579	7,056
Non-Regulated <sup>r</sup>	1,208	1,272	1,358	1,423	1,495	1,426	1,392	1,354	1,316	1,253	1,344
Gas Pipeline** - total	55,617	62,914	70,500	70,320	70,685	67,248	52,562	43,788	43,148	42,644	40,288
Transmission companies	41,604	50,188	55,847	53,577	53,319	45,738	33,887	27,275	26,482	23,883	21,756
Distribution companies	14,013	12,726	14,653	16,743	17,366	21,510	18,352	16,513	16,666	18,761	18,532
Class I Intercity Motor Carriers of Property	30,338	32,523	32,246	33,899	35,820	34,902	35,559	37,183	39,824	43,454	46,710
Class I Rail	28,258	30,899	27,504	26,729	29,453	27,586	26,204	26,622	27,934	27,956	28,370
Amtrak	454	512	514	605	659	725	755	883	982	1,269	1,308
Water Transportation											
ICC-regulated Carriers, inland and coastal	991	1,029	1,031	1,125	1,070	1,069	1,049	1,076 <sup>r</sup>	1,107 <sup>r</sup>	1,057	1,072
Maritime Carriers <sup>†</sup>	2,340	3,133	2,817	2,653	2,706	2,844	2,045	1,868	2,093	2,241	2,324
Class A Freight Forwarders	721	810	693	628	506	378	265	204	180	189	166

P = preliminary.

R = revised.

\* Oil pipeline revenues are much smaller than those of gas pipelines because oil pipeline companies are common carriers and include transport costs only.

\*\* Data not directly comparable from year to year due to acquisition and mergers.

† Figures include only those American flag carriers being subsidized by MARAD.

Source: See Appendix A, pp. A-12, A-13.



Figure 11. Total Operating Revenues, 1980-1990

**Table 5. Vehicle-Miles, 1980-1990  
(millions)**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, all services*	2,523	2,442	2,442	2,553	2,875	3,046	3,421	3,653	3,738	3,748	3,963
Majors	2,137	1,953	1,902	1,968	2,211	2,316	2,639	3,029	3,137	3,315	3,548
Nationals	331	367	388	462	461	580	622	452	475	334	352
Large regionals	57	56	101	109	161	139	152	163	123	96	61
Medium regionals <sup>1</sup>	23	70	69	18	46	19	16	19	9	11	9
General Aviation	5,204	5,162	4,625	4,907	5,059	4,817	4,925	4,688	4,766	5,154	4,831
Highway											
Passenger Car & Taxi	1,111,596	1,130,827	1,166,256	1,198,023	1,224,919	1,260,565	1,301,214	1,355,330	1,429,579 <sup>r</sup>	1,477,769	1,515,370
Motorcycle	10,214	10,690	9,910	8,760	8,784	9,086	9,397	9,506	10,024	10,371	9,572
Single-Unit Truck**	290,935	296,343	306,141	327,643	357,999	373,072	389,047	415,449	439,496	454,339	466,827
Other Single-Unit Truck	39,813	39,568	40,212	43,409	46,560	46,980	48,308	49,537	51,239	52,969	53,522
Combination Truck	68,678	69,134	66,668	69,754	77,367	79,600	81,833	86,064	90,158	95,349	96,482
Commercial Bus	3,500	3,541	3,577	3,648	3,329	3,483	3,565	3,728	3,730	3,823	3,936
School Bus	3,000	3,000	3,000	3,000	3,400	3,400	3,700	3,900	4,100	4,000	3,800
Local Transit***	2,287	2,325	2,318	2,306	2,750	2,791	2,986 <sup>r</sup>	3,055 <sup>r</sup>	3,157 <sup>r</sup>	3,203	3,274 <sup>p</sup>
Class I Rail											
Passenger Car (comm.)	179	176	175	177	168	183	189	189	202 <sup>r</sup>	210	213 <sup>p</sup>
Freight Car	29,277	27,968	23,951	24,358	26,409	24,920	24,414	25,627	26,339	26,196	26,159
Amtrak	235	223	217	224	235	251	250	261	273 <sup>r</sup>	290	301

p = preliminary.

r = revised.

\* All operations other than those operating under 14 CFR 121 and 14 CFR 135.

\*\* 2-axle, 4-tire single-unit trucks only.

\*\*\* Includes Class I Rail, Passenger Car.

<sup>1</sup> Includes domestic and international services.

Source: See Appendix A, pp. A-13, A-14.

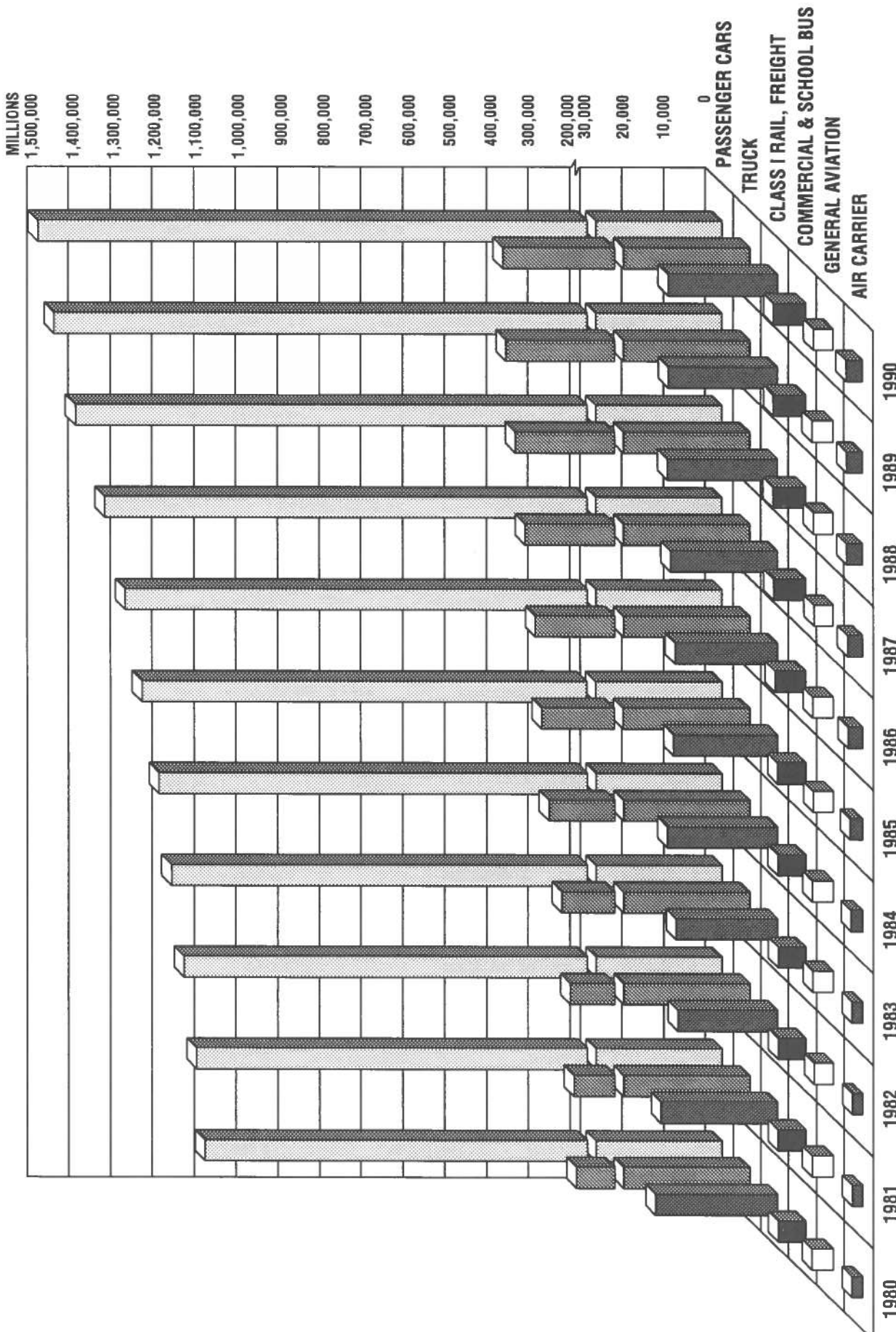


Figure 12. Vehicle-Miles, 1980-1990

Table 6. Passenger-Miles, 1980-1990  
(millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, all services	204,367	201,438	213,631	232,165	250,687	277,836	307,885	329,215	334,291	335,214	345,873
Majors	182,985	173,560	180,229	191,888	202,658	223,850	252,724	290,408	297,672	314,277	327,113
Nationals	20,467	25,149	27,368	33,709	37,504	48,553	50,026	34,187	32,270	17,792	16,757
Large regionals	712	1,648	4,426	5,552	7,642	4,952	4,861	4,521	4,304	3,035	1,753
Medium regionals*	251	1,352	3,888	1,476	3,262	905	569	493	260	398	331
General Aviation, intercity	14,700	14,600	13,100	12,700	13,000	13,000	12,400	12,100	12,100	12,200	12,300
Highway											
Passenger Cars and Taxis	2,000,872	2,035,488	2,099,260	2,036,639	2,082,362	2,142,960	2,212,063	2,304,061	2,430,284 <sup>r</sup>	2,512,207	2,454,899
Motorcycles	11,235	11,759	10,901	9,636	9,662	9,995	11,558	11,692	12,329	12,756	13,114
Intercity Bus	27,400	27,100	26,900	25,600	24,600	23,800	23,700	23,000	23,100	24,000	23,000
School Bus	41,000	41,200	40,800	43,100	78,300	70,000	89,100	72,900	83,200	80,600	74,200
Single-Unit Trucks**	378,216	385,246	397,983	425,936	465,399	484,994	505,761	540,084	571,345 <sup>r</sup>	590,641	611,543
Other Single-Unit Trucks	39,813	39,568	40,212	43,409	46,560	46,980	48,308	49,537	51,239	52,969	53,522
Combination Trucks	68,678	69,134	66,668	69,754	77,367	79,600	81,833	86,064	90,158 <sup>r</sup>	95,349	96,482
Local Transit***	39,854	39,482	37,124	37,602	39,424	39,581	40,204 <sup>r</sup>	40,348 <sup>r</sup>	40,580 <sup>r</sup>	41,603	41,536 <sup>p</sup>
Rail (commutation)	6,516	6,236	6,027	6,097	6,207	6,534	6,723	6,818 <sup>r</sup>	6,964 <sup>r</sup>	7,211	7,207
Amtrak	4,503	4,762	4,172	4,246	4,552	4,785	5,011	5,361	5,686	5,840	6,041

p = preliminary.

r = revised.

\* Includes domestic and international operations.

\*\* 2-axle, 4-tire trucks.

\*\*\* Includes Rail (commutation).

Source: See Appendix A, pp. A-14, A-15.



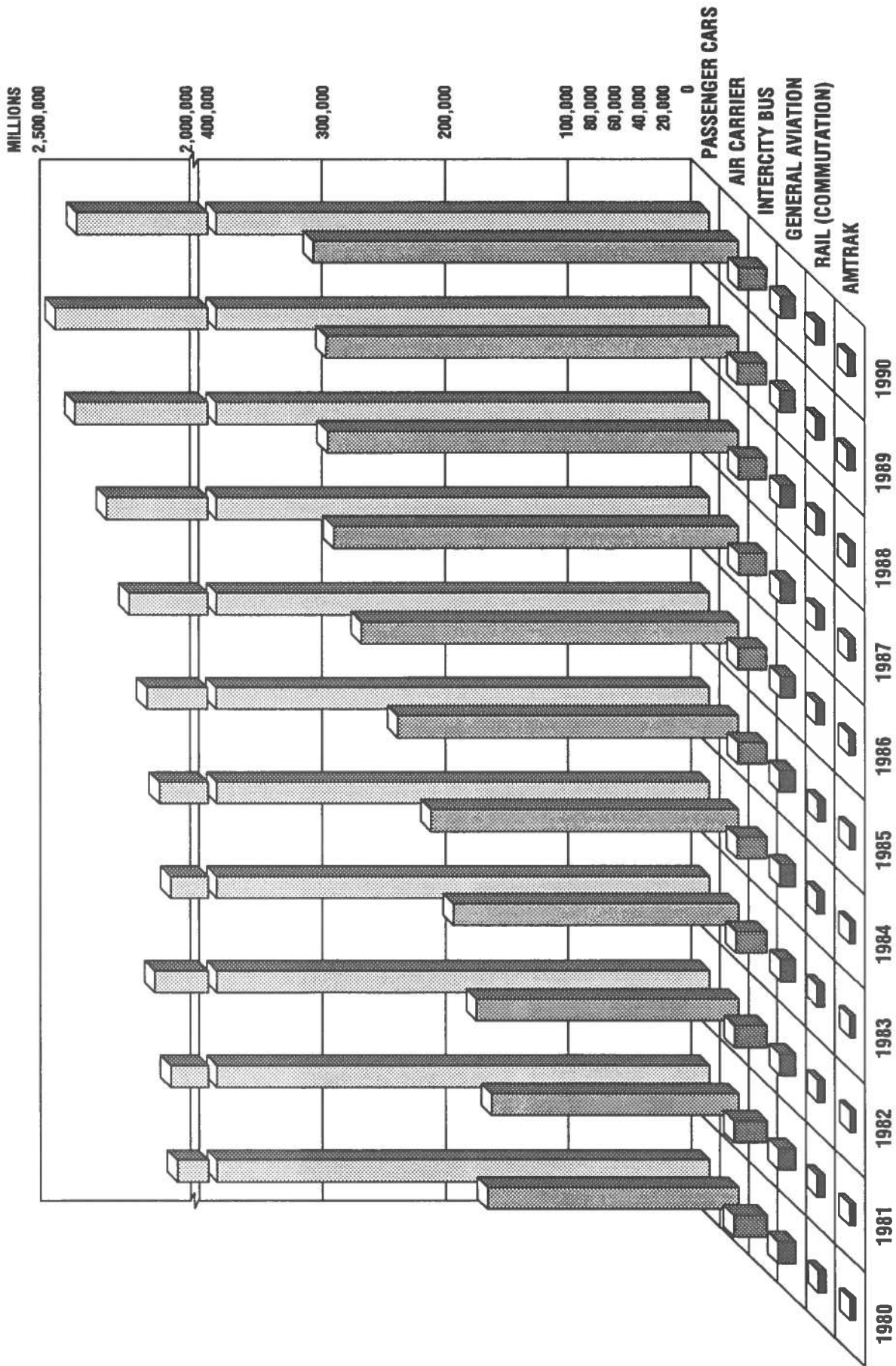


Figure 13. Passenger-Miles, 1980-1990

**Table 7. Revenue Ton-Miles of Freight, 1980-1990**  
(millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, domestic, all services <sup>1</sup>	4,528	4,657	4,476	5,055	5,493	5,156	6,356	7,589	8,169	8,954	9,064
Oil Pipeline	588,000	564,000	566,000	556,000	568,000	564,000	578,000	587,000	601,000 <sup>r</sup>	584,000	577,000
Class I Rail	918,958	910,169	797,759	828,275	921,542	876,984	867,722	943,747	996,182	1,013,841	1,033,969
Trucks											
Intercity	555,000	527,000	520,000	575,000	606,000	610,000	632,000	663,000	700,000 <sup>r</sup>	716,000	735,000
Local	n/a	n/a	n/a	294,447	343,554	326,668	318,126	334,137	375,703	377,332	392,150
Water Transport											
Inland Waterways*	406,879	410,240	351,280	359,013	398,879	381,693	392,604	410,737	438,185	448,687	462,000
Inland Waterways (domestic only)	289,000	293,000	253,000	269,000	293,000	281,000	291,000	307,000	327,000	330,000	340,000
Domestic Coastwise <sup>r</sup>	631,000	635,000	633,000	650,000	594,000	611,000	561,000	587,000	562,000	484,000	470,000

n/a = not available.

r = revised.

\* includes domestic and foreign U.S. traffic.

<sup>1</sup> Includes revenue ton-miles of freight, U.S. and foreign mail, and express, as reported on RSPA/OAS Form 41.

Source: See Appendix A, p. A-15.

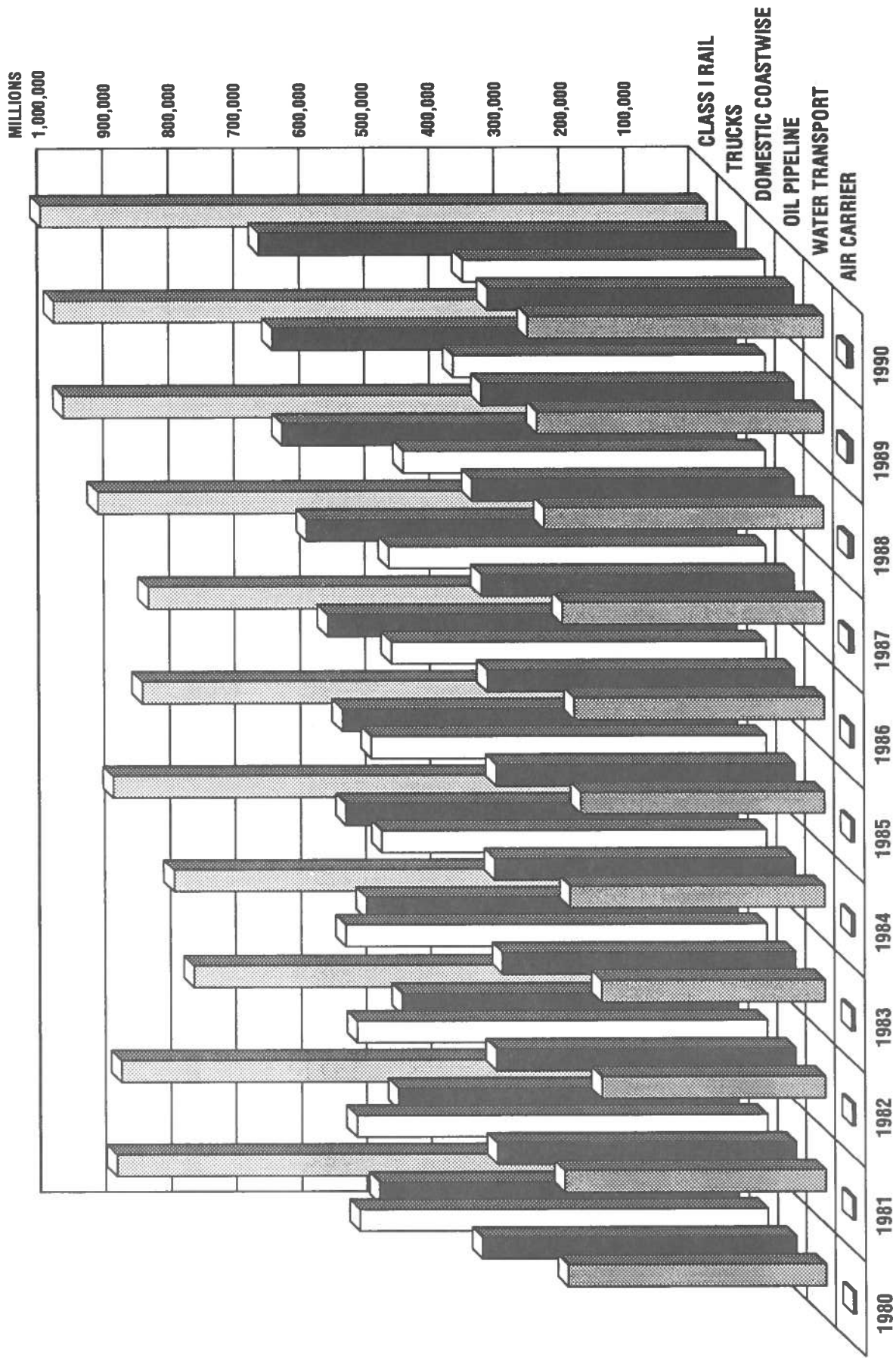


Figure 14. Revenue Ton-Miles of Freight, 1980-1990

Table 8. Basic Intercity Mileage Within the Continental United States, 1980-1990  
(statute miles)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Airway	341,283	344,578	352,292	355,599	360,346	373,891	381,094	382,503	384,691	386,889	n/a
Oil Pipeline, <sup>1</sup> total	218,393	215,041	213,677	211,930	215,317	213,605	214,788	215,914 <sup>r</sup>	214,084 <sup>r</sup>	214,166	213,585
Crude Lines											
Trunk	71,568	68,486	69,529	67,304	67,910	66,076	66,671	66,738	66,670	63,969	63,216
Gathering	58,263	57,099	53,421	51,177	51,996	51,736	55,771	55,045	56,641	58,929	62,337
Product Lines	88,562	89,456	90,727	93,449	95,411	95,793	92,689	93,959 <sup>r</sup>	91,773	91,268	87,982
Gas Pipeline, total	1,051,774	1,069,800	1,083,466	1,095,118	1,102,401	1,118,875	1,134,110	1,151,159	1,167,797	1,185,015	1,206,274
Distribution Mains	701,800	714,100	720,900	729,728	736,800	753,391	769,319	783,796	800,360	818,132	836,667
Transmission Pipelines	266,500	269,500	271,700	273,506	271,900	271,162	270,967	271,894	275,129	276,329	280,108
Field and Gathering Lines	83,500	86,200	90,500	91,884	93,700	94,322	93,770	95,469	92,308	90,554	89,499
Class I Rail	164,822	162,160	159,123	155,879	151,998	145,764	140,061	132,220	127,555	124,536	119,758
Highway*	300,456	298,256	298,219	300,040	300,018	301,006	303,233	302,448	303,698	304,054	305,347
Inland Waterway	25,543	25,543	25,543	25,777	25,777	25,777	25,777	25,777	25,777	25,777	25,777

n/a = no longer available.

r = revised.

\* Includes Federal-Aid primary roads only.

<sup>1</sup> Includes petroleum and other liquid product lines, including gathering lines.

Source: See Appendix A, pp. A-15, A-16.

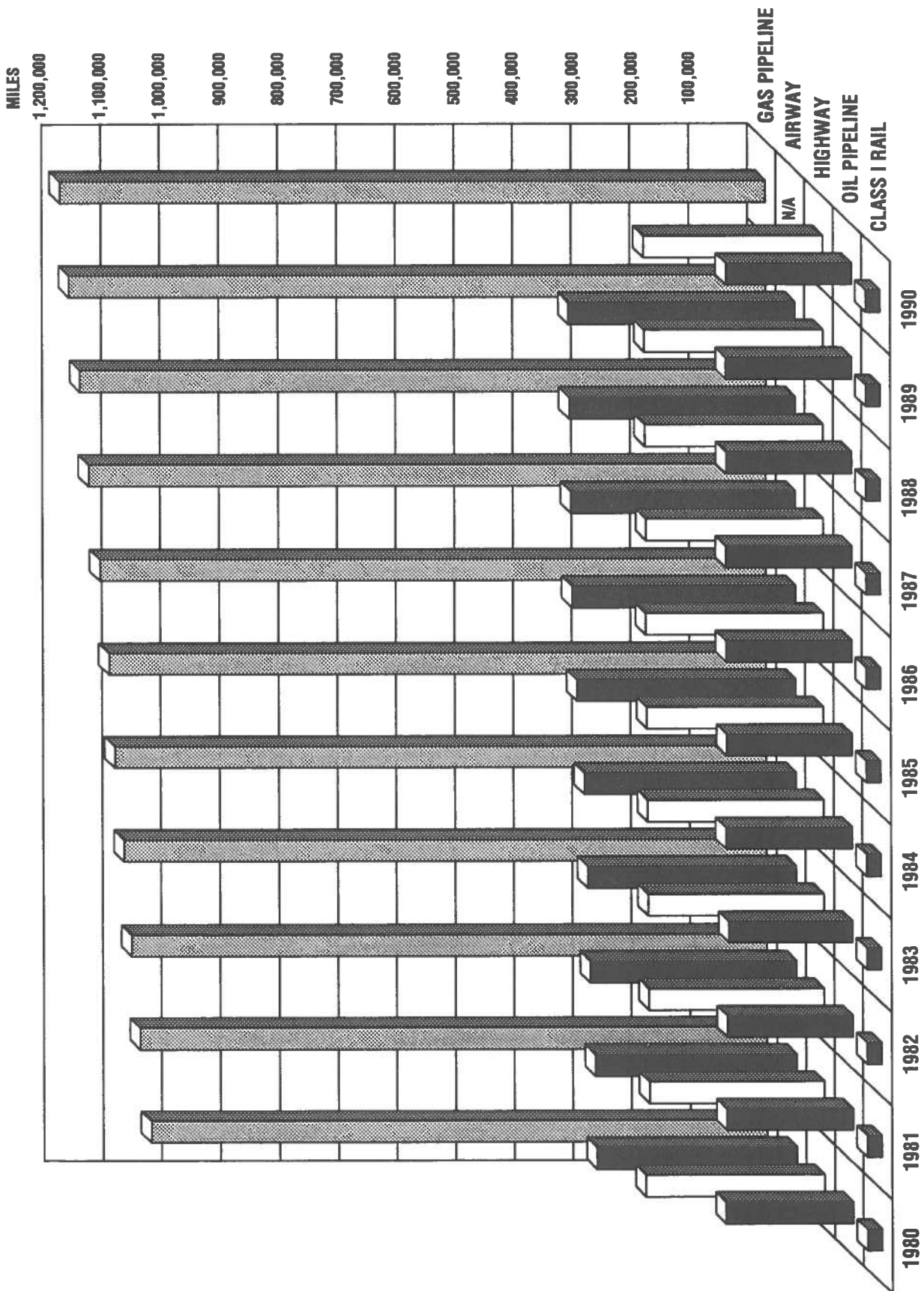


Figure 15. Basic Intercity Mileage Within the Continental United States, 1980-1990

Table 9. Average Length of Haul, Domestic Interstate Freight and Passenger Modes, 1980-1990  
(miles)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Freight											
Air Carrier	1,052	1,241	1,224	1,249	1,204	1,157	1,165	1,275	1,333	1,399	1,397
Oil Pipeline											
Crude	871	834	804	790	798	777	797	834	846	831	809
Products	414	424	422	398	399	391	395	386	384	380	396
Railroads											
All	586	597	600	611	614	617	613	630	633	650	650
Per system	590	600	604	613	617	635	665	688	697	723	726
Trucks	490	497	513	524	532	538	558	546	548	558	571
Water											
Rivers/Canals	405	444	438	463	448	435	443	452	458	449 <sup>e</sup>	451 <sup>e</sup>
Great Lakes	536	539	494	516	508	524	495	519	530	535 <sup>e</sup>	533 <sup>e</sup>
Coastwise	1,914	1,972	2,035	2,099	1,931	1,972	1,886	1,814	1,727	1,602 <sup>e</sup>	1,604 <sup>e</sup>
Passenger											
Air Carrier, scheduled	736	749	766	765	759	758	767	779	786	815	829
Bus, intercity	125	123	133	138	133	121	123	125 <sup>e</sup>	127 <sup>e</sup>	130 <sup>e</sup>	132 <sup>e</sup>
Railroad (commutation)	23.6	23.2	23.3	23.3	23.2	23.8	22.0	21.9	21.4	21.9	21.9
Amtrak	217	226	215	223	227	232	249	259	265	274	273

<sup>e</sup> = estimate.

Source: Eno Foundation for Transportation, *Transportation In America*, 1992.

Table 10. Number of Vehicles, 1980-1990

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier, certificated, all services	2,818	2,763	2,664	2,659	2,757	3,100	3,627	3,698	4,188	4,348	4,727
General Aviation	211,045	213,226	209,779	213,293	220,943	210,654	220,044	217,193	210,266	219,737	212,229
Motorcycle	5,693,940	5,831,132	5,753,858	5,585,112	5,479,822	5,444,404	5,262,322	4,917,131	4,584,284	4,433,915	4,259,462
Passenger Car & Taxi (thousands)	121,601	123,098	123,702	126,444	128,158	131,864	135,431	137,208	141,252	143,026	143,550
Truck, total	33,666,587	34,644,110	35,382,375	36,722,615	37,507,463	39,196,161	40,069,479	41,144,454	42,529,368	43,609,849	44,478,848
Single-Unit	32,249,718	33,382,908	34,117,054	35,418,574	36,167,319	37,792,895	38,670,542	39,725,054	41,053,127	42,020,564	42,871,665
Combination	1,416,869	1,261,202	1,265,321	1,304,041	1,340,144	1,403,266	1,398,937	1,419,400	1,476,241	1,589,285	1,607,183
Intercity Bus	21,400	21,500	22,000	20,300	20,100	20,200	20,300	20,097	19,887	19,688	19,491
Local Transit, total†	75,388	76,433	78,205	78,106	96,901 <sup>r</sup>	94,369 <sup>r</sup>	95,508 <sup>r</sup>	96,148 <sup>r</sup>	97,209 <sup>r</sup>	92,293	93,752 <sup>p</sup>
Motor Bus	59,411	60,393	62,114	62,093	67,294 <sup>r</sup>	64,258 <sup>r</sup>	66,218 <sup>r</sup>	63,017 <sup>r</sup>	62,572 <sup>r</sup>	58,919	59,753 <sup>p</sup>
Heavy Rail	9,641	9,749	9,815	9,891	9,083	9,326	10,386	10,168	10,539	10,506	10,419 <sup>p</sup>
Light Rail	1,013	1,075	1,016	1,013	733	717 <sup>r</sup>	697	766	831	755	913 <sup>p</sup>
Trolley Bus	823	751	763	686	664	676	680	671	710	725	832 <sup>p</sup>
Commuter Rail	4,500	4,465	4,497	4,423	4,075	4,035	4,440	4,686	4,649	4,472	4,415 <sup>p</sup>
Demand Response	n/a	n/a	n/a	n/a	14,164 <sup>r</sup>	14,490 <sup>r</sup>	15,346 <sup>r</sup>	15,944 <sup>r</sup>	16,812 <sup>r</sup>	15,856	16,222 <sup>p</sup>
Other	n/a	n/a	n/a	n/a	888 <sup>r</sup>	867 <sup>r</sup>	942 <sup>r</sup>	875 <sup>r</sup>	1,096 <sup>r</sup>	1,060	1,198 <sup>p</sup>
Class I Rail, total	1,196,208 <sup>r</sup>	1,138,536 <sup>r</sup>	1,065,811 <sup>r</sup>	1,032,613 <sup>r</sup>	972,288 <sup>r</sup>	889,618 <sup>r</sup>	819,421 <sup>r</sup>	767,881 <sup>r</sup>	744,204 <sup>r</sup>	701,285	677,737
Freight Cars	1,168,114	1,111,115	1,039,016	1,007,165	948,171	867,070	798,631	748,523	724,840	682,270	658,902
Locomotives	28,094 <sup>r</sup>	27,421	26,795 <sup>r</sup>	25,448	24,117	22,548	20,790	19,358	19,364	19,015	18,835
Amtrak, total	2,547	2,215	2,325	2,268	2,231	2,200	2,162	2,231	2,171 <sup>r</sup>	2,224	2,301
Passenger Train-Cars	2,128	1,830	1,929	1,880	1,844	1,818	1,793	1,850	1,853 <sup>r</sup>	1,912	1,983
Locomotives	419	385	396	388	387	382	369	381	318 <sup>r</sup>	312	318
Water Transport, total	37,149	n/a	39,614	n/a	39,581	39,230	38,384	37,868	36,952	36,998	n/a
Total Inland Water Vessels	36,285	*	38,782	*	38,837	38,493	37,664	37,159	36,277	36,293	n/a
Non-Self-Propelled Vessels	27,426	*	29,479	*	29,730	29,287	28,308	27,741	27,046	27,073	n/a
Dry Cargo Barges & Scows	4,166	*	4,413	*	4,114	4,252	4,260	4,247	4,043	3,978	n/a
Tankers	31,592	*	33,892	*	33,844	33,539	32,568	31,988	31,089	31,051	n/a
Total	4,693	*	4,890	*	4,993	4,954	5,096	5,171	5,188	5,242	n/a
Self-Propelled Vessels	864	853	832	788	744	737	720	709	675	655	636
Towboats & Tugs											
Oceangoing Steam & Motor Ships (1,000 gross tons & over)											

n/a = not available. r = revised. p = preliminary.

† Prior to 1984, excludes most rural and smaller systems funded via Sections 18 and 16(b)(2), Urban Mass Transportation Act of 1964, as amended. Also prior to 1984, includes total vehicles owned and leased. Series not continuous between 1983 and 1984.

\* Change in collection methods, see Appendix A, pp. A-15, A-16.

Source: See Appendix A, pp. A-16, A-17.

Table 11. Number of New Vehicles Purchased by Mode, 1980-1990

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Air Carrier (all services) Fixed-Wing	387	387	232	262	185	278	330	357	423	398	521
General Aviation	11,777	10,114	4,053	2,784	2,635	2,457	2,888	2,319	2,681	3,129	2,785
Passenger Car & Taxi*	8,980,000	8,535,000	7,980,000	9,179,000	10,394,000	11,039,000	11,450,000	10,278,000	10,639,000	9,903,000	9,499,000
Motorcycles	1,070,000	1,065,000	990,000	1,185,000	1,305,000	1,260,000	1,075,000 <sup>r</sup>	970,000	710,000	515,000	462,000
Mopeds	182,037	67,779	18,145	21,645	32,889	30,174	22,557	23,683	9,628	11,587	12,950
Bicycles*	9,000,000	8,900,000	6,800,000	9,000,000	10,100,000	11,400,000	12,300,000	12,600,000	9,900,000	10,700,000	10,800,000
Truck (domestic)	2,231,500	1,972,200	2,247,800	2,709,400	3,485,000	3,913,200	3,947,200	4,088,400	4,544,500	4,941,500*	4,649,900*
Bus (including school bus)	34,385	27,295	26,260	26,212	32,437	33,533	37,022	37,085	33,632	30,582	32,731
Local Transit	4,572	4,059	2,962	4,081	3,894	3,367	3,379	4,224 <sup>r</sup>	3,548 <sup>r</sup>	4,960	4,752 <sup>p</sup>
Motor Bus †	32	188	10	30	59	63	149	51	24	52	55 <sup>p</sup>
Light Rail	130	276	126	88	521	441	854	758	311	207	10 <sup>p</sup>
Heavy Rail	98	0	0	0	0	0	0	47	0	0	118 <sup>p</sup>
Trolley Bus	n/a	n/a	n/a	n/a	128	179	140	198	74	56	83 <sup>p</sup>
Commuter Rail	4,832	4,523	3,098	4,199	4,602	4,050	4,522	5,278 <sup>r</sup>	3,961 <sup>r</sup>	5,275	5,018 <sup>p</sup>
Total	85,920	44,901	17,236	5,772	12,396	12,080	11,508	13,645	22,524	29,617	32,063
Class I Rail	1,463	436	289	200	436	522	280	131	356	609	530
Freight Cars**	87,383	45,337	17,525	5,972	12,832	12,602	11,788	13,776	22,880	30,226	32,593
Locomotives	108	119	101	31	0	74	0	0	0	45	129
Amtrak	17	43	35	0	0	0	0	0	10	13	14
Passenger Train-Cars	125	162	136	31	0	74	0	0	10	58	143
Locomotives											
Total	23	12	11	14	12	14	8	12	5	8	12
Water Transport	693,200	427,979	342,000	409,100	389,900	581,300	321,100	470,500	251,000	385,942	414,308
Merchant Vessels											
Gross Tonnage											

n/a = not available.

r = revised.

p = preliminary.

\* Includes domestic and imported vehicles.

\*\* Freight cars include all railroads and private car owners.

† Buses or bus-type vehicles only. Excludes most rural and smaller systems prior to 1984. Series not continuous for motor buses between 1983 and 1984.

Source: See Appendix A, p. A-17.



**Table 12. U.S. Automobiles in Fleets by Type of Use, 1980-1990**  
(thousands)

Use	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Business Fleets <sup>a</sup>	3,279	3,306	3,324	3,383	3,422	3,484	3,530	3,564	3,689	3,787	3,823
Individually Leased	1,708	1,713	1,645	1,653	1,657	1,800	1,975	2,098	2,160	2,140	2,020
Government <sup>b</sup>	752	757	603	606	638 <sup>c</sup>	643	647	650	658	658 <sup>d</sup>	653 <sup>d</sup>
Utilities	532	537	530	533	540	540	545	550	553	553	551
Police	288	284	223	221	228	233	238	240	242	244	249
Taxi	205	198	141	139	140	140	143	144	144	144	141
Daily Rental	500	462	457	466	755 <sup>c</sup>	760	790	800	870	907	990
Total (Cars in fleets of 10 or more)	7,264	7,257	6,923	7,001	7,380	7,600	7,868	8,046	8,316	8,433	8,427
Cars in fleets of 4 or more	10,433	10,436	10,076	10,400	10,475	10,508	10,508	10,578	10,597	10,592	10,607

<sup>a</sup> Includes driver schools.

<sup>b</sup> Data from *Automotive Fleet Fact Book* does not include all Federal government fleet vehicles. Federal fleet data are added from *Federal Motor Vehicle Fleet Report*, General Services Administration, Table 1 (all agencies -- domestic sedans and station wagons).

<sup>c</sup> Major adjustment by *Automotive Fleet Fact Book* with new data for 1984. Daily rentals were underestimated from 1970 to 1983.

<sup>d</sup> Federal government data for 1989 and 1990 are not available; therefore, the data are assumed to be equal to the 1987 Federal government figures.  
Source: Oak Ridge National Laboratory, *Transportation Energy Data Book*, edition 12, Table 3.35.

**Table 13. Speed Trend Characteristics<sup>1</sup>, FY1981-1990**

Highway Categories	1981	1983	1985	1986	1987	1988	1989	1990
<b>AVERAGE SPEED</b>								
Urban Interstate	55.5	56.8	57.2	57.4	58.0	58.6	58.9	58.6
Urban Other Freeways & Expressways	55.0	56.1	56.8	56.7	56.8	57.5	57.5	57.6
Urban Other Principal & Minor Arterials	51.8	52.4	53.5	53.5	54.0	53.9	54.6	54.1
Rural Interstate	57.9	59.1	59.5	59.7	59.7	59.5	60.1	60.4
Rural Other Principal & Minor Arterials	54.1	54.6	54.9	55.3	55.9	56.0	56.2	56.4
Rural Major Collectors	51.7	52.4	52.9	52.9	53.4	53.6	54.3	54.3
<b>MEDIAN SPEED<sup>2</sup> (MPH)</b>								
Urban Interstate	55.5	56.8	57.4	57.7	58.0	58.7	59.0	58.7
Urban Other Freeways & Expressways	55.0	56.3	57.0	56.8	56.9	57.7	57.9	57.7
Urban Other Principal & Minor Arterials	51.9	52.4	53.6	53.5	54.1	54.4	55.1	54.1
Rural Interstate	57.7	59.0	59.4	59.7	59.7	59.6	60.3	60.2
Rural Other Principal & Minor Arterials	54.0	54.7	55.2	55.3	56.1	56.2	56.4	56.4
Rural Major Collectors	51.8	52.6	53.0	52.9	53.7	54.0	54.7	54.6
<b>85TH PERCENTILE<sup>3</sup> (MPH)</b>								
Urban Interstate	60.9	63.1	64.0	64.3	64.8	65.6	66.1	65.8
Urban Other Freeways & Expressways	60.1	62.3	63.4	63.2	63.4	64.2	64.3	64.6
Urban Other Principal & Minor Arterials	57.9	59.2	60.5	60.1	60.7	60.7	61.3	61.1
Rural Interstate	63.0	65.2	66.1	66.2	66.5	66.4	67.2	67.6
Rural Other Principal & Minor Arterials	59.9	61.3	61.7	62.2	62.8	62.8	63.1	63.2
Rural Major Collectors	58.7	60.2	60.6	60.6	61.3	61.4	62.1	62.0
<b>PERCENT EXCEEDING 55 MPH</b>								
Urban Interstate	51.0	60.5	64.1	64.8	67.4	69.7	71.3	69.8
Urban Other Freeways & Expressways	47.1	56.6	60.2	59.6	61.2	64.7	65.5	65.0
Urban Other Principal & Minor Arterials	30.2	34.3	42.1	40.7	44.7	42.6	47.7	43.6
Rural Interstate	67.6	73.6	75.4	76.2	73.7	74.0	76.8	77.6
Rural Other Principal & Minor Arterials	43.2	47.5	50.5	52.4	54.3	54.9	56.0	56.3
Rural Major Collectors	32.7	36.6	37.9	40.9	42.9	42.8	44.7	45.4
<b>PERCENT EXCEEDING 60 MPH</b>								
Urban Interstate	17.6	27.9	32.0	33.5	36.7	39.9	41.7	40.7
Urban Other Freeways & Expressways	15.4	24.9	29.1	28.8	30.4	33.0	33.7	34.2
Urban Other Principal & Minor Arterials	8.9	12.1	16.7	15.8	18.8	17.5	19.4	18.8
Rural Interstate	29.9	40.9	44.1	45.5	46.1	45.5	48.9	50.4
Rural Other Principal & Minor Arterials	15.3	19.7	21.1	22.5	25.2	24.9	26.6	27.1
Rural Major Collectors	12.6	15.8	16.8	17.5	18.7	18.4	20.4	20.7
<b>PERCENT EXCEEDING 65 MPH</b>								
Urban Interstate	4.0	9.2	11.9	12.0	13.6	15.9	16.9	17.1
Urban Other Freeways & Expressways	3.2	7.3	9.5	9.1	9.7	11.1	11.3	12.0
Urban Other Principal & Minor Arterials	2.2	3.6	4.9	4.4	5.3	5.0	5.8	5.8
Rural Interstate	8.8	14.9	17.3	18.2	18.8	18.8	21.8	23.2
Rural Other Principal & Minor Arterials	4.4	6.3	6.7	7.3	8.4	8.5	9.4	9.6
Rural Major Collectors	4.4	5.8	6.2	6.3	6.8	6.6	7.3	7.4

<sup>1</sup> Data in this table are only for highways with a 55 mph speed limit.

<sup>2</sup> Median speed is the speed at or below which 50 percent of the vehicles are traveling.

<sup>3</sup> 85th percentile speed is the speed at or below which 85 percent of the vehicles are traveling.

Source: U.S. DOT/FHWA, *Highway Statistics*, annual issues, Tables VS-1, VS-2.

**Table 14. Air Travel Arrivals Between the United States and Foreign Countries, 1980-1990 (thousands)**

**Arrivals**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Flag of Carrier and Country</b>											
Total Passengers	20,262	20,881	20,216	20,840	23,212	24,156	25,608	28,644	31,387	33,217	36,414
Flag of Carrier:											
United States	10,031	10,265	10,163	10,698	11,623	11,798	12,254	14,313	16,492	17,174	19,145
Foreign	10,231	10,615	10,054	10,142	11,588	12,357	13,354	14,331	14,896	16,044	17,269
<b>Country of embarkation<sup>1</sup></b>											
Australia	227	229	254	242	277	277	313	378	431	433	495
Bahama Islands	1,123	1,053	1,153	1,344	1,373	1,503	2,488	1,828	1,737	1,596	1,679
Barbados	135	123	115	167	211	216	218	237	2552	220	228
Belgium	242	249	299	250	242	281	316	227	224	305	417
Bermuda	497	451	441	439	441	434	500	516	476	451	487
Brazil	300	311	308	308	321	352	433	418	458	501	584
China/Taiwan	113	138	148	154	187	206	254	249	215	229	325
Colombia	315	334	314	309	285	279	281	264	282	284	286
Denmark	267	251	243	230	239	241	247	302	328	356	313
Dominican Republic	468	495	501	532	575	606	705	817	906	934	948
France	689	686	695	705	795	955	908	1,181	1,366	1,570	1,777
Germany	1,175	1,182	1,174	1,223	1,404	1,582	1,582	1,962	2,145	2,135	2,466
Grand Cayman	121	129	132	144	170	173	199	222	229	226	273
Greece	208	206	198	234	265	187	86	125	146	128	132
Haiti	133	148	146	159	175	192	179	190	232	234	233
Hong Kong	228	230	197	217	295	270	304	319	334	347	356
Ireland	220	229	250	222	256	274	300	291	353	436	448
Israel	189	190	189	233	255	294	187	230	226	206	204
Italy	537	493	529	572	649	662	506	665	710	749	792
Jamaica	429	479	587	682	712	707	851	938	914	899	975
Japan	1,624	1,705	1,819	1,896	2,267	2,435	2,612	3,098	3,748	4,117	4,528
Korea, South	234	228	245	249	290	390	509	521	503	666	826
Mexico	2,886	3,091	2,456	2,691	2,901	2,719	2,843	3,534	3,621	3,816	4,313
Netherlands	427	450	482	467	558	583	589	621	663	763	837
Netherlands Antilles	327	359	332	370	426	407	465	524	610	593	388
Panama Republic	150	151	146	146	169	180	176	165	152	111	153
Philippines	194	244	212	158	165	145	144	182	242	239	246
Spain	312	310	337	376	418	419	304	389	466	503	558
Switzerland	312	321	332	314	427	452	416	532	597	648	616
United Kingdom	2,973	3,092	2,694	2,812	3,222	3,460	3,215	3,884	4,289	4,638	5,166
Venezuela	533	577	581	312	255	248	359	329	401	415	458

Covers passengers on international commercial flights arriving at U.S. airports. Excludes traffic between U.S. and Canada, border crossers, crewmen, and military personnel. Travelers between U.S. ports in the 50 States, Puerto Rico, Guam, or the Virgin Islands, and any other outlying area are included. Data compiled from flight reports of U.S. Immigration and Naturalization Service.

<sup>1</sup> Country where passenger boarded/deboarded a direct flight to/from the U.S.

Note: Sum of components may not equal total due to independent rounding.

Source: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *U.S. International Air Travel Statistics*, annual issues, Tables Ia/Ia.

**Table 15. Air Travel Departures Between the United States and Foreign Countries, 1980-1990  
(thousands)**

**Departures**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Flag of Carrier and Country</b>											
Total Passengers	19,256	19,911	19,322	19,724	21,608	22,487	23,175	26,664	29,421	31,153	34,046
Flag of Carrier:											
United States	9,369	9,581	9,485	9,888	10,531	10,696	10,711	12,853	14,981	15,687	17,628
Foreign	9,886	10,330	9,837	9,837	11,076	11,791	12,464	13,811	14,440	15,466	16,418
Country of debarkation <sup>1</sup>											
Australia	245	258	258	201	223	232	281	349	345	466	540
Bahama Islands	1,006	927	1,009	1,075	1,063	1,151	1,206	1,265	1,318	1,288	1,279
Barbados	126	116	113	168	212	204	213	233	259	221	230
Belgium	231	238	283	226	216	249	285	180	186	294	395
Bermuda	467	417	413	394	395	389	396	367	302	283	277
Brazil	291	301	303	303	304	322	397	396	438	495	560
China/Taiwan	90	105	123	128	167	187	219	240	233	245	337
Colombia	299	315	300	302	290	294	270	279	296	291	277
Denmark	254	243	235	219	235	254	261	295	306	313	307
Dominican Republic	443	466	464	490	479	528	626	710	818	838	896
France	635	646	647	656	748	894	870	1,095	1,309	1,494	1,626
Germany	1,178	1,149	1,164	1,220	1,419	1,539	1,569	1,911	2,152	2,064	2,339
Grand Cayman	112	117	116	135	160	161	175	199	200	199	250
Greece	190	190	197	222	234	210	91	129	140	124	129
Haiti	124	126	131	144	156	169	163	181	225	224	201
Hong Kong	152	166	144	184	263	238	267	270	298	315	310
Ireland	212	219	234	196	212	233	268	281	302	299	311
Israel	186	194	211	228	278	255	236	277	262	256	259
Italy	495	460	500	561	647	660	475	637	667	691	731
Jamaica	382	435	526	601	616	607	778	858	812	798	888
Japan	1,602	1,697	1,779	1,854	2,127	2,255	2,420	2,937	3,580	4,081	4,471
Korea, South	186	188	212	212	244	333	423	459	444	559	723
Mexico	2,886	3,157	2,516	2,670	2,808	2,671	2,878	3,456	3,481	3,656	4,136
Netherlands	409	443	477	458	513	562	557	607	647	714	777
Netherlands Antilles	282	322	297	321	346	395	416	432	511	494	377
Panama Republic	142	141	136	164	194	209	201	168	141	131	183
Philippines	160	178	175	133	166	165	177	162	200	209	195
Spain	273	288	321	350	378	397	302	382	445	484	540
Switzerland	306	315	330	327	409	434	416	527	595	655	600
United Kingdom	2,840	2,989	2,607	2,687	3,103	3,322	3,083	3,696	4,171	4,528	4,903
Venezuela	518	571	571	321	257	245	257	320	391	395	444

Covers passengers on international commercial flights departing from U.S. airports. Excludes traffic between U.S. and Canada, border crossers, crewmen, and military personnel. Travelers between U.S. ports in the 50 States, Puerto Rico, Guam, or the Virgin Islands, and any other outlying area are included. Data compiled from flight reports of U.S. Immigration and Naturalization Service.

<sup>1</sup> Country where passenger boarded/deboarded a direct flight to/from the U.S.

Note: Sum of components may not equal total due to independent rounding.

