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16. Abstract <p>1 This report provides a number of preliminary estimates of traffic fatalities and fatal accidents for 1987. Trend data are presented for both the long and short term. Some summary statistics are provided at the State and Regional level.</p> <p>The national estimates for 1987 are quite extensive and cover the entire range of frequently used accident classifications. All estimates are compared to the corresponding values in 1986, 1983, and 1980.</p> <p>7 The results are presented in both tabular and graphical form.</p>					
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OVERVIEW OF MAJOR CHANGES, 1986 to 1987

The death toll on the nation's highways reached an estimated total of 46,330 fatalities in 1987. This total is less than 1 percent higher than the 46,087 traffic fatalities reported in 1986. When compared to 1980, the annual traffic death toll has declined by 9 percent (46,330 vs. 51,091).

There was a clear and definite pattern in the trend of traffic fatalities during the 12 months of 1987. The gradual decline that was present at the end of 1986 continued for the first eight months of 1987, but the trend reversed itself in September and continued to show increases for the rest of the year. The overall result for the entire year was a 1 percent increase.

Total travel in the United States increased by about 4 percent in 1987, as compared to a 1 percent increase in the number of fatalities. The fatality rate per 100 million vehicle miles of travel for the entire year is estimated at 2.4, the lowest on record.

State and Regional Changes

Significant increases in the number of fatalities occurred in 6 States. Eleven additional States and the District of Columbia showed increases which were sizeable but not significant. Ten States showed significant decreases, while three others had decreases that were not significant; the remaining States showed changes that were not appreciable in either direction.

As in the past, fatality changes varied widely among the States. The States of Texas, Louisiana, Oklahoma, and Wyoming continue to show declines. Fatality reductions range from 25 to 47 percent relative to 1980 in these States. The decreases in 1987 exceeded the 10 percent level in four States, with an additional eight States showing a reduction between 5 and 10 percent, while eight States had decreases which were less than 5 percent. At the other end of the spectrum, there were five States and the District of Columbia with increases above 10 percent, 12 other had increases of 5 to 9 percent, and another 11 had smaller increases. Two States had almost the same number of fatalities as in 1986.

Among the ten regions of the National Highway Traffic Safety Administration (NHTSA), Regions 2, and 9 experienced small but significant increases, while Region 6 had a significant decrease. All other regions show only minor changes, which were not significant.

Crashes

The number of single-vehicle fatal crashes decreased by 1 percent. This decrease was offset by a 3 percent increase in multi vehicle crashes. The number of crashes involving a pedestrian or a pedalcyclist did not change appreciably in 1987.

Vehicles and Occupants

The number of vehicles involved in fatal crashes increased by 2 percent over 1986. The increase was all among light trucks and vans. The number of occupant fatalities increased by 1 percent in 1987, with the largest contribution due to the 9 percent increase among occupants of light trucks and vans. Motorcycle fatalities decreased by 13 percent and heavy truck occupant fatalities by 8 percent. The number of occupant fatalities in passenger cars remained almost the same.

Drivers

The number of drivers involved in fatal crashes increased 2 percent in 1987. The greatest changes were found in the various driver age-sex groups. Male drivers show no change from 1986 while there was a 6 percent increase in the number of female drivers involved in fatal crashes. The difference was more pronounced among young drivers, 15 to 24 years of age. Young male drivers (15-24 years of age) were involved in 5 percent fewer crashes while their female counterpart had a 3 percent increase. Among male drivers, the decrease found for young drivers was offset by the increase for older male drivers. Drivers of both sexes, aged 65 and over, increased 4 percent in 1987. Further, their increase between 1980 and 1987 is 33 percent. For female drivers, all

age groups experienced an increase in 1987. Male driver fatalities decreased 1 percent with the largest increase in male drivers 20-24. Female driver fatalities increased by 8 percent, but the increase was 13 percent for the ages 15 to 19 and 35 to 54. Elderly drivers, 65 and over, have experienced 27 percent more fatal crashes since 1983.

Passengers

Passenger fatalities increased by 1 percent during 1987. The increase was 11 percent for children under 5, 5 percent for people aged 5 to 14 and 25 to 34, 9 percent for ages 35 to 54, and 7 percent for people over 64. The only reduction was found among young people between the ages of 15 and 24, who show a 6 percent decline.

Motorcyclists

There was a substantial decrease in motorcyclist fatalities in 1987, with the total 13 percent lower than 1986 and 23 percent lower than 1980.

Nonoccupants

Among nonoccupants (pedestrians and pedalcyclists) the number of fatalities remained at the same level as in 1986. Male fatalities increased by 1 percent while there was a 2 percent decrease among females. The reduction by age groups shows no clear pattern.

Land Use and Highway Type

Rural Interstate fatal crashes and fatalities increased 17 percent in 1987. Urban Interstate fatalities decreased 1 percent, while non-Interstate fatalities decreased less than 1 percent.

Alcohol Testing

Among drivers involved in fatal crashes, the proportion tested for blood alcohol concentration (BAC) is reported at 45 percent, with 90 percent of the test results known. In 1986, 45 percent were tested with 89 percent of the results known. Fatally injured drivers are almost four times as likely to be tested for BAC than the drivers that survive the crash. Surviving drivers in single-vehicle crashes are twice as likely to be tested as those in multi-vehicle crashes.

Reported Restraint and Helmet Use

The use of safety belts and other restraints, as reported by police, rose sharply in 1987. The usage rate for surviving drivers was reported at 48 percent; this compares favorably with the rates of 38 percent in 1986, 24 percent in 1984 and 5 percent in 1980. For the drivers who died, the usage rate was 18 percent in 1987, compared to 15 percent in 1986 and 3 percent in 1980.

Overall driver restraint use in 1987 increased to 34 percent of the drivers in fatal crashes. In 1980, only 4 percent were restrained; in 1983 the proportion was up to 5 percent; and in 1986 it reached the 27 percent level. Safety belt use by all passengers increased to 29 percent, 31 percent for the surviving passengers and 18 percent for those fatally injured.

Among children 5 years of age and under, 45 percent in 1987 were restrained, compared to 40 percent in 1986 and only 6 percent in 1980. Those who survived were using restraints at a 50 percent rate, while only 31 percent of the children who were killed in 1987 crashes were protected.

Motorcycle helmet use decreased slightly to 40 percent in 1987. Helmet use was 42 percent for drivers and 32 percent for passengers.

INTRODUCTION

The purposes of this report are to: (1) produce timely preliminary estimates of national traffic fatalities for 1987; (2) present both long and short-term traffic fatality trend data, and (3) identify broad changes from previous years. The 1987 FARS annual report will be based on more complete crash and related data, and will present more detailed analyses of 1987 traffic fatalities. No attempt is made to interpret the changes found in this report or to identify the contributing causes.

These fatality estimates are based on the 1987 file of the Fatal Accident Reporting System (FARS), which contains information on all fatal traffic crashes in the United States. FARS is sponsored and managed by the National Center for Statistics and Analysis (NCSA), an office of the National Highway Traffic Safety Administration.

All 1987 fatal traffic crashes on file as of March 1988 have been used in this analysis. These cases represent about 96 percent of the expected final total for the year.

The estimates in this report are an extrapolation of the data presently available in the FARS file. Extrapolation factors have been established for each month using the expected final monthly fatality counts and the corresponding counts in the FARS file. The 1987 national estimate of 46,330 deaths will be very close to the final fatality total obtained in the summer of 1988.

Based on experience with previous preliminary estimates, most estimates in this report will be within 1 percent of the final 1987 figures. The accuracy of smaller fatality count estimates depends on the magnitude of the estimate and the proportion of incomplete data in each specific classification.

Even where the data are complete, caution is required in the use of estimated changes in traffic fatalities. Deaths on the highway represent the result of relatively rare events and their annual number is subject to random variation. Although the effect of this inherent variability is small for large counts, it becomes more important as the numbers become smaller.

The random variation of fatality totals may be estimated by assuming that each total is a Poisson-distributed random variable having, as such, a standard deviation approximately equal to the square root of its value. For example, a total estimated at 100 fatalities has a standard deviation of about 10, or 10 percent of the total. A total of 10,000 has a standard deviation of about 100, or only 1 percent of the total.

Any two annual counts can be compared by a standard statistical test based on this assumed Poisson distribution. If such a test indicates the observed change to be "significant," there is confidence that the change is due to some real cause, and not simply to chance variation. If, on the other hand, the test indicates the change is "not significant," the conclusion is that either a change has not occurred or it was not large enough to be detected by the test. In general, a change is considered significant if its value is equal to or greater than two standard deviations.

FATALITY TRENDS

National Trends

Figures 1 and 2 provide a concise overview of the major highway fatality trends for the last 27 years. These figures place the 1987 experience in historical perspective.

Figure 1 shows that the annual number of traffic deaths rose steadily from 1961 to 1966, showed smaller increases through 1973 and then dropped abruptly in 1974 with the fuel crisis and implementation of the 55-mph national maximum speed limit. Fatalities remained almost constant during 1975 and 1976, increased again over the next two years and again remained constant during 1979 and 1980.

The next decline, which began in 1981, brought the 1983 count to the lowest total in 20 years. The 17 percent decrease from 1980 to 1983 occurred in spite of increases in the numbers of drivers and vehicles and miles of travel.

The downward trend was interrupted in 1983. Fatalities for 1986 were 8 percent higher than in 1983, followed by a 1 percent increase in 1987.

A closer look at the monthly changes for 1987 reveals that fatalities declined for seven of the first eight months, when compared to 1986, but rose sharply during the last four. (Table 12)

Figure 2 shows the fatality rate per vehicle mile of travel. This rate increased slightly from 1960 to 1966, declined significantly during the next decade, leveled off between 1976 and 1980, and declined sharply between 1980 and 1983. After 1983 the rate continued to decline but more gradually. The 1987 rate of 2.4 is the lowest rate ever recorded.

FIGURE 1

U.S. TRAFFIC FATALITIES
BY YEAR, 1960 TO 1987

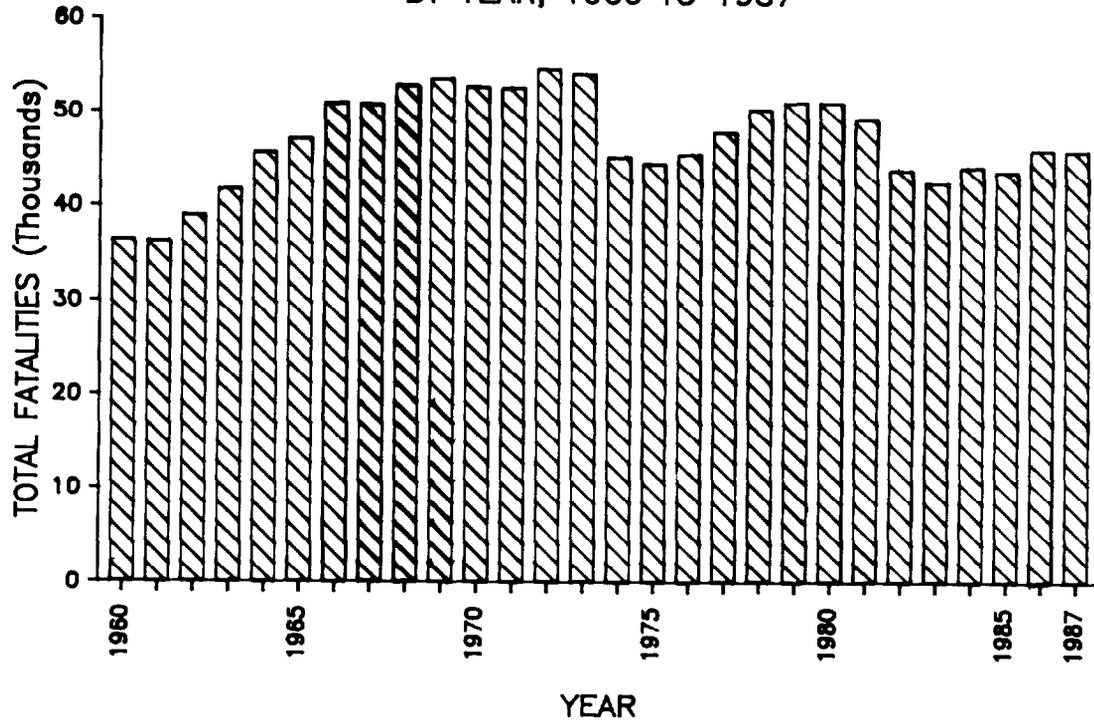
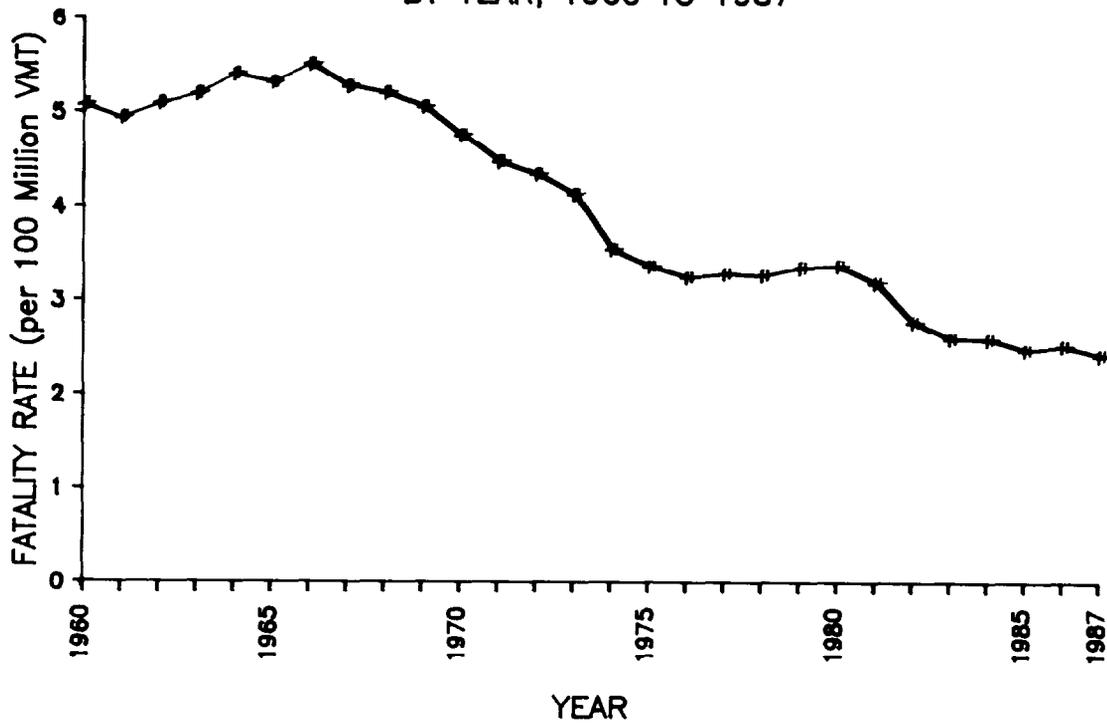


FIGURE 2

U.S. TRAFFIC FATALITY RATE
BY YEAR, 1960 TO 1987



State and Regional Trends

State-by-State statistics on fatal crashes over the 1980-1987 period are shown in Tables 1 and 1A. Similarly, data covering the eight-year period for the 10 NHTSA Regions are presented in Table 2.

