DOT-TSC-RSPA-88-2

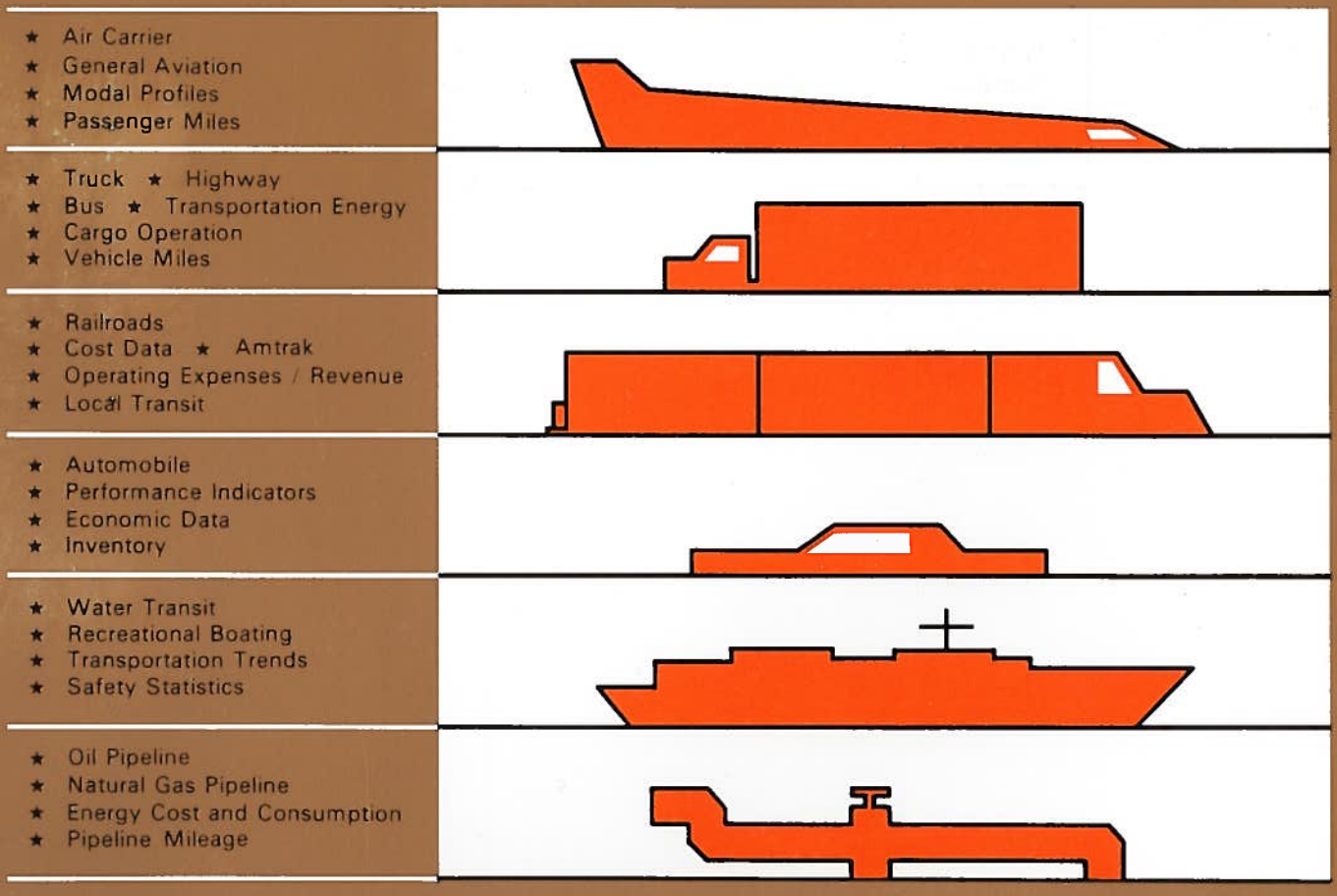
U.S. Department
of Transportation

**Research and
Special Programs
Administration**

National Transportation Statistics

Annual Report

August 1988



Transportation Systems Center

NATIONAL TRANSPORTATION STATISTICS

Annual Report, 1988

Secretary of Transportation

James Burnley

Research and Special Programs Administrator

M. Cynthia Douglass

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT-TSC-RSPA-88-2		

4. Title and Subtitle	5. Report Date
NATIONAL TRANSPORTATION STATISTICS Annual Report, 1988	August 1988
	6. Performing Organization Code TSC/DTS-32
7. Author(s) James Kelley, 617-494-3439/FTS-837-3439	Performing Organization Report No. DOT-TSC-RSPA-88-2
9. Performing Organization Name and Address U.S. Department of Transportation Research and Special Programs Administration Transportation Systems Center, Center for Transportation Information, Cambridge, MA 02142	10. Work Unit No. (TRAIS) RS809/P8005
	11. Contract or Grant No.
12. Sponsoring Agency Name and Address U.S. Department of Transportation Research and Special Programs Administration Office of Budget and Programs Washington, D.C. 20590	13. Type of Report and Period Covered Annual Report, 1955-1986/87
	14. Sponsoring Agency Code DMA-20

15. Supplementary Notes

16. Abstract

This report is a summary of selected national transportation statistics from a wide variety of government and private sources. Featured in the report are cost, inventory, and performance data describing the passenger and cargo operations of the following modes: air carrier, general aviation, automobile, bus, truck, local transit, rail, water, oil pipeline, and natural gas pipeline. The report illustrates basic descriptors of U.S. transportation, such as operating revenues and expenses, number of vehicles and employees, vehicle miles and passenger miles, etc. Supplementary sections include Transportation and the Economy and Energy in Transportation which is divided into Energy Consumption, Energy Intensiveness, Energy Transport, and Energy Supply and Demand. In this edition, the selected data cover the period 1955 through 1986/1987.

17. Key Words	18. Distribution Statement
Statistics, Transportation Energy Cost, Inventory, Performance, Passenger/Cargo Operations, Operating Expenses/Revenues, Employees, Number of Vehicles, Passenger/Vehicle Miles	For sale by the Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	232	

Form DOT F1700.7 (8-72) Reproduction of completed page authorized

TABLE OF CONTENTS

TABLES (cont'd)

ILLUSTRATIONS

INTRODUCTION

Developing and maintaining vital transportation statistics is one of the missions of the U.S. Department of Transportation's Transportation Systems Center (TSC). This publication is produced to support this mission and is intended to disseminate national transportation and energy statistics to the transportation and energy communities.

The compilation of statistical materials is usually a tedious and time consuming process. Consequently, reliable sources often represent a 1-2 years 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).

Four different formats are used -- 1) Tree Displays, 2) Modal Profiles, 3) Performance Indicators, and 4) Transportation Trends -- to spotlight various aspects of the major transportation modes. In addition, three supplemental data sections detail the role of transportation in the economy, the relationship of energy to transportation, and the results of a nationwide personal transportation study. Time series transportation statistics are presented for the period 1976-1986/1987. Energy consumption and supply-and-demand data cover the same period and extend back to 1955.

TREE DISPLAYS

The interrelationships of the various modes are presented via tree displays. These displays present 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

Because of the variety of data sources, the totals may not always equal the sums of the subordinate data. Sources for each statistic may be found by tracing its parenthetical reference number to Appendix A. Where data are not available or not applicable, the block contains the letters "n/a".

MODAL PROFILES

The Modal Profiles present cost, inventory, and performance data comparisons for 1976, 1985, and 1986. 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:

TREE DISPLAYS
1986

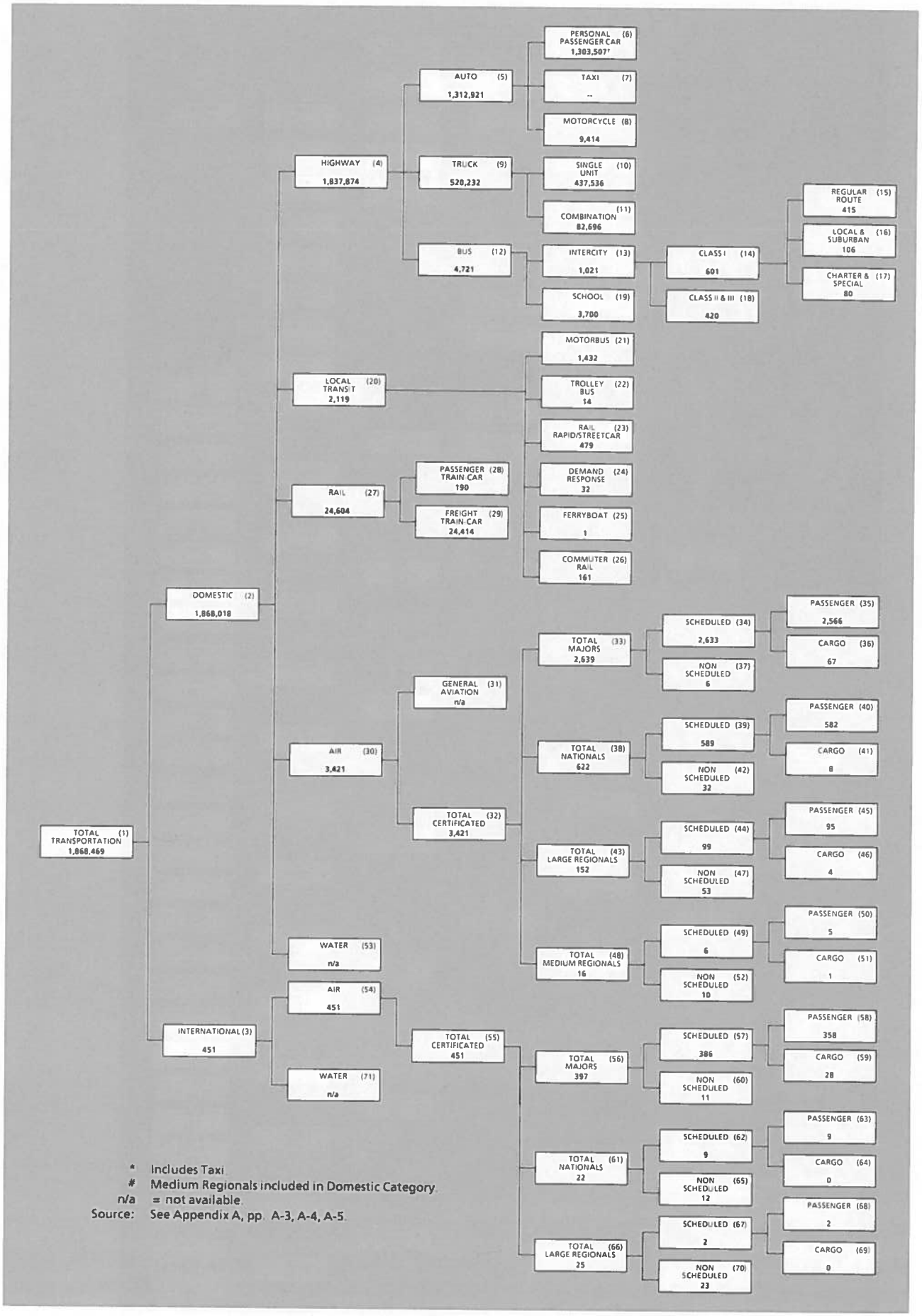


Figure 2. Vehicle-Miles (millions) - 1986

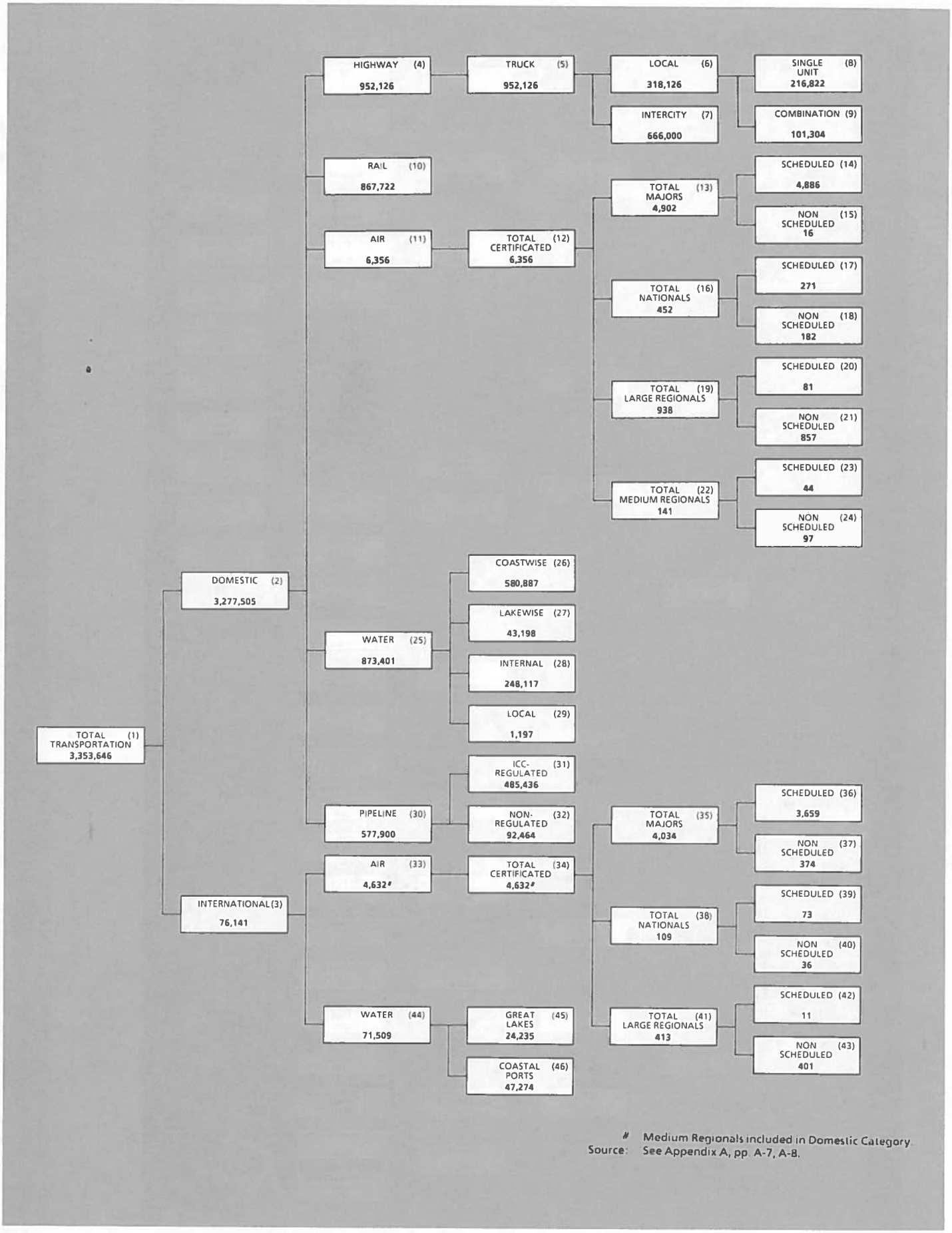


Figure 4. Revenue Ton-Miles of Freight (millions) - 1986

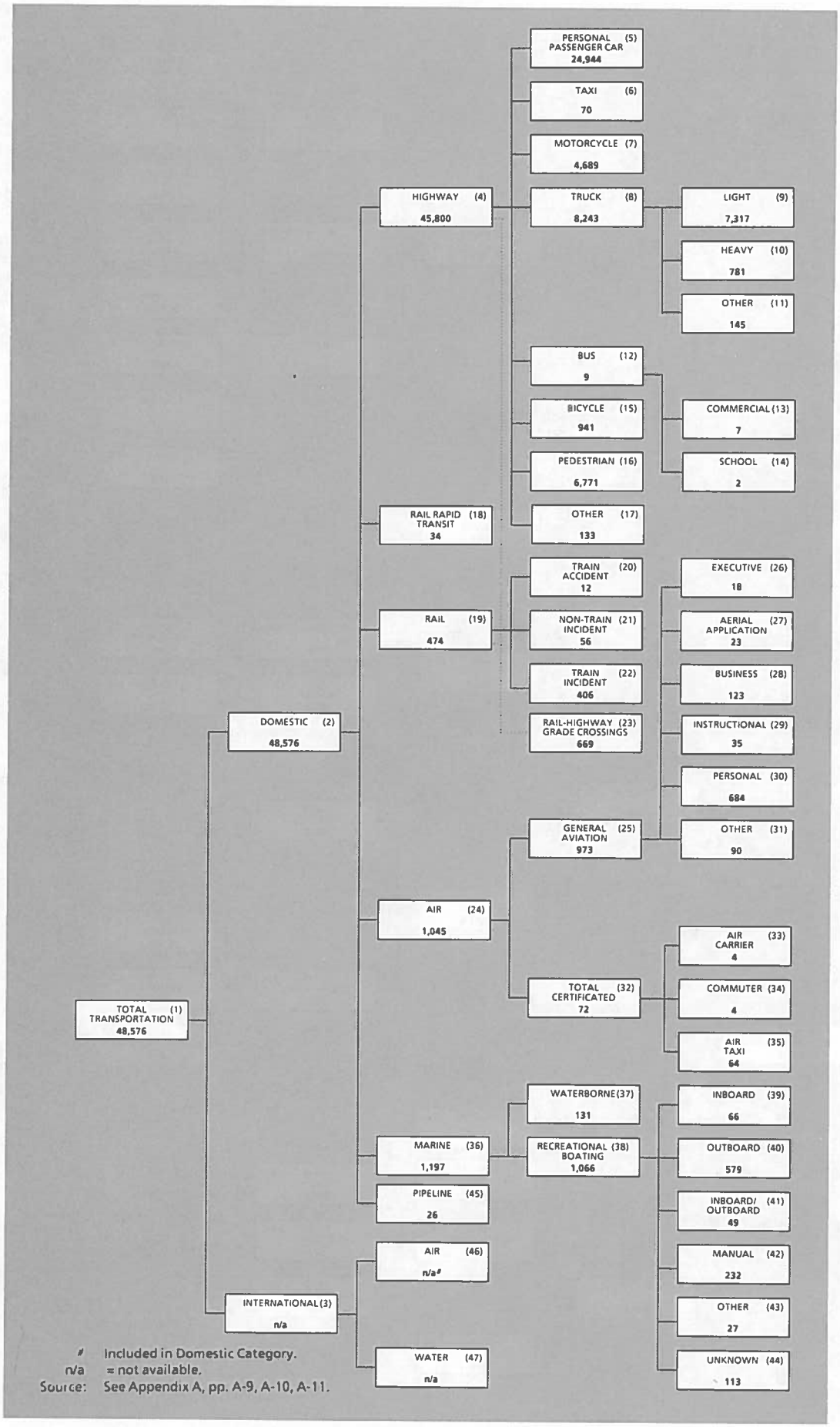


Figure 6. Number of Fatalities - 1986

MODAL PROFILES
1976, 1985 and 1986

MODAL PROFILE SOURCE REFERENCES AND PERCENT CHANGE CALCULATION

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 which 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:

Air Carrier Profile

1986

34,657,940[b]	reference letter b
32,923,185	also applies to the three
64,121	subsequent data elements
1,670,634	
5,292,240[c]	reference letter c refers to 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 1985-1986 percent change column refers to the percent difference between 1985 data and 1986 data. The 1976-1986 average annual percent change is equal to C x 100, where C is obtained from the following relationship: $D^{86} = D^{76} (1 + C)^{10}$. (Note D^{76} and D^{86} refer to 1976 and 1986 data, respectively; C is the change, and the relationship is derived from the compound interest formula.)

AIR CARRIER PROFILE (cont'd)

	1976	1985[1]	1986[1]	1976-1986 Average Annual % Change	1985-1986 % Change
III. PERFORMANCE					
Aircraft Revenue-Miles (thousands)					
Domestic					
Certificated, all services*	2,051,600[a]	3,046,440[j]	3,421,492[j]	5.1	12.3
Scheduled services	2,001,400	2,950,126	3,322,651	5.2	12.6
Nonscheduled services	50,200	96,314	98,841	7.0	2.6
Majors, all services*	1,711,500	2,315,685[k]	2,639,098[k]	4.4	14.0
Scheduled services	1,673,200	2,309,944	2,632,990	4.6	14.0
Nonscheduled services	38,300	5,741	6,108	-16.8	6.4
Nationals, all services*	284,300	579,924[l]	621,594[l]	8.1	7.2
Scheduled services	275,700	534,099	589,238	7.9	10.3
Nonscheduled services	8,600	45,825	32,356	14.2	-29.4
Large Regionals, all services*	304,100	139,452[m]	152,488[m]	-6.7	9.3
Scheduled services	52,500	102,992	99,257	6.6	-3.6
Nonscheduled services	3,300	36,460	53,231	32.1	46.0
International					
Certificated, all services*	367,700	415,355[n]	451,338[n]	2.1	8.7
Scheduled services	318,600	369,829	401,930	2.4	8.7
Nonscheduled services	49,100	45,526	49,408	0.1	8.5
Majors, all services*	334,500	364,900[o]	396,712[o]	1.7	8.7
Scheduled services	295,400	354,681	385,942	2.7	8.8
Nonscheduled services	39,100	10,210	10,770	-12.1	5.5
Nationals, all services*	33,200	26,389[p]	21,605[p]	-4.2	-18.1
Scheduled services	23,200	10,520	9,124	-8.9	-13.3
Nonscheduled services	10,000	15,869	12,481	2.2	-21.3
Large Regionals, all services*	n/a	16,258[q]	25,277[q]	-	55.5
Scheduled services	n/a	1,259	1,966	-	56.2
Nonscheduled services	n/a	14,999	23,311	-	55.4
Medium Regionals, all services					
Domestic and International*	n/a	19,196[r]	16,056[r]	-	-16.4
Total Certificated*	2,419,300	3,480,991	3,888,886	4.9	11.7
Aircraft Revenue-Hours					
Domestic					
Certificated, all services*	5,047,500	7,457,030[j]	8,265,034[j]	5.1	10.8
Scheduled services	4,929,200	7,203,892	8,115,808	5.1	12.7
Nonscheduled services	118,300	253,138	149,226	2.3	-41.0
Majors, all services*	3,950,100	5,446,261[k]	6,247,596[k]	4.6	14.7
Scheduled services	3,869,600	5,433,253	6,233,844	4.8	14.7
Nonscheduled services	80,500	13,008	13,752	-16.0	5.7
Nationals, all services*	899,400	1,485,374[l]	1,602,538[l]	5.9	7.9
Scheduled services	878,300	1,357,490	1,512,287	5.5	11.4
Nonscheduled services	21,100	127,884	90,251	15.5	-29.4
Large Regionals, all services*	198,000	496,269[m]	418,747[m]	7.7	-15.6
Scheduled services	181,300	405,131	366,807	7.2	-9.5
Nonscheduled services	16,700	91,138	51,940	35.7	-43.0
International					
Certificated, all services*	759,200	846,197[n]	923,641[n]	2.0	9.1
Scheduled services	658,500	743,543	815,834	2.1	9.7
Nonscheduled services	100,700	102,654	107,807	0.7	5.0
Majors, all services*	690,800	731,130[o]	800,071[o]	1.5	9.4
Scheduled services	610,800	710,433	778,261	2.4	9.6
Nonscheduled services	80,000	20,697	21,810	-12.1	5.4
Nationals, all services*	68,400	53,064[p]	42,138[p]	-4.7	-20.6
Scheduled services	47,700	20,743	17,677	-9.4	-14.8
Nonscheduled services	20,700	32,321	24,461	1.7	-24.3

AIR CARRIER PROFILE (cont'd)

	1976	1985[1]	1986[1]	1976-1986 Average Annual % Change	1985-1986 % Change
Majors, all services*	18,700[a]	24,196[o]	24,588[o]	2.8	1.6
Scheduled services	17,000	23,816	24,134	3.6	1.3
Nonscheduled services	1,700	380	454	-12.4	19.5
Nationals, all services*	200	2,048[p]	1,780[p]	24.4	-13.1
Scheduled services	n/a	812	615	-	-24.3
Nonscheduled services	200	1,236	1,165	19.3	-5.7
Large Regionals, all services*	n/a	1,135[q]	1,167[q]	-	2.8
Scheduled services	n/a	105	107	-	1.9
Nonscheduled services	n/a	1,030	1,060	-	2.9
Medium Regionals, all services					
Domestic and International*	n/a	1,107[r]	612[r]	-	-44.7
Total Certificated*	228,500	391,437	426,926	6.5	9.1
Revenue Passenger Load Factor (%)					
Domestic					
Certificated, scheduled services	55.6	60.7[j]	60.7[j]	0.9	0.0
Majors, scheduled services	55.8	60.9[k]	61.3[k]	0.9	0.7
Nationals, scheduled services	52.9	60.3[l]	58.3[l]	1.0	-3.3
Large Regionals, scheduled services	n/a	51.7[m]	51.7[m]	-	0.0
International					
Certificated, scheduled services	54.8	64.6[n]	58.9[n]	0.7	-8.8
Majors, scheduled services	54.8	64.3[o]	58.7[o]	0.7	-8.7
Nationals, scheduled services	n/a	70.2[p]	60.4[p]	-	-14.0
Large Regionals, scheduled services	n/a	88.9[q]	78.1[q]	-	-12.1
Medium Regionals, all services					
Domestic and International*	n/a	46.2[r]	46.6[r]	-	0.9
U.S. International Passenger Travel					
Total Passenger-Arrivals (thousands)	13,964[s]	24,156[s]	25,608[s]	6.3	6.0
Flag of Carrier:					
United States	7,124	11,798	12,254	5.6	3.9
Foreign	6,840	12,357	13,354	6.9	8.1
Total Passenger-Departures (thousands)	13,136	22,487	23,175	5.8	3.1
Flag of Carrier:					
United States	6,519	10,696	10,711	5.1	0.1
Foreign	6,617	11,791	12,464	6.5	5.7
Total Revenue Ton-Miles (thousands)#					
Domestic					
Certificated, all services	18,801,900[a]	32,939,216[j]	37,148,059[j]	7.1	12.8
Scheduled services	18,155,00	31,415,572	35,447,076	6.9	12.8
Nonscheduled services	646,900	1,523,641	1,700,981	10.2	11.6
Majors, all services	16,733,700	26,349,477[k]	30,174,129[k]	6.1	14.5
Scheduled services	16,170,600	26,289,993	30,099,100	6.4	14.5
Nonscheduled services	563,100	59,485	75,026	-18.3	26.1
Nationals, all services	1,375,700	5,510,258[l]	5,454,141[l]	14.8	-1.0
Scheduled services	1,321,800	4,704,955	4,939,682	14.1	5.0
Nonscheduled services	53,900	805,301	514,459	25.3	-36.1
Large Regionals, all services	692,500	898,916[m]	1,427,821[m]	7.5	58.8
Scheduled services	662,600	368,855	404,930	-4.8	9.8
Nonscheduled services	29,900	530,059	1,022,892	42.4	93.0
International					
Certificated, all services	6,907,300	11,215,563[n]	11,735,795[n]	5.4	4.6
Scheduled services	5,966,000	9,913,682	10,233,590	5.5	3.2
Nonscheduled services	941,300	1,301,880	1,501,505	4.8	15.3

AIR CARRIER PROFILE (cont'd)

	1976	1985[1]	1986[1]	1976-1986 Average Annual % Change	1985-1986 % Change
Fatal Air Carrier Accidents					
Operating under 14 CFR 121 (airlines)					
All scheduled services	2[t]	4[t]	1[t]	-6.7	-75.0
Nonscheduled services	0	3	1	-	-66.7
Operating under 14 CFR 135					
All scheduled services (commuters)	9	7	2	-14.0	-71.4
Nonscheduled services (on-demand air taxis)	31	35	31	0.0	-11.4
Total	42	49	35	-1.8	-28.6
Air Carrier Fatalities					
Operating under 14 CFR 121 (airlines)					
All scheduled services	38	197	1	-30.5	-99.5
Nonscheduled services	0	329	3	-	-99.1
Operating under 14 CFR 135					
All scheduled services (commuters)	27	37	4	-17.4	-89.2
Nonscheduled services (on-demand air taxis)	100	76	64	-4.4	-15.8
Total*	165	639	72	-8.0	-88.7

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 all now have scheduled service authority.
3 Scheduled includes total of freight, air express, U.S. mail and foreign mail. Nonscheduled includes total of civilian freight and other revenue; also military freight and other revenue.

The following data references are listed in Appendix A, pp. A-13, A-14.

Source	Reference Number/Location
a	21) personal communication
b	11) p. 3
c	11) p. 31
d	11) p. 48
e	11) p. 4
f	11) p. 32
h	41) personal communication
j	40) p. 2
k	40) p. 5
l	40) p.54/59
m	40) p. 90/94
n	40) p. 3
o	40) p. 6
p	40) p. 55/60
q	40) p. 91/95
r	40) p. 155/157
s	43) Tables Ia/IIa and Id/IId
t	42) p. 48/53/54/55/56/59

GENERAL AVIATION PROFILE (cont'd)

n/a = not available.
\# In 1976, Classified as "Industrial".
* Totals do not necessarily agree with the sums due to persons double-counted in collisions.
** Starting in 1986, Rental data is included with other business related uses.
Source: The following data references are listed in Appendix A, pp. A-13, A-14.

Source	Reference Number/Location
a	19) p. 5
b	21) p. 5
c	34) Table 2-9
d	34) Table 2-4
e	42) Table 16
f	42) Figure 32
g	42) Figure 34/35
h	33) p. 112
i	33) Table 8-3
j	42) Table 7

HIGHWAY PROFILE (cont'd)

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
Minor arterial	n/a	136,854[a]	140,743[a]	-	2.8
Major collector	121,779[a]	163,197	164,988	3.1	1.1
Minor collector	34,003	43,345	43,130	2.4	-0.5
Local	89,918	86,868	92,332	0.3	6.3
Total	630,840	730,315	750,075	1.8	2.7
Urban					
Interstate	135,243	216,160	231,177	5.5	5.0
Other freeways and expressways	n/a	97,397	105,474	-	8.3
Other principal arterial	156,785	279,073	287,688	6.3	3.1
Minor arterial	192,662	201,700	208,815	0.8	3.5
Collector	116,443##	89,552	90,521	-2.5	1.1
Local	177,190	160,096	164,490	-0.7	2.7
Total	778,323	1,043,978	1,088,165	3.4	4.2
Total Rural and Urban	1,409,163	1,774,179	1,838,240	2.7	3.6

n/a = not available.
\# 1976 classification was total other arterial.
1976 classification was total collector.
* Figures obtained by addition/subtraction and may not appear directly in data source.
** 1985 and 1986 now based on merged Highway Performance Monitoring System (HPMS) data and may vary from previous years.
† Mileage in Federal parks, forests, and reservations that are not a part of the state and local highway system.
Source: The following data references are listed in Appendix A, p. A-14.

Source	Refernce Number/Location
a	36) Table VM-2
b	36) Table HF-10
c	36) Table M-1
d	36) Table HM-10

AUTOMOBILE PROFILE (cont'd)

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
Average Annual Fuel Consumption per Vehicle (gallons)					
Passenger cars and taxis	723[e]	525[k]	525[k]	-3.2	0.0
Motorcycles	24	33	36	4.1	9.1
Average Miles Traveled Per Gallon of Fuel Consumed					
Passenger cars and taxis	13.5	18.2	18.3	3.1	0.5
Motorcycles	50.0	50.0	50.0	0.0	0.0
Number of Vehicles in All Accidents					
Passenger cars	23,100,000[i]	25,600,000[i]	27,700,000[a]	1.8	8.2
Taxis	180,000	100,000	100,000	-5.7	0.0
Motorcycles	385,000	460,000	420,000	0.9	-8.7
Number of Vehicles in Fatal Accidents					
Passenger cars	41,200	36,400	37,100	-1.0	1.9
Taxis	410	300	300	-3.1	0.0
Motorcycles	3,000	4,400	4,400	3.9	0.0
Number of Occupant & Non Occupant Fatalities					
Motor vehicles	45,523[j]	43,825[i]	46,087[j]	0.1	5.2
Passenger cars	26,166	23,214	24,944	-0.5	7.5
Taxis	n/a	70[i]	70[a]	-	0.0
Motorcycles, total	3,312	4,564[j]	4,566[j]	3.3	0.1
Motorcycles	3,238	4,417	4,309	2.9	-2.4
Mopeds	n/a	76	88	-	15.8
Other and unknown	74	71	169	8.6	138.0
Bicycles[5]	914	890	941	0.3	5.7
Pedestrians[5]	7,427	6,808	6,779	-0.9	-0.4
Fatalities in Vehicular Accidents[6]					
Passenger cars	34,960	30,876	32,776	-0.6	6.2
Motorcycles	3,425	4,720	4,689	3.2	-0.7
Occupant Fatality Rate					
Per 100 million vehicle-miles					
Passenger cars	2.4	1.8	1.9	-2.3	5.6
Motorcycles	55.2	50.2	48.5	-1.3	-3.4
Per 10,000 registered vehicles					
Passenger cars	2.4	1.8	1.8	-2.8	0.0
Motorcycles	6.7	8.4	8.7	2.7	3.6
Vehicle Involvement Rate					
Per 100 million vehicle-miles					
Passenger cars	3.5	2.7	2.8	-2.2	3.7
Motorcycles	55.7	50.7	48.5	-1.4	-4.3
Per 10,000 registered vehicles					
Passenger cars	3.4	2.6	2.7	-2.3	3.8
Motorcycles	6.8	8.5	8.7	2.5	2.4

n/a = not available.
* Figures obtained by addition/subtraction and may not appear directly in data source.
** In 1976, interstate rural was categorized as main rural and other rural was categorized as local rural.
*** Figure included in Interstate rural.
1 Includes passenger cars, taxis, and motorcycles. Also, 1985/1986 data reflect changes in FHWA reporting methods and may not be comparable to previous years.
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 2.3.
4 Derived by multiplying motorcycle vehicle-miles by an average occupancy rate of 1.1.
5 Involvement only with motor vehicle.
6 Includes all fatalities in the accident in which the vehicle types were listed.