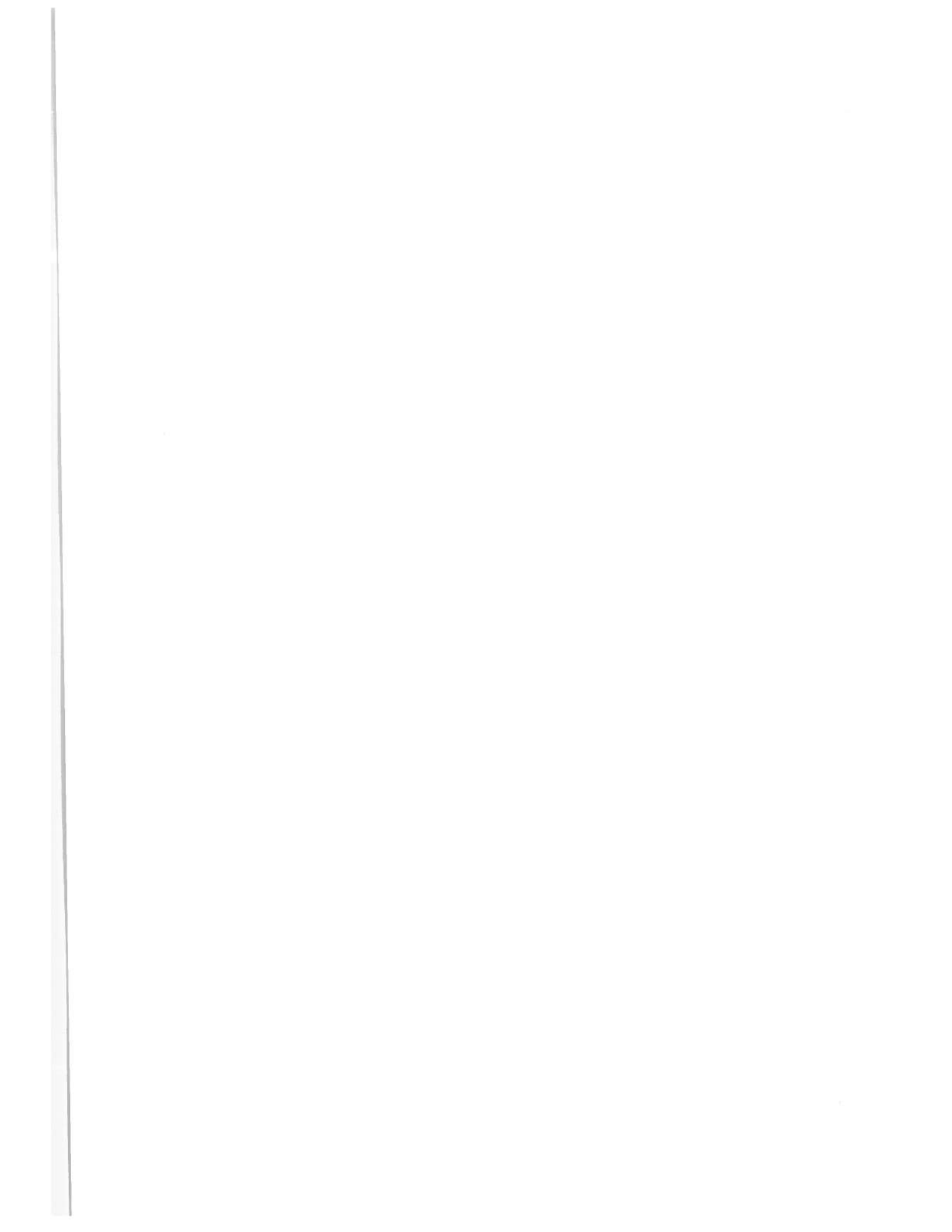
Source: U.S. DOT/RSPA/Volpe National Transportation Systems Center, Cambridge, MA, *U.S. International Air Travel Statistics*, annual issues, Tables Id/II.

**Table 16. Top 50 Airports\*, Large Scheduled Certificated Air Carriers, 1990**

<b>Rank</b>	<b>Airport</b>	<b>Total Enplaned Passengers</b>
1	Chicago (O'Hare), IL	25,636,383
2	Dallas/Ft. Worth (Regional), TX	22,899,267
3	Atlanta, GA	22,665,665
4	Los Angeles, CA	18,438,056
5	San Francisco, CA	13,474,929
6	Denver, CO	11,961,839
7	Phoenix, AZ	10,727,494
8	New York (La Guardia), NY	10,725,465
9	Detroit, MI	9,903,078
10	Newark, NJ	9,853,925
11	New York (John F. Kennedy), NY	9,687,068
12	Boston, MA	9,549,585
13	St. Louis, MO	9,332,091
14	Miami, FL	9,226,103
15	Honolulu, Oahu, HI	9,002,217
16	Minneapolis/St. Paul, MN	8,837,228
17	Pittsburgh, PA	7,912,394
18	Las Vegas, NV	7,796,218
19	Orlando, FL	7,677,769
20	Houston (Intercontinental), TX	7,543,899
21	Seattle-Tacoma, WA	7,385,594
22	Charlotte, NC	7,076,954
23	Washington (National), DC	7,034,693
24	Philadelphia, PA	6,970,820
25	Salt Lake City, UT	5,388,178
26	San Diego, CA	5,260,907
27	Tampa, FL	4,781,020
28	Washington (Dulles Int'l), DC	4,448,592
29	Baltimore, MD	4,420,425
30	Raleigh/Durham, NC	4,361,369
31	Houston (William P. Hobby), TX	3,972,327
32	Cincinnati, OH	3,907,625
33	Memphis, TN	3,887,208
34	Ft. Lauderdale, FL	3,875,357
35	Cleveland, OH	3,836,050
36	San Juan, PR	3,618,090
37	Chicago(Midway), IL	3,547,040
38	Nashville, TN	3,404,243
39	New Orleans, LA	3,361,062
40	Kansas City, MO	3,358,116
41	San Jose, CA	3,128,393
42	Portland, OR	3,025,345
43	Dallas(Love Field), TX	2,882,836
44	Oakland, CA	2,670,788
45	Ontario, CA	2,640,734
46	West Palm Beach, FL	2,609,138
47	Indianapolis, IN	2,601,839
48	San Antonio, TX	2,593,896
49	Albuquerque, NM	2,384,647
50	Hartford, CT	2,312,455

\* Rank order by total enplaned passengers.

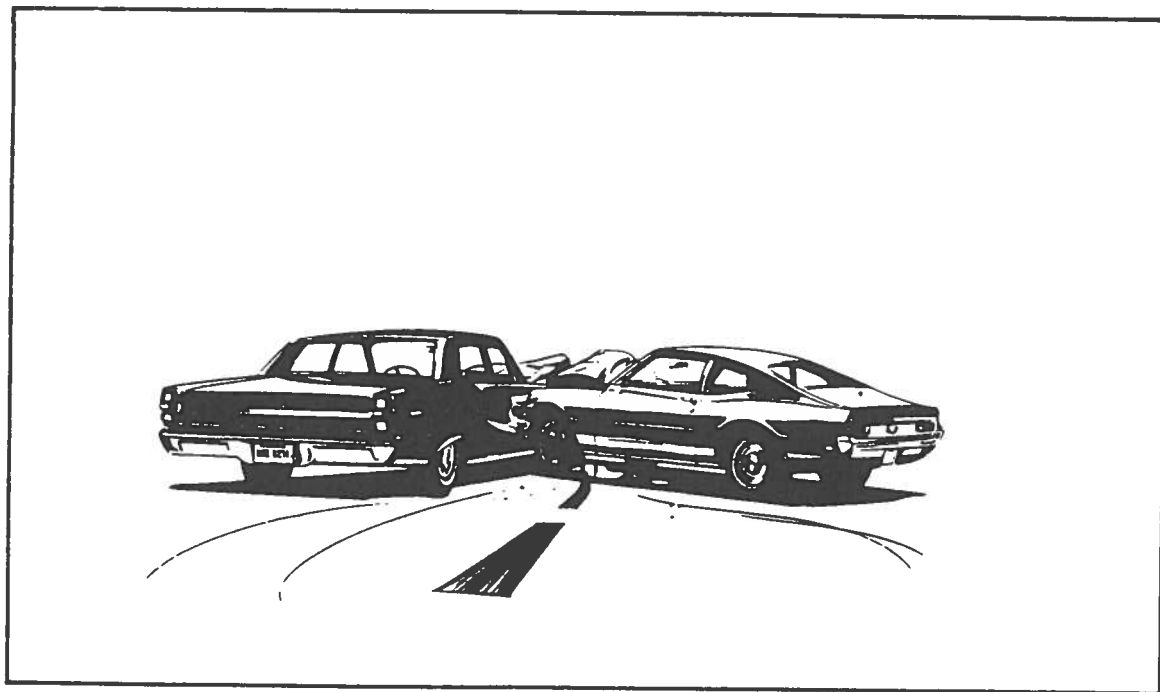
Source: U.S. DOT/FAA, *FAA Statistical Handbook of Aviation*, 1990, Table 4.11.



# TRANSPORTATION TRENDS

## Section II: Safety

This section presents the number of fatalities, accidents, and injuries for the various transportation modes from 1980-1990/1991.



**Table 17. Number of Fatalities by Mode,  
1980-1991**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989 <sup>r</sup>	1990	1991 <sup>p</sup>
<b>Highway</b>												
Motor Vehicle Traffic	51,091	49,301	43,945	42,589	44,257	43,825	46,087	46,390	47,093	45,555	44,529 <sup>r</sup>	41,150
Motor Carriers of Property <sup>1</sup>	2,528	2,810	2,456	2,528	2,721	2,646	2,616	2,907	3,309	3,451	3,281 <sup>p</sup>	1,360
Motor Carriers of Passengers <sup>1</sup>	74	95	76	67	57	62	100	89	64	74	55	36
<b>Railroad</b>												
Rail-Highway Grade Crossing	833	728	607	575	649	582	616	624	689	801	698	611
Rail <sup>2</sup>	584	556	512	498	598	454	475	541	510	523	599	583
<b>Rail Rapid Transit</b>												
	83 <sup>a</sup>	103 <sup>a</sup>	87	50	55	15	41	34	19	45	69	n/a
<b>Aviation</b>												
U.S. Air Carrier <sup>3</sup>	1	4	235	15	4	526	8	232	285	278	39	62
Commuter Air Carrier <sup>4</sup>	37	34	14	11	48	37	4	59	21	31	4	99
On-Demand Air Taxis <sup>5</sup>	105	94	72	62	52	76	65	65	58 <sup>r</sup>	83 <sup>r</sup>	50	69
U.S. General Aviation <sup>6</sup>	1,239	1,282	1,187	1,064	1,039	951 <sup>r</sup>	965	807 <sup>r</sup>	789 <sup>r</sup>	759	745	746
<b>Marine</b>												
Waterborne Transportation	206	154	223	289	113	131	133	119	81	96	54 <sup>p</sup>	n/a
Recreational Boating	1,360	1,206	1,178	1,241	1,063	1,116	1,066	1,036	946	896	865	924
<b>Materials Transport</b>												
Liquid Pipeline	3	5	1	6	0	5	3	3	2	3	3	0
Gas Pipeline	11	16	31	12 <sup>b</sup>	35	26	23	9	18	36	5	14
Hazardous Materials	19	25	13 <sup>r</sup>	8	7	8	17 <sup>r</sup>	10	19	8	8	10

n/a = not available.

r = revised.

p = preliminary.

<sup>a</sup> Fatality data include train accidents, train incidents and nontrain incidents. After 1982, fatalities resulting from train and nontrain accidents.

<sup>b</sup> Beginning with 1983 data, Pipeline Incidents are credited to the year in which they occurred, not the year in which the report was received.

<sup>1</sup> Includes only those motor carriers operating in interstate or foreign commerce.

<sup>2</sup> Fatalities resulting from train accidents, train incidents and non-train incidents.

<sup>3</sup> Large carriers operating under 14 CFR 121, all scheduled and nonscheduled service.

<sup>4</sup> All scheduled service operating under 14 CFR 135 (commuter air carriers).

<sup>5</sup> Nonscheduled service operating under 14 CFR 135 (on-demand air taxis).

<sup>6</sup> All operations other than those operated under 14 CFR 121 and 14 CFR 135.

Source: See Appendix A, p. A-18.



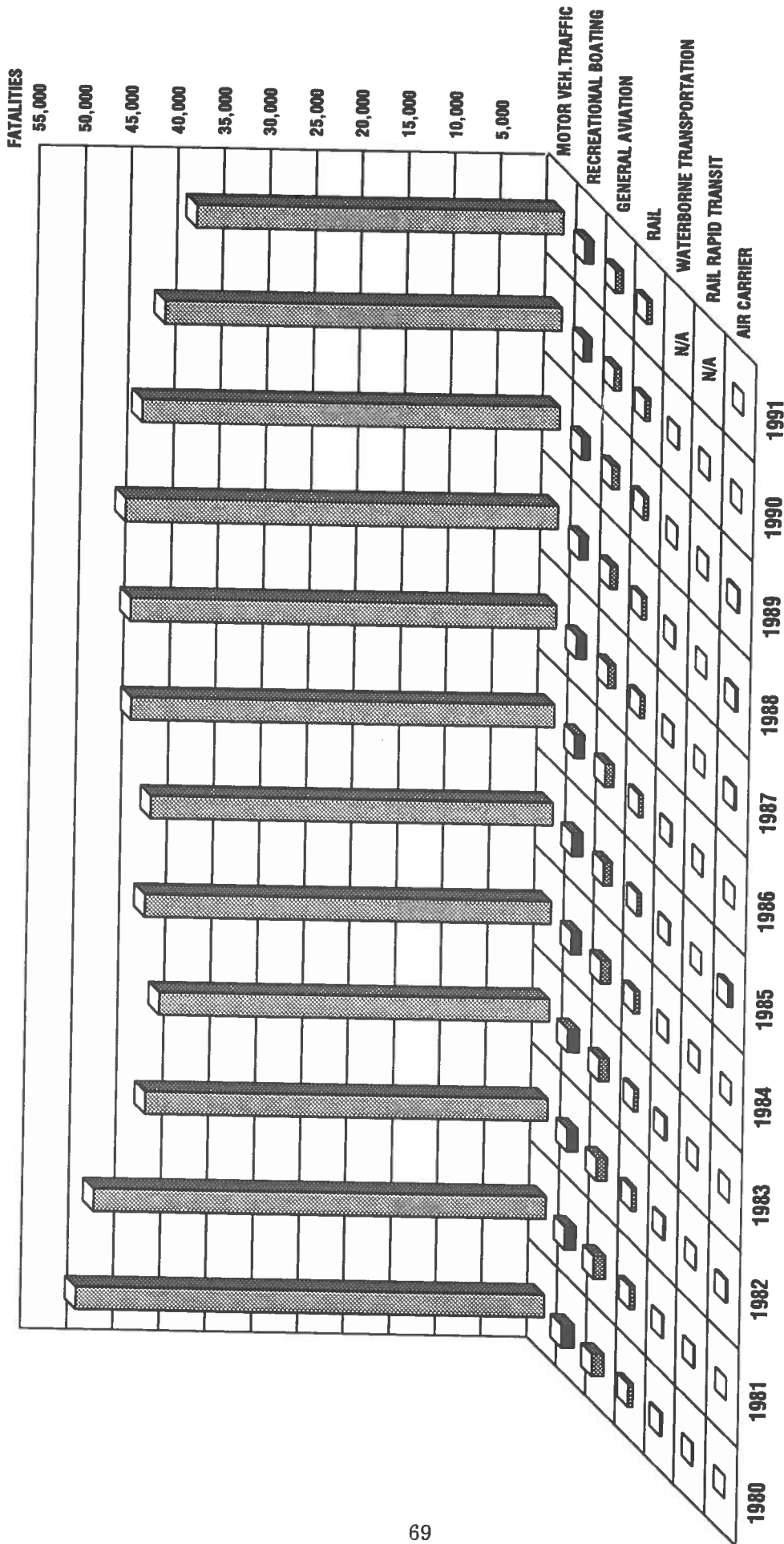


Figure 16. Number of Fatalities by Mode, 1980-1991

n/a = not available.

**Table 18. Reported Near Midair Collisions, by Degree of Hazard, 1980-1990**

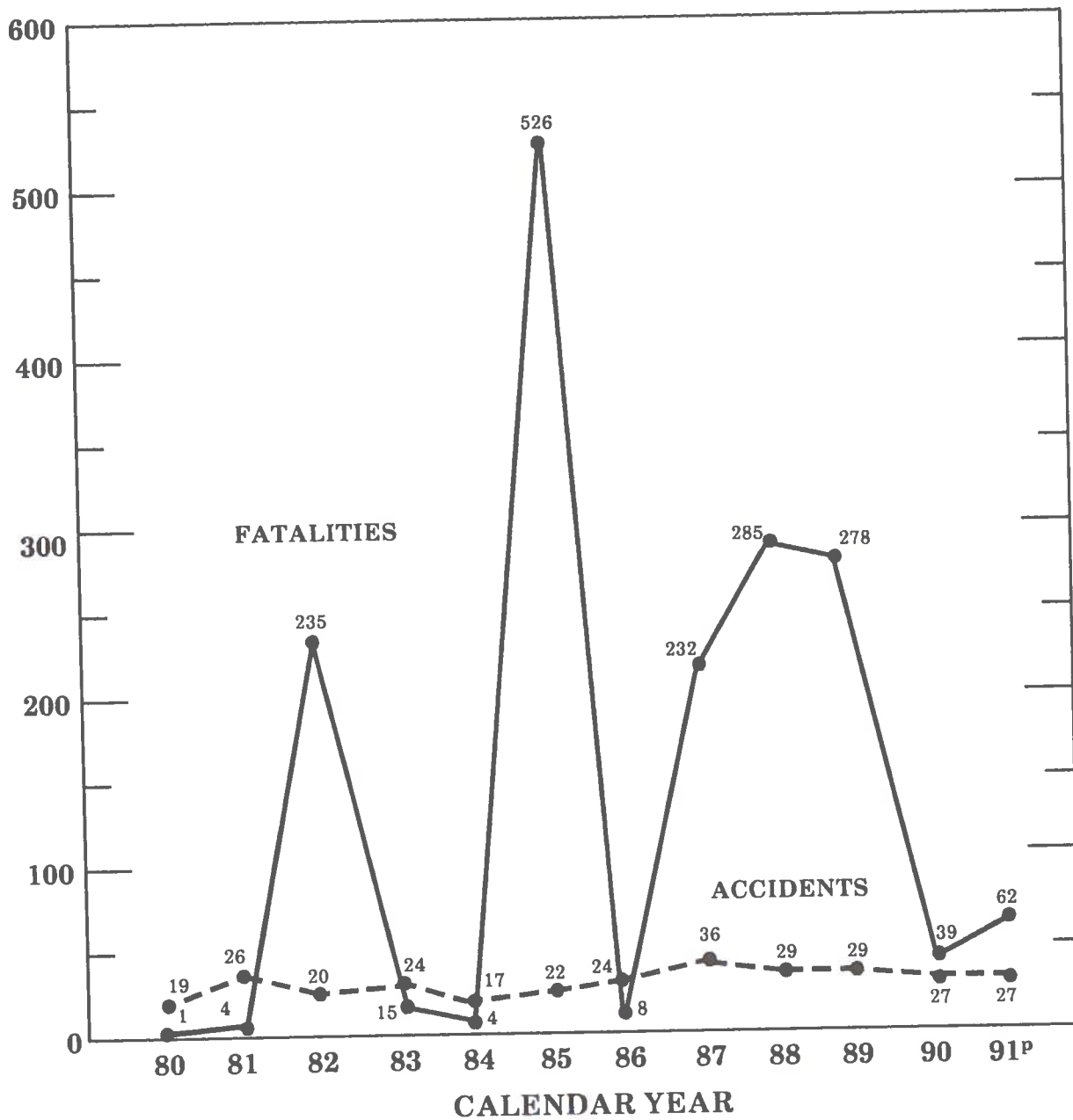
Classification	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Critical	118	84	56	98	127	180	162	190	110	93	73
Potential	319	232	191	283	317	423	473	605	442	322	244
No Hazard	122	76	64	84	115	133	198	263	158	135	107
Unclassified	9	3	0	10	30	22	7	0	0	0	0
Open	0	0	0	0	0	0	0	0	0	0	33
Total	568	395	311	475	589	758	840	1,058	710	550	457

**Critical:** A situation where collision avoidance was due to chance rather than an act on the part of the pilot. Less than 100 feet of aircraft separation would be considered critical.  
**Potential:** An incident which would probably have resulted in a collision if no action had been taken by either pilot. Closest proximity of less than 500 feet would usually be required in this case.  
**No Hazard:** When direction and altitude would have made a midair collision improbable regardless of evasive action taken.  
**Unclassified:** No determination could be made either due to insufficient evidence or unusual circumstances.  
**Open:** Incidents that are still under investigation.  
**Source:** U.S. DOT/FAA, *AXR Statistical Information Summary*, June 1991.

**Table 19. Airline Passenger Screening Results, 1980-1990**

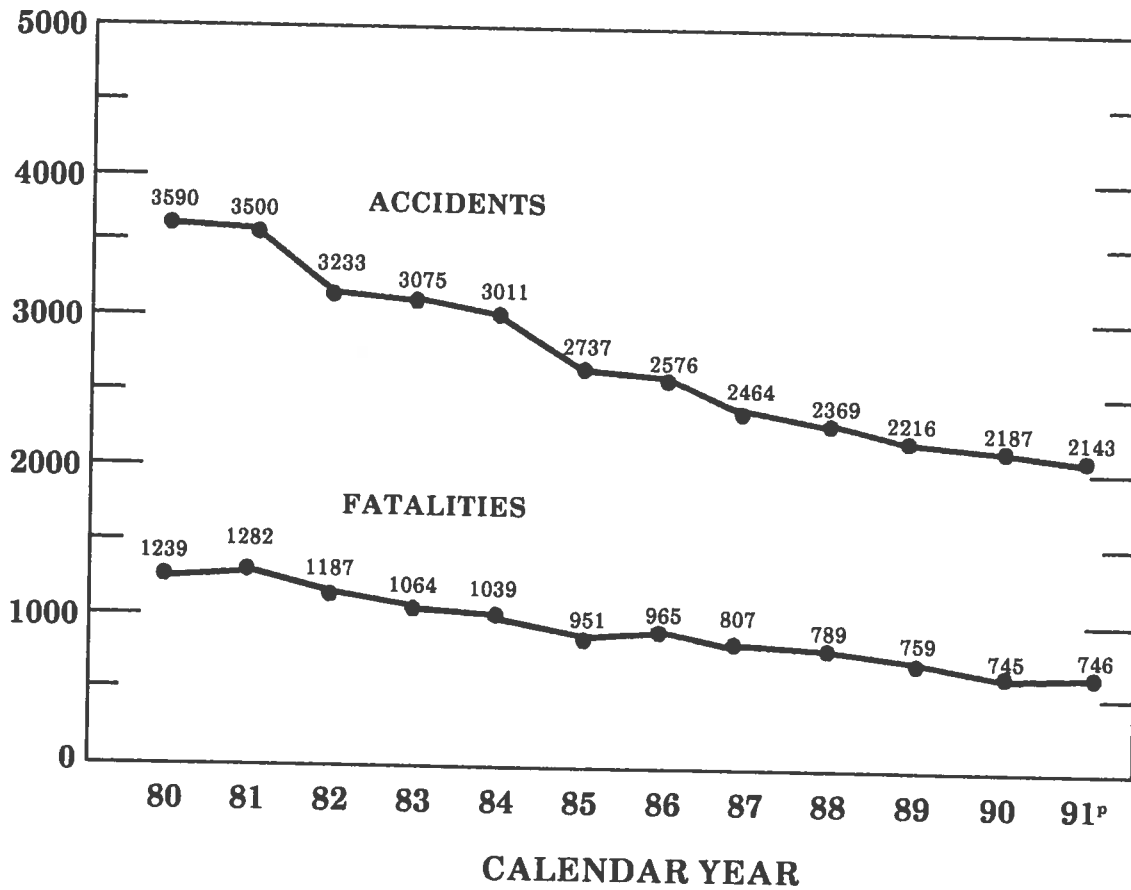
Screening Category	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Persons Screened (millions)	585	599	630	709	776	993	1,055	1,096	1,055	1,113	1,145
Weapons Detected											
Firearms	2,022	2,255	2,676	2,784	2,957	2,987	3,241	3,252	2,773	2,879	2,853
(1) Handguns	1,878	2,124	2,559	2,634	2,766	2,823	2,981	3,012	2,591	2,397	2,490
(2) Long Guns	36	44	57	67	98	90	146	99	76	92	59
(3) Other	108	87	60	83	91	74	114	141	108	390	304
Explosive/Incendiary Devices	8	11	1	4	6	12	11	14	11	26	15
Persons Arrested											
For Carriage of Firearms/Explosives	1,031	1,187	1,314	1,282	1,285	1,310	1,415	1,581	1,493	1,436	1,337
For Giving False Information	32	49	27	34	27	42	89	81	222	83	18

Source: U.S. DOT/FAA, *Annual Report to Congress on the Effectiveness of the Civil Aviation Security Program*, March 1992.



**Figure 17. U.S. Air Carrier Fatalities and Accidents\*, 1980-1991**

<sup>p</sup> = preliminary.  
<sup>\*</sup> Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during 14 CFR 121 operations.  
 Source: NTSB, *NTSB Aviation Accident Statistics*, January 1992, and earlier editions.

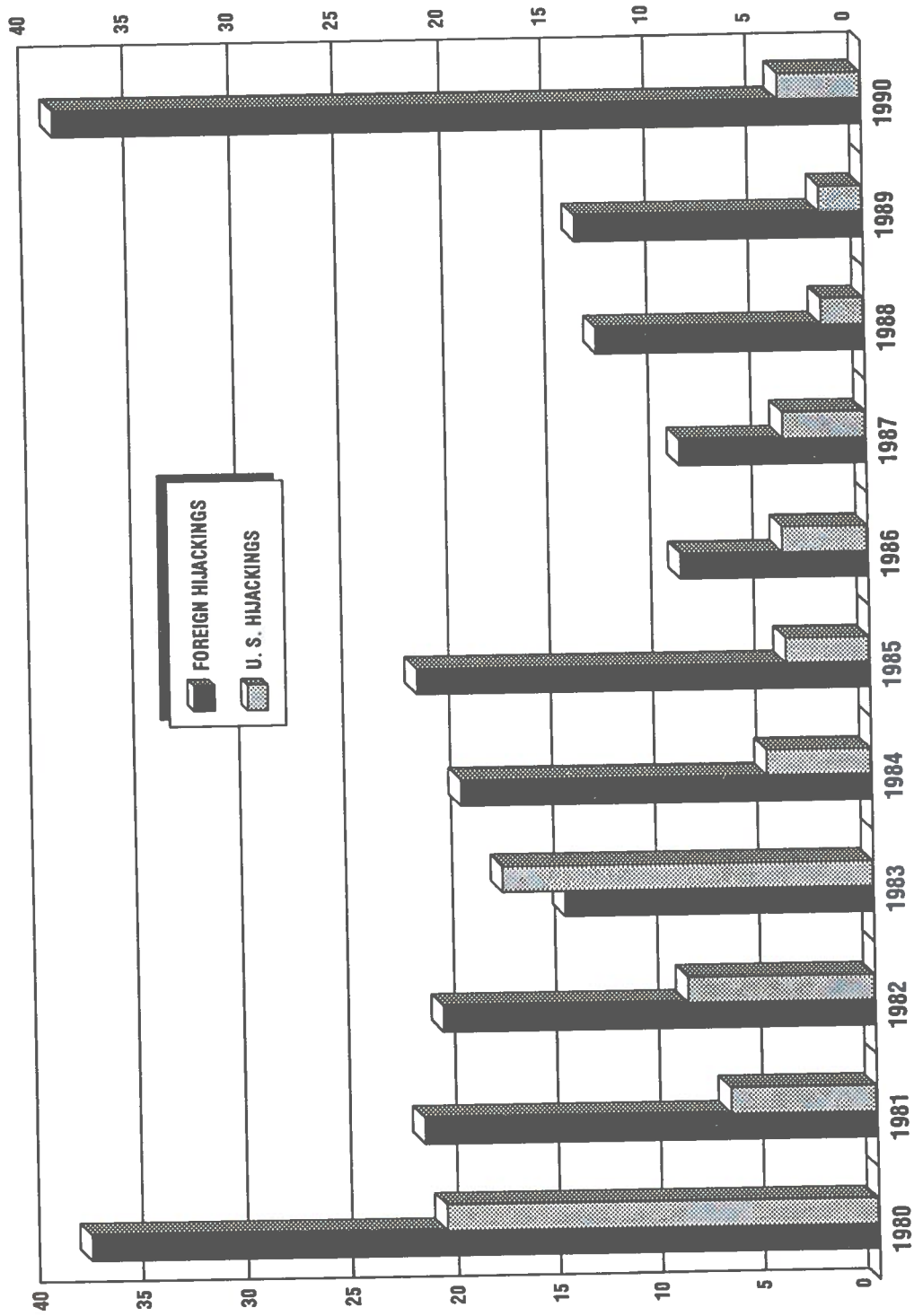


**Figure 18. General Aviation\* Fatalities and Accidents, 1980-1991**

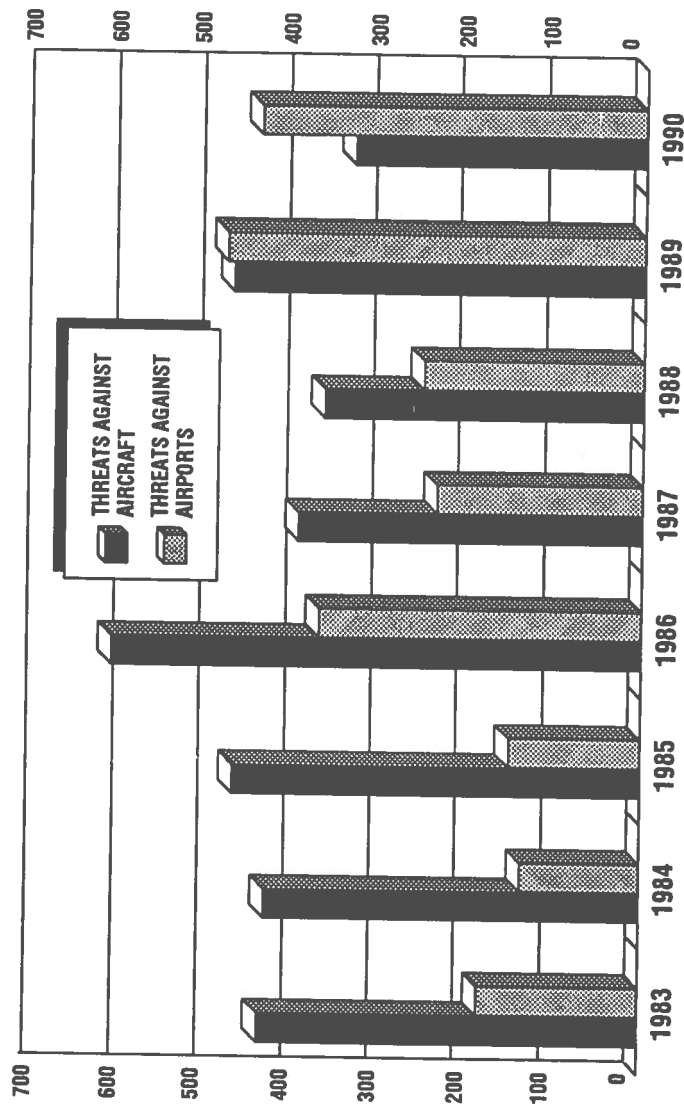
<sup>p</sup> = preliminary.

\* All operations other than those operated under 14 CFR 121 or 14 CFR 135.

Source: NTSB, *NTSB Aviation Accident Statistics*, January 1992, and earlier editions.



**Figure 19. U.S. and Foreign Air Carrier Aircraft Hijackings, 1980-1990**  
 Source: U.S. DOT/FAA, *Annual Report to Congress on the Effectiveness of the Civil Aviation Security Program*, March 1992.



**Figure 20. Bomb Threats Against U.S. Aircraft and U.S. Airports, 1983-1990**

Source: U.S. DOT/FAA, *Annual Report to Congress on the Effectiveness of the Civil Aviation Security Program*, March 1992.

**Table 20. Restraint Usage and Injury Severity of Passenger Car Occupants, 1981-1990**

<b>Injury Severity and Year</b>	<b>Restrained</b>	<b>Unrestrained</b>	<b>Unknown Restraint</b>	<b>Total</b>
<b>Fatal Injury</b>				
1981	568	21,086	4,891	26,545
1982	584	18,104	4,410	23,098
1983	748	17,895	4,332	22,975
1984	1,057	18,001	4,550	23,608
1985	2,115	16,773	4,304	23,192
1986	3,557	17,585	3,802	24,944
1987	4,504	17,276	3,352	25,132
1988	5,380	17,566	2,862	25,808
1989	5,569	16,734	2,743	25,046
1990	5,728	15,661	2,636	24,025
<b>Incapacitating Injury</b>				
1981	330	10,995	2,164	13,489
1982	341	9,625	2,150	12,116
1983	529	9,002	2,181	11,712
1984	777	9,072	2,084	11,933
1985	1,543	8,649	1,929	12,121
1986	2,564	8,838	1,726	13,128
1987	3,230	8,560	1,645	13,435
1988	3,621	8,030	1,483	13,134
1989	3,709	7,533	1,404	12,646
1990	3,686	6,762	1,304	11,752
<b>Non-Incapacitating Injury</b>				
1981	310	6,901	2,236	9,447
1982	310	5,843	1,790	7,943
1983	464	5,844	1,750	8,058
1984	666	5,709	1,833	8,208
1985	1,314	4,695	1,721	7,730
1986	2,006	4,540	1,432	7,978
1987	2,567	4,400	1,096	8,063
1988	2,927	4,539	844	8,310
1989	3,083	4,393	758	8,234
1990	3,183	3,994	778	7,955
<b>Possible Injury</b>				
1981	198	2,962	785	3,945
1982	163	2,268	680	3,111
1983	207	1,984	673	2,864
1984	351	1,998	764	3,113
1985	695	1,721	691	3,107
1986	1,310	1,577	667	3,554
1987	1,805	1,520	522	3,847
1988	2,044	1,632	374	4,050
1989	2,256	1,624	359	4,239
1990	2,404	1,501	361	4,266



**Table 20. Restraint Usage and Injury Severity of Passenger Car Occupants  
1981-1990 (cont'd)**

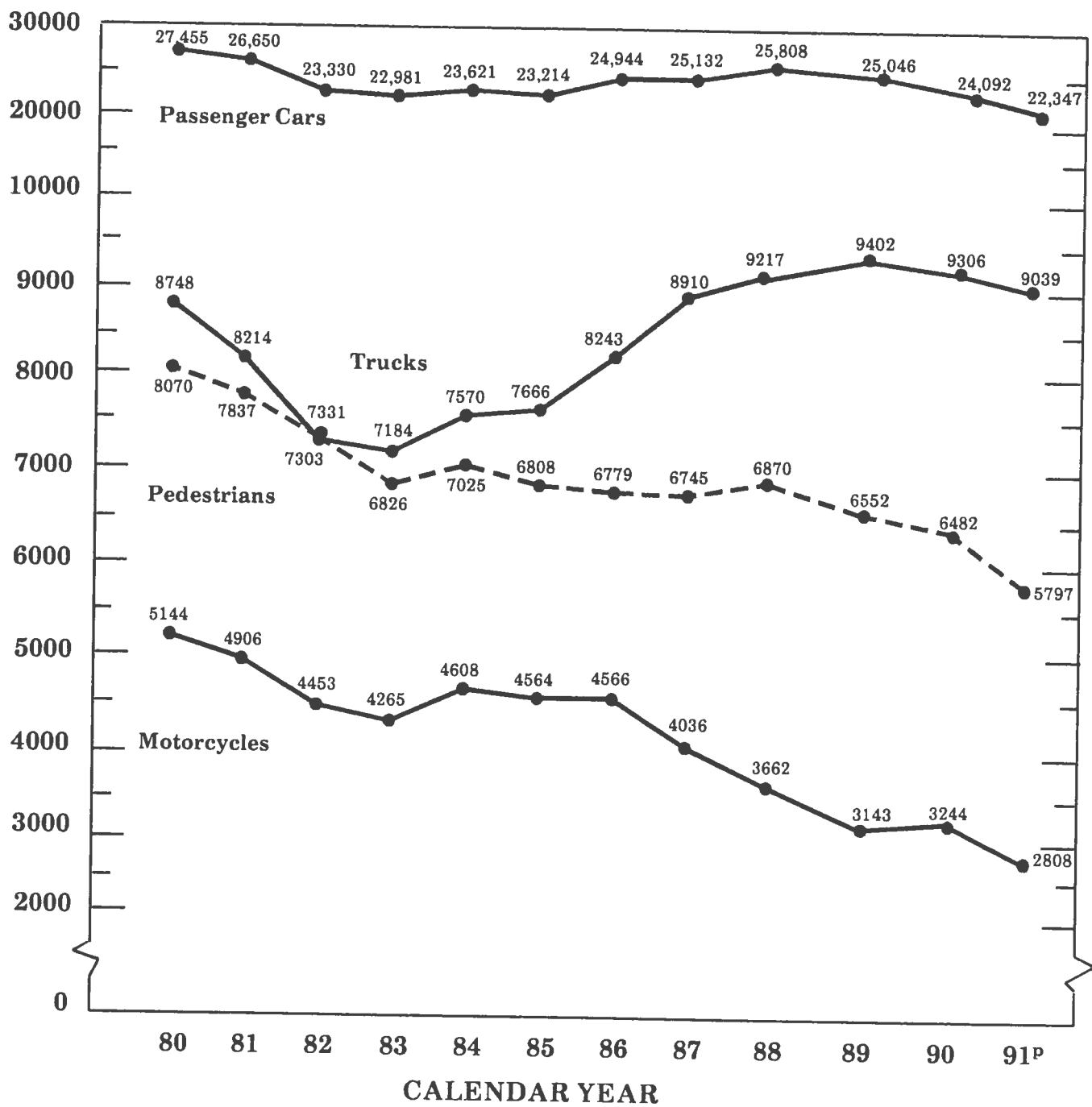
<b>Injury Severity and Year</b>	<b>Restrained</b>	<b>Unrestrained</b>	<b>Unknown Restraint</b>	<b>Total</b>
<b>No Injury</b>				
1981	485	8,523	3,456	12,464
1982	533	7,857	3,373	11,763
1983	765	7,347	3,412	11,524
1984	1,079	7,274	3,733	12,086
1985	2,574	5,647	3,929	12,150
1986	4,175	4,655	3,686	12,516
1987	5,567	3,812	3,118	12,497
1988	6,245	3,620	2,422	12,287
1989	5,938	3,000	2,166	11,104
1990	6,131	2,528	2,306	10,965
<b>Unknown</b>				
1981	12	276	107	395
1982	10	287	315	612
1983	7	93	241	341
1984	9	125	251	385
1985	83	350	314	747
1986	155	336	333	824
1987	174	300	314	788
1988	204	310	306	820
1989	86	134	267	487
1990	68	119	296	483
<b>Total</b>				
1981	1,903	50,743	13,639	66,285
1982	1,941	43,984	12,718	58,643
1983	2,720	42,165	12,589	57,474
1984	3,939	42,179	13,215	59,333
1985	8,324	37,835	12,888	59,047
1986	13,767	37,531	11,646	62,944
1987	17,847	35,868	10,047	63,762
1988	20,421	35,697	8,291	64,409
1989	20,641	33,418	7,697	61,756
1990	21,200	30,565	7,681	59,446

Source: U.S. DOT/NHTSA, 1990 *Fatal Accident Reporting System*, Table 10, and similar table in earlier editions.

**Table 21. Fatalities by Highest Blood Alcohol Concentration (BAC)  
in the Crash, 1982-1990**

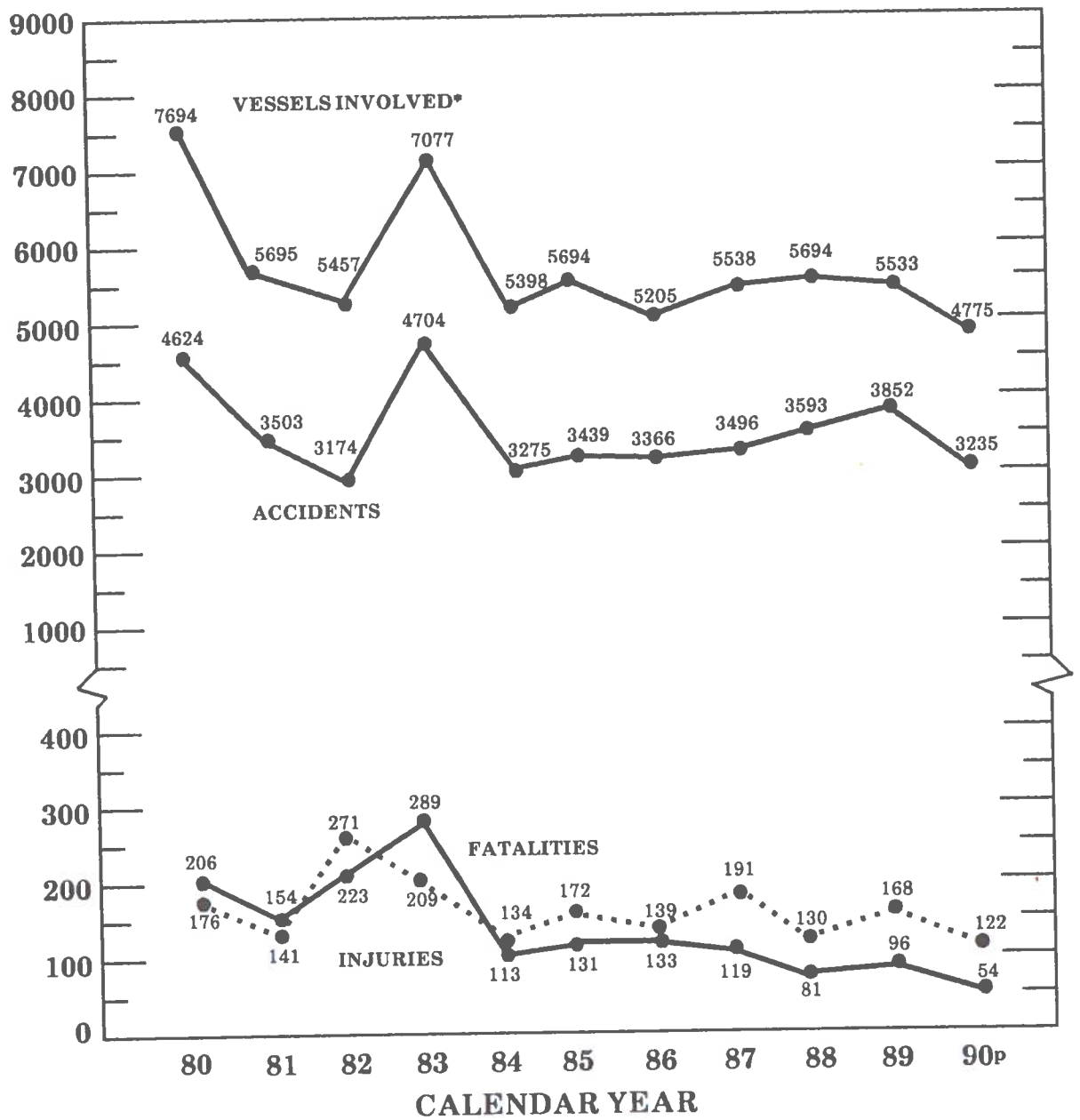
Year	BAC = 0.00		BAC = 0.01 - 0.09		BAC = 0.10 +		Total		Total Fatalities in Alcohol-Related Crashes	
	Number	Percent	Number	Percent	Number	Percent	Total	Number	Percent	
1982	18,780	42.7	4,809	10.9	20,356	46.3	43,945	25,165	57.3	
1983	18,943	44.5	4,472	10.5	19,174	45.0	42,589	23,646	55.5	
1984	20,499	46.3	4,766	10.8	18,992	42.9	44,257	23,758	53.7	
1985	21,109	48.2	4,604	10.5	18,111	41.3	43,825	22,715	51.8	
1986	22,042	47.8	5,109	11.1	18,936	41.1	46,087	24,045	52.2	
1987	22,749	49.0	5,112	11.0	18,529	39.9	46,390	23,641	51.0	
1988	23,461	49.8	4,895	10.4	18,731	39.8	47,087	23,626	50.2	
1989	23,146	50.8	4,574	10.0	17,862	39.2	45,582	22,436	49.2	
1990	22,445	50.4	4,412	9.9	17,671	39.7	44,529	22,083	49.6	

Source: U.S. DOT/NHTSA, 1990 Fatal Accident Reporting System, Table 12.



**Figure 21. Traffic Fatalities by Major Categories, 1980-1991**

p = preliminary.  
 Source: 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *Transportation Safety Information Report*, 1989 Annual Summary.  
 1990-1991: U.S. DOT/NHTSA, National Center for Statistics and Analysis, NRD-30.



**Figure 22. Waterborne Fatalities, Accidents, and Injuries, 1980-1990**

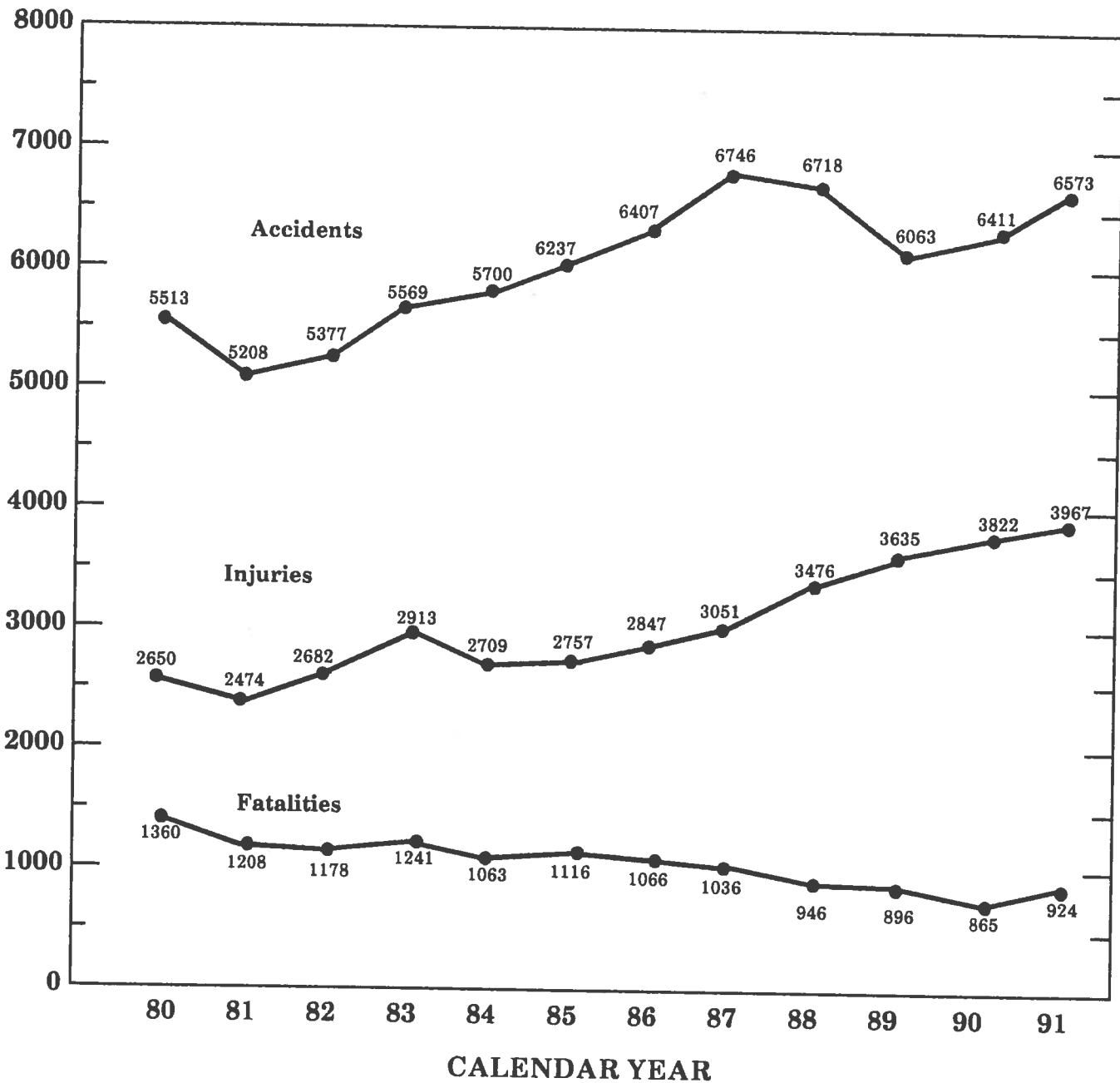
p = preliminary.

\* More than one vessel may be involved in a marine accident.

Note: All deaths and injuries cited result from vessel casualties.