When interpreting changes in fatality statistics for individual States and NHTSA Regions, recall that the accuracy of a comparison depends on the sizes of the totals being compared. The procedure outlined in the introduction should help determine how much confidence to place in the results. For a small State the variability of the total may be so large as to put any change into question.

This procedure has been used to classify the fatality changes from 1986 to 1987 for each State, NHTSA Regions and the nation as a whole as "significant," "probable" or "no change." A "significant" change means greater than 95 percent probability that the observed increase or decrease is not due to chance. A change with a probability between 67 and 95 percent that it is not due to chance is classified as simply a probable decrease or increase. All other values are classified as no change.

The 1 percent national increase was a probable increase. The increases in the NHTSA Regions 2 and 9 were significant, and the same can be said for the decrease in Region 6. In Regions 3, 4, 5, and 10 there was a probable increase, while Regions 1 and 8 showed probable decreases. The change in Region 7 was not significant.

The results for the individual States follow.

Classification of Changes by State

<u>SIGNIFICANT DECREASE</u>	<u>PROBABLE DECREASE</u>	<u>NO SUBSTANTIAL CHANGE</u>	<u>PROBABLE INCREASE</u>	<u>SIGNIFICANT INCREASE</u>
Alaska	Minnesota	Alabama	Arkansas	California
Arizona	Nevada	Colorado	Dist. of Col.	Iowa
Louisiana	North Carolina	Connecticut	Florida	New York
Massachusetts		Delaware	Georgia	Pennsylvania
Missouri		Idaho	Hawaii	Washington
New Mexico		Indiana	Illinois	Wisconsin
Oklahoma		Kansas	Kentucky	
Texas		Michigan	Maine	
Virginia		Mississippi	Maryland	
Wyoming		Montana	Nevada	
		Nebraska	New York	
		New Hampshire	West Virginia	
		New Jersey		
		North Dakota		
		Ohio		
		Oregon		
		Rhode Island		
		South Carolina		
		South Dakota		
		Tennessee		
		Utah		
		Vermont		

TABLE 1

STATE	FATALITIES BY STATE				% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
	1987	1986	1983	1980			
ALABAMA	1,106	1,081	930	940	-1%	16%	2%
ALASKA	76	101	150	88	70%	-33%	-25%
ARIZONA	933	1,007	675	947	-29%	49%	-7%
ARKANSAS	639	603	557	588	-5%	8%	6%
CALIFORNIA	5,503	5,253	4,573	5,496	-17%	15%	5%
COLORADO	591	603	646	709	-9%	-7%	-2%
CONNECTICUT	451	455	438	575	-24%	4%	-1%
DELAWARE	146	136	110	153	-28%	24%	7%
DIST OF COLUMBIA	53	44	66	41	61%	-33%	20%
FLORIDA	2,891	2,831	2,686	2,825	-5%	5%	2%
GEORGIA	1,590	1,530	1,296	1,508	-14%	18%	4%
HAWAII	138	120	141	186	-24%	-15%	15%
IDAHO	262	258	263	331	-21%	-2%	2%
ILLINOIS	1,656	1,596	1,526	1,975	-23%	5%	4%
INDIANA	1,056	1,038	1,016	1,166	-13%	2%	2%
IOWA	490	441	514	626	-18%	-14%	11%
KANSAS	491	500	411	595	-31%	22%	-2%
KENTUCKY	847	805	778	820	-5%	3%	5%
LOUISIANA	816	932	933	1,219	-23%	-0%	-12%
MAINE	232	214	224	265	-15%	-4%	8%
MARYLAND	830	784	656	756	-13%	20%	6%
MASSACHUSETTS	690	752	651	881	-26%	16%	-8%
MICHIGAN	1,596	1,605	1,314	1,750	-25%	22%	-1%
MINNESOTA	530	571	555	848	-35%	3%	-7%
MISSISSIPPI	757	771	715	695	3%	8%	-2%
MISSOURI	1,044	1,129	911	1,175	-22%	24%	-8%
MONTANA	234	222	286	325	-12%	-22%	5%
NEBRASKA	297	290	255	396	-36%	14%	2%
NEVADA	262	233	253	346	-27%	-8%	12%
NEW HAMPSHIRE	179	172	191	194	-2%	-10%	4%
NEW JERSEY	1,022	1,039	932	1,120	-17%	11%	-2%
NEW MEXICO	568	499	531	606	-12%	-6%	14%
NEW YORK	2,322	2,121	2,077	2,610	-20%	2%	9%
NORTH CAROLINA	1,588	1,647	1,234	1,503	-18%	33%	-4%
NORTH DAKOTA	101	100	116	151	-23%	-14%	1%
OHIO	1,692	1,673	1,582	2,033	-22%	6%	1%
OKLAHOMA	606	698	848	959	-12%	-18%	-13%
OREGON	620	619	550	646	-15%	13%	0%
PENNSYLVANIA	1,987	1,894	1,721	2,089	-18%	10%	5%
RHODE ISLAND	113	124	100	129	-22%	24%	-9%
SOUTH CAROLINA	1,087	1,059	844	852	-1%	25%	3%
SOUTH DAKOTA	134	134	175	228	-23%	-23%	0%
TENNESSEE	1,213	1,230	1,037	1,153	-10%	19%	-1%
TEXAS	3,261	3,567	3,823	4,366	-12%	-7%	-9%
UTAH	297	313	283	334	-15%	11%	-5%
VERMONT	118	109	94	137	-31%	16%	8%
VIRGINIA	1,020	1,126	901	1,045	-14%	25%	9%
WASHINGTON	782	703	698	971	-28%	1%	11%
WEST VIRGINIA	471	440	425	523	-19%	4%	7%
WISCONSIN	813	747	725	972	-25%	3%	9%
WYOMING	129	168	173	245	-29%	-3%	-23%
U S TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

TABLE 1A

FATAL ACCIDENTS BY STATE

STATE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
ALABAMA	977	968	806	835	-3%	20%	1%
ALASKA	68	89	135	79	71%	-34%	-24%
ARIZONA	828	889	616	833	-26%	44%	-7%
ARKANSAS	547	524	485	486	-0%	8%	4%
CALIFORNIA	4,917	4,683	4,089	4,930	-17%	15%	5%
COLORADO	520	507	591	625	-5%	-14%	3%
CONNECTICUT	416	429	404	520	-22%	6%	-3%
DELAWARE	129	119	98	135	-27%	21%	8%
DIST. OF COLUMBIA	49	44	58	38	53%	-24%	12%
FLORIDA	2,592	2,541	2,415	2,519	-4%	5%	2%
GEORGIA	1,423	1,378	1,157	1,348	-14%	19%	3%
HAWAII	127	111	133	167	-20%	-17%	14%
IDAHO	228	220	231	287	-20%	-5%	4%
ILLINOIS	1,495	1,449	1,379	1,776	-22%	5%	3%
INDIANA	932	931	876	1,029	-15%	6%	0%
IOWA	424	388	437	541	-19%	-11%	9%
KANSAS	417	413	361	506	-29%	14%	1%
KENTUCKY	762	723	690	746	-8%	5%	5%
LOUISIANA	724	821	836	1,080	-23%	-2%	-12%
MAINE	206	191	198	236	-16%	-4%	8%
MARYLAND	757	716	607	682	-11%	18%	6%
MASSACHUSETTS	634	680	605	813	-26%	12%	-7%
MICHIGAN	1,431	1,442	1,192	1,561	-24%	21%	-1%
MINNESOTA	468	505	498	742	-33%	1%	-7%
MISSISSIPPI	657	670	626	603	4%	7%	-2%
MISSOURI	912	970	810	1,025	-21%	20%	-6%
MONTANA	203	193	253	276	-8%	-24%	5%
NEBRASKA	258	259	221	337	-34%	17%	-1%
NEVADA	229	203	220	302	-27%	-8%	13%
NEW HAMPSHIRE	162	162	166	175	-5%	-2%	-0%
NEW JERSEY	937	946	866	1,022	-15%	9%	-1%
NEW MEXICO	492	436	467	513	-9%	-7%	13%
NEW YORK	2,127	1,949	1,918	2,374	-19%	2%	9%
NORTH CAROLINA	1,413	1,489	1,083	1,327	-18%	37%	-5%
NORTH DAKOTA	90	88	105	133	-21%	-16%	2%
OHIO	1,508	1,503	1,416	1,805	-22%	6%	0%
OKLAHOMA	520	607	720	820	-12%	-16%	-14%
OREGON	551	544	485	585	-17%	12%	1%
PENNSYLVANIA	1,788	1,710	1,544	1,882	-18%	11%	5%
RHODE ISLAND	105	115	96	118	-19%	20%	-8%
SOUTH CAROLINA	958	944	739	747	-1%	28%	1%
SOUTH DAKOTA	113	118	147	188	-22%	-20%	-4%
TENNESSEE	1,073	1,102	919	1,007	-9%	20%	-3%
TEXAS	2,848	3,120	3,328	3,814	-13%	-6%	-9%
UTAH	263	277	253	291	-13%	9%	-5%
VERMONT	105	91	87	125	-30%	5%	16%
VIRGINIA	910	1,002	803	938	-14%	25%	-9%
WASHINGTON	699	648	628	847	-26%	3%	8%
WEST VIRGINIA	417	386	379	464	-18%	2%	8%
WISCONSIN	713	651	648	847	-23%	0%	10%
WYOMING	112	146	152	205	-26%	-4%	-23%
U.S. TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 2

TRAFFIC FATALITIES BY NHTSA REGIONS

REGION	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
REGION 1	1,783	1,826	1,698	2,181	-22%	8%	-2%
REGION 2	3,345	3,160	3,009	3,730	-19%	5%	6%
REGION 3	4,508	4,424	3,879	4,607	-16%	14%	2%
REGION 4	11,078	10,954	9,520	10,296	-8%	15%	1%
REGION 5	7,343	7,230	6,718	8,744	-23%	8%	2%
REGION 6	5,888	6,299	6,692	7,738	-14%	-6%	-7%
REGION 7	2,322	2,360	2,091	2,792	-25%	13%	-2%
REGION 8	1,486	1,540	1,679	1,992	-16%	-8%	-4%
REGION 9	6,837	6,613	5,642	6,975	-19%	17%	3%
REGION 10	1,740	1,681	1,661	2,036	-18%	1%	4%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

FIGURE 3

TRAFFIC FATALITIES BY REGION - 1987

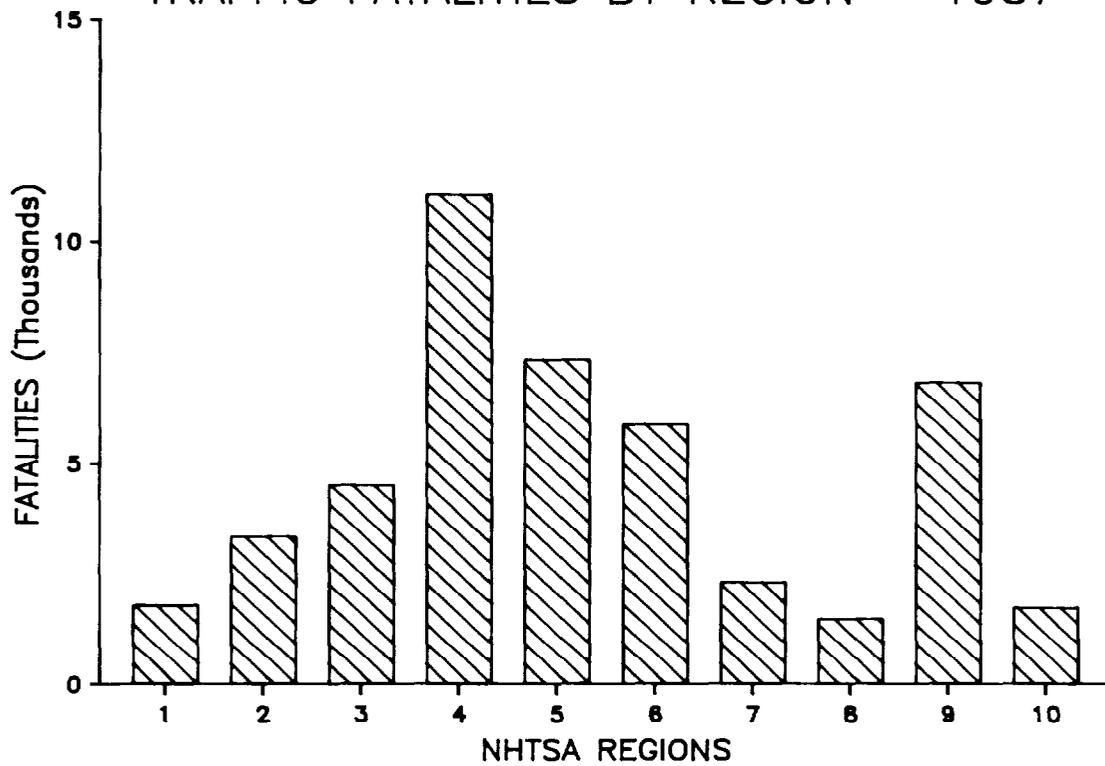
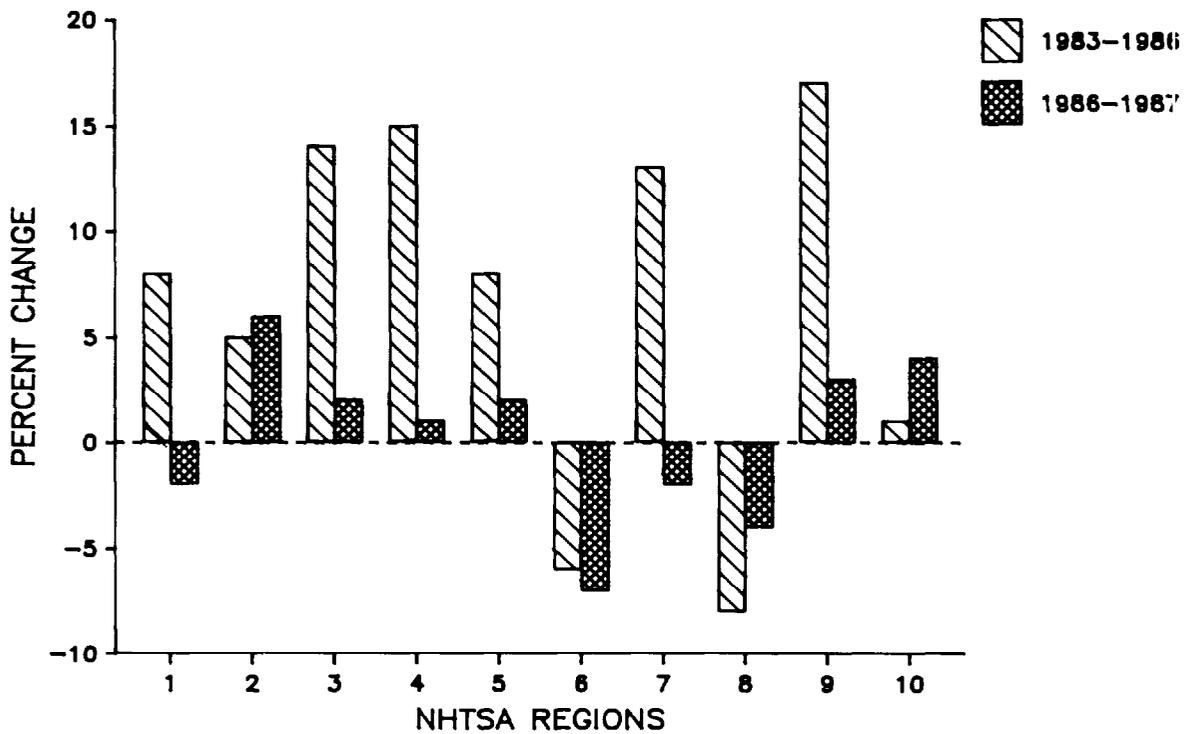


