

## Chapter 6

### Highway Vehicles and Characteristics

Summary Statistics from Tables in this Chapter

Source		
Table 6.1	U.S. share of world automobile registrations, 2000	25.1%
Table 6.2	U.S. share of world truck & bus registrations, 2000	44.3%
Table 6.3	Number of automobiles, 2000 (Polk - in thousands)	127,721
Table 6.3	Number of trucks, 2000 (Polk - in thousands)	85,579
Table 6.5	Vehicle miles traveled, 2000 (million miles)	2,749,803
	<i>Automobiles</i>	58.3%
	<i>Motorcycles</i>	0.4%
	<i>Two-axle, four-tire trucks</i>	33.6%
	<i>Other single-unit trucks</i>	2.6%
	<i>Combination trucks</i>	4.9%
	<i>Buses</i>	0.3%
Table 6.8	Average age of vehicles, 2000	(years)
	<i>Automobiles</i>	9.0
	<i>Trucks</i>	8.0
	Median lifetime of vehicles	(years)
<i>Table 6.9</i>	<i>Automobiles</i>	16.9
<i>Table 6.10</i>	<i>Light trucks</i>	15.5





The 1997 data in this series were never published. Use caution comparing historical data because of disconnects in data series, such as China in 1998. The U.S. totals include SUVs, minivans, and light trucks, many of which are used for personal travel.

**Table 6.2**  
**Truck and Bus Registrations for Selected Countries, 1950–2000**  
**(thousands)**

Year	China	India	Japan	France	United Kingdom	Germany <sup>a</sup>	Canada <sup>b</sup>	United States <sup>c</sup>	U.S. percentage of world <sup>c</sup>	World total
1950	<sup>d</sup>	<sup>d</sup>	183	<sup>d</sup>	1,060	<sup>d</sup>	643	8,823	50.9%	17,349
1955	<sup>d</sup>	<sup>d</sup>	318	<sup>d</sup>	1,244	<sup>d</sup>	952	10,544	46.1%	22,860
1960	<sup>d</sup>	<sup>d</sup>	896	1,540	1,534	786	1,056	12,186	42.6%	28,583
1965	<sup>d</sup>	<sup>d</sup>	4,119	1,770	1,748	1,021	1,232	15,100	39.6%	38,118
1970	<sup>d</sup>	<sup>d</sup>	8,803	1,850	1,769	1,228	1,481	19,175	36.2%	52,899
1975	811	<sup>d</sup>	10,854	2,210	1,934	1,337	2,158	26,243	38.8%	67,698
1980	1,480	<sup>d</sup>	14,197	2,550	1,920	1,617	2,955	34,195	37.7%	90,592
1985	2,402	1,045	18,313	3,310	3,278	1,723	3,149	43,804	37.4%	117,038
1990	4,496	1,536	22,773	4,748	3,774	1,989	3,931	55,097	37.2%	148,073
1991	4,721	1,687	22,839	4,910	3,685	2,114	3,402	59,837	38.9%	153,695
1992	5,177	1,872	22,694	5,040	3,643	2,672	3,413	63,781	39.6%	161,219
1993	5,316	1,967	22,490	5,065	3,604	2,842	3,409	66,736	40.1%	166,614
1994	5,922	2,083	22,333	5,140	3,605	2,960	3,466	70,162	45.1%	155,591
1995	6,221	2,221	22,173	5,195	3,635	3,062	3,485	73,143	43.1%	169,749
1996	6,750	2,506	21,933	5,255	3,621	3,122	3,515	76,637	41.3%	185,404
1997	Data are not available									
1998	8,313 <sup>e</sup>	2,610	20,919	5,500	3,169	4,357	3,694	79,062	44.0%	179,498
1999	9,400	3,000	20,559	5,609	3,392	3,370	722 <sup>f</sup>	86,640	46.9%	188,367
2000	10,487	3,390	20,212	5,753	3,361	3,534	739 <sup>f</sup>	85,579	44.3%	192,928
<i>Average annual percentage change</i>										
1950–2000	<sup>d</sup>	<sup>d</sup>	9.9%	<sup>d</sup>	2.3%	<sup>d</sup>	0.3%	4.6%		4.9%
1970–2000	<sup>d</sup>	<sup>d</sup>	2.0%	3.9%	2.2%	3.6%	-2.3%	5.1%		4.4%
1990–2000	8.8%	8.2%	-1.2%	1.9%	-1.2%	5.9%	-15.4%	4.5%		2.7%

**Source:**

Ward's Communications, *Ward's World Motor Vehicle Data*, 2001 Edition, Southfield, MI, 2001, pp. 232–235 and annual.  
(Additional resources: [www.wardsauto.com](http://www.wardsauto.com))

<sup>a</sup> Data for 1991 and prior include West Germany only. Kraftwagen are included with automobiles. Data from 1999 and later are not comparable to prior data.

<sup>b</sup> Data from 1991 and later are not comparable to prior data.

<sup>c</sup> Data from 1985 and later are not comparable to prior data.

<sup>d</sup> Data are not available.

<sup>e</sup> Data not comparable to prior data due to reclassification of autos and trucks.

<sup>f</sup> Canada

## VEHICLES IN USE

Both the Federal Highway Administration (FHWA) and The Polk Company report figures on the automobile and truck population each year. The two estimates, however, differ by as much as 25.6% for trucks (1992). The differences can be attributed to several factors:

- The FHWA data include all vehicles which have been registered at any time throughout the calendar year. Therefore, the data include vehicles which were retired during the year and may double count vehicles which have been registered in different states or the same states to different owners. The Polk Company data include only those vehicles which are registered on July 1 of the given year.
- The classification of mini-vans, station wagons on truck chasses, and utility vehicles as passenger cars or trucks causes important differences in the two estimates. The Polk Company data included passenger vans in the automobile count until 1980; since 1980 all vans have been counted as trucks. Recently, the Federal Highway Administration adjusted their definition of automobiles and trucks. Starting in 1993, some minivans and sport utility vehicles that were previously included with automobiles were included with trucks. This change produced a dramatic change in the individual percentage differences of cars and trucks. The difference in total vehicles has been less than 5% each year since 1990 and does not appear to be significantly affected by the FHWA reclassifications.
- The FHWA data include all non-military Federal vehicles, while The Polk Company data include only those Federal vehicles which are registered within a state. Federal vehicles are not required to have State registrations, and, according to the General Services Administration, most Federal Vehicles are not registered.

According to The Polk Company statistics, the number of passenger cars in use in the U.S. declined from 1991 to 1992. This is the first decline in vehicle stock since the figures were first reported in 1924. However, the data should be viewed with caution. A redesign of Polk's approach in 1992 allowed a national check for duplicate registrations, which was not possible in earlier years. Polk estimates that, due to processing limitations, its vehicle population counts may have been inflated by as much as 1½ percent. Assuming that percentage is correct, the number of passenger cars in use would have declined from 1991 to 1992 under the previous Polk method. The growing popularity of light trucks being used as passenger vehicles could also have had an impact on these figures.