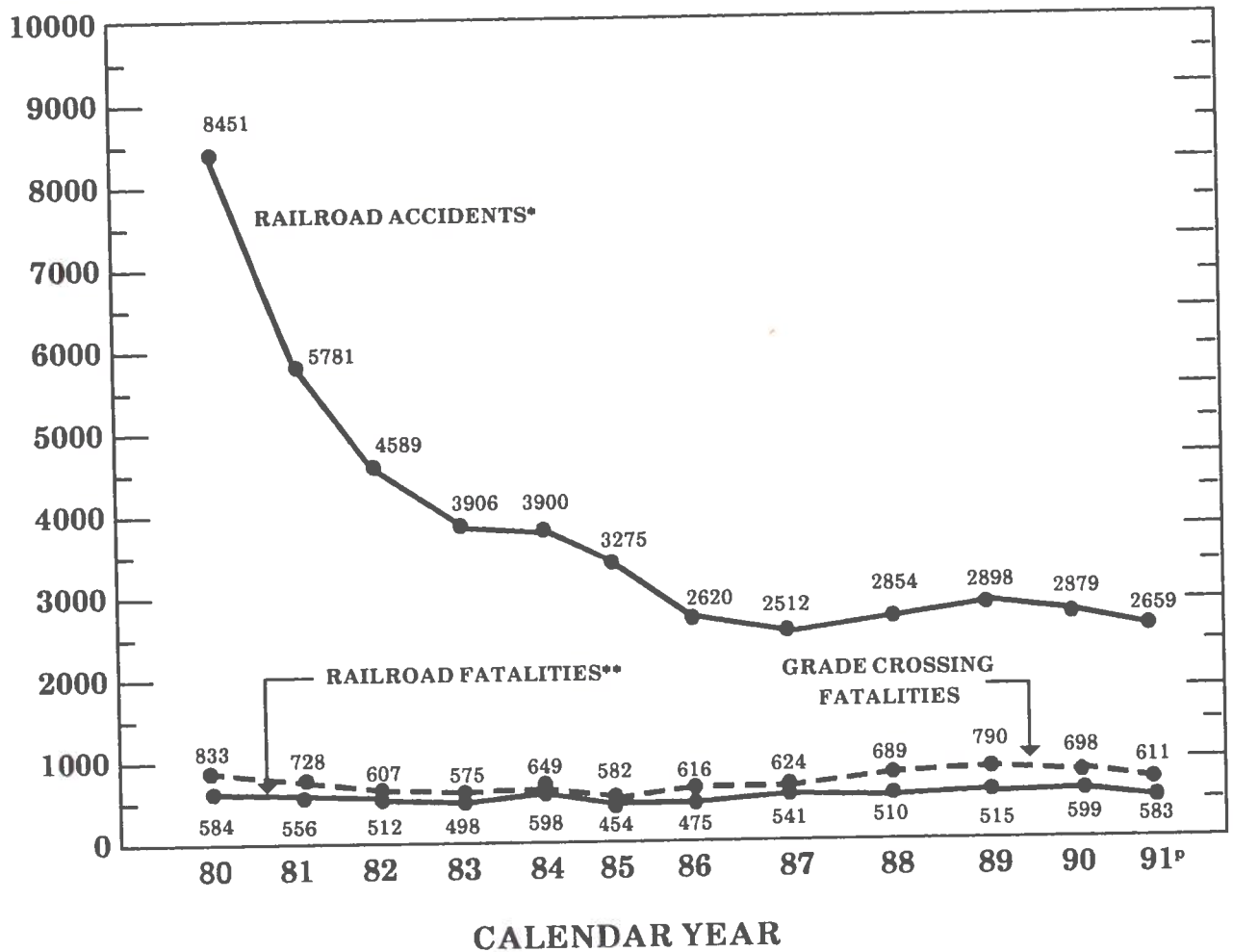
Source: 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *Transportation Safety Information Report, 1989 Annual Summary*.

1990: U.S. DOT/USCG/Marine Safety Evaluation Branch, G-MMI-3.



**Figure 23. Recreational Boating Fatalities, Accidents, and Injuries, 1980-1991**

Note: Only a small fraction of property damages and non-fatal accidents are reported to the Coast Guard.  
 Source: 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *Transportation Safety Information Report*, 1989 Annual Summary.  
 1990-1991: U.S. DOT/USCG, Auxiliary, Boating and Consumer Affairs Division, G-NAB.



**Figure 24. Railroad Fatalities and Accidents, and Grade Crossing Fatalities, 1980-1991**

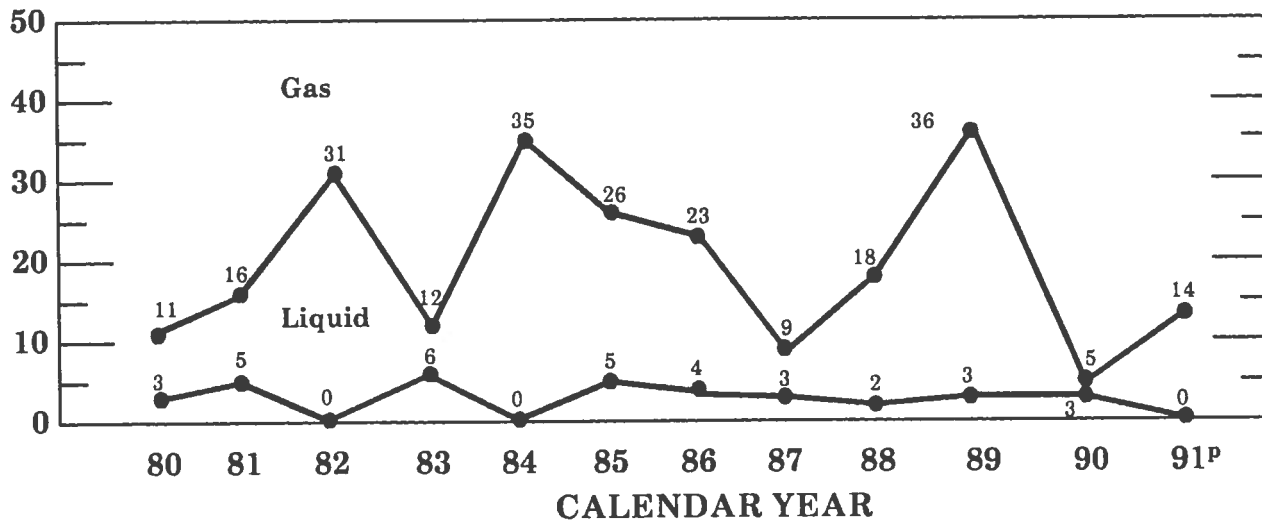
p = preliminary.

\* Train accidents only--also includes those grade crossing accidents that have been classified as train accidents.

\*\* Fatalities resulting from train accidents, train incidents and nontrain incidents.

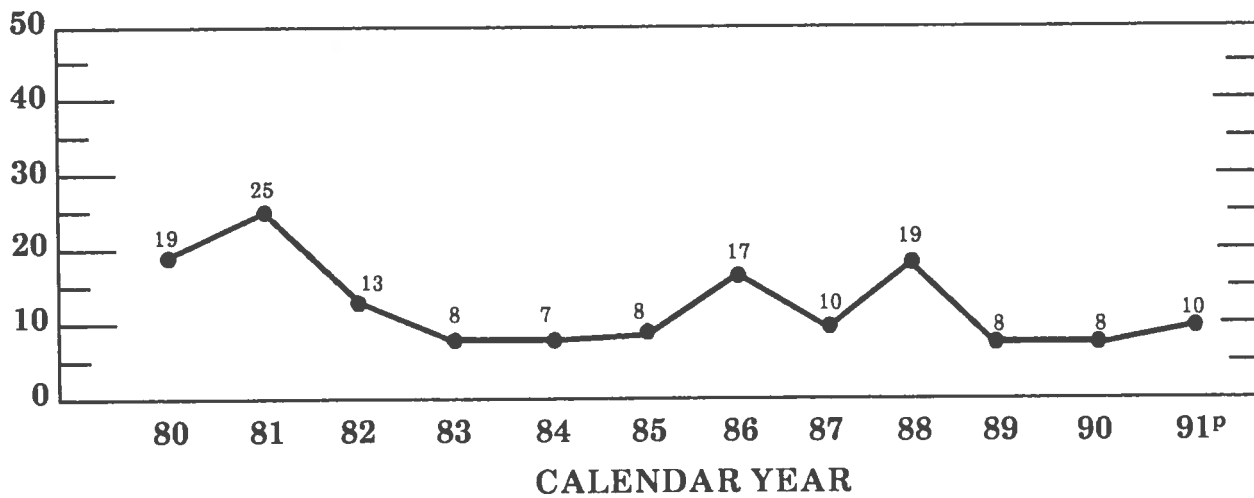
Source: 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *Transportation Safety Information Report*, 1989 Annual Summary.

1990-1991: U.S. DOT/FRA, Systems Support Division, RRS-22.



**Figure 25. Liquid and Gas Pipeline Fatalities, 1980-1991**

<sup>p</sup> = preliminary.  
 Source: 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *Transportation Safety Information Report*, 1989 Annual Summary.  
 1990-1991: U.S. DOT/RSPA, Office of Pipeline Safety, DPS-21.1.



**Figure 26. Hazardous Materials Fatalities, 1980-1991**

<sup>p</sup> = preliminary.  
 Source: 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center, *Transportation Safety Information Report*, 1989 Annual Summary.  
 1990-1991: U.S. DOT/RSPA, Office of Hazardous Materials Transportation, DHM-63.

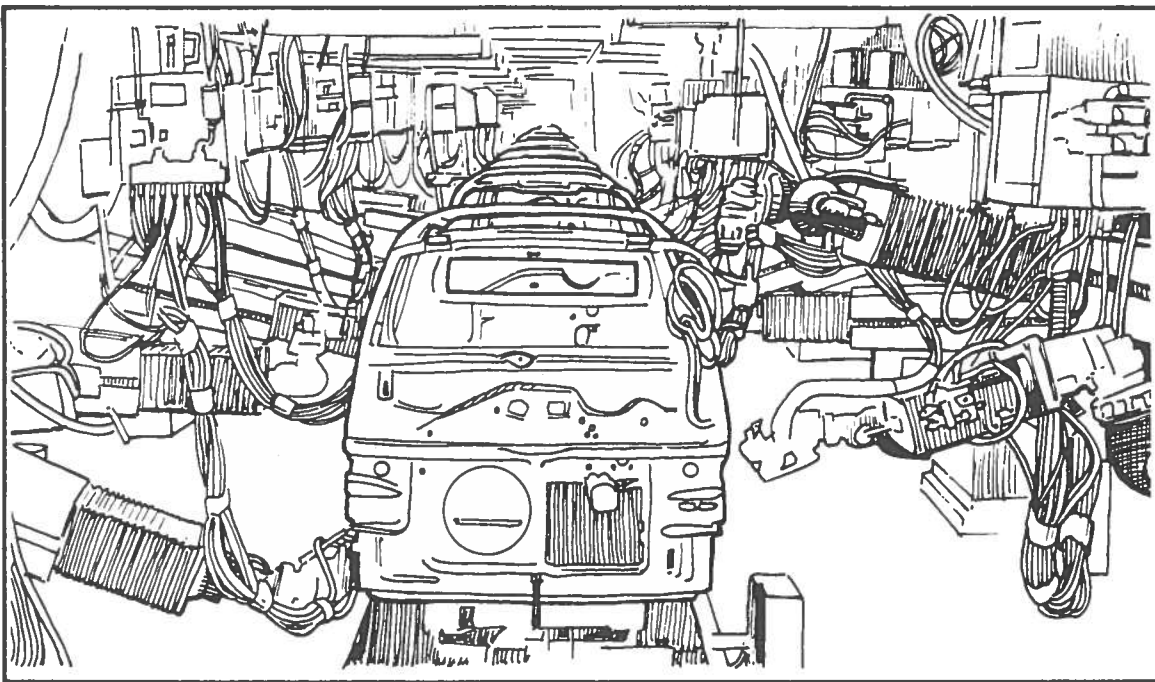




# TRANSPORTATION TRENDS

## Section III: Motor Vehicle Sales, Production, and Costs

This section includes data for 1980-1991 depicting the number of motor vehicles produced and sold in the U.S. and worldwide. Also shown are the passenger car operating costs over the same period.



**Table 22. U.S. Retail Passenger Car Sales,  
1980-1991  
(thousands)**

Year	Domestic	Imports				Total Passenger Car Sales
		Japan	Germany	Other	Total	
1980	6,581	1,906	305	187	2,398	8,979
1981	6,209	1,859	283	186	2,327	8,536
1982	5,759	1,802	247	174	2,223	7,982
1983	6,795	1,916	280	191	2,387	9,182
1984	7,952	1,906	344	188	2,439	10,390
1985	8,205	2,218	424	196	2,838	11,042
1986	8,215	2,383	444	418	3,245	11,460
1987	7,081	2,190	348	657	3,196	10,277
1988	7,526	2,023	280	701	3,004	10,523
1989	7,073	1,897	249	554	2,699	9,772
1990	6,897	1,719	265	419	2,403	9,300
1991	6,137	1,500	193	345	2,038	8,175

Note: Sum of components may not equal total due to independent rounding.  
Source: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts & Figures*, 1992, p. 16.

**Table 23. Annual U.S. Motor Vehicle Production and Factory Sales,  
1980-1991  
(thousands)**

Year	Production			Factory Sales		
	Passenger Cars	Motor Trucks and Buses	Total Vehicles	Passenger Cars	Motor Trucks and Buses	Total Vehicles
1980	6,376	1,634	8,010	6,400	1,667	8,067
1981	6,253	1,690	7,943	6,255	1,701	7,956
1982	5,073	1,912	6,986	5,049	1,906	6,956
1983	6,781	2,444	9,225	6,739	2,414	9,153
1984	7,773	3,151	10,925	7,621	3,075	10,697
1985	8,185	3,468	11,653	8,002	3,357	11,359
1986	7,829	3,506	11,335	7,516	3,393	10,909
1987	7,099	3,826	10,925	7,085	3,821	10,907
1988	7,113	4,101	11,214	7,105	4,121	11,225
1989	6,823	4,051	10,874	6,807	4,062	10,869
1990	6,077	3,706	9,783	6,050	3,719	9,769
1991	5,439	3,372	8,811	5,407	3,775	8,783

Note: Sum of components may not equal total due to independent rounding. Factory sales in 1980 and 1981 were greater than production total because of sales from previous year's inventory.  
Source: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts & Figures*, 1992, p. 6.

**Table 24. U.S. Retail Sales of New Cars by Sector,  
1980-1991**

Year	Units by Consuming Sector (000)				% of Total Sales	
	Consumer	Business	Government	Total	Consumer	Business
1980	6,062	2,791	126	8,979	67.5	31.1
1981	5,623	2,787	116	8,535	66.0	32.7
1982	5,285	2,593	102	7,980	66.2	32.5
1983	6,054	3,006	119	9,179	66.0	32.7
1984	6,590	3,669	135	10,394	63.4	35.3
1985	7,083	3,822	134	11,039	64.2	34.6
1986	7,658	3,666	127	11,450	66.9	32.0
1987	6,748	3,395	135	10,278	65.7	33.0
1988	6,802	3,699	138	10,639	63.9	34.8
1989	6,375	3,402	136	9,913	64.3	34.3
1990	5,792	3,553	163	9,508	60.9	37.4
1991	4,534	3,758	97	8,389	54.0	44.8

Source: 1980-1990: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts and Figures*, 1991, p. 16.  
1991: U.S. Department of Commerce, Bureau of Economic Analysis.

**Table 25. Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Automobiles, Model Years 1980-1991<sup>a</sup>**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991 <sup>p</sup>
<b>MINICOMPACT</b>												
Total sales, units	428,346	296,702	221,699	230,547	41,368	52,295	191,490	146,872	84,186	20,677	76,698	38,049
Market share, %	4.7	3.3	2.9	2.6	0.4	0.5	1.7	1.4	0.8	0.2	0.8	0.9
Fuel economy, mpg	29.4	33.3	36.5	36.5	29.0	32.7	31.9	33.1	37.8	24.9	26.4	27.9
<b>SUBCOMPACT</b>												
Total sales, units	3,441,480	2,927,574	2,404,489	2,353,847	2,510,929	2,248,965	2,350,031	1,903,092	1,983,353	1,963,385	2,030,226	1,029,030
Market share, %	37.8	33.0	31.4	26.8	24.6	20.5	21.2	18.2	19.1	19.3	22.0	25.7
Fuel economy, mpg	27.3	29.3	30.2	30.7	30.5	30.0	30.7	30.7	31.7	31.3	31.3	31.6
<b>COMPACT</b>												
Total sales, units	599,423	1,191,194	1,300,372	1,927,460	2,768,056	2,659,492	3,829,093	4,205,922	4,199,638	3,690,419	3,156,481	1,197,319
Market share, %	6.6	13.4	17.0	22.0	27.1	33.4	34.5	40.3	43.5	36.3	34.2	29.9
Fuel economy, mpg	22.3	27.8	30.1	29.9	30.6	29.7	30.0	29.9	29.8	29.8	28.9	28.6
<b>MIDSIZE</b>												
Total sales, units	3,073,103	3,113,806	2,533,121	2,779,178	3,059,647	3,117,817	2,985,835	2,535,712	2,550,964	2,939,948	2,511,503	1,107,166
Market share, %	33.8	35.1	33.1	31.7	30.0	28.4	26.9	24.3	24.6	28.9	27.2	27.6
Fuel economy, mpg	21.3	22.9	24.1	24.3	24.1	24.9	25.6	26.3	26.9	26.4	25.9	25.8
<b>LARGE</b>												
Total sales, units	1,336,190	1,107,627	995,561	1,275,939	1,502,097	1,516,249	1,467,077	1,396,687	1,368,713	1,400,514	1,279,092	567,067
Market share, %	14.7	12.5	13.0	14.5	14.7	13.8	13.2	13.4	13.2	13.8	13.9	14.2
Fuel economy, mpg	19.3	20.6	20.6	19.5	20.2	22.3	23.8	23.9	24.2	23.9	23.5	23.3
<b>TWO SEATER</b>												
Total sales, units	215,964	242,961	202,929	203,442	328,968	373,697	275,470	245,852	186,127	158,884	170,465	68,621
Market share, %	2.4	2.7	2.6	2.3	3.2	3.4	2.5	2.4	1.8	1.6	1.8	1.7
Fuel economy, mpg	21.0	24.1	25.1	23.7	26.5	27.6	28.4	26.9	27.3	27.0	28.0	27.4
<b>FLEET</b>												
Total sales, units	9,094,506	8,879,864	7,658,171	8,770,413	10,211,065	10,968,515	11,099,046	10,434,137	10,372,985	10,173,827	9,224,465	4,007,252
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	23.2	25.3	26.3	26.1	26.3	27.0	27.9	28.1	28.5	28.0	27.6	27.5

<sup>a</sup> These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

<sup>p</sup> = preliminary. Represents sales for the first six months of model year 1991 (October through March).

Source: Oak Ridge National Laboratory, *Light-Duty Vehicle Summary: First Six Months of Model Year 1991, Table 1.*

**Table 26. Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Light Trucks, Model Years 1980-1991<sup>a</sup>**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991 <sup>p</sup>
<b>SMALL PICKUP</b>												
Total sales, units	516,412	472,611	579,263	894,432	1,012,298	1,135,666	1,225,570	1,153,704	1,026,551	877,839	678,488	286,669
Market share, %	23.3	24.4	27.2	33.3	28.0	26.8	27.0	25.2	21.6	18.4	15.0	15.4
Fuel economy, mpg	25.5	28.1	28.1	27.2	27.2	27.3	26.1	26.6	26.1	25.7	25.2	25.6
<b>LARGE PICKUP</b>												
Total sales, units	1,115,248	967,242	1,000,772	958,408	1,218,972	1,407,153	1,325,547	1,324,839	1,453,255	1,580,916	1,573,729	594,297
Market share, %	50.3	50.0	46.9	35.7	33.7	33.2	29.2	28.9	30.6	33.2	34.9	32.0
Fuel economy, mpg	17.0	18.5	18.6	18.4	17.5	18.1	18.4	18.2	18.6	18.2	18.9	18.9
<b>SMALL VAN</b>												
Total sales, units	13,649	11,007	11,964	13,716	222,798	437,660	640,936	733,504	851,384	859,311	932,693	409,411
Market share, %	0.6	0.6	0.6	0.5	6.2	10.3	14.1	16.0	18.0	18.0	20.7	22.1
Fuel economy, mpg	19.6	18.8	22.5	21.0	25.0	23.9	23.8	23.4	22.9	22.9	23.1	22.6
<b>LARGE VAN</b>												
Total sales, units	328,065	327,730	379,110	484,349	545,595	536,242	510,558	473,268	486,981	471,762	398,877	137,472
Market share, %	14.8	16.9	17.8	18.0	15.1	12.7	11.3	10.3	10.3	9.9	8.8	7.4
Fuel economy, mpg	16.3	17.4	17.0	17.2	16.3	16.4	17.3	16.6	17.0	16.7	16.9	17.1
<b>SMALL UTILITY</b>												
Total sales, units	79,776	42,813	31,226	170,519	398,000	485,670	598,652	689,318	701,005	747,550	738,294	365,578
Market share, %	3.6	2.2	1.5	6.3	11.0	11.5	13.2	15.1	14.8	15.7	16.4	19.7
Fuel economy, mpg	16.7	19.5	20.0	23.0	23.0	22.3	21.5	22.9	22.3	21.7	21.9	21.3
<b>LARGE UTILITY</b>												
Total sales, units	163,387	114,013	130,505	165,875	215,271	232,974	233,625	205,403	223,824	228,664	192,544	62,875
Market share, %	7.4	5.9	6.1	6.2	6.0	5.5	5.2	4.5	4.7	4.8	4.3	3.4
Fuel economy, mpg	14.6	16.2	17.0	16.8	15.7	16.5	15.9	16.1	16.2	16.2	16.1	16.2
<b>FLEET</b>												
Total sales, units	2,216,537	1,935,416	2,132,840	2,687,299	3,612,934	4,235,365	4,534,888	4,580,036	4,743,000	4,766,042	4,514,625	1,856,302
Market share, %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	18.1	19.8	20.0	20.5	20.0	20.5	20.8	20.9	20.7	20.2	20.5	20.7

<sup>a</sup> These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

<sup>p</sup> = preliminary. Represents sales for the first six months of model year 1991 (October through March).

Source: Oak Ridge National Laboratory, *Light-Duty Vehicle Summary: First Six Months of Model Year 1991, Table 10*.

**Table 27. World Motor Vehicle Production, 1980 and 1990  
(thousands)**

Country	Passenger Cars		Trucks and Buses		Total	
	1980	1990	1980	1990	1980	1990
Argentina	219	81	63	19	282	100
Australia	316	361	46	23	362	384
Austria	8	15	8	5	16	20
Belgium	220	312	40	73	260	385
Brazil	601	663	564	252	1,165	915
Canada	847	1,045	527	851	1,374	1,896
China	n/a	24	n/a	407	n/a	431
Czechoslovakia	185	188	53	54	238	242
France	2,939	3,295	440	474	3,378	3,769
Germany, East	176	153	37	34	213	187
Germany, West	3,521	4,661	357	316	3,878	4,977
Hungary	n/a	n/a	16	9	16	9
India	30	177	83	188	113	365
Italy	1,445	1,875	167	246	1,612	2,121
Japan	7,038	9,948	4,005	3,539	11,043	13,487
Korea	n/a	987	n/a	335	n/a	1,322
Mexico	303	598	187	222	490	820
Netherlands	81	121	15	30	96	151
Poland	351	295	67	70	418	365
Spain	1,029	1,679	153	374	1,182	2,053
Sweden	235	336	63	74	298	410
United Kingdom	924	1,296	389	270	1,313	1,566
United States	6,375	6,077	1,634	3,703	8,009	9,780
U.S.S.R.	1,330	1,200	867	840	2,197	2,040
Yugoslavia	241	289	33	30	274	319
<b>Total</b>	<b>28,496</b>	<b>35,675</b>	<b>9,869</b>	<b>12,437</b>	<b>38,365</b>	<b>48,113</b>

n/a = not available.  
 Note: Production in this table refers to vehicles locally manufactured.  
 Source: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts & Figures*, 1991, p. 30, and similar table in earlier editions.

**Table 28. Cost of Owning and Operating Automobiles, Vans, and Light Trucks, 1991**  
(cents per mile)

Suburban Based Operation										
Vehicle Size	Depre- ciation	Insur- ance	Mainte- nance	Parking & Tolls	Tires	Finance Charges	License, Registra- tion and Taxes	Fuel & Oil Exclud- ing Taxes	Fuel & Oil Taxes	Total Cost <sup>1</sup>
Subcompact	8.6	7.1	4.0	1.3	0.7	1.6	0.8	3.5	1.3	28.9
Compact	8.7	7.0	3.9	1.3	0.9	1.6	0.7	4.0	1.4	29.5
Intermediate	10.7	7.0	4.2	1.3	1.0	2.0	0.9	4.6	1.7	33.4
Full-Size	13.5	7.2	4.5	1.3	1.0	2.5	1.1	5.0	1.8	37.9
Compact Pick-Up	8.7	7.2	4.0	1.3	1.0	1.8	0.9	4.2	1.5	30.6
Full-Size Pick-Up	9.5	7.2	4.3	1.3	1.2	2.2	0.9	6.2	2.3	35.1
Minivan	11.8	7.0	4.0	1.3	1.1	2.2	0.9	5.1	1.9	35.3
Full-Size Van	14.2	8.5	4.2	1.3	1.4	2.9	1.2	8.1	3.0	44.8

<sup>1</sup> Total costs over twelve years.  
Source: U.S.DOT/FHWA, Cost of Owning and Operating Automobiles, Vans, and Light Trucks, 1991.

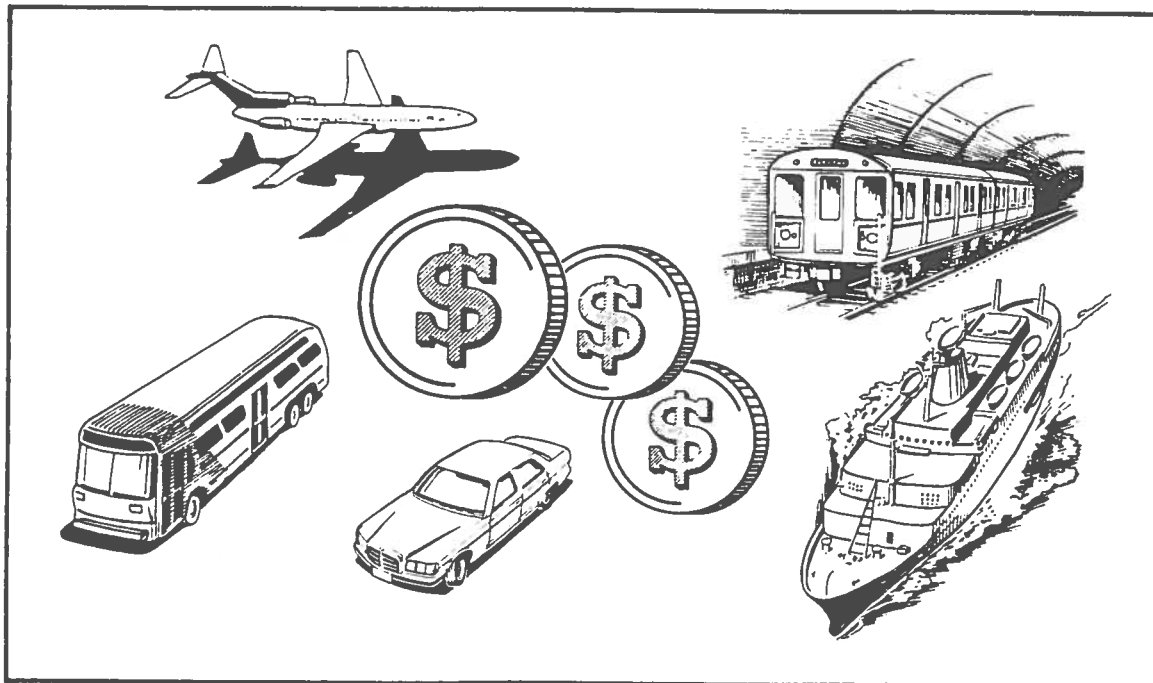




# SUPPLEMENTARY DATA

## Section I: Transportation and the Economy

Transportation and the Economy is the first of the three supplementary sections. Tabular and graphic statistics are used to show transportation's interrelationship with the economy from 1980-1990/1991.



**Table 29. Personal Consumption Expenditures by Transportation Sector, 1980-1990**  
(million dollars)

	1980	1981	1982	1983	1984	1985	1986	1987 <sup>r</sup>	1988 <sup>r</sup>	1989 <sup>r</sup>	1990 <sup>P</sup>
User-Operated Transportation											
New Cars and Net Purchases of Used Cars	61,300	68,473	72,984	87,740	107,711	122,522	136,158	131,983	142,040	141,353	139,781
Tires, Tubes, Accessories, and Parts	16,684	19,128	20,234	21,945	23,319	25,209	26,481	28,519	30,966	32,483	34,188
Repair and Rental	32,327	34,806	35,441	38,406	42,838	49,094	51,952	55,911	63,228	69,621	76,759
Gasoline & Oil	83,721	92,669	89,090	90,190	90,006	90,642	73,457	75,276	77,254	83,804	93,663
Tolls	1,061	1,138	1,224	1,202	1,300	1,424	1,682	1,878	1,663	1,741	1,895
Insurance Premiums less Claims Paid	9,383	8,861	9,054	10,308	9,993	9,901	12,590	15,379	16,665	16,954	18,242
Total	204,476	225,075	228,027	249,791	275,167	298,792	302,320	308,946	331,816	329,002	346,286
Purchased Local Transportation											
Street, Electric, Railway, and Local Bus	2,431	2,667	3,038	3,132	3,428	3,586	3,855	3,978	4,235	5,343	5,723
Taxicab	3,082	3,167	2,953	2,946	3,042	3,129	3,294	3,530	3,802	2,841	3,017
Railroad (commutation)	300	371	395	435	458	468	648	658	680	678	723
Total	5,813	6,205	6,386	6,513	6,928	7,183	7,797	8,166	8,717	8,862	9,463
Purchased Intercity Transportation											
Railroad	362	432	445	531	582	630	662	714	825	671	708
Intercity Bus	1,171	1,269	1,252	1,224	1,227	1,212	1,105	1,413	1,640	1,759	1,467
Airline	13,425	14,519	14,653	15,287	17,536	18,461	18,795	20,810	22,757	24,708	25,222
Other	939	1,062	1,236	1,361	1,640	1,876	2,031	2,255	2,517	2,387	2,644
Total	15,897	17,282	17,586	18,403	20,985	22,179	22,593	25,192	27,739	29,525	30,041
Total Transportation	226,186	248,562	251,999	274,707	303,080	328,154	332,710	342,304	368,272	367,389	385,790

<sup>r</sup> = revised.

<sup>P</sup> = preliminary.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 2.4.

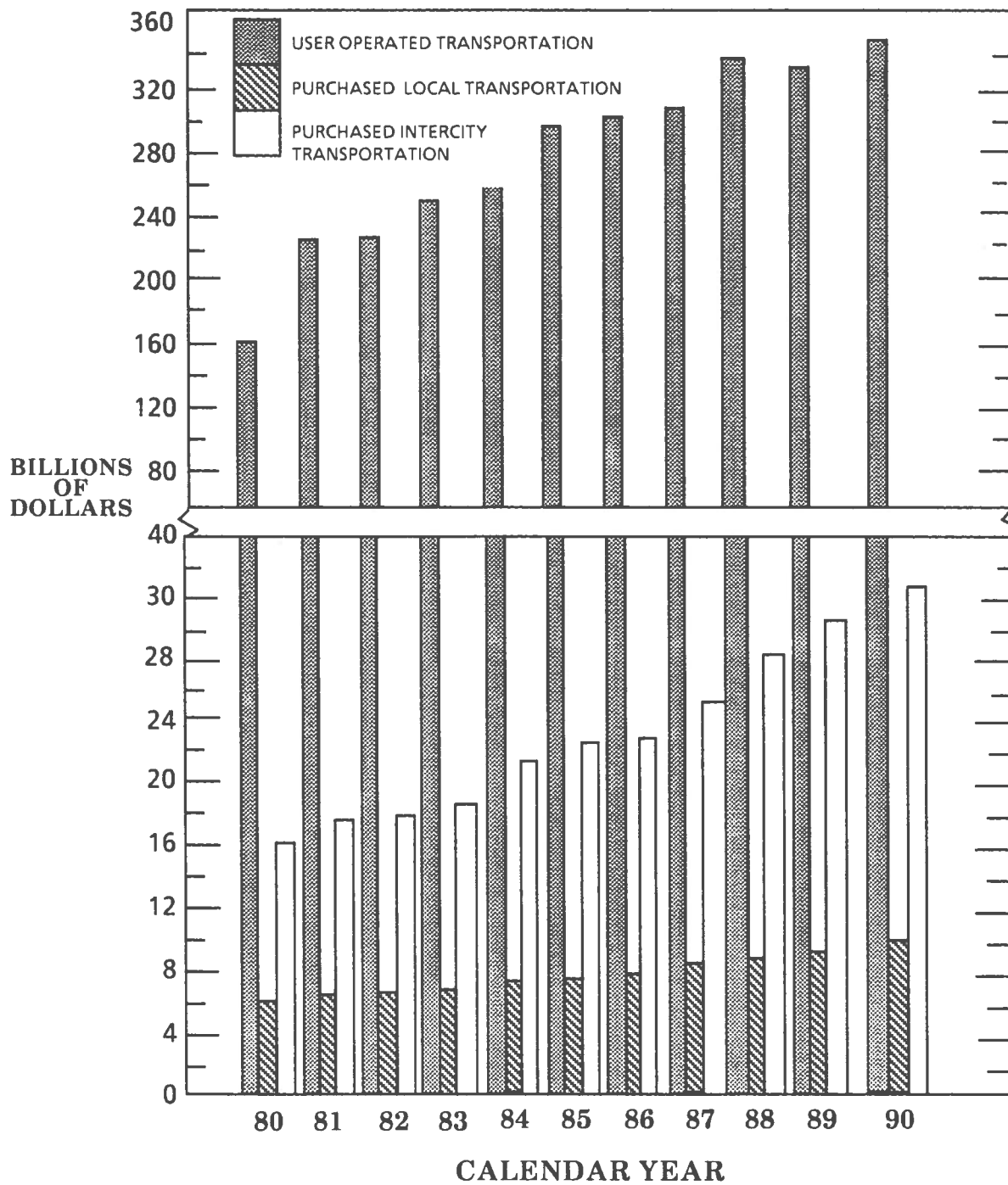


Figure 27. Personal Consumption Expenditures by Transportation Sector, 1980-1990

Table 30. Personal Consumption Expenditures by Type, 1980-1991  
(million dollars)

	1980	1981	1982	1983	1984	1985	1986	1987 <sup>r</sup>	1988 <sup>r</sup>	1989 <sup>r</sup>	1990	1991 <sup>p</sup>
Food and Tobacco	369,879	399,231	423,479	450,135	478,999	503,777	533,639	566,368	599,574	603,783	639,786	667,640
Clothing, Accessories and Jewelry	134,984	148,207	153,312	167,233	181,809	193,288	207,243	222,295	240,003	248,779	259,665	263,073
Personal Care	27,238	29,319	30,579	34,119	36,433	38,829	41,374	44,482	48,286	55,791	59,149	61,656
Housing	261,467	295,605	321,058	344,076	371,318	403,026	434,161	468,874	502,347	514,268	547,140	574,686
Household Operation	233,073	255,170	272,418	294,089	316,910	334,050	347,509	363,340	386,134	421,327	434,198	446,066
Medical Care	187,703	219,297	245,431	268,665	298,399	327,453	357,577	398,980	444,046	536,724	593,048	651,556
Personal Business	96,664	103,466	116,312	136,669	145,829	169,884	192,454	215,369	227,139	265,563	289,192	303,818
Transportation	238,484	261,504	267,636	295,424	329,492	359,499	366,265	379,682	407,459	439,085	458,113	442,773
Recreation	114,972	128,626	138,321	152,052	168,322	185,689	201,205	223,240	245,102	266,282	280,166	288,411
Private Education and Research	27,179	30,649	32,605	35,773	39,058	43,259	46,610	50,905	57,725	79,368	86,708	92,426
Religious and Welfare Activities	36,781	41,047	44,382	47,828	52,629	57,135	62,852	68,084	75,948	92,900	103,836	109,686
Foreign Travel by U. S. Residents	14,237	15,321	16,329	18,638	21,548	22,859	29,379	33,855	37,086	33,337	36,859	37,404
Total	1,744,004	1,927,442	2,061,862	2,244,701	2,440,736	2,638,748	2,820,268	3,035,474	3,270,849	3,557,297	3,787,860	3,939,195

<sup>r</sup> = revised.

<sup>p</sup> = preliminary.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July issues, Tables 2 and 2.4.

BILLIONS OF DOLLARS

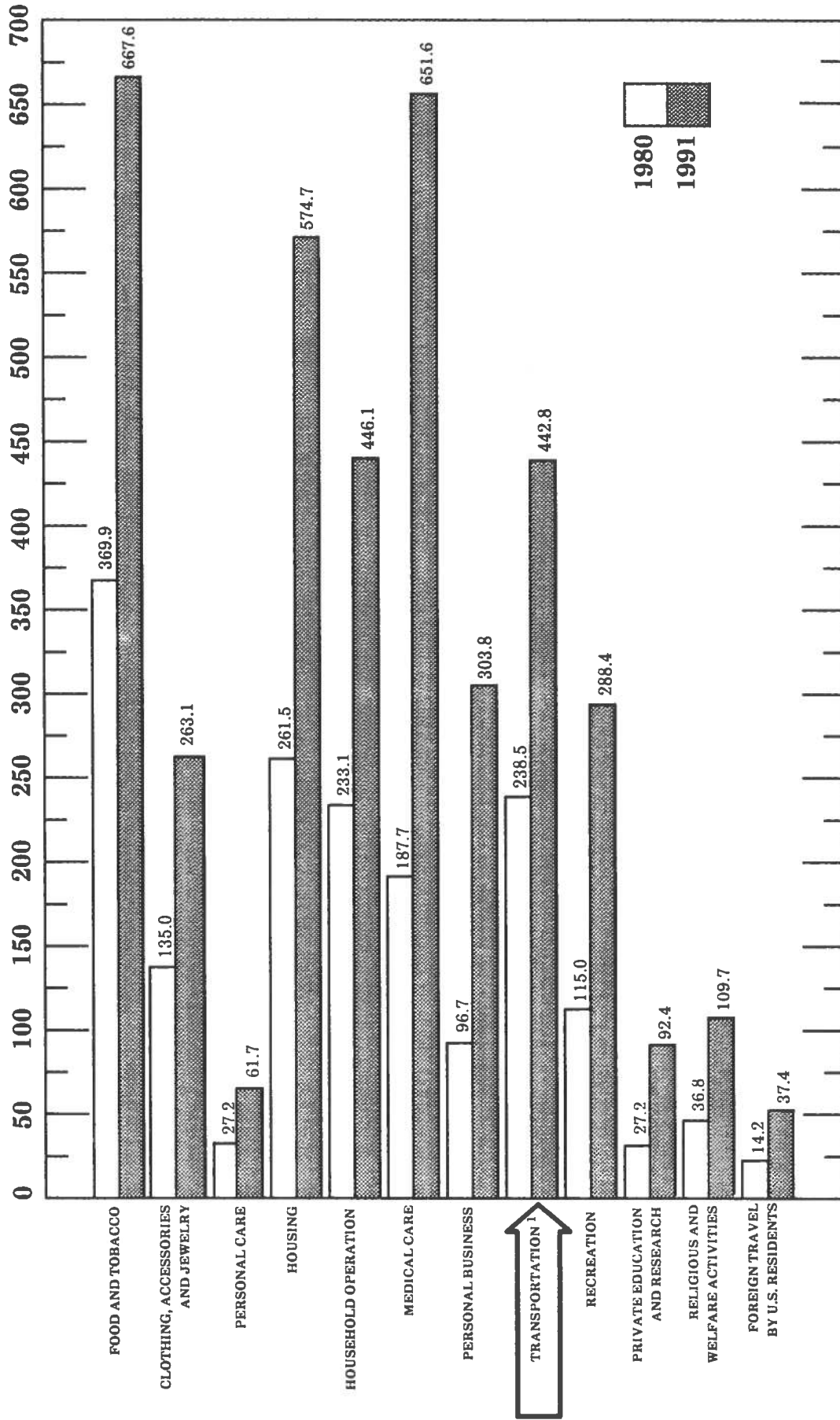


Figure 28. Personal Consumption Expenditures by Type, 1980 and 1991

<sup>1</sup> Excluding Foreign Travel

**Table 31. National Income by Transportation Sector, 1980-1990**  
(million dollars)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Railroad	17,533	16,793	15,546	16,196	18,727	17,403	17,487	17,127	18,614	17,757	17,841
Local and Interurban Passenger Transit	4,728	4,871	5,105	5,322	6,158	6,224	7,153	7,399	7,560	8,366	8,773
Trucking and Warehousing	35,187	37,614	37,007	39,240	43,634	45,214	48,760	50,857	54,648	57,675	60,402
Water	5,995	6,493	5,883	5,763	5,999	5,855	5,947	6,291	7,141	7,363	7,817
Air	13,419	14,184	14,025	16,529	19,119	18,367	19,826	24,541	27,635	28,382	29,021
Pipeline, except natural gas	1,729	1,919	2,133	2,230	1,934	1,970	1,647	1,901	1,740	1,739	1,785
Transportation Services	4,956	6,392	6,824	7,050	8,209	8,746	9,117	10,277	11,042	12,582	13,772
Total	83,547	88,266	86,523	92,330	103,780	103,779	109,937	118,393	128,380	133,864	139,411

r = revised.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 6.3B or equivalent.



Figure 29. National Income by Transportation Sector, 1980-1990

**Table 32. Wages and Salaries per Full-Time Employee by Transportation Sector, 1980-1990**  
(dollars)

	1980	1981	1982	1983	1984	1985	1986	1987 <sup>r</sup>	1988 <sup>r</sup>	1989	1990
Railroad	25,000	27,500	29,700	33,738	35,474	36,746	38,153	39,456	40,862	41,109	41,822
Local & Interurban Passenger Transit	13,400	14,400	15,200	15,258	15,333	15,813	16,263	16,710	17,356	17,651	18,529
Trucking and Warehousing	19,200	20,700	21,200	21,503	21,982	22,291	22,699	23,502	24,217	24,688	25,814
Water	22,700	24,400	26,100	26,822	27,802	28,435	28,900	29,410	30,616	31,648	33,219
Air	25,600	27,900	29,400	30,970	30,761	31,798	32,023	32,417	33,033	33,592	35,201
Pipeline, except natural gas	26,200	29,500	32,900	33,952	35,632	36,947	38,722	39,667	42,611	42,444	43,789
Transportation Services	16,000	17,500	18,700	18,819	19,506	20,207	20,819	21,695	23,080	23,978	25,555
Total	20,900	22,500	23,500	24,379	24,811	25,305	25,710	26,308	27,058	27,542	28,795

<sup>r</sup> = revised.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 6.6C or equivalent.



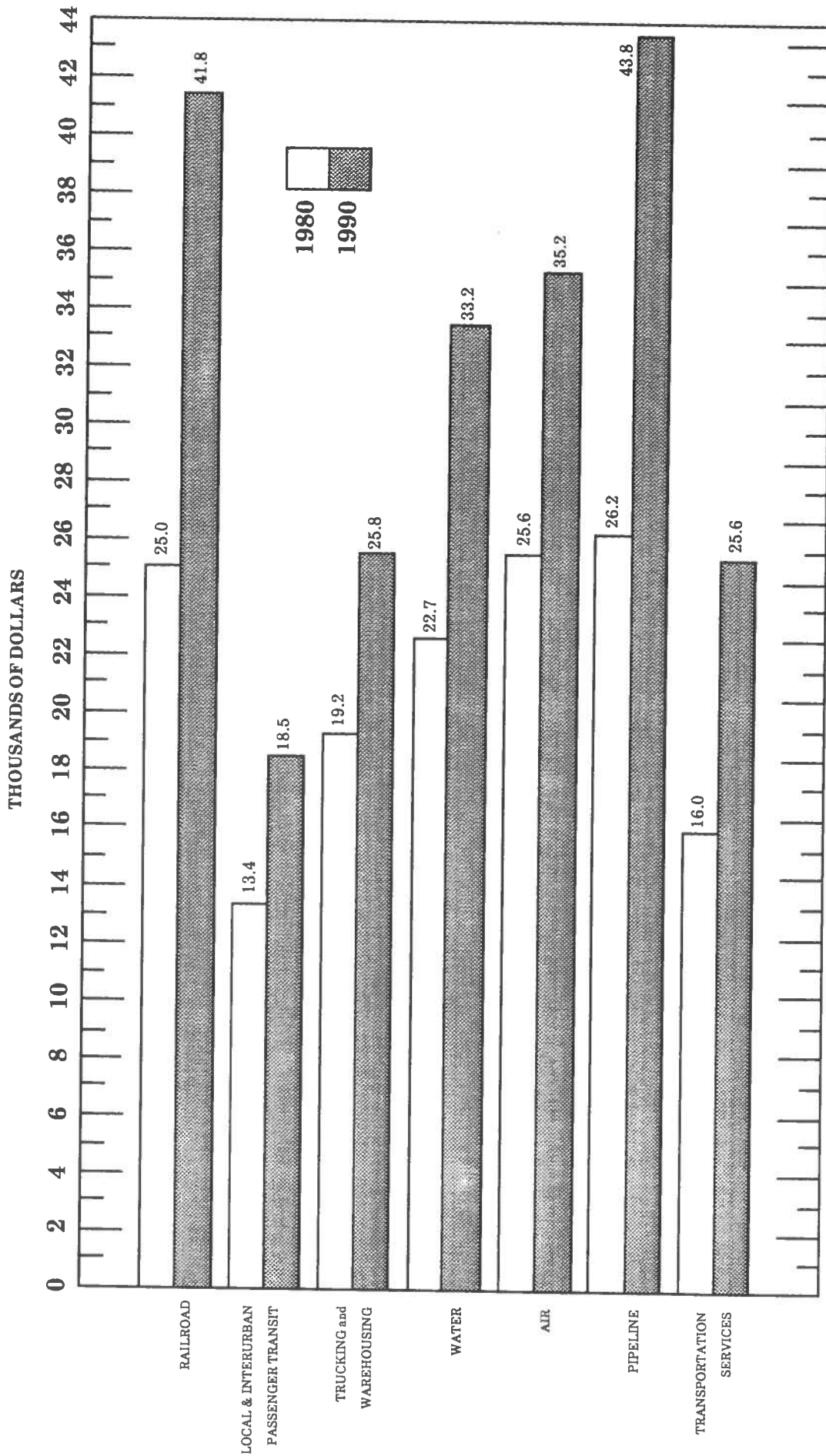


Figure 30. Wages and Salaries per Full-Time Employee by Transportation Sector, 1980 and 1990

**Table 33. Wages and Salaries by Transportation Sector, 1980-1990**  
(million dollars)

	1980	1981	1982	1983	1984	1985	1986	1987 <sup>r</sup>	1988 <sup>r</sup>	1989	1990
Railroad	12,800	13,100	12,300	12,213	12,948	12,567	11,980	11,679	11,809	11,675	11,543
Local and Interurban Passenger Transit	3,400	3,600	3,700	3,784	4,002	4,238	4,494	4,846	5,311	5,666	5,985
Trucking and Warehousing	23,700	25,300	24,800	25,417	28,181	29,535	30,825	33,819	36,785	38,390	40,166
Water	4,600	5,100	5,000	4,828	5,060	5,033	4,913	4,882	5,021	5,222	5,614
Air	11,000	12,000	12,400	13,317	14,150	15,581	16,876	18,510	20,051	21,902	24,113
Pipeline, except natural gas	600	600	700	713	677	702	697	714	767	764	832
Transportation Services	3,000	3,500	3,900	4,065	4,701	5,274	5,621	6,183	6,924	7,601	8,382
Total	59,100	63,200	62,700	64,337	69,719	72,930	75,406	80,633	86,668	91,220	96,635

<sup>r</sup> = revised.  
Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 6.3C or equivalent.