FIGURE 4

TRAFFIC FATALITIES CHANGES BY REGION



TRAFFIC FATALITIES in 1987

General Estimates

During 1987 an estimated 46,330 fatalities occurred on the nation's highways. This total is 1 percent higher than for 1986 and 9 percent above the total recorded for 1983. When taking travel mileage into consideration to evaluate the risk to the public, we find that 1987 remained at the safest level on record with a rate of 2.4 fatalities per 100 million vehicle miles of travel, a value half as large as that recorded for 1963, as well as the lowest value ever recorded.

As in previous years, male traffic fatalities exceeded female fatalities by a factor of about 2.4 to 1. The ratio of male to female fatalities is much higher for persons between the ages of 20 and 35; for these victims this ratio reaches 3.3, while it declines to 1.3 for victims 65 or older. (Table 3, Figure 5)

The age distribution of traffic fatalities is not uniform among the three major categories -- drivers, passengers and nonoccupants (mostly pedestrians and bicyclists). One way to highlight the difference is to present the distribution by category in each age group. (Table 4, Figure 6)

Overall, 58 percent of all victims are drivers, 25 percent are passengers, and 17 percent are nonoccupants (Table 4). These proportions vary considerably among the various age groups. As expected, in the 14-and-under group there are very few drivers and an almost even split between nonoccupants and passengers. For the remaining victims, the proportion in each category varies, but with recognizable patterns. The proportion of nonoccupant deaths rises steadily from 9 percent in the 15-to-24 age group to 25 percent for persons 65 or older.

The proportion of driver deaths is 54 percent for victims 15-to-19 years of age. It increases to nearly 70 percent for the 25-to-44 age group and decreases to about 50 percent for the 65-and-older age group.

The pattern for passenger deaths is opposite to that described for drivers. The proportion of passenger deaths is 52 percent for the 14-and-under age group, decreases to 16 percent for ages 35 to 44 and rises to 25 percent for the oldest group.

The monthly distribution of fatalities by victim type shows that passengers, drivers, and nonoccupants have almost identical distributions, with a low value of 6 percent in February, a peak value of about 10 percent from June to August and smooth transitions in between. The number of driver and passenger fatalities during these three summer months is about 60 percent higher than in February. (Table 5)

By associating monthly fatalities with the corresponding travel estimates contained in Table 2A, the fatality rate for each month can be determined. This rate is the number of fatalities per 100 million vehicle miles of travel.

The resulting figures for 1987 show that the rate did not remain constant, but -- in typical seasonal fashion -- rose steadily from a low of 2.2 in February to 2.7 in September and then declined. The fatality rate by day of week and hour of day cannot be estimated, because national estimates of travel are not available at this level of detail. (Table 2A)

The distribution of traffic fatalities by posted speed limit within urban and rural areas (Table 8) shows that 58 percent occurred in rural areas and that 51 percent of the fatalities occurred on roads with a posted speed limit of 55 mph or greater.

The latest estimates of travel by Land Use, Roadway Function, and Posted Speed Limits are available from the Federal Highway Administration for the year 1986. Based on these estimates, fatality rates have been derived at a finer level of detail and are presented in Table 2A. The table shows that the rate is higher in rural areas and that the interstate and the expressways have a significantly lower rate in both rural and urban areas. The highest rate is found on local streets.

TABLE 2A
ESTIMATES OF TRAVEL AND FATALITY RATES

A) 1987 Estimates, by Month, of Vehicle Miles of Travel (Millions) and Fatality Rate (per 100 million VMT)

MONTH	VMT	FATALITY RATE
January	136,902	2.3
February	132,098	2.2
March	156,812	2.2
April	157,141	2.2
May	166,235	2.5
June	167,725	2.5
July	176,785	2.4
August	179,745	2.6
September	152,409	2.7
October	165,592	2.6
November	153,757	2.6
December	153,406	2.5
Total	1,908,607	2.4

B) 1986 Estimates of Travel and Fatality Rate by Land Use and Posted Speed Limit

POSTED SPEED	LAND USE					
	RURAL		URBAN		TOTAL	
	TRAVEL	RATE	TRAVEL	RATE	TRAVEL	RATE
35 mph or Less	133,291	2.0	476,210	1.9	609,501	2.0
40-50 mph	88,390	5.5	243,416	2.4	331,806	3.2
55 mph & over	528,395	3.6	368,539	1.2	896,934	2.6
TOTAL	750,076	3.5	1,088,165	1.8	1,838,241	2.5

* Based on Federal Highway Administration's latest estimates of VMT and its distribution by Land Use and Posted Speed.

TABLE 2A (Cont'd)

C) 1986 Traffic fatality rate by Roadway Function and Land Use

ROADWAY FUNCTION	LAND USE	
	URBAN	RURAL
INTERSTATE/EXPRESSWAY	0.9	1.3
FREEWAYS	1.5	---
PRINC. ARTERIAL	2.1	3.9
MINOR ARTERIAL	2.1	3.5
COLLECTORS	2.0	4.2
LOCAL STREETS	2.1	5.1

TABLE 3

1987 FATALITIES BY AGE AND SEX OF VICTIM

AGE OF VICTIM	SEX OF VICTIM		TOTAL
	MALE	FEMALE	
4 YRS AND UNDER (Percent)	545 55	442 45	987 100
5 TO 14 YEARS (Percent)	1,468 65	778 35	2,246 100
15 TO 19 YEARS (Percent)	4,675 70	1,965 30	6,640 100
20 TO 24 YEARS (Percent)	5,718 78	1,655 22	7,373 100
25 TO 34 YEARS (Percent)	7,748 76	2,442 24	10,190 100
35 TO 44 YEARS (Percent)	4,195 73	1,562 27	5,757 100
45 TO 54 YEARS (Percent)	2,377 69	1,067 31	3,444 100
55 TO 64 YEARS (Percent)	2,136 65	1,130 35	3,266 100
65 YEARS OR OLDER (Percent)	3,492 57	2,645 43	6,137 100
UNKNOWN AGE (Percent)	206 71	84 29	290 100
TOTAL (Percent)	32,560 70	13,770 30	46,330 100

TABLE 4

1987 FATALITIES BY AGE AND TYPE OF VICTIM

AGE OF VICTIM	TYPE OF VICTIM			TOTAL
	NONOCCUPANT	DRIVER	PASSENGER	
4 YRS AND UNDER	307	0	680	987
(Percent)	31	0	69	100
5 TO 14 YEARS	1,133	121	992	2,246
(Percent)	50	5	44	100
15 TO 19 YEARS	590	3,574	2,476	6,640
(Percent)	9	54	37	100
20 TO 24 YEARS	670	4,893	1,810	7,373
(Percent)	9	66	25	100
25 TO 34 YEARS	1,220	7,045	1,925	10,190
(Percent)	12	69	19	100
35 TO 44 YEARS	918	3,904	935	5,757
(Percent)	16	68	16	100
45 TO 54 YEARS	660	2,161	623	3,444
(Percent)	19	63	18	100
55 TO 64 YEARS	682	1,953	631	3,266
(Percent)	21	60	19	100
65 YEARS OR OLDER	1,553	3,027	1,557	6,137
(Percent)	25	49	25	100
UNKNOWN AGE	127	82	81	290
(Percent)	44	28	28	100
TOTAL	7,860	26,760	11,710	46,330
(Percent)	17	58	25	100