BUS PROFILE

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
I. FINANCIAL					
Expenditures ($ thousands)					
School bus	2,372,000[a]	6,100,000[i]	6,300,000[i]	10.3	3.3
Operating Revenues ($ thousands)					
Intercity bus, total	1,231,900[b]	1,897,000[c]	1,837,800[c]	4.1	-3.1
Intercity bus, Class I*	932,400	1,251,000[i]	1,394,000[i]	4.1	11.4
Operating Expenses ($ thousands)					
Intercity bus, total	1,179,900	1,838,600[c]	1,781,200[c]	4.2	-3.1
Intercity bus, Class I*	890,500	1,187,400[i]	1,463,000[i]	5.1	23.2
Taxes Assignable to Operations ($ thousands)[1]					
Intercity bus, total	100,600	n/a	n/a	-	-
Intercity bus, Class I*	75,300	92,500[i]	n/a	-	-
II. INVENTORY					
Number of Operating Companies					
Intercity bus, total	1,000	3,520[e]	3,681[e]	13.9	4.6
Intercity bus, Class I*	81	60	56	-3.6	-6.7
Number of Vehicles					
Intercity bus, total	20,100	20,200	20,300	0.1	0.5
School bus	379,178[d]	480,389	479,079	2.4	-0.3
Intercity bus, Class I*	10,000[b]	7,252	6,769	-3.8	-6.7
Number of Employees of Operating Companies					
Intercity bus, total	46,000	36,100	36,200	-2.4	0.3
Intercity bus, Class I*	31,030	23,588	19,798	-4.4	-16.1
Miles of Highway Served					
Intercity bus, total	276,000	263,000	260,000	-0.6	-1.1
Intercity bus, Class I*	191,000	182,000	180,000	-0.6	-1.1
III. PERFORMANCE					
Vehicle Miles (millions)**					
Commercial bus					
Rural					
Interstate rural	294[f]	304	337	1.4	10.9
Other arterial rural	793	435	443	-5.7	1.8
Other rural	91	453	466	17.7	2.9
All rural	1,178	1,192	1,246	0.6	4.5
Urban[2]					
Interstate urban	313	373	357	1.3	-4.3
Other urban	1,408	1,918	1,962	3.4	2.3
All urban	1,721	2,291	2,319	3.0	1.2
Total Rural and Urban	2,892	3,483	3,565	2.1	2.4
School bus and nonrevenue bus					
Rural					
Interstate rural	160	205	220	3.2	7.3
Other arterial rural	1,182	687	737	-4.6	7.3
Other rural	637	1,144	1,228	6.8	7.3
All rural	1,979	2,036	2,185	1.0	7.3
Urban[2]					
Interstate urban	200	258	278	3.4	3.9
Other urban	683	1,153	1,237	6.1	7.3
All urban	883	1,412	1,515	5.6	7.3
Total Rural and Urban	2,862	3,448	3,700	2.6	7.3

BUS PROFILE (cont'd)

n/a = not available.
* Effective January 1, 1977, the average annual gross revenue for Class I carriers was increased to $4 million.
** Beginning in 1980, vehicle data based on Highway Performance Monitoring System, thus 1976 data is not comparable.
[1] Excludes income taxes.
[2] Urban consists of travel on all roads and streets in urban places of 5,000 or greater population.
[3] Calculated by dividing Revenue Passenger-Miles by Number of Revenue Passengers.
[4] 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-13, A-14.

Source	Reference Number/Location
a	19) p. 5
b	1) p. 2/5/6/8
c	1) personal communication
d	36) Table MV-10
e	20) personal communication
f	36) Table VM-1
g	21) p. 8/9
h	39) personal communication
i	13) personal communication

TRUCK PROFILE (cont'd)

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
Average Miles Traveled per Vehicle					
Single-unit trucks	10,127[h]	11,115[j]	11,286[j]	1.1	1.5
Combination trucks	40,558	56,725	59,113	3.8	4.2
All trucks	11,189	12,747	12,952	1.5	1.6
Ton-Miles (millions)					
Intercity	510,000[b]	634,000[b]	666,000[b]	2.7	5.0
Fuel Consumed (million gallons)					
Single-unit trucks	25,304[h]	35,757[j]	37,108[j]	3.9	3.8
Combination trucks	9,536	15,280	15,835	5.2	3.6
All trucks	34,840	51,037	52,943	4.3	3.7
Average Annual Fuel Consumption per Vehicle (gallons)					
Single-unit trucks***	904	857	869	-0.4	1.4
Combination trucks	7,785	10,889	11,319	3.8	3.9
All trucks	1,250	1,302	1,318	0.5	1.2
Average Miles Traveled per Gallon of Fuel Consumed					
Single-unit trucks***	11.2	12.9	12.9	1.4	0.0
Combination trucks	5.2	5.2	5.2	0.0	0.0
All trucks	9.0	9.8	9.8	0.9	0.0
Taxes Assignable to Operations ($ millions)					
State highway-user taxes	5,456[i]	9,772[i]	10,900[i]	7.2	11.5
Federal highway-user taxes	2,523	6,317	6,900	10.6	9.2
Total highway-user taxes	7,979	16,039	17,800	8.4	11.0
Average Length of Haul (statute miles)					
Class I Intercity motor carriers					
Common carriers	290[o]	366	377	2.7	3.0
Total Fatalities, Motor Carriers of Property	2,520[l]	2,646[p]	2,609[p]	0.4	-1.4
Private	634	521	535	-1.7	2.7
Authorized	1,773	2,015	1,948	1.0	-3.3
Exempt	99	85	101	0.2	18.8
Others	14	25	25	6.0	0.0
Total Accidents	25,666	39,273	26,176	0.2	-33.3
Private	5,017	5,829	4,013	-2.2	-31.2
Authorized	20,073	32,469	21,413	0.7	-34.1
Exempt	467	765	599	2.5	-21.7
Others	109	210	151	3.3	-28.1
Total Injuries	26,794	28,988	25,092	-0.7	-13.4
Private	5,123	4,424	3,785	-3.0	-14.4
Authorized	21,125	23,812	20,699	-0.2	-13.1
Exempt	443	600	470	0.6	-21.7
Others	103	152	138	3.0	-9.2
Property Damage ($ thousands)	183,700	393,816	326,381	5.9	-17.1
Private	40,300	59,826	49,601	2.1	-17.1
Authorized	138,000	322,445	265,274	6.8	-17.7
Exempt	4,700	9,455	9,193	6.9	-2.8
Others	700	2,090	2,313	12.7	10.7
Occupant Fatalities					
All trucks, total	6,570[m]	7,666[m]	8,243[m]	2.3	7.5
Light trucks	5,438	6,689	7,317	3.0	9.4
Medium trucks	129	157	145	1.2	-5.8
Heavy trucks	1,003	820	781	-2.5	-4.8
Fatalities in Vehicular Accidents[2]					
All trucks, total	14,462	17,755	18,503	2.5	4.2
Light trucks	10,213	13,141	14,042	3.2	6.9
Medium trucks	486	762	751	4.5	-1.4
Heavy trucks	4,554	5,044	4,888	0.7	-3.1

LOCAL TRANSIT PROFILE

	1979[1]	1985	1986	1979-1986 Average Annual % Change	1985-1986 % Change
I. FINANCIAL					
Operating Revenues ($ thousands)					
Passenger Revenues					
Single mode motor bus properties	533,400[a]	601,300[c]	657,714[c]	3.0	9.4
All properties	2,152,600[d]	3,882,500[f]	4,296,068[f]	10.4	10.7
Federal Cash Grants and Reimbursements					
Single mode motor bus properties	316,600[a]	194,500[c]	174,460[c]	-8.2	-10.3
All properties	1,177,300[d]	859,200[f]	895,518[f]	-3.8	4.2
Total Operating Revenues					
Single mode motor bus properties	1,559,600[a]	1,784,300[c]	1,744,600[c]	1.6	-2.2
All properties	5,771,000[d]	10,608,000[f]	12,101,600[f]	11.2	14.1
Operating Expenses ($ thousands)					
All Systems					
Motor Bus					
Vehicle operations	2,236,300[g]	3,393,700[i]	3,503,919[i]	6.6	3.2
Vehicle maintenance	771,400	1,323,800	1,424,461	9.2	7.6
Other*	700,900	1,299,700	1,430,820	10.7	10.1
Total expenses	3,708,600	6,017,200	6,359,200	8.0	5.7
Rail Rapid					
Vehicle operations	466,800	797,300	781,603	7.6	-2.0
Vehicle maintenance	247,000	518,200	586,202	13.1	13.1
Other*	792,100	1,529,100	1,737,795	11.9	13.6
Total expenses	1,505,900	2,847,500	3,101,600	10.9	8.9
Streetcar					
Vehicle operations	36,200	56,500	60,122	7.5	6.4
Vehicle maintenance	24,500	37,500	42,764	8.3	14.0
Other*	36,700	46,100	54,914	5.9	19.1
Total expenses	97,400	140,100	157,800	7.1	12.6
Trolley Bus					
Vehicle operations	25,900	52,900	56,563	11.8	6.9
Vehicle maintenance	6,000	15,800	19,836	18.6	25.5
Other*	9,900	20,700	21,801	11.9	5.3
Total expenses	41,900	89,500	98,200	12.9	9.7
Demand Response					
Vehicle operations	15,000	63,800	84,528	28.0	32.5
Vehicle maintenance	3,700	12,400	12,855	19.5	3.7
Other*	22,100	78,200	78,717	19.9	0.7
Total expenses	40,700	154,400	176,100	23.3	14.1
Ferryboat					
Vehicle operations	4,400	82,400	82,134	51.9	-0.3
Vehicle maintenance	1,900	19,700	16,848	36.6	-14.5
Other*	2,300	16,600	18,018	34.2	8.5
Total expenses	8,500	119,600	117,000	45.4	-2.2
Commuter Rail					
Vehicle operations	n/a	308,800	400,233	-	29.6
Vehicle maintenance	n/a	147,100	272,290	-	85.1
Other*	n/a	275,800	967,777	-	250.9
Total expenses	n/a	731,700	1,640,300	-	124.2
Other*					
Vehicle operations	400	2,900	1,374	19.3	-52.6
Vehicle maintenance	100	1,000	497	25.7	-50.3
Other*	58,300	3,900	4,829	-29.9	23.8
Total expenses	58,800	7,900	6,700	-26.7	-15.2

LOCAL TRANSIT PROFILE (cont'd)

	1979[1]	1985	1986	1979-1986 Average Annual % Change	1985-1986 % Change
Unlinked Passenger Trips (thousands)					
Motor bus	5,570,100[b]	5,364,400[e]	4,900,500[e]	-1.8	-8.6
Rail rapid/Streetcar*	1,555,000	2,420,500	2,461,100	6.8	1.7
Trolley bus	136,000	141,600	139,200	0.3	-1.7
Demand response	n/a	8,100	8,800	-	8.6
Ferryboat	4,200	45,300	32,400	33.9	-28.5
Commuter rail	n/a	260,800	291,500	-	11.8
Other*	n/a	28,200	3,300	-	-88.3
Total all modes	7,265,300	8,268,900	7,836,800	1.1	-5.2
Passenger Miles (thousands)					
Motor bus	17,766,700	19,275,700	17,431,500	-0.3	-9.6
Rail rapid/Streetcar*	3,515,500	10,775,000	11,008,800	17.7	2.2
Trolley bus	218,700	306,300	305,400	4.9	-0.3
Demand response	n/a	54,900	63,200	-	15.1
Ferryboat	16,300	219,900	175,200	40.4	-20.3
Commuter rail	n/a	6,141,800	6,337,200	-	3.2
Other*	n/a	148,200	118,300	-	-20.2
Total all modes	21,517,200	36,921,800	35,439,600	5.1	-4.0

n/a = not available.

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

1 Data covers fiscal year between 7/01/79 and 6/30/80. Beginning in 1984, data is reported on a calendar year basis.

Source: The following data references are listed in Appendix A, p. A-14.

Source	References Number/Location	Source	Reference Number/Location
a	44) Table 001.2.1	g	44) Table 001.07.1
b	44) Tables 001.15.1 and 001.16.1	h	45) Table 2.12
c	45) Table 2.01.1	i	45) Table 2.06
d	44) Table 002.2.1	j	44) Table 001.17.1
e	45) Table 2.13	l	45) Table 2.14
f	45) Table 2.01.2	m	44) Table 001.14.1

WATER TRANSPORT PROFILE (cont'd)

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
III. PERFORMANCE					
Ton-Miles (thousands)					
Domestic waterfreight					
Coastwise	322,932,250[a]	610,976,503[a]	580,886,675[a]	6.1	-4.9
Internal	197,072,803	232,707,523	248,116,902	2.3	6.6
Lakewise	70,684,181	48,183,952	43,198,187	-4.8	-10.3
Local	1,164,248	1,101,996	1,197,276	0.3	8.6
Total	591,853,482	892,969,974	873,401,040	4.0	-2.2
Tons of Freight Hauled (thousands)					
Domestic water					
Coastwise	236,279	309,802	308,025	2.7	-0.6
Internal	523,973	534,658	560,499	0.7	4.8
Lakewise	132,113	91,987	87,353	-4.1	-5.0
Local	83,731	74,263	77,358	-0.8	4.2
Total	976,096	1,010,710	1,033,235	0.6	2.2
Exports					
Great Lakes ports*	35,013	34,210	31,987	-0.9	-6.5
Coastal ports	250,633	327,426	319,163	2.5	-2.5
Total	285,645	361,636	351,150	2.1	-2.9
Imports					
Great Lakes ports*	30,645	17,110	13,842	-7.6	-19.1
Coastal ports	539,674	395,577	472,231	-1.3	19.4
Total	570,319	412,687	486,073	-1.6	17.8
Tons of Freight, Intraterritorial (thousands)	2,948[n]	3,401[n]	3,959[n]	3.0	16.4
Average Haul, Domestic System (miles-per-ton)					
Coastwise	1,367[a]	1,972[a]	1,886[a]	3.3	-4.4
Internal	376	524	495	2.8	-5.5
Lakewise	535	435	443	-1.9	1.8
Local	14	15	16	1.3	6.7
Total	606	884	845	3.4	-4.4
Cargo Capacity (net tons)					
Total non-self-propelled vessels	35,645,352[j]	49,475,727[j]	48,748,847[j]	3.2	-1.5
Dry cargo barges and scows	27,135,336	38,633,297	37,781,449	3.4	-2.2
Tankers	8,510,016	10,842,430	10,967,398	2.6	1.2
Total self-propelled vessels	16,536,420	21,196,263	21,302,369	2.6	0.5
Dry cargo/passenger	7,837,033	6,601,757	6,605,789	-1.7	0.1
Tankers	8,699,387	14,591,672	14,693,695	5.4	0.7
Sailing Vessels	n/a	2,834	2,885	-	1.8
Total Number of Vessels Involved in Marine Accidents[3]	6,140[l]	5,695[l]	5,019[l]	-2.0	-11.9
Total Number of Fatalities in Waterborne Transport[4]	153	132	131	-1.5	-0.8
Freight	10	5	1	-20.6	-80.0
Tankship	1	0	6	19.6	-
Passenger Vessel	27	3	10	-9.5	233.3
Tug/Towboat	24	5	4	-16.4	-20.0
Offshore Supply	0	3	1	-	-66.7
Fishing Vessel	22	59	58	10.2	-1.7
State Numbered	17	15	9	-6.2	-40.0
MODU[5]	12	19	0	-	-100.0
Platform	1	2	2	7.2	0.0
Freight Barge	0	0	0	0.0	0.0
Tank Barge	5	3	0	-	-100.0
Miscellaneous	105	18	40	-9.2	122.2

RAIL PROFILE
A. CLASS I RAILROADS

	1976	1985	1986	1975-1986 Average Annual % Change	1985-1986 % Change
I. FINANCIAL[1]					
Operating Revenues, Class I Line-Haul Railroads ($ millions)					
Passenger	327[i]	103[a]	108[a]	-10.5	4.9
Freight	17,400	26,688	25,344	3.8	-5.0
Other	809	795	752	-0.7	-5.4
Total Operating Revenues	18,537	27,586	26,204	3.5	-5.0
Operating Expenses, Class I Line-Haul Railroads[2] ($ millions)	17,881	25,225	24,896	3.4	-1.3
II. INVENTORY					
Number of Vehicles, Class I Railroads					
Freight-carrying cars[3]	1,699,027[a]	1,421,686	1,339,453	-2.4	-5.8
Passenger train cars[4]	5,478	2,502	2,307	-8.3	-7.8
Locomotives	27,612	22,932	21,161	-2.6	-7.7
Number of Companies, Class I Railroads	52[j]	22[b]	16[b]	-11.1	-27.3
Number of Employees, Class I Railroads	482,882[a]	301,879[a]	275,817[a]	-5.5	-8.6
Line Mileage, Class I Line-Haul Railroads	185,395	145,764	140,061	-2.8	-3.9
III. PERFORMANCE					
Car Mileage, Class I Railroads (thousands)					
Freight	28,530,000	24,920,000	24,414,000	-1.6	-2.0
Passenger	70,718	19,754[c]	19,593[c]	-12.0	-0.8
Total*	28,600,718	24,939,754	24,433,593	-1.6	-2.0
Train Mileage, Class I Railroads (thousands)					
Freight	424,571[d]	347,292[a]	347,234[a]	-2.0	0.0
Passenger	34,836	n/a	n/a	-	-
Total*	459,407	n/a	n/a	-	-
Locomotive Mileage, Class I Railroads (thousands)					
Freight	1,290,100	1,228,100[c]	1,223,633[c]	-0.5	-0.4
Passenger	17,900	3,900	n/a	-	-
Train and Yard Switching*	249,119	37,693	34,957	-17.8	-7.3
Total*	1,557,119	1,269,693	n/a	-	-
Revenue Passengers Carried, Class I Railroads (thousands)					
Commutation	193,700[e]	277,000[e]	280,000[e]	3.8	1.1
Revenue Passenger Miles, Class I Railroads (thousands)					
Commutation	4,470,000	6,547,000	6,770,000	4.2	3.4

RAIL PROFILE
B. AMTRAK

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
I. FINANCIAL					
Operating Revenues ($ thousands)					
Passenger	237,333[d]	518,770[a]	531,124[a]	8.4	2.4
Other*	49,819	205,839	224,250	16.2	8.9
Total Operating Revenues	287,152	724,609	755,374	10.2	18.8
Operating Expenses	651,701	1,435,034	1,407,001	8.0	-2.0
II. INVENTORY					
Number of Vehicles					
Passenger Train Cars	1,974	1,818	1,793	-1.0	-1.4
Locomotives	374	382	369	-0.1	-3.4
Number of Companies	1[b]	1[b]	1[b]	0.0	0.0
Number of Employees	13,805	20,537[c]	21,145[c]	4.4	3.0
Average Line Mileage	25,332	23,394[a]	23,499[a]	-0.8	0.5
III. PERFORMANCE					
Car Mileage (thousands)					
Passenger	247,237[d]	250,642	249,665	0.1	-0.4
Train Mileage (thousands)					
Passenger	30,885	30,038	28,604	-0.8	-4.8
Locomotive Mileage (thousands)					
Passenger	46,000[b]	42,700[c]	43,100[c]	-0.7	0.9
Revenue Passengers Carried (thousands)	18,430[d]	20,126[a]	20,157[a]	0.9	0.2
Revenue Passenger Miles (thousands)	4,088,923	4,784,695	5,011,343	2.1	4.7
Average Revenue per Passenger (dollars)	12.9	25.8	26.4	7.4	2.3
Average Revenue per Passenger-Mile (cents)	5.8	10.5	10.6	6.2	1.0
Average Trip per Passenger (miles)	221.9	237.7	248.6	1.1	4.6

* 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-13.

Source	Reference Number/Location
a	7) p. 61
b	9) p. 16, 17
c	5) personal communication
d	7) p. 62

NATURAL GAS PIPELINE PROFILE

	1976	1985	1986	1976-1986 Average Annual % Change	1985-1986 % Change
I. FINANCIAL					
Transmission Pipeline Companies					
Operating Revenues ($ millions)					
Total Operating Revenues	15,416[a]	45,738[b]	33,887[b]	8.2	-25.9
Operating Expenses ($ millions)					
Operating expenses	11,345	39,635	27,385	9.2	-30.9
Maintenance expenses	211	523	593	10.9	13.4
Total Operating and Maintenance Expenses	11,556	40,158	27,978	9.2	-30.3
Taxes					
Federal taxes*	977	1,454	1,399	3.7	-3.8
State and local taxes*	312	526	533	5.5	1.3
Total taxes	1,289	1,980	1,932	4.1	-2.4
Total Operating Expenses	13,827	43,587	31,587	8.6	-27.5
Distribution Pipeline Companies					
Operating Revenues ($ millions)					
Total Operating Revenues	7,375[c]	21,510[d]	18,675[d]	9.7	-13.2
Operating Expenses ($ millions)					
Operating expenses	5,613	17,387	14,627	10.1	-15.9
Maintenance expenses	179	420	442	9.5	5.2
Total Operating and Maintenance Expenses	5,792	17,807	15,069	10.0	-15.4
Taxes					
Federal taxes*	250	695	663	10.2	-4.6
State and local taxes*	492	1,187	1,090	8.3	-8.2
Total taxes	742	1,882	1,753	9.0	-6.9
Total Operating Expenses	6,804	20,260	17,459	9.9	-13.8
II. INVENTORY					
Transmission Pipeline Companies					
Number of Employees	38,100[m]	46,300[f]	46,900[f]	2.1	1.3
Miles of Transmission Pipeline[1]					
Steel pipe	254,700[e]	266,400[g]	267,700[g]	0.5	0.5
Plastic pipe**	1,800	4,000	3,000	5.2	-25.0
Other	1,800	800	300	-16.4	-62.5
Total Miles of Transmission Pipeline	258,200	271,200	271,000	0.5	-0.1
Distribution Pipeline Companies					
Number of Employees	51,900[m]	61,800[f]	61,800[f]	1.8	0.0
Miles of Distribution Pipeline					
Steel pipe	551,300[e]	570,600[g]	575,000[g]	0.4	0.8
Plastic pipe**	45,400	125,900	137,900	11.8	9.5
Other	62,400	56,900	56,400	-1.0	-0.9
Total Miles of Distribution Pipeline	659,100	753,400	769,300	1.6	2.1
Number of Interstate Natural Gas Pipeline Companies	122[k]	139[h]	134[h]	0.9	-3.6
III. PERFORMANCE					
Total Marketed Production[2] (million cubic feet)	19,952,438[i]	17,197,999[i]	16,790,910[i]	-1.7	-2.4
Total Delivered to Consumers[3] (million cubic feet)	17,763,818[j]	15,811,130[j]	14,813,731[j]	-1.8	-6.3
Total Consumed (million cubic feet)	19,946,496	17,280,943	16,221,296	-2.0	-6.1
Total Gas Used as a Pipeline Fuel (million cubic feet)	548,323	503,766	485,041	-1.2	-3.7
Total Gas Pipeline Fatalities	63[l]	28[l]	23[l]	-9.6	-17.9

SELECTED PASSENGER AND CARGO PERFORMANCE INDICATORS BY MODE 1976, 1985 and 1986

SELECTED PASSENGER AND CARGO PERFORMANCE INDICATORS BY MODE, 1976, 1985 and 1986 (cont'd)

	1976	1985	1986
AUTOMOBILE (cont'd)			
Vehicle-miles of travel per capita, passenger cars, taxis, motorcycles			
Rural			
Interstate rural	399.7	407.8	415.3
Other arterial rural	837.1	784.7	792.7
Other rural	828.3	788.6	780.0
All rural	2,065.0	1,981.1	2,007.0
Urban			
Interstate urban	501.4	675.0	715.5
Other urban	2,406.3	2,649.9	2,712.0
All urban	2,907.6	3,325.0	3,427.4
Total rural and urban	4,972.7	5,306.1	5,434.4
Passenger-miles per capita			
Passenger cars and taxis, total travel	11,373.8	12,116.6	12,409.4
Motorcycles, total travel	302.8	41.8	42.9
Vehicle-miles of travel per vehicle, passenger cars, taxis			
All rural	4,086.1	3,594.9	3,580.2
All urban	5,753.5	6,033.5	6,114.2
Total rural & urban	9,839.7	9,628.5	9,694.4
Passenger-miles per vehicle			
Passenger cars and taxis	22,505.9	21,987.0	22,137.2
Motorcycles	1,338.4	1,835.8	1,967.7
BUS			
U.S. population per intercity bus	10,847.5	11,845.7	11,901.3
Vehicle-miles per capita			
Commercial bus			
Rural			
Interstate rural	1.3	1.3	1.4
Other arterial rural	3.6	1.8	1.8
Other rural	0.4	1.9	1.9
All rural	5.4	5.0	5.2
Urban			
Interstate urban	1.4	1.6	1.5
Other urban	6.5	8.0	8.1
All urban	7.9	9.6	9.6
Total rural and urban	13.3	14.6	14.8

SELECTED PASSENGER AND CARGO PERFORMANCE INDICATORS BY MODE, 1976, 1985 and 1986 (cont'd)

	1979*	1985	1986
LOCAL TRANSIT			
Total vehicle operating expenses (dollars) per vehicle-mile			
Motorbus	2.8	4.3	4.4
Rail rapid/Streetcar	21.7	6.5	6.8
Trolley bus	3.5	5.9	6.9
Demand response	n/a	5.5	5.5
Ferryboat	58.6	105.0	100.3
Commuter Rail	n/a	3.9	10.2
Total annual passenger-miles per vehicle (thousands)			
Motorbus	364.2	360.5	313.8
Rail rapid/Streetcar	338.3	1,064.4	1,053.3
Trolley bus	303.3	453.1	515.0
Demand response	n/a	22.6	23.3
Ferryboat	1.6	4.8	7.0
Commuter Rail	n/a	1.5	1.4
Total revenue vehicle-miles per vehicle (thousands)			
Motorbus	27.1	26.4	25.8
Rail rapid/Streetcar	7.1	45.3	45.9
Trolley bus	16.8	22.3	24.0
Demand response	n/a	11.6	11.8
Ferryboat	14.5	24.8	46.7
Commuter Rail	n/a	38.7	36.4
	1976	**1985**	**1986**
WATER TRANSIT			
Ton-miles per capita, domestic water			
Coastwise	1,481.1	2,553.4	2,404.4
Internal	903.9	972.5	1,027.0
Lakewise	324.2	201.4	178.8
Local	5.3	4.6	5.0
Total	2,714.5	3,731.9	3,615.1
Tons of freight hauled per capita, domestic water			
Coastwise	1.1	1.3	1.3
Internal	2.4	2.2	2.3
Lakewise	0.6	0.4	0.4
Local	0.4	0.3	0.3
Total	4.5	4.2	4.3
CLASS I RAILROADS			
Revenue passenger-miles per capita			
Commutation	20.5	27.4	28.0