BILLIONS OF DOLLARS

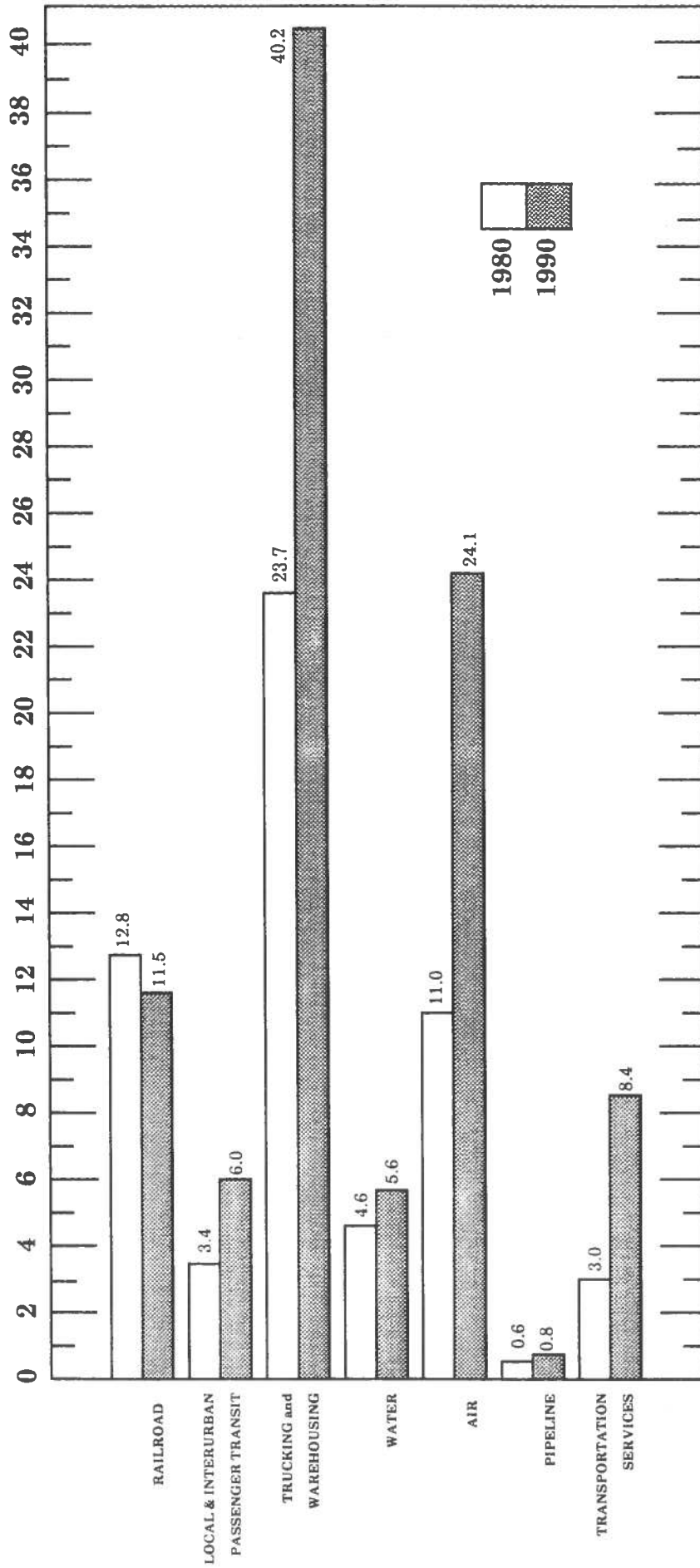


Figure 31. Wages and Salaries by Transportation Sector, 1980 and 1990

**Table 34. Employment in Transportation and Related Industries, 1980-1990**  
(thousands)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>TRANSPORT SECTOR</b>											
Air	453	455	444	455	489	522	567	603	644	684	751
Bus - intercity	38	38	39	36	37	35	33	30	29	31	26
Local Transport	79	82	82	80	87	92	100	109	119	128	138
Railroad	532	496	430	376	376	359	332	309	299	293	280
Oil Pipeline	21	22	21	17	16	16	15	16	16	19	19
Gas Pipeline(transmission)	45	47	48	47	47	46	48	44	43	37	37
(distribution)	52	42	42	46	46	62	59	60	60	64	64
Taxi	53	46	42	40	39	38	36	35	36	34	33
Trucking and Truck Terminals	1,189	1,168	1,125	1,132	1,227	1,285	1,297	1,361	1,434	1,538	1,534
Public Warehousing	91	88	84	85	91	96	99	107	114	115	117
Water	213	219	202	191	191	186	176	174	174	173	174
Transportation Services	198	211	220	229	253	276	282	296	316	331	350
<b>Total</b>	<b>2,964</b>	<b>2,914</b>	<b>2,779</b>	<b>2,734</b>	<b>2,899</b>	<b>3,013</b>	<b>3,044</b>	<b>3,144</b>	<b>3,284</b>	<b>3,447</b>	<b>3,523</b>
<b>EQUIPMENT MFG.</b>											
Aircraft and Parts	652	646	601	578	593	636	678	700	695	711	706
Motor Vehicles and Equip.	789	789	699	848	957	977	960	952	941	945	895
Railroad Equipment	71	54	37	30	35	33	29	28	32	34	33
Ship & Boat Building and Repair	221	231	210	183	192	187	185	187	193	194	187
Other	38	39	42	47	51	51	50	52	51	48	45
<b>Total</b>	<b>1,771</b>	<b>1,759</b>	<b>1,589</b>	<b>1,686</b>	<b>1,828</b>	<b>1,884</b>	<b>1,902</b>	<b>1,919</b>	<b>1,912</b>	<b>1,932</b>	<b>1,866</b>
<b>RELATED INDUSTRIES</b>											
Automotive and Accessories Retailers	1,048	1,023	994	1,043	1,140	1,213	1,258	1,301	1,362	1,295	1,273
Automotive Wholesalers	418	415	413	402	425	433	431	430	431	456	460
Automotive Repair, Services, and Parking	571	578	580	619	683	731	763	795	837	888	928
Gasoline Service Stations	561	563	550	556	575	589	596	608	627	642	650
Highway and Street Construction	268	211	218	231	244	257	265	269	254	234	241
Petroleum	533	617	622	556	564	550	471	442	448	436	443
Other Industries: Truck Drivers and Deliverymen	1,931	1,904	1,883	1,836	2,019	2,050	2,050	2,160	2,155	2,105	2,095
Shipping and Receiving Clerks	498	507	482	407	432	477	455	476	521	550	546
<b>Total</b>	<b>5,828</b>	<b>5,818</b>	<b>5,742</b>	<b>5,094</b>	<b>6,082</b>	<b>6,300</b>	<b>6,289</b>	<b>6,481</b>	<b>6,635</b>	<b>6,606</b>	<b>6,636</b>
<b>GOVERNMENT EMPLOY.</b>											
U.S. DOT	72	59	62	63	63	61	61	62	63	66	65
State and Local Highway	559	530	527	527	540	549	550	553	555	563	568
U.S. Postal Service	92	93	93	92	95	104	110	113	116	117	115
Other	13	13	10	10	9	11	9	9	11	12	11
<b>Total</b>	<b>736</b>	<b>695</b>	<b>692</b>	<b>692</b>	<b>707</b>	<b>725</b>	<b>730</b>	<b>737</b>	<b>745</b>	<b>758</b>	<b>759</b>
<b>Total Transportation</b>	<b>11,299</b>	<b>11,186</b>	<b>10,802</b>	<b>10,206</b>	<b>11,516</b>	<b>11,922</b>	<b>11,965</b>	<b>12,281</b>	<b>12,577</b>	<b>12,743</b>	<b>12,784</b>
<b>Total Civilian Labor Force</b>	<b>97,545</b>	<b>99,562</b>	<b>98,849</b>	<b>102,083</b>	<b>106,049</b>	<b>108,063</b>	<b>109,084</b>	<b>113,679</b>	<b>115,978</b>	<b>117,689</b>	<b>117,287</b>
<b>Percent Transportation</b>	<b>11.6%</b>	<b>11.2%</b>	<b>10.9%</b>	<b>9.9%</b>	<b>10.9%</b>	<b>11.1%</b>	<b>11.0%</b>	<b>10.8%</b>	<b>10.8%</b>	<b>10.8%</b>	<b>10.9%</b>

Source: See Appendix A, pp. A-19, A-20.

**Table 35. National Transportation and Economic Trends, 1980-1990**  
(billions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Passenger-Miles Index *	2,745 (100)	2,783 (101)	2,865 (104)	2,851 (104)	2,964 (108)	3,023 (110)	3,345 (122)	3,481 (127)	3,661 (133)	3,758 (137)	3,740 (136)
Revenue Ton-Miles Index *	3,104 (100)	3,051 (98)	2,873 (93)	2,973 (96)	3,094 (100)	3,049 (98)	3,058 (99)	3,199 (103)	3,306 (107)	3,255 (105)	3,287 (106)
Population (millions) Index *	228 (100)	230 (101)	232 (102)	234 (103)	236 (104)	238 (104)	241 (106)	243 (107)	245 (107)	247 (108)	250 (110)
Industrial Production Index **	84	86	82	85	93	94	95	100	105	108	109
Gross National Product (current dollars) Index *	2,732 (100)	3,053 (112)	3,166 (116)	3,406 (125)	3,772 (138)	4,015 (147)	4,232 (155)	4,516 (165)	4,874 (178)	5,201 (190)	5,465 (200)
(constant 1982 dollars)	3,187	3,249	3,166	3,279	3,501	3,619	3,718	3,845	4,017	4,118	4,157

\* Index (1980 = 100).

\*\* Index (1987 = 100).

Source: See Appendix A, p. A-20.

**Table 36. Passenger and Freight Transportation Expenditures, 1980-1990**  
(million dollars)

TYPE OF EXPENDITURE	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Passenger Transportation Expenditures											
Auto Purchases and Ownership <sup>1</sup>	276,699	307,318	312,554	340,139	379,024	410,313	417,956	431,660	460,217	488,289	523,512
Local	4,649	5,156	5,295	5,794	6,895	6,774	7,528	7,611	7,826	7,964	8,290
Bus <sup>3</sup>	5,195	5,243	5,642	5,282	5,455	5,636	6,000	6,364	6,909	7,091	7,455
Taxi	3,833	4,694	4,976	5,200	5,800	5,900	6,419	6,766	7,111	7,330	7,500
School Bus											
Intercity	1,709	1,809	1,854	1,965	2,035	1,989	1,890	1,826	2,036	2,185	2,010
Bus											
Total Highway Passenger Transportation Expenditures	284,752	324,220	330,321	358,380	399,209	430,612	439,793	454,227	484,099	510,674	546,757
Air	38,135	41,121	40,015	42,754	48,061	50,319	51,176	57,256	64,520	68,494	74,437
Rail <sup>2</sup>	2,976	2,622	2,730	2,744	4,371	3,875	3,093	4,061	4,071	4,494	4,655
Transit <sup>3</sup>	4,648	5,155	5,294	5,793	6,894	6,774	7,527	7,611	7,826	7,965	8,290
Water	303	373	393	425	478	517	521	701	803	863	936
Total Passenger Transportation Bill	338,148	373,491	378,753	412,507	459,013	492,097	502,110	523,856	561,319	592,490	635,070
Freight Transportation Expenditures											
Truck Intercity	43,000	47,100	44,100	46,500	52,100	54,200	58,100	61,000	66,500	70,500	75,500
ICC-authorized	51,551	49,993	55,840	64,598	68,600	69,000	70,100	73,800	76,200	80,800	84,800
Non-ICC-authorized	60,545	67,799	62,467	70,700	78,700	82,200	84,800	89,600	96,200	102,450	108,350
Truck Local	235	260	249	246	245	245	226	185	168	165	165
Bus Intercity	155,331	165,152	162,656	182,044	199,645	205,645	213,226	224,585	239,068	253,915	270,815
Total Highway Freight Transportation Expenditures	4,013	4,340	4,436	4,959	6,016	6,817	7,559	8,859	10,367	11,853	13,712
Air	7,548	7,950	8,489	8,895	9,343	8,910	8,698	8,463	8,224	7,832	8,635
Oil Pipeline	27,858	30,502	27,134	27,325	30,549	29,150	27,933	28,468	29,899	29,922	30,403
Rail	15,498	16,660	15,600	16,036	18,029	18,449	18,793	18,652	20,057	19,821	20,948
Water	3,153	3,377	3,123	3,253	3,426	3,345	3,348	3,497	3,515	3,590	3,779
Other	213,401	227,981	221,438	242,512	267,008	272,316	279,557	292,524	311,130	326,933	348,192
Total Freight Transportation Bill	440,083	489,372	492,977	540,424	598,854	636,257	653,019	678,812	723,167	764,589	817,572
Total Highway Passenger and Freight Transportation Expenditures	551,549	601,472	600,191	655,019	726,021	764,413	781,667	816,380	872,449	919,423	963,262
Total Passenger and Freight Transportation Bill	16.4%	16.2%	15.6%	15.9%	15.9%	15.9%	15.4%	14.9%	14.8%	14.7%	14.8%
Passenger and Freight Transportation Percent of GNP											

<sup>1</sup> Includes business expenditures for passenger cars.

<sup>2</sup> Data include federal, state/local authorities operating subsidies and capital grants.

<sup>3</sup> One-half of amount for "Bus and Transit" shown in source.

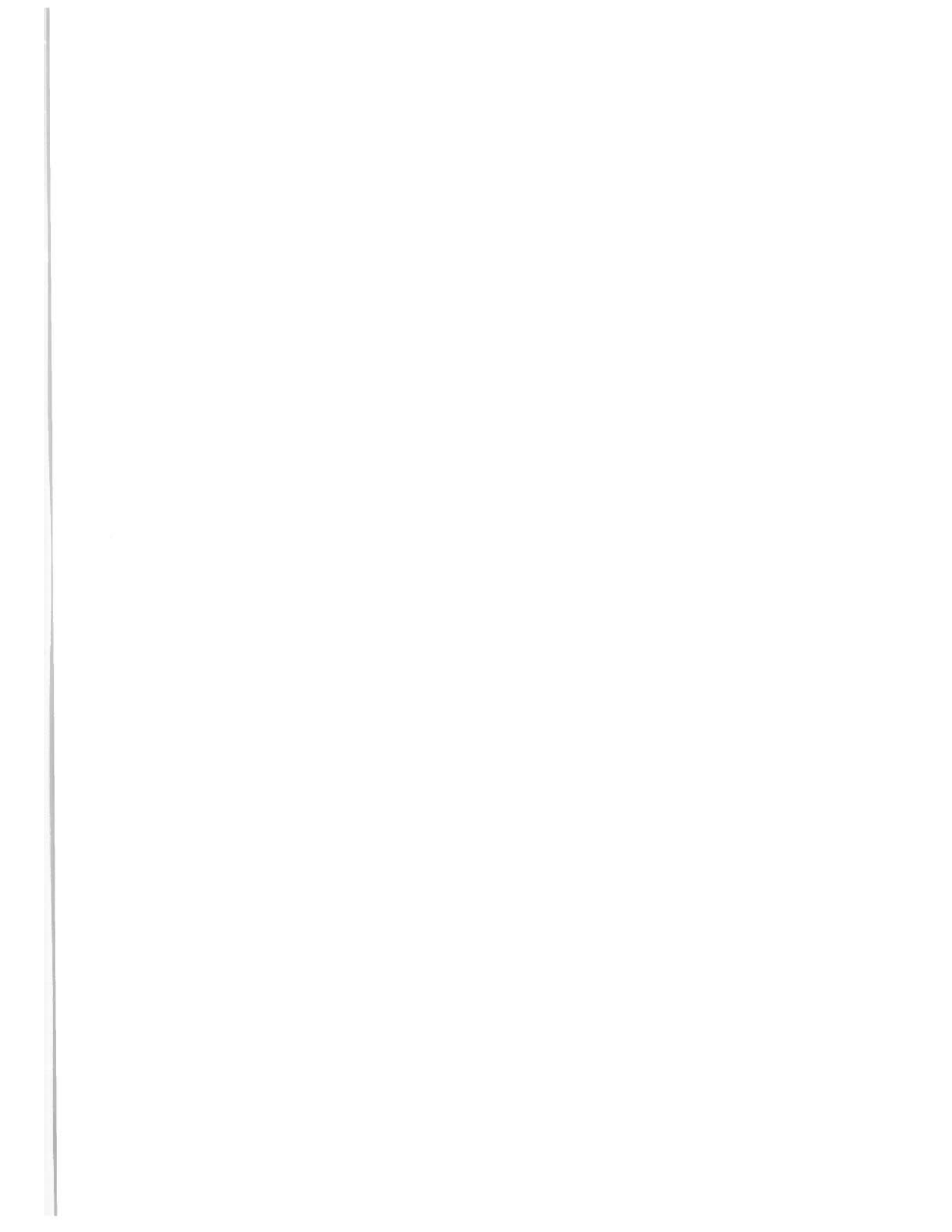
Source: Eno Foundation for Transportation, *Transportation In America*, 1992, and previous editions published by the Transportation Policy Associates.

**Table 37. U.S. Government Transportation Research, Planning and R&D Outlays  
(at 5-Year Intervals 1970-1985 and Annually 1986-1990)  
(million dollars)**

	1970	1975	1980	1985	1986	1987	1988	1989	1990
<b>General</b>									
Dept. of Transportation	8.1	33.3	22.1	7.5	6.2	6.9	7.1	6.3	9.3
Dept. of Agriculture	9.0	11.6	12.5	15.1	14.8	16.8	17.5	17.9	18.3
Total	17.1	44.9	34.6	22.6	21.0	23.7	24.6	24.2	27.6
<b>Air</b>									
FAA - aviation	214.4*	104.9*	127.5	279.3	313.7	190.8	193.0	154.3	172.2
NASA - aircraft technical	187.3	305.8	510.7	651.8	615.1	658.5	651.8	790.6	807.7
Total	401.7	410.7	638.2	931.1	928.8	849.3	844.8	944.9	979.9
<b>Highway</b>									
FHWA - highways†	94.2	20.1	42.2	41.4	37.7	36.9	38.1	44.1	44.4
NHTSA/FHWA - safety	14.0	21.8	50.1	36.9	36.8	48.7	44.0	43.7	40.9
Total	108.2	42.9	92.3	78.3	74.5	85.6	82.1	87.8	85.3
Rail - FRA	16.4	43.0	47.8	15.0	15.4	13.2	10.6	7.0	7.0
<b>Urban Mass Transport</b>									
UMTA	7.6	88.6	75.7	40.1	22.6	21.7	18.8	18.9	13.0
<b>Water</b>									
Maritime Administration	12.7	26.5	31.2	12.4	14.2	8.8	11.2	9.9	10.0
Coast Guard	10.1	16.6	21.9	18.4	16.7	17.8	14.9	18.1	21.4
Total	22.8	43.1	53.1	30.8	30.9	26.6	26.1	28.0	31.4
Total Transportation R&D	495.6	672.2	941.7	1,117.9	1,093.2	1,020.1	1,007.0	1,110.8	1,144.2
Total U.S. Government R&D	15,632	19,525	30,389	45,244	51,576	52,862	56,018	59,897	64,674
% Trans. R&D of Total U.S.	3.2%	3.4%	3.1%	2.5%	2.1%	1.9%	1.8%	1.9%	1.8%

† Does not include considerable research funded by FHWA but administered by States.

\* Includes R&D outlays for U.S. supersonic transport program, which was subsequently phased down to basic research.  
 Source: Eno Foundation for Transportation, *Transportation In America*, 1991, p. 74.

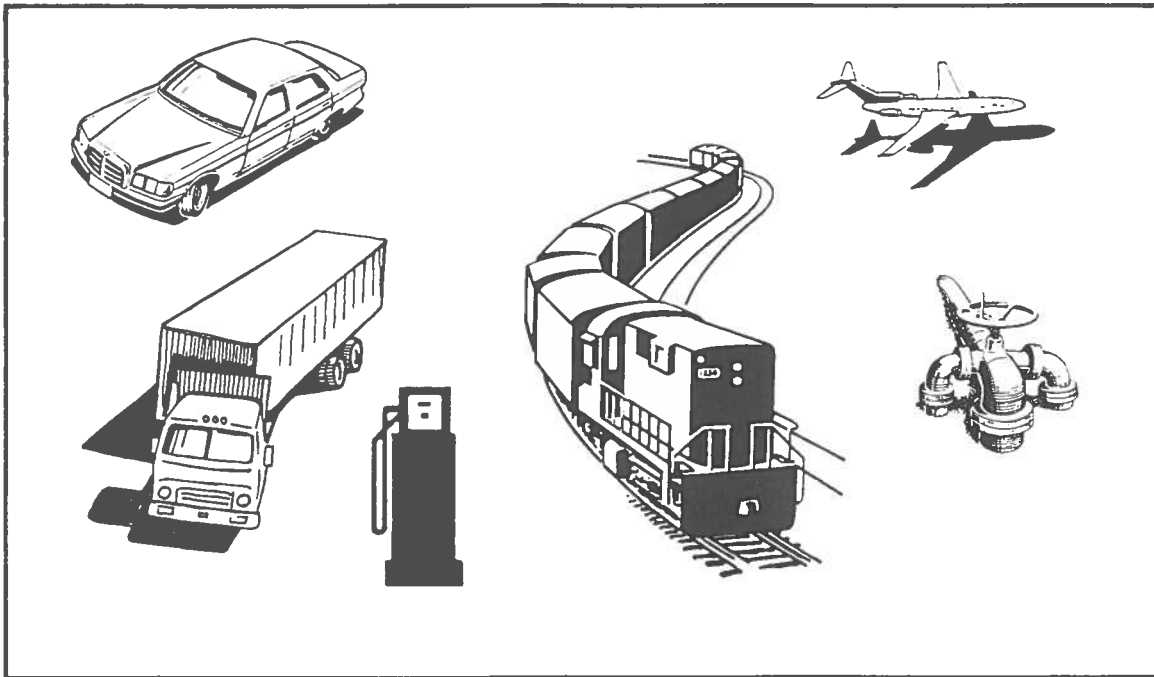




# SUPPLEMENTARY DATA

## Section II: Energy in Transportation

Energy in Transportation is the second part of the supplementary data section. This section details the relationship between energy and transportation, particularly in the areas of Energy Consumption, Energy Intensiveness, Energy Transport, and Energy Supply and Demand for the years 1980-1990/1991. Some data extend back to 1955.



## Energy Equivalents

### 1 Btu of Energy equals approximately:

- 1 match tip
- 250 calories (International Steam Table)
- 0.25 kilocalories (food calories)

### 1,000 Btu of Energy equals approximately:

- 250 kilocalories (food calories)

### 1 Million Btu of Energy equals approximately:

- 90 pounds of coal
- 8 gallons of motor gasoline or enough to move the average U.S. passenger car about 167 miles (1990)
- 10 therms of dry natural gas
- 11 gallons of propane
- 1.1 days of U.S. energy consumption per capita

### 1 Quadrillion Btu of Energy equals approximately:

- 45 million short tons of coal
- 60 million short tons of oven-dried hardwood
- 1 trillion cubic feet of dry natural gas
- 170 million barrels of crude oil
- 470 thousand barrels of crude oil per day for one year
- 24 days of U.S. petroleum imports
- 26 days of U.S. motor gasoline usage
- 25 hours of world energy consumption (1990)

### One Barrel of Crude Oil equals approximately:

- 15 days of U.S. petroleum consumption per capita
- 5.6 thousand cubic feet of dry natural gas
- 0.26 short tons (520 pounds) of coal
- 1,700 kilowatthours of electricity

### One Short Ton of Coal equals approximately:

- 104 days of U.S. coal consumption per capita
- 3.8 barrels of crude oil
- 21 thousand cubic feet of dry natural gas
- 6,500 kilowatthours of electricity

### 1,000 Cubic Feet of Natural Gas equals approximately:

- 4.7 days of natural gas consumption per capita
- 0.18 barrels (7.4 gallons) of crude oil
- 0.047 short tons (93 pounds) of coal
- 300 kilowatthours of electricity

### 1,000 Kilowatthours (kWh) of electricity equals approximately:

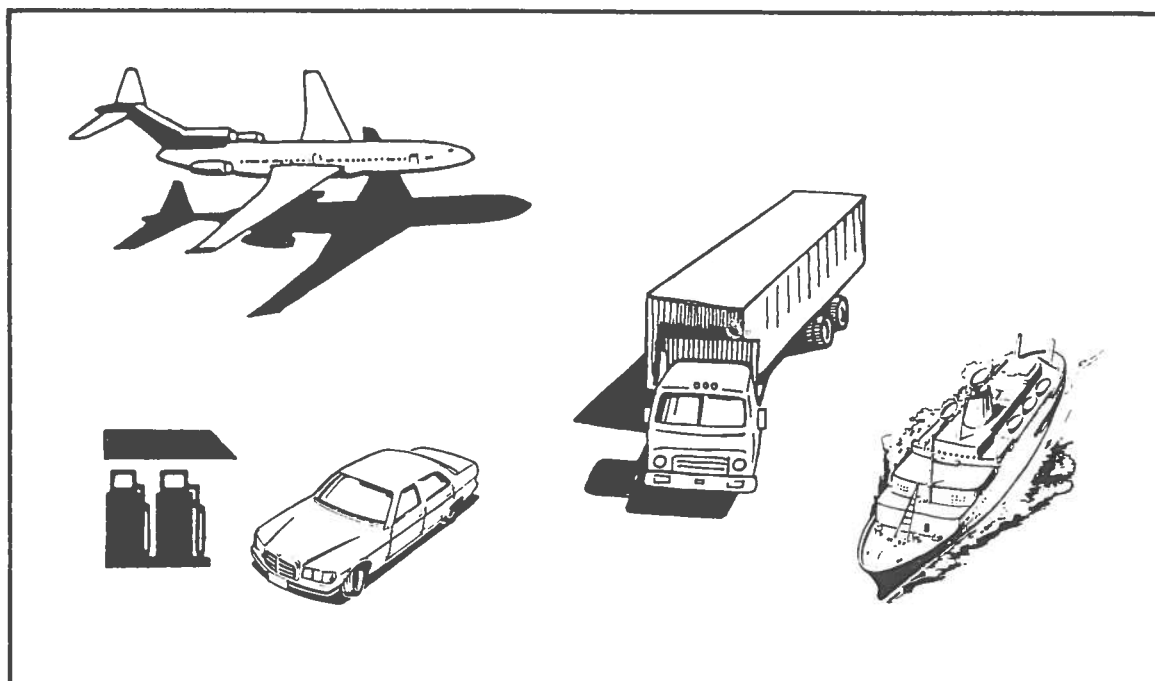
- 33 days of U.S. electricity consumption per capita
- 0.15 short tons (310 pounds) of coal (it takes about 0.47 short tons to produce 1,000 kWh)
- 3,300 cubic feet of dry natural gas (it takes about 10,000 cubic feet to produce 1,000 kWh)
- 0.59 barrels of crude oil (it takes about 1.8 barrels of oil to produce 1,000 kWh)

One million Btu of fossil fuels burned at electric utilities can generate about 100 kilowatthours of electricity, while about 300 kilowatthours of electricity generated at electric utilities can produce about one million Btu of heat.

Source: U.S. DOE/EIA, *Annual Energy Review 1991*, p. 320.

# Part 1. Energy Consumption

This section details the amount of fuel consumed by each mode of transportation and end-use sector. Also presented are fuel price data for 1980-1990/1991. In some instances, data extend back to 1955.



**Table 38. Consumption of Energy by Sector  
(at 5-Year Intervals 1955-1970 and Annually 1971-1991)  
(quadrillion Btu)**

Year	Residential and Commercial <sup>1</sup>		% of Total		Industrial <sup>1</sup>	% of Total		Transportation <sup>1</sup>	% of Total		Electric Utilities	% of Total	Total Energy Consumption
1955	7.39		19.0	39.7	15.42	9.48	24.4	6.50	16.7	38.82			
1960	8.75		20.0	37.1	16.26	10.56	24.1	8.19	18.7	43.80			
1965	10.00		19.0	36.5	19.24	12.40	23.5	11.01	20.9	52.68			
1970	12.14		18.3	33.0	21.92	16.06	24.2	16.27	24.5	66.43			
1971	12.35		18.2	31.9	21.66	16.69	24.6	17.15	25.3	67.89			
1972	12.64		17.8	31.4	22.39	17.68	24.8	18.52	26.0	71.26			
1973	12.27		16.5	31.7	23.54	18.58	25.0	19.85	26.7	74.28			
1974	11.77		16.2	31.2	22.62	18.09	24.9	20.02	27.6	72.54			
1975	11.60		16.5	28.9	20.36	18.21	25.8	20.35	28.9	70.55			
1976	12.25		16.5	28.8	21.44	19.07	25.6	21.57	29.0	74.36			
1977	11.87		15.6	28.7	21.88	19.78	25.9	22.71	30.1	76.29			
1978	11.91		15.3	28.0	21.84	20.58	26.4	23.72	30.4	78.09			
1979	11.53		14.6	28.9	22.77	20.44	25.9	24.13	30.6	78.90			
1980	10.72		14.1	27.7	21.04	19.66	25.9	24.51	32.3	75.96			
1981	10.04		13.6	26.6	19.68	19.47	26.3	24.76	33.5	73.99			
1982	10.06		14.2	24.6	17.45	19.03	26.9	24.27	34.3	70.85			
1983	9.72		13.8	23.7	16.72	19.10	27.1	24.96	35.4	70.52			
1984	10.04		13.5	24.7	18.29	19.76	26.7	25.98	35.1	74.10			
1985	9.78		13.2	23.8	17.63	20.02	27.1	26.48	35.8	73.95			
1986	9.56		12.9	23.2	17.24	20.77	28.0	26.64	35.9	74.24			
1987	9.71		12.6	23.6	18.15	21.40	27.8	27.55	35.9	76.84			
1988	10.29		12.8	23.7	18.99	22.26	27.8	28.63	35.7	80.20			
1989	10.41		12.8	23.5	19.10	22.51	27.7	29.29	36.0	81.35			
1990 <sup>r</sup>	9.62		11.8	24.0	19.55	22.48	27.7	29.60	36.4	81.29			
1991	9.90		12.1	23.8	19.43	22.24	27.3	29.90	36.7	81.51			

<sup>r</sup> = revised.

<sup>1</sup> Includes only those fossil fuels consumed directly in the sector.

Note: Sum of components may not equal total due to independent rounding.

Source: U.S. DOE/EIA, *Annual Energy Review 1991*, Table 5.

**Table 39. U.S. Energy Consumption by the Transportation Sector  
(at 5-Year Intervals 1955-1970 and Annually 1971-1991)**

Year	Petroleum		Natural Gas <sup>1</sup>		Total Fossil Fuels <sup>2</sup>	Sales of Electricity <sup>3</sup>		Total Transportation Consumption	Total Gross Energy Consumption
	Million Barrels	Trillion <sup>4</sup> Btu	Trillion Cubic Feet	Trillion <sup>4</sup> Btu	Trillion Btu	Million Kilowatt-Hours	Trillion <sup>4</sup> Btu	Trillion <sup>5</sup> Btu	Quadrillion Btu
1955	1,627.9	8,804	0.25	259	9,063	4,563	15.6	9,079	38.82
1960	1,881.2	10,136	0.35	362	10,498	4,770	16.3	10,514	43.80
1965	2,204.6	11,876	0.50	516	12,392	4,652	15.9	12,408	52.68
1970	2,839.7	15,315	0.72	742	16,057	4,633	15.8	16,073	66.43
1971	2,952.9	15,913	0.74	763	16,676	4,537	15.5	16,692	67.89
1972	3,136.6	16,900	0.77	791	17,691	4,440	15.1	17,706	71.26
1973	3,305.0	17,831	0.73	745	18,576	4,186	14.3	18,590	74.28
1974	3,225.6	17,399	0.67	686	18,085	4,258	14.5	18,100	72.54
1975	3,266.7	17,614	0.58	592	18,206	4,273	14.6	18,221	70.55
1976	3,430.2	18,506	0.55	560	19,066	4,338	14.8	19,081	74.36
1977	3,563.1	19,241	0.53	540	19,781	4,212	14.4	19,795	76.29
1978	3,708.5	20,041	0.53	538	20,579	4,336	14.8	20,594	78.09
1979	3,652.3	19,825	0.60	611	20,436	4,256	14.5	20,451	78.90
1980	3,494.1	19,008	0.63	645	19,653	4,275	14.6	19,668	75.96
1981	3,463.0	18,811	0.64	657	19,468	4,206	14.4	19,482	73.99
1982	3,397.0	18,420	0.60	616	19,036	4,288	14.6	19,051	70.85
1983	3,433.6	18,593	0.49	505	19,098	4,300	14.7	19,113	70.52
1984	3,544.1	19,216	0.53	546	19,762	4,483	15.3	19,777	74.10
1985	3,596.5	19,504	0.50	516	20,773	4,704	16.1	20,036	73.95
1986	3,734.8	20,269	0.49	504	20,773	4,714	16.1	20,789	74.24
1987	3,842.9	20,867	0.52	536	21,403	4,878	16.6	21,420	76.85
1988	3,979.4	21,624	0.61	628	22,252	5,110	17.4	22,269	80.20
1989 <sup>r</sup>	4,018.6	21,861	0.63	649	22,510	5,294	17.7	22,528	81.35
1990	4,004.4	21,804	0.66	680	22,484	5,297	18.1	22,502	81.27
1991 <sup>p</sup>	3,936.2	21,413	0.80	825	22,238	5,398	18.4	22,256	81.50

<sup>r</sup> = revised.

<sup>p</sup> = preliminary.

<sup>1</sup> Pipeline fuel.

<sup>2</sup> Sum of Petroleum and Natural Gas. <sup>3</sup> Includes only energy used by Railroads and Railways. <sup>4</sup> Btu's derived by multiplying by conversion factors in Table A3 for Petroleum in Transportation, Table A4 for Natural Gas Consumption by Non-Utility, and Table A7 for Electricity Consumption, U.S. DOE/EIA, *Monthly Energy Review*, April 1992. <sup>5</sup> Sum of Total Fossil Fuels and Sales of Electricity.

Source:

Petroleum: Table 2.5; Natural Gas: Table 4.3; Total Gross Energy Consumption: Table 2.2.

Sales of Electricity: Edison Electric Institute, *Statistical Year Book*.

1955-1982: *Ibid.*, Section IV, Table 19.

1983-1991: *Ibid.*, personal communication.

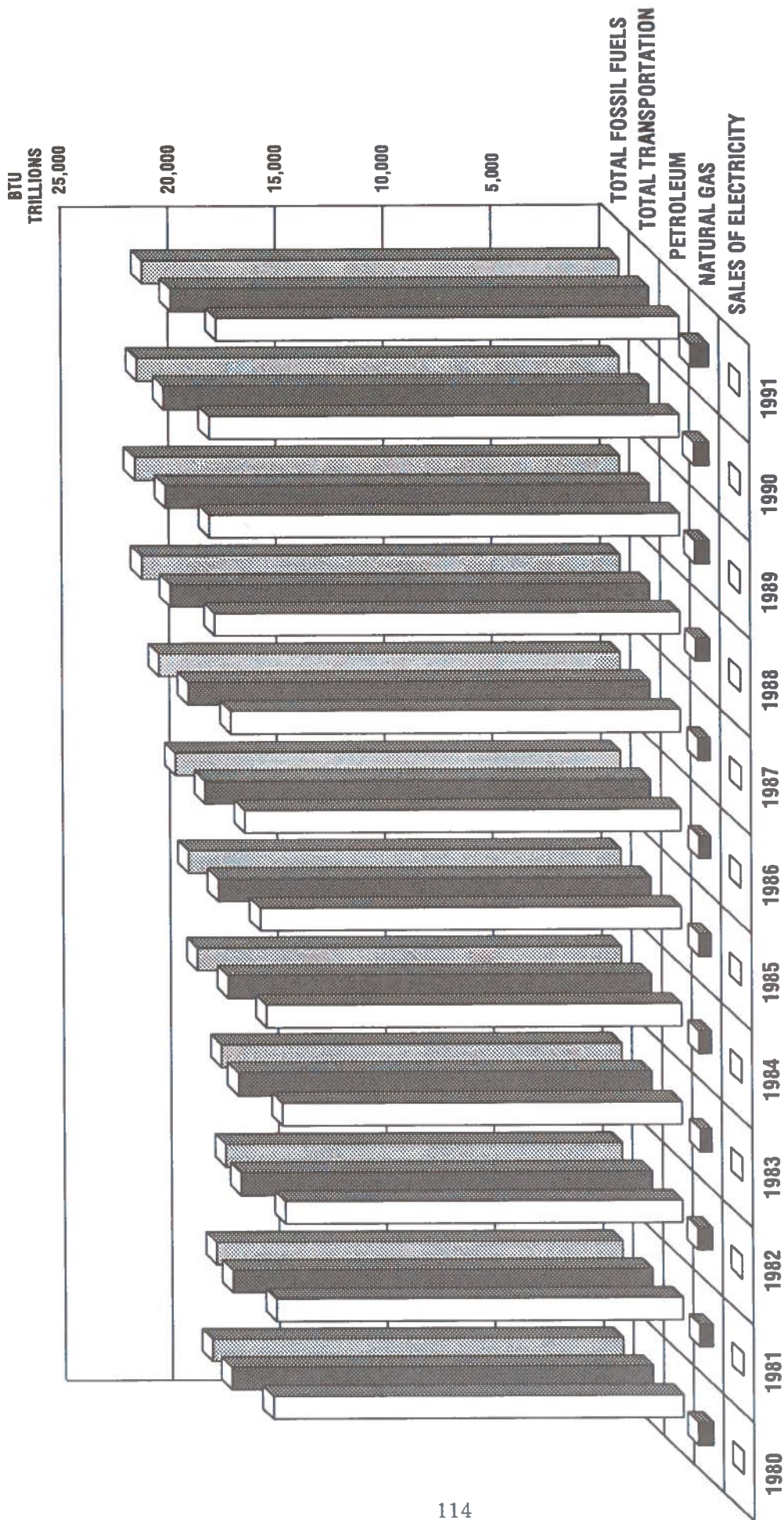


Figure 32. U. S. Energy Consumption by the Transportation Sector, 1980-1991

Table 40. U.S. Government Energy Consumption, Fiscal Years 1980-1991  
(trillion Btu)

Activity	1980 <sup>r</sup>	1981 <sup>r</sup>	1982 <sup>r</sup>	1983 <sup>r</sup>	1984 <sup>r</sup>	1985 <sup>r</sup>	1986 <sup>r</sup>	1987 <sup>r</sup>	1988 <sup>r</sup>	1989 <sup>r</sup>	1990	1991
Agency												
Defense	1,183.1	1,239.5	1,264.5	1,248.3	1,292.1	1,250.6	1,222.8	1,280.5	1,165.8	1,274.4	1,241.7	1,241.7
Energy	47.4	47.3	49.0	49.5	51.6	52.0	49.9	48.2	49.8	43.9	43.4	52.1
Postal Service	27.2	27.9	27.5	26.5	27.7	27.8	28.0	28.5	29.6	30.3	29.6	26.7
Veterans Affairs	24.8	24.0	24.2	24.1	24.6	24.3	24.7	24.6	26.0	26.0	24.6	25.0
Transportation	19.2	18.8	19.1	19.4	19.8	19.5	19.4	19.0	18.7	18.5	19.0	19.0
General Services Admin.	18.1	18.0	18.1	16.1	16.2	15.5	14.0	13.1	12.4	12.7	13.8	13.4
NASA	10.4	10.0	10.1	10.3	10.6	11.0	11.2	11.2	11.3	12.2	12.4	12.7
Agriculture	8.6	7.9	7.6	7.4	7.9	8.3	6.7	7.2	7.7	8.6	9.4	10.1
Justice	5.7	5.4	5.8	5.5	6.4	8.2	8.6	8.1	9.4	7.7	7.0	7.0
Interior	8.5	7.6	7.4	7.7	8.4	7.4	6.9	6.6	6.9	7.1	7.4	6.0
Health and Human Services	6.0	6.7	6.4	6.2	6.4	7.0	6.2	6.6	6.4	6.7	8.0	8.0
Other <sup>1</sup>	12.3	11.1	11.6	10.8	10.7	10.7	11.0	11.7	15.7	15.0	14.8	12.1
Total	1,371.2	1,424.2	1,451.4	1,431.8	1,482.5	1,442.2	1,409.4	1,465.4	1,359.7	1,463.2	1,430.9	1,433.7
Energy Source												
Petroleum	1,011.8	1,066.1	1,082.7	1,061.1	1,093.8	1,052.5	1,032.2	1,069.7	952.2	1,054.3	1,020.3	1,011.9
Jet Fuel	638.7	653.3	672.7	673.4	693.7	705.7	710.2	702.3	617.2	732.4	733.8	732.3
Distillate & Residual Fuel	307.7	351.3	349.4	329.5	342.9	290.4	271.4	319.3	284.6	245.1	244.0	241.0
Liquefied Petroleum Gases	4.0	3.7	3.9	4.0	4.1	4.0	3.9	4.0	3.2	5.6	6.2	6.1
Motor Gasoline	56.5	53.2	53.1	51.6	51.2	50.5	45.3	43.1	41.2	41.1	37.2	32.0
Aviation Gasoline	4.9	4.6	3.6	2.6	1.9	1.9	1.4	1.0	6.0	0.8	0.5	0.5
Electricity	141.9	144.5	147.5	151.5	155.7	164.0	159.0	169.6	171.0	188.2	192.3	192.7
Natural Gas	147.3	142.2	146.2	147.8	157.4	149.0	141.3	145.7	144.8	151.6	1256.0	155.8
Coal	63.5	65.1	68.6	62.4	65.3	64.0	63.8	67.0	60.1	48.6	44.2	54.4
Purchased Steam	6.8	6.2	6.2	9.0	10.1	12.7	13.1	13.4	31.6	20.3	18.1	18.9
Total	1,371.2	1,424.2	1,451.4	1,431.8	1,482.5	1,442.2	1,409.4	1,465.4	1,359.7	1,463.2	1,430.9	1,433.7

<sup>r</sup> = revised.

Energy usage data for U.S. Department of Defense, Environmental Protection Agency, General Services Administration, U.S. Department of Transportation, NASA, National Science Foundation, U.S. Department of Justice and U.S. Department of Treasury are estimated.

<sup>1</sup> Includes National Archives and Records Administration, U.S. Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, U.S. Department of Labor, National Science Foundation, Federal Trade Commission, Federal Communications Commission, Environmental Protection Agency, Railroad Retirement Board, Commodities Futures Trading Commission, Equal Employment Opportunity Commission, Nuclear Regulatory Commission, and Office of Personnel Management. Environmental Protection Agency data for 1982 and 1988 are estimated, as are U.S. Department of Treasury data for 1982 and 1983, and National Science Foundation data for 1988 and 1989.

Note: Sum of components may not equal total due to independent rounding.

These data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the U.S. Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. However, other energy used by U.S. agencies that produce electricity or enrich uranium is included.

Source: U.S. DOE/EIA, *Annual Energy Review 1991*, Table 10.

**Table 41. U.S. Government Energy Use by Agency and Source, Fiscal Years 1980 and 1991**  
(trillion Btu)

	Petroleum					Electricity	Natural Gas	Coal and Other <sup>2</sup>	Total
	Motor Gasoline	Distillate and Residual Fuel Oils	Other <sup>1</sup>	Total					
				Distillate and Residual Fuel Oils	Other <sup>1</sup>				
<b>1980</b>									
Defense	28.0	278.9	638.6	945.5	298.4	105.3	45.6	1,394.8	
Energy	1.3	3.6	0.5	5.4	51.7	9.7	17.2	84.0	
Postal Service	10.0	2.8	0.1	12.8	35.0	3.0	1.4	52.3	
Veterans Affairs	0.5	3.4	0.0	3.9	18.5	14.0	1.8	38.2	
Transportation	1.4	7.6	5.3	14.3	11.8	1.0	0.4	27.6	
General Services Admin.	0.1	1.7	0.0	1.8	29.4	3.2	4.4	38.9	
NASA	0.3	1.0	1.5	2.8	15.3	2.6	0.7	21.4	
Agriculture	4.6	1.2	0.5	6.3	3.6	1.2	0.0	11.2	
Interior	2.7	2.1	0.6	5.5	4.5	1.6	0.1	11.7	
Health & Human Services	0.6	2.2	0.1	2.9	5.0	1.6	0.0	9.5	
Justice	1.9	0.5	0.1	2.4	2.4	2.0	0.5	7.4	
Other <sup>3</sup>	4.7	2.7	0.2	7.7	6.6	1.9	0.3	16.6	
<b>Total</b>	<b>56.1</b>	<b>307.7</b>	<b>647.6</b>	<b>1,011.3</b>	<b>482.3</b>	<b>147.3</b>	<b>72.6</b>	<b>1,713.5</b>	
<b>1991<sup>e</sup></b>									
Defense	12.5	218.0	728.3	958.9	120.6	114.5	47.7	1,241.7	
Energy	1.5	3.6	0.7	5.7	18.8	6.7	20.9	52.1	
Postal Service	6.3	3.2	0.2	9.7	12.1	4.6	0.4	26.7	
Veterans Affairs	0.4	1.5	0.0	1.9	8.3	13.9	0.9	25.0	
Transportation	1.8	6.5	5.6	13.8	3.9	1.1	0.1	19.0	
General Services Admin.	0.0	0.5	0.0	0.5	8.9	2.5	1.6	13.4	
NASA	0.2	0.9	1.5	2.6	6.7	2.7	0.6	12.7	
Agriculture	4.7	0.6	0.3	5.7	2.1	2.4	0.0	10.1	
Health & Human Services	0.0	2.1	0.0	2.1	3.4	2.2	0.2	8.0	
Justice	1.8	0.4	0.2	2.5	1.9	2.2	0.4	7.0	
Interior	1.5	1.0	1.1	3.6	1.4	1.0	0.1	6.0	
Other <sup>4</sup>	1.2	1.1	2.7	5.0	4.7	2.1	0.4	12.1	
<b>Total</b>	<b>32.0</b>	<b>241.0</b>	<b>739.0</b>	<b>1,011.9</b>	<b>192.7</b>	<b>155.8</b>	<b>73.3</b>	<b>1,433.7</b>	

e = estimate.

1 Includes aviation gasoline, jet fuel, liquefied petroleum gases, and other.

2 Includes purchased steam, coal, and other.

3 Includes U.S. Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, U.S. Department of Labor, National Science Foundation, U.S. Department of Housing and Urban Development, Federal Communications Commission, Office of Personnel Management, U.S. Department of State, U.S. Department of Treasury, Small Business Administration, and Environmental Protection Agency.

4 Includes National Archives and Records Administration, U.S. Department of Commerce, U.S. Department of Labor, U.S. Department of State, Environmental Protection Agency, Federal Communications Commission, Federal Trade Commission, National Science Foundation, Panama Canal Commission, Commodity Futures Trading Commission, Equal Employment Opportunity Commission, Nuclear Regulatory Commission, Office of Personnel Management, U.S. Department of Housing and Urban Development, U.S. Department of Treasury, Tennessee Valley Authority, Railroad Retirement Board, and U.S. Information Agency.

Note: Sum of components may not equal total due to independent rounding. These data include energy consumed at foreign installations and in foreign operations, including aviation and ocean bunkering, primarily by the Department of Defense. U.S. Government energy use for electricity generation and uranium enrichment is excluded. However, other energy used by U.S. agencies that produce electricity or enrich uranium is included.

Source: U.S. DOE/EIA, *Annual Energy Review 1991*, Table 11.



**Table 42. Fuel Consumption by Mode of Transportation, 1980-1990**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<b>Class I Railroads</b>											
Locomotives											
Diesel Oil, gals x 10 <sup>6</sup>	3,955	3,774	3,178	3,137	3,388	3,144	3,039	3,102	3,182	3,191	3,134
Motor Cars											
Diesel Oil, gals x 10 <sup>6</sup>	2	1	1	1	1	1	1	1	1	1	1
<b>Air</b>											
Certified Carriers <sup>*</sup>											
Jet Fuel, gals x 10 <sup>6</sup>	9,096	8,555	8,439	8,673	9,624	10,121	11,137	11,587 <sup>r</sup>	11,918 <sup>r</sup>	11,905	12,936
General Aviation											
Aviation Gasoline, gals x 10 <sup>6</sup>	520	489	448	428	462	421	409	402	398	343	353
Jet Fuel, gals x 10 <sup>6</sup>	766	759	887	613	739	691	732	673	746	688	663
<b>Highway</b>											
Gasoline, gals x 10 <sup>6</sup>											
Pass. Cars	71,883	70,954	70,062	69,906	68,717	69,268	71,216	70,573	71,949 <sup>r</sup>	72,749	72,435
Motorcycles	204	214	198	175	177	182	188	190	200	207	191
Diesel & Gasoline, gals x 10 <sup>6</sup>											
Commercial Buses <sup>1</sup>	696	711	721	737	679	688	681 <sup>r</sup>	696 <sup>r</sup>	685 <sup>r</sup>	718	725
School Buses	380	387	399	402	440	425 <sup>r</sup>	462 <sup>r</sup>	487 <sup>r</sup>	511 <sup>r</sup>	498	472
Single-Unit Trucks <sup>2</sup>	23,594	23,697	23,845	25,556	27,687	29,021	30,265	32,266	32,803 <sup>r</sup>	33,005	33,140
Other Single-Unit Trucks	5,557	5,574	5,661	6,118	6,582	6,735	6,929	7,091	7,260	7,412	7,339
Combination Trucks	12,703	12,960	12,636	13,447	14,781	15,280	15,716	16,493	17,123 <sup>r</sup>	17,495	17,577
<b>Water Transport</b>											
Residual Fuel Oil, gals x 10 <sup>6</sup>	8,952	7,922	6,409	5,724	4,581	4,590	5,889	6,105	6,355	7,192	6,326
Distillate Fuel Oil, gals x 10 <sup>6</sup>	1,478	1,723	1,423	1,642	1,764	1,699	1,949	1,865	1,992	2,258	2,065
Gasoline, gals x 10 <sup>6</sup>	1,052	1,093	1,062	1,069	1,325	1,053	1,130	1,179	1,218	1,252	1,300
<b>Transit<sup>**</sup></b>											
Electricity, kWh x 10 <sup>6</sup>	2,446	2,655	2,722	2,930	4,238	4,216	4,489	4,656	4,785	4,912	4,854
Gallons of Motor Fuel, gals x 10 <sup>6</sup>											
Gasoline	11	14	12	9	50	46	38	34	40	39	39
Diesel Oil	431	446	456	450	600	609	640	630	640	638	658
<b>Pipelines</b>											
Natural Gas, cu. ft. x 10 <sup>6</sup>	634,622	642,325	596,411	490,042	528,754	503,766	485,041	519,170	613,912	629,308	659,816
<b>Non-Highway<sup>3</sup> Use of Gasoline x 10<sup>6</sup></b>	3,655	3,515	3,260	3,216	3,885	4,005	4,068	4,108	4,020	4,049	4,078

r = revised.