FIGURE 5

FATALITIES BY AGE AND SEX - 1987

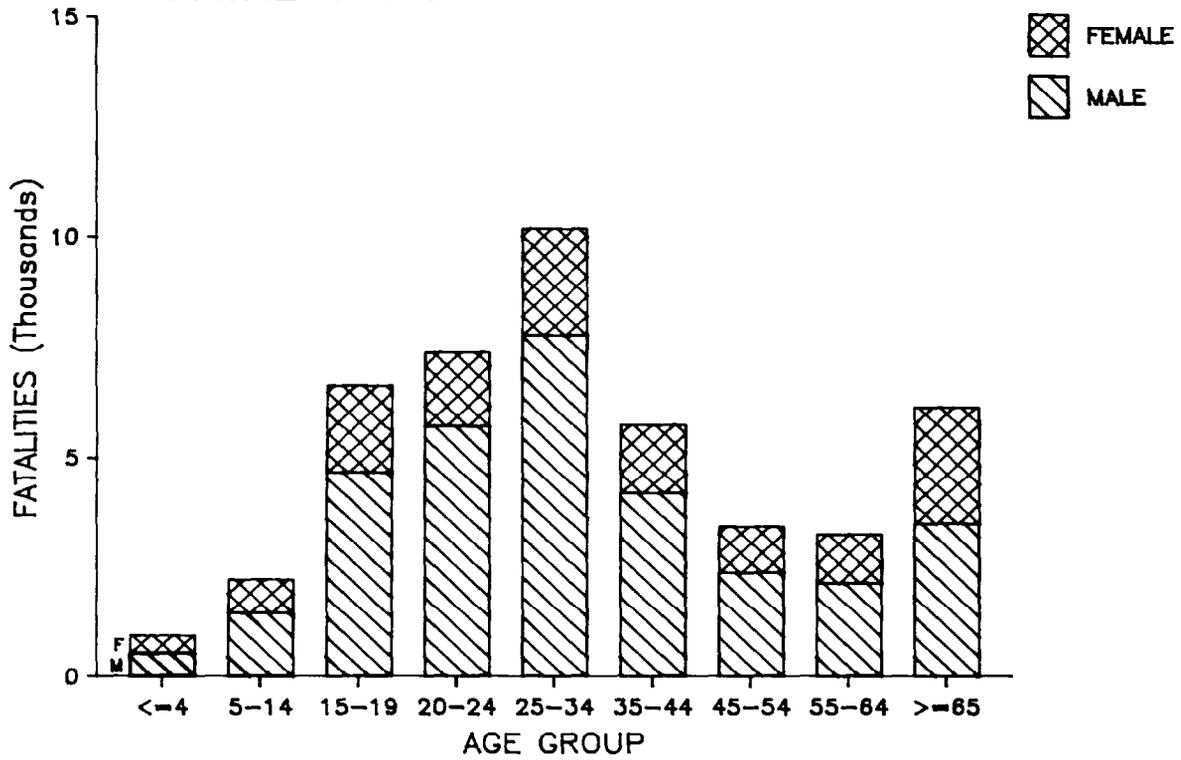


FIGURE 6

TRAFFIC FATALITIES - 1987
BY TYPE AND AGE OF VICTIM

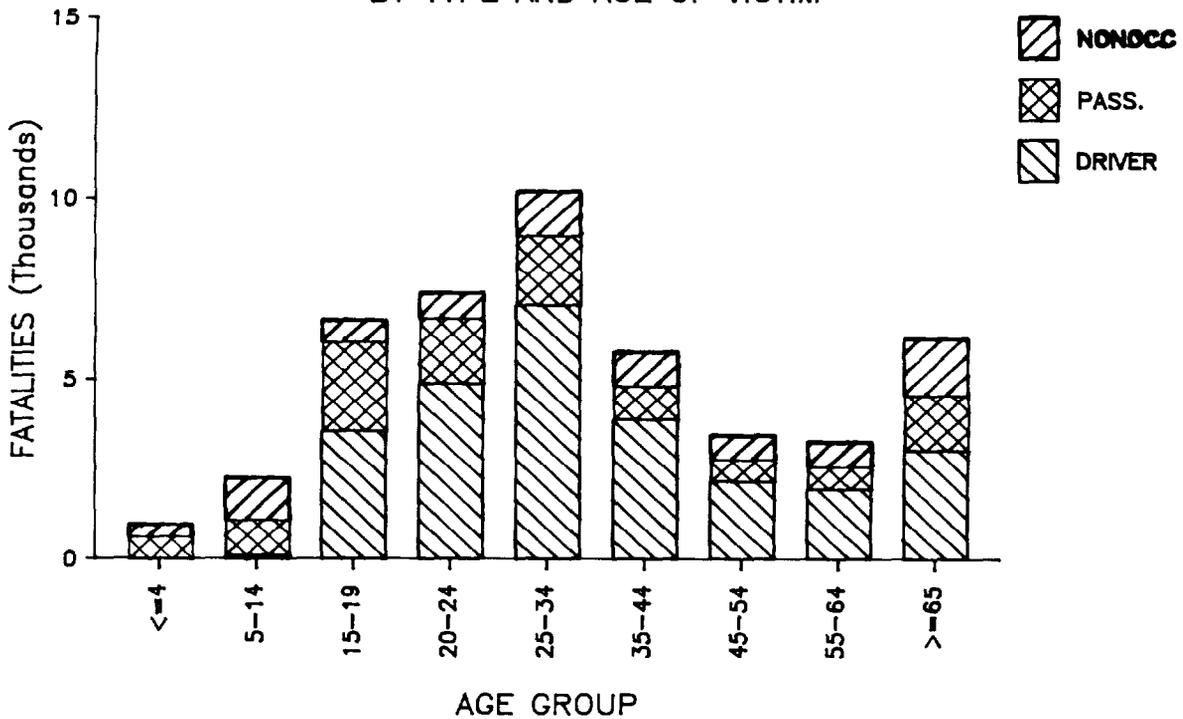


TABLE 5

MONTH	1987 FATALITIES BY MONTH AND TYPE OF VICTIM			TOTAL
	TYPE OF VICTIM			
	NONOCCUPANT	DRIVER	PASSENGER	
JANUARY	595	1,700	787	3,082
(Row percent)	19	55	26	100
(Column percent)	8	6	7	7
FEBRUARY	512	1,634	704	2,850
(Row percent)	18	57	25	100
(Column percent)	7	6	6	6
MARCH	615	1,915	842	3,372
(Row percent)	18	57	25	100
(Column percent)	8	7	7	7
APRIL	556	2,080	854	3,490
(Row percent)	16	60	24	100
(Column percent)	7	8	7	8
MAY	600	2,422	1,063	4,085
(Row percent)	15	59	26	100
(Column percent)	8	9	9	9
JUNE	679	2,415	1,026	4,120
(Row percent)	16	59	25	100
(Column percent)	9	9	9	9
JULY	672	2,496	1,080	4,248
(Row percent)	16	59	25	100
(Column percent)	9	9	9	9
AUGUST	712	2,730	1,248	4,690
(Row percent)	15	58	27	100
(Column percent)	9	10	11	10
SEPTEMBER	680	2,399	1,065	4,144
(Row percent)	16	58	26	100
(Column percent)	9	9	9	9
OCTOBER	690	2,581	1,092	4,363
(Row percent)	16	59	25	100
(Column percent)	9	10	9	9
NOVEMBER	742	2,261	1,000	4,003
(Row percent)	19	56	25	100
(Column percent)	9	8	9	9
DECEMBER	807	2,127	949	3,883
(Row percent)	21	55	24	100
(Column percent)	10	8	8	8
TOTAL	7,860	26,760	11,710	46,330
(Row percent)	17	58	25	100
(Column percent)	100	100	100	100

TABLE 6

1987 FATALITIES BY TIME AND MONTH

TIME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL
MIDNIGHT TO 3 AM	431	447	550	520	640	681	642	778	615	697	592	503	7 096
3 AM TO 6 AM	199	171	260	234	310	294	361	398	348	345	286	273	3 479
6 AM TO 9 AM	342	244	236	232	253	318	332	373	359	353	329	368	3 739
9 AM TO 12 NOON	240	240	232	300	305	333	361	375	359	359	351	362	3 817
12 NOON TO 3 PM	342	302	407	443	477	451	477	549	475	450	419	435	5 227
3 PM TO 6 PM	496	427	513	519	672	656	646	676	607	677	682	712	7 283
6 PM TO 9 PM	547	533	601	585	662	651	633	712	643	745	724	651	7 687
9 PM TO 12 MIDNIGHT	462	452	548	623	731	699	768	797	709	705	578	534	7 606
UNKNOWN TIME	23	34	25	34	35	37	28	32	29	32	42	45	396
TOTAL	3,082	2,850	3,372	3,490	4,085	4,120	4 248	4,690	4,144	4,363	4,003	3 883	46 330

TABLE 7

1987 FATALITIES BY TIME AND DAY

TIME	SUN	MON	TUE	WED	THU	FRI	SAT	TOTAL
MIDNIGHT TO 3 AM	1,930	585	508	535	703	837	1 998	7,096
3 AM TO 6 AM	858	289	252	283	378	407	1 012	3,479
6 AM TO 9 AM	369	549	580	564	559	560	558	3,739
9 AM TO 12 NOON	430	555	543	519	565	574	631	3 817
12 NOON TO 3 PM	731	728	693	664	741	811	859	5 227
3 PM TO 6 PM	1 063	978	931	933	988	1,212	1,178	7,283
6 PM TO 9 PM	1,244	850	896	889	1,012	1 357	1 439	7 687
9 PM TO 12 MIDNIGHT	879	762	733	883	1 067	1,681	1 601	7,606
UNKNOWN TIME	79	42	50	37	36	61	91	396
TOTAL	7,583	5 338	5 186	5,307	6 049	7 500	9 367	46 330

TABLE 8

1987 FATALITIES BY POSTED SPEED LIMIT AND LAND USE

POSTED SPEED LIMIT	LAND USE			TOTAL
	RURAL	URBAN	UNKNOWN	
LESS THAN 26 MPH	509	1,849	47	2,405
26 TO 35 MPH	1,798	6,615	157	8,570
36 TO 45 MPH	3,264	4,445	121	7,830
46 TO 54 MPH	1,441	1,014	35	2,490
55 MPH	17,949	4,208	213	22,370
56 TO 65 MPH	1,182	51	7	1,240
UNKNOWN LIMIT	633	670	122	1,425
TOTAL	26,776	18,052	702	46,330

FIGURE 7

TRAFFIC FATALITIES BY MONTH - 1987

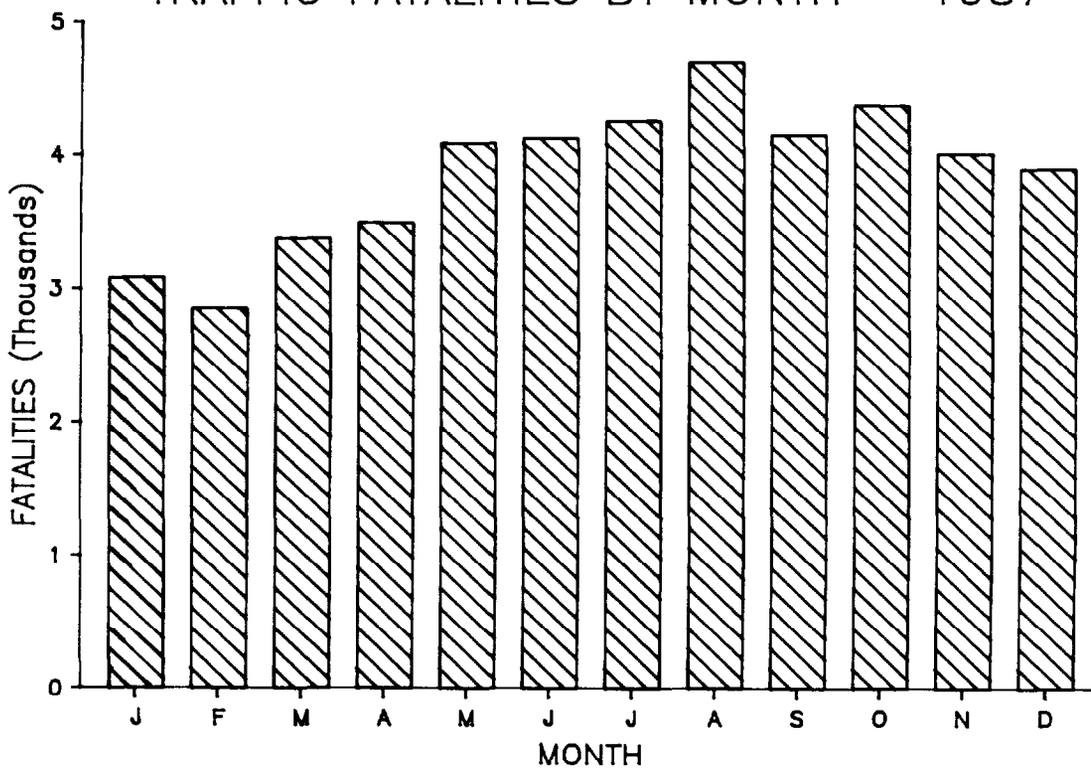


FIGURE 8

FATALITIES BY DAY OF WEEK - 1987

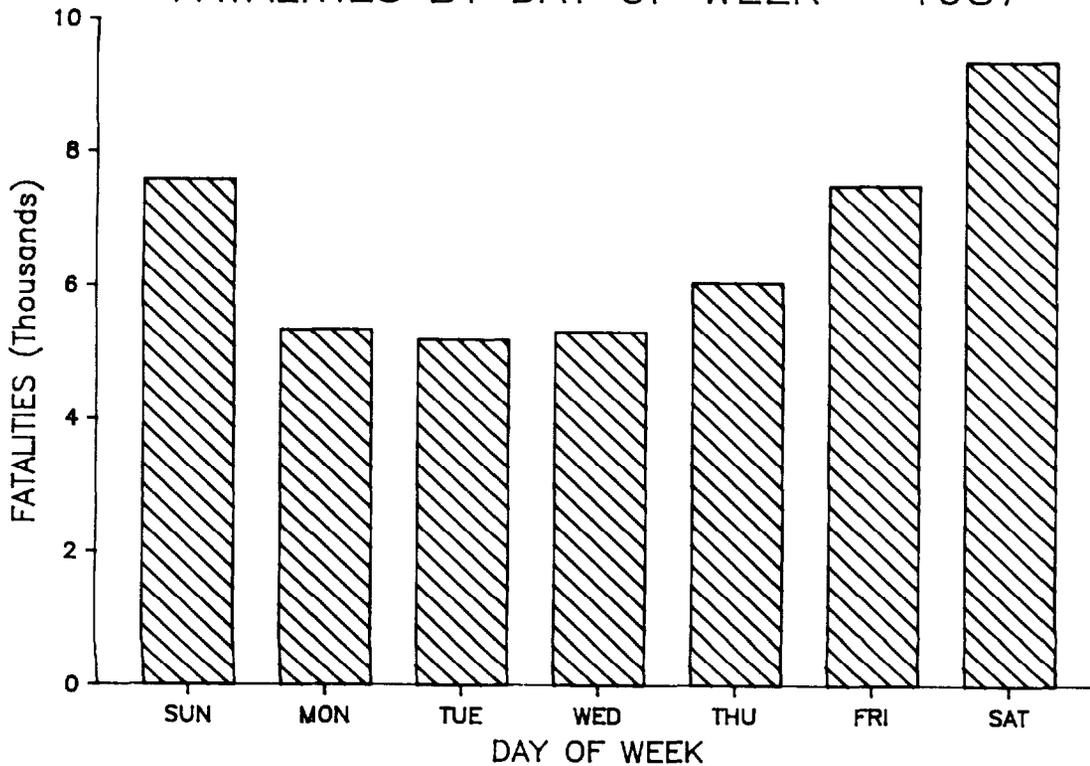


FIGURE 9

FATALITIES BY HOUR GROUP - 1987

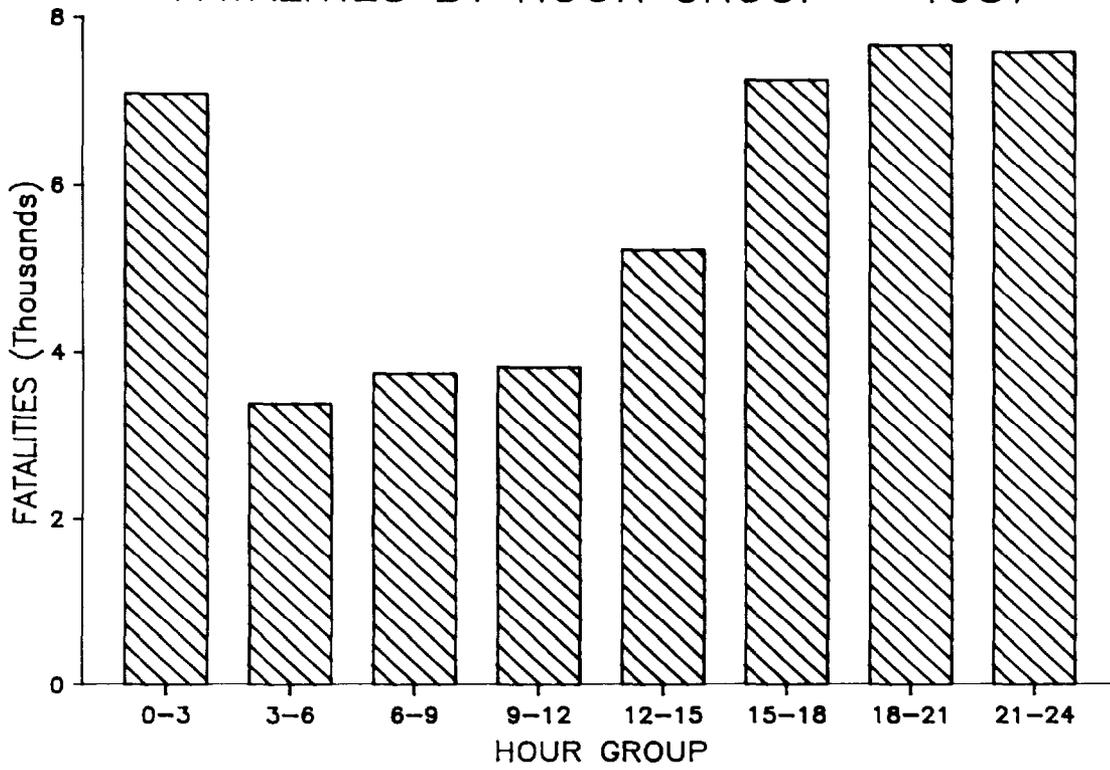
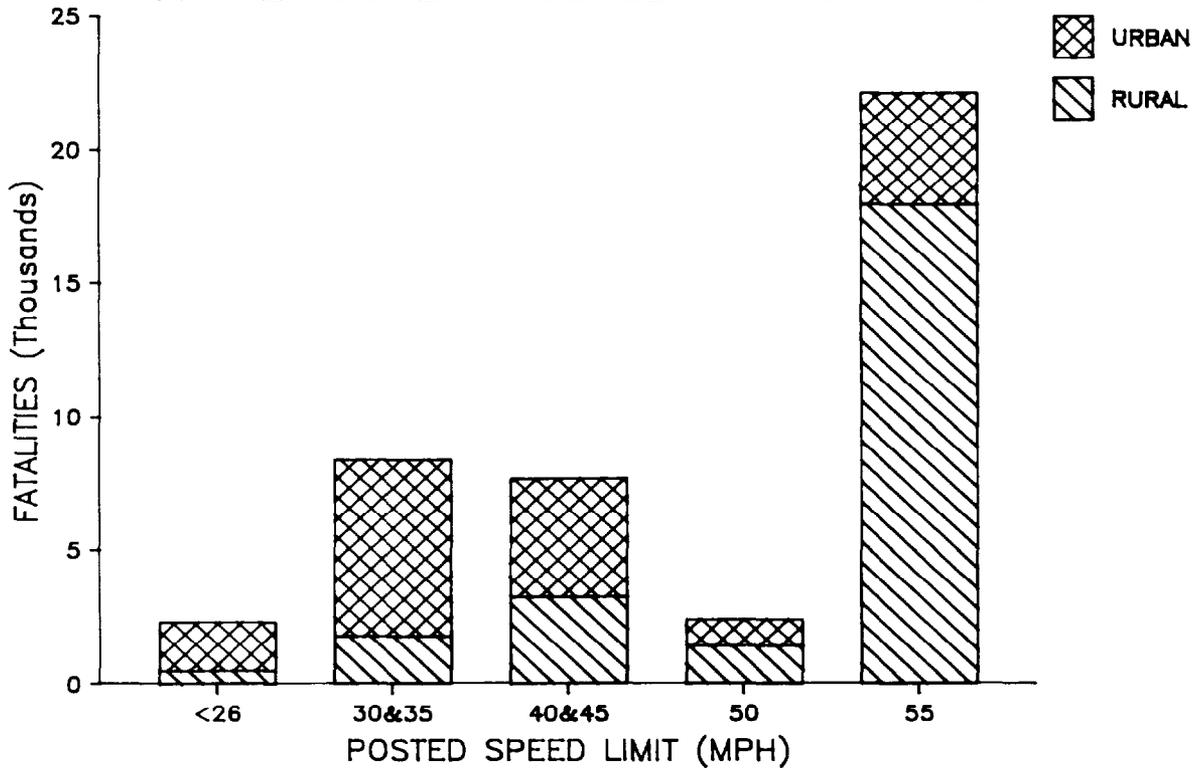