TRANSPORTATION TRENDS

Section I: Performance

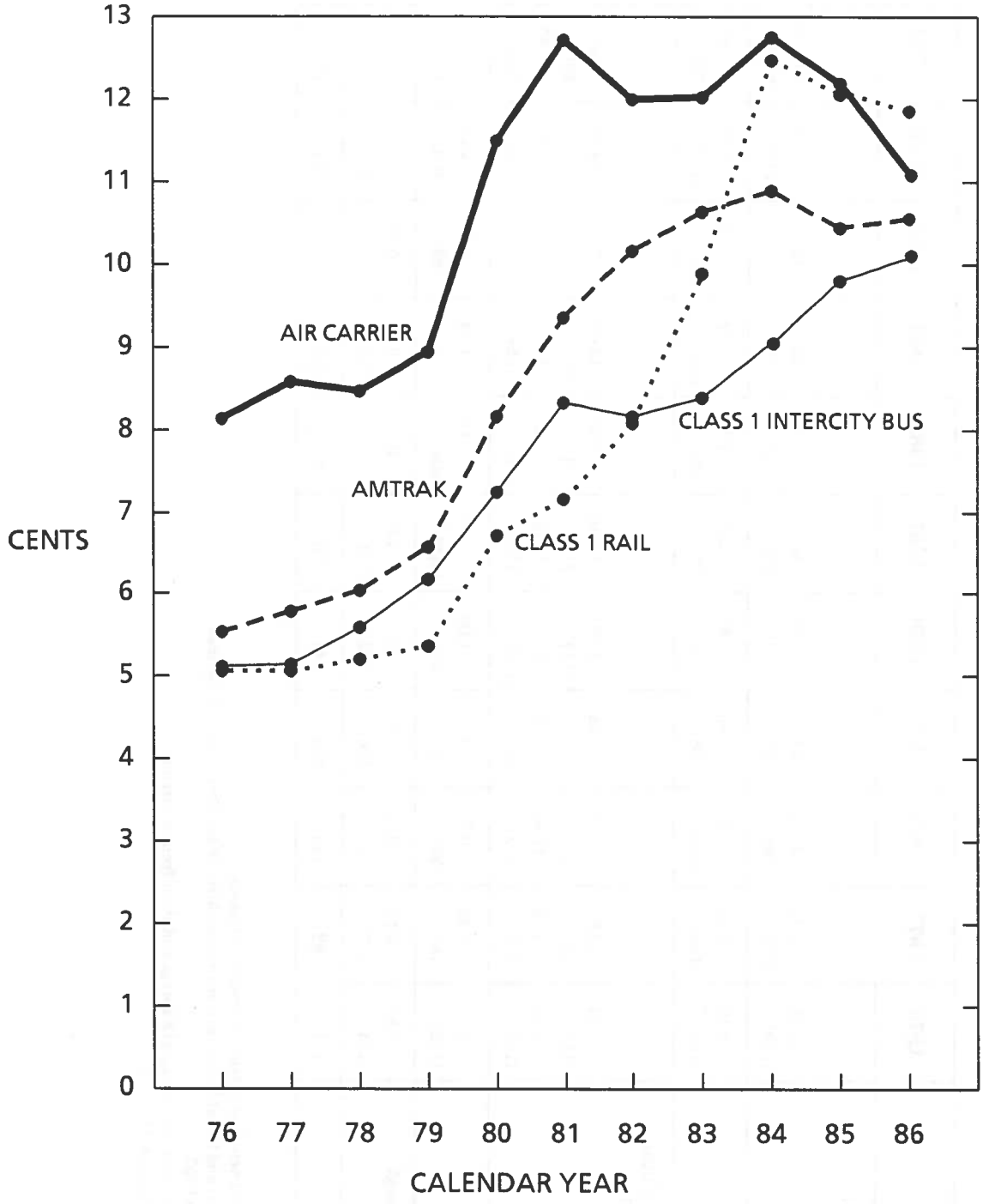


Figure 8. Average Passenger Revenue per Passenger-Mile, 1976-1986

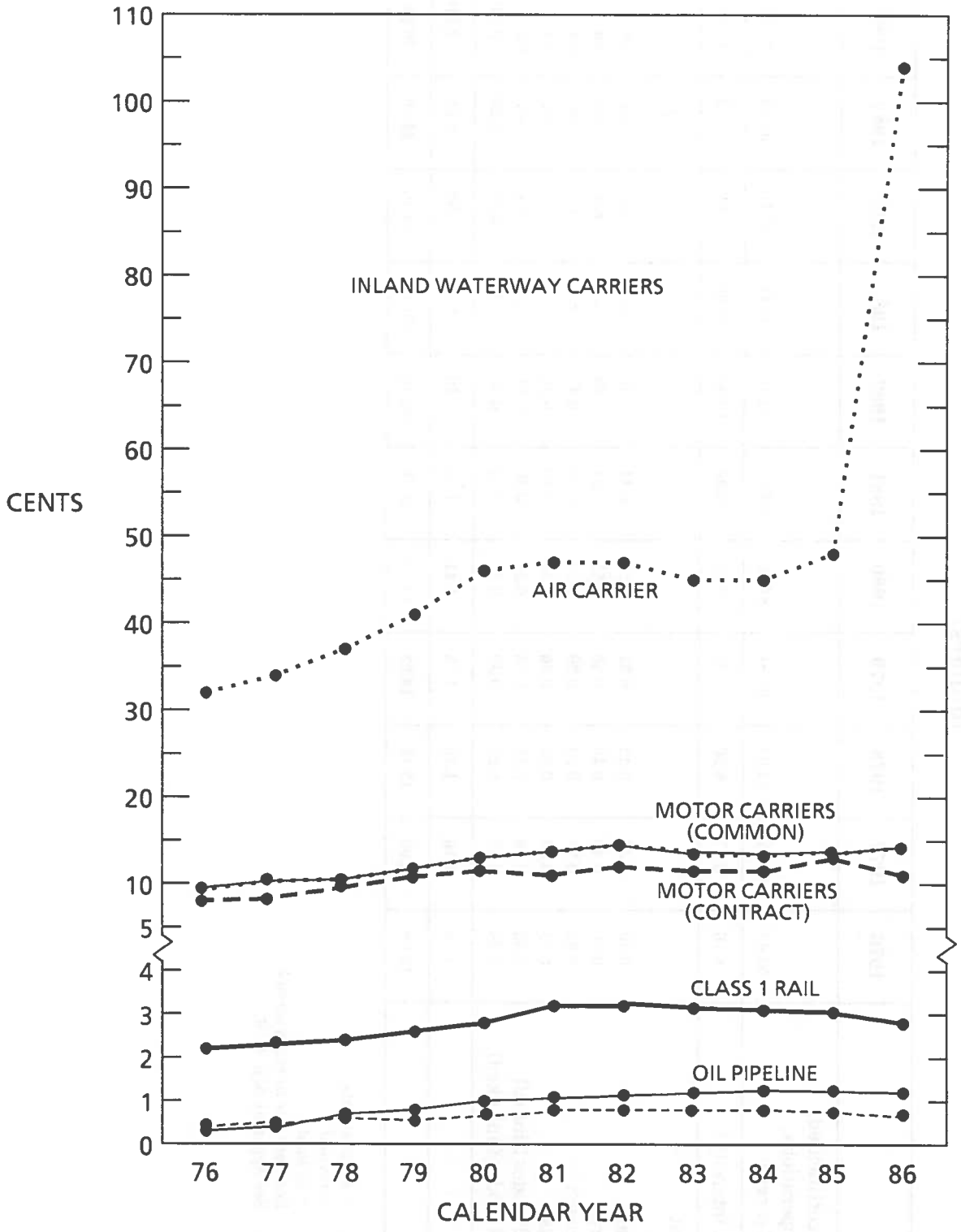


Figure 9. Average Freight Revenue per Ton-Mile, 1976-1986

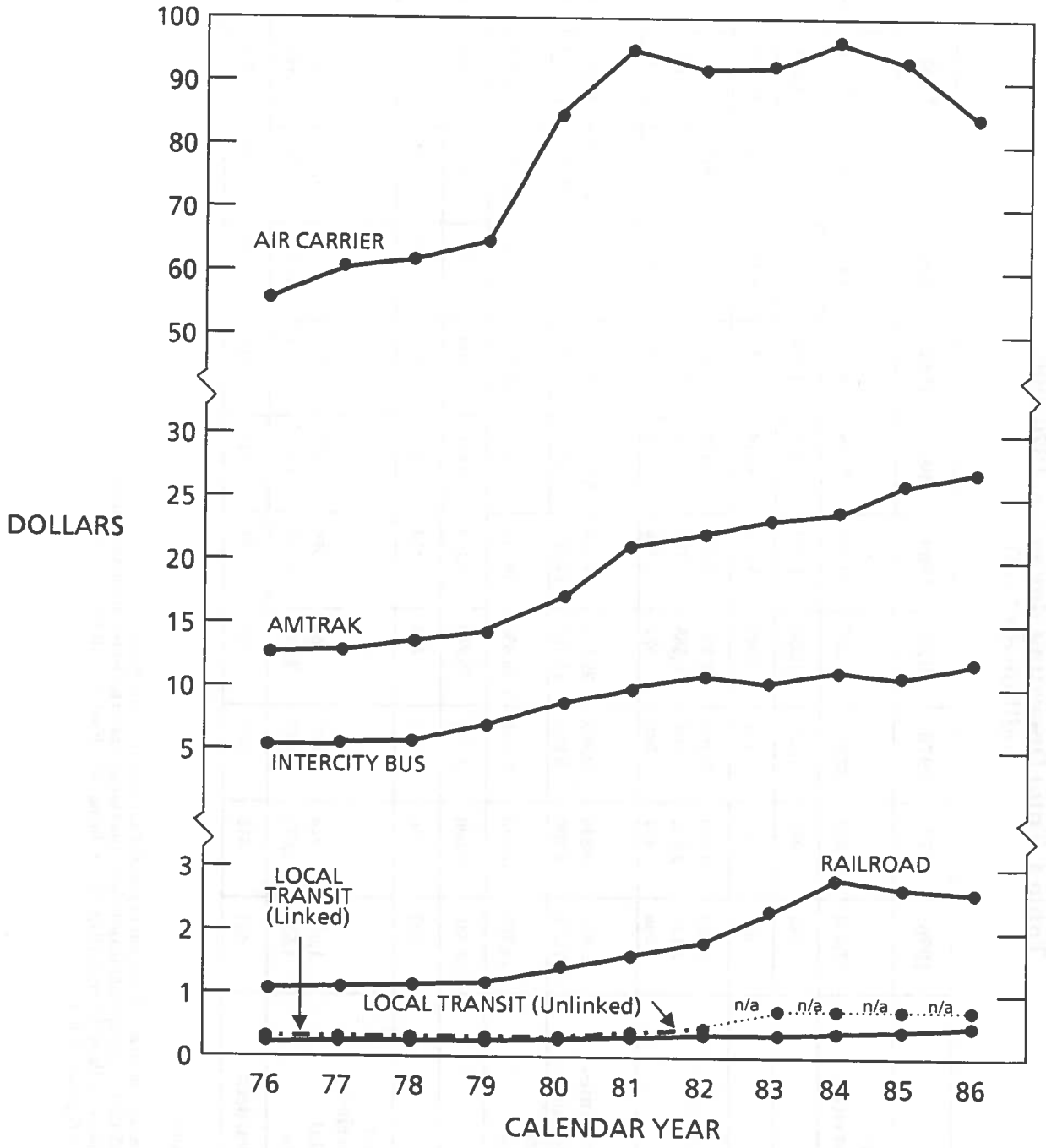


Figure 10. Average Passenger Fare, 1976-1986

n/a = not available.

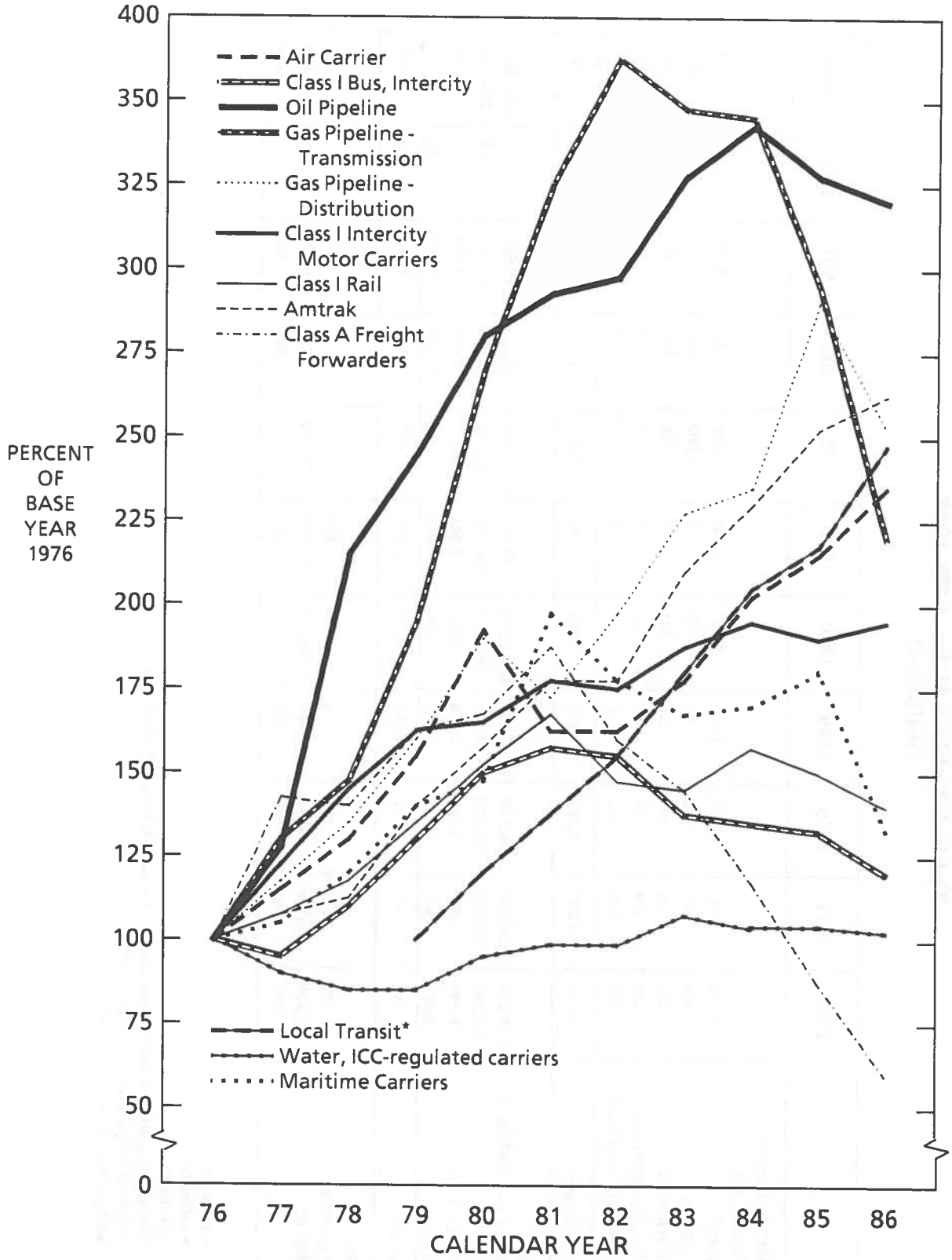


Figure 11. Total Operating Revenues, 1976-1986

* Base year equals 1979.

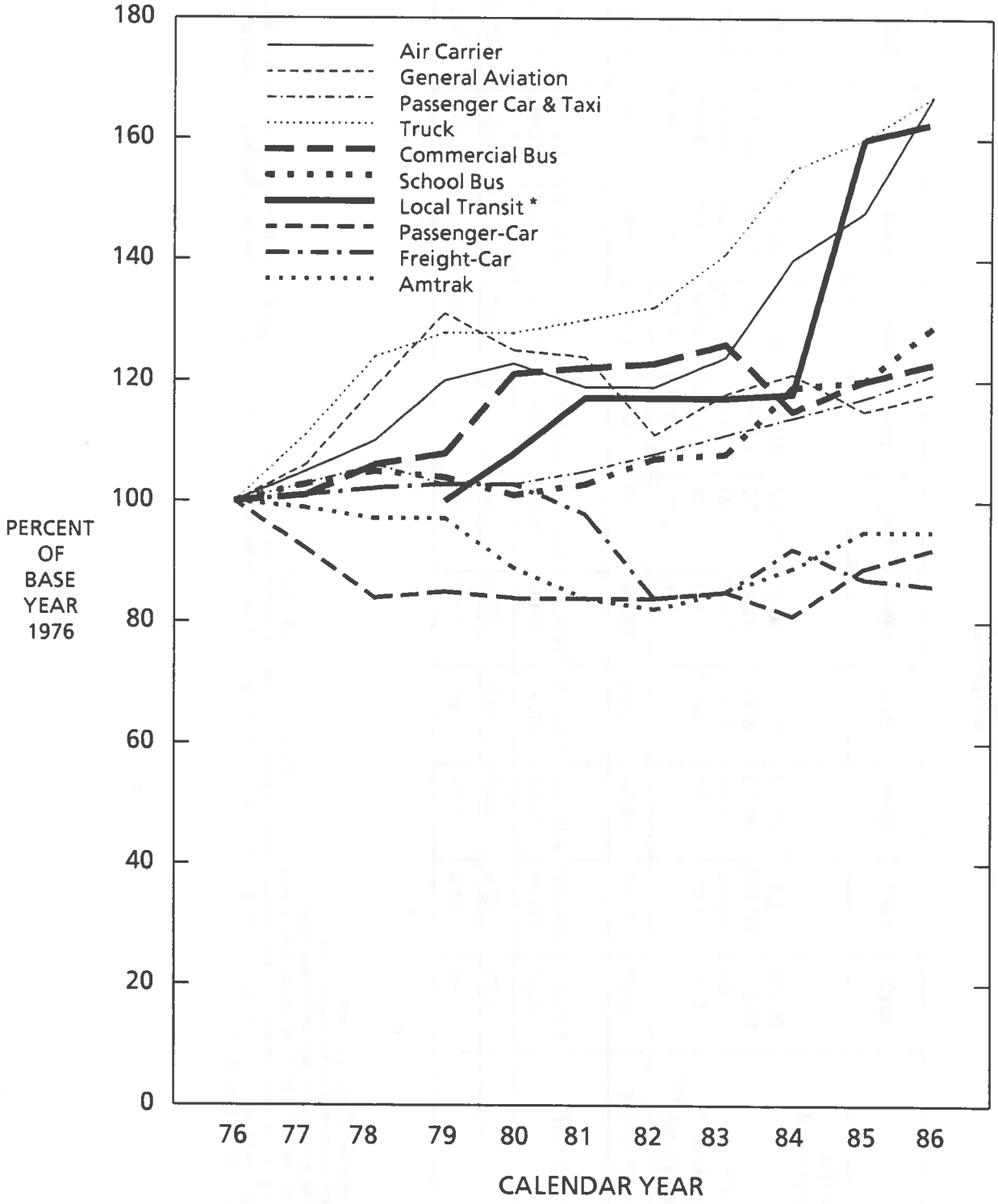


Figure 12. Vehicle-Miles, 1976-1986

* Base year equals 1979.

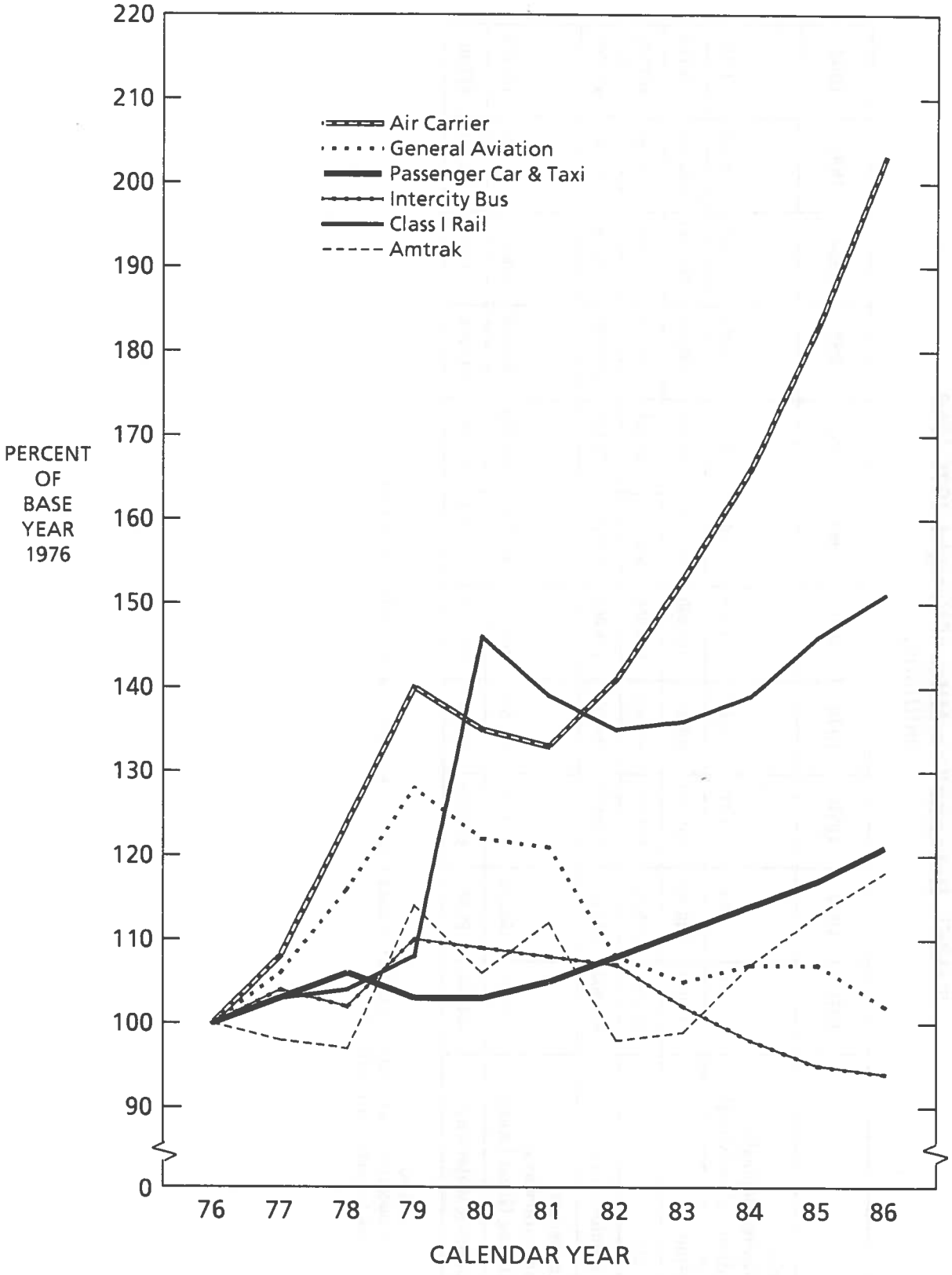


Figure 13. Passenger Miles, 1976-1986

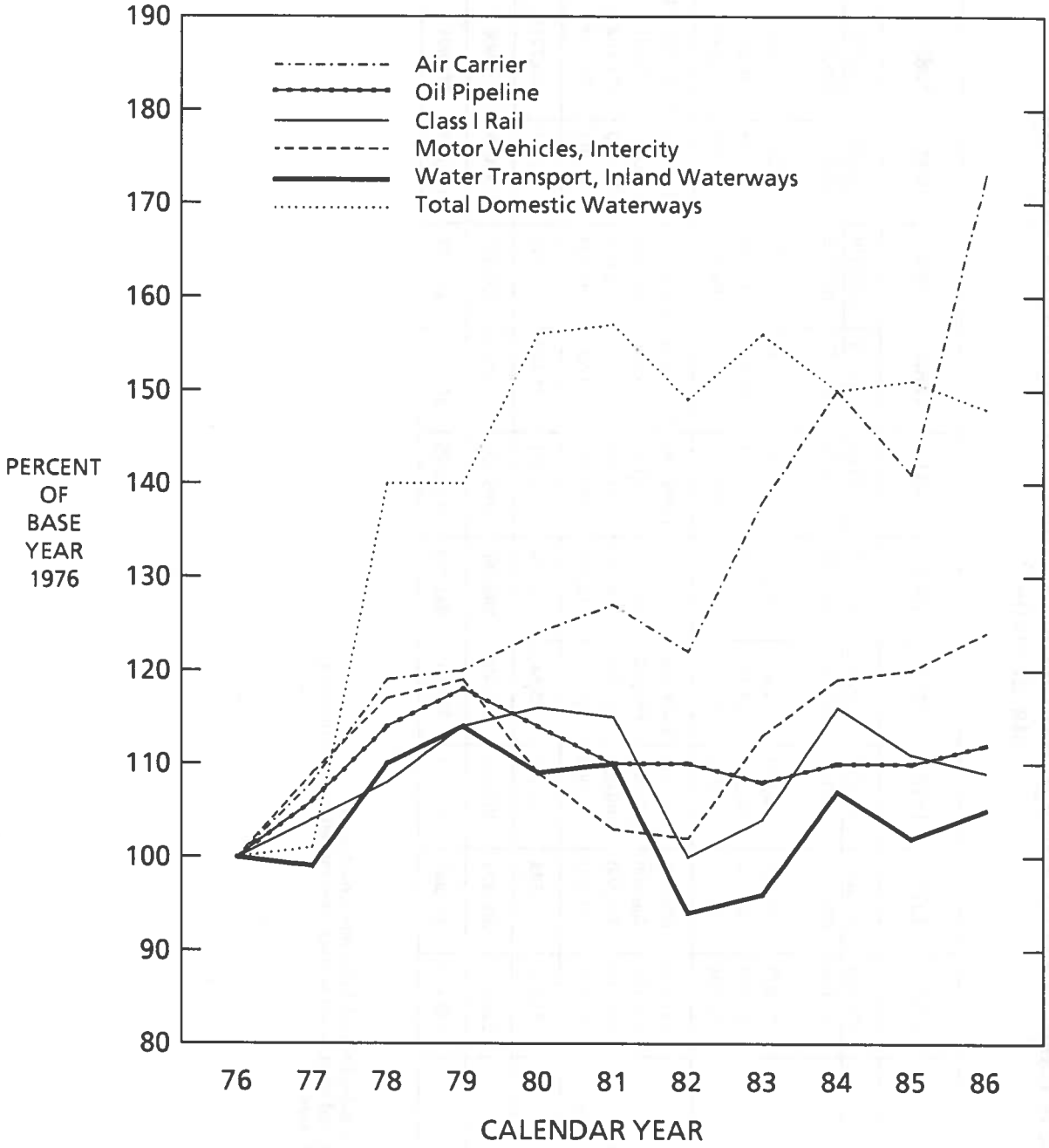


Figure 14. Revenue Ton-Miles of Freight, 1976-1986

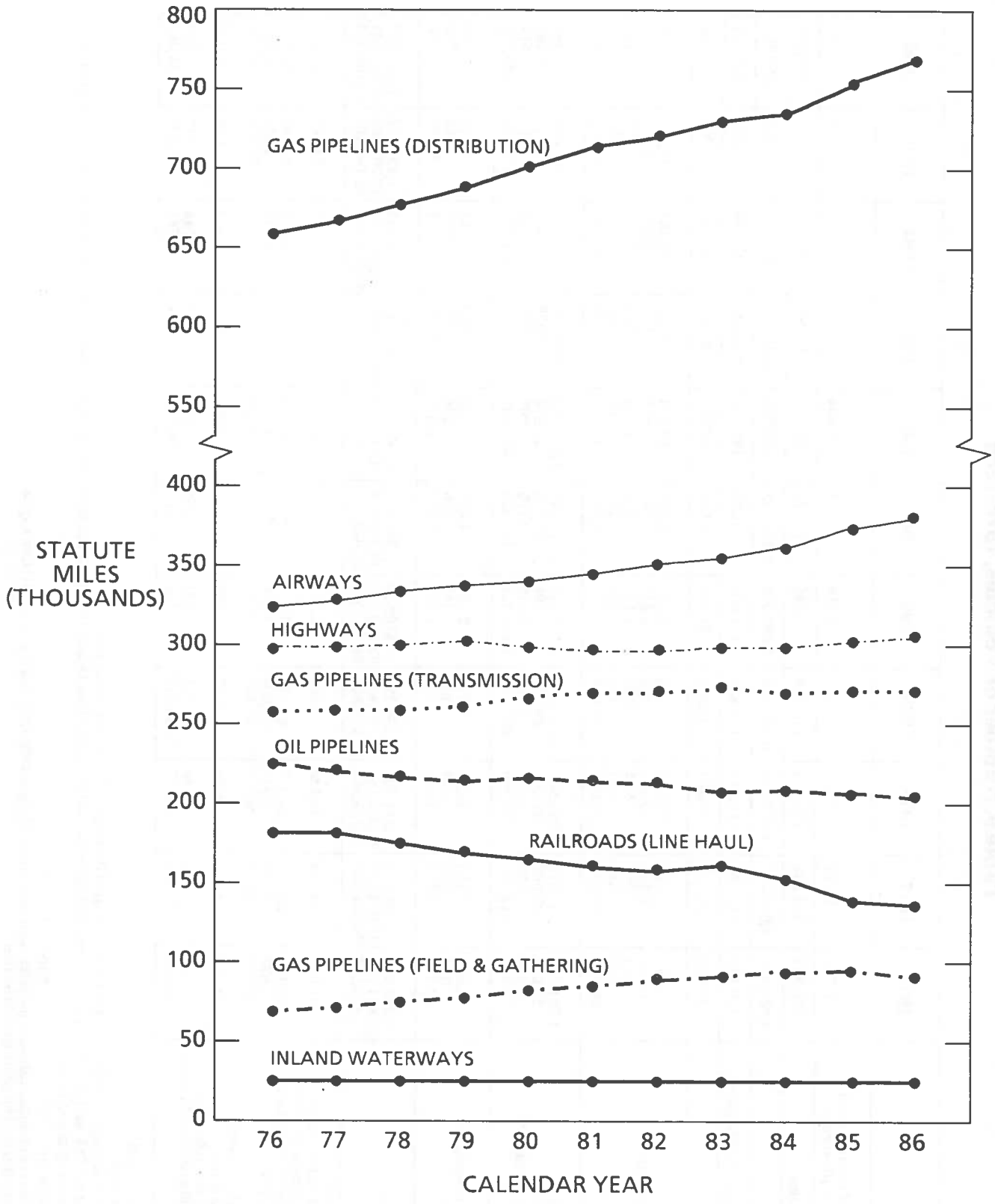


Figure 15. Basic Intercity Mileage Within the Continental United States, 1976-1986

Table 10. Number of New Vehicles Purchased by Mode, 1976-1986

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Air Carrier (all services) Fixed-Wing	222	155	241	376	387	387	232	262	185	278	330
General Aviation	16,446	17,605	17,397	17,924	11,777	10,114	4,055	2,784	2,635	2,457r	2,286p
Passenger car & taxi*	10,110,000	11,185,000	11,312,000	10,558,800	8,980,000	8,535,000	7,980,000	9,179,000	10,394,000	11,039,000	11,450,000
Motorcycles	1,050,000	1,080,000	975,000	1,085,000	1,070,000	1,065,000	990,000	1,185,000	1,305,000	1,260,000	1,045,000
Mopeds	78,000	190,000	350,000	130,000	182,037r	67,779r	18,145r	21,645r	32,889r	30,174r	22,557
Bicycles*	8,100,000	9,400,000	9,400,000	10,800,000	9,000,000	8,900,000	6,800,000	9,000,000	10,100,000	11,400,000	12,300,000
Truck (domestic)	3,040,000	3,500,600	6,920,860	3,120,159	2,231,500	1,972,200	2,247,800	2,709,400	3,485,000	3,913,200r	3,947,200
Bus (including school bus)	33,801	31,668	35,342	32,498	34,385	27,295	26,260	26,212	32,437	33,533	37,022
Local transit**											
Motorbus	4,475	2,437	3,805	3,440	4,572	4,059	2,962	4,081	3,444	3,296	n/a
Light rail	4	62	35	70	32	188	10	30	59	63	149
Heavy rail/Rapid transit	472	506	172	94	130	274	126	88	521	441	854
Trolley coach	260	198	0	141	98	0	0	0	0	0	0
Total	5,481	3,203	4,012	3,745	4,832	4,523	3,098	4,199	4,024	3,800	n/a
Class I Railroad											
Freight cars	31,757	29,478	25,295r	28,781r	30,889r	20,653r	5,731r	3,496r	2,618r	1,773r	670
Locomotives	438	820	1,214	1,709	1,466	470	323	200	428	515	273
Passenger train-cars	44	20	42	43	44	0	1	n/a	n/a	n/a	n/a
Total	32,239	30,318	26,551r	30,553r	32,399r	21,123r	6,055r	3,696r	3,046r	2,288r	943
Amtrak											
Passenger train-cars	305	133	1	56	108	119	101	31	0	74	0
Locomotives	58	4	75	39	17	43	35	0	0	0	0
Total	363	137	76	95	125	162	136	31	0	74	0
Water transport											
Merchant vessels	1	18	14	15	23	12	11	14	12	14	12
Gross tonnage	616,000	920,198	911,791	1,148,530	693,200	427,979	342,000	409,100	389,900	581,300	408,200

n/a = not available.
r = revised.
p = preliminary.
* Includes domestic and imported vehicles.
** New transit passenger vehicles delivered, excludes commuter railroad, vans, ferry boats and other modes not listed.
Source: See Appendix A, pp. A-21, A-22.

Table 12. Air Travel Arrivals Between the United States Foreign Countries, 1976 to 1987 (thousands)

Arrivals

Flag of Carrier and Country	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total Passengers	13,964	14,701	16,955	19,268	20,262	20,881	20,216	20,840	23,212	24,156	25,608	28,644
Flag of Carrier:												
United States	7,124	7,487	8,551	9,864	10,031	10,265	10,163	10,698	11,623	11,798	12,254	14,313
Foreign	6,840	7,214	8,404	9,404	10,231	10,615	10,054	10,142	11,588	12,357	13,354	14,331
Country of embarkation[1]												
Australia	124	127	147	208	227	229	254	242	277	277	313	378
Bahamas, The	790	799	993	1,078	1,123	1,053	1,153	1,344	1,373	1,503	2,488	1,828
Barbados	85	104	117	139	135	123	115	167	211	216	218	237
Belgium	140	113	113	187	242	249	299	250	242	281	316	227
Bermuda	452	441	426	469	497	451	441	439	441	434	500	516
Brazil	183	186	219	253	300	311	308	308	321	352	433	418
China/Taiwan	57	67	92	96	113	138	148	154	187	206	254	249
Colombia	188	212	232	281	315	334	314	309	285	279	281	264
Denmark	238	238	248	260	267	251	243	230	239	241	247	302
Dominican Republic	367	416	429	465	468	495	501	532	575	606	705	817
France	602	611	656	707	689	686	695	705	795	955	908	1,181
Germany, Fed. Rep. of	815	863	963	1,053	1,175	1,182	1,174	1,223	1,404	1,582	1,582	1,962
Grand Cayman	63	68	81	96	121	129	132	144	170	173	199	222
Greece	161	198	220	231	208	206	198	234	265	187	86	125
Haiti	97	101	120	142	133	148	146	159	175	192	179	190
Hong Kong	123	91	112	187	228	230	197	217	295	270	304	319
Ireland	239	251	244	263	220	229	250	222	256	274	300	291
Israel	109	134	139	190	189	190	189	233	255	294	187	230
Italy	447	471	530	572	537	493	529	572	649	662	506	665
Jamaica	388	327	427	492	429	479	587	682	712	707	851	938
Japan	1,180	1,213	1,308	1,579	1,624	1,705	1,819	1,896	2,267	2,435	2,612	3,098
Korea, Rep. of	119	117	118	169	234	228	245	249	290	390	509	521
Mexico	1,661	1,647	2,118	2,611	2,886	3,091	2,456	2,691	2,901	2,719	2,843	3,534
Netherlands	314	322	371	460	427	450	482	467	558	583	589	621
Netherlands Antilles	272	269	307	353	327	359	332	370	426	407	465	524
Panama Republic	119	122	127	154	150	151	146	146	169	180	176	165
Philippines	148	136	175	163	194	244	212	158	165	145	144	182
Spain	279	299	335	333	312	310	337	376	418	419	304	389
Switzerland	308	345	339	321	312	321	332	314	427	452	416	532
United Kingdom	1,869	2,102	2,596	2,689	2,973	3,092	2,694	2,812	3,222	3,460	3,215	3,884
Venezuela	225	282	355	431	533	577	581	312	255	248	359	329
Other	1,802	2,029	2,298	2,636	2,674	2,747	2,707	2,683	2,987	3,027	3,119	3,473

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.