**Table 6.3**  
**Automobiles and Trucks in Use, 1970–2000**  
**(thousands)**

Year	Automobiles			Trucks			Total		
	FHWA	The Polk Company	Percentage difference	FHWA	The Polk Company	Percentage difference	FHWA	The Polk Company	Percentage difference
1970	89,243	80,448	10.9%	18,797	17,688	6.3%	108,040	98,136	10.1%
1975	106,706	95,241	12.0%	25,781	24,813	3.9%	132,487	120,054	10.4%
1980	121,601	104,564	16.3%	33,667	35,268	-4.5%	155,267	139,832	11.0%
1981	123,098	105,839	16.3%	34,644	36,069	-4.0%	157,743	141,908	11.2%
1982	123,702	106,867	15.8%	35,382	36,987	-4.3%	159,084	143,854	10.6%
1983	126,444	108,961	16.0%	36,723	38,143	-3.7%	163,166	147,104	10.9%
1984	128,158	112,019	14.4%	37,507	40,143	-6.6%	165,665	152,162	8.9%
1985	127,885	114,662	11.5%	43,210	42,387	1.9%	171,095	157,049	8.9%
1986	130,004	117,268	10.9%	45,103	44,826	0.6%	175,106	162,094	8.0%
1987	131,482	119,849	9.7%	46,826	47,344	-1.1%	178,308	167,193	6.6%
1988	133,836	121,519	10.1%	49,941	50,221	-0.6%	183,777	171,740	7.0%
1989	134,559	122,758	9.6%	52,172	53,202	-1.9%	186,731	175,960	6.1%
1990	133,700	123,276	8.5%	54,470	56,023	-2.8%	188,171	179,299	4.9%
1991	128,300	123,268	4.1%	59,206	58,179	1.8%	187,505	181,447	3.3%
1992	126,581	120,347	5.2%	63,136	61,172	3.2%	189,717	181,519	4.5%
1993	127,327	121,055	5.2%	66,082	65,260	1.3%	193,409	186,315	3.8%
1994	127,883	121,997	4.8%	69,491	66,717	4.2%	197,375	188,714	4.6%
1995	128,387	123,242	4.2%	72,458	70,199	3.2%	200,845	193,441	3.8%
1996	129,728	124,613	4.1%	75,940	73,681	3.1%	205,669	198,294	3.7%
1997	129,749	124,673	4.1%	77,307	76,398	1.2%	207,056	201,071	3.0%
1998	131,839	125,966	4.7%	79,062	79,077	0.0%	210,901	205,043	2.9%
1999	132,432	126,869	4.4%	83,148	82,640	0.6%	215,580	209,509	2.9%
2000	133,432	127,721	4.5%	87,108	85,579	1.8%	220,540	213,300	3.4%

**Source:**

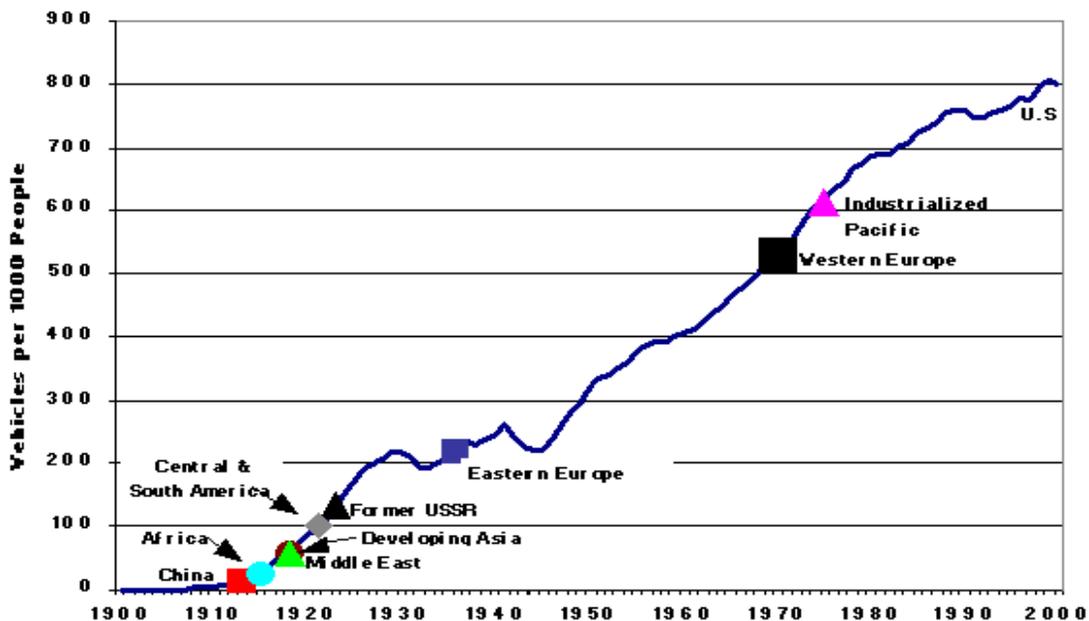
FHWA - U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2000*, Washington, DC, 2001, Table VM-1, p. V-50, and annual. (Additional resources: [www.fhwa.dot.gov](http://www.fhwa.dot.gov))

Polk - The Polk Company, Detroit, Michigan. **FURTHER REPRODUCTION PROHIBITED.** (Additional resources: [www.polk.com](http://www.polk.com))



The line on this graph shows the total vehicles per thousand people in the U.S. from 1900 to 2000. The symbols show the 1998 vehicles per thousand people in other countries/regions of the world. This shows that the Western European nations had the same ratio of vehicles per thousand people in 1998 as the U.S. had in 1970; the former USSR in 1998 had the same ratio of vehicles per thousand people as the U.S. did in 1923; and China in 1998 had the same ratio of vehicles per thousand people as the U.S. did in 1913.

Figure 6.1. Vehicles per Thousand People: U.S. Compared to Other Countries



**Source:**

United States data –

Vehicles: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2000, Table VM-1, and earlier annual editions.

Population: U.S. Department of Commerce, Bureau of the Census web site:

<http://www.census.gov/population/estimates/nation/popclockest.txt>

<http://eire.census.gov/popest/data/national/populartables/files/national01.pdf>

Other countries/regions –

Energy Information Administration, *International Energy Outlook 2002*, DOE/EIA-0484(2002), p. 256.