FIGURE 10

FATALITIES BY POSTED SPEED - 1987



SELECTED COMPARISONS

Procedure

The purpose of this section is to compare selected statistics for 1987 to those in 1986. To provide a broader view of the latest trends, the tables include comparisons with 1983 and 1980 statistics. These figures are especially useful because after 1980, traffic fatalities began a decline from 51,091 in 1980 to 42,589 in 1983. The comparisons range from the general (such as crash characteristics) to the specific (such as blood alcohol concentration (BAC) of drivers and restraint use by vehicle occupants).

Although final fatality counts are available through 1986, the figures for 1987 are still preliminary. The 1987 FARS file used for this early assessment (March 1988), does not contain all the fatal crashes that occurred during the year, and not all the data are complete for many of the crashes already on file. Hence a significant number of values for certain variables are unknown.

Adjustments have been made to account for missing data. Past experience with this procedure suggests that for large totals the estimates will not differ from the final counts by more than 1 percent. As stated in the introduction, some unknown data from a limited number of States have been classified to reflect the characteristics of the known data within each State.

Besides any errors in the 1987 estimates caused by these adjustments for missing and incomplete data, the probable error due to the random variation inherent in every count must be recognized. This range of variability, unique for each total, must be taken into account in analyzing year-to-year differences before concluding that real changes have occurred.

As described in the introduction, a practical solution is to assume that fatality counts are Poisson distributed random variables and to accept as meaningful changes only those in which the new total differs from the old by an amount greater than twice the square root of the old total.

This section is mostly descriptive, with little effort at interpretation. It contains a large set of preliminary statistics for 1987, compares them to the totals for 1986, 1983, and 1980 and points out evident differences.

Crashes and Fatalities

The estimated number of 46,330 traffic fatalities for 1987 is about 1 percent over the total for 1986. Of the total, 7,860 were pedestrians or pedalcyclists ("nonoccupants"); 26,760 were drivers, and 11,710 were passengers. Nonoccupant fatalities remained at the same level as in 1986, while vehicle occupant fatalities increased by 1 percent. Among vehicle-occupant fatalities, there was a 1 percent decrease in single-vehicle crashes, and a 3 percent increase in multi-vehicle crashes. (Tables 4, 10, 33 and Figure 11)

The number of fatalities decreased during the first eight months of the year, with the exception of February which showed a 7 percent increase. During the last four months of the year fatalities increased by an average of 5 percent, thus resulting in 1 percent overall increase for the year. (Tables 11 and 12 and Figure 12)

By days of the week, the 1987 fatality increase was 7 percent for Thursdays. The remaining days of the week showed either no change or small decreases. (Tables 13 and 14 and Figure 13)

The changes in fatalities by hour of day show about a 4 percent decrease between midnight and 3 a.m. During the hours of 3 a.m. to 3 p.m. the number of fatalities increased by an average of 4 percent. Very small changes occurred during the remaining hours. It is noteworthy that since 1983 there has been a 6 percent decrease in the number of fatalities occurring between midnight and 3 a.m. in contrast with the 12 percent increase found for the remaining hours. (Tables 15 and 16 and Figure 14)

The pattern by highway type is varied. Deaths increased by 17 percent on rural interstate highways, and 2 percent on urban interstate highways. Fatalities on all other roads decreased by less than 1 percent. (Tables 17 and 18 and Figure 15)

The distribution between rural and urban fatalities for all road types showed that fatalities increased by 1 percent in rural areas while decreasing by 4 percent in urban areas. (Tables 19 and 20 and Figure 16)

Highways with a posted speed limit of 55 mph and over showed the only fatality increase in 1987. The change over the previous year varied gradually from a 4 percent reduction at the lowest speed range to a 2 percent increase at 55 mph and over. (Tables 21 and 22 and Figure 17)

TABLE 9

FATAL ACCIDENTS CLASSIFIED BY TYPE

ACCIDENT TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
PEDESTRIAN	5,968	6,013	6,179	7,243	-15%	-3%	-1%
PEDALCYCLIST	908	899	813	928	-12%	11%	1%
SINGLE VEHICLE	17,186	17,363	16,056	19,981	-20%	8%	-1%
ANGLE CRASH	7,342	7,148	6,091	6,949	-12%	17%	3%
HEAD-ON-CRASH	5,994	6,053	5,461	6,449	-15%	11%	-1%
REAR END CRASH	1,928	1,877	1,903	2,100	-9%	-1%	3%
SIDESWIPE	692	726	632	722	-12%	15%	-5%
OTHER TYPE	1,189	987	823	890	-8%	20%	20%
UNKNOWN TYPE	29	24	18	22	-18%	33%	20%
TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 10

TRAFFIC FATALITIES CLASSIFIED BY TYPE OF ACCIDENT

ACCIDENT TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
PEDESTRIAN	6,074	6,100	6,280	7,383	-15%	-3%	-0%
PEDALCYCLIST	918	919	820	944	-13%	12%	-0%
SINGLE VEHICLE	18,828	19,097	17,498	21,865	-20%	9%	1%
ANGLE CRASH	8,376	8,158	6,996	8,089	-14%	17%	3%
HEAD-ON-CRASH	7,728	7,716	7,110	8,538	-17%	9%	0%
REAR END CRASH	2,205	2,134	2,192	2,408	-9%	-3%	3%
SIDESWIPE	805	828	713	828	-14%	16%	-3%
OTHER TYPE	1,359	1,109	961	1,011	-5%	15%	23%
UNKNOWN TYPE	37	26	19	25	-24%	37%	42%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

TABLE 11
FATAL ACCIDENTS CLASSIFIED BY MONTH

MONTH	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
JANUARY	2,729	2,779	2,570	3,048	-16%	8%	-2%
FEBRUARY	2,534	2,388	2,382	2,905	-18%	0%	6%
MARCH	2,976	3,053	2,721	3,221	-16%	12%	-3%
APRIL	3,125	3,144	2,892	3,341	-13%	9%	-1%
MAY	3,631	3,693	3,246	3,965	-18%	14%	-2%
JUNE	3,655	3,820	3,290	4,324	-24%	16%	-4%
JULY	3,815	3,988	3,713	4,330	-14%	7%	-4%
AUGUST	4,132	4,220	3,694	4,739	-22%	14%	-2%
SEPTEMBER	3,703	3,566	3,604	4,008	-10%	-1%	4%
OCTOBER	3,908	3,663	3,548	3,892	-9%	3%	7%
NOVEMBER	3,565	3,413	3,149	3,729	-16%	8%	4%
DECEMBER	3,462	3,363	3,167	3,782	-16%	6%	3%
TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 12
TRAFFIC FATALITIES CLASSIFIED BY MONTH

MONTH	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
JANUARY	3,082	3,123	2,875	3,432	-16%	9%	-1%
FEBRUARY	2,850	2,676	2,695	3,271	-18%	-1%	7%
MARCH	3,372	3,417	3,079	3,645	-16%	11%	-1%
APRIL	3,490	3,508	3,257	3,731	-13%	8%	-1%
MAY	4,085	4,173	3,669	4,482	-18%	14%	-2%
JUNE	4,120	4,305	3,703	4,935	-25%	16%	-4%
JULY	4,248	4,495	4,146	4,848	-14%	8%	-5%
AUGUST	4,690	4,730	4,155	5,401	-23%	14%	-1%
SEPTEMBER	4,144	4,003	3,987	4,498	-11%	0%	4%
OCTOBER	4,363	4,114	3,970	4,350	-9%	4%	6%
NOVEMBER	4,003	3,787	3,552	4,257	-17%	7%	6%
DECEMBER	3,883	3,756	3,501	4,241	-17%	7%	3%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