[1] 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.

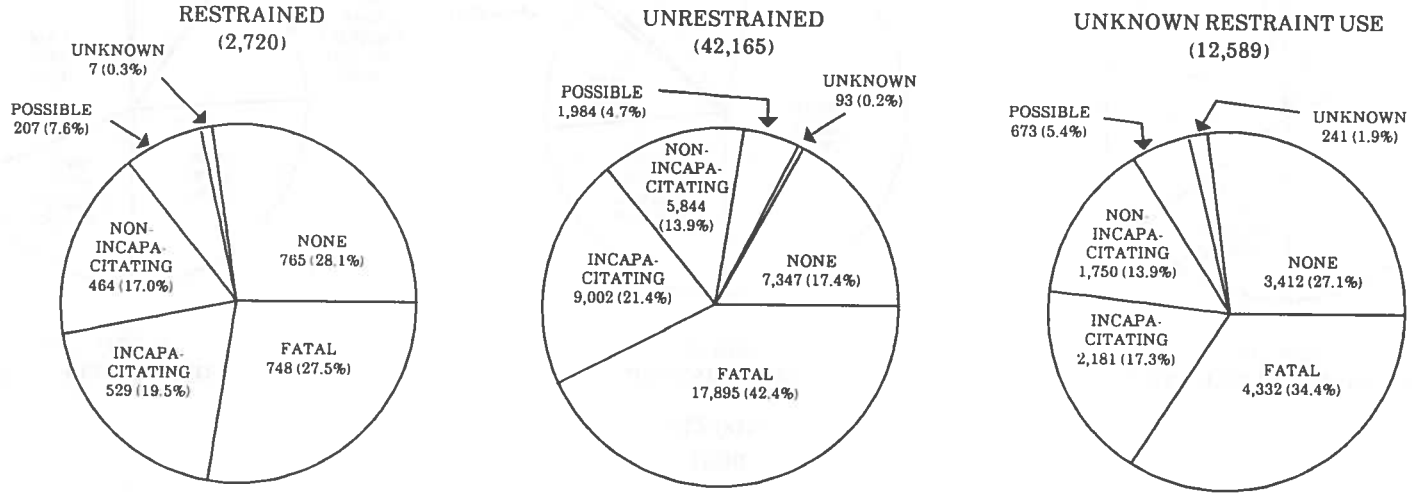
Source: U.S. DOT/Transportation Systems Center, Center for Transportation Information, Cambridge, MA, *U.S. International Air Travel Statistics*, annual issues, Table Ia.

TRANSPORTATION TRENDS

Section II: Safety

Figure 16. Injury Severity of Passenger Car Occupants in Fatal Accidents, 1981-1986 (cont'd)

1983
(57,474)



1984
(59,333)

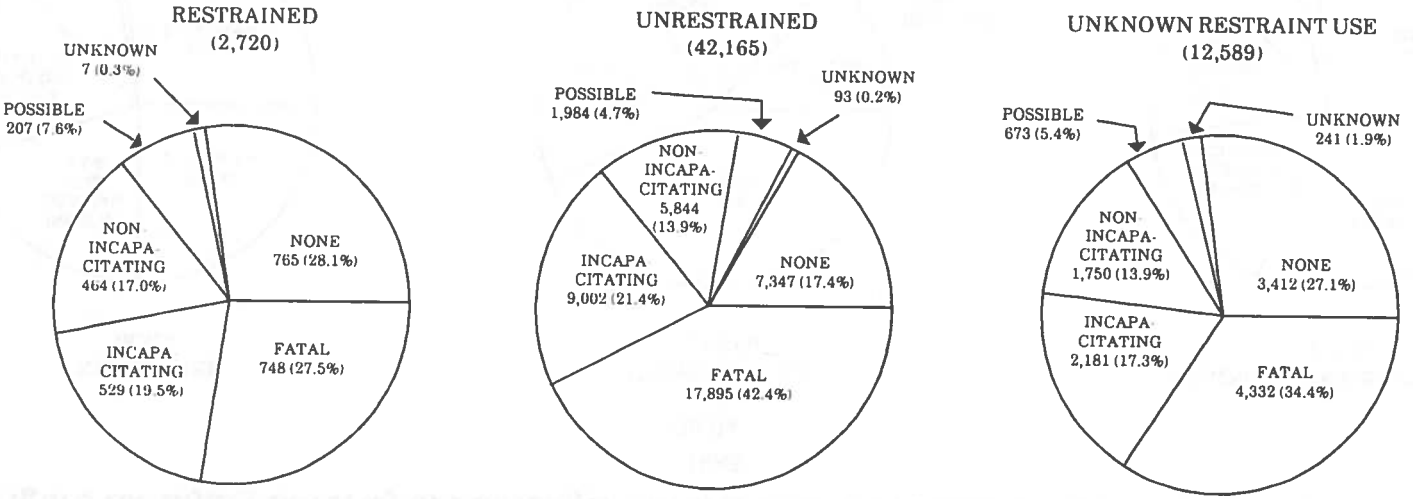


Table 14. Number of Fatalities by Mode
1976-1987

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
HIGHWAY												
Motor Vehicle Traffic	45,523	47,878	50,331	51,093	51,091	49,301	43,945	42,589	44,257	43,825	46,087[r]	46,386
Motor Carriers of Property[1]	2,520	2,983	2,998	3,072	2,528	2,810	2,479	2,528	2,721	2,646	2,609[r]	n/a
Motor Carriers of Passengers[1]	62	87	68	60	74	95	76	67	57	62	n/a	n/a
RAILROAD												
Rail-Highway Grade Crossing	1,174	996	1,064	883	833	728	607	575	649	582[r]	615	617
Rail[2]	510	534	582	546	584	556	512	498	598	454	475	540
RAIL RAPID TRANSIT	n/a	70	50	62	83	103	87[c]	50[c]	55[c]	15[c]	40[cr]	n/a
AVIATION												
U.S. Air Carriers[3]	38	655	160	354	1	4	234	15	4	526	4	232[p]
Commuter Air Carriers[4]	27	32	48	66	37	34	14	11	48	37	4	60[p]
On-Demand Air Taxis[5]	100	118	155	77	105	94	72	62	52	76	67[r]	62[p]
U.S. General Aviation[6]	1,216	1,276	1,556	1,221	1,239	1,282	1,187	1,064	1,039	976r	955[r]	804[p]
MARINE												
Waterborne Transportation	248	157	186	174	206	154	223	289	113	131	162[r]	89[p]
Recreational Boating	1,264	1,312	1,321	1,400	1,360	1,206	1,178	1,241	1,063	1,116	1,066	1036
MATERIALS TRANSPORT												
Liquid Pipeline	5	3	3	4	3	5	0	6	0	5	4[r]	0[p]
Gas Pipeline	63	36	31[a]	45[a]	11	17	31	12[b]	35[b]	28	36[r]	11[p]
Hazardous Materials	24	26	45	17	19	25	12	8	7	8	16	13[p]

n/a = not available.
r = revised.
p = preliminary.
a Includes preliminary notification of Pipeline leaks via telephone reports.
b Beginning with 1983 data, Pipeline Incidents are credited to the year in which they occurred, not the year in which the report was received.
c Fatalities resulting from train and nontrain accidents. Prior to 1982, fatality data include train accidents, train incidents and nontrain incidents.
1 Includes only those motor carriers operating in interstate or foreign commerce.
2 Fatalities resulting from train accidents, train incidents and non-train incidents.
3 Large carriers operating under 14 CFR 121, 125, and 127 only, all scheduled and nonscheduled service.
4 All scheduled service operating under 14 CFR 135 (commuter air carriers).
5 Non-scheduled service operating under 14 CFR 135 (on-demand air taxis).
6 All operations other than those operated under 14 CFR 121 and 14 CFR 135. Includes air carrier fatalities when in collision with General Aviation aircraft.

Source: See Appendix A, pp. A-22, A-23.

TRANSPORTATION TRENDS

Section III: Motor Vehicle Sales, Production and Costs

Table 17. U.S. Retail Sales of New Cars by Sector 1976 - 1987

Year	Units by Consuming Sector (000)				% of Total Sales	
	Consumer	Business	Government	Total	Consumer	Business
1976	7,036	2,822	137	9,994	70.4	28.2
1977	7,657	3,220	169	11,046	69.3	29.2
1978	7,548	3,456	161	11,164	67.6	31.0
1979	7,132	3,285	142	10,559	67.5	31.1
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	7,568	3,666[r]	127[r]	11,450	66.9[r]	32.0[r]
1987	6,760	3,395	127	10,282	65.7	33.0

r = revised.

Source: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts and Figures*, 1988, p. 16.

Table 19. Passenger Car Operating Costs, 1977-1987*

Year	Variable Costs In Cents Per Mile				Costs Per 10,000 Miles			Total Cost Per Mile
	Gas & Oil	Maintenance	Tires	Total	Variable Cost	Fixed Cost	Total Cost	
1977	4.11¢	1.03¢	.66¢	5.80¢	$580	$1,439	$2,019	20.19¢
1978	3.89	1.10	.66	5.65	565	1,392	1,957	19.57
1979	4.11	1.10	.65	5.86	586	1,811	2,397	23.97
1980	5.86	1.12	.64	7.62	762	2,033	2,795	27.95
1981	6.27	1.18	.72	8.17	817	2,375	3,192	31.92
1982	6.74	1.00	.63	8.37	837	2,398	3,235	32.35
1983	6.64	1.04	.68	8.36	836	2,506	3,342	33.42
1984	6.19	1.04	.63	7.86	786	2,346	3,132	31.32
1985	6.16	1.23	.65	8.04	804	1,916[1]	2,720	27.20
1986	4.48	1.37	.67	6.52	652	2,307[1]	2,959	29.59
1987	4.80	1.60	.80	7.20	720	2,544[1]	3,264	32.60

* 1976 data are not available.
1 Not comparable to previous data. Ownership costs based on a 6 year or 60,000 mile retention cycle.
Note: Vehicles specified are intermediate size.
Source: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts & Figures*, 1988, p. 44.

Table 20. Annual Fixed Cost of Operating a Passenger Car, 1977-1987*

Year	Insurance			License and Registration	Depreciation	Finance Charge	Total	Average Fixed Cost Per Day
	Fire & Theft[1]	Collision[2]	Property Damage[3] and Liability					
1977	$80	$188	$250	$ 74	$ 847	-	$1,439	$3.94
1978	57	138	229	74	894	-	1,392	3.81
1979	74	168	241	90	942	$296	1,811	4.96
1980	70	172	248	82	1,038	423	2,033	5.57
1981	76	180	254	88	1,287	490	2,375	6.51
1982	53	153	243	54	1,356	539	2,398	6.57
1983	80	201	222	102	1,343	558	2,506	6.87
1984	80	200	225	106	1,207	528	2,346	6.43
1985	92	198	213	115	1,253	570	2,441	6.69
1986	86	191	232	130	1,320	637	2,596	7.11
1987	87	196	252	140	1,506	601	2,782	7.62

* 1976 data are not available.
1 $50 deductible 1977, $100 deductible 1978 through 1986.
2 $100 deductible 1977, $250 deductible 1978 through 1986.
3 Coverage: 1977 to 1986-$100,000/$300,000.
Note: Vehicles specified are intermediate size.
Source: Motor Vehicle Manufacturers Association of the U.S., Inc., *Facts & Figures*, 1988, p. 44.

SUPPLEMENTARY DATA
Section I: Transportation and the Economy 1976-1986/1987

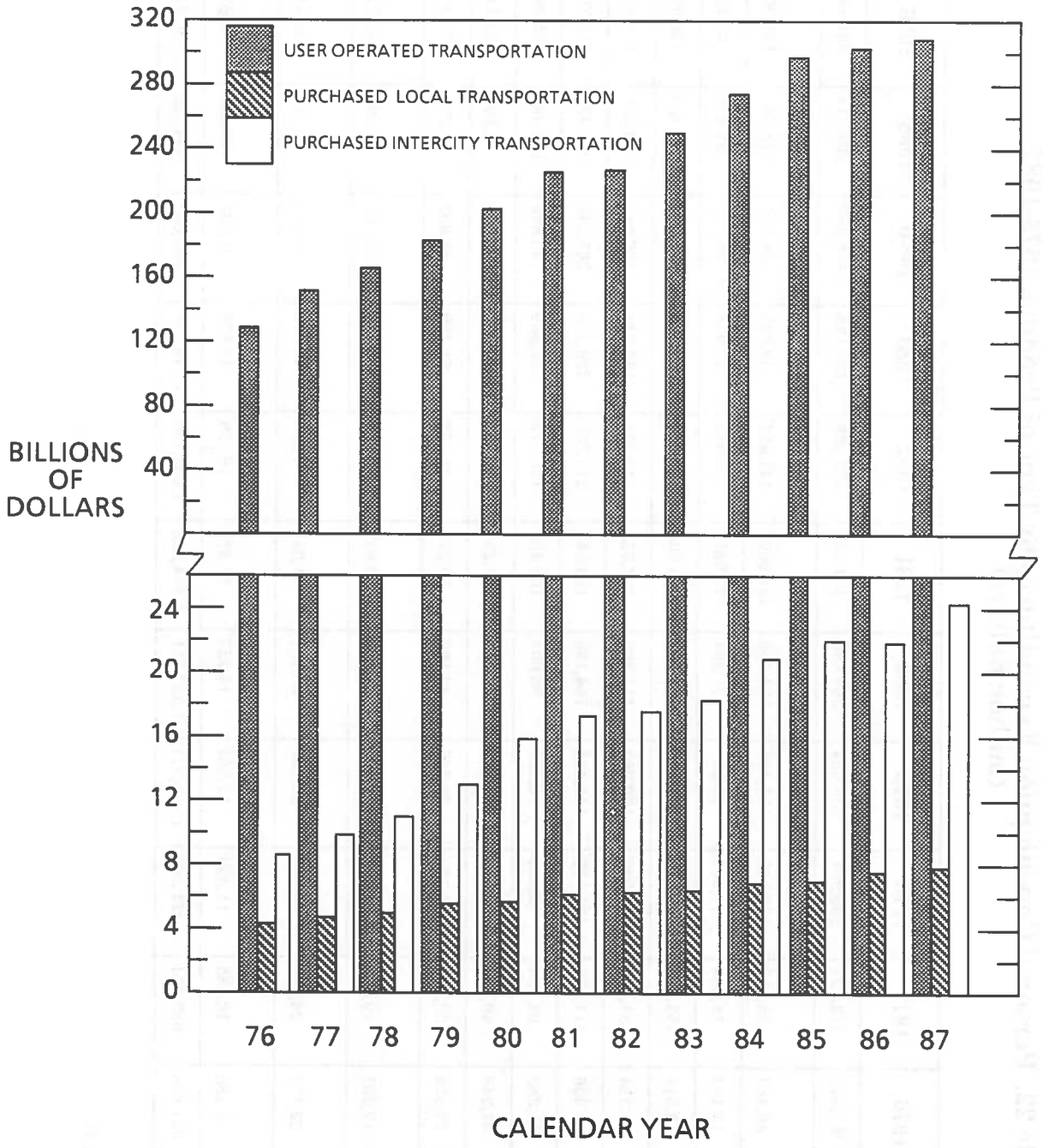


Figure 18. Personal Consumption Expenditures by Transportation Sector, 1976-1987

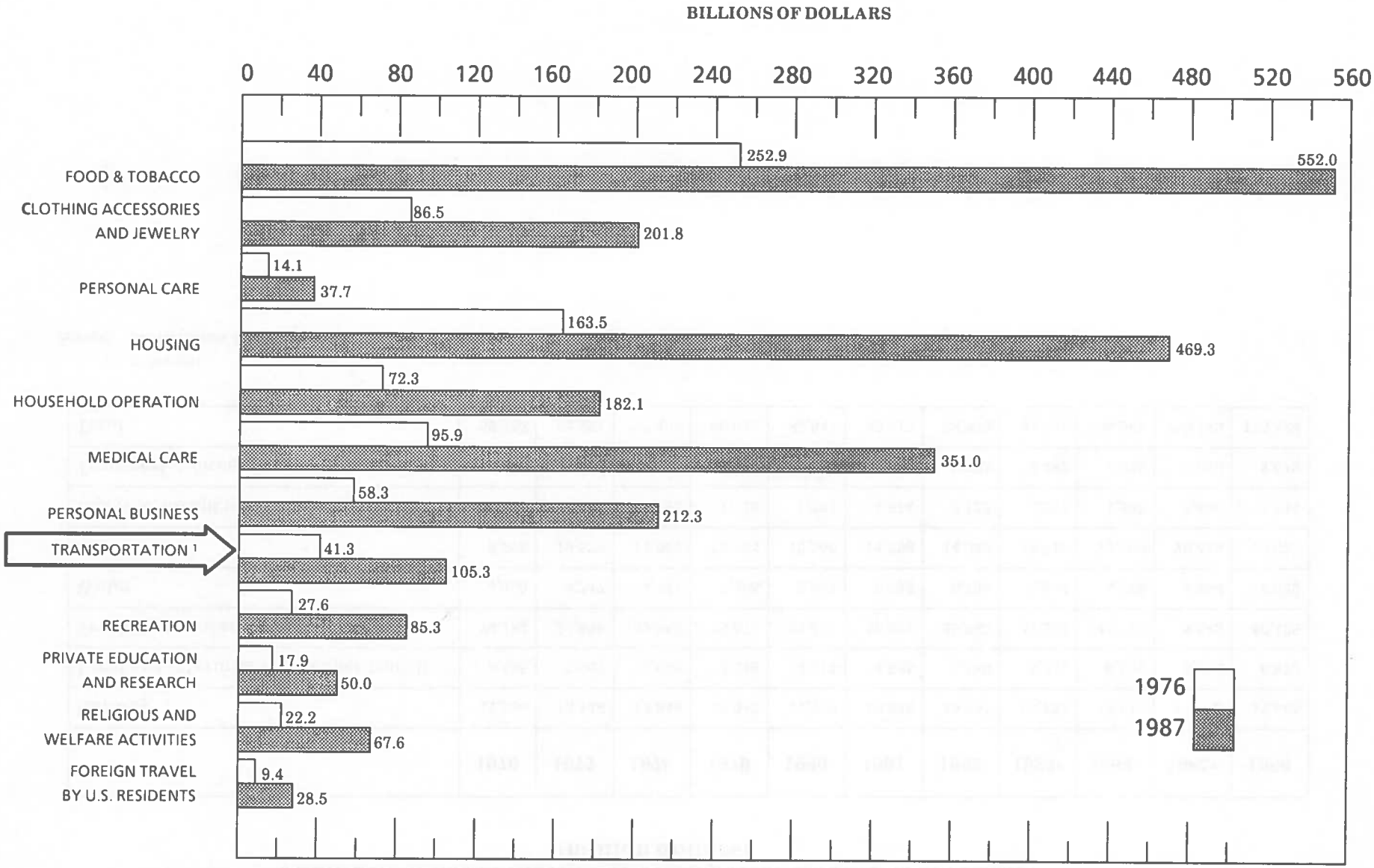


Figure 19. Personal Consumption Expenditures by Type of Product, 1976 and 1987

[1] Excluding Foreign Travel

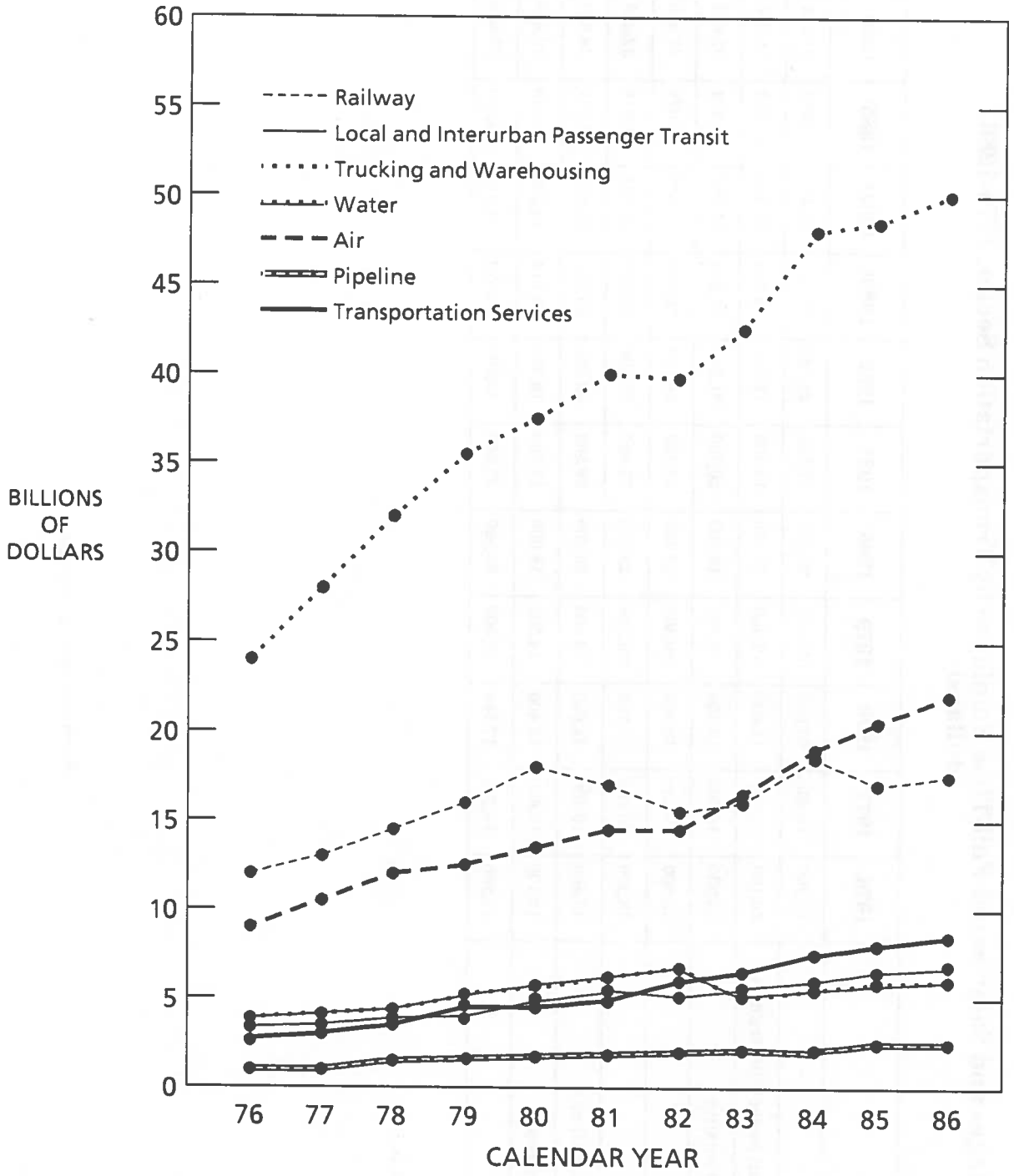


Figure 20. National Income by Transportation Sector, 1976-1986

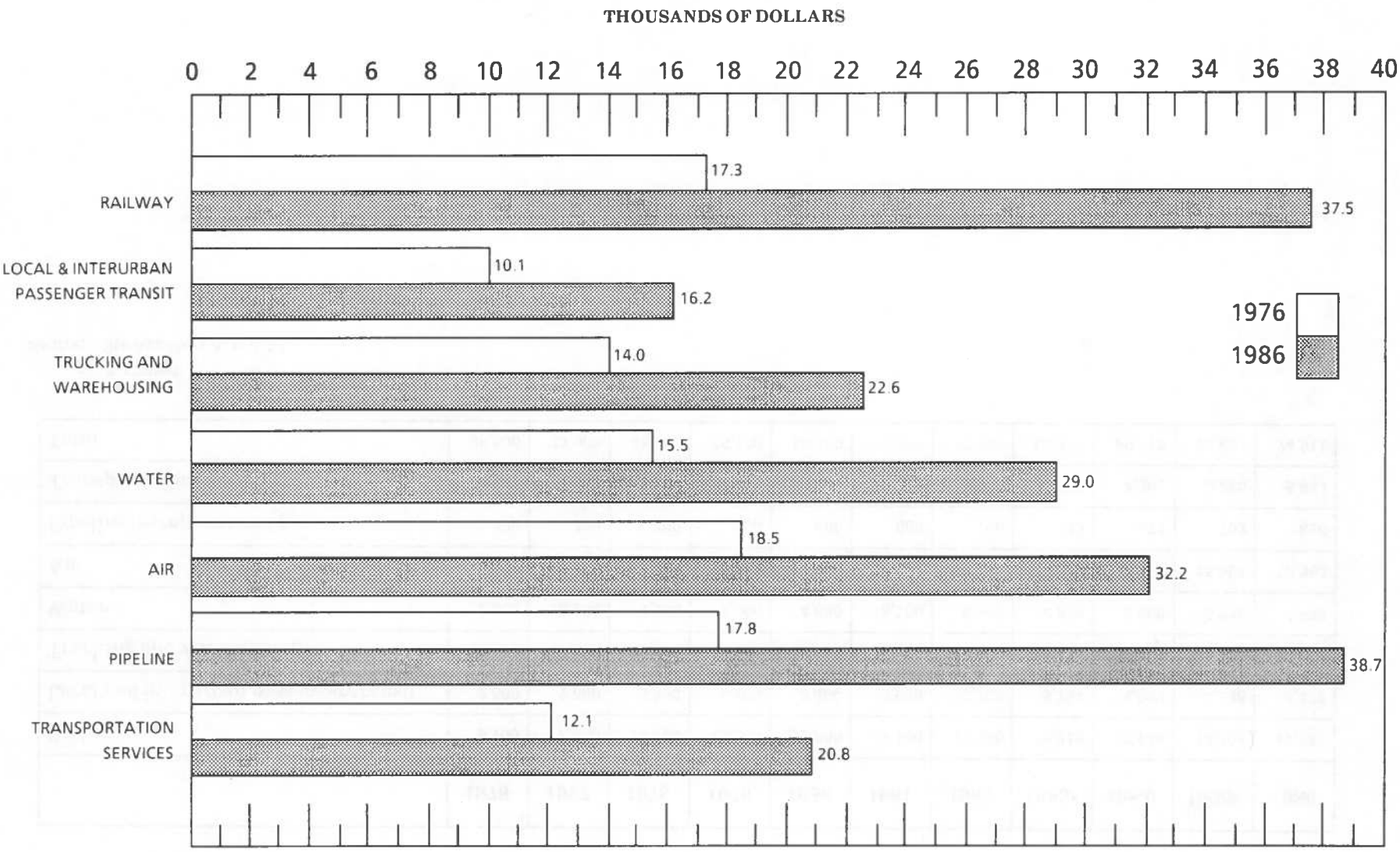


Figure 21. Wages and Salaries per Full-Time Employee by Transportation Sector, 1976 and 1986

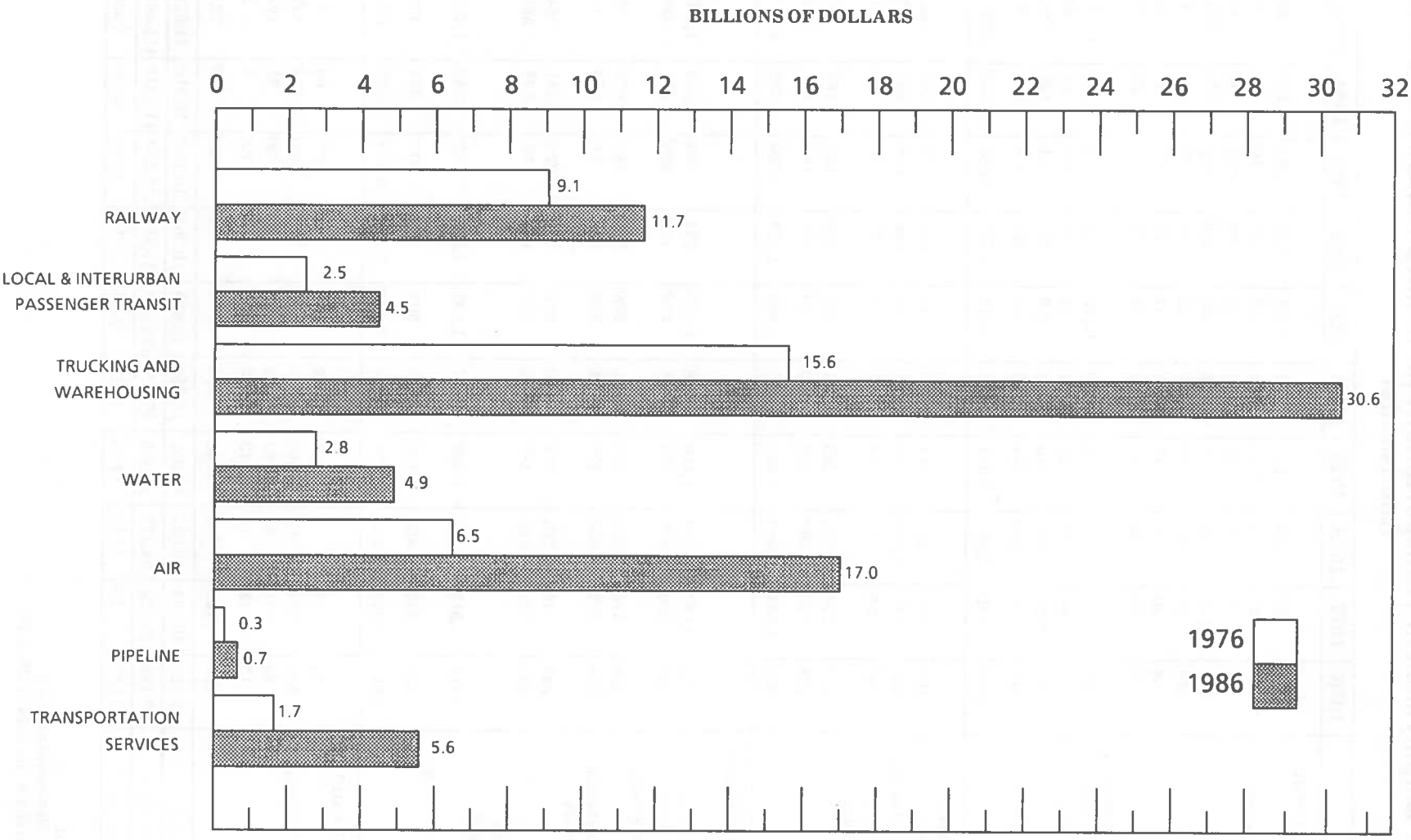


Figure 22. Wages and Salaries by Transportation Sector, 1976 and 1986

Table 27. National Transportation and Economic Trends, 1976-1986 (billions)

	1976	1977	1978	1979	1980	1981	1982	1983	1984[r]	1985[r]	1986
Total passenger-miles[r]	2,677	2,762	2,873	2,827	2,814	2,855	2,946	3,036	3,116	3,225	3,354
Index *	148	153	158	156	155	157	162	167	172	178	185
Total revenue ton-miles	2,787	2,899	3,284	3,387	3,395	3,345	3,126	3,243	3,388	3,331	3,352
Index *	123	128	145	149	150	147	138	143	149	147	148
Population (millions)	218	220	223[r]	225	228	230	233	235	237	239	242
Index *	110	111	112	113	115[r]	116	117	118[r]	119	120	122
Industrial production											
Index **	93	100	107	111	109	111	103	109	122	124	125
Gross national product											
(current dollars)	1,783	1,991	2,250	2,508	2,732	3,053	3,166	3,406	3,772	4,010	4,235
Index *	223	249	281	314	342	383	397	426	472	501	530
(constant 1982 dollars)	2,827	2,959	3,115	3,192	3,187	3,249	3,166	3,279	3,501	3,608	3,713

r = revised.
* Index = 100 in 1967.
** Index = 100 in 1977.
Source: See Appendix A, p. A-27.