\* Domestic consumption only.

\*\* Prior to 1984, excludes commuter rail, automated guideway, urban ferryboat, demand response, and most rural and smaller systems. Series not continuous between 1983 and 1984.

<sup>1</sup> Includes intercity and local buses.

<sup>2</sup> 2-axle, 4-tire single-unit trucks only.

<sup>3</sup> Private, commercial, and public non-highway use of gasoline.

Source: See Appendix A, p. A-21.

**Table 43. Fuel Consumption by Certificated Air Carriers, 1980-1990**  
(thousand gallons)

Year	Total Certificated Route Air Carriers	Domestic Operations				International Operations			
		Passenger/Cargo Carriers				Total International Operations	Majors <sup>4</sup>	Other	
		Total Domestic Operations	Majors <sup>1</sup>	Nationals <sup>2</sup>	Other <sup>3</sup>				
1980	11,034,038	9,096,323	7,424,555	1,094,678	577,090	1,937,715	1,764,506	173,209	
1981	10,587,769	8,555,248	7,263,415	1,119,021	172,812	2,032,520	1,654,395	378,125	
1982	10,405,726	8,438,672	6,936,089	1,231,483	271,101	1,967,054	1,589,285	377,769	
1983	10,670,863	8,672,574	7,136,444	1,162,543	373,586	1,998,289	1,670,922	327,367	
1984	11,910,302	9,623,895	7,439,082	1,702,290	482,523	2,286,407	1,833,195	453,212	
1985	12,598,193	10,121,329	7,726,689	2,106,161	288,479	2,476,864	2,052,972	423,892	
1986	13,682,296	11,137,330	8,556,771	2,227,520	353,642	2,544,966	2,117,062	427,903	
1987	14,480,454	11,586,837	10,210,249	1,044,581	332,008	2,893,616	2,677,289	216,329	
1988	15,180,729	11,917,901	10,515,047	1,068,388	334,471	3,212,825	3,020,519	242,035	
1989	15,462,435	11,905,141	10,274,147	1,415,557	215,437	3,557,294	3,297,217	260,077	
1990	16,412,553	12,935,950	11,279,812	952,097	203,541	3,977,103	3,586,302	390,801	

<sup>1</sup> In 1980, categorized as domestic trunk.

<sup>2</sup> In 1980, categorized as local service.

<sup>3</sup> In 1980, included helicopter carriers.

<sup>4</sup> In 1980, categorized as international trunk.

Note: Sum of components may not equal total due to independent rounding.

Source: 1980-1984: CAB, *Fuel Cost and Consumption, Twelve Months Ended December 31, 1984*, Tables 1, 2, 3, 4, 6, 7, and similar tables in earlier editions.  
1985-1990: U.S. DOT/RSPA, Data Administration Division, DAI-20.

**Table 44. Total Motor Vehicle Fuel Consumption and Travel<sup>1</sup>, 1980-1990**

<b>Year</b>	<b>Number Registered (thousands)</b>	<b>Vehicle Miles Traveled (millions)</b>	<b>Average Miles Traveled per Vehicle</b>	<b>Average Miles Traveled per Gallon</b>	<b>Fuel Consumed (million gallons)</b>	<b>Average Gallons Consumed per Vehicle</b>
1980	161,490	1,527,295	9,458	13.29	114,960	712
1981	164,118	1,552,803	9,462	13.57	114,453	697
1982	165,397	1,595,010	9,644	14.07	113,384	686
1983	169,334	1,652,788	9,761	14.24	116,081	686
1984	171,729	1,720,269	10,017	14.49	118,736	691
1985	177,098	1,774,179	10,018	14.62	121,322	685
1986	181,357	1,834,872	10,117	14.66	125,183	690
1987	183,872	1,921,204	10,449	15.07	127,515	694
1988	188,981	2,025,586	10,718	15.60	129,886	687
1989	191,694	2,096,456	10,936	15.90	131,817	688
1990	192,915	2,147,501	11,132	16.32	131,583	682

<sup>1</sup> Includes personal passenger vehicles, buses, and motor trucks.

Source: 1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.  
 1986-1990: *Ibid.*, *Highway Statistics*, annual issues, Table VM-1.

**Table 45. Fuel Consumption and Travel by Personal Passenger Vehicles, 1980-1990**

Year	Number Registered <sup>1</sup> (thousands)	Vehicle Miles Traveled <sup>1</sup> (millions)	Average Miles Traveled per Vehicle		Average Miles Traveled per Gallon		Fuel Consumed (million gallons)		Average Gallons Consumed per Vehicle	
			Passenger Cars	Motor-cycles	Passenger Cars	Motor-cycles	Passenger Cars	Motor-cycles	Passenger Cars	Motor-cycles
1980	127,295	1,121,810	9,141	1,794	15.46	50	71,883	204	591	36
1981	128,929	1,141,517	9,186	1,833	15.94	50	70,954	214	576	37
1982	129,456	1,176,166	9,428	1,722	16.65	50	70,062	198	566	34
1983	132,029	1,206,783	9,475	1,568	17.14	50	69,906	175	553	31
1984	133,638	1,233,703	9,558	1,603	17.83	50	68,717	177	536	32
1985	137,308	1,269,651	9,560	1,669	18.20	50	69,268	182	525	33
1986	140,693	1,310,611	9,608	1,786	18.27	50	71,216	188	526	36
1987	142,125	1,364,836	9,878	1,933	19.20	50	70,573	190	514	39
1988	145,836	1,439,319	10,119	2,186	19.95	50	71,949	200	507	44
1989	147,460	1,488,140	10,332	2,339	20.31	50	72,749	207	509	47
1990	147,809	1,524,942	10,556	2,247	20.92	50	72,435	191	505	45

<sup>1</sup> Includes motorcycles.

1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.

1986-1990: *Ibid.*, *Highway Statistics*, annual issues, Table VM-1.

Source:

Table 46. Fuel Consumption and Travel by Buses, 1980-1990

Year	Total <sup>1</sup> Vehicle Miles Traveled (millions)		Average Miles Traveled per Vehicle			Average Miles Traveled per Gallon			Total Fuel Consumed (million gallons)			Average Gallons Consumed per Vehicle		
	Number <sup>1</sup> Registered	Miles	Commercial	School	All Buses <sup>1</sup>	Commercial	School	All Buses <sup>1</sup>	Commercial	School	All Buses <sup>1</sup>	Commercial	School	All Buses <sup>1</sup>
1980	528,789	6,059	32,765	7,592	11,458	5.03	7.64	5.95	696	380	1,018	6,516	994	1,926
1981	543,894	6,241	32,996	6,780	11,475	4.98	7.65	5.92	711	387	1,054	6,626	886	1,938
1982	559,200	5,823	31,524	6,870	10,413	4.96	7.68	5.93	721	399	982	6,356	894	1,756
1983	582,884	5,199	32,795	6,532	8,919	4.95	7.70	5.92	737	402	878	6,625	848	1,507
1984	583,671	4,640	34,224	10,000	7,950	4.21	7.72	5.85	679	440	793	8,122	1,295	1,359
1985	593,485	4,876	36,859	10,145	8,216	4.15	7.74	5.84	688	452	835	8,879	1,311	1,407
1986	593,728	5,073	35,659	10,571	8,544	4.12	7.76	5.84	708	476	867	8,646	1,362	1,463
1987	602,055	5,318	36,818	10,833	8,833	4.16	7.78	5.89	721	501	903	8,857	1,392	1,500
1988	615,669	5,465	36,680	11,081	8,877	4.18	7.80	5.94	710	526	920	8,778	1,421	1,494
1989	625,040	5,659	40,921	10,526	9,054	4.37	8.03	5.96	718	498	949	9,356	1,311	1,518
1990	626,987	5,728	41,540	10,000	9,136	4.36	8.05	6.36	725	472	901	9,534	1,242	1,436

<sup>1</sup> Includes commercial, school and non-revenue buses.

Source: 1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.

1986-1990: *Ibid.*, *Highway Statistics*, annual issues, Table VM-1.

1984-1990: Commercial/School Bus: Transportation Policy Associates, personal communication.

**Table 47. Fuel Consumption and Travel by Trucks, 1980-1990**

Year	Number Registered (thousands)	Vehicle Miles Traveled (millions)	Average Miles Traveled per Vehicle			Average Miles Traveled per Gallon			Fuel Consumed (million gallons)			Average Gallons of Fuel Consumed per Vehicle		
			Single-Unit*	Combinations	Other Single Unit	Single-Unit*	Combinations	Other Single Unit	Single-Unit*	Combinations	Other Single Unit	Single-Unit*	Combinations	Other Single Unit
1980	33,667	399,426	10,437	48,472	9,103	12.33	5.41	7.16	23,594	12,703	5,557	846	8,966	1,271
1981	34,644	405,045	10,244	54,816	8,882	12.51	5.33	7.10	23,697	12,960	5,574	819	10,276	1,251
1982	35,382	413,021	10,276	52,689	9,297	12.84	5.28	7.10	23,845	12,636	5,661	800	9,987	1,309
1983	36,723	440,806	10,497	53,491	10,235	12.82	5.19	7.10	25,556	13,447	6,118	819	10,312	1,455
1984	37,507	481,926	11,150	57,730	11,465	12.93	5.23	7.07	27,687	14,781	6,582	862	11,030	1,621
1985	39,196	499,652	11,115	56,725	11,962	12.86	5.21	6.98	29,021	15,280	6,735	857	10,889	1,715
1986	40,069	519,188	11,173	58,497	12,547	12.85	5.21	6.97	30,265	15,716	6,929	869	11,234	1,800
1987	41,144	551,050	11,591	60,634	12,755	12.88	5.22	6.99	32,266	16,493	7,091	900	11,620	1,826
1988	42,529	580,802	11,846	61,066	12,948	13.41	5.27	7.06	32,760	17,101	7,260	883	11,584	1,834
1989	43,610	602,657	11,982	59,995	12,910	13.77	5.45	7.15	33,005	17,495	7,412	870	11,008	1,807
1990	44,479	616,831	12,078	60,032	12,683	14.09	5.49	7.29	33,140	17,577	7,339	857	10,936	1,739

\* 2-axle, 4-tire trucks.  
 1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.  
 1986-1990: *Ibid.*, *Highway Statistics*, annual issues, Table VM-1.

**Table 48. Motor Fuel and Total Energy Consumption  
by the U.S. Transit Industry  
(at 5-Year Intervals 1955-1975 and Annually 1976-1990\*)**

Year	Kilowatt Hours Consumed (millions)	Gallons of Motor Fuel Used (thousands)	
		Gasoline	Diesel
1955	3,530	246,000	172,600
1960	2,908	191,900	208,100
1965	2,584	124,200	248,400
1970	2,561	68,200	270,600
1975	2,646	7,576	365,060
1976	2,576	6,163	389,187
1977	2,303	9,273	402,842
1978	2,223	9,331	422,017
1979	2,473	8,973	423,212
1980	2,446	11,400	431,400
1981	2,655	13,950	445,950
1982	2,722	11,670	455,590
1983	2,930	9,460	450,260
1984	4,238	49,907	600,364
1985	4,216	45,704	608,738
1986	4,489	38,156	640,044
1987	4,656	34,220	630,273
1988	4,785	40,055	640,069
1989	4,912	39,389	638,016
1990 <sup>p</sup>	4,854	38,605	658,444

<sup>p</sup> = preliminary.

\* Prior to 1984, excludes commuter rail, automated guideway, urban ferryboat, demand response, and most rural and smaller systems. Series not continuous between 1983 and 1984.

Source: American Public Transit Association, *Transit Fact Book*, 1991, Table 45, and similar table in earlier editions.

**Table 49. Average Retail Price of Transportation Fuel, 1980-1991**  
(cents per gallon)

Year	Aviation Fuels		Highway Fuels				Railroad Fuel
	Aviation Gasoline	Jet Fuel Kerosene	Leaded Regular	Motor Gasoline Unleaded Premium	Unleaded Regular	Truck No. 2 Diesel	Diesel
1980	108.4	86.8	119.1	128.1	124.5	81.8	83.0
1981	130.3	102.4	131.1	147.0	137.8	99.5	100.2
1982	131.2	96.3	122.2	141.5	129.6	94.2	95.4
1983	125.5	87.8	115.7	138.3	124.1	82.6	83.1
1984	123.4	84.2	112.9	136.6	121.2	82.3	82.6
1985	120.1	79.6	111.5	134.0	120.2	78.9	78.3
1986	101.1	52.9	85.7	108.5	92.7	47.8	49.2
1987	90.7	54.3	89.7	109.3	94.8	55.1	53.8
1988	89.1	51.3	89.9	110.7	94.6	50.0	49.2
1989	99.5	59.2	99.8	119.7	102.1	58.5	56.3
1990	112.0	76.6	114.9	134.9	116.4	72.5	69.2
1991	104.7	65.3	n/a	132.1	114.0	64.8	n/a

n/a = not available.

Railroad Fuel: Association of American Railroads, *Railroad Facts*, 1991, p. 60.

Other data: U.S. DOE/EIA, *Monthly Energy Review*, April 1992, Tables 9.4/9.7 and similar tables in earlier editions.



**Table 50. Gasoline Cost per Mile at Various Gasoline Prices, 1991 (cents)**

Vehicle	Avg. MPG.	Price Per Gallon						
		1.00	1.10	1.20	1.30	1.40	1.50	1.60
Subcompact	26.2	3.81	4.19	4.58	4.96	5.34	5.72	6.10
Compact	22.9	4.37	4.81	5.25	5.69	6.12	6.56	7.00
Intermediate	19.9	5.03	5.54	6.04	6.54	7.04	7.55	8.05
Full-Size	18.0	5.56	6.11	6.67	7.23	7.78	8.34	8.89
Compact Pick-Up	21.7	4.61	5.07	5.53	5.99	6.46	6.92	7.38
Full-Size Pick-Up	14.5	6.90	7.60	8.29	8.98	9.67	10.36	11.05
Minivan	17.5	5.70	6.27	6.84	7.41	7.98	8.55	9.12
Full-Size Van	11.2	8.90	9.80	10.69	11.58	12.47	13.36	14.25

Source: U.S. DOT/FHWA, *Cost of Owning and Operating Automobiles, Vans, and Light Trucks, 1991*.

**Table 51. Price Trend of Gasoline vs. Other Consumer Goods and Services  
(at 5-Year Intervals 1955-1970 and Annually 1971-1991)**

Year	Retail Price of Regular Grade Gasoline (Cents Per Gallon)			Price Indexes of Motor Fuel and Other Consumer Items (Index: 1982-84 = 100)							
	Service Station Price Excl. Taxes	State and Federal Taxes	Service Station Price Incl. Taxes	All Items	Food	Shelter	Apparel and Upkeep	Motor Fuel	Medical Care		
1955	21.42	7.65	29.07	26.8	27.8	22.7	42.9	22.1	18.2		
1960	20.99	10.14	31.13	29.6	30.0	25.2	45.7	24.4	22.3		
1965	20.70	10.45	31.15	31.5	32.2	27.0	47.8	25.1	25.2		
1970	24.55	11.14	36.69	38.8	39.2	35.5	59.2	27.9	34.0		
1971	25.20	11.23	36.43	40.5	40.4	37.0	61.1	28.1	36.1		
1972	24.46	11.67	36.13	41.8	42.1	38.7	62.3	28.4	37.3		
1973	26.88	11.94	38.83	44.4	48.2	40.5	64.6	31.2	38.8		
1974	41.20	12.00	53.20	49.3	55.1	44.4	69.4	42.2	42.4		
1975	44.93	11.77	56.70	53.8	59.8	48.8	72.5	45.1	47.5		
1976	47.44	12.03	59.47	56.9	61.6	51.5	75.2	47.0	52.0		
1977	49.83	12.37	62.20	60.6	65.5	54.9	78.6	49.7	57.0		
1978	49.98	12.62	62.60	65.2	72.0	60.5	81.4	51.8	61.8		
1979	72.24	13.46	85.70	72.6	79.9	68.9	84.9	70.1	67.5		
1980	107.35	14.37	119.10	82.4	86.8	81.0	90.9	97.4	74.9		
1981	122.33 <sup>e</sup>	12.97 <sup>e</sup>	131.10	90.9	93.6	90.5	95.3	108.5	82.9		
1982	108.11 <sup>e</sup>	14.09 <sup>e</sup>	122.20	96.5	97.4	96.9	97.8	102.8	92.5		
1983	95.36	20.34 <sup>e</sup>	115.70	99.6	99.4	99.1	100.2	99.4	100.6		
1984	92.06	20.84	112.90	103.9	103.2	104.0	102.1	97.9	106.8		
1985	89.64	21.86	111.50	107.6	105.6	109.8	105.0	98.7	113.5		
1986	63.63	22.07	85.70	109.6	109.0	115.8	105.9	77.1	122.0		
1987	66.33	23.37	89.70	113.6	113.5	121.3	110.6	80.2	130.1		
1988	65.85	24.10	89.95	118.3	118.2	127.1	115.4	80.9	138.6		
1989	74.87	24.80	99.67	124.0	125.1	132.8	118.6	88.5	149.3		
1990	89.00	25.90	114.90	130.7	132.4	140.0	124.1	101.2	162.8		
1991	81.20	32.80	114.00*	136.2	136.3	146.3	128.7	99.4	177.0		

<sup>e</sup> = estimate.  
<sup>\*</sup> Price of regular unleaded gasoline. Regular leaded prices are no longer available.  
 Price of Regular Grade Gasoline: American Petroleum Institute, *Basic Petroleum Data Book*, Section VI, Table 4/4a/5a.  
 Source: Price Indexes of Motor Fuel/Consumer Items: 102nd Congress, 2nd Session, *Economic Report of the President*, February 1992, Table B-56/57.

**Table 52. Average Fuel Efficiency of U.S. Passenger Cars  
(at 5-Year Intervals 1955-1970 and Annually 1971-1992)**

Year	Average U.S. Passenger Car Fuel Efficiency, (mpg) (Calendar Year Basis)	New Car Fuel Efficiency, (mpg) <sup>1</sup> (Model Year Basis)	
		Domestic Cars	Domestic and Imported Cars
1955	14.53	16.0	16.1
1960	14.28	15.5	16.1
1965	14.27	15.4	15.9
1970	13.52	14.1	15.2
1971	13.54	13.7	14.7
1972	13.40	13.6	14.4
1973	13.30	13.3	14.2
1974	13.42	12.8	13.7
1975	13.52	15.1	16.2
1976	13.53	16.5	17.4
1977	13.80	17.6	18.8
1978	14.04	18.7	19.9
1979	14.41	19.3	20.3
1980	15.46	22.6	24.3
1981	15.94	24.2	25.9
1982	16.65	25.0	26.6
1983	17.14	24.4	26.4
1984	17.83	25.5	26.9
1985	18.20	26.3	27.6
1986	18.27	26.9	28.2
1987	19.20	27.0	28.5
1988	19.87	27.4	28.8
1989	20.31	27.2	28.4
1990	20.92	26.9	28.0
1991	n/a	27.4	28.3
1992	n/a	26.9	27.8

n/a = not available.

<sup>1</sup> 55% city, 45% highway miles sales weighted harmonic average.

Source: Average Passenger Car Fuel Efficiency: U.S. DOT/FHWA, *Highway Statistics*, annual issues, Table VM-1.

New Car Fuel Efficiency:

1955-1977: U.S. DOT/NHTSA, Motor Vehicle Requirements Division, NRM-21.

1978-1989: *Ibid.*, EPA Final Fuel Economy Calculations for NHTSA.

1990-1992: *Ibid.*, Manufacturer's preliminary estimates for NHTSA.

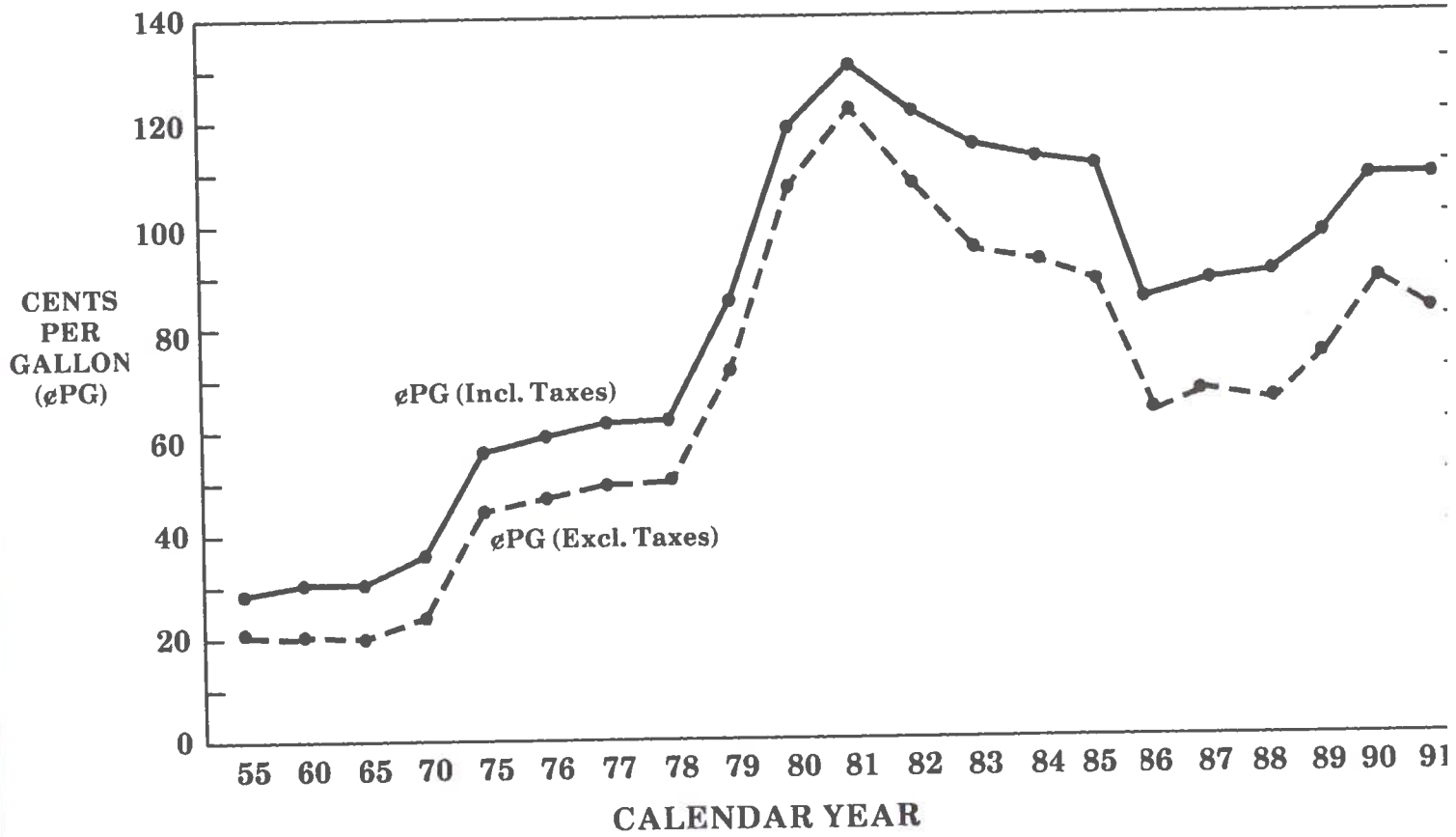


Figure 33. Price Trend of Regular Grade Gasoline Prices, 1955-1991

\* = price of regular unleaded gasoline.

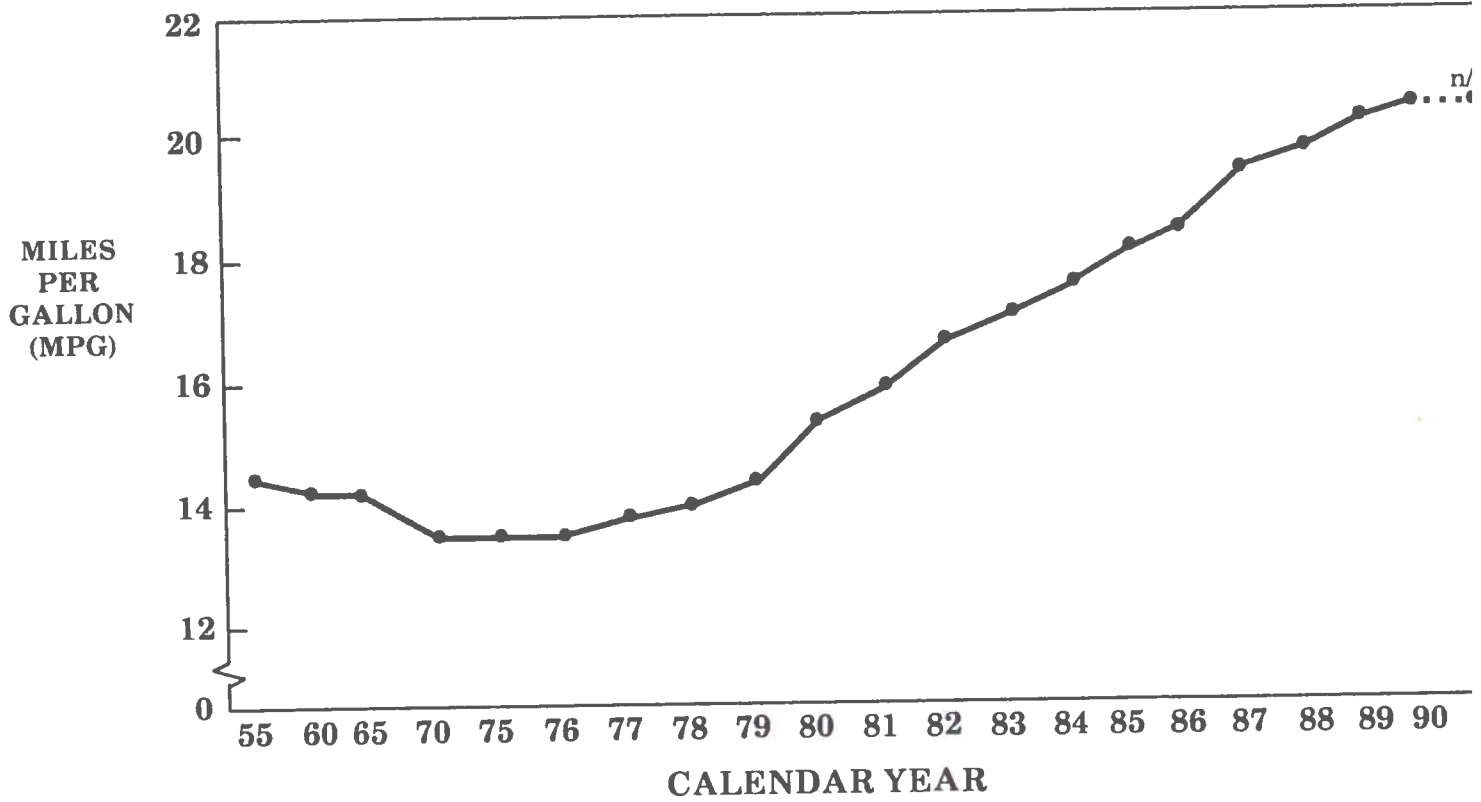
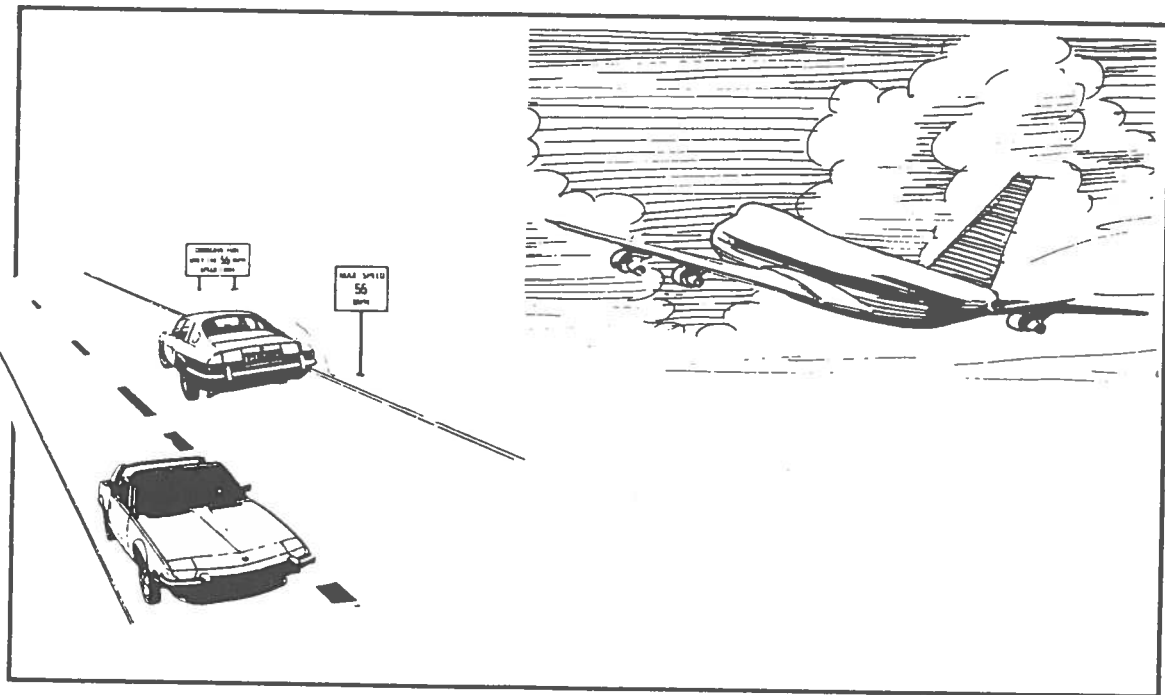


Figure 34. Average Fuel Efficiency of U.S. Passenger Cars, 1955-1991

n/a = not available.

## Part 2. Energy Intensiveness

This section presents the energy intensiveness of each transportation mode utilizing the number of miles traveled and the amount of fuel consumed for the years 1980-1990.



**Table 53. Energy Intensiveness of Certificated Air Carriers (All Services), 1980-1990**

Year	Aircraft Miles (millions)		Fuel Consumed (million gallons)		Passenger-Miles (millions)		Passenger Load Factor (%)		Btu/Passenger-Miles	
	Domestic Operations	Inter-national Operations	Domestic Operations	Inter-national Operations	Domestic Operations	Inter-national Operations	Domestic Operations	Inter-national Operations	Domestic Operations	Inter-national Operations
1980	2,523	401	9,218	2,093	204,368	63,354	58.0	62.8	6,089	4,460
1981	2,442	356	8,555	2,033	201,435	58,629	57.4	63.7	5,733	4,681
1982	2,443	362	8,439	1,967	213,631	58,804	58.5	61.4	5,333	4,516
1983	2,553	363	8,673	1,998	232,165	61,823	59.9	64.3	5,043	4,363
1984	2,875	389	9,624	2,286	250,687	68,817	57.7	66.2	5,183	4,485
1985	3,046	415	10,121	2,477	277,837	73,237	60.7	64.6	4,918	4,566
1986	3,421	451	11,137	2,545	307,885	71,038	60.7	58.9	4,883	4,836
1987	3,652	530	11,587	2,894	329,214	88,616	61.6	65.6	4,751	4,408
1988	3,738	615	11,918	3,213	334,291	103,358	61.4	67.1	4,813	4,197
1989	3,748	694	11,905	3,557	335,214	112,266	62.3	66.6	4,794	4,277
1990	3,963	760	12,936	3,977	345,873	126,363	60.4	69.1	5,049	4,249

Note: Heat equivalent factor used for Btu conversion is 135,000 Btu/gallon.

Source: Aircraft Miles:

1980-1983: CAB, *Air Carrier Traffic Statistics*, 1984, pp. 5, 15, and similar tables in earlier editions.  
 1984-1990: U.S. DOT/RSPA, *Ibid.*, December issues, pp. 2, 3; sum of lines 27 and 50.

Fuel Consumed:

1980-1984: CAB, *Fuel Cost and Consumption, Twelve Months Ended Dec. 31, 1984*, Tables 1, 2, 3, 4, 6, 7, and similar tables in earlier editions.  
 1985-1990: U.S. DOT/RSPA, Data Administration Division, DAI-20.

Passenger Miles:

1980-1983: CAB, *Air Carrier Traffic Statistics*, 1984, pp. 4, 5, and similar tables in earlier editions.  
 1984-1990: U.S. DOT/RSPA, *Ibid.*, December issues, pp. 2, 3; line 1.

Passenger Load Factor:

1980-1983: CAB, *Ibid.*, 1984, pp. 5, 15, and similar tables in earlier editions.  
 1984-1990: U.S. DOT/RSPA, *Ibid.*, December issues, pp. 2, 3; line 15.

**Table 54. Energy Intensiveness of General Aviation, 1980-1990**

Year	Intercity Passenger-Miles (millions)	Fuel Consumption (million gallons)		Btu/Passenger-Miles
		AVGAS	Jet Fuel	
1980	14,700	520	766	11,286
1981	14,600	489	759	11,044
1982	13,100	448	887	13,252
1983	12,700	428	613	10,566
1984	13,000	462	739	11,946
1985	13,000	421	691	11,068
1986	12,400	409	732	11,934
1987	12,100	402	673	11,501
1988	12,100	398	746	12,276
1989	12,200	343	688	10,992
1990	12,300	353	663	10,726

Note: The heat equivalent factors used in Btu conversion are:

AVGAS = 120,190 Btu/gal.

Jet Fuel (kerosene) = 135,000 Btu/gal.

Source: Passenger-Miles Flown: Eno Foundation for Transportation, *Transportation In America*, 1991, p. 47.

Fuel Consumed: U.S. DOT/FAA, *General Aviation Activity and Avionics Survey*, annual editions, Table 5-1.

Table 55. Energy Intensiveness of Passenger Cars and Motorcycles, 1980-1990

Year	<u>Vehicle-Miles</u> (millions)		<u>Passenger-Miles</u> (millions)		<u>Fuel Consumed</u> (million gallons)		<u>BTU/Passenger-Miles</u>	
	Passenger Cars	Motorcycles	Passenger Cars	Motorcycles	Passenger Cars	Motorcycles	Passenger Cars	Motorcycles
1980	1,111,596	10,214	2,000,872	11,235	71,883	204	4,491	2,270
1981	1,130,827	10,690	2,035,488	11,759	70,954	214	4,357	2,275
1982	1,166,256	9,910	2,099,260	10,901	70,062	198	4,172	2,270
1983	1,198,023	8,760	2,036,639	9,636	69,906	175	4,291	2,270
1984	1,224,919	8,784	2,082,362	9,662	68,717	176	4,123	2,277
1985	1,260,565	9,086	2,142,960	9,995	69,268	182	4,040	2,276
1986	1,301,214	9,397	2,212,063	11,558	71,216	188	4,024	2,033
1987	1,355,330	9,506	2,304,061	11,692	70,573	190	3,829	2,031
1988 <sup>r</sup>	1,429,579	10,024	2,430,284	12,329	71,949	200	3,701	2,028
1989	1,477,769	10,371	2,512,207	12,756	72,749	207	3,620	2,028
1990	1,515,370	9,572	2,454,899	13,114	72,435	191	3,688	1,821

<sup>r</sup> = revised.

Note: Passenger-mile data is based on vehicle-miles and an average occupancy rate of 1.8 (1980-1982), 1.7 (1983-1989), 1.62 (1990) for passenger cars; and 1.1 (1980-1985), 1.23 (1986-1989), 1.37 (1990) for motorcycles.

The heat equivalent factor used for Btu conversion is 125,000 Btu/gal.

Source: 1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.

1986-1990: *Ibid.*, *Highway Statistics*, annual issues, VM-1.



Table 30. Energy Intensity of Trucks, 1980-1990

Year	Vehicle-Miles (millions)		Passenger-Miles (millions)		Fuel Consumed (million gal.)		Btu/Passenger-Miles		
	Single-Unit*	Other Single-Unit	Single-Unit*	Other Single-Unit	Single-Unit*	Other Single-Unit	Single-Unit*	Other Single-Unit	
1980	290,935	39,813	378,216	39,813	23,594	5,557	7,798	19,359	
1981	296,343	39,568	385,246	39,568	23,697	5,574	7,689	19,539	
1982	306,141	40,212	397,983	40,212	23,845	5,661	7,489	19,526	
1983	327,643	43,409	425,936	43,409	25,556	6,118	7,500	19,548	
1984	357,999	46,560	465,399	46,560	27,687	6,582	7,436	19,607	
1985	373,072	46,980	484,994	46,980	29,021	6,735	7,480	19,884	
1986	389,047	48,308	505,761	48,308	30,265	6,929	7,480	19,894	
1987	415,449	49,537	540,084	49,537	32,266	7,091	7,468	19,854	
1988 <sup>r</sup>	439,496	51,239	571,345	51,239	32,803	7,260	7,178	19,652	
1989	454,339	52,969	590,641	52,969	33,005	7,412	6,685	19,408	
1990	466,827	53,522	611,543	53,522	33,140	7,339	6,774	19,019	
									25,268

<sup>r</sup> = revised.

\* 2-axle, 4-tire trucks only.

Note: Passenger-mile data for single-unit trucks is based on vehicle-miles and an average occupancy rate of 1.3 (1980-1989) and 1.31 (1990). Passenger-mile data for other single-unit trucks and combination trucks is based on vehicle-miles and an average occupancy rate of 1.0.

The heat equivalent factors used for Btu conversions are:

Automotive gasoline = 125,000 Btu/gal. (single-unit trucks).

Distillate fuel = 138,700 Btu/gal. (combinations) (other single-unit trucks).

Source: 1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.

1986-1990: *Ibid.*, *Highway Statistics*, annual issues, VM-1.

**Table 57. Energy Intensiveness of Local Transit Buses and School Buses  
1980-1990**

Year	Vehicle-Miles (millions)		Passenger-Miles (millions)		Fuel Consumed (million gal.)		Btu/ Passenger-Miles	
	Motor Bus	School Bus	Motor Bus	School Bus	Motor Bus (Diesel)	School Bus (Gasoline)	Motor Bus	School Bus
1980	1,677	3,000	21,790	41,000	431	380	2,743	1,159
1981	1,685	3,000	21,012	41,200	446	387	2,944	1,174
1982	1,669	3,000	19,987	40,800	456	399	3,164	1,222
1983	1,678	3,000	20,047	43,100	450	402	3,113	1,166
1984	1,845	3,400	21,595	78,300	505	421	3,243	672
1985	1,863	3,400	21,161	70,000	518	425	3,395	759
1986	2,002	3,700	21,395	89,100	547	462	3,546	648
1987	2,079	3,900	20,970	72,900	543	487	3,592	835
1988	2,097	4,100	20,753	83,200	553	511	3,696	768
1989	2,109	4,000	20,768	80,600	551	498	3,680	772
1990	2,153	3,800	21,127	74,200	568	472	3,729	795

Note: The heat equivalent factors used for Btu conversions are:  
Automotive gasoline = 125,000 Btu/gal. (School Bus).  
Distillate oil = 138,700 Btu/gal. (Motor Bus).

Source: School Bus: 1980-1990: National Safety Council, Accident Facts, annual issues.  
(fuel consumed): 1980-1990: Eno Foundation for Transportation, *Transportation In America*, 1992, and earlier editions published by Transportation Policy Associates.  
Motor Bus: 1980-1990: American Public Transit Association (APTA), *Transit Fact Book*, 1991, pp. 73, 74.

**Table 58. Energy Intensiveness of Class I  
Intercity Buses, 1980-1990**

Year	Passenger- Miles (millions)	Fuel Consumed (million gallons)	Btu/ Passenger- Miles
1980	16,500	132.2	1,111
1981	15,730	123.0	1,085
1982	16,070	123.1	1,062
1983	14,100	105.8	1,041
1984	13,420	104.7	1,082
1985	12,540	102.6	1,135
1986	12,063	94.2	1,083
1987	11,701	97.8	1,159
1988	11,935	101.6	1,181
1989	13,221	105.1	1,103
1990	13,820	99.0	994

Note: The heat equivalent factor used in Btu conversion is 138,700 Btu/gal.  
Source: 1980-1982: American Bus Association, Public Affairs Office.  
1983-1990: estimate.

**Table 59. Energy Intensiveness of Class I  
Railroad Freight, 1980-1990**

Year	Revenue Freight Ton- Miles (millions)	Fuel Consumed (million gallons)	Btu/ Revenue Freight Ton-Miles
1980	918,621	3,904	589
1981	910,169	3,722	567
1982	797,759	3,130	544
1983	828,275	3,112	521
1984	921,542	3,355	505
1985	876,984	3,110	492
1986	867,722	3,008	481
1987	943,747	3,079	453
1988	996,182	3,159	440
1989	1,013,841	3,169	434
1990	1,033,969	3,115	418

Note: The heat equivalent factor used for Btu conversion is 138,700 Btu/gal.  
Source: AAR, *Railroad Facts*, 1991, p. 40.

**Table 60. Energy Intensiveness of Amtrak Service, 1980-1990**

Year	Revenue Passenger-Miles (10 <sup>6</sup> )	Fuel Consumed		Total Fuel Consumed (10 <sup>9</sup> Btu)*	Btu/Revenue Passenger-Miles*
		Locomotive			
		Diesel gallons (10 <sup>6</sup> )	Electric kWh (10 <sup>6</sup> )*		
1980	4,503	63.5	253.8	10,600	2,353
1981	4,762	48.9	215.5	8,177	1,716
1982	4,172	60.9	218.7	9,801	2,350
1983	4,246	60.0	274.4	9,929	2,339
1984	4,552	63.9	281.5	10,523	2,312
1985	4,785	64.8	295.1	10,236	2,239
1986	5,011	56.8	303.7	9,500	1,900
1987	5,361	58.2	313.9	9,469	1,768
1988	5,654	75.3	246.7	11,324	2,002
1989	5,840	74.7	283.1	11,601	1,986
1990	6,041	82.1	329.6	12,512	2,071

\* Does not include electric power generation and distribution losses; which, if included, would increase figures shown by about 20%.

Note: The heat equivalent factors used in Btu conversion are:

Diesel = 138,700 Btu/gal.

Electric = 3,412 Btu/kWh.

Source: Amtrak, State and Local Affairs Department.

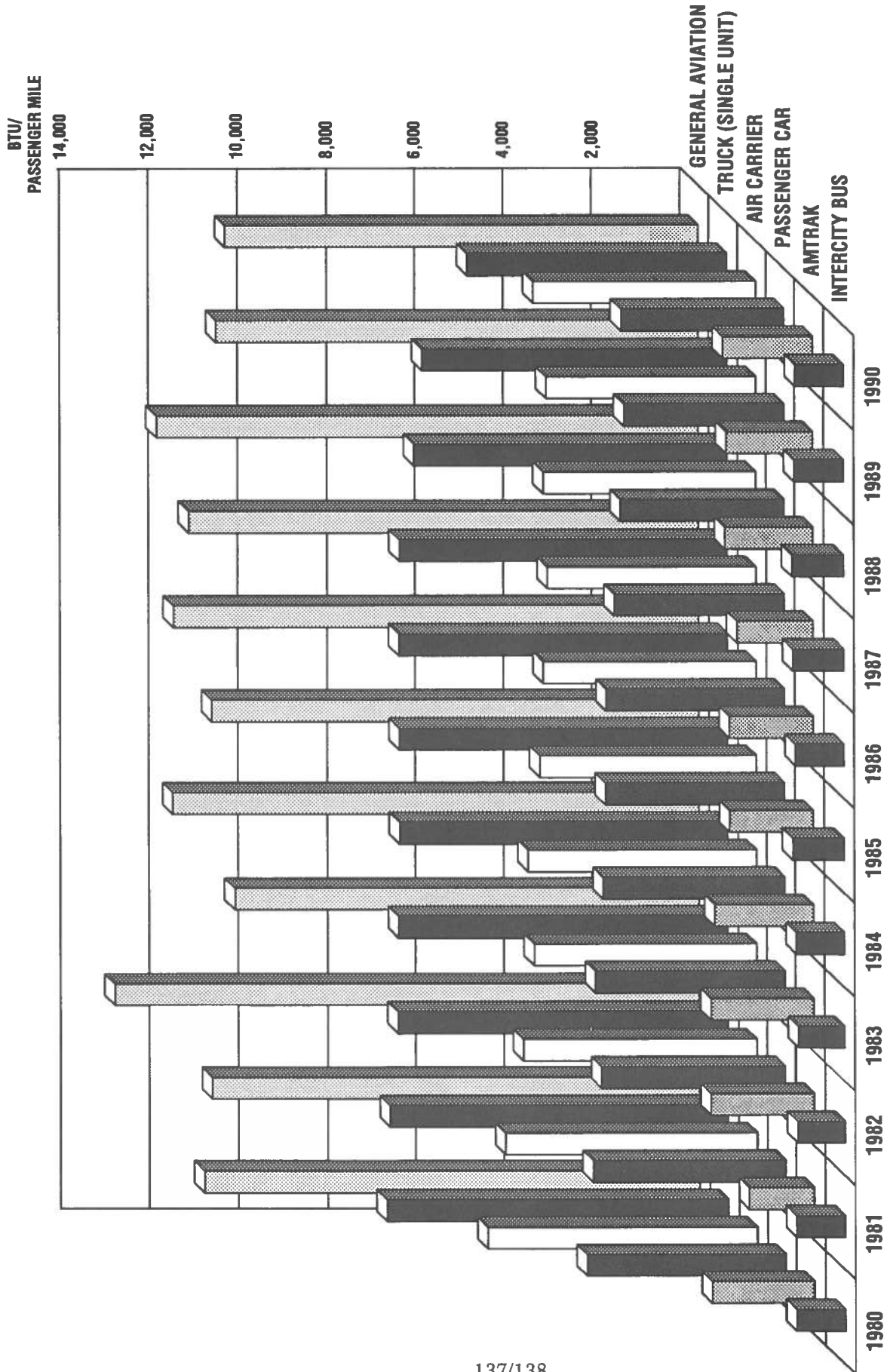


Figure 35. Energy Intensiveness by Passenger Mode, 1980-1990



## Part 3. Energy Transport

Included in this section are data showing the types of energy transported in the U.S., the miles traveled, and the means used for transportation. Data cover the period 1980-1990, and in some instances extend back to 1955.

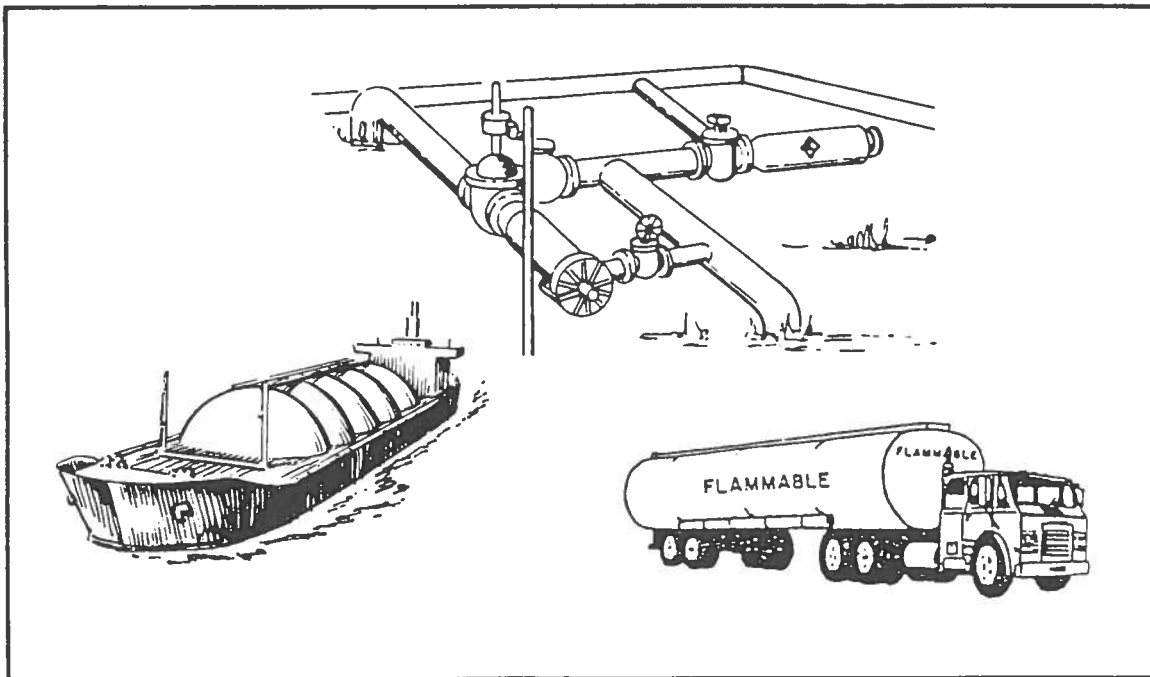


Table 61. Crude Oil Transported in the U.S. by Mode of Transportation, 1980-1990  
(billion ton-miles)

Year	Pipelines <sup>1</sup>		Water Carriers		Truckse		Railroads		Total Ton-Miles
	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	
1980	362.6	48.2	387.4	51.4	2.5	0.3	0.5	0.1	753.0
1981	333.1	45.0	404.9	54.6	2.2	0.3	0.5	0.1	740.7
1982	335.1	43.5	432.7	56.2	2.0	0.2	0.4	0.1	770.2
1983	332.4	41.2	471.2	58.5	2.0	0.2	0.5	0.1	806.1
1984	333.0	44.5	412.6	55.1	2.2	0.3	0.6	0.1	748.4
1985	334.4	42.5	449.2	57.2	1.8	0.2	0.8	0.1	786.2
1986	335.2	44.6	413.6	55.1	1.7	0.2	0.8	0.1	751.3
1987	341.5	44.5	423.3	55.2	1.6	0.2	0.9	0.1	767.3
1988r	350.7	47.4	386.8	52.3	1.6	0.2	0.8	0.1	739.9
1989r	338.7	47.4	386.8	52.3	1.6	0.2	0.5	0.1	727.6
1990e	334.5	52.5	300.3	47.2	1.5	0.2	0.5	0.1	636.8

r = revised.

e = estimate.