FIGURE 11

FATALITIES BY ACCIDENT TYPE

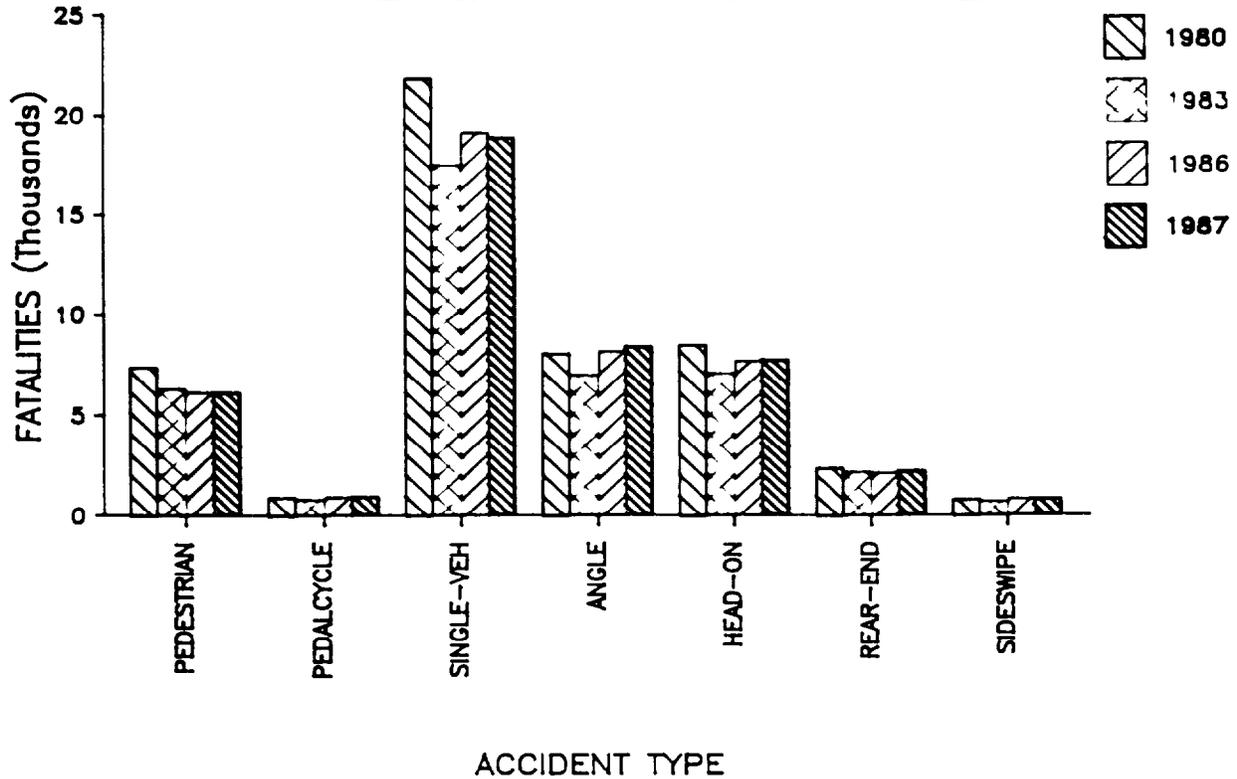


FIGURE 12

FATALITIES BY MONTH

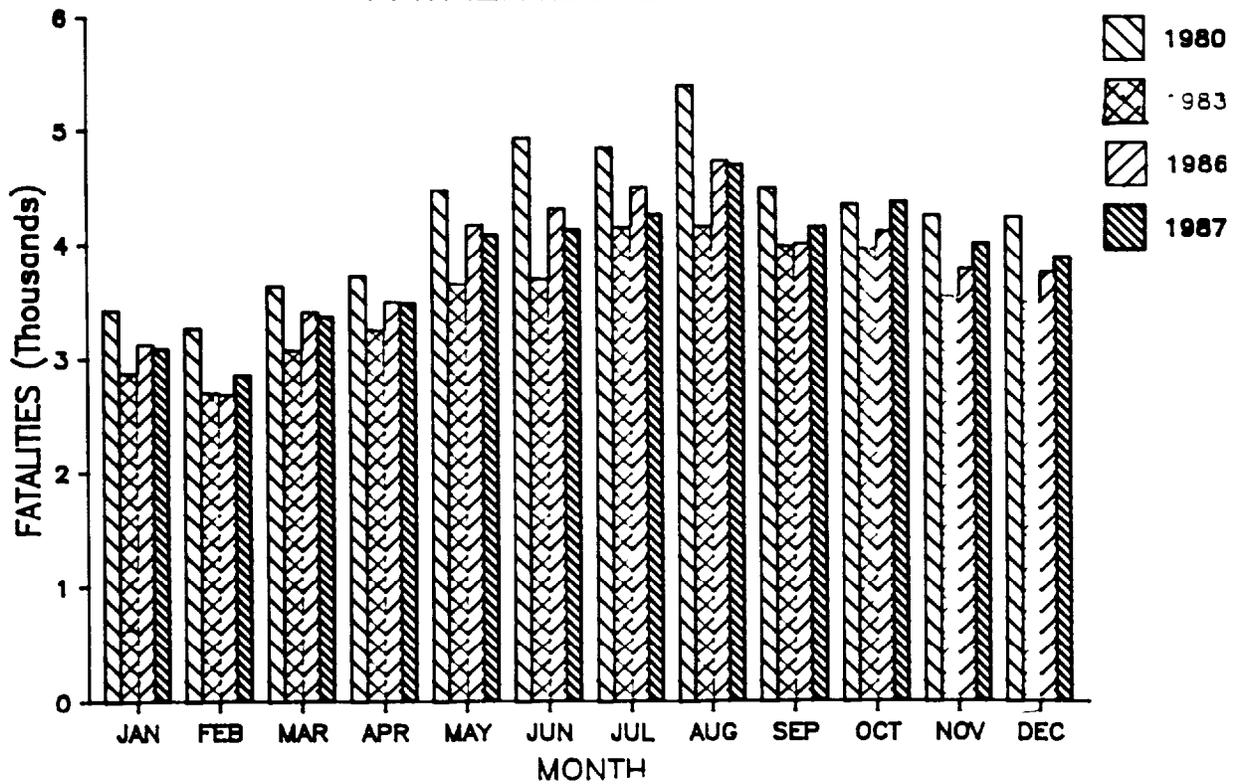


TABLE 13

FATAL ACCIDENTS CLASSIFIED BY DAY OF WEEK

DAY OF WEEK	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
SUNDAY	6,619	6,586	5,941	7,443	-20%	11%	0%
MONDAY	4,805	4,851	4,205	4,898	-14%	15%	-1%
TUESDAY	4,669	4,694	4,351	4,915	-11%	8%	-1%
WEDNESDAY	4,785	4,922	4,464	5,257	-15%	10%	-3%
THURSDAY	5,440	5,141	4,888	5,647	-13%	5%	6%
FRIDAY	6,700	6,681	6,280	7,462	-16%	6%	0%
SATURDAY	8,218	8,215	7,847	9,662	-19%	5%	0%
TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 14

TRAFFIC FATALITIES CLASSIFIED BY DAY OF WEEK

DAY OF WEEK	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
SUNDAY	7,583	7,514	6,815	8,555	-20%	10%	1%
MONDAY	5,338	5,390	4,657	5,498	-15%	16%	-1%
TUESDAY	5,186	5,217	4,762	5,432	-12%	10%	-1%
WEDNESDAY	5,307	5,440	4,957	5,848	-15%	10%	-2%
THURSDAY	6,049	5,676	5,415	6,304	-14%	5%	7%
FRIDAY	7,500	7,484	6,975	8,415	-17%	7%	0%
SATURDAY	9,367	9,366	9,008	11,039	-18%	4%	0%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

TABLE 15

FATAL ACCIDENTS CLASSIFIED BY TIME

HOUR GROUP	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
12.1 AM TO 3 AM	6,313	6,597	6,717	8,776	-23%	-2%	-4%
3 1 AM TO 6 AM	3,122	3,010	2,796	3,530	-21%	8%	4%
6 1 AM TO 9 AM	3,360	3,208	2,755	3,003	-8%	16%	5%
9 1 AM TO 12 NOON	3,389	3,301	2,965	3,087	-4%	11%	3%
12 1 PM TO 3 PM	4,628	4,477	3,940	4,374	-10%	14%	3%
3 1 PM TO 6 PM	6,450	6,523	5,780	6,554	-12%	13%	-1%
6 1 PM TO 9 PM	6,822	6,784	6,363	7,452	-15%	7%	1%
9 1 PM TO MDNGHT	6,798	6,837	6,419	8,263	-22%	7%	-1%
UNKNOWN TIME	353	353	241	245	-2%	46%	-0%
TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 16

TRAFFIC FATALITIES CLASSIFIED BY TIME

HOUR GROUP	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
12 1 AM TO 3 AM	7,096	7,363	7,535	9,958	-24%	-2%	-4%
3 1 AM TO 6 AM	3,479	3,350	3,161	3,961	-20%	6%	4%
6 1 AM TO 9 AM	3,739	3,573	3,044	3,344	-9%	17%	5%
9 1 AM TO 12 NOON	3,817	3,688	3,355	3,420	-2%	10%	3%
12.1 PM TO 3 PM	5,227	5,030	4,409	4,938	-11%	14%	4%
'3 1 PM TO 6 PM	7,283	7,327	6,487	7,385	-12%	13%	-1%
6 1 PM TO 9 PM	7,687	7,644	7,139	8,425	-15%	7%	1%
9.1 PM TO MIDNIGHT	7,606	7,721	7,194	9,404	-24%	7%	-1%
UNKNOWN TIME	396	391	265	256	4%	48%	1%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

FIGURE 13

FATALITIES BY DAY OF WEEK

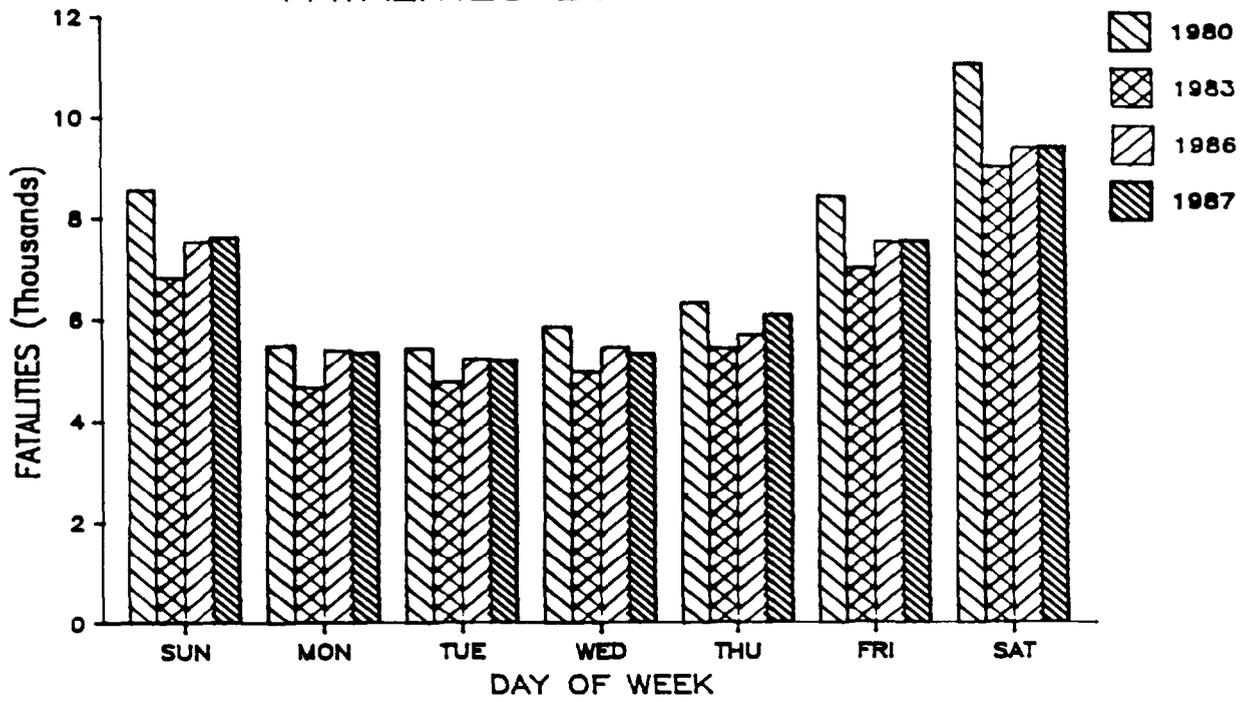


FIGURE 14

FATALITIES BY HOUR GROUP

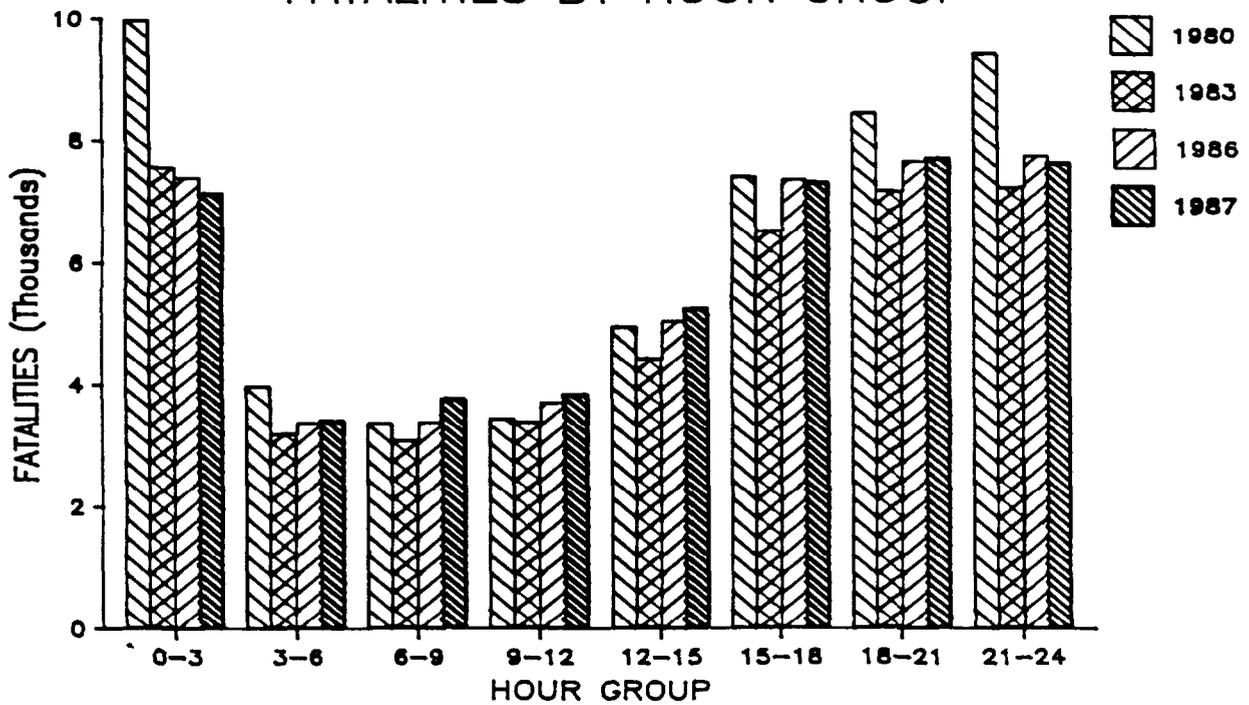


TABLE 17

FATAL ACCIDENTS CLASSIFIED BY HIGHWAY TYPE

HIGHWAY TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
Interstate rural	2,158	1,845	1,731	1,965	-12%	7%	17%
Interstate urban	1,971	1,934	1,851	1,901	-3%	4%	2%
INTERSTATE TOTAL	4,129	3,779	3,582	3,866	-7%	6%	9%
OTHER U S ROUTES	6,846	6,769	6,205	7,130	-13%	9%	1%
STATE ROUTES	11,877	12,780	11,798	14,657	-20%	8%	-7%
COUNTY ROADS	7,353	7,737	6,866	8,393	-18%	13%	-5%
LOCAL STREETS	10,294	9,874	9,398	11,120	-15%	5%	4%
UNKNOWN TYPE	751	151	129	116	11%	17%	197%
TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 18

TRAFFIC FATALITIES CLASSIFIED BY HIGHWAY TYPE

HIGHWAY TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
Interstate rural	2,552	2,172	1,920	2,329	-18%	13%	17%
Interstate urban	2,150	2,175	2,157	2,098	3%	1%	-1%
INTERSTATE TOTAL	4,702	4,347	4,077	4,427	-8%	7%	8%
OTHER U S ROUTES	7,947	7,920	7,216	8,429	-14%	10%	0%
STATE ROUTES	13,576	14,457	13,494	16,820	-20%	7%	-6%
COUNTY ROADS	8,171	8,585	7,593	9,321	-19%	13%	-5%
LOCAL STREETS	11,114	10,615	10,055	11,970	-16%	6%	5%
UNKNOWN TYPE	820	164	154	122	26%	6%	400%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

TABLE 19

FATAL ACCIDENTS CLASSIFIED BY LAND USE

LAND USE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
URBAN	17,432	18,074	16,693	19,785	-16%	8%	-4%
RURAL	23,161	22,954	21,218	25,105	-15%	8%	1%
UNKNOWN	642	62	65	394	-84%	-5%	935%
TOTAL	41,235	41,090	37,976	45,284	-16%	8%	0%

TABLE 20

TRAFFIC FATALITIES CLASSIFIED BY LAND USE

LAND USE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
URBAN	18,852	19,554	18,027	21,560	-16%	8%	-4%
RURAL	26,776	26,466	24,486	29,114	-16%	8%	1%
UNKNOWN	702	67	76	417	-82%	-12%	948%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