*The data on automobile and light truck stock by size class are estimations based on historical sales data. This method assumes a constant scrappage rate for all size classes. The definitions for the size classes are in the Glossary. The data on trucks by weight class are based on estimates from the 1997 Vehicle Inventory and Use Survey (latest available survey) and a 2002 report entitled "Investigation of Class 2b Trucks (Vehicles of 8,500 to 10,000 lbs GVWR)."*

**Table 6.4**  
**Vehicle Stock and New Sales in the United States, 2000 Calendar Year**

	Vehicle stock <sup>a</sup>		New sales (in thousands)					
	Thousands	Share	Domestic		Import <sup>b</sup>		Total	
Autos	127,721	100.0%	6,830	(77.2%)	2,016	(22.8%)	8,846	(100.0%)
Two-seaters	1,948	1.5%	55	(44.7%)	69	(56.1%)	123	(100.0%)
Minicompact	1,353	1.1%	0	(0.0%)	20	(100.0%)	20	(100.0%)
Subcompact	26,844	21.0%	1,468	(83.3%)	294	(16.7%)	1,762	(100.0%)
Compact	40,868	32.0%	1,626	(68.7%)	740	(31.3%)	2,366	(100.0%)
Midsize	38,342	30.0%	2,452	(74.2%)	854	(25.8%)	3,306	(100.0%)
Large	18,366	14.4%	1,229	(96.8%)	40	(3.2%)	1,269	(100.0%)
Autos	127,721	100.0%	c	c	c	c	c	c
Business fleet autos	7,346	5.8%	c	c	c	c	c	c
Personal autos	120,375	94.2%	c	c	c	c	c	c
Trucks	85,579	100.0%	8,092	(90.3%)	873	(9.7%)	8,965	(100.0%)
Less than 8,500 lbs.	73,775	62.8%	7,059	(89.4%)	841	(10.6%)	7,900	(100.0%)
Small pickup	13,316	11.5%	1,016	(100.0%)	0	(0.0%)	1,016	(100.0%)
Large pickup	21,884	18.3%	1,863	(100.0%)	0	(0.0%)	1,863	(100.0%)
Small van	12,832	11.2%	1,165	(96.6%)	41	(3.4%)	1,206	(100.0%)
Large van	5,718	4.8%	346	(100.0%)	0	(0.0%)	346	(100.0%)
Small SUV	5,925	5.2%	416	(56.6%)	319	(43.4%)	735	(100.0%)
Medium SUV	11,009	9.3%	1,631	(78.7%)	441	(21.3%)	2,071	(100.0%)
Large SUV	3,091	2.6%	628	(94.0%)	40	(6.0%)	669	(100.0%)
8,500 – 10,000 lbs.	6,241	30.7%	487	(100.0%)	0	(0.0%)	487	(100.0%)
Pickup	4,600	22.6%	400	(100.0%)	0	(0.0%)	400	(100.0%)
Van/SUV	1,641	8.1%	87	(100.0%)	0	(0.0%)	87	(100.0%)
10,000 – 26,000 lbs.	2,567	3.0%	213	(87.3%)	31	(12.7%)	244	(100.0%)
26,000 lbs. and over	2,995	3.5%	333	(99.7%)	1	(0.3%)	334	(100.0%)
Trucks	85,579	100.0%	c	c	c	c	c	c
Business fleet trucks <= 19,500 lbs. GVW <sup>d</sup>	7,850	9.2%	c	c	c	c	c	c
Personal trucks <=19,500 lbs. GVW	73,878	86.3%	c	c	c	c	c	c
Trucks > 19,500 lbs. GVW	3,851	4.5%	c	c	c	c	c	c

**Source:**

See Appendix A Highway Vehicle Stock and New Sales for detailed methodology and sources.  
(Additional resources: [www.polk.com](http://www.polk.com))

<sup>a</sup> Total auto and truck vehicle stocks as of July 1, 2000 from The Polk Company (FURTHER REPRODUCTION PROHIBITED).

<sup>b</sup> Includes domestic-sponsored imports.

<sup>c</sup> Data are not available.

<sup>d</sup> In fleets of four or more vehicles.



*The trend of using two-axle, four-tire trucks, such as pickups, vans, and sport-utility vehicles, for personal travel is evident in these data; two-axle, four-tire trucks account for 22% more travel in 2000 than in 1970, and automobiles account for 24% less travel in that time period.*

**Table 6.5**  
**Shares of Highway Vehicle-Miles Traveled by Vehicle Type, 1970–2000**  
**(million miles)**

Year	Automobiles	Motorcycles	Two-axle, four-tire trucks	Other single-unit trucks	Combination trucks	Buses <sup>a</sup>	Total vehicle-miles traveled (million miles)
1970	82.6%	0.3%	11.1%	2.4%	3.2%	0.4%	1,109,724
1975	77.9%	0.4%	15.1%	2.6%	3.5%	0.5%	1,327,664
1980	72.8%	0.7%	19.0%	2.6%	4.5%	0.4%	1,527,295
1981	72.9%	0.7%	19.1%	2.5%	4.4%	0.4%	1,555,308
1982	72.8%	0.6%	19.2%	2.5%	4.4%	0.4%	1,595,010
1983	72.3%	0.5%	19.8%	2.6%	4.5%	0.3%	1,652,788
1984	71.3%	0.5%	20.8%	2.6%	4.5%	0.3%	1,720,269
1985	70.2%	0.5%	22.0%	2.6%	4.4%	0.3%	1,774,826
1986	69.2%	0.5%	23.1%	2.5%	4.4%	0.3%	1,834,872
1987	68.5%	0.5%	23.8%	2.5%	4.5%	0.3%	1,921,204
1988	67.6%	0.5%	24.8%	2.4%	4.4%	0.3%	2,025,962
1989	66.8%	0.5%	25.6%	2.4%	4.4%	0.3%	2,096,487
1990	65.7%	0.4%	26.8%	2.4%	4.4%	0.3%	2,144,362
1991	62.5%	0.4%	29.9%	2.4%	4.4%	0.3%	2,172,050
1992	61.0%	0.4%	31.5%	2.4%	4.4%	0.3%	2,247,151
1993	59.9%	0.4%	32.5%	2.5%	4.5%	0.3%	2,296,378
1994	59.6%	0.4%	32.4%	2.6%	4.6%	0.3%	2,357,588
1995	59.4%	0.4%	32.6%	2.6%	4.8%	0.3%	2,422,696
1996	59.1%	0.4%	32.8%	2.6%	4.8%	0.3%	2,485,848
1997	58.7%	0.4%	33.2%	2.6%	4.9%	0.3%	2,561,695
1998	58.9%	0.4%	33.0%	2.6%	4.9%	0.3%	2,631,522
1999	58.3%	0.4%	33.5%	2.6%	4.9%	0.3%	2,691,056
2000	58.3%	0.4%	33.6%	2.6%	4.9%	0.3%	2,749,803
<i>Average annual percentage change</i>							
1970–2000							3.1%
1990–2000							2.5%

**Source:**

U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2000*, Washington, DC, 2001, Table VM-1, p. V-50, and annual. (Additional resources: [www.fhwa.dot.gov](http://www.fhwa.dot.gov))

<sup>a</sup>The data do not correspond with vehicle-miles of travel presented in the "Bus" section of this chapter due to differing data sources.