<sup>1</sup> The amounts carried by pipeline are based on ton-miles of crude and petroleum products for Federally regulated pipelines (84 percent) plus an estimated breakdown of crude and petroleum products for the ton-miles for pipelines not Federally regulated (16 percent).

Source: 1980-1989: Association of Oil Pipelines, *Shifts in Petroleum Transportation*, 1991, Table 2.

1990: Eno Foundation for Transportation, *Transportation In America*, 1992, p. 59.



**Table 62. Refined Petroleum Products Transported in the U.S.  
by Mode of Transportation, 1980-1990  
(billion ton-miles)**

Year	Pipelines <sup>1</sup>		Water Carriers		Trucks <sup>e</sup>		Railroads		Total Ton-Miles
	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	
1980	225.6	45.8	230.4	46.8	24.3	5.0	12.0	2.4	492.3
1981	230.6	48.3	212.3	44.4	22.7	4.8	12.1	2.5	477.7
1982	230.6	51.5	184.2	41.1	20.7	4.6	12.5	2.8	448.0
1983	223.7	53.6	159.3	38.2	23.1	5.5	11.3	2.7	417.4
1984	235.1	54.4	158.1	36.6	27.0	6.3	11.6	2.7	431.8
1985	229.9	56.2	141.2	34.5	26.9	6.6	11.3	2.7	409.3
1986	242.7	55.6	154.5	35.4	28.0	6.4	11.3	2.6	436.5
1987	245.3	57.3	143.2	33.4	28.8	6.7	11.2	2.6	428.4
1988 <sup>r</sup>	250.4	55.9	156.9	35.0	28.9	6.4	12.0	2.7	448.2
1989 <sup>r</sup>	245.5	55.7	154.0	34.9	28.8	6.5	12.9	2.9	441.2
1990 <sup>e</sup>	249.3	56.0	154.2	34.7	28.2	6.3	13.3	3.0	445.0

<sup>r</sup> = revised.

<sup>e</sup> = estimate.

<sup>1</sup> The amounts carried by pipeline are based on ton-miles of crude and petroleum products for Federally regulated pipelines (84 percent) plus an estimated breakdown of crude and petroleum products for the ton-miles for pipelines not Federally regulated (16 percent).

Source: 1980-1989: Association of Oil Pipelines, *Shifts in Petroleum Transportation*, 1991, Table 3.

1990: Eno Foundation for Transportation, *Transportation In America*, 1992, p. 59.

**Table 63. Crude Petroleum and Petroleum Products Transported in the U.S.  
by Mode of Transportation, 1980-1990  
(billion ton-miles)**

Year	Pipelines <sup>1</sup>		Water Carriers		Truckse		Railroads		Total Ton-Miles
	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	
1980	588.2	47.24	617.8	49.61	26.8	2.15	12.5	1.00	1,245.3
1981	563.7	46.27	617.2	50.66	24.9	2.04	12.6	1.03	1,218.4
1982	565.7	46.44	616.9	50.64	22.7	1.86	12.9	1.06	1,218.2
1983	556.1	45.45	630.5	51.53	25.1	2.05	11.8	0.97	1,223.5
1984	568.1	48.14	570.7	48.36	29.2	2.47	12.2	1.03	1,180.2
1985	564.3	47.20	590.4	49.39	28.7	2.40	12.1	1.01	1,195.5
1986	577.9	48.65	568.1	47.83	29.7	2.50	12.1	1.02	1,187.8
1987	586.8	49.07	566.5	47.37	30.4	2.54	12.1	1.01	1,195.7
1988 <sup>r</sup>	601.1	50.59	543.7	45.76	30.5	2.57	12.8	1.08	1,188.1
1989 <sup>r</sup>	584.2	50.98	466.2	45.61	30.4	2.78	12.8	1.08	1,093.6
1990 <sup>e</sup>	583.8	53.97	454.5	42.01	29.7	2.75	13.8	1.28	1,081.8

<sup>r</sup> = revised.

<sup>e</sup> = estimate.

<sup>1</sup> The amounts carried by pipeline are based on ton-miles of crude and petroleum products for Federally regulated pipelines (84 percent) plus an estimated breakdown of crude and petroleum products for the ton-miles for pipelines not Federally regulated (16 percent).

Source: 1980-1989: Association of Oil Pipelines, *Shifts in Petroleum Transportation*, 1991, Table 1.

1990: Eno Foundation for Transportation, *Transportation In America*, 1992, p. 59.

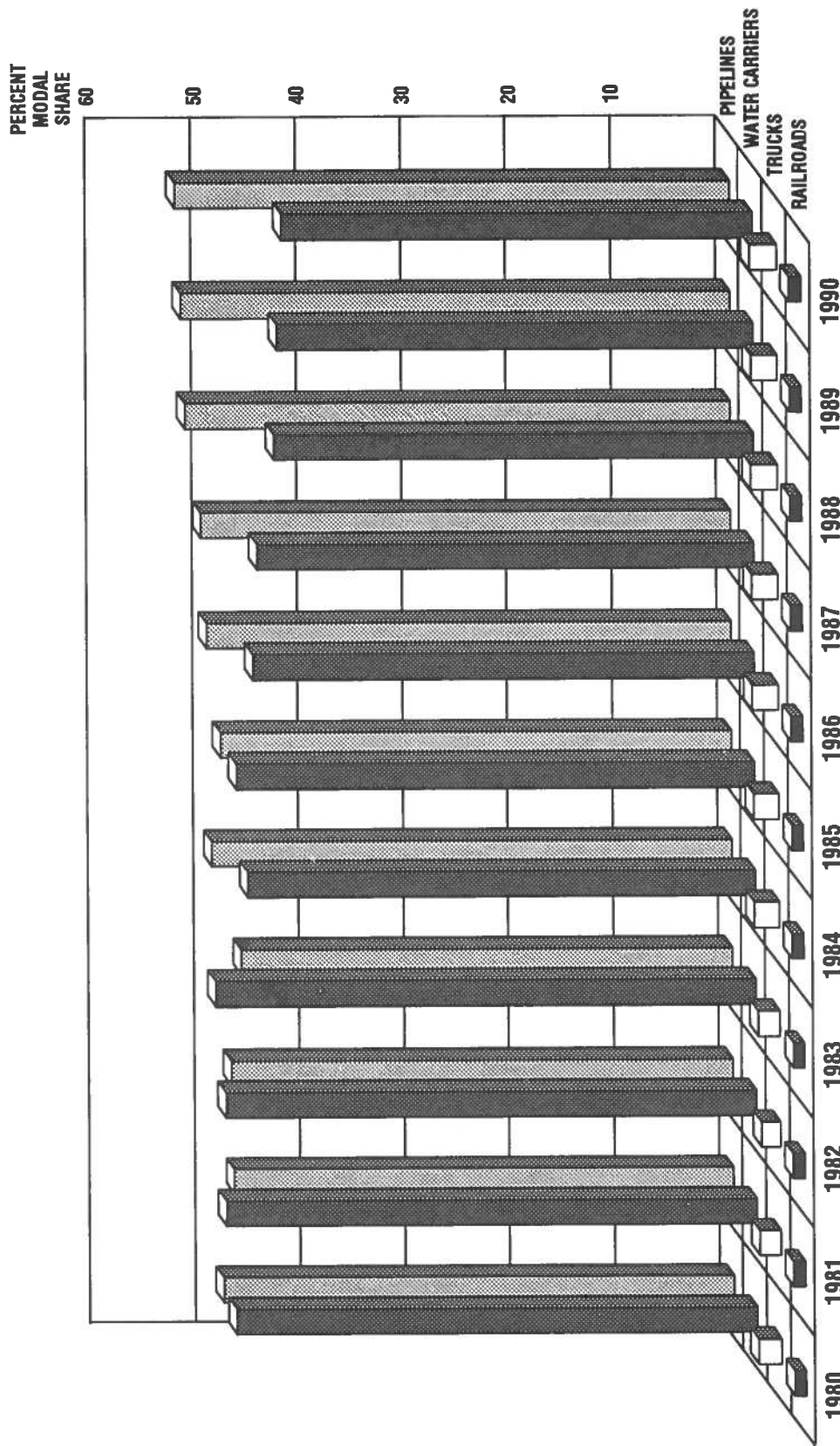


Figure 36. Crude Petroleum and Petroleum Products Transported in the U.S. by Modal Share, 1980-1990

**Table 64. U.S. Gas Utility Industry Miles of Pipeline and Main, by Type<sup>1</sup>  
(At 5-Year Intervals 1955-1970 and Annually 1971-1990)  
(thousands)**

Year	Total	Field and Gathering	Transmission Pipeline <sup>2</sup>	Distribution Main
1955	496.7	45.7	145.9	305.1
1960	630.9	55.8	183.7	391.4
1965	767.5	61.7	211.3	494.5
1970	913.3	66.3	252.2	594.8
1971	931.4	66.2	254.8	610.4
1972	948.1	66.9	258.1	623.1
1973	962.9	65.9	263.1	633.8
1974	974.1	66.4	262.2	645.6
1975	979.3	68.5	262.6	648.2
1976	987.7	70.3	258.2	659.1
1977	998.9	71.5	260.5	666.9
1978	1,013.0	74.9	260.6	677.5
1979	1,029.8	77.8	263.5	688.5
1980	1,051.8	83.5	266.5	701.8
1981	1,069.8	86.2	269.5	714.1
1982	1,083.4	90.5	271.7	721.2
1983	1,095.1	91.9	273.5	729.7
1984	1,102.4	93.7	271.9	736.8
1985	1,118.9	94.3	271.2	753.4
1986	1,134.1	93.8	271.0	769.3
1987	1,151.2	93.6	273.8	783.8
1988	1,169.0	92.3	275.4	801.3
1989	1,185.0	90.6	276.3	818.4
1990	1,206.3	89.5	280.1	836.7

<sup>1</sup> Includes data for Alaska subsequent to 1960; excludes service pipe. Data not adjusted to common diameter equivalent. Mileage shown as of end of each year.

<sup>2</sup> Includes 5,000 miles of Underground Storage pipe in 1975; 5,300 in 1976; 5,200 in 1977; 6,000 in 1978; 5,700 in 1979; 6,200 in 1980; 7,800 in 1981; 5,500 in 1982; 5,900 in 1983 and 1984; 6,000 in 1985, 1986, 1987, and 1988, and 6,200 in 1989, some of which was formerly included in Field and Gathering pipe.

Source: 1955: American Gas Association, *Gas Facts*, 1980, Table 44.  
1960-1990: *Ibid.*, 1991, Table 5-1.

**Table 65. U.S. Tanker Fleet  
(Ocean-going Vessels of 1,000 Gross Tons and Over)  
(At 5-Year Intervals 1955-1980 and Annually 1981-1990)**

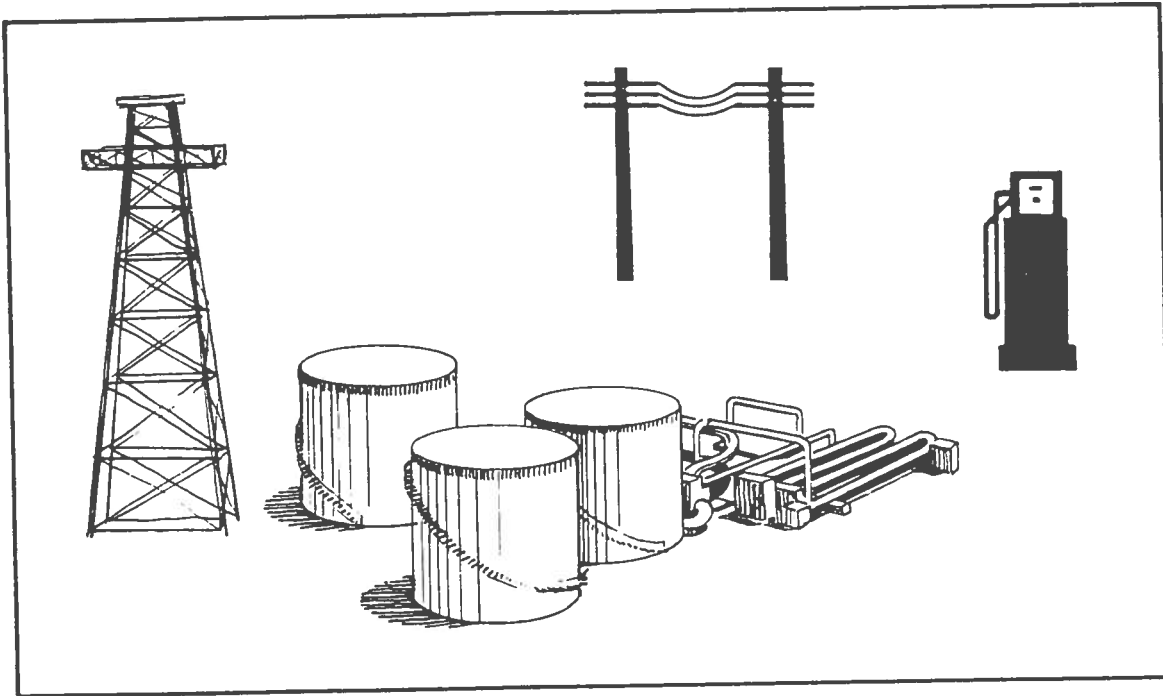
Actual Fleet				
Year	Number	Gross Tons	Deadweight Tons	Average Speed (Knots)
1955	490	5,094,900	7,989,500	15.1
1960	478	5,664,000	8,894,600	15.7
1965	410	5,479,800	8,733,500	16.0
1970	350	5,305,800	8,911,002	16.2
1975	293	5,943,289	10,601,370	16.4
1980	308	8,949,000	16,152,000	16.3
1981	314	9,217,000	16,670,000	16.5
1982	306	9,184,000	16,663,000	15.6
1983	289	9,006,000	16,508,000	16.0
1984	265	8,705,000	15,877,000	15.7
1985	258	8,444,000	15,535,000	16.0
1986	247	8,382,000	15,452,000	15.9
1987	254	9,174,000	16,877,000	16.0
1988	247	9,005,000	16,708,000	16.0
1989	239	8,604,000	15,754,000	16.0
1990	233	8,501,000	15,650,000	16.0

Source: 1955-1975: Sun Oil Company, Division of Planning and Industry Affairs, *Analysis of World Tank Ship Fleet*, 1977, Table 1, and equivalent table in earlier editions.  
1980-1990: U.S. DOT/Maritime Administration, *Merchant Fleets of the World*, annual issues, Table 6 and equivalent tables in earlier editions.



# Part 4. Energy Supply and Demand

Included in this section are data illustrating the types of energy supplied and used by the end-use sectors from 1955-1990/1991.



**Table 66. Petroleum Products Supplied by Sector  
(at 5-Year Intervals 1955-1970 and Annually 1971-1991)  
(million barrels per day)**

Year	Residential and Commercial	Industrial	Transportation	Transportation as % of Total	Electric Utilities	Total
1955	1.40	2.39	4.46	52.7	0.21	8.46
1960	1.71	2.71	5.14	52.4	0.24	9.80
1965	1.91	3.25	6.04	52.4	0.32	11.51
1970	2.18	3.81	7.78	52.9	0.93	14.70
1971	2.18	3.84	8.09	53.1	1.09	15.21
1972	2.25	4.19	8.57	52.3	1.36	16.37
1973	2.23	4.48	9.05	52.3	1.54	17.31
1974	2.04	4.30	8.84	53.1	1.48	16.65
1975	1.95	4.04	8.95	54.8	1.39	16.32
1976	2.12	4.45	9.37	53.7	1.52	17.46
1977	2.14	4.82	9.76	52.9	1.71	18.43
1978	2.07	4.87	10.16	53.8	1.75	18.85
1979	1.73	5.34	10.01	54.0	1.44	18.51
1980	1.52	4.84	9.55	56.0	1.15	17.06
1981	1.33	4.27	9.49	59.1	0.96	16.06
1982	1.24	4.06	9.31	61.0	0.69	15.30
1983	1.29	3.85	9.41	61.8	0.68	15.23
1984	1.29	4.19	9.68	61.5	0.56	15.73
1985	1.30	4.10	9.85	62.6	0.48	15.73
1986	1.31	4.11	10.23	62.8	0.64	16.28
1987	1.34	4.25	10.53	63.2	0.55	16.67
1988	1.34	4.39	10.87	62.9	0.68	17.28
1989	1.32	4.26	11.01	63.5	0.74	17.33
1990	1.15	4.32	10.97	64.6	0.55	16.99
1991	1.15	4.19	10.78	64.8	0.52	16.64

Note: Sum of components may not equal total due to independent rounding.  
Source: U.S. DOE/EIA, *Annual Energy Review 1991*, Table 63.



**Table 67. Domestic Demand for Refined Petroleum Products  
Supplied by Sector  
(at 5-Year Intervals 1955-1970 and Annually 1971-1991)  
(trillion Btu's per day)<sup>1</sup>**

Year	Residential and Commercial	Industrial	Transportation	Transportation as % of Total	Electric Utilities	Total
1955	7.85	14.02	24.12	51.0	1.31	47.30
1960	9.53	15.72	27.69	50.9	1.50	54.44
1965	10.57	18.61	32.54	51.1	2.01	63.67
1970	11.78	21.35	41.96	51.9	5.81	80.89
1971	11.75	21.50	43.60	52.1	6.81	83.72
1972	12.08	23.31	46.18	51.3	8.48	90.04
1973	12.01	24.24	48.82	51.1	9.62	95.46
1974	10.97	23.81	47.68	52.0	9.23	91.64
1975	10.45	22.33	48.26	53.8	8.69	89.70
1976	11.41	24.64	50.56	52.6	9.50	96.10
1977	11.53	26.78	52.70	51.8	10.69	101.70
1978	11.42	27.04	54.90	52.8	10.94	104.03
1979	9.46	28.93	54.33	53.4	9.01	101.69
1980	8.31	26.02	51.95	55.6	7.19	93.47
1981	7.19	22.69	51.55	58.9	6.01	87.49
1982	6.69	21.36	50.48	60.9	4.32	82.85
1983	6.97	20.30	50.96	61.9	4.25	82.33
1984	6.95	21.88	52.48	61.8	3.50	84.86
1985	6.92	21.41	53.42	63.0	3.00	84.74
1986	7.02	21.73	55.52	62.9	4.00	88.21
1987	7.13	22.33	57.18	63.5	3.44	90.07
1988	7.13	23.03	59.07	63.2	4.25	93.48
1989	6.94	22.29	59.89	63.9	4.25	93.76
1990	5.99	22.78	59.73	65.0	4.62	91.93
1991	5.94	21.81	58.64	65.4	3.25	89.64

<sup>1</sup> Data derived by multiplying figures in previous table by conversion factors in each sector column in Table A3 in U.S. DOE's *Annual Energy Review 1990*.

Table 68. Petroleum Products Supplied by Type and Sector, 1980 and 1991

Year and Refined Product	Residential and Commercial		Industrial		Transportation		Electric Utilities		Total	
	Million Barrels Per Day	Quad-rillion Btu	Million Barrels Per Day	Quad-rillion Btu	Million Barrels Per Day	Quad-rillion Btu	Million Barrels Per Day	Quad-rillion Btu	Million Barrels Per Day	Quad-rillion Btu
<b>1980</b>										
Asphalt and Road Oil	0	0	0.40	0.96	0	0	0	0	0.40	0.96
Aviation Gasoline	0	0	0	0	0.03	0.06	0	0	0.03	0.06
Distillate Fuel Oil	0.86	1.83	0.62	1.32	1.31	2.80	0.07	0.16	2.87	6.11
Jet Fuel	0	0	0	0	1.06	2.18	0.01	0.01	1.07	2.19
Kerosene	0.07	0.15	0.09	0.18	0	0	0	0	0.16	0.33
Liquefied Petroleum Gases	0.28	0.38	1.17	1.58	0.01	0.02	0	0	1.47	1.98
Lubricants	0	0	0.08	0.18	0.08	0.17	0	0	0.16	0.35
Motor Gasoline	0.06	0.11	0.08	0.16	6.44	12.38	0	0	6.58	12.65
Residual Fuel Oil	0.25	0.56	0.59	1.35	0.61	1.40	1.07	2.46	2.51	5.77
Other <sup>1</sup>	0	0	1.81	3.79	0	0	*	0.01	1.82	3.80
Total	1.52	3.04	4.84	9.53	9.55	19.01	1.15	2.63	17.06	34.20
<b>1991</b>										
Asphalt and Road Oil	0	0	0.44	1.07	0	0	0	0	0.44	1.07
Aviation Gasoline	0	0	0	0	0.02	0.04	0	0	0.02	0.04
Distillate Fuel Oil	0.60	1.29	0.53	1.13	1.74	3.70	0.04	0.08	2.92	6.20
Jet Fuel	0	0	0	0	1.47	3.01	0	0	1.47	3.01
Kerosene	0.04	0.08	0.01	0.01	0	0	0	0	0.05	0.10
Liquefied Petroleum Gases	0.34	0.45	1.29	1.70	0.02	0.02	0	0	1.65	2.18
Lubricants	0	0	0.07	0.17	0.07	0.16	0	0	0.15	0.32
Motor Gasoline	0.06	0.11	0.10	0.18	7.04	13.50	0	0	7.19	13.79
Residual Fuel Oil	0.10	0.23	0.16	0.36	0.43	0.98	0.47	1.07	1.15	2.64
Other <sup>1</sup>	0	0	1.59	3.34	0	0	0.01	0.02	1.60	3.36
Total	1.15	2.17	4.19	7.96	10.78	21.41	0.52	1.18	16.64	32.72

\* less than 5,000 barrels per day.

<sup>1</sup> Other in the industrial sector includes petrochemical feedstock, special naphthas, wax, petroleum coke, still gas, natural gasoline, pentanes plus, crude oil and miscellaneous products. Other for electric utilities is petroleum coke.

Note: Sum of components may not equal total due to independent rounding.

Source: U.S. DOE/EIA, *Annual Energy Review 1991*, Table 64.

**Table 69. Domestic Demand for Gasoline  
(at 5-Year Intervals 1955-1970 and Annually 1971-1990)  
(thousand gallons)**

Year	Total Demand	Highway	Non-Highway					Total
			Agriculture	Aviation <sup>1</sup>	Marine	Other <sup>2</sup>		
1955	52,566,255	47,731,734	2,156,434	999,440	25,885	1,652,762	4,834,521	
1960	63,221,243	57,879,908	2,291,666	1,323,769	60,633	1,656,267	5,332,335	
1965	75,312,613	71,104,430	1,963,432	501,339	96,336	1,647,076	4,208,183	
1970	96,331,909	92,329,056	1,931,966	393,012	598,159	1,079,713	4,002,850	
1971	101,471,956	97,558,586	1,864,708	359,549	645,428	1,043,865	3,913,370	
1972	108,886,206	105,062,178	1,698,185	355,178	686,763	1,083,902	3,824,028	
1973	114,368,632	110,472,881	1,749,776	395,018	716,990	1,033,967	3,895,751	
1974	109,923,280	106,300,765	1,605,809	394,806	696,906	924,994	3,622,515	
1975	112,626,656	108,984,347	1,564,882	409,713	729,718	937,996	3,642,309	
1976	119,478,018	115,700,146	1,472,272	529,238	763,803	1,012,559	3,777,872	
1977	123,350,479	119,625,280	1,360,220	552,615	774,066	1,038,298	3,725,199	
1978	115,816,431	112,239,066	1,228,772	457,372	811,850	1,079,371	3,577,365	
1979	111,771,026	108,125,994	1,152,097	502,977	780,171	1,209,787	3,645,032	
1980	104,837,657	101,183,014	1,059,044	412,883	1,052,185	1,130,531	3,654,643	
1981	103,111,410	99,596,671	962,149	376,708	1,092,982	1,082,900	3,514,739	
1982	101,738,767	98,478,881	912,062	372,637	1,061,931	913,256	3,259,886	
1983	103,180,290	99,964,516	735,919	407,110	1,069,072	1,003,673	3,215,774	
1984	105,300,798	101,415,509	1,152,912	382,976	1,325,012	1,024,389	3,885,289	
1985	107,612,794	103,607,851	1,080,677	381,515	1,052,998	1,489,753	4,004,943	
1986	110,823,992	106,756,056	964,226	378,064	1,130,305	1,595,341	4,067,936	
1987	112,810,688	108,702,264	921,692	360,195	1,178,753	1,647,764	4,108,404	
1988	113,836,534	109,816,325	806,097	359,019	1,217,885	1,637,208	4,020,209	
1989	114,681,547	110,632,453	821,612	351,317	1,251,931	1,624,234	4,049,094	
1990	114,262,125	110,184,150	681,220	357,718	1,300,421	1,738,616	4,077,975	

<sup>1</sup> Does not include aviation jet fuel.

<sup>2</sup> Includes state, county, and municipal use, industrial, commercial, construction and miscellaneous.

Source: 1955-1976: U.S. DOT/PHWA, *Highway Statistics*, annual issues, Tables MF-24 and MF-26.

1977-1990: *Ibid.*, annual issues, Tables MF-21A and MF-24.



# **SUPPLEMENTARY DATA**

## **Section III: Results of Nationwide Personal Transportation Survey (NPTS)**

Results of Nationwide Personal Transportation Survey (NPTS) is the final part of the supplementary data section. Travel data by characteristics of the trip and tripmaker are presented for the years 1969, 1977, 1983, and 1990.

## Nationwide Personal Transportation Survey (NPTS)

The NPTS is a periodic national survey that provides comprehensive information on travel by the U.S. population, along with related socioeconomic characteristics of the tripmaker. The NPTS is designed to allow an analysis of travel by characteristics of the trip (e.g., length, purpose, mode), the tripmaker (e.g., age, sex, household income) and the vehicle used (e.g., model year, vehicle type, make and model). NPTS surveys were conducted in 1969, 1977, 1983, and 1990.

### SPONSORSHIP

The 1990 NPTS was sponsored by a group of Department of Transportation (DOT) agencies, specifically the Federal Highway Administration, Federal Railroad Administration, National Highway Traffic Safety Administration, Office of the Secretary, and the Federal Transit Administration. The survey was conducted for DOT by Research Triangle Institute, located in North Carolina.

### CONTENT

Information was collected on all trips taken by each household member age 5 and older during a designated 24-hour period, known as 'travel day', and on trips of 75 miles or more taken during the preceding 14-day period, known as 'travel period.' The trip information was expanded to annual estimates of trips and travel. The survey encompassed trips on all modes of transportation for all trip purposes and all lengths. In addition, the NPTS collected information on the demographic characteristics of household members, characteristics of household vehicles, estimates of annual driving, and highway accidents in the past five years.

### SAMPLE DESIGN AND SURVEY METHODOLOGY

The 1990 NPTS was a national random-digit dialing sample which yielded interviews from 18,000 households throughout the United States. The sampling frame was stratified by population size of the area, region of the country, and for areas of one million or more, by presence or absence of a subway system. The interviews were conducted from March 1990 through March 1991, with approximately 1500 households interviewed each month to balance seasonal variations in travel. The survey was conducted by telephone, using a computer-assisted telephone interview (CATI) system. The survey response rate was 84 percent, which means that of all eligible households contacted, 84 percent participated in the survey.

### STATUS OF THE 1990 DATA

The tables in this chapter are based on preliminary information from the 1990 NPTS survey. The 1990 NPTS dataset is still being evaluated and minor revisions are being made. The continuing evaluation of the dataset and data analysis may result in some differences between the data presented here and reports from the final data.

### REPORTS AND PRODUCTS

The 'Early Results' report and 'Summary of Travel Trends' are available from the Federal Highway Administration's Office of Highway Information Management at 202-366-0160. The final NPTS report will be available in late 1992. The NPTS public use tape, NPTS diskettes (overall reduction of the public tape), and a special tabulation service designed to provide user-specified tables are available from the Research and Special Programs Administration's Volpe National Transportation Systems Center at 617-494-2450.

### TABLES

The tables in this chapter contain data on demographic and travel changes over time, household vehicle ownership, vehicle trips and vehicle miles of travel, average annual miles per licensed driver, and person trips by women. Comparisons are made with data from previous NPTS surveys.

**Table 70. Summary Statistics on Demographic Characteristics and Total Travel, 1969-1990**

	1969	1977	1983	1990	Percent Change				
					1969-1977	1977-1983	1983-1990	1969-1983	1969-1990
Households	62,504	75,412	85,371	93,347	21	13	9	37	49
Persons	197,213	213,141	229,453	239,416	8	8	4	16	21
Licensed Drivers	102,986	127,552	147,015	163,025	24	15	11	43	58
Workers	75,758	93,019	103,224	118,343	23	11	15	36	56
Household Vehicles <sup>b</sup>	72,500	120,098	143,714	165,221	66	20	15	98	128
Household Vehicle Trips <sup>a</sup>	87,284	108,826	126,874	158,927	25	17	25	45	82
Household Vehicle Miles of Travel <sup>a</sup>	775,940	907,603	1,002,139	1,409,600	17	10	41	29	82
Person Trips <sup>a,c</sup>	145,146	211,778	224,385	249,562	46	6	11	55	72
Person Miles of Travel <sup>a,c</sup>	1,404,137	1,879,215	1,946,662	2,315,300	34	4	19	39	65

Note: All numbers in thousands except where noted.

a In millions.

b 1969 survey includes only automobiles, station wagons, and vanbuses/minibuses as household vehicles.

c 1969 survey does not include walk and bicycle trips.

Source: U.S. DOT/FHWA, 1990 *Nationwide Personal Transportation Survey (NPTS)*, *Summary of Travel Trends*, Table 1.

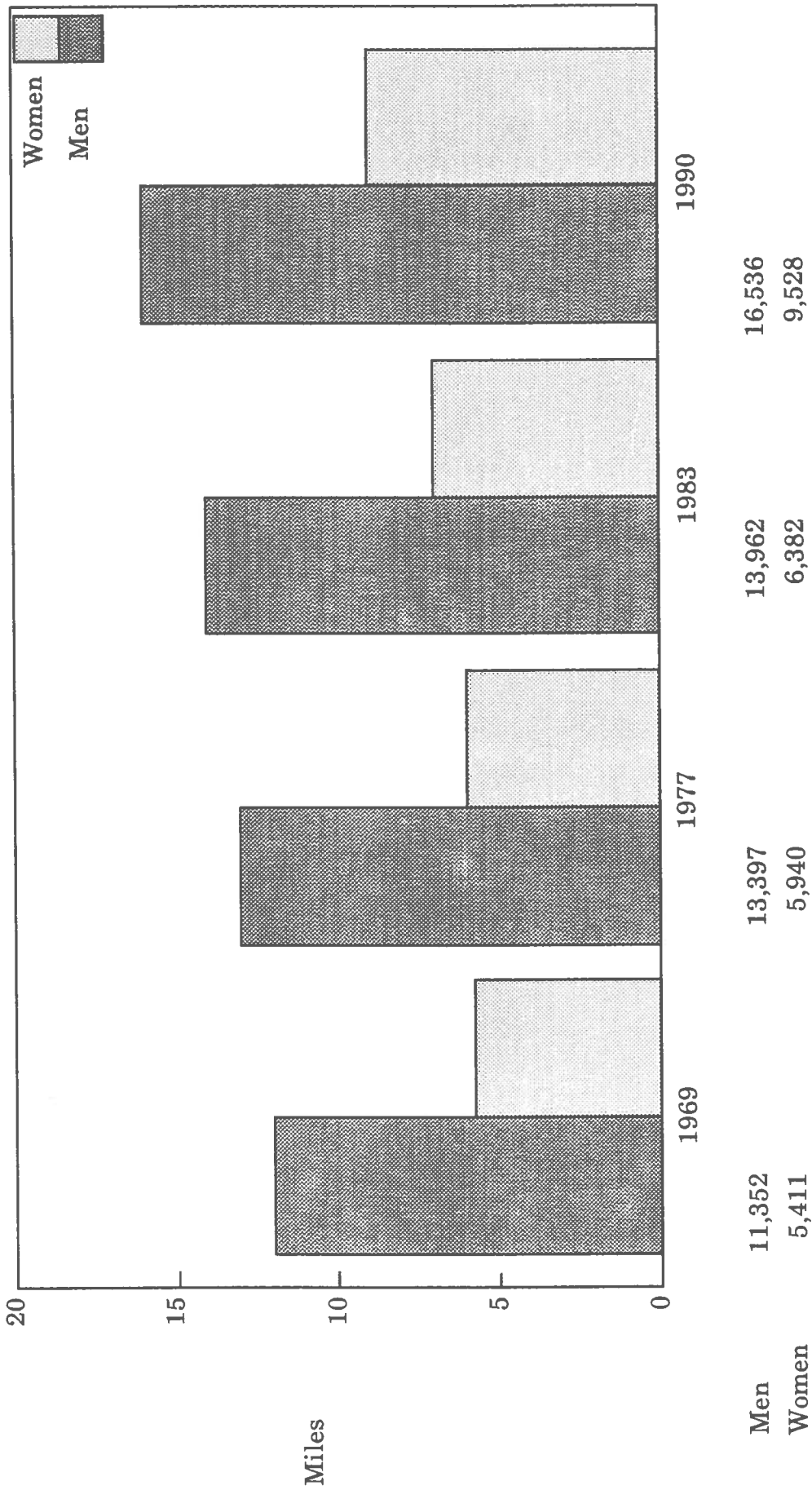
**Table 71. Household Travel Rates  
and Demographic Indicators, 1969-1990**

Rate	1969*	1977	1983	1990
Annual Vehicle Trips Per Household	1,396	1,442	1,486	1,702
Annual VMT Per Household	12,423	12,036	11,739	15,100
Annual Person Trips Per Household	2,322	2,808	2,628	2,673
Annual Person Miles Per Household	22,465	24,919	22,802	24,803
Persons Per Household	3.2	2.8	2.7	2.6
Licensed Drivers Per Household	1.7	1.7	1.7	1.8
Vehicles Per Household	1.2	1.6	1.7	1.8
Workers Per Household	1.2	1.2	1.2	1.3

\* In the 1969 survey, only auto and van trips were collected as private vehicle trips. In 1977, 1983, and 1990 surveys, the definition of private vehicle was expanded to include pickups and other light trucks, recreational vehicles, motorcycles and mopeds.

Source: U.S. DOT/FHWA, 1990 *Nationwide Personal Transportation Survey (NPTS), Summary of Travel Trends*.





**Figure 37. Average Annual Miles Per Licensed Driver, 1969-1990**

Source: U.S. DOT/FHWA, 1990 Nationwide Personal Transportation Survey (NPTS), Summary of Travel Trends.

**Table 72. Vehicle Miles of Travel (VMT) by Purpose, 1969-1990  
(percent)**

<b>Purpose</b>	<b>1969</b>	<b>1977</b>	<b>1983</b>	<b>1990</b>
Work	33.6	31.7	30.1	32.1
Work-Related Business	7.9	7.6	4.2	3.0
Shopping	7.5	11.1	13.4	11.5
School/Church	4.9	5.2	4.1	4.4
Doctor/Dentist	1.6	1.8	1.5	1.3
Other Personal Business	10.2	12.0	15.5	20.0
Vacation	2.6	0.6	2.1	1.5
Visit Friends/Relatives	12.1	12.1	13.5	11.6
Pleasure Driving	3.1	0.9	1.1	0.6
Other Social/Recreational	15.3	13.7	13.3	13.2
Other	1.2	3.3	1.2	0.8
All Purposes	100.0	100.0	100.0	100.0

Source: U.S. DOT/FHWA, 1990 *Nationwide Personal Transportation Survey (NPTS)*.

**Table 73. Average Vehicle Trip Length in Miles by Purpose, 1969-1990**

<b>Purpose</b>	<b>1969</b>	<b>1977</b>	<b>1983</b>	<b>1990</b>
Work	9.4	9.1	8.5	11.0
Work-Related Business	16.1	11.9	11.4	15.1
Shopping	4.4	5.0	5.3	5.1
School/Church	4.7	5.9	5.5	7.5
Doctor/Dentist	8.4	10.3	9.7	10.5
Other Personal Business	6.5	6.8	6.7	7.4
Vacation	160.0	77.9	113.9	114.9
Visit Friends/Relatives	12.0	10.9	10.8	11.8
Pleasure Driving	20.0	14.1	22.7	21.9
Other Social/Recreational	11.4	9.3	8.7	10.5
Other	9.4	29.3	7.2	10.8
All Purposes	8.9	8.4	7.9	9.0

Source: U.S. DOT/FHWA, 1990 *Nationwide Personal Transportation Survey (NPTS)*.

**Table 74. Vehicle Trips by Purpose, 1969-1990  
(percent)**

<b>Purpose</b>	<b>1969</b>	<b>1977</b>	<b>1983</b>	<b>1990</b>
Work	31.9	29.3	27.8	26.3
Work-Related Business	4.4	5.3	2.9	1.8
Shopping	15.3	18.6	20.0	20.3
School/Church	9.3	7.3	5.9	5.3
Doctor/Dentist	1.7	1.5	1.2	1.1
Other Personal Business	14.0	14.9	18.3	24.1
Vacation	0.0	0.1	0.2	0.1
Visit Friends/Relatives	9.0	9.3	9.9	8.8
Pleasure Driving	1.4	0.5	0.4	0.3
Other Social/Recreational	11.9	12.3	12.1	11.3
Other	1.1	0.9	1.3	0.6
All Purposes	100.0	100.0	100.0	100.0

Source: U.S. DOT/FHWA, 1990 *Nationwide Personal Transportation Survey (NPTS)*.

**Table 75. Person Trips Taken by Women by Mode and Purpose  
1983 and 1990  
(millions)**

Purpose	Mode						Total	
	Private		Public		Other <sup>1</sup>		1983	1990
	1983	1990	1983	1990	1983	1990	1983	1990
Earning a Living	18,200	21,900	1,250	1,011	1,414	1,204	20,864	24,115
Family & Personal Business	40,000	55,600	476	656	3,475	3,771	43,951	60,027
Civic, Education & Religious	8,172	10,000	720	627	5,296	4,660	14,188	15,287
Social & Recreational	26,300	27,200	428	384	4,074	3,851	30,802	31,435
Other	2,276	791	48	8	385	145	2,709	944
All Purposes	94,948	115,491	2,922	2,686	14,644	13,631	112,514	131,808

<sup>1</sup> Includes trips by bicycle, walking, school bus, taxi, airplane, Amtrak, moped and other modes.  
Source: U.S. DOT/FHWA, 1990 *Nationwide Personal Transportation Survey (NPTS)*, *Summary of Travel Trends*.



# APPENDIX A

## Source Information

Appendix A is a detailed list of the data sources used in this publication. The parenthetical numbers in Figures 1 through 7 indicate the data source. The data sources are also shown for Tables 1 through 8, 10, 11, 17, 34, 35, and 42, as well as the Modal Profiles. Readers who may require additional data or information should refer to the data source(s).

## Figure References (Figure 1-Figure 7)

### Figure 1. Expenditures and Revenues, 1990

1. Domestic Transportation: Sum of Highway, Local Transit, Rail, Air, Water, and Pipeline.
2. Highway: Sum of Auto, Truck, and Bus.
3. Auto: Sum of Personal Passenger Car, Taxi, and Motorcycle.
4. Personal Passenger Car: U.S. Department of Commerce (DOC), Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 2.4. Auto registration and driver's license fees from the U.S. DOT/Federal Highway Administration (FHWA), *Highway Statistics*, 1990, Table MV-2 are also included.
5. Taxi: U.S. Department of Commerce (DOC), Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 2.4.
6. Motorcycle: Motorcycle Industry Council, Inc., *1991 Motorcycle Statistical Annual*, p. 11.
7. Truck: Sum of Local Truck and Intercity Truck.
8. Local Truck: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 8.
9. Intercity Truck: Sum of ICC-authorized Truck and Non-ICC-authorized Truck.
10. ICC-authorized Truck: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 8. Revenues of the Class I, II, III motor carriers of property. Revenues include local cartage under the assumption that the majority of such revenues constitute pickup and delivery of intercity freight.
11. Non-ICC-authorized Truck: *Ibid.*
12. Bus: Sum of Intercity Bus and School Bus.
13. Intercity Bus: Sum of Passenger and Cargo.
14. Passenger, Intercity Bus: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 9.
15. Cargo, Intercity Bus: *Ibid.*, p. 8. Total package express and mail revenues for Class I carriers plus 25 percent of this amount as estimated cargo revenues for Class II and III and intrastate carriers.
16. School Bus: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 9.
17. Local Transit: American Public Transit Association (APTA), *Transit Fact Book*, 1991, p. 49.
18. Rail: Sum of Passenger, Freight, and Other.
19. Rail, Passenger: Sum of Class I Rail and Amtrak.
20. Rail, Class I: Association of American Railroads (AAR), *Railroad Facts*, 1991, p. 10.
21. Amtrak: Amtrak, State and Local Affairs Department.
22. Rail, Freight: AAR, *Railroad Facts*, 1991.
23. Rail, Other: *Ibid.*
24. Air: Sum of General Aviation and Air Carrier.
25. General Aviation: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 9. Figure represents the sum of operating costs and total retail value of new general aviation aircraft.
26. Air Carrier: U.S. DOT/Research and Special Programs Administration (RSPA), *Air Carrier Financial Statistics*, 1990/1991, p. 1, total operating revenues, domestic operations.
27. Total Majors: *Ibid.*, p. 3, total operating revenues in scheduled and nonscheduled services.
28. Total Nationals: *Ibid.*, p. 32, total operating revenues in scheduled and nonscheduled services.
29. Total Large Regionals: *Ibid.*, p. 50, total operating revenues in scheduled and nonscheduled service.
30. Water: Sum of Passenger, Freight, and Commercial Fishing.
31. Passenger, Water: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 9. Figure represents revenues of ICC-regulated carriers. Expenditures for private boating are not available.
32. Freight, Water: *Ibid.*, p. 8, domestic operations only.
33. Commercial Fishing: U.S. DOC, *Statistical Abstract of the U.S.*, 1991, Table 1199.
34. Pipeline: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 8, includes revenues of regulated and unregulated oil pipelines.



## Figure 2. Vehicle-Miles, 1990

1. Domestic Transportation: Sum of Highway, Local Transit, Rail, and Air.
2. Highway: Sum of Auto, Truck, and Bus.
3. Auto: Sum of Personal Passenger Car and Motorcycle.
4. Personal Passenger Car (includes Taxi): U.S. DOT/Federal Highway Administration (FHWA), *Highway Statistics*, 1990, Table VM-1, includes total rural and urban.
5. Motorcycle: *Ibid.*
6. Truck: *Ibid.*
7. Single-Unit: *Ibid.*
8. Other Single-Unit: *Ibid.*
9. Combination: *Ibid.*
10. Bus: Sum of Commercial Bus and School Bus.
11. Commercial Bus: estimated by Transportation Policy Associates (TPA).
12. School Bus: National Safety Council, *Accident Facts*, 1991, p. 71.
13. Local Transit: APTA, *Transit Fact Book*, 1991, p. 25.
14. Motor Bus: *Ibid.*
15. Heavy Rail: *Ibid.*
16. Light Rail: *Ibid.*
17. Trolley Bus: *Ibid.*
18. Demand Response: *Ibid.*
19. Ferryboat: *Ibid.*
20. Commuter Rail: *Ibid.*
21. Other: *Ibid.*
22. Rail: Sum of Amtrak and Freight.
23. Amtrak: Amtrak, State and Local Affairs Department.
24. Freight, Rail: AAR, *Railroad Facts*, 1991, p. 34.
25. Air: Sum of General Aviation and Air Carrier.
26. General Aviation: U.S.DOT/FAA, *General Aviation Activity and Avionics Survey*, 1990, Table 3.3; mileage multiplied by 1.151 to convert from nautical miles.
27. Air Carrier: U.S. DOT/RSPA, *Air Carrier Traffic Statistics*, December 1991/1990, p. 2, sum of scheduled aircraft revenue miles, line 27, and nonscheduled aircraft revenue miles, line 50.
28. Total Majors: *Ibid.*, p. 5, sum of scheduled, line 27, and nonscheduled, line 50, services.
29. Scheduled: *Ibid.*, p. 5, line 27.
30. Nonscheduled: *Ibid.*, p. 5, line 50.
31. Total Nationals: *Ibid.*, p. 54, sum of scheduled, line 27, and nonscheduled, line 50, services.
32. Scheduled: *Ibid.*, line 27.
33. Nonscheduled: *Ibid.*, line 50.
34. Total Large Regionals: *Ibid.*, p. 90, sum of scheduled, line 27, and nonscheduled, line 50, services.
35. Scheduled: *Ibid.*, line 27.
36. Nonscheduled: *Ibid.*, line 50.
37. Total Medium Regionals: *Ibid.*, p. 143, includes domestic and international operations, sum of scheduled, line 27, and nonscheduled, line 50, services.
38. Scheduled: *Ibid.*, line 27.
39. Nonscheduled: *Ibid.*, line 50.
40. Water: See Block 19.

### Figure 3. Passenger-Miles, 1990

1. Domestic Transportation: Sum of Highway, Local Transit, Rail, and Air; Water data not available.
2. Highway: Sum of Auto, Truck, and Bus.
3. Auto: Sum of Personal Passenger Car, Taxi, and Motorcycle.
4. Personal Passenger Car (includes Taxi): U.S. DOT/FHWA, *Highway Statistics*, 1990, Table VM-1. Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.62.
5. Motorcycle: *Ibid.* Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.37.
6. Truck: Sum of Single-Unit Truck and Combination Truck.
7. Single-Unit: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table VM-1. Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.31.
8. Other Single-Unit: *Ibid.*, Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.0.
9. Combination: *Ibid.*, Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.0.
10. Bus: Sum of Intercity Bus and School Bus passenger-miles.
11. Intercity Bus: Eno Foundation for Transportation, *Transportation In America*, 1991, p. 47.
12. Class I: estimated.
13. Class II and III: Figure derived by subtraction of Class I from Intercity.
14. School Bus: National Safety Council, *Accident Facts*, 1990, p. 70.
15. Local Transit: APTA, *Transit Fact Book*, 1991, p. 73.
16. Motor Bus: *Ibid.*
17. Heavy Rail: *Ibid.*
18. Light Rail: *Ibid.*
19. Trolley Bus: *Ibid.*
20. Demand Response: *Ibid.*
21. Commuter Rail: *Ibid.*
22. Ferryboat: *Ibid.*
23. Other: *Ibid.*
24. Rail: Amtrak total.
25. Amtrak: Amtrak, State and Local Affairs Department.
26. Air: Sum of General Aviation and Air Carrier.
27. General Aviation: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 11.
28. Air Carrier: U.S. DOT/RSPA, *Air Carrier Traffic Statistics*, December 1991/1990, p. 2, revenue passenger-miles, all services, line 1.
29. Total Majors: *Ibid.*, p. 5, sum of scheduled, line 9, and nonscheduled, line 41, services.
30. Scheduled: *Ibid.*, line 9.
31. Nonscheduled: *Ibid.*, line 41.
32. Total Nationals: *Ibid.*, p. 54, sum of scheduled, line 9, and nonscheduled, line 41, services.
33. Scheduled: *Ibid.*, line 9.
34. Nonscheduled: *Ibid.*, line 41.
35. Total Large Regionals: *Ibid.*, p. 90, sum of scheduled, line 9, and nonscheduled, line 41, services.
36. Scheduled: *Ibid.*, line 9.
37. Nonscheduled: *Ibid.*, line 41.
38. Total Medium Regionals: *Ibid.*, p. 143, includes domestic and international operations; sum of scheduled, line 9, and nonscheduled, line 41, services.
39. Scheduled: *Ibid.*, line 9.
40. Nonscheduled: *Ibid.*, line 41.
41. Water: See Block 22.