FIGURE 15

FATALITIES BY HIGHWAY TYPE

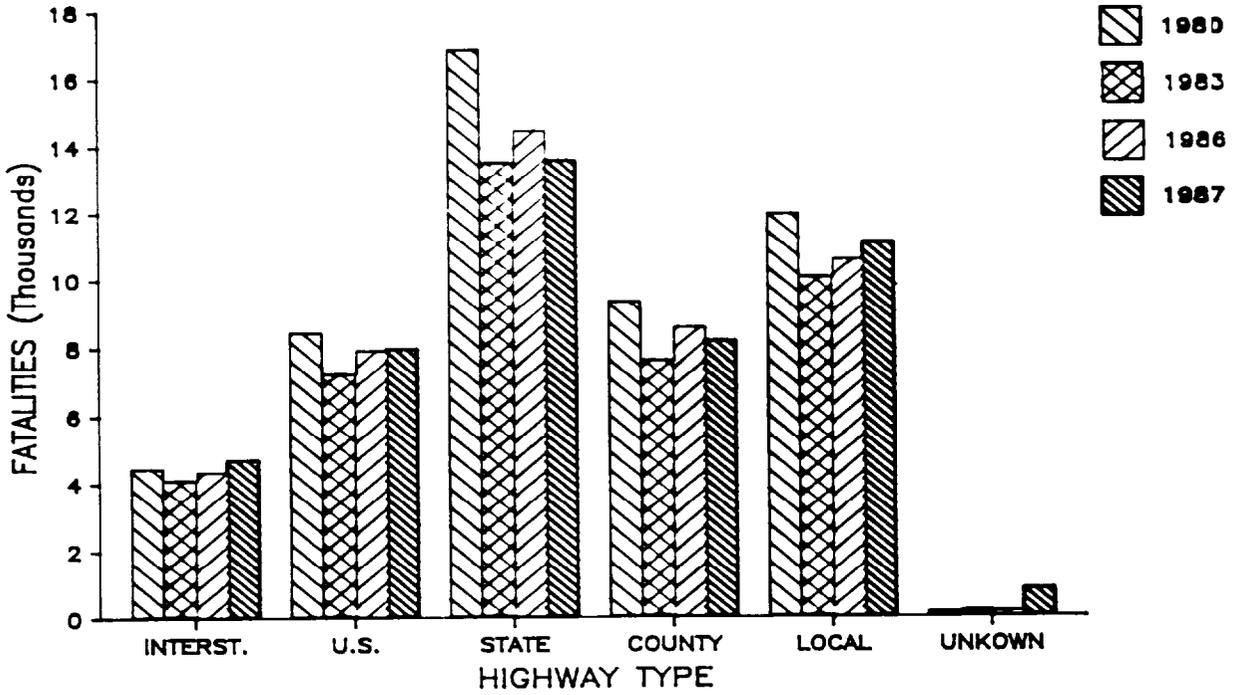


FIGURE 16

FATALITIES BY LAND USE

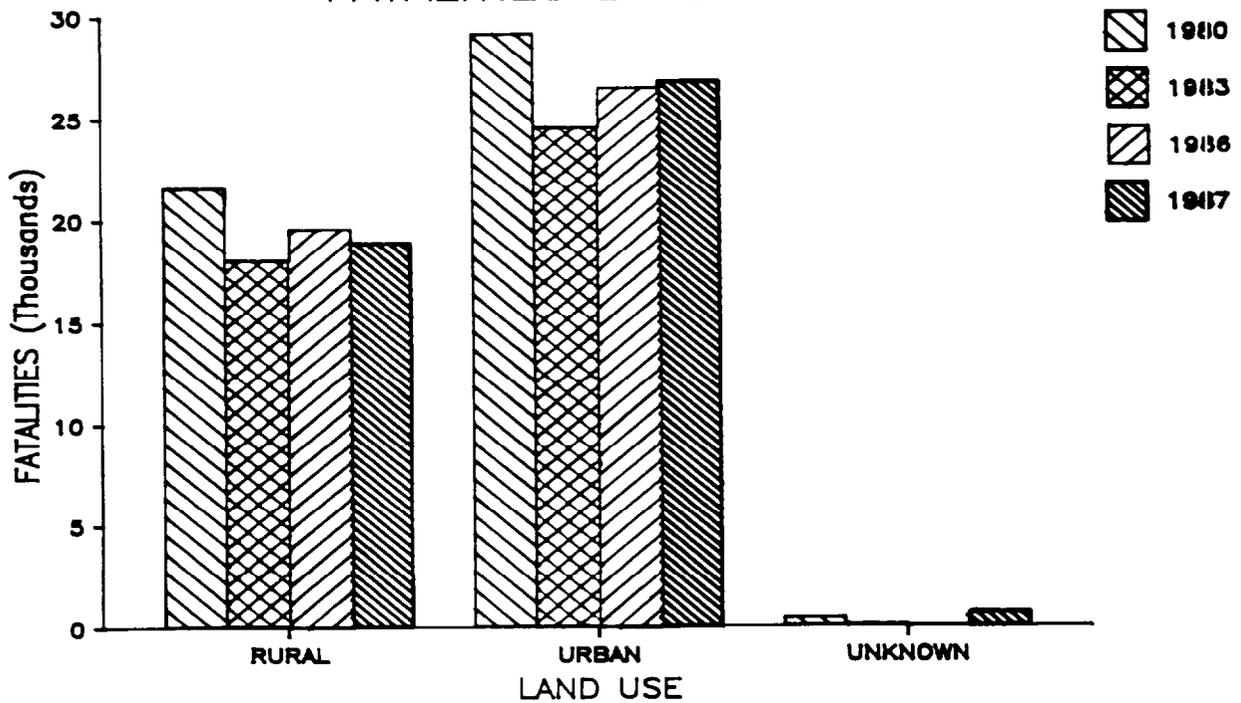


TABLE 21

FATAL ACCIDENTS CLASSIFIED BY POSTED SPEED LIMIT

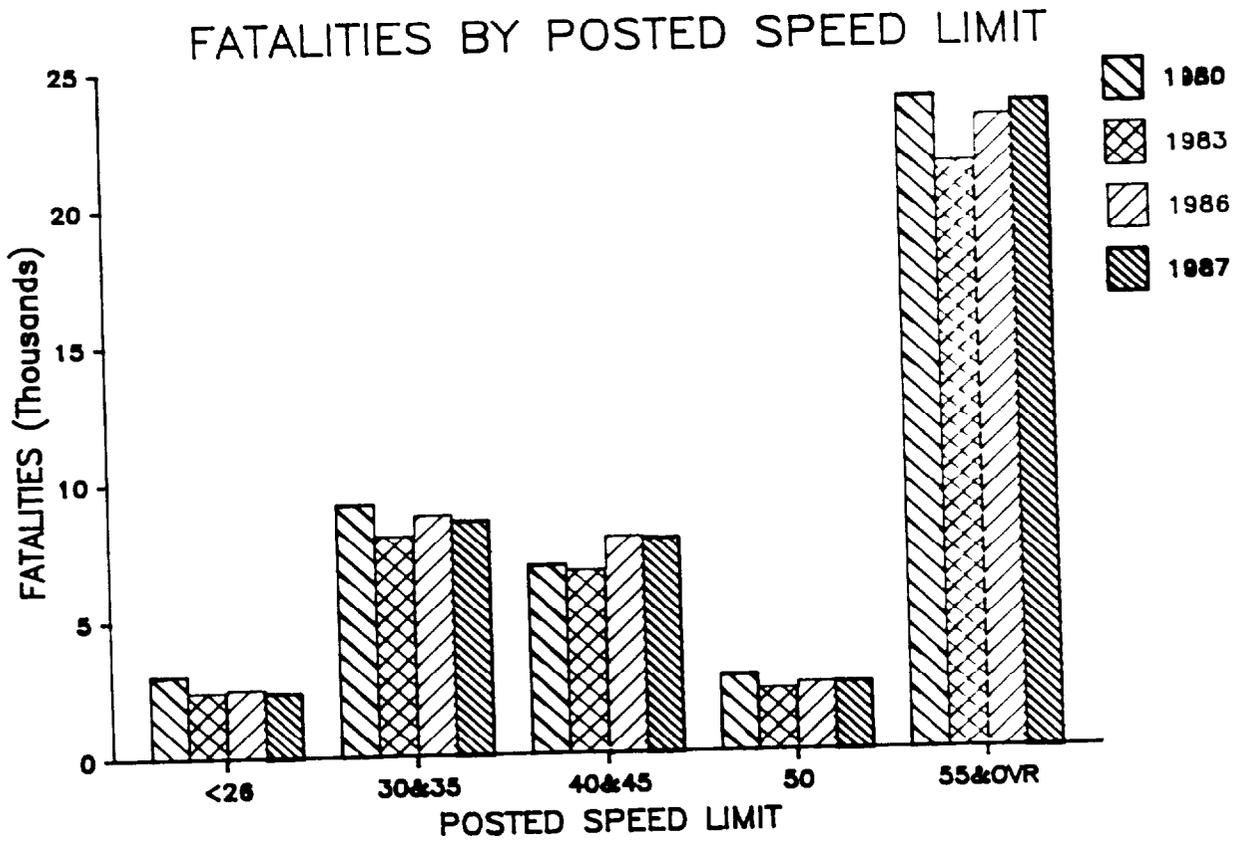
POSTED SPEED LIMIT	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
LESS THAN 26 MPH	2,299	2,391	2,294	2,865	-20%	4%	-4%
26 TO 35 MPH	8,025	8,258	7,493	8,527	-12%	10%	-3%
36 TO 45 MPH	7,085	7,179	6,129	6,256	-2%	17%	-1%
46 TO 54 MPH	2,200	2,180	2,043	2,431	-16%	7%	1%
55 MPH & OVER	20,330	19,890	18,519	20,352	-9%	7%	2%
UNKNOWN LIMIT	1,296	1,192	1,493	4,853	-69%	-20%	9%
TOTAL	41,235	41,090	37,971	45,284	-16%	8%	0%

TABLE 22

TRAFFIC FATALITIES CLASSIFIED BY POSTED SPEED LIMIT

POSTED SPEED LIMIT	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
LESS THAN 26 MPH	2,405	2,513	2,416	3,035	-20%	4%	-4%
26 TO 35 MPH	8,570	8,784	8,022	9,209	-13%	9%	-2%
36 TO 45 MPH	7,830	7,904	6,685	6,895	-3%	18%	-1%
46 TO 54 MPH	2,490	2,482	2,278	2,796	-19%	9%	0%
55 MPH & OVER	23,610	23,103	21,441	23,799	-10%	8%	2%
UNKNOWN LIMIT	1,425	1,301	1,747	5,357	-67%	-26%	10%
TOTAL	46,330	46,087	42,589	51,091	-17%	8%	1%

FIGURE 17



Drivers

The number of drivers involved in fatal crashes (Tables 23, 24 and 25) increased by 2 percent in 1987. The greatest contrast was between young drivers, 15 to 24, who were involved in 4 percent fewer fatal crashes, and drivers aged 35 and over who were in 5 percent more. Elderly drivers, 65 and over, have had 27 percent more fatal crashes since 1983.

The change was different for male and female drivers. All male drivers combined show no change from 1986 as compared to the 6 percent increase experienced by female drivers. The difference was more pronounced among young drivers. Young male drivers (15-24) were involved in 5 percent fewer fatal crashes while their female counterpart increased their involvements by 3 percent. Additionally, increases were throughout all ages for female drivers.

The total number of driver fatalities did not change in 1987, but there were changes among the various age-sex groups. The 5 percent decrease found for young male drivers (15-24) more than compensated for the increase found among older male drivers (55-64). Female driver fatalities increased by 8 percent in 1987, with the change varying from a 1 percent decrease for drivers 20 to 24 years of age to a 17 percent increase for drivers in the 45 to 54 age group. (Tables 26, 27 and 28 and Figures 18-23)

TABLE 23

AGE OF DRIVER	AGE OF DRIVERS IN FATAL ACCIDENTS				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	183	197	203	240	-15%	-3%	-7%
15 TO 19 YEARS	7,988	8,162	7,263	10,085	-28%	12%	-2%
20 TO 24 YEARS	10,883	11,437	10,716	13,537	-21%	7%	-5%
25 TO 34 YEARS	16,515	16,179	14,470	16,503	-12%	12%	2%
35 TO 44 YEARS	9,722	9,240	8,068	8,366	-4%	15%	5%
45 TO 54 YEARS	5,437	5,077	4,992	5,912	-16%	2%	7%
55 TO 64 YEARS	4,213	4,019	3,862	4,339	-11%	4%	5%
65 YRS OR OLDER	5,093	4,881	4,026	3,813	6%	21%	4%
UNKNOWN AGE	1,676	1,600	1,506	1,270	19%	6%	5%
TOTAL	61,710	60,792	55,106	64,065	-14%	10%	2%

TABLE 24

AGE OF DRIVER	AGE OF MALE DRIVERS IN FATAL ACCIDENTS				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	141	163	163	213	-23%	0%	-13%
15 TO 19 YEARS	6,015	6,257	5,640	8,209	-31%	11%	-4%
20 TO 24 YEARS	8,634	9,235	8,709	11,388	-24%	6%	-7%
25 TO 34 YEARS	13,137	13,012	11,859	13,734	-14%	10%	1%
35 TO 44 YEARS	7,508	7,272	6,374	6,740	-5%	14%	3%
45 TO 54 YEARS	4,199	3,975	3,978	4,706	-15%	-0%	6%
55 TO 64 YEARS	3,205	3,054	2,946	3,419	-14%	4%	5%
65 YRS OR OLDER	3,614	3,497	2,988	2,938	2%	17%	3%
UNKNOWN AGE	1,370	1,282	1,218	1039	17%	5%	7%
TOTAL	47,823	47,747	43,875	52,386	-16%	9%	0%

TABLE 25

AGE OF DRIVER	AGE OF FEMALE DRIVERS IN FATAL ACCIDENTS				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	42	34	40	27	48%	-15%	24%
15 TO 19 YEARS	1,973	1,905	1,623	1,876	-13%	17%	4%
20 TO 24 YEARS	2,249	2,202	2,007	2,149	-7%	10%	2%
25 TO 34 YEARS	3,378	3,167	2,611	2,769	-6%	21%	7%
35 TO 44 YEARS	2,214	1,968	1,694	1,626	4%	16%	13%
45 TO 54 YEARS	1,238	1,102	1,014	1,206	-16%	9%	12%
55 TO 64 YEARS	1,008	965	916	920	-0%	5%	4%
65 YRS OR OLDER	1,479	1,384	1,038	875	19%	33%	7%
UNKNOWN AGE	306	318	288	231	25%	10%	-4%
TOTAL	13,887	13,045	11,231	11,679	-4%	16%	6%

TABLE 26

AGE OF FATALLY INJURED DRIVERS

AGE OF DRIVER	1987	1986	1983	1980	% CHANGE	% CHANGE	% CHANGE
					80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	121	139	133	170	-22%	5%	-13%
15 TO 19 YEARS	3,574	3,577	3,212	4,490	-28%	11%	-0%
20 TO 24 YEARS	4,893	5,266	4,913	6,232	-21%	7%	-7%
25 TO 34 YEARS	7,045	7,073	6,331	7,367	-14%	12%	-0%
35 TO 44 YEARS	3,904	3,704	3,258	3,482	-6%	14%	5%
45 TO 54 YEARS	2,161	2,034	2,063	2,609	-21%	-1%	6%
55 TO 64 YEARS	1,953	1,856	1,793	2,104	-15%	4%	5%
65 YRS OR OLDER	3,027	2,953	2,406	2,323	4%	23%	3%
UNKNOWN AGE	82	28	29	39	-26%	-3%	193%
TOTAL	26,760	26,630	24,138	28,816	-16%	10%	0%