Table 29. Expenditures and Overseas Travel by U.S. Residents and Foreign Visitors, 1976-1986

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985[r]	1986[p]
U.S. residents- Overseas travelers (thousands)	6,897	7,390	7,790	7,835	8,163	8,040	8,510	9,628	11,252[r]	12,309	11,562
Average expenditures Overseas (dollars)	533	543	604[r]	672[r]	726[r]	802[r]	827[r]	798[r]	830[r]	825	n/a
Total travel and passenger fare transactions (million dollars)	9,424	10,199	11,371	12,597	14,004	15,966	17,166	19,040[r]	21,951[r]	23,795	24,469
Travel payments in foreign countries (million dollars)	6,856	7,451	8,475	9,413	10,397	11,479	12,394	13,556	15,449	16,482	17,627
Passenger fare payments to foreign countries (million dollars)	2,568	2,748	2,896	3,184	3,607	4,487	4,772	5,484	6,502	7,313	6,842
Foreign visitors to U.S. (thousands)	4,456	4,509	5,764	7,230	7,706[r]	8,069	8,761	7,873	7,527	7,538	8,860
Average expenditures of visitors (dollars)	537	595	604	605	662[r]	713	761	799	844	877	n/a
Total travel and passenger fare transactions (million dollars)	6,697	7,175	8,421	10,118	10,650	13,488	15,085	13,932	13,891[r]	14,171	15,924
Travel receipts in U.S. (million dollars)	5,742	6,150	7,183	8,441	10,588	12,913	12,393	11,408	11,353	11,675	12,913
Passenger fare receipts in U.S. (million dollars)	937	1,025	1,238	1,677	2,062	2,575	2,692	2,524	2,538	2,496	3,011

p = preliminary.
r = revised.
n/a = not available.
Source: See Appendix A, p. A-27.

SUPPLEMENTARY DATA
Section II: Energy in Transportation

Part 1. Energy Consumption

Table 32. Coal Consumption by End-Use Sector (at 5-Year Intervals 1955-1970 and Annually 1971-1987) (million short tons)

Year	Industry and Miscellaneous						
	Electric Utilities	Coke Plants	Other Industry and Miscellaneous	Total	Transportation	Residential and Commercial	Total
1955	143.8	107.7	110.1	217.8	17.0	68.4	447.0
1960	176.7	81.4	96.0	177.4	3.0	40.9	398.1
1965	244.8	95.3	105.6	200.8	0.7	25.7	472.0
1970	320.2	96.5	90.2	186.6	0.3	16.1	523.2
1971	327.3	83.2	75.6	158.9	0.2	15.2	501.6
1972	351.8	87.7	72.9	160.6	0.2	11.7	524.3
1973	389.2	94.1	68.0	162.1	0.1	11.1	562.6
1974	391.8	90.2	64.9	155.1	0.1	11.4	558.4
1975	406.0	83.6	63.6	147.2	*	9.4	562.6
1976	448.4	84.7	61.8	146.5	*	8.9	603.8
1977	477.1	77.7	61.5	139.2	*	9.0	625.3
1978	481.2	71.4	63.1	134.5	*	9.5	625.2
1979	527.1	77.4	67.7	145.1	*	8.4	680.5
1980	569.3	66.7	60.3	127.0	*	6.5	702.7
1981	596.8	61.0	67.4	128.4	*	7.4	732.6
1982	593.7	40.9	64.1	105.0	*	8.2	706.9
1983	625.2	37.0	66.0	103.0	*	8.4	736.7
1984	664.4	44.0	73.7	117.8	*	9.1	791.3
1985	693.8	41.1	75.4	116.4	*	7.8	818.0
1986[r]	685.1	36.0	75.6	111.6	*	7.7	804.3
1987[p]	718.0	36.4	74.5	110.9	*	7.0	835.9

r = revised.
p = preliminary, except for Electric Utilities which is final.
* = less than 0.05 million short tons. Quantities are included in the Other Industry and Miscellaneous category.
Source: U.S. DOE/EIA, *Annual Energy Review 1987*, Table 76.

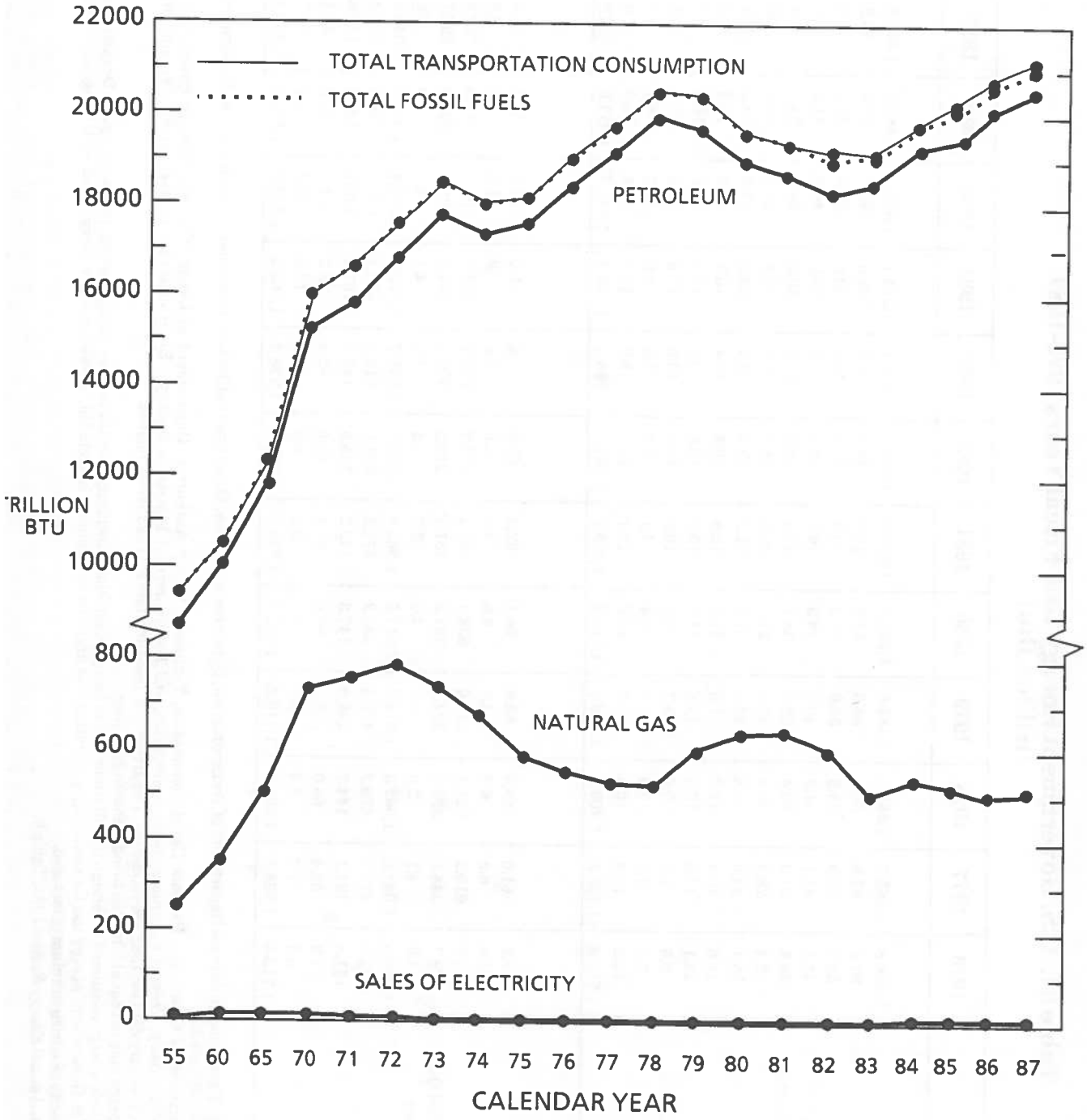


Figure 23. U.S. Energy Consumption by the Transportation Sector, 1955-1987

Table 35. U.S. Government Energy Use by Agency, by Source, Fiscal Years 1977 and 1987 (trillion Btu)

	Petroleum							
	Motor Gasoline	Distillate and Residual Fuel Oils	Other[1]	Total	Electricity	Natural Gas	Coal and Other[2]	Total
1977								
Defense	31.9	308.4	623.3	936.6	291.2	98.0	45.7	1,398.4
Energy	1.3	5.2	0.4	6.9	51.4	9.9	19.7	87.9
Postal Service	10.8	3.8	0.1	14.7	42.2	4.4	1.6	62.9
Veterans Administration	0.6	7.3	0.0	7.9	16.4	12.0	1.7	37.9
General Services Administration	0.2	2.7	0.0	2.9	29.3	4.1	4.9	41.1
Transportation	1.6	8.3	5.7	15.5	11.7	1.2	0.3	28.8
NASA	0.4	1.5	1.3	3.2	16.5	3.1	1.2	24.0
Agriculture	4.9	1.2	0.3	6.3	2.7	1.7	0.0	10.8
Interior	2.8	2.5	0.6	5.9	5.6	1.9	0.1	13.5
Health and Human Services	0.7	3.1	0.1	3.9	4.2	1.7	0.1	9.9
Justice	2.0	0.9	0.1	3.0	2.3	1.9	0.5	7.5
Other[3]	3.8	3.7	0.4	7.9	6.3	1.3	0.4	15.9
Total	60.9	348.5	632.1	1,041.6	479.7	141.2	76.1	1,738.6
1987[p]								
Defense	20.2	273.0	697.5	1,990.7	352.6	100.4	54.2	1,497.8
Energy	1.4	3.1	0.6	5.1	63.5	6.4	18.5	93.2
Postal Service	9.2	3.9	0.2	13.3	34.9	4.3	1.0	53.4
Veterans Administration	0.5	2.4	0.0	2.9	24.3	13.7	1.2	42.0
General Services Administration	0.1	0.5	0.0	0.6	26.3	2.4	3.0	32.4
Transportation	1.2	7.5	5.4	14.1	13.1	1.1	0.0	28.3
NASA	0.2	0.9	1.3	2.3	19.7	2.6	0.4	25.1
Agriculture	3.4	0.3	0.2	3.9	5.9	1.6	0.0	16.4
Interior	2.0	1.3	0.9	4.2	4.2	1.0	0.2	9.7
Health and Human Services	0.4	2.5	0.1	3.0	6.6	1.6	0.0	11.2
Justice	1.9	0.4	0.1	2.4	4.1	1.7	0.5	8.7
Other[3]	3.0	1.9	0.7	5.7	8.1	1.5	1.3	17.1
Total	43.5	297.7	707.0	1,048.2	563.3	138.0	80.2	1,830.3

p = preliminary. Energy usage data for Department of Defense, Department of Labor, Department of Justice, Department of Transportation, and Department of Treasury are estimated.

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

2 Includes purchased steam, coal and other.

3 Includes Department of Commerce, Panama Canal Commission, Tennessee Valley Authority, Department of Labor, National Science Foundation, Department of Treasury, Federal Communications Commission, and Environmental Protection 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 1987*, Table 9.

Table 37. Fuel Consumption by Certificated Air Carriers, 1976-1986
(scheduled and nonscheduled service)
(thousand gallons)

Year	Total Certificated Route Air Carriers	Domestic Operations				International Operations		
		Passenger/Cargo Carriers						
		Total Domestic Operations	Majors[1]	Nationals[2]	Other[3]	Total Int'l Operations	Majors[4]	Other
1976	9,808,051	8,008,306	7,043,139	766,019	109,149	1,799,745	1,635,266	164,479
1977	10,268,024	8,416,730	7,373,856	828,195	214,679	1,851,294	1,683,513	167,781
1978	10,639,227	8,726,033	7,527,587	918,531	279,915	1,913,194	1,741,918	171,276
1979	11,368,702	9,376,064	7,848,761	1,017,118	510,185	1,992,638	1,830,001	162,637
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

[1] Prior to 1981, categorized as domestic trunk.
[2] Prior to 1981, categorized as local service.
[3] Prior to 1981, included helicopter carriers.
[4] Prior to 1981, categorized as international trunk.

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

Source: 1976-1984: *CAB, Fuel Cost and Consumption, Twelve Months Ended December 31, 1984*, Tables 1, 2, 3 ,4 ,6, 7, and similar tables in earlier editions.
1985-1986: U.S. DOT/RSPA, DAI-1, *Ibid., Twelve Months Ended December 31, 1986*.

Table 39. Fuel Consumption and Travel by Personal Passenger Vehicles, 1976-1986

Year	Number Registered[1] (thousands)	Total[1] Vehicle Miles Traveled (millions)	Average Miles Traveled per Vehicle		Average Miles Traveled per Gallon		Total 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
1976	115,122	1,084,218	9,785	1,217	13.53	50	79,693	120	723	24
1977	117,221	1,115,592	9,879	1,287	13.80	50	80,397	127	716	26
1978	121,441	1,153,666	9,835	1,470	14.04	50	81,661	143	701	29
1979	123,851	1,122,277	9,403	1,593	14.41	50	77,304	173	653	32
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	1,312,921	9,625	1,789	18.32	50	71,162	188	525	36

[1] Includes motorcycles.

Source: 1976-1985: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985,* Table VM-201A.
1986: *Ibid.*, *Highway Statistics*, 1986, Table VM-1.

Table 41. Fuel Consumption and Travel by Motor Trucks, 1976-1986

Year	Number Registered (thousands)	Total Vehicle Miles Traveled (millions)	Average Miles Traveled per Vehicle			Average Miles Traveled per Gallon			Total Fuel Consumed (million gallons)			Average Gallons of Fuel Consumed per Vehicle		
			Single-unit* Trucks	Combi-nations	All Trucks	Single-unit* Trucks	Combi-nations	All Trucks	Single-unit Trucks	Combi-nations	All Trucks	Single-unit* Trucks	Combi-nations	All Trucks
1976	27,876	311,904	10,127	40,558	11,189	11.20	5.21	8.95	25,304	9,536	34,840	904	7,785	1,250
1977	29,314	345,612	10,607	44,919	11,790	11.44	5.22	9.06	27,454	10,673	38,127	927	8,610	1,301
1978	31,336	385,153	10,968	46,949	12,291	11.62	5.20	9.11	30,162	12,112	42,274	944	9,028	1,349
1979	32,913	400,909	10,802	48,322	12,181	11.80	5.21	9.19	30,778	12,864	43,642	916	9,279	1,326
1980	33,667	399,426	10,437	48,472	11,864	12.33	5.41	9.54	29,157	12,703	41,854	846	8,966	1,243
1981	34,644	405,045	10,244	54,816	11,692	12.51	5.33	9.59	29,271	12,960	42,231	819	10,276	1,219
1982	35,382	413,021	10,276	52,689	11,673	12.84	5.28	9.80	29,505	12,636	42,141	800	9,987	1,191
1983	36,723	440,806	10,497	53,491	12,004	12.82	5.19	9.77	31,674	13,447	45,121	819	10,312	1,229
1984	37,507	481,926	11,150	57,730	12,849	12.93	5.23	9.83	34,269	14,781	49,050	862	11,030	1,308
1985	39,196	499,652	11,115r	56,725	12,747	12.86	5.21	9.79	35,757r	15,280	51,037r	857	10,889	1,302
1986	40,166	520,232	11,286	59,113	12,952	12.89	5.22	9.83	37,108	15,835	52,943	869	11,319	1,318

* Averages are for 2-axle, 4-tire single unit trucks.

r = revised.

Source: 1976-1984: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.
1985-1986: *Ibid.*, *Highway Statistics*, 1986, Table VM-1.

Table 43. Average Retail Price of Transportation Fuel (¢/gal.), 1976-1987

Year	Aviation Fuels			Highway Fuels				Railroad Fuel	Marine
		Jet Fuel		Motor Gasoline					
	Aviation Gasoline	Naphtha*	Kerosene	Regular	Premium	Unleaded	Truck No. 2 Diesel	Diesel	Bunker 'C' Fuel
1976	43.1	31.5	31.2	59.0	63.6	61.4	34.7	32.38	24.83
1977	47.7	35.0	35.8	62.2	67.4	65.6	39.3	36.38	27.74
1978	51.6	37.5	38.7	62.6	69.4	67.0	37.7	37.90	25.74
1979	68.9	52.3	54.7	85.7	92.2	90.3	58.5	57.58	35.91
1980	108.4	88.2	86.8	119.1	128.1	124.5	81.8	83.00	47.11
1981	130.3	105.7	102.4	131.1	147.0	137.8	99.5	100.23	62.66
1982	131.2	97.7	96.3	122.2	141.5	129.6	94.2	95.43	56.21
1983	125.5	n/a	87.8	115.7	138.3	124.1	82.6	83.12[r]	51.43
1984	123.4	n/a	84.2	112.9	136.6	121.2	82.3	82.57[r]	60.64
1985	120.1	n/a	79.6	111.5	134.0	120.2	78.9	78.34[r]	52.76
1986	101.1	n/a	52.9[r]	85.7	108.5	92.7	47.8[r]	49.23[r]	29.00[r]
1987	90.5	n/a	54.3	89.7	109.3	94.8	54.9	n/a	39.00

r = revised.
n/a = not available.
* Naphtha jet fuel data is no longer collected by the U.S. DOE after 1982.

Source: Railroad Fuel, Diesel: 1976-1987: Association of American Railroads, *Railroad Ten-Year Trends*, 1986, p. 79.
Marine: 1976-1978: U.S. DOE/EIA, *Monthly Energy Review*, December 1980.
1979-1987: *Platt's Oil Price Handbook*; estimated by Transportation Policy Associates.
Other data: 1976-1987: *Ibid.*, *Monthly Energy Review*, December issues, Tables 9.4/9.7 and similar tables in earlier editions.

Table 45. Price Trend of Gasoline vs. Other Consumer Goods and Services (at 5-Year Intervals 1955-1970 and Annually 1971-1987)

	Retail Price of Regular Grade Gasoline (Cents Per Gallon)			Price Indexes of Regular and Premium Gasoline and Other Consumer Items (Index: 1967 = 100)					
Year	Service Station Price Excl. Taxes	State and Federal Taxes	Service Station Price Incl. Taxes	All Items	Food	Rent	Apparel and Upkeep	Regular and Premium Gasoline	Entertainment*
1955	21.42	7.65	29.07	80.2	81.6	84.3	84.1	83.6	76.7
1960	20.99	10.14	31.13	88.7	88.0	91.7	89.6	92.5	87.3
1965	20.70	10.45	31.15	94.5	94.4	96.9	93.7	94.9	95.9
1970	24.55	11.14	36.69	116.3	114.9	110.1	116.1	105.6	116.7
1971	25.20	11.23	36.43	121.3	118.4	115.2	119.8	106.3	122.9
1972	24.46	11.67	36.13	125.3	123.5	119.2	122.3	107.6	126.5
1973	26.88	11.94	38.83	133.1	141.4	124.3	126.8	118.1	130.0
1974	41.20	12.00	53.20	147.7	161.7	130.6	136.2	159.9	139.8
1975	44.93	11.77	56.70	161.2	175.4	137.3	142.3	170.8	152.2
1976	47.44	12.03	59.47	170.5	180.8	144.7	147.6	100.0	159.8
1977	49.83	12.37	62.20	181.5	192.2	153.5	154.2	106.9	167.7
1978	49.98	12.62	62.60	195.4	211.4	164.0	159.6	111.8	176.6
1979	72.24	13.46	85.70	217.4	234.5	176.0	166.6	150.4	188.5
1980	107.35	14.37	119.10	246.8	254.6	191.6	178.4	210.0	205.3
1981	122.33e	12.97e	131.10	272.4	274.6	208.2	186.9	234.4	221.4
1982	108.11e	14.09e	122.20	289.1	285.7	224.0	191.8	224.9	235.8
1983	95.36r	20.34er	115.70r	298.4	291.7	236.9	196.5	217.8	246.0
1984	92.06r	20.84r	112.90	311.1	302.9	249.3	200.2	216.3	255.1
1985	89.64r	21.86r	111.50	322.2	309.8	264.6	206.0	215.1	265.0
1986	63.63r	22.07r	85.70r	328.4	319.7	280.0	207.8	237.9	274.1
1987	n/a	n/a	n/a	340.4	333.0	291.5	216.9	n/a	283.2

r = revised.
n/a = not available.
e = estimated by Transportation Policy Associates.
* Includes reading materials, sporting goods, toys and hobbies, and entertainment services.
Note: In 1976, regular and premium gasoline reverted to an index of 100.
Source: Price of Regular Grade Gasoline: 1955-1980: American Petroleum Institute, *Basic Petroleum Data Book*, Section VI, Table 4/4a.
1981-1982: U.S. DOL: Bureau of Labor Statistics, personal communication (December 31 figures).
1983-1986: American Petroleum Institute, *Basic Petroleum Data Book*, Section VI, Table 5a.
Price Indexes of Gasoline/Consumer Items: 1955-1987: U.S. DOL: Bureau of Labor Statistics, *Consumer Price Index, All Urban Consumers*, U.S. City Averages.

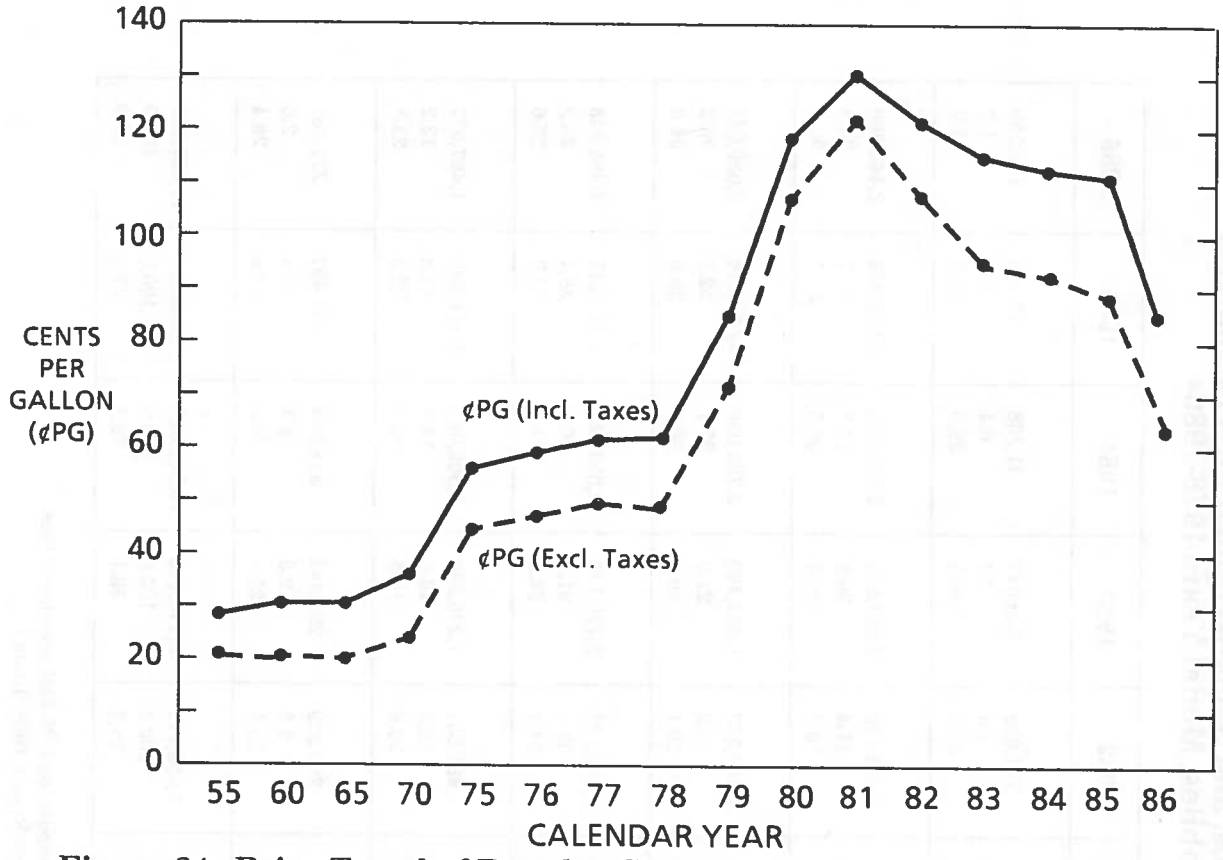


Figure 24. Price Trend of Regular Grade Gasoline Prices, 1955-1986

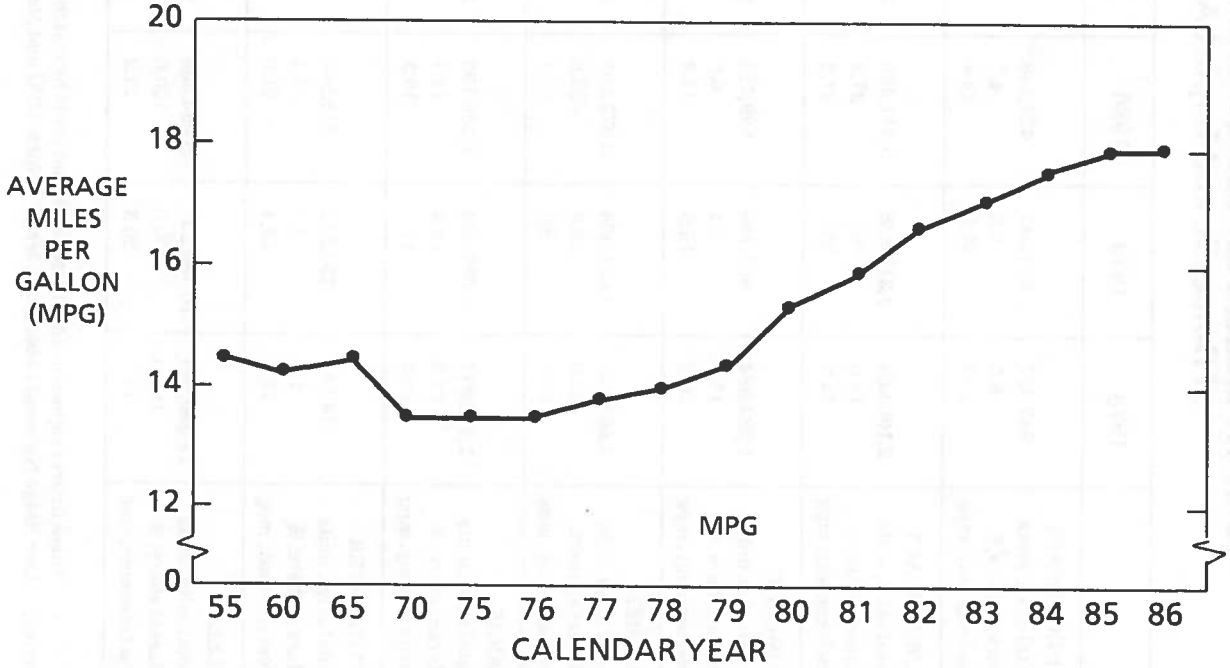


Figure 25. Average Fuel Efficiency of U.S. Passenger Cars, 1955-1986

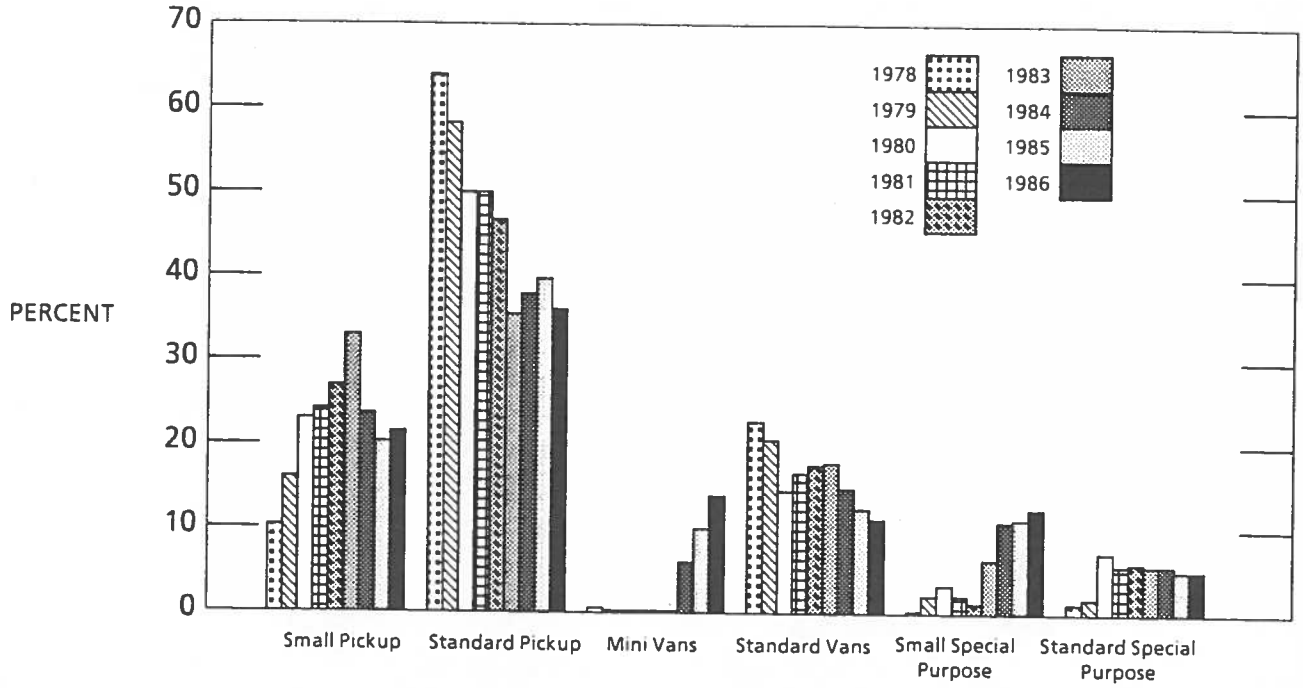
Table 48. Model Year Sales, Market Shares, and Sales-Weighted Fuel Economies of Domestic and Import Trucks, Model Years 1978-1986[a]

	1978	1979	1980	1981	1982	1983	1984	1985	1986
SMALL PICKUP									
Total sales, units	308,790	451,548	516,412	472,611	579,263	894,432	857,804	863,584	981,857
Market share, %	10.5	16.1	23.3	24.4	27.2	33.3	23.7	20.4	21.7
Fuel economy, mpg	26.9	23.6	25.5	28.1	28.1	27.2	27.0	26.8	25.4
STANDARD PICKUP									
Total sales, units	1,886,782	1,635,745	1,115,248	967,242	1,000,772	958,408	1,375,948	1,690,931	1,593,512
Market share, %	64.2	58.4	50.3	50.0	46.9	35.7	38.1	39.9	35.1
Fuel economy, mpg	16.6	15.8	17.0	18.5	18.6	18.3	18.3	19.0	19.3
MINI VAN									
Total sales, units	19,476	18,153	13,649	11,007	11,964	13,716	222,798	437,660	640,936
Market share, %	0.7	0.6	0.6	0.6	0.6	0.5	6.2	10.3	14.1
Fuel economy, mpg	19.5	17.9	19.6	18.8	22.5	21.0	25.0	24.3	23.8
STANDARD VAN									
Total sales, units	670,453	580,883	328,065	327,730	379,110	484,349	545,595	536,242	510,558
Market share, %	22.8	20.7	14.8	16.9	17.8	18.0	15.1	12.7	11.3
Fuel economy, mpg	16.4	14.9	16.3	17.4	17.0	17.2	16.3	16.4	17.3
SMALL SPECIAL PURPOSE									
Total sales, units	11,588	61,796	79,776	42,813	31,226	174,982	399,611	477,706	568,322
Market share, %	0.4	2.2	3.6	2.2	1.5	6.5	11.1	11.3	12.5
Fuel economy, mpg	15.7	17.0	16.7	19.5	20.0	22.6	22.8	22.1	21.3
STANDARD SPECIAL PURPOSE									
Total sales, units	40,091	53,038	163,387	114,013	130,505	161,412	211,178	229,242	239,508
Market share, %	1.5	1.9	7.4	5.9	6.1	6.0	5.8	5.4	5.3
Fuel economy, mpg	15.3	15.2	14.6	16.1	17.0	16.9	15.7	16.6	16.1
FLEET									
Total sales, units	2,941,180	2,801,163	2,216,537	1,935,416	2,132,840	2,687,299	3,612,934	4,235,365	4,534,693
Market share, %	100.0	100.0	10.0	100.0	100.0	100.0	100.0	100.0	100.0
Fuel economy, mpg	17.2	16.5	18.1	19.8	20.0	20.5	20.1	20.4	20.7

[a] These figures represent only those sales that could be matched to corresponding EPA fuel economy values.