**Table 6.6**  
**Automobiles in Operation and Vehicle Travel by Age, 1970 and 2000**

Age (years)	1970			2000			2000 Estimated vehicle travel		Average annual miles per vehicle
	Vehicles (thousands)	Percentage	Cumulative percentage	Vehicles (thousands)	Percentage	Cumulative percentage	Percentage	Cumulative percentage	
Under 1 <sup>a</sup>	6,288	7.8%	7.8%	6,665	5.2%	5.2%	7.1%	7.1%	15,600
1	9,299	11.6%	19.4%	8,177	6.4%	11.6%	8.1%	15.2%	14,500
2	8,816	11.0%	30.3%	7,655	6.0%	17.6%	7.8%	23.0%	14,800
3	7,878	9.8%	40.1%	7,906	6.2%	23.8%	7.5%	30.5%	13,800
4	8,538	10.6%	50.8%	7,413	5.8%	29.6%	6.6%	37.0%	12,900
5	8,506	10.6%	61.3%	8,675	6.8%	36.4%	7.5%	44.6%	12,700
6	7,116	8.8%	70.2%	7,628	6.0%	42.4%	6.5%	51.1%	12,400
7	6,268	7.8%	78.0%	7,650	6.0%	48.4%	6.1%	57.2%	11,600
8	5,058	6.3%	84.3%	7,021	5.5%	53.9%	5.4%	62.6%	11,300
9	3,267	4.1%	88.3%	7,109	5.6%	59.4%	5.5%	68.0%	11,200
10	2,776	3.5%	91.8%	7,071	5.5%	65.0%	4.4%	72.4%	9,000
11	1,692	2.1%	93.9%	7,338	5.7%	70.7%	4.5%	76.9%	9,000
12	799	1.0%	94.9%	6,876	5.4%	76.1%	4.2%	81.2%	9,000
13	996	1.2%	96.1%	6,084	4.8%	80.9%	3.8%	84.9%	9,000
14	794	1.0%	97.1%	5,334	4.2%	85.0%	3.3%	88.2%	9,000
15 and older	2,336	2.9%	100.0%	19,119	15.0%	100.0%	11.8%	100.0%	9,000
<b>Subtotal</b>	<b>80,427</b>	<b>100.0%</b>		<b>127,721</b>					
Age not given	22			0					
<b>Total</b>	<b>80,449</b>			<b>127,721</b>					
Average age		9.0			8.9				
Median age		8.9			8.3				

**Source:**

The Polk Company, Detroit, MI. **FURTHER REPRODUCTION PROHIBITED.**

Vehicle travel - Average annual miles per auto by age were multiplied by the number of vehicles in operation by age to estimate the vehicle travel. Average annual miles per auto by age - generated by ORNL from the *Nationwide Personal Transportation Survey* web site: [www-cta.ornl.gov/npts](http://www-cta.ornl.gov/npts).

(Additional resources: [www.polk.com](http://www.polk.com), [www-cta.ornl.gov/npts](http://www-cta.ornl.gov/npts))

<sup>a</sup>Includes automobiles from model year 2001 and 2000 which were sold prior to July 1, 2001, and similarly, model years 1971 and 1970 sold prior to July 1, 1970.



**Table 6.7**  
**Trucks in Operation and Vehicle Travel by Age, 1970 and 2000**

Age (years)	1970			2000			2000 Estimated vehicle travel		Average annual miles per vehicle
	Vehicles (thousands)	Percentage	Cumulative percentage	Vehicles (thousands)	Percentage	Cumulative percentage	Percentage	Cumulative percentage	
Under 1 <sup>a</sup>	1,262	7.1%	7.1%	6,439	7.5%	7.5%	9.2%	9.2%	17,500
1	1,881	10.6%	17.8%	7,726	9.0%	16.6%	12.1%	21.3%	19,200
2	1,536	8.7%	26.5%	6,630	7.7%	24.3%	10.7%	32.0%	19,800
3	1,428	8.1%	34.6%	6,313	7.4%	31.7%	9.2%	41.2%	17,900
4	1,483	8.4%	43.0%	5,300	6.2%	37.9%	7.6%	48.7%	17,500
5	1,339	7.6%	50.5%	5,818	6.8%	44.7%	8.0%	56.8%	17,000
6	1,154	6.5%	57.1%	5,206	6.1%	50.8%	6.6%	63.4%	15,600
7	975	5.5%	62.6%	4,335	5.1%	55.8%	5.4%	68.8%	15,400
8	826	4.7%	67.3%	3,547	4.1%	60.0%	4.4%	73.2%	15,100
9	621	3.5%	70.8%	3,411	4.0%	63.9%	3.7%	76.9%	13,200
10	658	3.7%	74.5%	3,258	3.8%	67.8%	2.4%	79.3%	9,200
11	583	3.3%	77.8%	3,665	4.3%	72.0%	2.7%	82.0%	9,200
12	383	2.2%	80.0%	3,421	4.0%	76.0%	2.6%	84.6%	9,200
13	417	2.4%	82.3%	2,860	3.3%	79.4%	2.1%	86.8%	9,200
14	414	2.3%	84.7%	2,812	3.3%	82.7%	2.1%	88.9%	9,200
15 and older	2,710	15.3%	100.0%	14,838	17.3%	100.0%	11.1%	100.0%	9,200
<b>Subtotal</b>	<b>17,670</b>	<b>100.0%</b>		<b>85,579</b>			<b>100.0%</b>		
Age not given	15			0					
<b>Total</b>	<b>17,685</b>			<b>85,579</b>					
Average age		7.3			8.0				
Median age		5.9			6.9				

**Source:**

The Polk Company, Detroit, MI. **FURTHER REPRODUCTION PROHIBITED.**

Vehicle travel—The average annual vehicle-miles per truck by age were multiplied by the number of trucks in operation by age to estimate the vehicle travel. Average annual miles per truck by age were generated by ORNL from the *1992 Truck Inventory and Use Survey* public use tape provided by U.S. Department of Commerce, Bureau of the Census, Washington, DC, 1995. (Additional resources: [www.polk.com](http://www.polk.com), [www.census.gov](http://www.census.gov))

<sup>a</sup>Includes trucks from model year 2001 and 2000 which were sold prior to July 1, 2001, and similarly, model years 1971 and 1970 sold prior to July 1, 1970.