#### Figure 4. Revenue Ton-Miles of Freight, 1990

1. Domestic Transportation: Sum of Highway, Rail, Air, Water and Pipeline.
2. Highway: Figure represents total intercity ton-miles of motor vehicle transport.
3. Truck: Sum of local and intercity ton-miles.
4. Local: Sum of Single-Unit and Combination Trucks.
5. Single-Unit: estimate.
6. Combination: *Ibid.*
7. Intercity: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 10.
8. Rail: AAR, *Railroad Facts*, 1991, p. 40.
9. Air: Same as Air Carrier.
10. Air Carrier: U.S. DOT/RSPA, *Air Carrier Traffic Statistics*, December 1991/1990, p. 2, Freight, Express, U.S. and Foreign Mail Revenue ton-miles, all services, line 3.
11. Total Majors: *Ibid.*, p. 5, line 3.
12. Scheduled: *Ibid.*, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
13. Nonscheduled: *Ibid.*, sum of Civilian Freight, line 44, and Military Freight, line 45.
14. Total Nationals: *Ibid.*, p. 54, line 3.
15. Scheduled: *Ibid.*, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
16. Nonscheduled: *Ibid.*, sum of Civilian Freight, line 44, and Military Freight, line 45.
17. Total Large Regionals: *Ibid.*, p. 90, line 3.
18. Scheduled: *Ibid.*, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
19. Nonscheduled: *Ibid.*, sum of Civilian Freight, line 44, and Military Freight, line 45.
20. Total Medium Regionals: *Ibid.*, p. 143, line 3, includes international operations.
21. Scheduled: *Ibid.*, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
22. Nonscheduled: *Ibid.*, sum of Civilian Freight, line 44, and Military Freight, line 45.
23. Water: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 10.
24. Coastwise: *Ibid.*
25. Lakewise: *Ibid.*
26. Internal: *Ibid.*
27. Local: estimate.
28. Pipeline: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 10.
29. ICC-Regulated: Estimated to be 84% of total pipeline.
30. Non-Regulated: Estimated to be 16% of total pipeline.

#### Figure 5. Number of Vehicles, 1990

1. Domestic Transportation: Sum of Highway, Local Transit, Rail, Air, and Water.
2. Highway: Sum of Auto, Truck, and Bus.
3. Auto: Sum of Personal Passenger Car and Motorcycle.
4. Personal Passenger Car: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table VM-1. This figure includes private and commercial automobiles (including taxicabs) for the 50 states and the District of Columbia (number of motorized vehicles registered).
5. Motorcycle: *Ibid.* This figure includes private and commercial motorcycles (number of motorized vehicles registered).

### Figure 5. Number of Vehicles, 1990 (cont'd)

6. Truck: Sum of Private Truck, Public Truck, and Recreational Vehicles.
7. Private: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table VM-1.
8. Public: *Ibid.*, Table MV-9.
9. Recreational Vehicles: Motor Vehicle Manufacturer's Association (MVMA), *Facts and Figures*, 1991, p. 12.
10. Bus: Sum of Intercity Bus and School Bus.
11. Intercity Bus: ICC, *105th Annual Report of the ICC*, 1991, p. 6.
12. School Bus: National Safety Council, *Accident Facts*, 1991, p. 71.
13. Local Transit: APTA, *Transit Fact Book*, 1991, pp. 24,76.
14. Motor Bus: *Ibid.*
15. Heavy Rail: *Ibid.*
16. Light Rail: *Ibid.*
17. Trolley Bus: *Ibid.*
18. Demand Response: *Ibid.*
19. Ferryboat: *Ibid.*
20. Commuter Rail: *Ibid.*
21. Other: *Ibid.*
22. Rail: Sum of Freight and Amtrak.
23. Rail, Freight: AAR, *Railroad Facts*, 1991, p. 50.
24. Amtrak: Amtrak, State and Local Affairs Department.
25. Air: Sum of General Aviation and Air Carrier.
26. General Aviation: U.S. DOT/Federal Aviation Administration (FAA), Office of Management Systems, *General Aviation Activity and Avionics Survey*, 1990, Table 3.1.
27. Business: *Ibid.*, includes Business and Corporate Transportation.
28. Commercial: *Ibid.*, includes Air Taxi, Commuter Carrier, Aerial Application, and Aerial Observation.
29. Instructional: *Ibid.*
30. Personal: *Ibid.*
31. Other: *Ibid.*, includes Other and Other Work.
32. Air Carrier: Includes domestic and international aircraft; sum of Major, National and Regional airlines.
33. Total Majors: U.S. DOT/RSPA, Data Administration Division, DAI-20.
34. Total Nationals: *Ibid.*
35. Total Regionals: *Ibid.*, includes Large and Medium Regional airlines.
36. Water: not available.
37. Self-Propelled: *Ibid.*
38. Non-Self-Propelled: *Ibid.*

### Figure 6. Number of Fatalities, 1990

1. Domestic Transportation: Sum of Highway, Rail Rapid Transit, Rail, Air, Marine, and Pipeline.
2. Highway: Sum of Auto, Motorcycle, Truck, Bus, Bicycle, Pedestrian, and Other. Also includes Rail/Highway Grade Crossing fatalities.
3. Auto: Sum of Personal Passenger Car, Taxi, and Motorcycle.
4. Personal Passenger Car: U.S. DOT/NHTSA/National Center for Statistics and Analysis, NRD-30.
5. Taxi: *Ibid.*

**Figure 6. Number of Fatalities, 1990 (cont'd)**

6. Motorcycle: *Ibid.*
7. Truck: Sum of Light Truck, Heavy Truck, and Other Truck.
8. Light: U.S. DOT/NHTSA/National Center for Statistics and Analysis, NRD-30.
9. Heavy: *Ibid.*
10. Other: *Ibid.*
11. Bus: Sum of commercial and school bus occupant fatalities.
12. Commercial Bus: U.S. DOT/NHTSA/National Center for Statistics and Analysis, NRD-30.
13. School Bus: *Ibid.*
14. Bicycle: *Ibid.*
15. Pedestrian: *Ibid.*, motor vehicle involvement only.
16. Other: *Ibid.*, includes non-occupant fatalities, does not include bus fatalities.
17. Rail Rapid Transit: U. S. DOT/RSPA/Volpe National Transportation Systems Center, DTS-38.
18. Rail: U.S. DOT/FRA, Systems Support Division, RRS-22, (includes railroad passengers, employees, trespassers, and others killed in railroad operations). Does not include those killed in rail/highway grade crossing accidents.
19. Rail-Highway Grade Crossing: *Ibid.*
20. Air: Sum of General Aviation and Air Carrier.
21. General Aviation: National Transportation Safety Board (NTSB), RE-50.
22. Executive: *Ibid.*
23. Aerial Application: *Ibid.*
24. Business: *Ibid.*
25. Instructional: *Ibid.*
26. Personal: *Ibid.*
27. Other: *Ibid.*
28. Air Carrier: *Ibid.*, *NTSB Aviation Accident Statistics, 1980-1991*. Air Carriers operating under 14 CFR 121 and 14 CFR 135 (commuter air carriers and on-demand air taxis). Includes domestic and international operations.
29. Air Carrier: *Ibid.*, Airlines operating under 14 CFR 121, scheduled and nonscheduled services.
30. Commuter: *Ibid.*, Air Carriers operating under 14 CFR 135.
31. Air Taxi: *Ibid.*, On-Demand Air Carriers operating under 14 CFR 135.
32. Marine: Sum of Waterborne and Recreational Boating.
33. Waterborne: U.S. DOT/USCG, Marine Safety Evaluation Branch, G-MMI-3.
34. Recreational Boating: *Ibid.*, Auxiliary, Boating, and Consumer Affairs Division, G-NAB.
35. Pipeline: (includes Liquid and Gas Pipeline) U.S. DOT/RSPA, Office of Pipeline Safety, DPS-21.1.

**Figure 7. Energy Consumed in Transportation, 1990**

1. Domestic Transportation: Sum of Highway, Local Transit, Rail, Air, and Water. Pipeline not included in Total.
2. Highway: Sum of Auto, Truck, and Bus.
3. Auto: Sum of Personal Passenger Car and Motorcycle.
4. Personal Passenger Car (includes Taxi): U.S. DOT/FHWA, *Highway Statistics, 1990*, Table VM-1.

**Figure 7. Energy Consumed in Transportation, 1990 (cont'd)**

5. Motorcycle: *Ibid.*
6. Truck: Sum of Single-Unit, Other Single-Unit, and Combination.
7. Single-Unit: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table VM-1.
8. Other Single-Unit: *Ibid.*
9. Combination: *Ibid.*
10. Bus: Sum of Class I Intercity, School Bus and Local Bus.
11. Class I Intercity Bus: Eno Foundation for Transportation, *Transportation In America*, 1992, p. 56.
12. School Bus: *Ibid.*
13. Local Bus: *Ibid.*
14. Local Transit: APTA, *Transit Fact Book*, 1991, p. 62.
15. Rail: Sum of Passenger and Class I Rail Freight.
16. Rail, Passenger: Sum of Class I Rail Passenger and Amtrak.
17. Rail, Class I Rail Passenger: AAR, *Railroad Ten-Year Trends*, Volume 7, p. 90.
18. Amtrak: Amtrak, State and Local Affairs Department.
19. Rail, Class I Freight: AAR, *Railroad Ten-Year Trends*, Volume 7, p. 90.
20. Air: Sum of Total Certificated and General Aviation.
21. General Aviation: U.S. DOT/FAA, *General Aviation Activity and Avionics Survey*, 1990, Table 2-21. Figure derived by the addition of jet fuel and aviation gasoline.
22. Air Carrier: U.S. DOT/RSPA, Data Administration Division, DAI-20.
23. Water: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table MF-24.
24. Pipeline (Natural Gas): U.S. Department of Energy (DOE), Energy Information Administration (EIA), *Natural Gas Annual*, 1990, Table 14.

## PROFILE REFERENCES

1. American Gas Association, *Gas Facts*, 1991, 1981.
2. American Public Transit Association, *Transit Fact Book*, 1991, 1981.
3. Amtrak, State and Local Affairs Department.
4. Association of American Railroads, *Railroad Facts*, 1991, 1981.
5. *Ibid.*, *Analysis of Class 1 Railroads*, 1980 (Series 3), 1989 (Series 12), and 1990 (Series 13).
6. Association of Oil Pipelines, *Shifts in Petroleum Transportation*, 1991.
7. CAB, *Air Carrier Traffic Statistics*, December 1981.
8. *Ibid.*, *Air Carrier Financial Statistics*, December 1981.
9. Eno Foundation for Transportation, *Transportation In America*, 1992; September Supplement, 1991.
10. Federal Energy Regulatory Commission (FERC).
11. Interstate Commerce Commission, Bureau of Accounts and Statistics *105th, 96th Annual Report of the ICC*, 1991, 1982.
12. *Ibid.*, *Transport Statistics in the United States*, Part 2, 1990, 1989.
13. Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts and Figures*, 1992, 1991.
14. National Safety Council, *Accident Facts*, 1991, 1990, 1981.
15. National Transportation Safety Board, RE-50.
16. *Ibid.*, *NTSB Aviation Accident Statistics, 1980-1990, 1981-1991*.
17. Penn Well Publishing Company, *Oil and Gas Journal*, 1991.
18. Transportation Policy Associates.
19. U.S. Army, Corps of Engineers, *Summary of U.S. Flag Passenger & Cargo Vessels*, annual issues.
20. *Ibid.*, *Waterborne Commerce of the United States*, Part 5, 1989, 1980.
21. U.S. Coast Guard, *Boating Statistics 1991, 1980*.
22. *Ibid.*, Marine Safety Evaluation Branch, G-MM1-3.
23. U.S. Department of Commerce, Bureau of Economic Analysis.
24. *Ibid.*, *Survey of Current Business*, July 1990, 1984.
25. U.S. Department of Energy/EIA, *Natural Gas Annual*, Vol. II, 1990.
26. *Ibid.*, *Statistics of Interstate Natural Gas Pipeline Companies*, 1990, 1989, 1980.
27. *Ibid.*, *Fuel Oil and Kerosene Sales*, 1990.
28. *Ibid.*, *Petroleum Supply Annual*, 1990.
29. U.S. Department of Labor, Bureau of Labor Statistics, *Supplement to Employment and Earnings, Revised Establishment Data*, August 1991, July 1984.
30. U.S. Department of Transportation (DOT)/Federal Aviation Administration, Office of Management Systems, *General Aviation Activity and Avionics Survey*, 1990, 1989, 1980.

### Profile References (cont'd)

31. U.S. DOT/Federal Highway Administration (FHWA), Office of Motor Carrier Safety Field Operations, HFO-30.
32. *Ibid.*, Office of Highway Information Management, *Highway Statistics*, 1990, 1989, 1980.
33. *Ibid.*, *Highway Statistics, Summary to 1985*.
34. U.S. DOT/Maritime Administration (MARAD), *Merchant Fleets of the World*, annual issues.
35. *Ibid.*, Office of External Affairs, MAR-240.
36. U.S. DOT/National Highway Traffic Safety Administration (NHTSA), National Center for Statistics and Analysis, NRD-30.
37. U.S. DOT/Federal Railroad Administration (FRA), Systems Support Division, RRS-22.
38. U.S. DOT/Research and Special Programs Administration (RSPA), *Air Carrier Traffic Statistics*, December 1991/1990, 1990/1989.
39. *Ibid.*, *Air Carrier Financial Statistics*, December 1991/1990, 1990/1989.
40. *Ibid.*, Data Administration Division, DAI-20.
41. *Ibid.*, Office of Pipeline Safety, DPS-21.1.
42. *Ibid.*, Volpe National Transportation Systems Center, *Transportation Safety Information Report*, 1989 Annual Summary.
43. *Ibid.*, *U.S. International Air Travel Statistics*, annual issues.



## TABLE REFERENCES

**Table 1. Average Passenger Revenue Per Passenger Mile, 1980-1990**

**Certificated Air Carrier, Domestic Operations, Scheduled Service:**

- 1980-1984: Civil Aeronautics Board (CAB), *Air Carrier Financial Statistics*, 1981-1984, annual issues, p. 2, lines 1, 2, and 3; *Air Carrier Traffic Statistics*, 1981-1984, annual issues, p. 4/5, lines 7, 8, and 9. To compute Total, First Class, and Coach plus economy figures, divide line 1 by line 7, line 2 by line 8, and line 3 by line 9.
- 1985-1990: U.S. Department of Transportation (DOT) Research and Special Programs Administration (RSPA), *Air Carrier Financial Statistics*, annual issues, 1985-1991, p. 1, lines 1, 2 and 3; *Air Carrier Traffic Statistics*, annual issues, 1985-1991, p. 2, lines 7, 8 and 9.

**Class I Rail:**

- 1980-1990: Eno Foundation, *Transportation In America*, September 1991 Supplement, p. 12.

**Amtrak:**

- 1980-1988: Association of American Railroads, (AAR), *Railroad Facts*, annual issues, p. 61.
- 1989-1990: Amtrak, State and Local Affairs Department.

**Class I Bus, Intercity:**

- 1980-1986: American Bus Association (ABA).
- 1987-1990: Eno Foundation, *Transportation in America*, September 1991 Supplement, p. 12.

**Consumer Price Index:**

- 1980-1990: U.S. Department of Labor (DOL), Bureau of Labor Statistics, *Monthly Labor Review*, Table 31, December issues.

**Table 2. Average Freight Revenue Per Ton-Mile, 1980-1990**

**Certificated Air Carrier, Domestic Operations, Scheduled Service:**

- 1980-1984: CAB, *Air Carrier Financial Statistics*, 1981-1984, annual issue, p. 2, line 4; *Air Carrier Traffic Statistics*, 1981-1984, annual issues, p. 4/5, line 18. Freight revenue (Financial Statistics) divided by revenue ton-miles of freight (Traffic Statistics).
- 1985-1990: U.S. DOT/RSPA, *Air Carrier Financial Statistics*, 1985-1991, annual issues, p. 1, line 4; *Air Carrier Traffic Statistics*, 1985-1991, annual issues, p. 2, line 18. Freight revenue (Financial Statistics) divided by revenue ton-miles of freight (Traffic Statistics).

**Class I Rail:**

- 1980-1990: AAR, *Railroad Facts*, 1991, p.30.

**Class I and II Intercity Motor Carriers of Property, Common Carrier:**

- 1980-1990: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 12.

**Oil Pipeline:**

- 1980-1990: *Ibid.*

**Inland Waterway Carriers:**

- 1980-1990: *Ibid.*

**Producer Price Index:**

- 1980-1990: *Ibid.*

**Table 3. Average Passenger Fare, 1978-1988**

Certificated Air Carrier, Domestic Operations, Scheduled Service:

1980-1984:	CAB, <i>Air Carrier Financial Statistics</i> , 1981-1984, annual issues, p. 1, line 3 and <i>Air Carrier Traffic Statistics</i> , 1981-1984 annual issues, p. 2, line 16, passenger revenue (Financial Statistics) divided by revenue passenger enplanements (Traffic Statistics).
1985-1990:	U.S. DOT/RSPA, <i>Air Carrier Financial Statistics</i> , 1985-1991, annual issues, p. 1, line 3 and <i>Air Carrier Traffic Statistics</i> , 1985-1991, annual issues, p. 2, line 16, passenger revenue (Financial Statistics) divided by revenue passenger enplanements (Traffic Statistics).

Class I Bus, Intercity:

1980-1981:	ABA, <i>Bus Facts</i> , 1982, p. 7.
1982-1990:	Transportation Policy Associates (TPA).

Local Transit:

1980-1990:	American Public Transit Association (APTA), <i>Transit Fact Book</i> , 1991, p. 54.
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Rail (commutation):

1980-1990:	<i>Ibid.</i>
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Amtrak:

1980-1987:	Eno Foundation for Transportation, <i>Transportation In America</i> , September 1991 Supplement, p. 12.
1988-1990:	Amtrak, State and Local Affairs Department.

**Table 4. Total Operating Revenues, 1980-1990**

Certificated Air Carrier, Domestic Operations, All Services:

1980-1984:	CAB, <i>Air Carrier Financial Statistics</i> , 1981-1984, annual issues, p. 1.
1985-1990:	U.S. DOT/RSPA, <i>Ibid.</i> , 1985-1991, annual issues, p. 1.

Class I Bus, Intercity:

1980-1990:	ICC, <i>Transport Statistics in U.S., Motor Carriers, Part 2</i> , December 1990, Table 5 and similar table in earlier editions.
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Local Transit:

1980-1990:	APTA, <i>Transit Fact Book</i> , 1991, p. 49.
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Oil Pipeline, ICC-Regulated and Non-regulated:

1980-1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , September 1991 Supplement, p. 8, and previous issues published by TPA.
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Gas Pipeline:

1980-1990:	Transmission Companies: American Gas Association (AGA), <i>Gas Facts</i> , 1991, p. 146.
1980-1990:	Distribution Companies: <i>Ibid.</i> , p. 145.

Class I Intercity Motor Carriers of Property:

1980-1990:	ICC, <i>105th Annual Report of the ICC</i> , 1991, Appendix E, Table 5, and similar table in earlier editions.
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Class I Rail:

1980-1990:	AAR, <i>Railroad Facts</i> , 1991, p. 9.
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Amtrak:

1980-1990:	Amtrak, State and Local Affairs Department.
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Water Transport:

ICC-Regulated Carriers, Inland and Coastal Waterways:	
1980-1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , September 1991 Supplement, p. 13, and previous issues published by TPA.

**Table 4. Total Operating Revenues, 1980-1990 (cont'd)**

**Maritime Carriers:**

1980-1990: U.S. DOT/Maritime Administration, Office of External Affairs, MAR-240.

**Class A Freight Forwarders:**

1980-1990: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 8, and previous issues published by TPA.

**Table 5. Vehicle-Miles, 1980-1990**

**Air Carriers:**

**Certificated, Domestic Operations, All Services:**

1980-1984: CAB, *Air Carrier Traffic Statistics*, 1981-1984/85, annual issues, p. 2, line (27) plus line (50).

1985-1990: U.S. DOT/RSPA, *Ibid.*, annual issues, 1985-1991, p. 2, line (27) plus line (50).

**Total Majors, Domestic Operations:**

1980-1984: CAB, *Ibid.*, 1981-1984/85, annual issues, p. 5, line (27) plus line (50).

1985-1990: U.S. DOT/RSPA, *Ibid.*, annual issues, 1985-1991, p. 5, line (27) plus line (50).

**Total Nationals, Domestic Operations:**

1980-1984: CAB, *Ibid.*, 1981-1984/85, annual issues, p. 47, line (27) plus line (50).

1985-1990: U.S. DOT/RSPA, *Ibid.*, annual issues, 1985-1991, p. 54, line (27) plus line (50).

**Total Large Regionals, Domestic Operations:**

1980-1984: CAB, *Ibid.*, 1981-1984/85, annual issues, p. 83, line (27) plus line (50).

1985-1990: U.S. DOT/RSPA, *Ibid.*, annual issues, 1985-1991, p. 90, line (27) plus line (50).

**Total Medium Regionals, domestic and international operations:**

1980-1984: CAB, *Ibid.*, 1981-1984/85, annual issues, p. 113, line (27) plus line (50).

1985-1990: U.S. DOT/RSPA, *Ibid.*, annual issues, 1985-1991, p. 143, line (27) plus line (50).

**General Aviation:**

1980-1982: U.S. DOT/Federal Aviation Administration (FAA), *FAA Statistical Handbook of Aviation*, figures adjusted in line with changes in total hours flown, per TPA.

1983-1990: *Ibid.*, *General Aviation Activity and Avionics Survey*, annual issues, Table 3.3; mileage multiplied by 1.151 to convert from nautical miles.

**Highway:**

**Passenger Car and Taxi:**

1980-1984: U.S. DOT, Federal Highway Administration (FHWA), *Highway Statistics, Summary to 1985*, Table VM-201A.

1985-1990: *Ibid.*, *Highway Statistics*, annual issues, Table VM-1.

**Motorcycle:**

1980-1990: *Ibid.*

**Single-Unit Trucks:**

1980-1990: *Ibid.*

**Other Single-Unit Trucks:**

1980-1990: *Ibid.*

**Combination Trucks:**

1980-1990: *Ibid.*

**Commercial Bus:**

1980-1983: *Ibid.*, *Highway Statistics, Summary to 1985*, Table VM-201A.

1984-1990: Transportation Policy Associates.

**School Bus:**

1980-1990: National Safety Council, *Accident Facts*, annual issues, p. 71.

**Table 5. Vehicle-Miles, 1980-1990 (cont'd)**

Local Transit:	
1980-1990:	APTA, <i>Transit Fact Book</i> , 1991, p. 74.
Class I Rail:	
Passenger Car (commutation):	
1980-1990:	<i>Ibid.</i>
Freight Car:	
1980-1990:	AAR, <i>Railroad Facts</i> , 1991, p. 34.
Amtrak:	
1980-1990:	Amtrak, State and Local Affairs Department.

**Table 6. Passenger-Miles, 1980-1990**

Air Carrier:	
Certificated, Domestic Operations, All Services:	
1980-1984:	CAB, <i>Air Carrier Traffic Statistics</i> , 1981-1984/85, p. 2, line 1.
1985-1988:	U.S. DOT/RSPA, <i>Ibid.</i> , annual issues, 1985-1991, p. 2, line 1.
Total Majors, Domestic Operations:	
1980-1984:	CAB, <i>Ibid.</i> , 1980-1984/85, annual issues, p. 5, lines 1.
1985-1990:	U.S. DOT/RSPA, <i>Ibid.</i> , annual issues, 1985-1991, p. 5, line 1.
Total Nationals, Domestic Operations:	
1980-1984:	CAB, <i>Ibid.</i> , 1981-1984/85, annual issues, p. 47, line 1.
1985-1990:	U.S. DOT/RSPA, <i>Ibid.</i> , annual issues, 1985-1991, pp. 54, line 1.
Total Large Regionals, Domestic Operations:	
1980-1984:	CAB, <i>Ibid.</i> , 1981-1984/85, annual issues, p. 83, line 1.
1985-1990:	U.S. DOT/RSPA, <i>Ibid.</i> , annual issues, 1985-1991, pp. 90, line 1.
Total Medium Regionals, Domestic and International Operations:	
1980-1984:	CAB, <i>Ibid.</i> , 1981-1984/85, annual issues, p. 113, line 1.
1985-1990:	U.S. DOT/RSPA, <i>Ibid.</i> , annual issues, 1985-1991, pp. 143, line 1.
General Aviation:	
1980-1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , September 1991 Supplement, p. 11.
Highway:	
Passenger Car and Taxi:	
1980-1984:	U.S. DOT/FHWA, <i>Highway Statistics, Summary to 1985</i> , Table VM-201A. Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.8 (1980-1982) and 1.7 (1983-1984).
1985-1990:	<i>Ibid.</i> , <i>Highway Statistics</i> , annual issues, Table VM-1. Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.7 (1985-1989) and 1.62 (1990).
Motorcycles:	
1980-1990:	<i>Ibid.</i> , Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.1 (1980-1985), 1.23 (1986-1989), and 1.37 (1990).
Intercity Bus:	
1980-1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , September 1991 Supplement, p. 11.
School Bus:	
1980-1990:	National Safety Council, <i>Accident Facts</i> , 1991, p. 70.
Single-Unit Trucks:	
1980-1990:	U.S. DOT/FHWA, <i>Highway Statistics</i> , annual issues, Table VM-1. Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.3 (1980-1989), and 1.31 (1990).
Other Single-Unit Trucks:	
1980-1990:	<i>Ibid.</i> , Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.0.

### Table 6. Passenger-Miles, 1980-1990 (cont'd)

Combination Trucks:

1980-1990: *Ibid.*, Passenger-miles derived by multiplying vehicle-miles by an average occupancy rate of 1.0.

Local Transit:

1980-1990: APTA, *Transit Fact Book*, 1991, p. 73.

Rail (commutation):

1980-1990: *Ibid.*

Amtrak:

1980-1988: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 11.

1989-1990: Amtrak, State and Local Affairs Department.

### Table 7. Revenue Ton-Miles of Freight, 1980-1990

Certificated Air Carrier, Domestic Operations, All Services:

1980-1984: CAB, *Air Carrier Traffic Statistics*, 1981-1984/85, annual issues, p. 2, line 3.

1985-1990: U.S. DOT/RSPA, *Ibid.*, annual issues, 1985-1991, p. 2, line 3.

Oil Pipeline:

1980-1990: Eno Foundation for Transportation, *Transportation In America*, September 1991 Supplement, p. 10.

Class I Rail:

1980-1990: AAR, *Railroad Facts*, 1991, p. 27.

Motor Vehicles:

1980-1990: Eno Foundation for Transportation, *Transportation In America*, 1991, p. 44.

Water Transport:

Inland Waterways, including Great Lakes:

1980-1989: U.S. Army, Corps of Engineers, *Waterborne Commerce of the U.S.*, annual issues, Part 5, Section 1, Table 6 and similar table in earlier editions.

1990: Eno Foundation for Transportation, *Transportation in America*, September 1991 Supplement, p. 10.

Inland Waterways (domestic only):

1980-1990: *Ibid.*

Domestic Coastwise:

1980-1990: *Ibid.*

### Table 8. Basic Intercity Mileage Within the Continental United States, 1980-1990

Airways:

1980-1990: U.S. DOT/FAA, *FAA Statistical Handbook of Aviation*, 1990, Table 2.1. Mileage equals sum of VHF low altitude direct and VHF jet route mileages multiplied by 1.151 to convert from nautical miles.

Oil Pipeline, total:

1980-1990: Eno Foundation for Transportation, *Transportation in America*, 1991, p. 64.

Crude Lines and Product Lines:

1980-1990: Transportation Policy Associates.

Gas Pipeline:

1980-1990: American Gas Association (AGA), *Gas Facts*, 1991, Table 5-3 and similar table in earlier editions.

**Table 8. Basic Intercity Mileage Within the Continental United States, 1980-1990 (cont'd)**

Class I Rail:	
1980-1990:	AAR, <i>Railroad Facts</i> , annual issues, p. 44. Data represent aggregate length of roadway of all line-haul railroads, excluding mileage of yard tracks or sidings. Jointly used track is counted only once.
Highway:	
1980-1990:	U.S. DOT/FHWA, <i>Highway Statistics</i> , annual issues, Table HM-14 and similar table in earlier editions.
Inland Waterway:	
1980-1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , 1991, p. 64.

**Table 10. Number of Vehicles, 1980-1990**

Certificated Air Carrier, All Services:	
1980-1990:	U.S. DOT/RSPA, Data Administration Division, DAI-20.
General Aviation:	
1980-1990:	<i>Ibid.</i> , FAA, <i>General Aviation Activity and Avionics Survey</i> , 1990, Table 2.1.
Motorcycle:	
1980-1984:	<i>Ibid.</i> , FHWA, <i>Highway Statistics, Summary to 1985</i> , Table VM-201A.
1985-1990:	<i>Ibid.</i> , annual issues, Table VM-1.
Passenger Car and Taxi:	
1980-1984:	<i>Ibid.</i> , <i>Highway Statistics, Summary to 1985</i> , Table VM-201A.
1985-1990:	<i>Ibid.</i> , annual issues, Table VM-1.
Intercity Bus:	
1980-1983:	American Bus Association, Public Affaris Office.
1984-1990:	Transportation Policy Associates.
Local Transit:	
1980-1990:	APTA, <i>Transit Fact Book</i> , 1991, Table 33.
Class I Rail:	
Freight Cars:	
1980-1990:	AAR, <i>Railroad Facts</i> , annual issues, p. 50.
Locomotives:	
1980-1990:	<i>Ibid.</i> , p. 48. Excludes Amtrak.
Amtrak:	
Passenger Train-Cars and Locomotives:	
1980-1990:	Amtrak, State and Local Affairs Department.
Truck:	
Combination, Single-Unit and Other Single-Unit:	
1980-1984:	U.S. DOT/FHWA, <i>Highway Statistics, Summary to 1985</i> , Table VM-201A.
1985-1990:	<i>Ibid.</i> , annual issues, Table VM-1.
Water Transport:	
Total Inland Water Vessels:	
1980-1989:	Sum of non-self-propelled vessels and self-propelled vessels.
1990:	Not available.

**Table 10. Number of Vehicles, 1980-1990 (cont'd)**

Non-self propelled vessels and self-propelled vessels:

1980:	U.S. Army, Corps of Engineers, <i>Summary of U.S. Flag Passenger &amp; Cargo Vessels</i> , data as of Dec. 31, 1980.
1981-1982:	<i>Ibid.</i> , Beginning in 1981 data are collected every 2 years and are shown in 1982 column.
1983-1984:	<i>Ibid.</i> , data shown in 1984 column.
1985-1989:	<i>Ibid.</i> , data as of Oct. 1.
1990:	Not available.

Oceangoing Steam and Motor Ships:

1980-1990:	U.S. DOT/Maritime Administration (MARAD), <i>Merchant Fleets of the World</i> , annual issues, Table 6 and similar table in earlier editions.
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**Table 11. Number of New Vehicles Purchased by Mode, 1980-1990**

Air Carrier, All Services:

1980-1990:	Aerospace Industries Association, <i>1991 Aerospace Year-End Review and Forecast</i> , Table V.
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General Aviation:

1980-1990:	U.S. DOT/FAA, <i>FAA Statistical Handbook of Aviation</i> , 1990, Table 10-1, aircraft production.
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Passenger Car and Taxi:

1980-1990:	U.S. DOC, Bureau of Economic Analysis, <i>Survey of Current Business</i> , January 1992, p. S-32 and similar table in earlier editions.
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Motorcycle:

1980-1990:	Motorcycle Industry Council, Inc., <i>1991 Motorcycle Statistical Annual</i> , p. 11.
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Moped:

1980-1990:	<i>Ibid.</i> , p. 14.
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Bicycle:

1980-1990:	Bicycle Manufacturer's Association of America, <i>The 1991 Bicycle Market in Review</i> .
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Truck:

1980-1990:	U.S. DOC, Bureau of Economic Analysis, <i>Survey of Current Business</i> , January 1992, p. S-32 and similar table in earlier editions. Total of light, medium and heavy duty.
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Class I Bus, Intercity :

1980-1990:	Motor Vehicle Manufacturers Association, <i>Facts &amp; Figures</i> , 1991, p. 12 and similar table in earlier editions.
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Local Transit :

1980-1990:	APTA, <i>Transit Fact Book</i> , 1991, Table 34.
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Class I Rail:

Freight Cars and Locomotives:

1980-1990:	AAR, <i>Railroad Facts</i> , 1991, p. 54.
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Amtrak:

Passenger Train-Cars and Locomotives:

1980-1982:	<i>Ibid.</i> , p. 17.
1983-1990:	Amtrak, State and Local Affairs Department.

Water:

Merchant Vessels and Gross Tonnage:

1980-1990:	U.S. DOT/MARAD, <i>Merchant Fleets of the World</i> , annual issues, p. 39 and similar table in earlier editions.
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**Table 17. Number of Fatalities by Mode, 1978-1989**

**Highway:**

**Motor Vehicle Traffic:**

- 1980-1989: U.S. DOT/RSPA/Volpe National Transportation Systems Center (Volpe Center), *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, NHTSA, National Center for Statistics and Analysis, NRD-30.

**Motor Carriers of Property:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, FHWA, Office of Motor Carrier Safety Field Operations, HFO-30.

**Motor Carriers of Passengers:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, FHWA, Office of Motor Carrier Safety Field Operation, HFO-30.

**Railroad:**

**Rail-Highway Grade Crossing:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, FRA, Systems Support Division, RRS-22.

**Rail:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1988 Annual Summary
- 1990-1991: *Ibid.*, FRA, Systems Support Division, RRS-22.

**Rail Rapid Transit:**

- 1980-1988: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1989-1991: *Ibid.*, Safety and Security Systems Division, DTS-38.

**Aviation:**

**U.S. Air Carriers:**

- 1980-1991: NTSB, *NTSB Aviation Accident Statistics, 1980-1990, 1981-1991*, Table 2.

**Commuter Air Carriers:**

- 1980-1991: *Ibid.*, Table 5.

**On-Demand Air Taxi:**

- 1980-1991: *Ibid.*, Table 6.

**U.S. General Aviation:**

- 1980-1991: *Ibid.*, Table 7.

**Marine:**

**Waterborne Transportation:**

- 1980-1989: U.S. DOT/RSPA, Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1981-1990: U.S. DOT/USCG, Marine Safety Evaluation Branch, G-MM1-3.

**Recreational Boating:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: U.S. DOT/USCG, Auxiliary, Boating, and Consumer Affairs Division, G-NAB.

**Materials Transport:**

**Liquid Pipeline:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, RSPA, Office of Pipeline Safety, DPS-21.1.

**Gas Pipeline:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, RSPA, Office of Pipeline Safety, DPS-21.1.

**Hazardous Materials:**

- 1980-1989: *Ibid.*, RSPA/Volpe Center, *Transportation Safety Information Report*, 1989 Annual Summary.
- 1990-1991: *Ibid.*, RSPA, Office of Hazardous Materials Transportation, DHM-63.



**Table 34. Employment in Transportation and Related Industries, 1980-1990**

**Transport Sector:**

**Air:**

1980-1990: U.S. Department of Labor (DOL), Bureau of Labor Statistics, *Supplement to Employment and Earnings, Revised Establishment Data*, annual issues, SIC 45.

**Bus:**

1980-1990: *Ibid.*, SIC 413.

**Local Transport:**

1980-1990: *Ibid.*, SIC 411.

**Railroad:**

1980-1990: *Ibid.*, SIC 40.

**Oil Pipeline:**

1980-1990: *Ibid.*, SIC 46. FERC-regulated companies employ approximately 85% of the total.

**Gas Pipeline, Transmission and Distribution:**

1980-1990: AGA, *Gas Facts*, 1991, Table 17-2 and similar table in earlier editions.

**Taxi:**

1980-1990: U.S. DOL, Bureau of Labor Statistics, *Supplement to Employment and Earnings, Revised Establishment Data*, annual issues, SIC 412.

**Trucking and Warehousing:**

**Trucking and Terminals:**

1980-1990: *Ibid.*, SIC 421,3.

**Public Warehousing:**

1980-1990: *Ibid.*, SIC 422.

**Water:**

1980-1990: *Ibid.*, SIC 44.

**Transportation Services:**

1980-1990: *Ibid.*, SIC 47.

**Equipment Manufacturing:**

**Aircraft and Parts:**

1980-1990: *Ibid.*, SIC 372.

**Motor Vehicles and Equipment:**

1980-1990: *Ibid.*, SIC 301 and 371, sum of motor vehicles and equipment and tires. Railroad Equipment:

1980-1990: *Ibid.*, SIC 374.

**Ships and Boat Building and Repair:**

1980-1990: *Ibid.*, SIC 373.

**Other:**

1980-1990: *Ibid.*, sum of SIC 376 and SIC 379.

**Related Industries:**

**Automotive and Accessories Retailers:**

1980-1990: *Ibid.*, SIC 551,2 and 553, sum of new and used automobile dealers and other auto and home supply stores.

**Automotive Wholesalers:**

1980-1990: *Ibid.*, SIC 501.

**Automotive Services and Garages:**

1980-1990: *Ibid.*, SIC 75.

### Table 34. Employment in Transportation and Related Industries, 1980-1990 (cont'd)

Gasoline Service Stations:	
1980-1990:	<i>Ibid.</i> , SIC 554.
Highway and Street Construction:	
1980-1990:	<i>Ibid.</i> , SIC 161.
Petroleum:	
1980-1990:	<i>Ibid.</i> , sum of SIC 13, p. 6, SIC 291 and 4.5% of SIC 50 and 51 (to account for petroleum bulk stations and terminals). The totals are adjusted for 56% transportation use.
Other Industries:	
Truckdrivers and Deliverymen:	
1980-1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , 1991, p. 62 and previous editions by TPA.
Shipping and Receiving Clerks:	
1980-1990:	<i>Ibid.</i> , p. 63 and previous editions by TPA.
Government Employees:	
U.S. DOT	
1980-1989:	U.S. DOC, Bureau of the Census, <i>Statistical Abstract of the U.S.</i> , 1991, Table 529 and similar table in earlier editions.
1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , p. 61.
State and Local Highway:	
1980-1989:	U.S. DOC, Bureau of the Census, <i>Statistical Abstract of the U.S.</i> , 1991, Table 498.
1990:	Eno Foundation for Transportation, <i>Transportation In America</i> , p. 61.
Post Office:	
1980-1990:	<i>Ibid.</i> Figures based on assumption that 14% of postal workers are engaged in transportation work i.e., employees transporting or delivering mail by motor vehicles.
Other:	
1980-1990:	<i>Ibid.</i>
Total Civilian Labor Force:	
1980-1990:	U.S. DOL, Bureau of Labor Statistics, <i>Employment and Earnings</i> , annual issues, Table B-2.

### Table 35. National Transportation and Economic Trends, 1980-1990

Passenger-Miles:	
1980-1990:	Summation of all modes from Table 6. (This edition of NTS).
Revenue Ton-Miles:	
1980-1990:	Summation of all modes from Table 7. (This edition of NTS).
Population:	
1980-1990:	U.S. DOC, Bureau of the Census, <i>Statistical Abstract of the U.S.</i> , 1991, Table 2.
Industrial Production:	
1980-1990:	<i>Ibid.</i> , Bureau of Economic Analysis, <i>Survey of Current Business</i> , July 1991, p. S-1 and similar page in earlier editions.
Gross National Product:	
1980-1990:	<i>Ibid.</i>

**Table 42. Fuel Consumption by Mode of Transportation, 1980-1990**

**Class I Rail:**

**Locomotives:**

1980-1990: AAR, *Railroad Facts*, 1991, p. 60.

**Motor Cars:**

1980-1990: *Ibid.*

**Certificated Air Carrier, Domestic Operations:**

1980-1984: CAB, *Fuel Cost and Consumption, Twelve Months Ended December 31, 1984*; Total of Tables 2, 3, 4, 6 and 7 and similar tables in earlier editions.

1985-1990: U.S. DOT/RSPA, Data Administration Division, DAI-20.

**General Aviation:**

1980-1990: *Ibid.*, FAA, *General Aviation Activity and Avionics Survey*, 1990, Table 5-1, and similar table in earlier editions.

**Highway:**

1980-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.

1986-1990: *Ibid.*, *Highway Statistics*, annual issues, Table VM-1. Commercial and School bus figures for 1984-1990 were calculated by the Transportation Policy Associates.

**Water Transport:**

**Residual and Distillate Fuel Oil:**

1980-1983: American Petroleum Institute, *Basic Petroleum Data Book*, annual issues, Tables 10, 10a, 12, and 12a.

1984-1990: U.S. DOE/EIA, *Fuel Oil and Kerosene Sales*, annual, Tables 2 and 4.

**Gasoline:**

1980-1990: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table MF-24 and similar table in earlier editions.

**Transit:**

**Electricity:**

1980-1990: APTA, *Transit Fact Book*, 1991, Table 45.

**Gallons of Motor Fuel:**

1980-1990: *Ibid.*

**Pipeline:**

1980-1990: U.S. DOE, *Natural Gas Annual*, 1990, Vol. II, Table 14 and similar table in earlier editions.

**Non-Highway Use of Gasoline:**

1980-1990: U.S. DOT/FHWA, *Highway Statistics*, 1990, Table MF-21 and similar table in earlier editions.



# **APPENDIX B**

## **Glossary**

## AIR CARRIER TERMINOLOGY

**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.

**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."

**AIRCRAFT REVENUE HOURS:** The airborne hours in revenue service, computed from the moment an aircraft leaves the ground until it touches the ground again.

**AIRCRAFT REVENUE MILES:** The miles (computed in airport-to-airport distances) for each inter-airport hop actually completed in revenue service, whether or not performed in accordance with the scheduled pattern. For this purpose, operation to a flag stop is a hop completed even though a landing is not actually made. In cases where the inter-airport distances are inapplicable, aircraft miles flown are determined by multiplying the normal cruising speed for the aircraft type by the airborne hours.

**ALL-CARGO CARRIER:** One of a class of air carriers holding an All Cargo Air Service Certificate issued under section 418 of the Federal Aviation Act and certificated in accordance with FAR Part 121 to provide domestic air transportation of cargo.

**CERTIFICATED AIR CARRIER:** An air carrier holding a Certificate of Public Convenience and Necessity issued by DOT, to conduct scheduled services interstate. Nonscheduled or charter operation may also be conducted by these carriers. These carriers operate large aircraft (30 seats or more or a maximum payload capacity of 7,500 pounds or more) in accordance with FAR Part 121.

**CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY, "CC AND N":** A certificate issued to an air carrier under Section 401 of the Federal Aviation Act, by the Department of Transportation, authorizing the carrier to engage in air transportation.

**COACH:** Transport service established for the carriage of passengers at special reduced passenger fares that are predicated on both the operation of specifically designated aircraft space and a reduction in the quality of service regularly and ordinarily provided.

**COMMUTER AIR CARRIERS:** An air taxi operator who performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and points between which such flights are performed.

**DOMESTIC OPERATIONS:** Operations within and between the 50 States, District of Columbia, the Commonwealth of Puerto Rico and the U.S. Virgin Islands. It also encompasses Canadian transborder operations and for certain carriers, Mexican transborder operations.

**ECONOMY:** Transport service established for the carriage of passengers at fares and quality of service below that of coach service.

**FIRST-CLASS:** Transport service established for the carriage of passengers moving at either standard fares or premium fares, or at reduced fares not predicated upon the operation of specifically allocated aircraft space, and for whom standard or premium quality services are provided.

**FIXED-WING AIRCRAFT:** Aircraft having nonrotating wings fixed to the airplane fuselage and outspread in flight.

**FOREIGN FLAG AIR CARRIER:** An air carrier other than a U.S. flag air carrier engaged in international air transportation.

**INTERNATIONAL OPERATIONS:** Operations outside the territory of the United States, including operations between the United States and foreign countries. Prior to January 1981, statistics for Puerto Rico and the Virgin Islands operations are included in the international category rather than domestic. Includes both the combination passenger/cargo carriers and the all-cargo carriers engaged in international and territorial operations.

**JET ENGINE:** An engine which converts fuel and air into a fast-moving stream of hot gases which effect propulsion of the device of which the engine is a part.

**JET FUEL:** Includes both naphtha-type and kerosene-type fuel meeting standards for use in aircraft turbine engines. Although most jet fuel is used in aircraft, some is used for other purposes such as for generating electricity in gas turbines.

**KEROSENE-BASE JET FUEL:** A quality kerosene product with an average gravity of 40.7 degrees API and 10 to 90% distillation temperatures of 217 to 261 degrees C. Used primarily as fuel for commercial turbojet and turboprop aircraft engines. It is a relatively low freezing point distillate of the kerosene type.

**LARGE REGIONALS:** Carrier groups with annual operating revenues of \$20,000,000-\$99,999,999. Included in this group are Air Transport Int'l, American Int'l, Amerijet, Arrow, Aspen, Braniff Int'l, Carnival, Challenge Air Cargo, Emerald, Executive Airlines, Express One, Flagship, Florida West, Key, MGM Grand, Northern Air, Reeve, Rich, Simmons, Sun Country, Trans Continental, Trans States, and Zantop. Airlines in this category are subject to periodic changes.

**MAJORS:** Carrier groups with annual operating revenues of \$1,000,000,000+. Included in this group are America West, American, Continental, Delta, Eastern, Federal Express, Northwest, Pan American, Southwest, Trans World, United, and USAir. Airlines in this category are subject to periodic changes.

**MEDIUM REGIONALS:** Carrier groups with annual operating revenues of \$0-\$19,999,999 (or that operate only aircraft with 60 seats or less or 18,000 pounds maximum payload). Included in this group are Aerial, Buffalo, Casino Express, Conner, Discovery, Emery, Great American, Independent Air, Jet Fleet, Millon, North American, Private Jet, TPI International, Trans Air Link, Universal, Wilbur's, and Wrangler. Airlines in this category are subject to periodic changes.

**NAPHTHA-BASE JET FUEL:** A fuel in the heavy naphtha boiling range with an average gravity of 52.8 degrees API and 10 to 90% distillation temperatures of 117 to 233 degrees C. Used for turbojet and turboprop aircraft engines, primarily by the military. Excludes ramjet and petroleum.

**NATIONALS:** Carrier groups with annual operating revenues of \$100,000,000-\$1,000,000,000. Included in this group are Air Wisconsin, Alaska, Aloha, American Trans Air, Evergreen, Hawaiian, Horizon Air, Markair, Midway, Midwest Express, Southern Air, Tower, Trump Shuttle, United Parcel Service, Westair, and World. Airlines in this category are subject to periodic changes.

**NONREVENUE FLIGHTS:** Flights and flight stages involving training, test, technical, positioning for scheduled flights, ferry, company business, publicity and forced returns for which no remuneration is received.

**NONSCHEDULED FREIGHT:** Property carried in charter operations.

**NONSCHEDULED SERVICE:** Revenue flights, such as charter flights, not operated in regular scheduled service and all nonrevenue flights incident to such flights.

**OPERATING EXPENSES:** Expenses incurred in the performance of air transportation. Includes direct aircraft operating expenses, ground, and indirect operating expenses.

**OPERATING REVENUES:** Includes revenues from the performance of air transportation and transport related activities. See "Transport Related Revenues".

**OTHER TRANSPORT REVENUES:** Miscellaneous revenues associated with air transportation performed by the air carrier, such as airline employees, officers and directors, or other persons, except ministers of religion who travel under reduced rated transportation; reservation cancellation fees; and other items not specified in other transport revenue accounts.

**PASSENGER-MILE:** One passenger transported one mile (5,280 feet). Passenger-miles are computed by summation of the products of the aircraft miles flown on each interairport flight stage multiplied by the number of passengers carried on that flight stage.

**PASSENGER REVENUES:** Revenues from the transportation of passengers by air.

**REVENUE:** Pertaining to activities for which remuneration is received by the carrier.

**REVENUE PASSENGER:** Person receiving air transportation for an air carrier for which remuneration is received by the carrier. Air carrier employees or others, except ministers of religion, elderly individuals and handicapped individuals, receiving air transportation against whom reduced rate charges (less than the applicable tariff) are levied are considered nonrevenue passengers. Infants for whom a token fare is charged are not counted as passengers.

**REVENUE PASSENGER ENPLANEMENTS:** The total number of passengers boarding aircraft.

**REVENUE PASSENGER LOAD FACTOR:** The percent that revenue passenger-miles are of available seat-miles in revenue passenger services, representing the proportion of aircraft seating capacity that is actually sold and utilized.

**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.

**REVENUE PASSENGER TON-MILE:** One ton of revenue passenger weight (including all baggage) transported one mile (5,280 feet). The passenger weight standard for both "Domestic" and "International" operations is 200 pounds.

**REVENUE TON-MILE:** One ton of revenue traffic transported one mile (5,280 feet).

**REVENUE TON-MILE OF FREIGHT:** One short ton of freight transported one mile (5,280 feet). Ton-miles are computed by summation of the products of the aircraft miles flown on each interairport flight stage multiplied by the number of tons carried on that flight stage.

**SCHEDULED SERVICE:** Transport service operated pursuant to published flight schedules, including extra sections and related nonrevenue flights.

**SUPPLEMENTAL AIR CARRIER:** An air carrier which holds Certificates of Public Convenience and Necessity issued by the DOT, authorizing performance of passenger and cargo interstate charter services supplementing the scheduled service of the certificated air carrier. The authority of supplemental air carriers to engage in military charters is of an indefinite period. In addition, they can perform on an emergency basis, as may be authorized by the DOT, scheduled operations including the transportation of individually ticketed passengers and individually waybilled cargo.