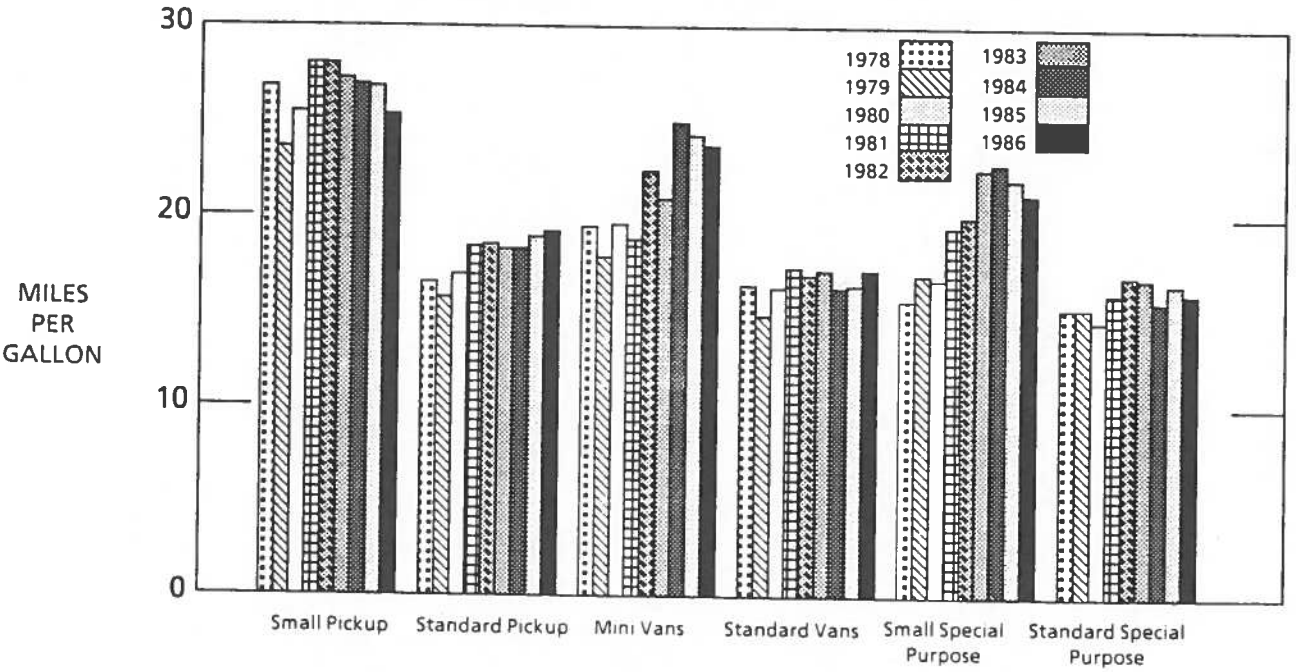
Source: Oak Ridge National Laboratory, *Motor Vehicle MPG and Market Shares Report*, 1986, Table 20.

Figure 28. Market Shares of Domestic and Import Light Trucks by EPA Size Classification, 1978-1986



Source: Oak Ridge National Laboratory, *Motor Vehicle MPG and Market Shares Report*, 1986, p. 61.

Figure 29. Fuel Economies of Domestic and Import Light Trucks by EPA Size Classification, 1978-1986



Source: Oak Ridge National Laboratory, *Motor Vehicle MPG and Market Shares Report*, 1986, p. 62

Part 2. Energy Intensiveness

Table 50. Energy Intensiveness of General Aviation, 1976-1986

Year	Intercity Passenger-Miles (10^6)	Fuel Consumption (million gallons) AVGAS	Jet Fuel	Btu/Passenger Miles
1976	12,100	432	495	9,814
1977	12,800	456	536	9,935
1978	14,100	518	763	11,723
1979	15,500	570	736	10,830
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

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:
1976-1986: TPA, *Transportation In America*, March 1988, p. 8.
Fuel Consumed:
1976-1979: U.S. DOT/FAA, personal communication.
1980-1986: *Ibid.*, Office of Management Systems, *General Aviation Activity and Avionics Survey*, 1980-1987 editions, Tables 2-21 and similar table in earlier editions.

Table 52. Energy Intensiveness of Trucks, 1976-1986

Year	Vehicle Miles (millions)			Fuel Consumed (thousand gal.)			Btu/Vehicle-Mile		
	Single-Unit Trucks	Combinations	All Trucks	Single-Unit Trucks	Combinations	All Trucks	Single-Unit Trucks	Combinations	All Trucks
1976	262,224	49,680	311,904	25,304	9,536	34,840	12,062	26,623	15,146
1977	289,930	55,682	345,612	27,454	10,673	38,127	11,836	26,586	15,301
1978	322,158	62,992	385,153	30,162	12,112	42,274	11,703	26,669	15,224
1979	333,917	66,992	400,909	30,778	12,864	43,642	11,522	26,634	15,099
1980	330,748	68,678	399,426	29,151	12,703	41,854	11,017	25,655	14,534
1981	335,911	69,134	405,045	29,271	12,960	42,231	10,892	26,001	14,461
1982	346,353	66,668	413,021	29,505	12,636	42,141	10,648	26,289	14,152
1983	371,052	69,754	440,806	31,674	13,447	45,121	10,670	26,738	14,197
1984	404,559	77,367	481,926	34,269	14,781	49,050	10,596	26,499	14,117
1985	420,052	79,600	499,652	35,757[r]	15,280	51,037[r]	10,641[r]	26,625	14,167
1986	437,536	82,696	520,232	37,108	15,835	52,943	10,601	26,559	14,115

r = revised.

Note: 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)

Source: 1976-1985: U.S. DOT/FHWA, Highway Statistics, Summary to 1985, Table VM-201A.
1986: *Ibid.*, *Highway Statistics*, 1986, VM-1.

Table 54. Energy Intensiveness of Class I Intercity Buses, 1976-1986

Year	Revenue Passenger-Miles (10^6)	Fuel Consumed (million gallons)	Btu/ Passenger-Mile
1976	16,440	134.8	1,049
1977	17,100	126.4	1,025
1978	16,230	121.9	1,042
1979	17,330	127.4	1,020
1980	17,080	132.2	1,074
1981	15,730	123.0	1,085
1982	16,070	123.1	1,062
1983	14,100	103.4	1,017
1984	13,420	109.6	1,133
1985	12,540	106.3	1,176
1986	12,063	105.1	1,208

Note: The heat equivalent factor used in Btu conversion is 138,700 Btu/gal.
Source: Revenue Passenger-Miles:
1976 - 1980: ABA, *Bus Facts*, 1982, p.5.
1981 - 1982: ABA, personal communication.
1983 - 1986: TPA, personal communication.
Fuel Consumed:
1976 - 1982: ABA, personal communication.
1983 - 1986: TPA, personal communication.

Table 55. Energy Intensiveness of Class I Railroad Freight, 1976-1986

Year	Revenue Freight Ton-Miles (millions)	Fuel Consumed* (million gallons)	Btu/ Revenue Freight Ton-Mile
1976	794,059	3,460	605
1977	826,292	3,537	594
1978	858,105	3,508	567
1979	913,669	3,637	559
1980	918,621	3,567	538
1981	910,169	3,429	523
1982	797,759	2,872	499
1983	828,275	2,872	481
1984	921,542	3,104	467
1985	876,984	2,878	455
1986	867,722	2,787	445

* Diesel fuel only. Does not include electrically powered locomotives.
Note: The heat equivalent factor used for Btu conversion is 138,700 Btu/gal.
Source: Revenue Freight Ton-Miles:
1976-1986: *Railroad Ten-Year Trends*, 1987, p. 81.
Fuel Consumed:
1976-1986: *Railroad Ten-Year Trends*, 1987, p. 80.

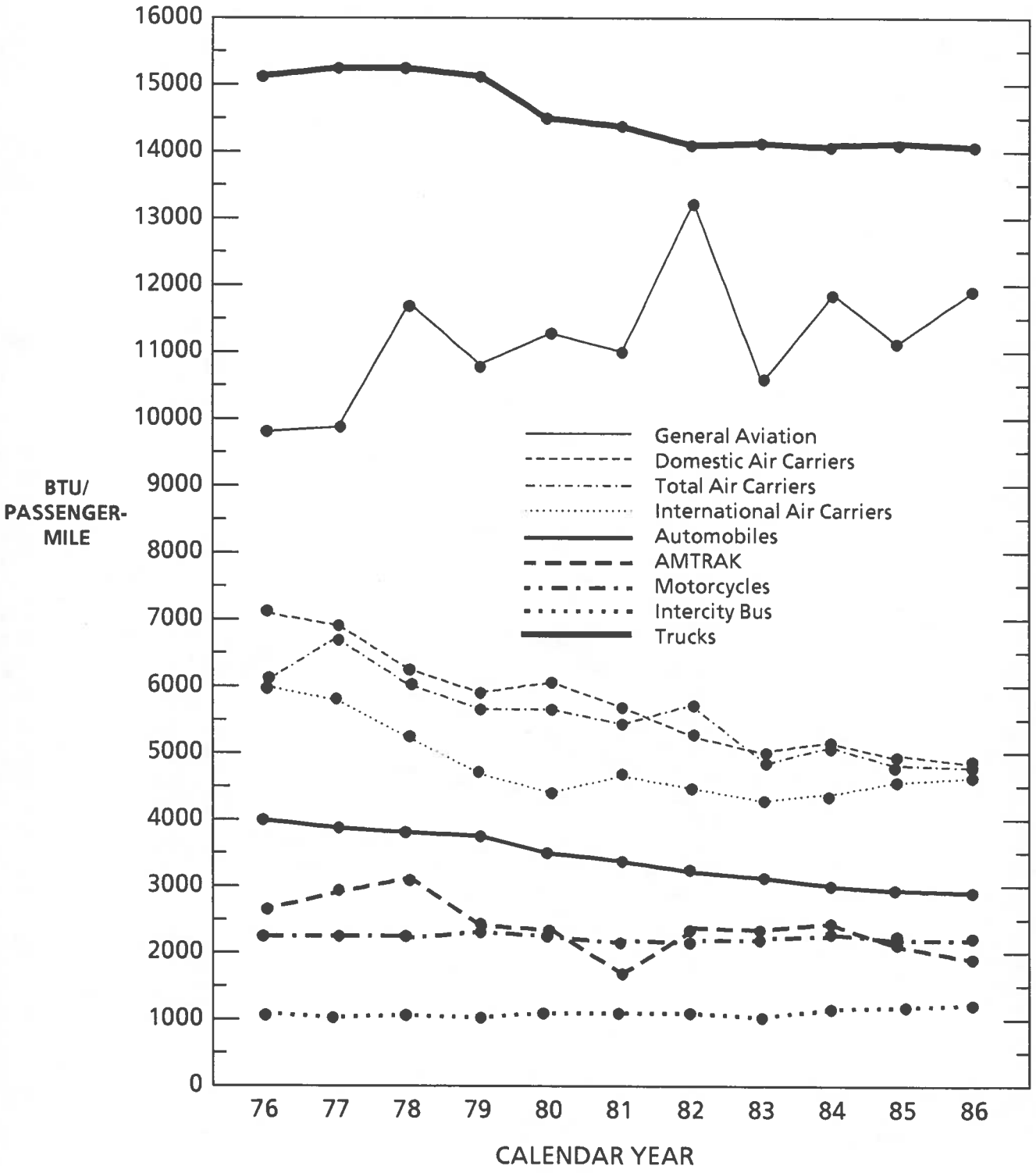


Figure 30. Energy Intensiveness by Passenger Mode, 1976-1986

Part 3. Energy Transport

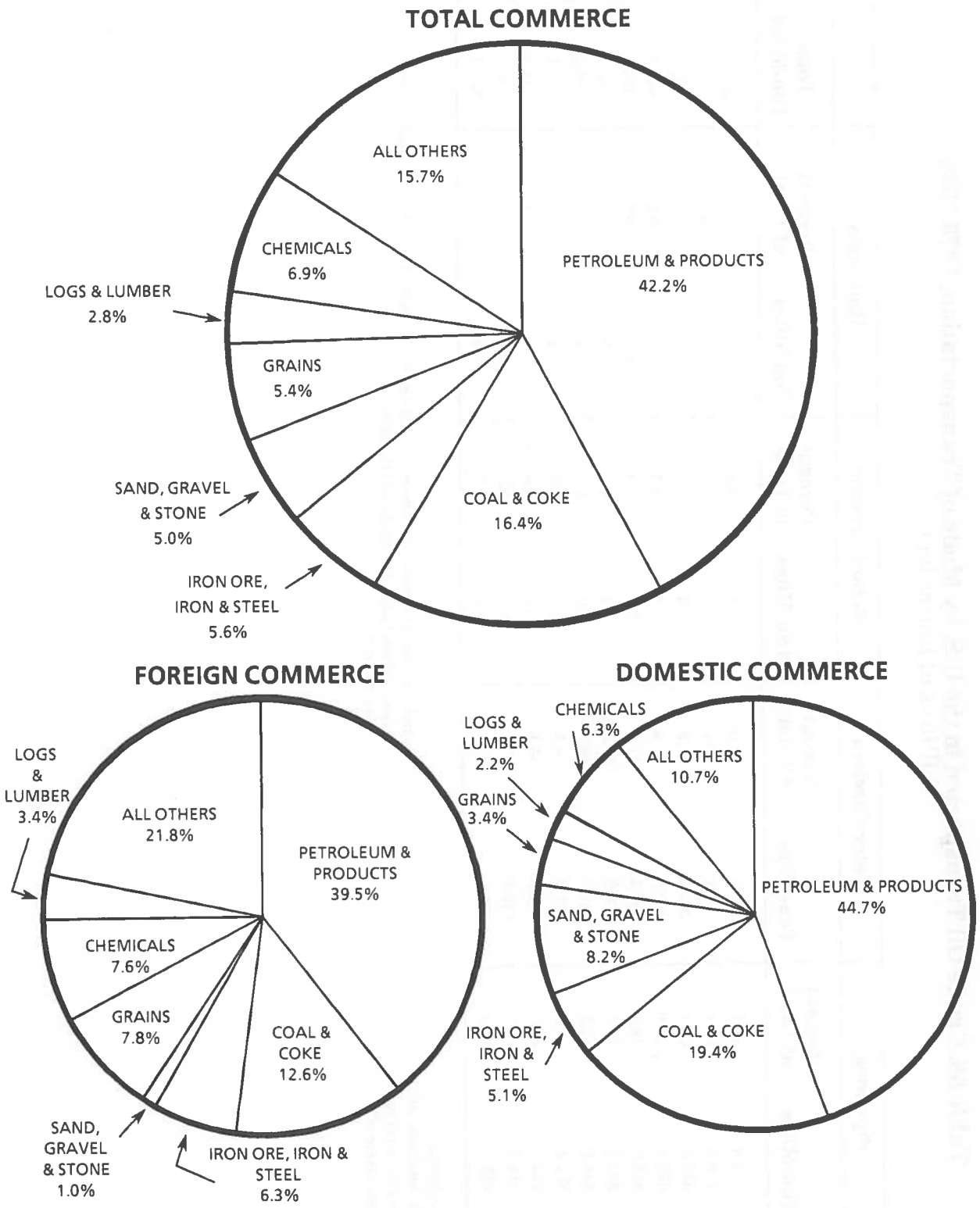


Figure 32. Principal Commodities Carried by Water, 1986

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

Table 59. Refined Petroleum Products Transported in the U.S., 1976-1986 (billions of ton-miles)

	Pipelines[1]		Water Carriers		Motor Carriers[e]		Railroads		
Year	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Ton-Miles	Percent of Total	Total Ton-Miles
1976	212.0	40.5	269.1	51.4	30.4	5.8	12.4	2.3	523.9
1977	219.4	41.3	270.2	50.9	27.6	5.2	13.7	2.6	530.9
1978	226.3	42.2	269.3	50.2	28.6	5.3	12.5	2.3	536.7
1979	236.1	44.2	257.4	48.2	27.8	5.2	12.9	2.4	534.2
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

e = estimate.

1 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: Association of Oil Pipelines, *Shifts in Petroleum Transportation*, 1988, Table 3.

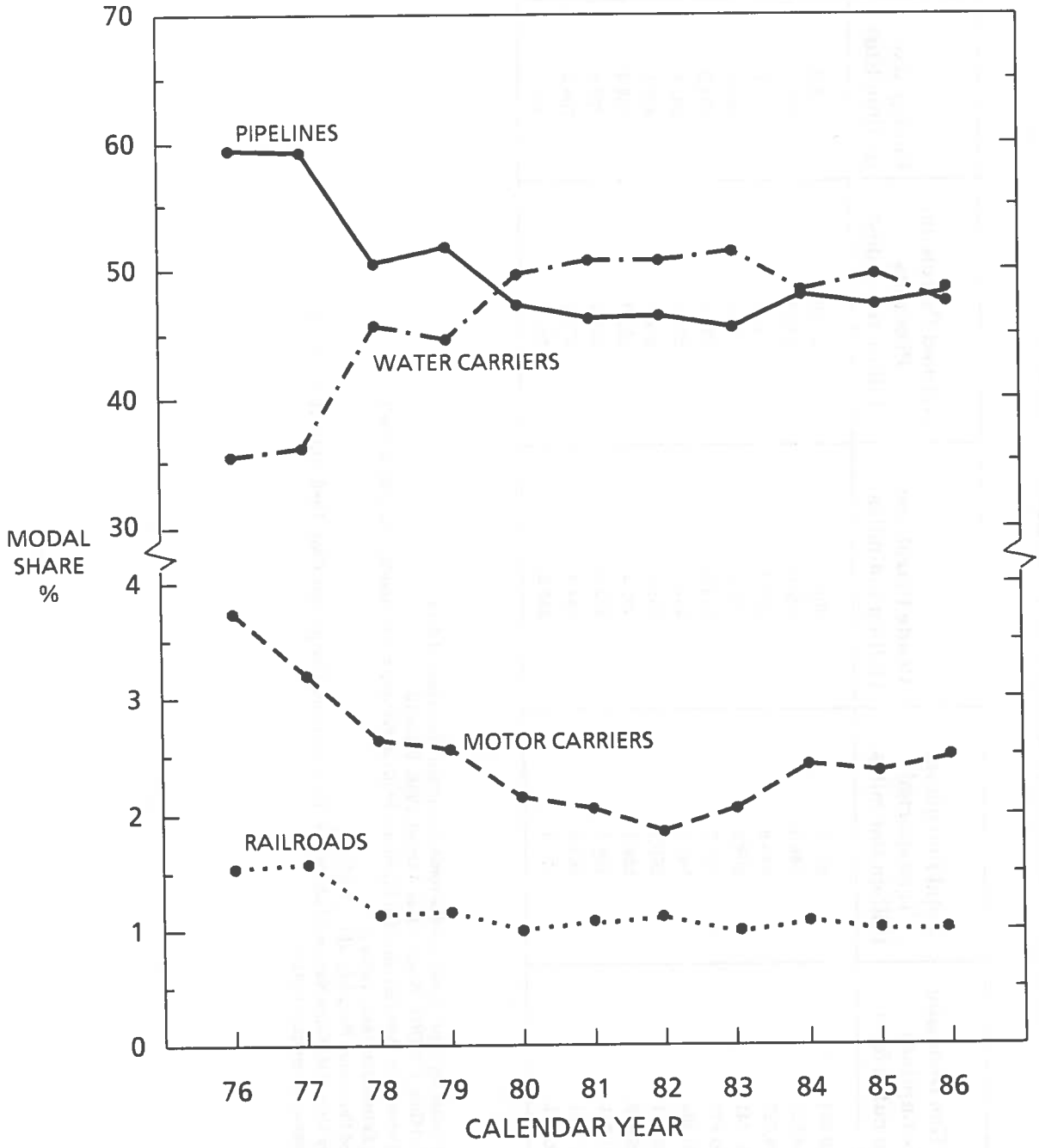


Figure 32. Crude Petroleum and Petroleum Products Transported in the U.S. by Modal Share, 1976-1986

Table 62. U.S. Petroleum Pipeline Mileage, 1970-1986

Year[1]	Crude-Oil Trunk Lines		Refined-Oil Trunk Lines		Total Trunk Lines		Crude-Oil Gathering Lines		Total Petroleum Pipelines	
	FERC* Lines	All Lines[2]	FERC* Lines	All Lines[2]	FERC* Lines	All Lines[2]	FERC* Lines	All Lines[2]	FERC* Lines	All Lines
1970	63,030	75,143	59,335	72,396	122,365	147,539	46,587	71,132	175,735[3]	218,671
1971	60,946	75,512	61,525	74,277	122,471	149,789	45,759	70,110	174,722[3]	219,899
1972	59,757	75,881	64,701	76,158	124,458	152,039	42,893	69,088	173,532[3]	221,127
1973	57,435	76,250	64,919[4]	78,038	122,354[4]	154,288	41,655	69,247	170,691[3]	223,535
1974	57,602	76,824	68,609[4]	79,124	126,211[4]	155,948	41,577	68,764	173,341[3]	224,712
1975	54,658	77,398	66,620[4]	80,210	121,278[4]	157,608	42,582	68,281	172,680[3]	225,889
1976	58,544	77,972	67,913[4]	81,296	126,457[4]	159,268	39,235	67,798	174,072	227,066
1977	59,739	78,483	60,099	74,995	119,838	153,478	34,703	66,580	154,541	220,058
1978	59,981	75,483	65,114	77,314	125,095	152,797	36,539	65,368	161,634	218,165
1979	58,606	71,876	74,261	85,905	132,867	157,781	36,927	58,179	169,794	215,960
1980	59,560	71,568	74,510	88,562	134,070	160,130	35,279	58,263	169,349	218,393
1981	57,904	68,486	76,353	89,456	134,257	157,942	38,558	57,099	172,815	215,041
1982	59,567	69,529	77,402	90,727	131,969	160,256	35,580	53,421	172,549	213,677
1983	57,466	67,077	79,387	93,054	136,853	160,131	30,966	47,688	167,819	207,819
1984	56,975	66,540	80,875	94,822	137,850	161,362	36,072	47,288	173,922	208,650
1985	55,844	65,209	80,536	94,442	136,380	159,652	35,021	46,077	171,401	205,729
1986	54,153	63,253	81,652	95,765	135,805	159,018	34,209	45,065	170,014	204,083

* Data is for Federal Energy Regulatory Commission lines, prior to 1976, they were regulated by the ICC.

1 As of December 31.

2 Triennial Data.

3 Total mileage includes pipelines classified as "other than owned" by the ICC. In 1967 "other than owned" pipeline mileage was 6,255 miles.

4 Includes 273 miles of coal slurry pipeline.

Source:
- FERC Lines: 1970-1976: Interstate Commerce Commission, *Transport Statistics in the United States*, 1976, Table 2 and equivalent tables in earlier editions.
- 1977-1981: Penn Well Publishing Co., *Oil and Gas Journal*, 1979-1982.
- 1982: Federal Energy Regulatory Commission, personal communication.
- 1983-1986: Penn Well Publishing Co., *Oil and Gas Journal*, November issues.
- All Lines: 1970-1976: U.S. DOE, *Energy Data Reports*, Crude Oil and Product Pipelines, Triennial, 1977, Table 1.
- 1977-1986: Estimated by TPA based on annual trends for FERC - regulated oil pipelines, as reported in *Oil and Gas Journal*, annual issues.
- Total Petroleum (All Lines): 1970-1986: TPA, *Transportation In America*, 1988, p. 21.

Table 64. World Tanker Fleet By Size, 1976-1986 (billion d.w.t.)

Year	Vessel Size							
	10-25 d.w.t.	25-45 d.w.t.	45-65 d.w.t.	65-125 d.w.t.	125-200 d.w.t.	200-320 d.w.t.	Over 320 d.w.t.	Total
1976	17.5	27.3	19.9	54.4	28.7	144.8	28.1	320.7
1977	16.1	26.6	18.2	54.2	32.3	156.6	28.5	332.5
1978	14.8	24.6	16.1	50.8	33.3	157.4	31.5	328.5
1979	14.2	24.2	15.3	51.2	33.4	157.7	31.9	327.9
1980	14.1	24.6	16.1	52.5	33.0	155.4	29.1	324.8
1981	13.8	26.0	16.6	55.4	31.2	146.5	30.7	320.2
1982	13.5	27.2	16.1	51.8	30.2	134.5	30.4	303.7
1983	13.0	27.4	15.3	48.4	28.8	120.4	29.9	283.2
1984	12.8	26.3	15.7	46.2	28.9	111.6	28.2	269.7
1985	12.3	25.8	15.0	44.4	28.4	94.9	26.0	246.8
1986	12.4	26.3	14.2	46.6	27.5	90.6	23.4	241.0

d.w.t. = deadweight tons.
Source: British Petroleum Co., *BP Statistical Review of World Energy*, 1987, p. 20.

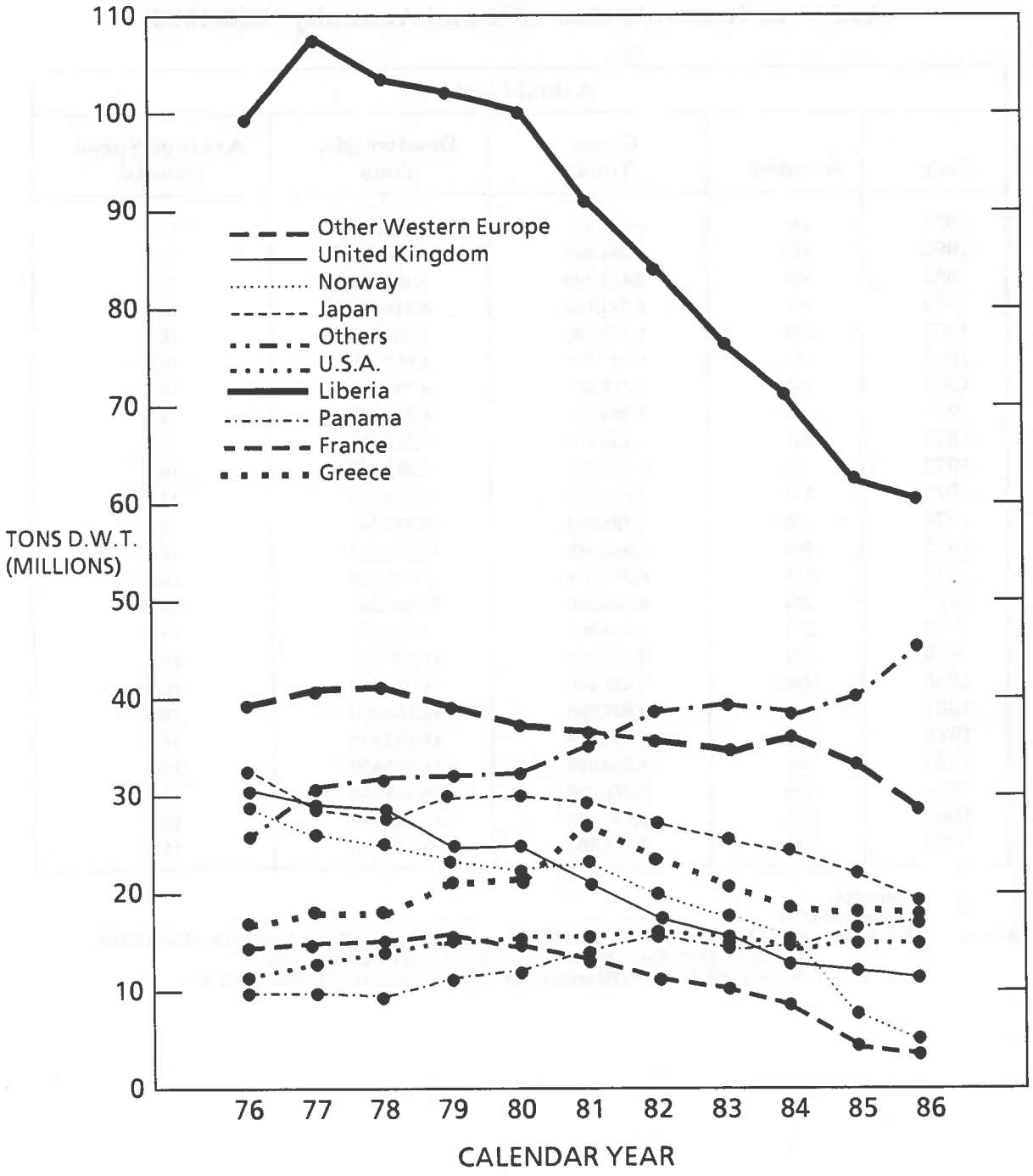


Figure 33. World Tanker Fleet by Flag, 1976 - 1986

Part 4. Energy Supply and Demand

Table 68. Domestic Demand for Refined Petroleum Products Supplied to End-Use Sectors (at 5-Year Intervals 1955-1965 and Annually 1966-1987) (trillion Btu's per day)[1]

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	32.49	51.0	2.01	63.67
1966	10.71	19.50	34.23	51.2	2.44	66.83
1967	11.06	19.59	35.87	51.8	2.76	69.27
1968	11.45	20.24	38.76	52.6	3.26	73.70
1969	11.66	21.15	40.53	52.2	4.32	77.66
1970	11.78	21.38	41.60	51.6	5.81	80.89
1971	11.75	21.59	43.57	52.0	6.81	83.72
1972	12.08	23.35	46.08	51.2	8.48	90.03
1973	12.01	24.99	48.84	51.2	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	26.82	52.67	51.8	10.69	101.70
1978	11.42	27.06	54.83	52.6	10.94	104.03
1979	9.46	28.98	54.30	53.4	9.01	101.69
1980	8.31	26.02	51.95	55.6	7.19	93.47
1981	7.19	22.73	51.51	58.9	6.01	87.44
1982	6.69	21.36	50.43	60.9	4.32	82.80
1983	6.97	20.35	49.67	61.1	4.25	81.24
1984	7.05	21.55	52.71	62.2	3.50	84.81
1985	7.02	21.11	53.56	63.2	3.00	84.69
1986[r]	7.07	21.72	55.42	62.8	4.00	88.21
1987[e]	7.13	22.36	56.48	63.2	3.44	89.41

[r] = revised.
[e] = estimate.
[1] Data derived by multiplying figures in previous table by conversion factors in each end-user sector column in Table A3 in U.S. DOE's *Annual Energy Review 1987*.

Table 70. Petroleum Supply and Disposition
(At 5-Year Intervals 1955-1970 and Annually 1971-1987)
(million barrels per day)

	Supply									Disposition			
	Production			Imports			Other						
Year	Crude Oil[1]	Natural Gas Plant Liquids	Total Production	Crude Oil[2]	Petroleum Products[3]	Total Imports	Change in Stocks[4]	Other Supply[5]	Total Supply	Exports	Crude Oil Losses	Refined Petroleum Products Supplied	Total Disposition
1955	6.81	0.77	7.58	0.78	0.47	1.25	*	0.04	8.86	0.37	0.04	8.46	8.86
1960	7.04	0.93	7.96	1.02	0.80	1.81	0.08	0.15	10.01	0.20	0.01	9.80	10.01
1965	7.80	1.21	9.01	1.24	1.23	2.47	0.01	0.22	11.71	0.19	0.01	11.51	11.71
1970	9.64	1.66	11.30	1.32	2.10	3.42	-0.10	0.35	14.97	0.26	0.01	14.70	14.97
1971	9.46	1.69	11.16	1.68	2.25	3.93	-0.07	0.44	15.45	0.22	0.01	15.21	15.45
1972	9.44	1.74	11.18	2.22	2.53	4.74	0.23	0.44	16.60	0.22	0.01	16.37	16.60
1973	9.21	1.74	10.95	3.24	3.01	6.26	-0.14	0.49	17.55	0.23	0.01	17.31	17.55
1974	8.77	1.69	10.46	3.48	2.64	6.11	-0.18	0.49	16.89	0.22	0.01	16.65	16.89
1975	8.37	1.63	10.01	4.10	1.95	6.06	-0.03	0.51	16.54	0.21	0.01	16.32	16.54
1976	8.13	1.60	9.74	5.29	2.03	7.31	0.06	0.59	17.70	0.22	0.01	17.46	17.70
1977	8.24	1.62	9.86	6.61	2.19	8.81	-0.55	0.57	18.69	0.24	0.02	18.43	18.69
1978	8.71	1.57	10.27	6.36	2.01	8.36	0.09	0.49	19.22	0.36	0.02	18.85	19.22
1979	8.55	1.58	10.14	6.52	1.94	8.46	-0.15	0.56	19.00	0.47	0.02	18.51	19.00
1980	8.60	1.57	10.17	5.26	1.65	6.91	-0.14	0.68	17.61	0.54	0.01	17.06	17.61
1981	8.57	1.61	10.18	4.40	1.60	6.00	-0.16	0.64	16.66	0.59	*	16.06	16.66
1982	8.65	1.55	10.20	3.49	1.63	5.11	0.15	0.65	16.12	0.82	*	15.30	16.12
1983	8.69	1.56	10.25	3.33	1.72	5.05	0.02	0.65	15.97	0.74	*	15.23	15.97
1984	8.88	1.63	10.51	3.43	2.01	5.44	-0.28	0.78	16.45	0.72	*	15.73	16.45
1985	8.97	1.61	10.58	3.20	1.87	5.07	0.10	0.76	16.51	0.78	*	15.73	16.51
1986[r]	8.68	1.55	10.23	4.18	2.05	6.22	-0.20	0.81	17.06	0.78	*	16.28	17.06
1987[p]	8.31	1.60	9.91	4.64	1.90	6.54	-0.04	0.91	17.33	0.77	*	16.56	17.33

r = revised.
p = preliminary.
* Less than 5,000 barrels per day.
1 Includes lease condensate.
2 Includes imports for the Strategic Petroleum Reserve which began in 1977.
3 For 1981 and forward, includes motor gasoline blending components, and aviation gasoline blending components.
4 Negative numbers denote a net addition to stocks or a reduction in supply. Positive numbers denote a net withdrawal from stocks or an addition to supply.
5 Includes benzol, other hydrocarbons, hydrogen, alcohol, processing gains and unaccounted for crude oil.