*The average age of automobiles was lower than the average age of trucks until 1994. Since then, the average automobile age continues to grow, while the average truck age has held about the same. The increasing popularity of light trucks as personal passenger vehicles may have had an influence on the average age of trucks.*

**Table 6.8**  
Average Age of Automobiles and Trucks in Use, 1970–2000  
(years)

Calendar year	Automobiles		Trucks	
	Mean <sup>a</sup>	Median <sup>b</sup>	Mean <sup>a</sup>	Median <sup>b</sup>
1970	5.6	4.9	7.3	5.9
1971	5.7	5.1	7.4	6.1
1972	5.7	5.1	7.2	6.0
1973	5.7	5.1	6.9	5.8
1974	5.7	5.2	7.0	5.6
1975	6.0	5.4	6.9	5.8
1976	6.2	5.5	7.0	5.8
1977	6.2	5.6	6.9	5.7
1978	6.3	5.7	6.9	5.8
1979	6.4	5.9	6.9	5.9
1980	6.6	6.0	7.1	6.3
1981	6.9	6.0	7.5	6.5
1982	7.2	6.2	7.8	6.8
1983	7.4	6.5	8.1	7.2
1984	7.5	6.7	8.2	7.4
1985	7.6	6.9	8.1	7.6
1986	7.6	7.0	8.0	7.7
1987	7.6	6.9	8.0	7.8
1988	7.6	6.8	7.9	7.1
1989	7.6	6.5	7.9	6.7
1990	7.6	6.5	8.0	6.5
1991	7.8	6.7	8.1	6.8
1992	7.9	7.0	8.4	7.2
1993	8.1	7.3	8.6	7.5
1994	8.3	7.5	8.4	7.5
1995	8.4	7.7	8.4	7.6
1996	8.5	7.9	8.3	7.7
1997	8.6	8.1	8.3	7.8
1998	8.8	8.3	8.3	7.5
1999	8.9	8.3	8.2	7.2
2000	9.0	8.3	8.0	6.9

**Source:**

The Polk Company, Detroit, MI. **FURTHER REPRODUCTION PROHIBITED.**  
(Additional resources: [www.polk.com](http://www.polk.com))

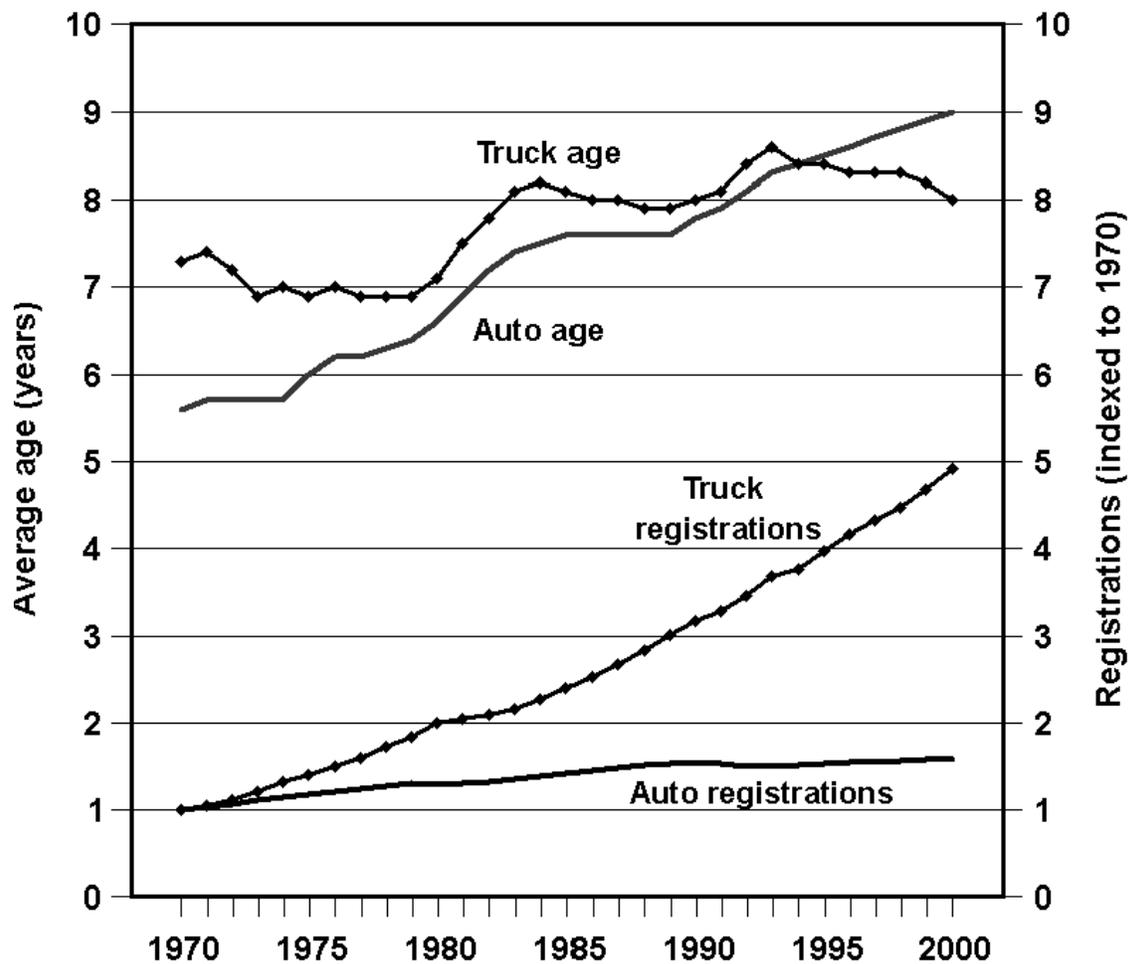
<sup>a</sup>Mean is the sum of the products of units multiplied by age, divided by the total units.

<sup>b</sup>Median is a value in an ordered set of values below and above which there are an equal number of values.



The average age of trucks (classes 1-8) has historically been higher than the average age of automobiles. In 1995, however, this trend reversed, with average automobile age higher than average truck age for the first time. The recent boom in the sales of minivans, sport-utility vehicles, and pick-ups, which are classified as trucks, is influencing the average age of trucks. So many new light trucks are being added into the truck population, that the average age of trucks has been declining since 1993, while the average age of automobiles continues an upward trend.

Figure 6.2. Average Age and Registrations of Automobiles and Trucks, 1970–2000



Source:  
See Tables 6.3 and 6.8.



Using current registration data and a scrappage model by Greenspan and Cohen, [1996 paper: <http://www.federalreserve.gov/pubs/feds/1996/199640/199640pap.pdf>], ORNL calculated new automobile scrappage rates. The expected median lifetime for a 1990 model year automobile is 16.9 years. These data are fitted model values which assume constant economic conditions.