**TRANSPORT-RELATED EXPENSES:** Expenses from services related to air transportation such as in-flight sales of liquor, food and other items; ground, restaurant and food services, rental expense as lessor, interchange sales, general service sales, mutual aid, substitute service and air cargo service (other than actual air movement).

**TRANSPORT-RELATED REVENUES:** Revenues from services related to air transportation such as enumerated above under "Transportation Related Expenses."

**TRANSPORT REVENUES:** Revenues from transportation by air of all classes of traffic in scheduled and nonscheduled service, including the performance of charters.

**U.S. FLAG CARRIER OR AMERICAN FLAG CARRIER:** One of a class of air carriers holding a Certificate of Public Convenience and Necessity issued by the DOT, approved by the President, authorizing scheduled operations over specified routes between the U.S. (and/or its territories) and one or more foreign countries.

#### GENERAL AVIATION TERMINOLOGY

**ACTIVE AIRCRAFT:** All legally registered civil aircraft which flew one or more hours.

**AERIAL APPLICATION:** Any use of an aircraft for work purposes which 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.

**AERIAL OBSERVATION:** Any use of an aircraft for aerial mapping/photography, survey, patrol, fish spotting, search and rescue, hunting, highway traffic advisory, or sightseeing, not included under Part 135.

**AIR-TAXI:** The classification of air carriers which transports persons, property, and mail using small aircraft (under 30 seats or a maximum payload capacity of less than 7,500 pounds). An air taxi does not hold a Certificate of Public Convenience and Necessity.

**AVIATION GASOLINE (AVGAS):** All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D 910. Includes all refinery products within the gasoline range that are to be marketed straight or in blends as aviation gasoline without further processing (i.e., any refinery operation except mechanical blending). Also includes finished components in the gasoline range which will be used for blending or compounding into aviation gasoline.

**BUSINESS:** Use of an aircraft not for compensation or hire by individuals for the purposes of transportation required by business in which they are engaged.



**COMMUTER AIR CARRIER:** An air-taxi that performs at least five scheduled round trips per week between two or more points or carries mail.

**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.

**DEMAND AIR-TAXI:** Use of an aircraft operating under Federal Aviation Regulations, Part 135, passenger and cargo operations, including charter and excluding commuter air carrier.

**GENERAL AVIATION:** That portion of civil aviation which encompasses all facets of aviation except air carriers holding a Certificate of Public Convenience and Necessity issued by the DOT.

**INSTRUCTIONAL:** Any use of an aircraft for the purpose of formal instruction with the flying instructor aboard, or with the maneuvers on the particular flight(s) specified by the flight instructor; excludes proficiency flying.

**PERSONAL:** Any use of an aircraft for personal purposes not associated with a business or profession, and not for hire. This includes maintenance of pilot proficiency.

**RENTAL:** Aircraft owned for the purpose of renting; commercial flying club, leased, and rental aircraft activity.

**OTHER WORK:** Any aircraft used for construction work (not included under Part 135), helicopter, hoist, towing gliders, or parachuting.

**OTHER:** Any other use of an aircraft not included in above, i.e, experimentation, R&D, testing, demonstration, government.

### HIGHWAY TERMINOLOGY

**ARTERIAL:** A major highway, primarily for through traffic, usually on a continuous route.

**FEDERAL EXPENDITURES:** Intergovernmental payments to the State, District of Columbia, and local governments plus direct expenditures for capital outlay, maintenance, administration, and research.

**HIGHWAY TRUST FUND:** This is a grant-in-aid type fund administered by the FHWA. That is, most funds for highway improvements are apportioned to States in accordance with formulas that give weight to population, area and mileage.

**INTERSTATE:** Limited access divided facility of at least four lanes designated by the Federal Highway Administration as part of the Interstate System.

**LOCAL STREETS AND ROADS:** Streets whose primary purpose is feeding higher order systems, providing direct access with little or no through traffic.

**MINOR ARTERIALS:** Streets and highways linking cities and larger towns in rural areas in distributing trips to small geographic areas in urban areas (not penetrating identifiable neighborhoods).

**OTHER PRINCIPAL ARTERIAL:** Major streets or highways, many with multi-lane or freeway design, serving high volume traffic corridor movements that connect major generators of travel.

**ROADWAY:** That part of a trafficway used for motor vehicle travel.

**RURAL MILEAGE:** Roads outside city, municipal district, or urban boundaries.

**STATE AND LOCAL EXPENDITURES:** Disbursements for capital outlay, maintenance and traffic surfaces, administration and resarch, highway law enforcement and safety, and interest on debt.

**URBAN MILEAGE:** Roads inside city, municipal district, or urban boundaries: includes extensions of the state primary system, and state secondary roads within delimited incorporated and unincorporated places, and mileage under local control; i.e., local city streets, roads, and public ways not under State control within such places.

## AUTOMOBILE TERMINOLOGY

**ACCIDENT:** An accident is that occurrence in a sequence of events which usually produces unintended injury, death or property damage.

**COMPACT CAR:** An automobile industry designation usually consisting of cars with a wheelbase between 100 and 104 inches.

**FATAL MOTOR VEHICLE TRAFFIC ACCIDENT:** An accident that involves a motor vehicle in transport on a trafficway and in which at least one person dies within 30 days of the accident.

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

**INTERMEDIATE CAR:** An automobile industry designation usually consisting of cars with a wheelbase between 105 and 109 inches.

**LARGE-SIZE CAR:** An automobile industry designation usually consisting of cars with a wheelbase of greater than 114 inches.

**LOCAL RURAL ROADS:** Streets outside urban boundaries other than principal arteries of travel.

**MAIN RURAL ROADS:** Streets outside urban boundaries that are generally recognized as principal arteries of travel.

**MINI-SUBCOMPACT CAR:** An automobile industry designation usually consisting of cars with a wheelbase of less than 95 inches.

**MOTORCYCLE:** A two or three-wheeled motor vehicle designed to transport one or two people.

**MULTIPURPOSE PASSENGER VEHICLE:** A motor vehicle with motive power, except a trailer, designed to carry 10 persons or less which is constructed either on a truck chassis or with special features for occasional off-road operation.

**NON-OCCUPANT:** Any person who is not an occupant of a motor vehicle in transport and includes: pedestrians, pedalcyclists, occupants of parked motor vehicles, and others such as joggers, skateboard riders, people riding on animals, and persons riding in animal-drawn conveyances.

**OCCUPANT:** Any person who is in or upon a motor vehicle in transport and includes the driver, passengers, and persons riding on the exterior of a motor vehicle (eg., a skateboard rider who is set in motion by holding onto a vehicle).

**PASSENGER:** Any occupant of a motor vehicle who is not a driver.

**PASSENGER CAR:** Any of the following types of motor vehicles: convertible; 2-door sedan, hardtop, coupe; 4-door sedan or hardtop, coupe; 3- or 5-door hatchback; automobile with pickup body; station wagon; and other small four-wheel motor vehicles used primarily for carrying passengers.

**PASSENGER-MILES:** This figure represents the total distance traveled by all passengers in passenger cars and taxis. One passenger traveling one mile (5,280 feet) generates one passenger-mile.

**PEDESTRIAN:** Any person not traveling in or upon a motor vehicle or other vehicle.

**SUBCOMPACT CAR:** An automobile industry designation usually consisting of cars with a wheelbase between 95 and 99.

**URBAN STREETS:** Street within urban boundaries.

**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.

**VEHICLE-MILE (BY TYPE OF STREET):** These figures represent the total number of miles traveled by passenger cars, taxis, and motorcycles on the different types of streets. One vehicle traveling one mile (5,280 feet) generates one vehicle-mile.

## BUS TERMINOLOGY

**AVERAGE PASSENGER TRIP LENGTH:** Calculated by dividing revenue passenger-miles by the number of revenue passengers.

**COMMERCIAL BUS:** Any bus used to carry passengers at rates specified in tariffs; charges may be computed per passenger (as in regular route service) or per vehicle (as in charter service).

**INTERCITY BUS--CLASS I:** An interstate motor carrier of passengers with an average annual gross revenue of at least \$1,000,000 is defined by the ICC as a Class I carrier.

**INTERCITY BUS--TOTAL:** This figure includes Class I, II, and III interstate carriers, all of which report to the Interstate Commerce Commission, and intrastate carriers.

**REVENUE PASSENGERS:** Passengers on a commercial bus by or for whom a fare is paid.

**REVENUE PASSENGER-MILES:** One revenue passenger carried one mile (5,280 feet) generates one passenger-mile. The revenue passenger miles reported thus represent the total distance traveled by all bus passengers.

**SCHOOL BUS:** A specific type of vehicle which independent of ownership or design, is used to transport children to and from school, or to and from school activities.

**SCHOOL BUS - RELATED ACCIDENT:** Any accident in which a vehicle, regardless of body design, used as a school bus is directly or indirectly involved, such as an accident involving school children alighting from a vehicle.

**TAXES ASSIGNABLE TO OPERATIONS:** Includes the amount of federal, state, county, municipal, and other taxing district taxes which relate to motor carrier operations and property use therein (except income taxes on ordinary income).

**VEHICLE-MILE:** One vehicle traveling one mile (5,280 feet) generates one vehicle-mile. Thus, total vehicle-miles is the total mileage traveled by all vehicles.

### TRUCK TERMINOLOGY

**AVERAGE LENGTH OF HAUL (MILES):** The total number of ton-miles divided by the total number of tons carried.

**COMBINATION TRUCKS:** Consist of a power unit (a truck tractor) and one or two trailing units (a semi-trailer). The most frequently used combination is popularly referred to as a "tractor-semitrailer" or a "tractor trailer."

**GROSS VEHICLE WEIGHT (GVW):** The maximum rated capacity of a vehicle which includes the weight of the vehicle, all added equipment, driver and passengers, and load.

**HEAVY TRUCK:** 1. Single-unit truck with GVW greater than 26,000 lbs; 2. Tractor-trailer combination; 3. Truck with cargo trailers; 4. Truck-tractor pulling no trailer.

**ICC-REGULATED CARRIER:** A motor common carrier operating in interstate commerce under a grant of authority from the Interstate Commerce Commission and subject to its economic regulation.

**LIGHT TRUCK:** Trucks under 10,000 lbs. GVW (e.g., pickups, vans, and station wagons).

**MEDIUM TRUCK:** Any single-unit truck with GVW between 10,000 and 26,000 lbs.

**NON-ICC-REGULATED CARRIER:** A motor carrier not subject to the economic regulation of the ICC. The category includes intrastate carriers, private carriers hauling only the goods of their owners, and carriers of commodities, the transportation of which is exempt from ICC economic regulation.

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

**OPERATING EXPENSES:** This includes expenditures for equipment maintenance, supervision, wages, fuel, equipment rental, terminal operations, insurance, safety, and administrative and general functions.

**OPERATING REVENUES OF CLASS I INTERCITY MOTOR CARRIERS:** This term is defined by the ICC to include the five categories of revenue listed in the text.

**REVENUE:** The total amounts received by carriers for transportation and other services.

**SINGLE-UNIT TRUCK, (2-axle, 4-tire):** Includes pick-up trucks, panel trucks, vans, and other vehicles (such as campers, motor homes, etc.).

**TON-MILES:** The transportation of one short ton (2,000 lbs) of freight a distance of one mile (5,280 feet) generates one ton-mile.

**VEHICLE-MILES:** This term includes miles operated by power units upon urban streets, main rural roads, and local rural roads.

#### LOCAL TRANSIT TERMINOLOGY

**COMMUTER RAIL:** Those portions of "main-line railroad" (not "electric railway") transportation operations which encompass urban passenger train service for local travel between a central city and adjacent suburbs; commuter railroad service--using both locomotive-hauled and self-propelled railroad passenger cars--is characterized by multi-trip tickets, specific station-to-station fares, railroad employment practices, and usually only one or two stations in the central business district.

**DEMAND RESPONSE VEHICLE:** A type of non-fixed-route bus or van service characterized by passengers boarding and alighting at any location within the transit provider's service area. Vehicles pickup and discharge passengers at times requested by the passengers by prior arrangement, either by telephone for "dial-a-ride" service, or other prescheduling arrangements.

**FERRYBOAT:** Passenger-carrying marine vessel providing frequent "bridge" service over a fixed-route and on a published time schedule between two or more points.

**HEAVY RAIL:** A type of electric transit vehicle railway with the capacity for a "heavy volume" of traffic and characterized by exclusive rights-of-way, multi-car trains, high speed and rapid acceleration, sophisticated signaling, and high platform loading. Also known as "subway," "elevated (railway)," or "metropolitan railway (metro)."

**LIGHT RAIL:** A type of electric transit vehicle railway with a "light volume" traffic capacity compared to "heavy rail." Light rail may be on exclusive or shared rights-of-way, high or low platform loading, multi-car trains or single cars, automated or manually operated. In generic usage, light rail includes "streetcars," "trolley cars," and "tramways"; in specific usage, light rail refers to very modern and more sophisticated developments of these older rail modes.

**MOTOR BUS:** Rubber tired, self-propelled, manually steered transit vehicle with fuel supply carried on board the vehicle. Motor bus types include: Advanced Design Bus, Articulated Bus, Double Deck Bus, Intercity Bus, Medium Size Bus, New Look Bus, Sightseeing Bus, Small Bus, Standard-Size Bus, Suburban Bus, Transit Bus, and Van.

**OTHER REVENUE VEHICLES:** Other modes of transit service such as cable cars, personal rapid transit systems of varying designs, monorail vehicles, inclined railway cars, etc., not covered otherwise.

**OPERATING EXPENSES:** The total of all expenses associated with operation of an individual mode by a given operator. At the required level, total operating expense is reported on line 14 of Form 301 for a single mode system, and is derived from Form 310 for a multi-mode system. Operating expenses include distributions of "joint expenses" to individual modes, and exclude "reconciling items" such as interest expenses and depreciation. Do not confuse with 'vehicle operations expense'.

**OPERATING REVENUE:** Includes passenger revenue and revenue from charter and contract services.

**PASSENGER-MILE:** The number of person-miles traveled by all passengers riding transit vehicles; one person traveling one mile aboard a transit vehicle is one passenger-mile.

**PASSENGER REVENUE:** Fares, including transfer charges and zone charges, paid by transit passengers traveling aboard transit vehicles operating in regular fixed-route and special demand-response service; also known as "farebox revenue." Beginning in 1984, also includes fare revenue retained by contractors operating transit service and not turned over to transit system.

**RAIL RAPID TRANSIT:** Transit vehicles operating over completely grade-separated exclusive right-of-way. The term rail rapid transit, also known as "rapid rail transit," applies to both operation of light rail vehicles over exclusive right-of-way and operation of heavy rail vehicles.

**REVENUE PASSENGERS:** Single-vehicle transit rides by initial-board (first-ride) transit passengers only; excludes all transfer rides and all non-revenue rides.

**REVENUE VEHICLE-MILES:** One vehicle (bus, trolleybus, streetcar, etc.) traveling one mile (5,280 feet) while revenue passengers are on board generates one revenue vehicle-mile. The revenue vehicle-miles reported thus represent the total mileage traveled by vehicles in scheduled or unscheduled revenue-producing services.

**STREETCARS:** Relatively lightweight passenger rail cars operating singly or in short trains or fixed rails in right-of-way that is not always separated from other traffic for much of the way. Streetcars do not necessarily have the right-of-way at grade crossings with other traffic.

**TROLLEYBUS:** Rubber-tired electric transit vehicle, manually steered, propelled by a motor drawing current--normally through overhead wires--from a central power source not on board the vehicle.

**UNLINKED PASSENGER TRIPS:** Transit trips taken by both initial-board (originating) and transfer (continuing) transit passengers; includes charter rides and special rides. Each passenger is counted each time that person boards a transit vehicle regardless of the type of fare paid or transfer presented.

**VANPOOL:** A type of transit service in which passengers share a van with one passenger designated "driver." The route is "fixed," but varies as passengers change. Purchase, maintenance, and recruitment of passengers may be handled by a sponsoring transit system. Fares may be charged, or the cost may be divided as agreed by the passengers.

**VEHICLE MAINTENANCE EXPENSES:** The inspection, maintenance and repair of vehicles, such as mechanics wages and fringe benefits, maintenance supplies, repair parts, outside maintenance and repair work.

**VEHICLE-MILES OPERATED:** Sum of all miles operated in regular service, special service, and non-revenue service by transit vehicles that carry passengers. When vehicles are operated in trains, each vehicle is counted separately, e.g., an eight-vehicle train operating for one mile equals eight vehicle miles.

**VEHICLE OPERATIONS EXPENSES:** The costs associated with operating vehicles, such as operators' wages and fringe benefits, fuel, tires, and vehicle licensing.

#### WATER TRANSPORT TERMINOLOGY

**BULK CARRIER:** Ships designed to carry dry bulk cargo. Includes ore/bulk/oil carriers and other combination bulk/oil, and ore/oil carriers.

**BUNKER C/NUMBER 6 FUEL OIL:** A high viscosity oil used mostly by ships, industry, and large-scale heating installations. This heavy fuel requires preheating in the storage tank to permit pumping and additional preheating to permit atomizing at the burners.

**CLASS A CARRIERS BY INLAND AND COASTAL WATERWAYS:** A Class A carrier by water is one with an average annual operation revenue that exceeds \$500,000.

**CLASS B CARRIERS BY INLAND AND COASTAL WATERWAYS:** A Class B carrier by water is one with an average annual operating revenue greater than \$100,000 but less than \$500,000.

**COASTWISE TRAFFIC:** Domestic traffic is coastwise when it moves over the ocean, or the Gulf of Mexico; i.e., between New Orleans and Baltimore, New York and Puerto Rico, San Francisco and Hawaii, Puerto Rico and Hawaii. Traffic between Great Lakes ports and seacoast ports, when having a carriage over the ocean, is also deemed to be coastwise. The Chesapeake Bay and Puget Sound are considered internal bodies of water rather than arms of the ocean; traffic confined to these areas is deemed to be "internal" rather than coastwise.

**DEADWEIGHT TONNAGE:** The carrying capacity of a vessel in long tons (2,240 pounds). It is the difference between the light ship weight and the displacement loaded.

**DOMESTIC FREIGHT:** All waterborne commercial movements between points in the United States, Puerto Rico and the Virgin Islands, excluding traffic with the Panama Canal Zone. Cargo moved for the military in commercial vessels is reported as ordinary commercial cargo; military cargo moved in military vessels is omitted.

**DOMESTIC PASSENGER:** Any person traveling on a public conveyance by water between points in the United States, Puerto Rico, and the Virgin Islands.

**DRY CARGO BARGES:** Large flat-bottomed, non-self-propelled vessels used to transport dry bulk materials such as coal and ore.

**EXPORTS:** Outbound international freight including re-export of foreign merchandise.

**FREIGHTERS:** General cargo carriers, full containerships, partial containerships, roll-on/roll-off (Ro-Ro) ships, and barge carriers.

**IMPORTS:** Inbound international freight.

**INLAND AND COASTAL WATERWAYS**

**INLAND AND COASTAL CHANNELS:** These terms include the Atlantic Coast Waterways, the Atlantic Intracoastal Waterway, the New York State Barge Canal System, the Gulf Coast Waterways, the Gulf Intracoastal Waterway, the Mississippi River System (including the Illinois Waterway), Pacific Coast Waterways, the Great Lakes, and all other channels (waterways) of the United States, exclusive of Alaska, that are usable for commercial navigation.

**INTERNAL TRAFFIC:** Traffic is internal when the entire movement between ports or landings takes place on inland waterways. The following types of movements are also termed internal: movements involving carriage on both inland waterways and waters of the Great Lakes, inland movements that cross short stretches of open waters that link inland systems; marine products, sand and gravel taken directly from beds of the oceans, the Gulf of Mexico and important arms thereof, and movements between offshore installations and inland waterways.

**INTERNATIONAL (FOREIGN) FREIGHT:** Movements between the United States and foreign countries and between Puerto Rico, the Virgin Islands and foreign countries. Trade between U.S. territories and possessions (i.e., Guam, Wake, American Samoa, etc.) and foreign countries is excluded. Traffic to or from the Panama Canal Zone is included.

**INTERNATIONAL PASSENGER:** Any person traveling on a waterborne public conveyance between the United States and foreign countries and between Puerto Rico and the Virgin Islands and foreign countries.

**INTRATERRITORIAL TRAFFIC:** Traffic between ports in Puerto Rico and the Virgin Islands, which are considered as a single unit.

**LAKEWISE OR GREAT LAKES:** These terms apply to traffic between U.S. ports on the Great Lakes system. The Great Lakes system is treated as a separate system rather than as a part of the inland system.

**LOCAL:** Movements of freight within the confines of a port, whether the port has only one or several arms or channels, except car-ferry and general ferry, are termed "local." The term is also applied to marine products, sand, and gravel taken directly from the Great Lakes.

**MARITIME CARRIERS:** Maritime carriers operate on the open sea; i.e., their operations must include a foreign or international component and may include a domestic component.

**MARITIME REVENUE:** Revenue received for operations in international or foreign shipping.

**NON-SELF-PROPELLED:** Vessels not containing within themselves the means for their own propulsion.

**PASSENGER/COMBINATION VESSELS:** Ships with a capacity for 13 or more passengers.

**PASSENGER-MILE, INTERCITY:** Moving one passenger one mile on a trip between two cities generates one intercity passenger mile.

**PASSENGER VESSELS:** Domestic passenger service, other than short-haul ferry, is limited. However, two operators offer coastwise and river system cruises with small cruise vessels accommodating about 100 passengers each. One operator provides cruises within the Hawaiian Islands, using a refurbished trans-Atlantic passenger liner. The State of Alaska seasonally operates several large passenger/vehicle ferries between Seattle and points in southeastern Alaska, plus service between points in and around Cook Inlet and Prince William Sound.

**SELF-PROPELLED TOWBOAT:** A compact, shallow-draft boat with a squared bow and towing "knees" for pushing tows of barges on inland waterways.

**SCOWS:** Large, flat-bottomed non-self-propelled vessels used to transport sand, gravel, or refuse.

**TANKERS:** Crude petroleum, petroleum product, and chemical tankers, LNG and LPG tankers, wine, molasses, and whaling tankers.

**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. It is one of the largest and newest vessels used in domestic

commerce, with sizes ranging from 16,000 to 190,000 deadweight tons. Commonly referred to as "tanker." Approximately 180 are presently in domestic service.

**TON-MILE:** Moving one ton one mile (5,280 feet) generates one ton-mile.

**TONS OF FREIGHT HAULED:** The figures for tons of freight hauled on domestic waterways include exports and imports.

**TUG:** A strongly built, self-propelled boat used for towing and pushing.

### RAILROAD TERMINOLOGY

**AMTRAK (AMERICAN RAILROAD TRACKS):** Operated by the National Railroad Passenger Corporation of Washington, D.C. This rail system was created by President Nixon in 1970 and was given the responsibility for the operation of intercity, as distinct from suburban, passenger trains between points designated by the Secretary of Transportation.

**AVERAGE HAUL:** The average distance in miles that one ton is carried. It is computed by dividing the number of ton-miles generated by the number of tons carried to generate that number of ton-miles.

**AVERAGE PASSENGER TRIP LENGTH:** Calculated by dividing the number of revenue passenger-miles by the number of revenue passengers carried.

**CAR-MILE:** The movement of a car the distance of one mile (5,280 feet).

**CLASS I RAILROAD:** A railroad with an annual operating revenue of greater than \$93,500,000 effective January 1, 1990. The minimum annual operating revenue requirement is adjusted each year on January 1.

**FREIGHT REVENUE:** Revenue from the transportation of freight and from the exercise of transit, stop-off, diversion, and reconsignment privileges, as provided for in tariffs.

**LINE MILEAGE:** The aggregate length of roadway of all line-haul railroads. It does not include the mileage of yard tracks or sidings, nor does it reflect the fact that a mile of railroad may include two or more parallel tracks. Jointly-used track is counted only once.

**LOCOMOTIVE:** Self-propelled units of equipment designed solely for moving other equipment.

**LOCOMOTIVE-MILE:** The movement of a locomotive unit the distance of one mile (5,280 feet).

**OPERATING EXPENSE:** Expenses of furnishing transportation service, including maintenance and depreciation of the plant used in the service.

**OPERATING REVENUE:** The amount of money that a carrier receives from transportation operations.

**OTHER REVENUE:** This is a general heading that includes revenues from miscellaneous operations (i.e., dining and bar car services), income from lease of road and equipment, miscellaneous rent income, income from non-operating property, profit from separately operated properties, dividend income, interest income, income from sinking and other reserve funds, release or premium on funded debt, contributions from other companies, and other miscellaneous income.

**PASSENGER REVENUE:** Revenue from the sale of tickets.

**PASSENGER TRAIN-CARS:** Cars typically found in passenger trains include coaches, sleeping cars (formerly called Pullman cars), parlor cars, dining cars, lounge cars, baggage cars, crew-dormitory cars, and observation cars.

**RAIL MOTOR CARS:** Self-propelled passenger rail cars which are driven by electric motors energized from an electrified roadway or by a generator driven by a diesel or gas turbine engine.

**REVENUE PASSENGERS CARRIED:** Number of one-way trips made by persons holding tickets.

**REVENUE PASSENGER-MILE:** One revenue passenger traveling one mile (5,280 feet) generates one revenue passenger-mile. The revenue passenger-miles reported thus represent the total distance traveled by all railroad passengers.

**REVENUE TON-MILES:** The product of weight of the contents of a freight car in tons and the distance transported in miles; i.e., n tons moving m miles generate n x m revenue ton-miles.

**TRAIN-MILE:** The movement of a train the distance of one mile (5,280 feet).

### OIL PIPELINE TERMINOLOGY

**AVERAGE LENGTH OF HAUL (miles):** The total number of ton-miles divided by the total number of tons transported.

**BARREL (OIL):** A volumetric unit of measurement equivalent to 42 U.S. standard gallons.

**COKE:** The residue left by petroleum which has been distilled to dryness.

**CRUDE OIL:** A mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface-separating facilities.

**CRUDE OIL GATHERING LINES:** A network of pipelines transporting crude oil from individual wells to compressor station, processing point, or main trunk pipeline.

**CRUDE OIL TRUNK LINES:** One of three types of pipeline network that is used to transport crude oil to the refineries for processing.

**DISTILLATE FUEL OIL:** The lighter fuel oils distilled off during the refining process. Included are products known as ASTM grades Nos. 1 and 2 heating oils, diesel fuels, and No. 4 fuel oil. The major uses of distillate fuel oils include heating, fuel for on- and off-highway diesel engines, and railroad diesel fuel.

**FERC-REGULATED PIPELINE:** A pipeline company operating in interstate commerce under a grant of authorization from the Federal Energy Regulatory Commission and subject to economic regulation by the Commission. Such a pipeline company is required to report relevant statistics to the FERC.

**NO. 2 DISTILLATE FUEL OIL:** A petroleum distillate which meets the specifications for No. 2 heating oil and/or the specifications for diesel fuel grade No. 2.

**NON-REGULATED PIPELINE:** A pipeline company not operating as a common carrier in interstate commerce, hence required neither to secure a grant of operating authority from the Federal Energy Regulatory Commission nor to report to it.

**OPEC:** Organization of Petroleum Exporting Countries including Saudi Arabia, Iran, Venezuela, Libya, Indonesia, United Arab Emirates, Algeria, Nigeria, Ecuador, Gabon, Iraq, Kuwait, and Qatar.

**OPERATING EXPENSES:** Expenditures necessarily made while providing services by which operating revenue is earned.

**OPERATING REVENUE:** Revenue from the transportation of oil and from services incidental to such transportation.

**OTHER DISTILLATE FUEL OILS:** All other refined petroleum products not included in any other category and which, when produced in conventional distillation operations, have a boiling range from 10% point at 167 degrees C to 90% point at 375 degrees C. Included are products known as No. 1 and No. 4 distillate fuel oils and diesel oils.

**PETROLEUM:** A material occurring naturally in the earth and predominantly composed of mixtures of chemical compounds of carbon and hydrogen with or without other nonmetallic elements such as sulfur, oxygen, nitrogen, etc. Petroleum may contain, or be composed of, such compounds in the gaseous, liquid, and/or solid state, depending on the nature of these compounds and the existent conditions of temperature and pressure.

**PETROLEUM CONSUMPTION, ELECTRIC UTILITY SECTOR:** Domestic demand for all fuel oils at electric utilities.

**PETROLEUM CONSUMPTION, INDUSTRIAL SECTOR:** Domestic demand for petroleum products for use by establishments engaged in processing unfinished materials into another form or product. Excludes industrial space heating.

**PETROLEUM CONSUMPTION, "OTHER" SECTOR:** Domestic demand for miscellaneous products and for some agricultural uses.

**PETROLEUM CONSUMPTION, RESIDENTIAL AND COMMERCIAL:** Domestic demand for petroleum products by private households and non-manufacturing establishments. Includes industrial space heating and road paving.



**PETROLEUM CONSUMPTION, TRANSPORTATION SECTOR:** Domestic demand for petroleum products for on-highway use, aircraft and vessel bunkering, and railroad use.

**PIPELINE:** All parts of those physical facilities through which gas is moved in transportation, including pipe, valves and other appurtenances attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders and fabricated assemblies.

**REFINED PRODUCT TRUNK LINES:** One of three types of pipeline network that is used to transport refined petroleum products (i.e., gasoline, kerosene, residual oil, etc.) from the refineries to local distribution centers near large market areas.

**RESIDUAL FUEL OIL:** The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as ASTM grade Nos. 5 and 6 oil, heavy diesel oil, Navy Special Fuel Oil, Bunker C oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for the production of electric power, for heating, and for various industrial purposes.

### GAS PIPELINE TERMINOLOGY

**GAS, DISTRIBUTION COMPANY:** A company that obtains the major portion of its gas operating revenues from the operation of a retail gas distribution system, and which operates no transmission system other than incidental connections within its own system or the system of another company. A distribution company obtains at least 90 percent of its gas operating revenues from sales to ultimate customers and classifies at least 90 percent of mains (other than service pipe) as distribution.

**GAS, TRANSMISSION COMPANY:** A company which obtains at least 90 percent of its gas operating revenues from sales for resale and/or transportation of gas for others and/or main line sales to industrial customers and classifies at least 90 percent of mains (other than service pipe) as field and gathering, storage and/or transmission.

**DISTRIBUTION MAINS:** Generally, mains, services, and equipment that carry or control the supply of gas from the point of local supply to and including the sales meters.

**FIELD AND GATHERING PIPELINES:** A network of pipelines (mains) transporting natural gas from individual wells to a compressor station, processing point, or main trunk pipeline.

**LIQUID PETROLEUM GAS (LPG):** A gas containing certain specific hydrocarbons which are gaseous under normal atmospheric conditions but can be liquefied under moderate pressure at normal temperatures. Propane and butane are the principal examples.

**MAINS:** A distribution line that serves as a common source of supply for more than one gas service line.

**NATURAL GAS:** A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in porous geologic formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane.

**LIQUEFIED NATURAL GAS (LNG):** Natural gas that has been liquefied by reducing its temperature to -260° F at atmospheric pressure.

**REPRESSURING:** Forcing gas, under pressure, into the oil reservoir in an attempt to increase the recovery of crude oil; also done with water.

**TRANSMISSION PIPELINE:** Pipelines (mains) installed for the purpose of transmitting gas from a source or sources of supply to one or more distribution centers, or to one or more large-volume customers, or a pipeline installed to interconnect sources of supply. In typical cases, transmission lines differ from gas mains in that they operate at higher pressures, are longer, and the distance between connections is greater.

### ENERGY TERMINOLOGY

**ASPHALT:** A dark-brown-to-black cement-like material containing bitumens as the predominant constituents, obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products; cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts.

**AVIATION GASOLINE, FINISHED:** All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D910. Excludes blending components that will be used in blending or compounding into finished aviation gasoline.

**BTU--BRITISH THERMAL UNIT:** The heat required to raise the temperature of one pound of water by 1° F. at or near 39.2° F.

**ELECTRIC UTILITY:** A corporation, person, agency, authority, or other entity that owns or operates facilities for the generation, transmission, distribution, or sale of electricity, primarily for use by the public.

**ENERGY EFFICIENCY:** In reference to transportation, the inverse of energy intensiveness: the ratio of outputs from a process to the energy inputs; for example, passenger-miles traveled (PMT) per gallon of fuel.

**FOSSIL FUELS:** Any naturally occurring fuel of an organic nature such as coal, crude oil, or natural gas.

**GASOHOL:** A blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol but sometimes methanol) in which 10 percent or more of the product is alcohol.

**GASOLINE:** A refined petroleum product which, by its composition, is suitable for use as a fuel in internal combustion engines.

**MOTOR GASOLINE, FINISHED:** A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark-ignition engines and conforming to ASTM Specification D439. Included are the following:

**LEADED REGULAR:** A gasoline that has an antiknock index of 89 with the use of lead additives or which contains more than 0.05 grams of lead per gallon or more than 0.05 grams of phosphorus per gallon.

**UNLEADED REGULAR:** A gasoline having an antiknock index of 87 containing not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon.

**LEADED PREMIUM:** A gasoline having an antiknock index of 93 with the use of lead additives or which contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. Includes gasohol.

**UNLEADED PREMIUM:** A gasoline having an antiknock index of 90 containing not more than 0.05 grams of lead per gallon and not more than 0.005 grams of phosphorus per gallon. Includes gasohol.

**PSI:** Pounds per square inch.

**ROAD OIL:** Any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades from 0, the most liquid, to 5, the most viscous.

# APPENDIX C

## Index

# INDEX

Subject	Page
<b>Accidents</b>	
air .....	15, 16, 72, 73
automobile .....	22
bus .....	25
motorcycle .....	22
pedestrian .....	22
railroad .....	82
truck .....	28
water .....	33, 34, 80, 81
<b>Air Carriers - see also general aviation</b>	
accidents .....	15, 70, 72
airports, top 50 .....	65
arrivals between U.S. and foreign countries .....	63
departures between U.S. and foreign countries .....	64
bomb threats .....	75
collisions, near midair .....	70
employment .....	12, 104
energy,	
consumed in transportation .....	10
intensiveness .....	130, 131, 137
expenditures, personal consumption .....	94
fares, passenger .....	46, 47
fatalities .....	9, 15, 68, 69, 72
fuel,	
consumption .....	10, 117, 118
price, retail .....	124, 126, 128
hijackings .....	74
income, national .....	98, 99
miles,	
intercity .....	56, 57
passenger .....	6, 13, 52, 53
revenue ton .....	7, 14, 54, 55
vehicle .....	5, 50, 51
profile .....	12
revenues,	
freight .....	44, 45
operating .....	4, 12, 48, 49
passenger .....	42, 43
screening, passenger .....	71
vehicles,	
number of .....	8, 12, 59
purchased .....	60
wages and salaries .....	98, 99, 100, 102
<b>Amtrak - see also railroads</b>	
energy, intensiveness .....	136, 137
fares, passenger .....	46, 47
miles,	
passenger .....	6, 37, 52, 53
vehicle .....	5, 37, 50, 51
profile .....	37
revenues,	
operating .....	4, 37, 48, 49
passenger .....	37, 52, 53
vehicles,	
number of .....	8, 37, 59
purchased .....	60
<b>Automobiles</b>	
accidents .....	22, 78
employment .....	21, 104
energy,	
consumed in transportation .....	10

## Index (cont'd)

intensiveness .....	132, 137
expenditures, personal consumption .....	94
fatalities .....	9, 22, 68, 69
fleets .....	61
<b>fuel</b>	
consumption and travel .....	21, 117, 119, 120
efficiency .....	124, 125
gasoline, cost .....	91, 124, 126, 128
miles,	
passenger .....	6, 21, 52, 53
vehicle .....	5, 21, 50, 51
operating costs .....	91
profile .....	21
sales,	
production and factory, U.S. ....	86
model year, market shares and sales-weighted fuel efficiency .....	88, 89
retail, U.S. ....	87
speed trends .....	62
vehicles,	
number of .....	8, 21, 59
purchased .....	60
world production .....	90
 <b>Boating - see inland waterways and water</b>	
<b>Buses</b>	
employment .....	24, 104
energy,	
consumed in transportation .....	10
intensiveness .....	134, 135, 137
expenditures, personal consumption .....	94
fares, passenger .....	46, 47
fatalities .....	9, 25, 68, 69
fuel, consumption and travel .....	117, 121
miles,	
passenger .....	6, 25, 52, 53
vehicle .....	5, 24, 50, 51
profile .....	24
revenues,	
operating .....	4, 24, 48, 49
passenger .....	42, 43
sales, factory, U.S. ....	86
vehicles,	
number of .....	8, 24, 59
purchased .....	60
world production .....	90
 <b>Cargo - see freight</b>	
<b>Consumer Price Index</b>	
revenues, passenger .....	42
 <b>Electricity - see energy</b>	
<b>Employment</b>	
air .....	12, 104
automobile .....	21, 104
bus .....	24, 104
natural gas .....	38, 104
oil .....	37, 104
railroad .....	35, 37, 104
transportation and related industries .....	104
truck .....	27, 104
water .....	32, 104
 <b>Energy - see also fuel</b>	
consumption,	
by sector .....	112
transportation sector .....	10, 113, 117

## Index (cont'd)

U.S. transit industry .....	123
conversion factors .....	inside backcover
energy intensiveness, .....	130, 131, 137
air .....	132, 137
automobiles/motorcycles .....	134, 135, 137
buses .....	137
passenger mode .....	135, 136, 137
railroads .....	133, 137
trucks .....	110
equivalents .....	
petroleum products, .....	148, 149, 150
supplied .....	140, 141, 142
transported .....	
transportation, .....	115, 116
use, U.S. Government .....	
<b>Expenditures</b> .....	<b>4</b>
expenditures and revenues .....	
consumption, .....	94
personal, transportation sector .....	96
personal, type .....	
<b>Fares</b> .....	<b>46, 47</b>
passenger .....	
<b>Fatalities - see also accidents</b> .....	<b>9, 15, 16, 68, 72, 73</b>
air .....	9, 22, 68, 78, 79
automobile .....	68, 83
hazardous materials .....	9, 68, 69
modal fatalities .....	9, 22, 79
motorcycle .....	9, 79
pedestrians .....	9, 36, 68, 82
rail-highway grade crossing .....	9, 36, 68, 69, 82
railroad .....	9, 68, 69, 81
recreational boating .....	9, 38, 40, 68, 69, 83
pipeline .....	79
traffic .....	9, 28, 79
truck .....	9, 33, 68, 69, 80
water .....	
<b>Freight</b> .....	<b>58</b>
average length of haul .....	106
expenditures .....	7, 44, 45, 54, 55
revenues .....	
<b>Fuel - see also energy</b> .....	
consumption, .....	117, 118
air carrier .....	117
mode of transportation .....	117, 119
motor vehicle .....	123
U.S. transit industry .....	
consumption and travel, .....	117, 121
bus .....	117, 120
passenger vehicle .....	117, 122
truck .....	
efficiency .....	127, 128
passenger cars .....	88
sales-weighted, domestic and imported automobiles .....	89
sales-weighted, domestic and imported light trucks .....	
gasoline, .....	91, 124, 126, 128
cost .....	151
domestic demand .....	144
miles, gas utility .....	
<b>Gasoline - see fuel</b>	

## Index (cont'd)

### General Aviation - *see also air carriers*

accidents .....	16
energy,	
consumed in transportation .....	10
intensiveness .....	131, 137
fatalities .....	9, 16, 68, 69, 73
fuel,	
consumption .....	117
price, retail .....	124
miles,	
passenger .....	6, 52, 53
vehicle .....	5, 50, 51
profile .....	16
vehicles,	
number of .....	8, 59
purchased .....	60

### Gross National Product

national transportation and economic trends .....	105
---	-----

### Highway - *see also automobiles, buses and trucks*

employment .....	19, 104
energy, consumed in transportation .....	10
fatalities .....	9, 68, 79
fuel,	
price, retail .....	124
miles, intercity .....	56, 57
profile .....	18
speed trends .....	62

### Inland Waterways - *see also water*

inland water vessels, number of .....	59
miles,	
revenue ton .....	7, 54, 55
intercity .....	56, 57
water profile .....	32

### International Comparisons

arrivals between U.S. and foreign countries .....	63
departures between U.S. and foreign countries .....	64
world production, motor vehicles .....	90

### Local Transit

earnings, per full-time employee .....	101
employment .....	31, 104
energy,	
consumed in transportation .....	10
intensiveness .....	134, 137
fares, passenger .....	46, 47
fuel, consumption .....	117
income, national .....	98, 99
miles, vehicle .....	5, 31, 50, 51
profile .....	30
revenues, operating .....	4, 30, 48, 49
vehicles,	
number of .....	8, 31, 59
purchased .....	60
wages and salaries .....	98, 99, 100, 101

### Motor Carriers of Property - *see trucks*

### Motorcycles - *includes bicycles and mopeds*

accidents .....	22, 78
automobile profile .....	21
energy,	
consumed in transportation .....	10
intensiveness .....	132, 137
fatalities .....	9, 22, 79

## Index (cont'd)

fuel	117, 120
consumption and travel	
miles,	
passenger	6
vehicle	5
vehicles,	
number of	8, 59
purchased	60
 <b>Natural Gas - see energy and pipeline</b>	
 <b>Oil - see energy and pipeline</b>	
 <b>Passenger</b>	
airport, enplaned	65
average length of haul	58
energy, intensiveness	137
expenditures	106
fares	46, 47
miles,	
passenger	6, 52, 53
revenue	7, 44, 45, 54, 55
vehicle	5, 50, 51
screening	71
 <b>Petroleum - see energy and pipeline</b>	
 <b>Pipeline</b>	
earnings, per full-time employee	100, 101
energy,	
consumed in transportation	10
employment	38, 39, 104
fatalities	9, 38, 39, 68, 69, 83
fuel, consumption	117
income, national	98, 99
miles,	
revenue ton	7, 54, 55
gas utility	144
intercity	56, 57
natural gas profile	39
oil profile	38
revenues,	
freight	44, 45
operating	4, 48, 49
transportation,	
crude oil	140
crude petroleum and petroleum products, U.S.	142, 143
petroleum, refined	141
wages and salaries	98, 99, 100, 101
 <b>Price</b>	
gasoline	91, 124, 126
transportation,	
fuel, retail	124
trend of gasoline vs other consumer goods	126
 <b>Producer Price Index</b>	
revenues, freight	44, 45
 <b>Railroads - includes Class I - see also Amtrak</b>	
accidents	82
earnings, per full-time employee	100, 101
employment	35, 104
energy,	
consumed in transportation	10
intensiveness	135, 137
expenditures, personal consumption	94, 95, 96, 97
fares, passenger	46, 47
fatalities	9, 36, 68, 69, 82
fuel,	
consumption	117



## Index (cont'd)

price, retail .....	124
income, national .....	98, 99
miles, .....	
revenue ton .....	7, 54, 55
intercity .....	56, 57
passenger .....	6, 52, 53
profile .....	35
revenues, .....	
freight .....	44, 45
operating .....	4, 48, 49
passenger .....	4, 42, 43
transportation, .....	
crude oil .....	140
crude petroleum and petroleum products, U.S. ....	142, 143
petroleum, refined .....	141
vehicles, .....	
number of .....	8, 59
purchased .....	60
wages and salaries .....	98, 99, 100, 101
<b>Revenues</b>	
freight, .....	
air .....	44, 45
railroad .....	44, 45
truck .....	44, 45
pipeline .....	44, 45
water .....	44, 45
operating, .....	
air .....	
local transit .....	4, 12, 48, 49
pipeline .....	4, 30, 48, 49
railroad .....	4, 38, 39, 48, 49
truck .....	4, 35, 48, 49
water .....	4, 27, 48, 49
passenger, .....	4, 32, 48, 49
air .....	
bus .....	42, 43
railroad .....	42, 43
	35, 37, 42, 43
<b>Salaries - see wages</b>	
<b>Streetcars - see local transit</b>	
<b>Subway - see local transit</b>	
<b>Taxis - see automobiles</b>	
<b>Trolley Coaches/Buses - see local transit</b>	
<b>Trucks - see also highway</b>	
accidents .....	28, 78
earnings, per full-time employee .....	100, 101
employment .....	27, 104
energy, .....	
consumed in transportation .....	10
intensiveness .....	133, 137
fatalities .....	9, 28, 29, 68, 78, 79
fuel, .....	
consumption and travel .....	117, 122
price, retail .....	124
income, national .....	98, 99
miles, vehicle .....	50, 51
profile .....	26
revenues, .....	
freight .....	44, 45
operating .....	5, 48, 49
sales, .....	
model year, market shares and sales-weighted fuel efficiency .....	89
retail, U.S. ....	87

## Index (cont'd)

transportation,	140
crude oil .....	142, 143
crude petroleum and petroleum products, U.S. ....	141
petroleum, refined .....	
vehicles,	
number of .....	8, 59
purchased .....	60
wages and salaries .....	98, 99, 100, 101
world production .....	90
<b>Wages</b>	
earnings, per full-time employee .....	100, 101
income, national .....	98, 99
transport sector .....	102, 103
<b>Water - see also inland waterways</b>	
accidents .....	33, 68, 69, 80, 81
employment .....	32, 104
energy,	
consumed in transportation .....	10
fatalities .....	9, 33, 68, 69, 80, 81
fuel, consumption .....	117
income, national .....	98, 99
miles,	
revenue ton .....	7, 54, 55
vehicles .....	5, 50, 51
profile .....	32
revenues,	
freight .....	44, 45
operating .....	4, 48, 49
transportation,	
crude oil .....	140
crude petroleum and petroleum products, U.S. ....	142, 143
petroleum, refined .....	141
vehicles,	
number of .....	8, 59
purchased .....	60
wages and salaries .....	98, 99, 100, 101

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In addition to the *National Transportation Statistics Annual Report*, the following is a list of reports/products prepared by the Research and Special Programs Administration's Volpe National Transportation Systems Center's (RSPA/Volpe Center) Center for Transportation Information. Inquiries may be directed by telephone (617) 494-2450, or by writing to DOT/Volpe National Transportation Systems Center, DTS-44, Kendall Square, Cambridge, MA 02142, ATTN: Patricia Harrington.

**Transportation Safety Information Report (TRANSIS)** is an annual summary 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 over a ten-year period. The 1991 Annual Summary will be available in September, 1992.

**Air Carrier Traffic Statistics** is a monthly report compiled by RSPA's Office of Airline Statistics. The data are reported on RSPA Form 41, Schedules T-1(a), T-1(b) and T-1(c) by Large Certificated Air Carriers, that is, by carriers holding a certificate issued under Section 401 of the Federal Aviation Administration Act of 1958 and that operate aircraft designed to have a maximum passenger seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds or that conduct international operations. The report is available on a subscription basis, January 1992 - December 1992. Price: \$400.

**Air Carrier Financial Statistics** is a quarterly report compiled by the RSPA's Office of Airline Statistics. The financial data are reported on RSPA Form 41 Schedules by Large Certificated Air Carriers (see above definition). The report is available on a subscription basis, January 1992 - December 1992. Price: \$200.

**Air Carrier Industry Scheduled Service Traffic Statistics** is a quarterly report compiled by RSPA's Office of Airline Statistics. The data are obtained from the carrier reports on either Form 41, Schedule T-1(a) or Form 298-C, Schedules A-1 and T-1. The publication incorporates the scheduled service activities of the Part 298 small certificated and commuter air carriers with large certified medium regionals into one group in one volume. It includes group totals for large certified air carriers in the major, national and large regional groupings. The report is available on a subscription basis, January 1992 - December 1992. Price: \$200.

**Air Carrier Passenger Enplanement All-Cargo Landings and Apportionments** report is an annual summary of enplanement data extracted from the Air Carrier Activity Information System (ACAIS). The ACAIS is a database of passenger enplanement data and cargo landing data that support the Federal Aviation Administration Airport Improvement Program (AIP) activities and apportion AIP entitlement funds. Price: \$95.

**1990 Nationwide Personal Transportation Survey (NPTS) Public-Use Tape.** The 1990 NPTS is a telephone survey of 22,300 households throughout the U.S. conducted for the Department of Transportation by Research Triangle Institute. The 1990 NPTS provides data on the relative use of various modes of transportation, the characteristics of those traveling, and the characteristics of the trips taken, such as purpose, duration, destination, time of day, and vehicle occupancy. The 9-track tape is available in SAS (Statistical Analysis System) or EBCDIC at 6250 bpi. Price: \$150.

**1990 NPTS Diskettes** are an overall reduction of the six files in the public-use tape. The files were condensed from 72 megabytes to 16.5 megabytes by selecting only certain data elements for inclusion and removing any redundancies. The diskettes are compressed ASCII fixed length records from six separate files. The complete set of diskettes (3 1/2" high density) will require approximately 20 megabytes of storage space. The cost of the diskettes varies and interested parties should contact the Volpe Center for further information.

**1990 NPTS Special Tabulation Service** is offered to fill a gap evident in previous NPTS surveys. Data users would often need answers to specific questions that were not addressed in the published reports. In the past, the only option for the data user was to obtain the tape and run the specific tabulations needed. The cost varies by the time required for each table, however, an estimated cost for a single standard table with a set of categories on each axis is \$150-200.

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