Source: U.S. DOE/EIA, *Annual Energy Review 1987*, Table 46.

Table 72. Domestic Demand for Gasoline
(at 5-Year Intervals 1955-1970 and Annually 1971-1986)
(thousand gallons)

Year	Total Demand	Highway	NonHighway				
			Agriculture	Aviation	Marine	Other[1]	Total
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

[1] Other includes state, county, and municipal use, industrial, commercial, construction, miscellaneous and unclassified users.

Source: 1955-1975: U.S. DOT/FHWA, *Highway Statistics*, annual issues, Tables MF-24 and MF-26.
1976: *Ibid.*, 1976, Table MF-21; Table MF-24, unpublished.
1977-1986: *Ibid.*, annual issues, Tables MF-21A and MF-24.

Table 74. Domestic Supply and Demand for Kerosene-Type Jet Fuel, 1965-1987
(daily averages in thousands of barrels)

Year	Supply			Stocks as of Dec. 31 (barrels x 10^3)	Demand			
	Production	Imports	New Supply		Change in Stocks	Total Demand	Exports	Domestic Demand
1965	298	37	335	10,361	*	335	1	334
1966	345	52	397	13,139	5	392	1	391
1967	448	74	522	13,174	3	519	1	518
1968	529	86	615	15,373	6	609	*	609
1969	594	111	705	19,517	11	694	*	694
1970	597	125	722	20,989	4	718	*	718
1971	601	150	751	20,747	1	752	1	751
1972	638	162	800	19,346	3	803	*	803
1973	679	176	855	22,945	10	845	3	842
1974	641	135	776	23,906	3	773	2	771
1975	691	105	796	25,158	3	793	2	791
1976	731	61	792	25,590	1	791	2	789
1977	787	53	840	28,263	7	833	2	831
1978	791	67	858	27,707	2	859	1	858
1979	835	56	891	32,921	14	877	1	876
1980	811	50	861	35,723	8	853	1	852
1981	775	31	806	34,011	-5	810	1	809
1982	777	22	799	31,176	8	801	5	796
1983	817	26	843	32,368	-1	837	5	832
1984	919	44	963	35,118	-8	956	7	949
1985	962	28	990	33,494	4	994	12	982
1986	1,095	45	1,140	42,677	-25	1,115	16	1,099
1987	1,138	30	1,168	41,971	2	1,170	25	1,145

* Less than 1,000 barrels.

Source: 1965-1975: American Petroleum Institute, *Basic Petroleum Data Book*, Section VII, Table 15.
1976-1980: U.S. DOE, *Petroleum Supply Monthly*, December issues 1977-1980, Table 2 (converted to daily averages using column 6).
1981-1982: *Ibid.*, December 1981, Tables 2a and 3a; December 1982, Tables 3 and 5.
1983-1987: *Ibid.*, December issues, pp. 25, 27.

Table 76. Natural Gas Production
(at 5-Year Intervals 1955-1970 and Annually 1971-1987)
(trillion cubic feet)

Year	Gross Withdrawls			Reservoir Repressuring	Non-hydrocarbon Gases Removed	Vented and Flared	Marketed Production	Extraction Loss[1]	Dry Natural Gas Production
	From Gas Wells	From Oil Wells	Total						
1955	7.84	3.88	11.72	1.54	n/a	0.77	9.41	0.38	9.03
1960	10.85	4.23	15.09	1.75	n/a	0.56	12.77	0.54	12.23
1965[2]	13.52	4.44	17.96	1.60	n/a	0.32	16.04	0.75	15.29
1970	18.59	5.19	23.79	1.38	n/a	0.49	21.92	0.91	21.01
1971	18.93	5.16	24.09	1.31	n/a	0.28	22.49	0.88	21.61
1972	19.04	4.97	24.02	1.24	n/a	0.25	22.53	0.91	21.62
1973	19.37	4.70	24.07	1.17	n/a	0.25	22.65	0.92	21.73
1974	18.67	4.18	22.85	1.08	n/a	0.17	21.60	0.89	20.71
1975	17.38	3.72	21.10	0.86	n/a	0.13	20.11	0.87	19.24
1976	17.19	3.75	20.94	0.86	n/a	0.13	19.95	0.85	19.10
1977	17.42	3.68	21.10	0.93	n/a	0.14	20.03	0.86	19.16
1978	17.39	3.91	21.31	1.18	n/a	0.15	19.97	0.85	19.12
1979	18.03	3.85	21.88	1.25	n/a	0.17	20.47	0.81	19.66
1980	17.57	4.30	21.87	1.37	0.20	0.13	20.18	0.78	19.40
1981	17.34	4.25	21.59	1.31	0.22	0.10	19.96	0.77	19.18
1982	15.80	4.41	20.21	1.39	0.21	0.09	18.52	0.76	17.76
1983	14.15	4.45	18.60	1.46	0.22	0.09	16.82	0.79	16.03
1984	15.51	4.69	20.19	1.63	0.22	0.11	18.23	0.84	17.39
1985	14.53	5.01	19.53	1.92	0.33	0.09	17.20	0.82	16.38
1986[r]	14.15	4.92	19.06	1.84	0.34	0.10	16.79	0.80	15.99
1987[p]	14.72	5.12	19.83	2.16	0.40	0.11	17.16	0.82	16.35

n/a = not available
r = revised.
p = preliminary.
[1] Volume reduction resulting from the removal of natural gas plant liquids. Natural gas plant liquids are transferred to petroleum supply.
[2] Beginning with 1965 data, all volumes are on a pressure base of 14.73 p.s.i.a at 60°F. For prior years, the pressure base is 14.65 p.s.i.a. at 60°F.
Note: Sum of components may not equal total due to independent rounding.
Source: U.S. DOE/EIA, *Annual Energy Review 1987*, Table 67.

Table 78. Coal Supply and Disposition
(at 5-Year Intervals 1955-1970 and Annually 1971-1987)
(million short tons)

	Supply				Disposition		
Year	Production	Imports	Change In Stocks, Losses and Unaccounted For[1]	Total	Exports	Consumption	Total
1955	490.8	0.3	10.3	501.4	54.4	447.0	501.4
1960	434.3	0.3	1.5	436.1	38.0	398.1	436.1
1965	527.0	0.2	-4.1	523.1	51.0	472.0	524.1
1970	612.7	*	-17.7	595.0	71.7	523.2	595.6
1971	560.9	0.1	-2.2	558.8	57.3	501.6	559.6
1972	602.5	*	-21.5	581.0	56.7	524.3	581.5
1973	598.6	0.1	17.5	616.2	53.6	562.6	616.6
1974	610.0	2.1	7.0	619.1	60.7	558.4	619.5
1975	654.6	0.9	-26.6	628.9	66.3	562.6	629.4
1976	684.9	1.2	-22.3	663.8	60.0	603.8	664.4
1977	697.2	1.6	-19.2	679.6	54.3	625.3	680.0
1978	670.2	3.0	-7.2	666.0	40.7	625.2	666.2
1979	781.1	2.1	-36.6	746.6	66.0	680.5	746.9
1980	829.7	1.2	-36.4	794.5	91.7	702.7	794.8
1981	823.8	1.0	20.4	845.2	112.5	732.6	845.5
1982	838.1	0.7	-25.7	813.1	106.3	706.9	813.5
1983	782.1	1.3	31.1	814.5	77.8	736.7	814.8
1984	895.9	1.3	-24.4	872.8	81.5	791.3	873.1
1985	883.6	2.0	25.1	910.7	92.7	818.0	910.9
1986[r]	890.3	2.2	-2.7	889.8	85.5	804.3	890.0
1987[p]	916.9	1.7	-3.1	915.5	79.6	835.9	915.7

r = revised.
p = preliminary.
* Less than 0.05 million short tons.
1 Includes changes in stocks at electric utilities, coke plants, other industries, retail dealers, and producers/distributors and the balancing item of losses and unaccounted for. Also includes overseas shipments to U.S. Armed Forces. Net additions to stocks are considered as negative numbers. Net withdrawals from stocks are considered as positive numbers.

Source: U.S. DOE/EIA, *Annual Energy Review 1987*, Table 74.

Table 80. Deliveries of Distillate Fuel Oil by Use
(at 5-Year Intervals 1955-1970 and Annually 1971-1986)
(thousand barrels)

Year	Heating Oils	Industrial Use	Oil Company Fuel	Electric Utility	Railroads	Vessel Bunkering	Military Use[1]	Diesel Type			All Other	Total
								On Highway	Off Highway	Total		
1955	356,589	43,606	8,597	5,884	84,668	16,675	10,945	23,446	20,769	44,215	9,948	581,127
1960[2]	438,010	34,271	8,347	4,742	86,490	18,730	10,793	36,467	38,095	74,562	7,380	633,325
1965	475,992	42,484	10,430	3,661	86,436	15,532	14,953	73,776	50,346	124,122	13,281	786,891
1970	521,135	43,668	11,518	24,770[3]	88,416	19,503	12,447	148,796	46,123	194,919	10,874	927,250
1971	522,475	50,731	14,088	35,329	86,251	20,959	17,427	166,981	46,925	213,906	10,154	971,320
1972	543,337	60,388	13,405	68,334	97,001	22,125	20,187	189,055	50,186	239,241	10,852	1,074,870
1973	536,856	67,306	14,902	77,950	102,828	26,786	19,598	221,420	55,541	276,961	11,876	1,135,063
1974	493,223	64,036	13,805	84,661	102,949	24,757	17,748	221,033	48,743	269,776	10,131	1,081,086
1975	488,388	63,993[4]	13,633	63,420	92,191	26,138	18,004	217,906	48,977	266,883	10,096	1,043,746
1976	543,895	79,956	14,523	60,570	97,467	28,330	17,574	242,820	54,429	297,249	11,365	1,150,929
1977	538,845	96,502	19,954	76,681	99,306	33,512	20,121	264,412	66,452	330,864	14,394	1,230,179
1978	533,069	94,797	19,410	77,175	99,841	37,591	20,320	290,943	69,856	360,799	14,059	1,257,061
1979	454,955[5]	99,583	22,043	46,579	103,493	41,725	18,570	327,402	65,212	392,614	34,812	1,214,374
1980	393,122	86,089	24,205	31,812	102,022	35,201	19,138	323,431	51,705	375,136	19,994	1,086,709
1981	345,728	80,216	29,185	18,192	100,482	41,025	17,763	340,002	38,851	378,853	21,032	1,032,476
1982	324,912	71,340	29,482	12,134	93,150	33,885	15,201	338,006	37,118	375,124	19,639	974,864
1983	339,455	54,030	21,510	11,744	76,230	39,108	15,804	370,101	38,493	408,594	15,541	981,926
1984	352,127	56,114	21,623	16,405	82,308	40,287	16,579	399,939	39,847	439,786	15,988	1,041,217
1985	358,129	61,730	20,869	12,246	76,422	45,102	18,290	411,420	38,493	449,413	4,198	1,046,827
1986	356,380	63,907	17,857	14,628	73,800	48,434	18,105	426,822	40,458	467,280	3,349	1,063,740

1 Includes imports by military.
2 Includes Alaska and Hawaii.
3 Includes gas turbine plants in 1970 and subsequent years.
4 Beginning in 1975, excludes oil company use.
5 Beginning in 1979, heating oils is no longer a separate category. The figure is derived by adding residential, commercial and farming.

Source: 1955-1986: American Petroleum Institute, *Basic Petroleum Data Book*, annual issues.

APPENDIX A
Source Information

Figure 1. Expenditures and Revenues, 1986 (cont'd)

37. Freight: *Ibid.*, p. 48, sum of scheduled and nonscheduled freight service.
38. Water: Sum of Passenger, Cargo, and Commercial Fishing.
39. Passenger, Water: TPA, *Transportation In America*, 1988, p. 5. Figure represents revenues of ICC-regulated carriers. Expenditures for private boating are not available.
40. Cargo, Water: *Ibid.*, p. 4, domestic operations only.
41. Commercial Fishing: U.S. DOC, *Statistical Abstract of the U.S.*, 1988, Table 1136.
42. Pipeline: TPA, *Transportation In America*, 1988, p. 4, includes revenues of regulated and unregulated oil pipelines.
43. Air Carrier: Figure represents overall operating revenues of the certificated carriers, total international operations. Same as Total Certificated figure, block (44).
44. Total Certificated: U.S. DOT/TSC, *Air Carrier Financial Statistics*, 1985/1986, p. 2, total operating revenues, international operations only.
45. Total International Majors: *Ibid.*, p. 4, total operating revenues in scheduled and nonscheduled service.
46. Passenger: *Ibid.*, p. 4, sum of scheduled and nonscheduled passenger service.
47. Freight: *Ibid.*, p. 4, sum of scheduled and nonscheduled freight service.
48. Total International Nationals: *Ibid.*, p. 32, total operating revenues in scheduled and nonscheduled service.
49. Passenger: *Ibid.*, p. 32, sum of scheduled and nonscheduled passenger service.
50. Freight: *Ibid.*, p. 32, sum of scheduled and nonscheduled freight service.
51. Total International Large Regionals: *Ibid.*, p. 32, total operating revenues in scheduled and nonscheduled service.
52. Passenger: *Ibid.*, p. 32, sum of scheduled and nonscheduled passenger service.
53. Freight: *Ibid.*, p. 32, sum of scheduled and nonscheduled freight service.
54. Water: Sum of Passenger and Cargo.
55. Passenger, Water: TPA, *Transportation In America*, 1988, p. 5.
56. Cargo, Water: *Ibid.*, p. 4.

Figure 2. Vehicle-Miles, 1986

1. Total Transportation: Sum of Domestic and International.
2. Domestic: Sum of Highway, Local Transit, Rail, and Air; Water data not available.
3. International: Includes Total Certificated; Water data not available.
4. Highway: Sum of Auto, Truck, and Bus.
5. Auto: Sum of Personal Passenger Car and Motorcycle.
6. Personal Passenger Car: U.S. DOT/Federal Highway Administration (FHWA), *Highway Statistics*, 1986, Table VM-1, includes total rural and urban. This figure includes Taxi.
7. Taxi: Data for Taxi are included in the Personal Passenger Car category.
8. Motorcycle: U.S. DOT/FHWA, *Highway Statistics*, 1986, Table VM-1, includes total rural and urban.
9. Truck: *Ibid.*
10. Single-Unit: *Ibid.*
11. Combination: *Ibid.*
12. Bus: Sum of Intercity Bus and School Bus.
13. Intercity Bus: ICC, *Transport Statistics in U.S.*, Part 2, 1986. Includes Class I, II, and III carriers reporting to the ICC and Intrastate carriers.
14. Class I: *Ibid.*, total vehicle-miles operated.
15. Regular-route: *Ibid.*, regular-route intercity service.
16. Local and Suburban: *Ibid.*, Table 15.
17. Charter and Special: *Ibid.*, charter and special service.
18. Class II and III: Figure derived by subtracting Class I from Intercity Bus.

Figure 2. Vehicle-Miles, 1986 (cont'd)

60. Nonscheduled: *Ibid.*, p. 6, line 50.
61. Total International Nationals: *Ibid.*, p. 60, sum of scheduled, line 27, and nonscheduled, line 50, services.
62. Scheduled: *Ibid.*, p. 60, line 27.
63. Passenger: *Ibid.*, p. 60, line 25.
64. Cargo: *Ibid.*, p. 60, line 26.
65. Nonscheduled: *Ibid.*, p. 60, line 50.
66. Total International Large Regionals: *Ibid.*, p. 95, sum of scheduled, line 27, and nonscheduled, line 50, services.
67. Scheduled: *Ibid.*, p. 95, line 27.
68. Passenger: *Ibid.*, p. 95, line 25.
69. Cargo: *Ibid.*, p. 95, line 26.
70. Nonscheduled: *Ibid.*, p. 95, line 50.
71. Water: Not available.

Figure 3. Passenger-Miles, 1986

1. Total Transportation: Sum of Domestic and International.
2. Domestic: Sum of Highway, Local Transit, Rail, and Air; Water data not available.
3. International: Includes Air; Water data not available.
4. Highway: Sum of Auto and Bus.
5. Auto: Sum of Personal Passenger Car, Taxi, and Motorcycle.
6. Personal Passenger Car: U.S. DOT/FHWA, *Highway Statistics*, 1986, Table VM-1. Passenger miles derived by multiplying total rural and urban passenger car travel by an average occupancy level of 2.3.
7. Taxi: Included in Personal Passenger Car.
8. Motorcycle: U.S. DOT/FHWA, *Highway Statistics*, 1986, Table VM-1. Passenger miles derived by multiplying total rural and urban motorcycle travel by an average occupancy level of 1.1.
9. Bus: Sum of Intercity Bus and School Bus passenger-miles.
10. Intercity Bus: TPA, *Transportation In America*, 1988, p. 8.
11. Class I: *Ibid.*, personal communication, based on ICC data.
12. Regular-Route: *Ibid.*, ICC, *Transport Statistics in U.S.*, Part 2, 1986.
13. Class II and III: Figure derived by subtraction of Class I from Intercity.
14. School Bus: National Safety Council, *Accident Facts*, 1987, p. 99.
15. Local Transit: UMTA, *National Urban Mass Transportation Statistics, 1986 Section 15 Annual Report*, Table 2.13, total for all modes.
16. Motor Bus: *Ibid.*
17. Rail Rapid/Streetcar: *Ibid.*
18. Trolley Bus: *Ibid.*
19. Demand Response: *Ibid.*
20. Ferryboat: *Ibid.*
21. Commuter Rail: *Ibid.*
22. Rail: TPA, *Transportation In America*, 1988, p. 38.
23. Class I: *Ibid.*
24. Amtrak: *Ibid.*
25. Air: Sum of General Aviation and Total Certificated.
26. General Aviation: TPA, *Transportation In America*, 1988, p. 8.
27. Total Domestic Certificated: U.S. DOT/TSC, *Air Carrier Traffic Statistics*, December 1986/1987, p. 2, revenue passenger miles, all services, line 1.

Figure 3. Passenger-Miles, 1986 (cont'd)

71. Civilian: *Ibid.*, line 39.
72. Military: *Ibid.*, line 40.
73. Total International Large Regionals: *Ibid.*, p. 95, sum of scheduled, line 9, and nonscheduled, line 41, services.
74. Scheduled: *Ibid.*, line 9.
75. First Class: *Ibid.*, line 7.
76. Coach: *Ibid.*, line 8.
77. Nonscheduled: *Ibid.*, line 41.
78. Civilian: *Ibid.*, line 39.
79. Military: *Ibid.*, line 40.
80. Water: Not Available.

Figure 4. Revenue Ton-Miles of Freight, 1986

1. Total Transportation: Sum of Domestic and International.
2. Domestic: Sum of Highway, Rail, Air, Water and Pipeline.
3. International: Sum of Air and Water.
4. Highway: Figure represents total intercity ton-miles of motor vehicle transport.
5. Truck: Sum of local and intercity ton-miles .
6. Local Truck: Sum of Single-Unit and Combination Trucks.
7. Intercity: TPA, *Transportation In America*, 1988, p. 6, total intercity ton-miles.
8. Single-Unit: TPA, personal communication, estimate.
9. Combination: *Ibid.*
10. Rail: AAR, *Railroad Ten-Year Trends*, 1987, p. 71.
11. Air: Same as Total Domestic Certificated, block (12).
12. Total Domestic Certificated: U.S. DOT/TSC, *Air Carrier Traffic Statistics*, December 1986/1987, p. 2, Freight, Express, U.S. and Foreign Mail Revenue ton-miles, all services, line 3.
13. Total Domestic Majors: *Ibid.*, p. 5, line 3.
14. Scheduled: *Ibid.*, p. 5, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
15. Nonscheduled: *Ibid.*, p. 5, sum of Civilian Freight, line 44, and Military Freight, line 45.
16. Total Domestic Nationals: *Ibid.*, p. 59, line 3.
17. Scheduled: *Ibid.*, p. 59, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
18. Nonscheduled: *Ibid.*, p. 59, sum of Civilian Freight, line 44, and Military Freight, line 45.
19. Total Domestic Large Regionals: *Ibid.*, p. 94, line 3.
20. Scheduled: *Ibid.*, p. 94, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
21. Nonscheduled: *Ibid.*, p. 94, sum of Civilian Freight, line 44, and Military Freight, line 45.
22. Total Domestic Medium Regionals: *Ibid.*, p. 157, line 3, includes international operations.
23. Scheduled: *Ibid.*, p. 157, sum of Freight, Air Express, U.S. Mail and Foreign Mail, lines 18-21.
24. Nonscheduled: *Ibid.*, p. 157, sum of Civilian Freight, line 44, and Military Freight, line 45.
25. Water: U.S. Department of the Army, Corps of Engineers, *Waterborne Commerce of the United States*, 1986, Part 5, Section 3, Table 1, total domestic ton-miles.
26. Coastwise: *Ibid.*
27. Lakewise: *Ibid.*
28. Internal: *Ibid.*
29. Local: *Ibid.*
30. Pipeline: TPA, *Transportation In America*, 1988, p. 6, intercity ton-miles.

Figure 5. Number of Vehicles, 1986 (cont'd)

22. Commuter Rail: *Ibid.*
23. Ferryboat: *Ibid.*
24. Demand Response: *Ibid.*
25. Rail: Sum of passenger and freight.
26. Rail, Passenger: AAR, *Railroad Facts*, 1987, p. 50.
27. Rail, Freight: *Ibid.*, p. 46.
28. Air: Sum of General Aviation and Total Certificated.
29. General Aviation: U.S. DOT/Federal Aviation Administration (FAA), Office of Management Systems, *General Aviation Activity and Avionics Survey*, 1987, Table 2-9.
30. Rental: now included with other business related uses.
31. Business: *Ibid.*, includes Business and Executive Transportation.
32. Commercial: *Ibid.*, includes Air Taxi, Commuter Carrier, Aerial Application, and Aerial Observation.
33. Instructional: *Ibid.*
34. Personal: *Ibid.*
35. Other: *Ibid.*, includes Other Work.
36. Total Certificated: Includes domestic and international aircraft; sum of Major, National and Regional airlines.
37. Majors: U.S. DOT/RSPA, Office of Aviation Information Management, DAI-20, personal communication.
38. Nationals: *Ibid.*
39. Regionals: *Ibid.*, includes Large and Medium Regional airlines.
40. Water: U.S. Army, Corps of Engineers, *Summary of U.S. Flag Passenger & Cargo Vessels*, annual issues.
41. Self-Propelled: *Ibid.*
42. Dry Cargo/Passenger: *Ibid.*
43. Ferries, Railroad Car: *Ibid.*
44. Tankers: *Ibid.*
45. Towboats/Tugs: *Ibid.*
46. Sailing Vessels: *Ibid.*
47. Non-Self-Propelled: *Ibid.*
48. Barges/Scows: *Ibid.*
49. Tankers: *Ibid.*
50. Railroad Car Floats: *Ibid.*
51. Air: Not available, figure included in Domestic Total Certificated, block (36).
52. Water: U.S. DOT/Maritime Administration, *Merchant Fleets of the World*, 1987, p. 5.
53. Government: *Ibid.*
54. Private: *Ibid.*

Figure 6. Number of Fatalities, 1986

1. Total Transportation: Includes domestic fatalities only.
2. Domestic: Sum of Highway, Rail Rapid Transit, Rail, Air, Marine and Pipeline.
3. International: Not available, Air included in domestic category.
4. Highway: Sum of Automobile, Motorcycle, Truck, Bus, Bicycle, Pedestrian, and Other. Also includes Rail/Highway Grade Crossing fatalities.
5. Personal Passenger Car: U.S. DOT/NHTSA, NRD-30, personal communication.
6. Taxi: National Safety Council, *Accident Facts*, 1987, p. 60.
7. Motorcycle: U.S. DOT/NHTSA, NRD-30, personal communication.

Figure 6. Number of Fatalities, 1986 (cont'd)

45. Pipeline: U.S. DOT/TSC, *Transportation Safety Information Report*, 1986 annual summary, Figure 57B. This figure includes gas distribution and transmission lines (including gathering lines), and liquid transmission lines.
46. Air: Not available, figure is included in Total Certificated, block (33).
47. Water: Not available.

Figure 7. Energy Consumed in Transportation (10^{12} Btu), 1986

1. Total Transportation: Sum of Domestic and International.
2. Domestic: Sum of Highway, Rail, Air, Water, Pipeline and Local Transit.
3. International: Includes Total Certificated; Water data not available.
4. Highway: Sum of Personal Passenger Car, Truck, and Bus.
5. Personal Passenger: Sum of Personal Passenger Car, Taxi, and Motorcycle.
6. Personal Passenger Car (includes Taxi): U.S. DOT/FHWA, *Highway Statistics*, 1986, Table VM-1, multiplied by the conversion factor of motor gasoline (125,000 Btu/gallon).
7. Taxi: Included in Passenger Car.
8. Motorcycle: U.S. DOT/FHWA, *Highway Statistics*, 1986, Table VM-1, multiplied by the conversion factor of motor gasoline (125,000 Btu/gallon).
9. Truck: Sum of Single-Unit and Combination.
10. Single-Unit: U.S. DOT/FHWA, *Highway Statistics*, 1986, Table VM-1, multiplied by the conversion factor of motor gasoline (125,000 Btu/gallon).
11. Combination: *Ibid.*, multiplied by the conversion factor of distillate fuel oil (138,700 Btu/gallon).
12. Bus: Sum of Class I Intercity, School Bus and Local Bus.
13. Class I Intercity: TPA, personal communication, fuel consumed, multiplied by the conversion factor of distillate fuel oil (138,700 Btu/gallon).
14. School Bus: *Ibid.*, multiplied by the conversion factor of motor gasoline (125,000 Btu/gallon).
15. Local Bus: *Ibid.*
16. Local Transit: UMTA, *National Urban Mass Transportation Statistics, 1986 Section 15 Annual Report*, Table 2.10; figure multiplied by the conversion factor of electricity (1 kWh = 3412 Btu).
17. Rail: Sum of Passenger and Class I Rail Freight.
18. Passenger: Sum of Class I Rail Passenger and Amtrak.
19. Class I Rail Passenger: AAR, *Railroad Ten-Year Trends*, 1987, p. 80, multiplied by the conversion factor of distillate fuel oil (138,700 Btu/gallon), excludes electricity.
20. Amtrak: Amtrak, Mechanical Department, personal communication.
21. Class I Rail Freight: AAR, *Railroad Ten-Year Trends*, 1987, p. 80, multiplied by the conversion factor of distillate fuel oil (138,700 Btu/gallon).
22. Air: Sum of Total Certificated and General Aviation.
23. General Aviation: U.S. DOT/FAA, *General Aviation Activity and Avionics Survey*, 1987, Table 2-21. Figure derived by the addition of kerosene-type jet fuel (135,000 Btu/gallon) and aviation gasoline, (120,200 Btu/gallon).
24. Total Domestic Certificated: U.S. DOT/RSPA, OAIM, *Fuel Cost and Consumption, Twelve Months Ended December 31, 1986 and 1985*. Total Domestic Certificated figure converted into barrels and multiplied by the conversion factor of kerosene-type jet fuel (135,000 Btu/gallon).
25. Total Domestic Majors: *Ibid.*
26. Total Domestic Nationals: *Ibid.*
27. Total Domestic Large Regionals: *Ibid.*
28. Water: U.S. DOT/FHWA, *Highway Statistics*, 1986, Table MF-24, multiplied by the conversion factor of motor gasoline (125,000 Btu/gallon).
29. Pipeline: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 1987*, Table 70, converted to Btu by thermal conversion factor for natural gas, Table A4.

PROFILE REFERENCES

1. American Bus Association, *Bus Facts*, 1982, 1981.
2. American Gas Association, *Gas Facts*, anual issues.
3. American Trucking Association, Inc., *Truck Taxes and Highway Finance*, 1986.
4. *Ibid.*, Department of Publications and Statistics.
5. Amtrak, Intergovernmental Affairs Office.
6. Association of American Railroads, *Yearbook of Railroad Facts*, 1978, 1977.
7. *Ibid.*, *Railroad Facts*, 1987, 1986.
8. *Ibid.*, *Railroad Ten-Year Trends*, annual issues.
9. *Ibid.*, *Statistics of Railroads of Class I in the U.S.*, 1983, 1980, 1977.
10. Association of Oil Pipelines, *Shifts in Petroleum Transportation*, 1988.
11. *Air Carrier Financial Statistics Quarterly*, 1986.
12. Federal Energy Regulatory Commission (FERC).
13. Interstate Commerce Commission.
14. *Ibid.*, *101st/100th//90th Annual Report of the ICC*, 1987, 1986, 1977.
15. *Ibid.*, *Transport Statistics in the United States*, Part 2, 1986.
16. National Safety Council, *Accident Facts*, 1987, 1986, 1977.
17. National Transportation Safety Board (NTSB), Information Systems Division.
18. Penn Well Publishing Company, *Oil and Gas Journal*, 1987, 1986, 1976.
19. Transportation Association of America, *Transportation Facts and Trends*, 1980.
20. Transportation Policy Associates.
21. *Ibid.*, *Transportation In America*, 1988, 1987.
22. U.S. Army, Corps of Engineers, *Summary of U.S. Flag & Cargo Passenger Vessels*, annual issues.
23. *Ibid.*, *Waterborne Commerce of the United States*, Part 5, 1986, 1985, 1976.
24. U.S. Coast Guard, *Boating Statistics*, 1986, 1985, 1976.
25. *Ibid.*, Marine Safety Evaluation Branch, G-MM1-3.
26. U.S. Department of Commerce, Bureau of Economic Analysis.
27. *Ibid.*, *Survey of Current Business*, July 1987, 1982.
28. *Ibid.*, Bureau of the Census, *Statistical Abstract of the United States*, 1988.
29. U.S. Department of Energy, *Natural Gas Annual*, 1986.
30. *Ibid.*, *Statistics of Interstate Natural Gas Pipeline Companies*, 1986, 1985.
31. U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings, United States, 1909-78*, Bulletin 1312-11, 1979.
32. *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, July 1987.
33. U.S. DOT/Federal Aviation Administration (FAA), *FAA Statistical Handbook of Aviation*, 1976.
34. Ibid., Office of Management Systems, *General Aviation Activity and Avionics Survey*, 1987, 1986.

TABLE REFERENCES

Table 1. Average Passenger Revenue Per Passenger Mile, 1976-1986

Certificated Air Carrier, Domestic Operations, Scheduled Service:

1976-1984: Civil Aeronautics Board (CAB), *Air Carrier Financial Statistics*, 1976-1984, annual issues, p. 2, lines 1, 2, and 3; *Air Carrier Traffic Statistics*, 1976-1984, 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. To compute the index for Total, divide Total figure by 1967 index of 5.64. Use the same method for First Class and Coach plus economy, however, change the 1967 index to 7.24 for First Class and 5.13 for Coach plus economy.

1985-1986: U.S. Department of Transportation (DOT) Transportation Systems Center (TSC), *Air Carrier Financial Statistics Quarterly*, annual issue, 1985/1986, p. 1, lines 1, 2 and 3; *Air Carrier Traffic Statistics*, 1985/1986, 1986/1987, annual issue, p. 2, lines 7, 8 and 9.