**Table 6.9**  
**Automobile Scrappage and Survival Rates**  
**1970, 1980 and 1990 Model Years**

Vehicle age <sup>a</sup> (years)	1970 model year		1980 model year		1990 model year	
	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>
4	99.0	1.0	100.0	0.0	100.0	0.0
5	94.1	5.0	96.3	3.7	100.0	0.0
6	88.4	6.1	91.3	5.1	99.4	0.6
7	82.0	7.2	85.7	6.1	96.3	3.2
8	75.2	8.3	79.7	7.1	92.7	3.7
9	68.1	9.5	73.3	8.1	88.7	4.3
10	60.9	10.6	66.6	9.0	84.4	4.9
11	53.8	11.7	60.0	10.0	79.8	5.5
12	46.9	12.8	53.3	11.0	75.0	6.1
13	40.3	14.0	46.9	12.0	70.0	6.7
14	34.2	15.1	40.8	13.0	64.9	7.3
15	28.7	16.2	35.1	14.0	59.7	7.9
16	23.7	17.4	29.8	15.0	54.6	8.6
17	19.3	18.5	25.0	16.1	49.5	9.3
18	15.5	19.6	20.8	17.1	44.6	9.9
19	12.3	20.8	17.0	18.1	39.9	10.6
20	9.6	21.9	13.8	19.1	35.4	11.3
21	7.4	23.0	11.0	20.1	31.1	12.0
22	5.6	24.2	8.7	21.2	27.2	12.7
23	4.2	25.3	6.7	22.2	23.5	13.5
24	3.1	26.4	5.2	23.2	20.2	14.2
25	2.2	27.5	3.9	24.2	17.1	15.0
26	1.6	28.6	2.9	25.3	14.5	15.7
27	1.1	29.7	2.2	26.3	12.1	16.5
28	0.8	30.8	1.6	27.3	10.0	17.2
29	0.5	31.9	1.1	28.4	8.2	18.0
30	0.4	33.0	0.8	29.4	6.6	18.8
Median lifetime	11.5 years		12.5 years		16.9 years	

**Source:**

Schmoyer, Richard L., unpublished study on scrappage rates, Oak Ridge National Laboratory, Oak Ridge, TN, 2001.

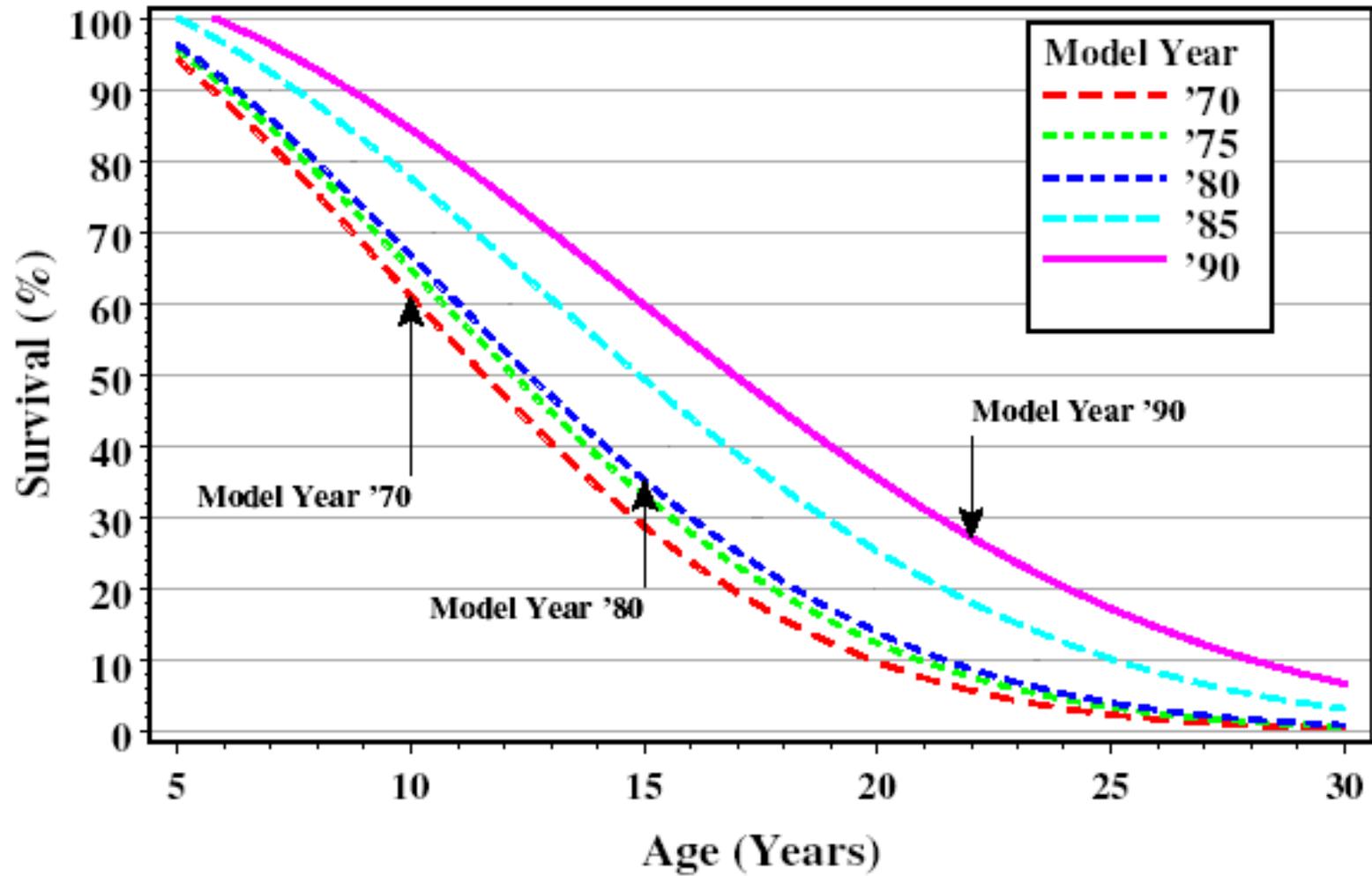
<sup>a</sup>It was assumed that scrappage for vehicles less than 4 years old is 0.

<sup>b</sup>The percentage of automobiles which will be in use at the end of the year.

<sup>c</sup>The percentage of automobiles which will be retired from use during the year.



Figure 6.3. Automobile Survival Rates



Source: See Table 6.9.



Using current registration data and a scrappage model by Greenspan and Cohen [1996 paper: <http://www.federalreserve.gov/pubs/feds/1996/199640/199640pap.pdf>], ORNL calculated new light truck scrappage rates. The expected median lifetime for a 1990 model year light truck is 15.5 years. These data are fitted model values which assume constant economic conditions.