Class I Rail:

1976-1979: Association of American Railroads (AAR), *Statistics of Railroads of Class I in the U.S.*, 1980, p. 8/18. Class I average passenger revenue per passenger mile data was calculated by dividing passenger revenue by passenger miles and subtracting Amtrak and Auto-Train passenger revenue and revenue passenger mile data. As of 1978, Auto-Train is no longer Class I.

1980: *Ibid.*, Operating and Traffic Statistics, 1981.

1981-1986: Transportation Policy Associates (TPA), personal communication.

Amtrak:

1976-1979: AAR, *Statistics of Railroads of Class I in the U.S.*, 1982, p. 17, passenger revenue (Acct. 102) divided by passenger mile data, abstracted from Transportation Policy Associates, *Transportation in America*, 1983, p. 14.

1980-1986: *Ibid., Railroad Facts*, annual issues, p. 61.

Class I Bus, Intercity:

1976-1979: American Bus Association (ABA), *Bus Facts*, 1981, p. 12.

1980-1981: *Ibid.*, 1982, p. 7.

1982-1983: *Ibid.*, personal communication.

1984-1986: Interstate Commerce Commission (ICC), Bureau of Accounts, personal communication.

Consumer Price Index:

1976-1980: U.S. Department of Commerce (DOC), Bureau of Economic Analysis, *Survey of Current Business*, July issues, p. S-6.

1981-1983: *Ibid.*, July issues, p. S-5.

1984-1986: U.S. Department of Labor (DOL), Bureau of Labor Statistics, *Consumer Price Index for All Urban Consumers*, Table 1A, December issues.

Table 2. Average Freight Revenue Per Ton-Mile, 1976-1986

Certificated Air Carrier, Domestic Operations, Scheduled Service:

1976-1984: CAB, *Air Carrier Financial Statistics*, 1976-1984, annual issue, p. 2, line 4; *Air Carrier Traffic Statistics*, 1976-1984, annual issues, p. 4/5, line 18. Freight revenue (Financial Statistics) divided by revenue ton-miles of freight (Traffic Statistics).

1985-1986: U.S. DOT/TSC, *Air Carrier Financial Statistics Quarterly*, 1985/1986, annual issue, p. 1, line 4; *Air Carrier Traffic Statistics*, 1985/1986, 1986/1987 annual issue, p. 2, line 18. Freight revenue (Financial Statistics) divided by revenue ton-miles of freight (Traffic Statistics).

Class I Rail:

1976: ICC, *Transport Economics*, 1978, p. 11.

1977-1980: AAR, *Operating and Traffic Statistics*, 1981.

1981-1986: TPA, *Transportation in America*, 1988, p. 11.

Table 4. Total Operating Revenues, 1976-1986 (cont'd)

Local Transit:
- 1976-1978: Not available.
- 1979-1982: Urban Mass Transportation Association (UMTA), *1981/1982 Section 15 Annual Reports*, Tables 001.02.2 and 002.02.
- 1983-1986: UMTA, *1983-1986 Section 15 Annual Reports*, Table 2.01.2.

Oil Pipeline, ICC-Regulated only:
- 1976: TAA, *Transportation Facts and Trends*, 1978, p. 4.
- 1977-1979: *Ibid.*, 1981, p. 2.
- 1980-1986: TPA, *Transportation In America*, 1988, p. 4.

Gas Pipeline:
- 1976-1986: Transmission Companies: American Gas Association (AGA), *Gas Facts*, 1986, p. 146.
- 1976-1986: Distribution Companies: *Ibid.*, p. 145.

Class I Intercity Motor Carriers of Property:
- 1976-1986: ICC, *101st Annual Report of the ICC*, 1987, Appendix E, Table 6, and similar table in earlier editions.

Class I Rail:
- 1976-1986: AAR, *Railroad Ten-Year Trends*, 1987, p. 33.

Amtrak:
- 1976-1982: AAR, *Statistics of Railroads of Class I in the U.S.*, 1983, p.16.
- 1983-1986: *Ibid.*, *Railroad Facts*, annual issues, p. 61.

Water Transport:

ICC-Regulated Carriers, Inland and Coastal Waterways:
- 1976-1979: ICC, *94th Annual Report of the ICC*, 1980, Table 10 and similar table in earlier editions.
- 1980-1986: TPA, *Transportation In America*, 1988, p. 10.

Maritime Carriers:
- 1976-1979: ICC, *94th Annual Report of the ICC*, 1980, Table 11 and similar table in earlier editions.
- 1980-1986: U.S. DOT/Maritime Administration, personal communication.

Class A Freight Forwarders:
- 1976-1979: ICC, *94th Annual Report of the ICC*, 1980, Table 12 and similar table in earlier editions.
- 1980-1986: TPA, *Transportation In America*, 1988, p. 4.

Table 5. Vehicle-Miles, 1976-1986

Air Carriers:

Certificated Domestic Operations, All services:
- 1976-1979: CAB, *Air Carrier Traffic Statistics*, 1976-1979, annual issues, p. 4/5, line (27) plus line (50).
- 1980-1984: *Ibid.*, 1981-1984/85, annual issues, p. 2, line (27) plus line (50).
- 1985-1986: U.S. DOT/TSC, *Air Carrier Traffic Statistics*, 1985/1986, 1986/1987, p. 2, line (27) plus line (50).

Total Majors, domestic operations:
- 1976-1979: Not available.
- 1980-1984: CAB, *Ibid.*, 1981-1984/85, annual issues, p. 5, line (27) plus line (50).
- 1985-1986: U.S. DOT/TSC, *Ibid.*, 1985/1986, 1986/1987, p. 5, line (27) plus line (50).

Total Nationals, domestic operations:
- 1976-1979: Not available.
- 1980-1984: CAB, *Ibid.*, 1981-1984/85, annual issues, p. 47, line (27) plus line (50).
- 1985-1986: U.S. DOT/TSC, *Ibid.*, 1985/1986, p. 54, 1986/1987, p. 59 line (27) plus line (50).

Table 6. Passenger-Miles, 1976-1986 (cont'd)

Total Majors, domestic operations:
1976-1984: CAB, *Ibid.*, 1976-1984/85, annual issues, p. 5, lines 1.
1985-1986: U.S. DOT/TSC, 1985/1986, 1986/1987, p. 5, line 1.

Total Nationals, domestic operations:
1976-1984: CAB, *Ibid.*, 1976-1984/85, annual issuess, p. 47, line 1.
1985-1986: U.S. DOT/TSC, 1985/1986, p. 54, 1986/1987, p. 59, line 1.

Total Large Regionals, domestic operations:
1976-1984: CAB, *Ibid.*, 1976-1984/85, annual issues, p. 83, line 1.
1985-1986: U.S. DOT/TSC, 1985/1986, p. 90, 1986/1987, p. 94, line 1.

Total Medium Regionals, domestic and international operations.
1976-1984: CAB, *Ibid.*, 1976-1984/85, annual issues, p. 113, line 1.
1985-1986: U.S. DOT/TSC, 1985/1986, p.155, 1986/1987, p. 157, line 1.

General Aviation:
1976-1986: TPA, *Transportation In America*, 1988, p. 8.

Highway:
Passenger Car and Taxi:
1976-1984: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A. Vehicle-miles multiplied by a constant average occupancy of 2.3.
1985-1986: *Ibid., Highway Statistics*, 1986, Table VM-1.

Intercity Bus:
1976-1980: ABA, *Bus Facts*, 1982, p. 2.
1981-1986: TPA, *Transportation In America*, 1988, p. 8.

Class I Rail:
1976-1979: AAR, *Statistics of Railroads of Class I in the U.S.*, 1980, p. 8 and p. 18. Amtrak and Auto-Train data (p. 18) subtracted from Class I data (p. 8).
1980: *Ibid., Operating & Traffic Statistics*, 1981, p. 8.
1981-1986: TPA, *Transportation In America*, 1988, p. 8.

Amtrak:
1976-1979: AAR, *Statistics of Railroads of Class I in the U.S.*, 1980, p. 18.
1980-1986: TPA, *Transportation In America*, 1988, p. 8.

Table 7. Revenue Ton-Miles of Freight, 1976-1986

Certificated Air Carrier:
1976-1979: CAB, *Air Carrier Traffic Statistics*, 1976-1980, annual issues, p. 4/5, line 3.
1980-1984: *Ibid.*, 1981-1984/85, annual issues, p. 2, line 3.
1985-1986: U.S. DOT/TSC, *Air Carrier Traffic Statistics*, 1985/1986, 1986/1987, p. 2, line 3.

Oil Pipeline:
1976-1986: TPA, *Transportation In America*, 1988, p. 6.

Class I Rail:
1976-1986: AAR, *Railroad Ten-Year Trends*, 1987, p. 71.

Table 9. Number of Vehicles, 1976-1986 (cont'd)

Passenger Car and Taxi:
- 1976-1984: *Ibid.*, *Highway Statistics, Summary to 1985*, Table VM-201A.
- 1985-1986: *Ibid.*, *Highway Statistics*, 1986, Table VM-1.

Intercity Bus:
- 1976-1980: ABA, *Bus Facts*, 1982, p. 2.
- 1981-1983: *Ibid.*, personal communication.
- 1984-1986: ICC, Bureau of Accounts, personal communication.

Local Transit:
- 1976-1985: APTA, *Transit Fact Book*, 1987, Table 17.
- 1986: *Ibid.*, personal communication.

Class I Rail:

Freight Cars:
- 1976-1986: AAR, *Railroad Facts*, annual issues, p. 46.

Locomotives:
- 1976-1986: *Ibid.*, p. 44.

Passenger Cars and Pullman:
- 1976-1986: *Ibid.*, p. 50.

Amtrak:

Passenger Cars and Pullman and Locomotives:
- 1976-1986: *Ibid.*, p. 61.

Truck:
- 1976-1984: U.S. DOT/FHWA, *Highway Statistics, Summary to 1985*, Table VM-201A.
- 1985-1986: *Ibid.*, *Highway Statistics*, 1986, Table VM-1.

Water Transport:

Total Inland Water Vessels:
- 1976-1986: Sum of non-self-propelled vessels and self-propelled vessels.

Non-self propelled vessels and self-propelled vessels:
- 1976: U.S. Army, Corps of Engineers, *Summary of U.S. Flag Passenger & Cargo Vessels*, data as of Jan. 1, 1976.
- 1977-1979: *Ibid.*, Data as of Oct. 1, 1977, 1978 and 1979, respectively.
- 1980: *Ibid.*, Data as of Dec. 31, 1980.
- 1981-1982: *Ibid.*, Beginning in 1981 data are collected every 2 years and are shown in 1982 column.
- 1983-1984: *Ibid.*, Data shown in 1984 column.
- 1985-1986: *Ibid.*, preliminary figures.

Oceangoing Steam and Motor Ships:
- 1976-1978: *Ibid.*, *Merchant Fleets of the World*, annual issues.
- 1979: *Ibid.*, *A Statistical Analysis of the World's Merchant Fleets*, 1981.
- 1980: U.S. DOT, *Merchant Fleets of the World*, 1981, p. 2.
- 1981: *Ibid.*, Maritime Administration, MAR-371, personal communication.
- 1982-1986: *Ibid.*, *Merchant Fleets of the World*, annual issues.

Table 10. Number of New Vehicles Purchased by Mode, 1976-1986

Air Carrier:
- 1976-1986: Aerospace Industries Association, *1987 Aerospace Year-End Review and Forecast*, Table V.

General Aviation:
- 1976-1986: U.S. DOT/FAA, *FAA Statistical Handbook of Aviation*, 1985, 1986, Table 10-1, aircraft shipments only.

Table 14. Number of Fatalities by Mode, 1976-1987 (cont'd)

Motor Carriers of Passengers:
- 1976-1986: *Ibid.*, annual issues, Table 7.
- 1987: *Ibid.*, NHTSA, National Center for Statistics and Analysis, NRD-30.

Rail-Highway Grade Crossing:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 12.
- 1987: *Ibid.*, personal communication.

Rail:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 12.
- 1987: *Ibid*, personal communication.

Rail Rapid Transit:
- 1976: Not available.
- 1977: *Ibid.*, 1978 annual summary, Chart 15.
- 1978: *Ibid.*, 1979 annual summary, Charts 15, 16, and 17.
- 1979: *Ibid.*, 1980 annual summary, p. 26.
- 1980: *Ibid.*, 1981 annual summary, Tables 11, 12 and 13.
- 1981-1985: *Ibid.*, 1986 annual summary, Table 10.
- 1986-1987: *Ibid.*, personal communication.

U.S. Air Carriers:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 21.
- 1987: *Ibid.*, personal communication.

Commuter Air Carriers:
- 1976-1986: *Ibid.*, 1986 annual summary, Table 14.
- 1987: *Ibid.*, personal communication.

On-Demand Air Taxi:
- 1976-1986: *Ibid.*, 1986 annual summary, Table 15.
- 1987: *Ibid.*, personal communication.

U.S. General Aviation:
- 1976-1985: *Ibid.*, 1986 annual summary, Figure 32.
- 1986-1987: *Ibid.*, personal communication.

Waterborne Transportation:
- 1976-1985: *Ibid.*, 1986 annual summary, Figure 42.
- 1986-1987: *Ibid.*, personal communication.

Recreational Boating:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 51.
- 1987: *Ibid.*, personal communication.

Liquid Pipeline:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 57B.
- 1987: *Ibid.*, personal communication.

Gas Pipeline:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 57B.
- 1987: *Ibid.*, personal communication.

Hazardous Materials:
- 1976-1986: *Ibid.*, 1986 annual summary, Figure 65.
- 1987: *Ibid.*, personal communication.

Table 21. Personal Consumption Expenditures by Transportation Sector, 1976-1987

- 1976-1987: U.S. DOC, Bureau of Economic Analysis, *Survey of Current Business*, July issues, Table 2.4.

Table 26. Employment in Transportation and Related Industries, 1976-1986 (cont'd)

Trucking and Terminals:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 421, 3.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 421, 3.
- 1983-1986: *Ibid.*, July 1987.

Public Warehousing:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 422.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 422.
- 1983-1986: *Ibid.*, July 1987.

Water:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 44.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 44.
- 1983-1986: *Ibid.*, July 1987.

Transportation Services:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 47.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 47.
- 1983-1986: *Ibid.*, July 1987.

Equipment Manufacturing:

Aircraft and Parts:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 372.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 372.
- 1983-1986: *Ibid.*, July 1987.

Motor Vehicles and Equipment:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 301 and 371, sum of motor vehicles and equipment and tires.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 301 and 371, sum of motor vehicles and equipment and tires.
- 1983-1986: *Ibid.*, July 1987.

Railroad Equipment:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 374.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 374.
- 1983-1986: *Ibid.*, July 1987.

Ships and Boat Building and Repair:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 373.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 373.
- 1983-1986: *Ibid.*, July 1987.

Other:
- 1976-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, sum of SIC 376 and SIC 379.
- 1983-1986: *Ibid.*, July 1987.

Related Industries:

Automotive and Accessory Retailers:
- 1976: *Ibid.*, *Employment and Earnings, United States*, 1909-1978, SIC 551, 2 and 553.
- 1977-1982: *Ibid.*, *Supplement to Employment and Earnings, Revised Establishment Data*, 1986, SIC 551, 2 and 553, sum of new and used automobile dealers and other auto and home supply stores.
- 1983-1986: *Ibid.*, July 1987.

Table 27. National Transportation and Economic Trends, 1976-1986

Passenger-Miles:
1976-1986: Summation of all modes from Table 6. (This edition of NTS).

Ton Miles:
1976-1986: Summation of all modes from Table 7. (This edition of NTS).

Population:
1976-1986: U.S. DOC, Bureau of the Census, *Statistical Abstract of the U.S.*, 1988, Table 2.

Industrial Production:
1976-1986: *Ibid.*, Bureau of Economic Analysis, *Survey of Current Business*, July 1987, p. S-1 and similar page in earlier editions.

Gross National Product:
1976-1986: *Ibid.*, Bureau of the Census, *Statistical Abstract of the U.S.*, 1988, Table 668 and similar table in earlier editions.

Table 29. Expenditures and Overseas Travel by U.S. Residents and Foreign Visitors, 1976-1986

U.S. Residents - Overseas Travelers:
1976-1981: U.S. DOC, Bureau of Economic Analysis, *Survey of Current Business*, May 1983, Table 7 and similar table in earlier editions.
1982-1986: *Ibid.*, June 1987, Table 3.

Average Expenditures:
1976-1980: *Ibid.*, May 5, 1983, Table 4 and similar table in earlier editions.
1981-1985: *Ibid.*, May 1986, Table 4.
1986: Data no longer collected.

Total Travel and Passenger Fare Transactions:
1976-1981: *Ibid.*, May 1983, Table 1 and similar table in earlier editions.
1982-1986: *Ibid.*, June 1987, Table 1.

Travel Payments in Foreign Countries:
1976-1986: *Ibid.*

Passenger Fare Payments to Foreign Countries:
1976-1986: *Ibid.*

Foreign Visitors to U.S.:
1976-1981: *Ibid.*, May 1983, Table 4 and similar table in earlier editions.
1982-1986: *Ibid.*, June 1987, Table 5.

Average Expenditures of Visitors:
1976-1980: *Ibid.*, May 1983, Table 3, and similar table in earlier editions.
1981-1985: *Ibid.*, May 1986, Table 8.
1986: Data no longer collected.

Total Travel and Passenger Fare Transactions:
1976-1986: Sum of Travel Receipts in U.S. and Passenger Fare Receipts in U.S.

Travel Receipts in U.S.:
1976-1986: U.S. DOC, Bureau of Economic Analysis, *Survey of Current Business*, June 1987, Table 1 and similar table in earlier editions.

Passenger Fare Receipts in U.S.:
1976-1986: *Ibid.*

APPENDIX B
Glossary

DOMESTIC OPERATIONS: Operations within and between the 50 States and the District of Columbia. Includes domestic operations of the certificated trunk carriers, Pan American, local service, helicopter, intra-Alaska, intra-Hawaii, domestic all-cargo, and other carriers; also includes transborder operations conducted on the domestic route segments of U.S. air carriers.

ECONOMY: Transport services 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.

INTERNATIONAL OPERATIONS: Operations outside the territory of the United States, including operations between the United States and foreign countries and between the United States and its territories and possessions. 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 fuels 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 $10,000,000-$74,999,999. Included in this group are Air America, Air Atlanta, Arrow, Aspen, Britt, Emerald, Empire, Evergreen, Five Star, Florida Express, Gulf Air Transport, Horizon Air, International Air Service, Interstate, Key, Markair, Mid Pacific, Midwest Express, Northern Air, Pilgrim, Presidential, Reeve, Rich, Rosenbalm, Royal West, Ryan, Skystar, Sky World, Southern Air, Sun Country, Sunworld, and Tower. 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 American, Continental, Delta, Eastern, Federal Express, Flying Tiger, Northwest, Pan American, Piedmont, Republic, Trans World, United, USAir, and Western. Airlines in this category are subject to periodic changes.

MEDIUM REGIONALS: Carrier groups with annual operating revenues of $0-$9,999,999 (or that operate only aircraft with 60 seats or less or 18,000 pounds maximum payload or less). Included in this group are Aerial, Aeron, Amerijet, Atlantic Gulf, Buffalo, Challenge, Challenge Air Cargo, Challenge Air International, Conner, Florida West, Galaxy, Great American, Independent Air, Jet Charter, Jet East, Jet Fleet, McClain, MGM Grand, Millon, Orion, Pacific Interstate, Samoa, Skybus, South Pacific, Trans Air Link, Trans International, and Worldwide. 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 $75,000,000-$1,000,000,000. Included in this group are Air California, Air Wisconsin, Alaska, Aloha, America West, American Trans Air, Braniff, Inc., Frontier, Hawaiian, Jet America, Midway, New York Air, Ozark, Pacific Southwest, People Express, Southwest, Transamerica, TranStar, World and Zantop. Airlines in this category are subject to periodic changes.

NON-OPERATING INCOME AND EXPENSES: Income and loss of commercial ventures not part of the common carrier air transport services of the accounting entity; other revenues and expenses attributable to financing or other activities that are extraneous to and not an integral part of air transportation or its incidental services.

NON-REVENUE 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.

NON-SCHEDULED FREIGHT: Property carried in charter operations.

NON-SCHEDULED SERVICE: Revenue flights not operated in regular scheduled service, principally contract and charter operations.

TURBOFAN AIRCRAFT: Aircraft propelled by a turbojet engine whose thrust has been increased by the addition of a low-pressure compressor (fan). The turbofan engine can have an oversized low-pressure compressor at the front, with part of the flow by-passing the rest of the engine (front-fan or forward-fan), or it can have a separate fan driven by a turbine stage (aft-fan).

TURBOJET AIRCRAFT: Aircraft propelled by jet engines incorporating a turbine-driven air compressor to take in and compress the air for the combustion of fuel, the gases of combustion (or the heated air) being used both to rotate the turbine and to create a thrust-producing jet.

TURBOPROP AIRCRAFT: Aircraft in which the main propulsive force is supplied by a conventional propeller driven by a gas turbine. Additional propulsive force may be supplied from the discharged turbine exhaust gas.

* As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board (CAB) functions are now handled by the U.S. Department of Transportation's Research and Special Programs Administration.

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 fire fighting 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.

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.

EXECUTIVE/CORPORATE: Any use of an aircraft by a corporation, company, or other organization for the purposes of transporting its employees and/or property not for compensation or hire, and employing professional pilots for the operation of the aircraft.

GENERAL AVIATION: That portion of civil aviation which encompassses all facets of aviation except air carriers.

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.

BUS TERMINOLOGY

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 AND NONREVENUE BUS: Passengers using these are not directly charged for transportation, either on a "per passenger" or on a "per vehicle" basis.

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 weight of the empty vehicle plus the maximum anticipated load weight.

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.

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.

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: A motor vehicle consisting primarily of a single motorized device designed for carrying a load of property weighing 4,409 pounds or more on or in the device.

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

ACCIDENTS: Incidents in which there is property damage or personal injury, involving revenue or non-revenue transit vehicles or stations. Accidents are classified as "collision," "non-collision," or "station."

REVENUE PASSENGERS CARRIED: The total number of transit rides from origin to destination taken by passengers. Thus, a multi-vehicle ride would be counted only once. A ride by a nonrevenue passenger would not be counted.

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.

SCHOOL BUSES: Type I and Type II school vehicles as defined in Highway Safety Program Standard No. 17, used exclusively to transport students, personnel, and equipment.

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.

TROLLEYBUSES: Rubber-tired, electrically powered passenger vehicles operated on city streets drawing power from overhead lines with trolleys.

UNLINKED PASSENGER TRIPS: The number of passengers who board public transportation vehicles. Passengers are counted each time they board a vehicle, even though more than one vehicle may be used for a single journey from origin to destination.

VEHICLE-MILES: The total distance traveled by revenue vehicles, including both revenue miles and deadhead 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: Carries dry cargo in bulk, stowed in cargo holds within vessel hull. Cargo is poured aboard from elevator spouts, conveyor belts or slurry pipelines. It is unloaded using grab buckets, conveyor systems or vacuum equipment. Only nine vessels, mostly converted tankships are presently eligible for domestic service. Commonly referred to as "dry bulker."

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.

CONTAINERSHIP: Carries cargo in special intermodal cargo containers which are stowed below deck in specially fitted holds and stacked on deck several units high. Loading and unloading are accomplished by shoreside traveling crane or, occasionally, by shipboard gantry crane. Sometimes referred to as "lift-on/lift-off" vessel. Twenty-six are presently in domestic service.

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.

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: Movement of a car one mile (5,280 feet) is one car-mile.

CLASS I RAILROAD: A railroad with an annual operating revenue of greater than $5,000,000. Effective January 1, 1976, the minimum annual operating revenue requirement was raised to $10,000,000; on January 1, 1978, the requirement was raised to $50,000,000.

COMMUTATION TICKET: A ticket intended for use by a person traveling on a daily basis, i.e., to and from work; such a ticket is typically valid for an extended time period (i.e., a week or a month); the charge for such a ticket reflects a discount from the sum of the one-way fares that would be paid by the ticket-holder for the period of validity in the absence of such a reduced-rate ticket.

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 MILEAGE: Movement of a locomotive unit one mile (5,280 feet) is one locomotive-mile.

OPERATING EXPENSES: Expenses of furnishing transportation service, including maintenance and depreciation.

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--COMMUTATION: Revenue from the sale of commutation tickets.

PASSENGER REVENUE--NON-COMMUTATION: Revenue from the transportation of paying passengers not holding commutation tickets; this classification includes basic one-way and round-trip fares, discounted fares offered for the clergy and military, special excursion fares offered to travelers meeting the requirements for eligibility for those fares, (i.e., origin/destination, time of travel, length of stay at destination), revenue from the extra charges made for occupancy of space in parlor and sleeping cars, and revenue from the transportation of corpses.

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.

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.

REFINED PRODUCT TRUNK LINES (PIPELINE SYSTEMS): 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 TRANSMISSION COMPANY: A company which obtains most of its gas operating revenues from the operation of a gas transmission pipeline and/or from main line sales to industrial customers.

DISTRIBUTION MAINS: Generally, mains which carry or control the supply of gas from the point of supply to the sales meters.

FIELD AND GATHERING PIPELINES: A network of pipelines transporting natural gas from individual wells to a compressor station, processing point, or main trunk pipeline.

LIQUID PETROLEUM GAS (LPG): Consists of propane and butane and is usually derived from natural gas. In locations where there is no natural gas and the gasoline consumption is low, naphtha is converted to LPG by catalytic reforming.

NATURAL GAS: A naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in porous geologic formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane.

NATURAL GAS LIQUIDS: Those liquid hydrocarbon mixtures which are gaseous at reservoir temperatures and pressures but are recoverable by condensation or absorption. Natural gasoline and liquefied petroleum gas such as propane and butane are principal examples.

TRANSMISSION PIPELINE: Pipelines installed for the purpose of transmitting gas from a source of supply to one or more distribution centers, to one or more large-volume customers, or a pipeline installed to interconnect sources of supply.

JET FUEL: Includes both naphtha-type and kerosene-type jet fuel meeting standards for use in aircraft turbine engines or meeting ASTM Specification D1655. Although most jet fuel is used in aircraft, some is used for other purposes, such as fuel for turbines to produce electricity.

KEROSENE: A petroleum middle distillate having burning properties suitable for use as an illuminant when burned in wick lamps. Included are No. 1-K and No. 2-K recognized in ASTM Specification D3699 and grades of kerosene called range oil having properties similar to No. 1 fuel oil, and is used primarily in space heaters, cooking stoves, and water heaters.

LEASE CONDENSATE: A natural gas liquid recovered from gas-well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons. Generally, it is blended with crude oil for refining.

LIQUEFIED GASES: Propane, propylene, butane, butylene, ethane-propane mixtures, propane-butane mixtures, and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids. Excludes ethane and ethylene.

LUBRICANTS: Substances used to reduce friction between bearing surfaces. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. Lubricants include all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. The three categories include bright stock lubricants, and other lubricants, lubricating oil base stock used in finished lubricating oils and greases, including black, coastal, and red oils.

MARKETED PRODUCTION: This quantity is derived. It is gross withdrawals of natural gas from production reservoirs, less gas used for reservoir repressuring, quantities vented and flared, and nonhydrocarbon gases removed in treating and processing operations.

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 finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

MOTOR GASOLINE, REGULAR GRADE: Finished motor gasoline (see above) that has an antiknock designation of 2 or less for unleaded motor gasoline and 3 or less for leaded motor gasoline.

NATURAL GAS: A naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in porous geologic formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane.

NATURAL GAS LIQUIDS: Those liquid hydrocarbon mixtures which are gaseous at reservoir temperatures and pressures but are recoverable by condensation or absorption. Natural gasoline and liquefied petroleum gas such as propane and butane are principal examples.

NATURAL GAS, WET: Natural gas prior to the extraction of liquids and other miscellaneous products.

PETROLEUM: A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oils, refined petroleum products, natural gas plant liquids, and nonhydrocarbon compounds blended into finished petroleum products.

PIPELINE: A line of pipe with pumping machinery and apparatus for conveying a liquid or gas.

PROVED RESERVES (ECONOMICALLY RECOVERABLE RESERVES): Those resources (coal, oil, natural gas) that have actually been discovered and can be produced under current economic and technological conditions.

PSI: Pounds per square inch.

REFINED PETROLEUM PRODUCTS: Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, naphtha less than 400° F. end-point, other oils over 400° F. end-point, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

APPENDIX C
Index

Index (cont'd)

Index (cont'd)

Index (cont'd)

APPENDIX D
Bibliography

Bibliography (cont'd)

33. National Transportation Safety Board (NTSB), Information Systems Division, *News Release SB-81-1*, 1981, Washington, D.C.

34. NTSB, Safety Studies and Analysis Division, *Safety Information Release*, 1988, Washington, D.C.

35. Oak Ridge National Laboratory, *Motor Vehicle MPG and Market Shares Report*, 1986, Oak Ridge, TN.

36. Oak Ridge National Laboratory, *Transportation Energy Data Book*, 1986, 9th edition, Oak Ridge, TN.

37. Penn Well Publishing Company, *Oil and Gas Journal*, 1987, 1986, 1979, 1976.

38. Transportation Association of America, *Transportation Facts and Trends*, 1981, and Quarterly Supplements, Washington, D.C.

39. Transportation Policy Associates, *Transportation In America*, 1988, Washington, D.C.

40. Sun Oil Company, Division of Planning and Industry Affairs, *Analysis of World Tank Ship Fleet*, 1977, Chester, PA.

41. U.S. Army, Corps of Engineers, *Summary of U.S. Flag Passenger and Cargo Vessels*, annual, 1976-1986, Washington, D.C.

42. U.S. Army, Corps of Engineers, *Waterborne Commerce of the United States*, annual, 1980-1986, Part 5, Washington, D.C.

43. U.S. Coast Guard (USCG), *Boating Statistics*, 1987, 1986, 1977, Washington, D.C.

44. U.S. Department of Commerce (DOC), *A Statistical Analysis of the World's Merchant Fleets*, 1981, Washington, D.C.

45. U.S. DOC, Bureau of the Census, *Statistical Abstract of the U.S.*, 1988, 1981, Washington, D.C.

46. U.S. DOC, Bureau of Economic Analysis, *Survey of Current Business*, 1976-1987, Washington, D.C.

47. U.S. DOC, *Merchant Fleets of the World*, annual issues, 1976-1987, Washington, D.C.

48. U.S. DOE/EIA, *Annual Energy Review 1987*, Washington, D.C.

49. U.S. DOE/EIA, *Monthly Energy Review*, 1987, 1986, 1980, Washington, D.C.

50. U.S. DOE/EIA, *Natural Gas Annual*, 1986, Washington, D.C.

51. U.S. DOE/EIA, *Energy Data Reports, Petroleum Supply Monthly*, December issues, 1977-1987, Washington, D.C.

52. U.S. DOE/EIA, *Statistics of Interstate Natural Gas Pipeline Companies*, 1986, 1985, 1981, Washington, D.C.

53. U.S. DOE/EIA, *Petroleum Marketing Monthly*, 1987, Washington, D.C.

54. U.S. DOE, *Mineral Industry Surveys; Crude Oil and Product Pipelines*, Triennial, 1977, Washington, D.C.

55. U.S. Department of Interior (DOI), Bureau of Mines, *Mineral Industry Surveys, Fuel Oil Sales Annual, U.S.*, 1976, Washington, D.C.

56. U.S. DOI, Bureau of Mines, *Mineral Industry Surveys, Petroleum Statement Annual*, 1965-1975, Washington, D.C.

57. U.S. DOI, Bureau of Mines, *Natural Gas Annual*, 1975, Washington, D.C.

58. U.S. Department of Labor (DOL)/Bureau of Labor Statistics, *Consumer Price Index for All Urban Consumers*, 1987, Washington, D.C.

59. U.S. DOL, Bureau of Labor Statistics, *Employment and Earnings, U.S.*, 1909-1978, Bulletin 1312-11, 1979, Washington, D.C.

60. U.S. DOL/Bureau of Labor Statistics, *Supplement to Employment and Earnings, Revised Establishment Data*, 1987, 1986, Washington, D.C.

61. U.S. Department of Transportation (DOT)/Federal Aviation Administration (FAA), *Statistical Handbook of Aviation*, 1986, 1985, 1976, Washington, D.C.