**Table 6.10**  
**Light Truck<sup>a</sup> Scrappage and Survival Rates**

Vehicle age <sup>b</sup> (years)	1970 model year		1980 model year		1990 model year	
	Survival rate <sup>c</sup>	Scrappage rate <sup>d</sup>	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>
4	99.7	0.3	99.1	0.9	99.3	0.7
5	97.5	2.2	96.6	2.5	96.9	2.4
6	94.9	2.7	93.7	3.1	94.1	3.0
7	91.8	3.2	90.2	3.7	90.7	3.6
8	88.3	3.8	86.3	4.3	86.9	4.2
9	84.4	4.4	82.0	5.0	82.7	4.8
10	80.2	5.0	77.3	5.7	78.2	5.5
11	75.7	5.6	72.4	6.4	73.4	6.1
12	70.9	6.3	67.3	7.1	68.4	6.8
13	66.0	6.9	62.1	7.8	63.3	7.5
14	61.0	7.6	56.8	8.5	58.0	8.2
15	55.9	8.3	51.5	9.3	52.8	9.0
16	50.8	9.0	46.3	10.1	47.7	9.7
17	45.9	9.8	41.3	10.8	42.7	10.5
18	41.1	10.5	36.5	11.6	37.9	11.3
19	36.4	11.3	32.0	12.4	33.3	12.1
20	32.1	12.0	27.7	13.3	29.0	12.9
21	28.0	12.8	23.8	14.1	25.0	13.7
22	24.2	13.6	20.3	14.9	21.4	14.5
23	20.7	14.4	17.1	15.8	18.1	15.4
24	17.5	15.2	14.2	16.7	15.2	16.2
25	14.7	16.1	11.7	17.5	12.6	17.1
26	12.2	16.9	9.6	18.4	10.3	18.0
27	10.1	17.8	7.7	19.3	8.4	18.8
28	8.2	18.6	6.2	20.2	6.7	19.7
29	6.6	19.5	4.9	21.1	5.3	20.6
30	5.2	20.4	3.8	22.1	4.2	21.5
Median lifetime	16.2 years		15.3 years		15.5 years	

**Source:**

Schmoyer, Richard L., unpublished study on scrappage rates, Oak Ridge National Laboratory, Oak Ridge, TN, 2001.

<sup>a</sup>Light trucks are trucks less than 10,000 lbs. gross vehicle weight.

<sup>b</sup>It was assumed that scrappage for vehicles less than 4 years old is 0.

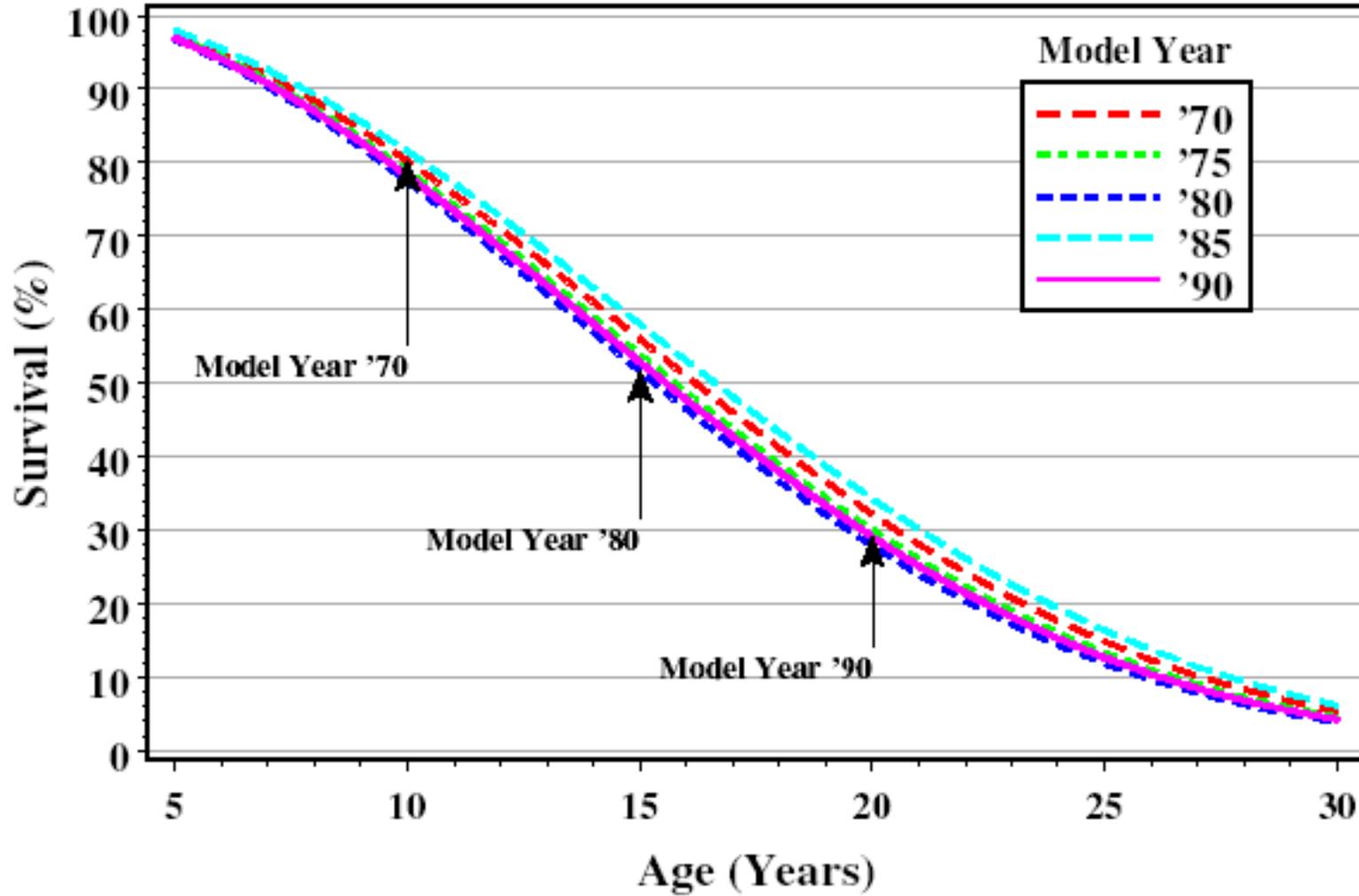
<sup>c</sup>The percentage of light trucks which will be in use at the end of the year.

<sup>d</sup>The percentage of light trucks which will be retired from use during the year.





Figure 6.4. Light Truck Survival Rates



Source: See Table 6.10.

Using current registration data and a scrappage model by Greenspan and Cohen [1996 paper: <http://www.federalreserve.gov/pubs/feds/1996/199640/199640pap.pdf>], ORNL calculated heavy truck (trucks over 26,000 lbs. gross vehicle weight) scrappage rates. The expected median lifetime for a 1990 model year heavy truck is 29 years. These data are fitted model values which assume constant economic conditions.

**Table 6.11**  
**Heavy Truck<sup>a</sup> Scrappage and Survival Rates**

Vehicle age <sup>b</sup> (years)	1970 model year		1980 model year		1990 model year	
	Survival rate <sup>c</sup>	Scrappage rate <sup>d</sup>	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>	Survival rate <sup>b</sup>	Scrappage rate <sup>c</sup>
4	98.8	1.2	98.5	1.5	99.4	0.6
5	97.2	1.6	96.7	1.9	98.6	0.8
6	95.3	1.9	94.5	2.3	97.6	1.0
7	93.2	2.3	92.0	2.7	96.5	1.2
8	90.7	2.6	89.1	3.1	95.2	1.3
9	88.1	3.0	86.0	3.5	93.8	1.5
10	85.2	3.3	82.7	3.9	92.2	1.7
11	82.1	3.6	79.1	4.3	90.5	1.9
12	78.8	4.0	75.4	4.7	88.6	2.0
13	75.4	4.3	71.6	5.1	86.7	2.2
14	71.9	4.7	67.7	5.5	84.6	2.4
15	68.3	5.0	63.7	5.9	82.4	2.6
16	64.6	5.3	59.7	6.3	80.2	2.7
17	61.0	5.7	55.7	6.7	77.9	2.9
18	57.3	6.0	51.8	7.1	75.5	3.1
19	53.7	6.3	47.9	7.4	73.0	3.3
20	50.1	6.7	44.2	7.8	70.5	3.4
21	46.6	7.0	40.6	8.2	68.0	3.6
22	43.2	7.3	37.1	8.6	65.4	3.8
23	39.9	7.6	33.7	9.0	62.8	3.9
24	36.7	8.0	30.6	9.4	60.3	4.1
25	33.7	8.3	27.6	9.7	57.7	4.3
26	30.8	8.6	24.8	10.1	55.1	4.5
27	28.0	8.9	22.2	10.5	52.6	4.6
28	25.4	9.3	19.8	10.9	50.0	4.8
29	23.0	9.6	17.6	11.2	47.6	5.0
30	20.7	9.9	15.5	11.6	45.1	5.1
Median lifetime	20.0 years		18.5 years		28.0 years	

**Source:**

Schmoyer, Richard L., unpublished study on scrappage rates, Oak Ridge National Laboratory, Oak Ridge, TN, 2001.

<sup>a</sup>Heavy trucks are trucks more than 26,000 lbs. gross vehicle weight.

<sup>b</sup>It was assumed that scrappage for vehicles less than 4 years old is 0.

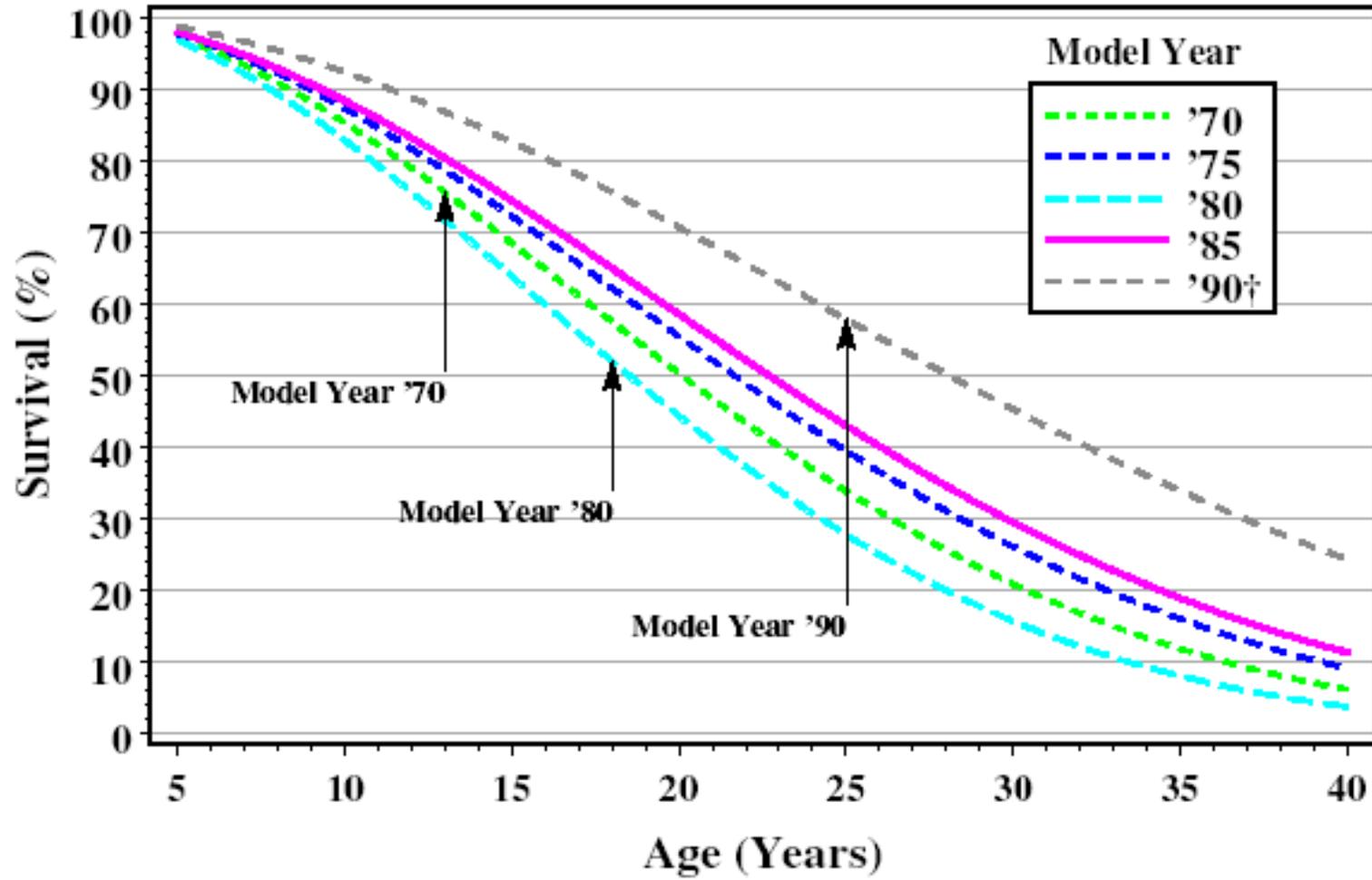
<sup>c</sup>The percentage of heavy trucks which will be in use at the end of the year.

<sup>d</sup>The percentage of heavy trucks which will be retired from use during the year.





Figure 6.5. Heavy Truck Survival Rates



Source: See Table 6.11.

Model year '90 estimates are based on minimal preliminary data.