TABLE 27

AGE OF FATALLY INJURED MALE DRIVERS

AGE OF DRIVER	1987	1986	1983	1980	% CHANGE	% CHANGE	% CHANGE
					80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	100	115	113	160	-29%	2%	-13%
15 TO 19 YEARS	2,697	2,804	2,580	3,738	-31%	9%	-4%
20 TO 24 YEARS	3,949	4,312	4,062	5,327	-24%	6%	-8%
25 TO 34 YEARS	5,676	5,797	5,249	6,245	-16%	10%	-2%
35 TO 44 YEARS	2,994	2,878	2,577	2,796	-8%	12%	4%
45 TO 54 YEARS	1,600	1,553	1,597	2,038	-22%	-3%	3%
55 TO 64 YEARS	1,430	1,363	1,317	1,641	-20%	3%	5%
65 YRS OR OLDER	2,124	2,099	1,803	1,809	-0%	16%	1%
UNKNOWN AGE	65	24	26	33	-21%	-8%	171%
TOTAL	20,635	20,945	19,324	23,787	-19%	8%	-1%

TABLE 28

AGE OF FATALLY INJURED FEMALE DRIVERS

AGE OF DRIVER	1987	1986	1983	1980	% CHANGE	% CHANGE	% CHANGE
					80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	21	24	20	10	100%	20%	-13%
15 TO 19 YEARS	877	773	632	752	-16%	22%	13%
20 TO 24 YEARS	944	954	851	905	-6%	12%	-1%
25 TO 34 YEARS	1,369	1,276	1,082	1,122	-4%	18%	7%
35 TO 44 YEARS	910	826	681	686	-1%	21%	10%
45 TO 54 YEARS	561	481	466	571	-18%	3%	17%
55 TO 64 YEARS	523	493	476	463	3%	4%	6%
65 YRS OR OLDER	903	854	603	514	17%	42%	6%
UNKNOWN AGE	17	4	3	6	-50%	33%	325%
TOTAL	6,125	5,685	4,814	5,029	-4%	18%	8%

FIGURE 18

DRIVERS IN FATAL ACCIDENTS

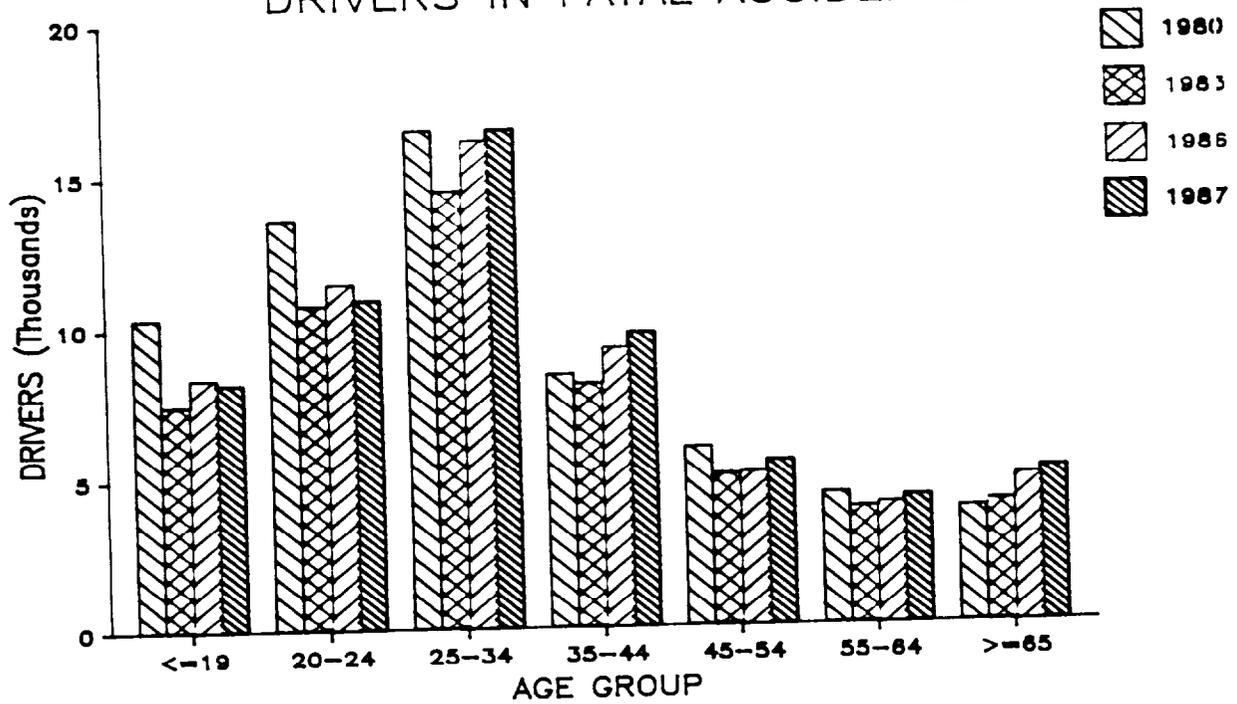


FIGURE 19

FATALLY INJURED DRIVERS

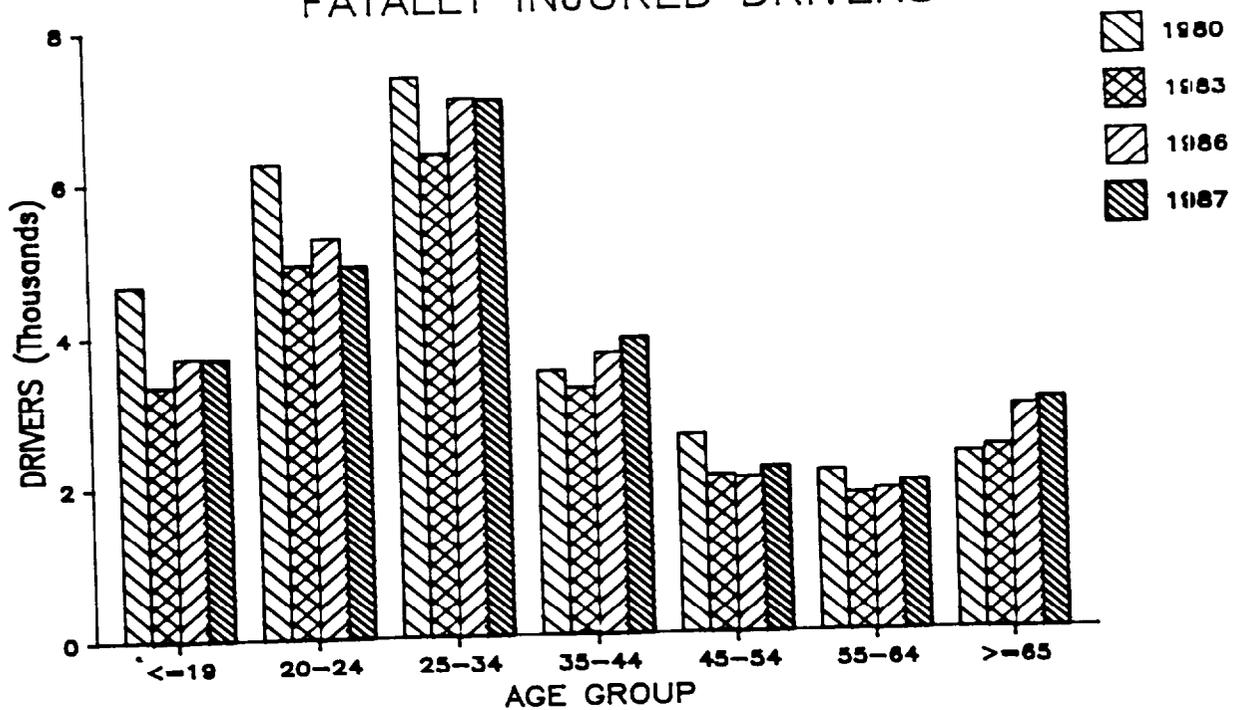


FIGURE 20

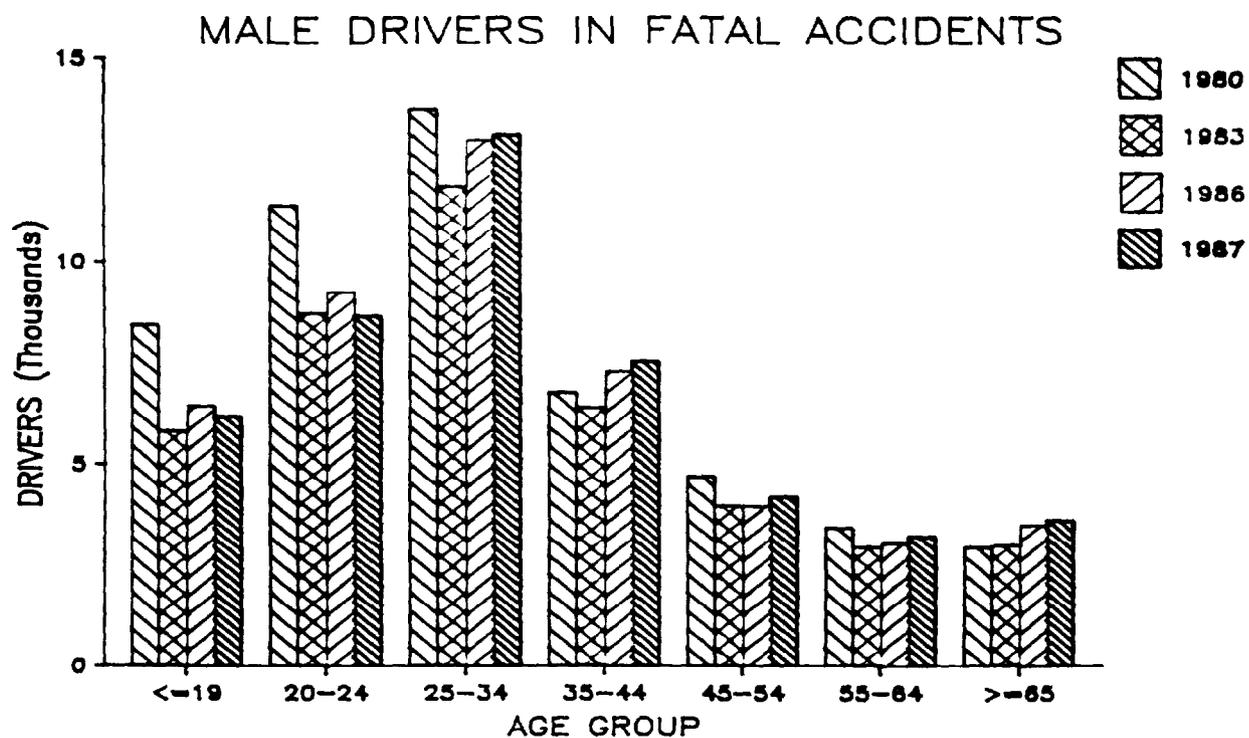


FIGURE 21

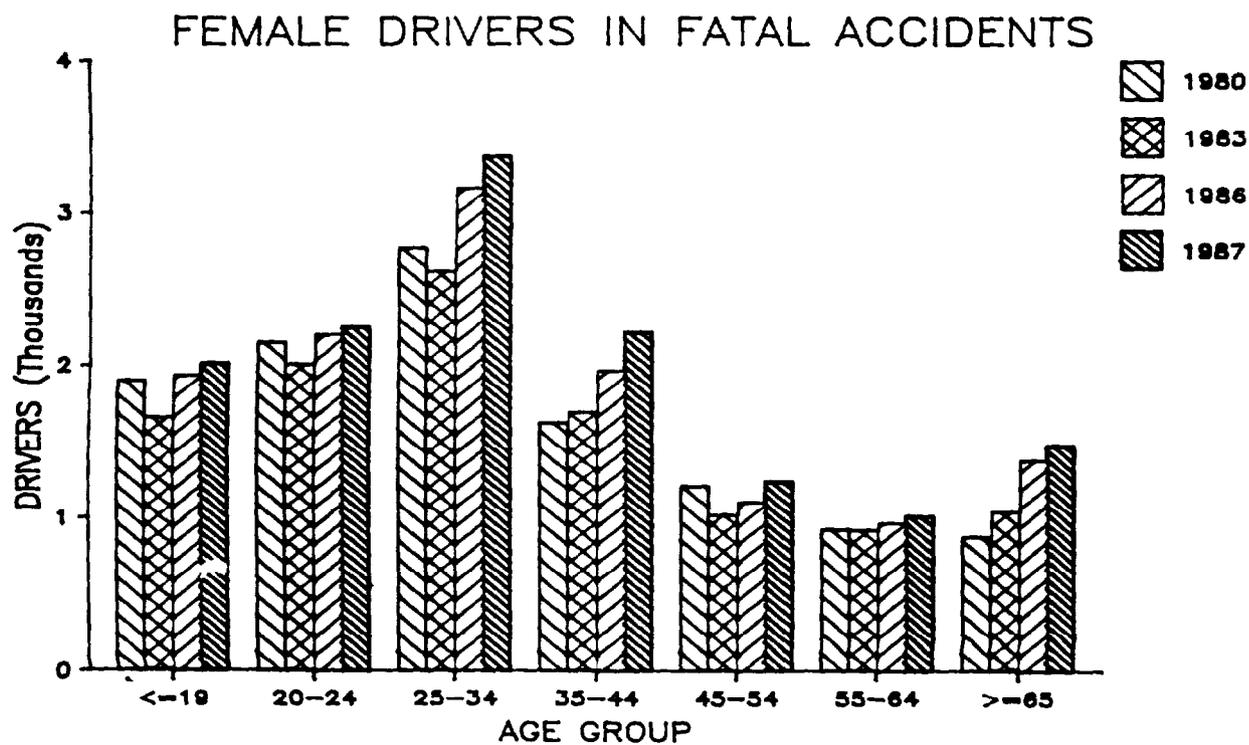


FIGURE 22

FATALLY INJURED MALE DRIVERS

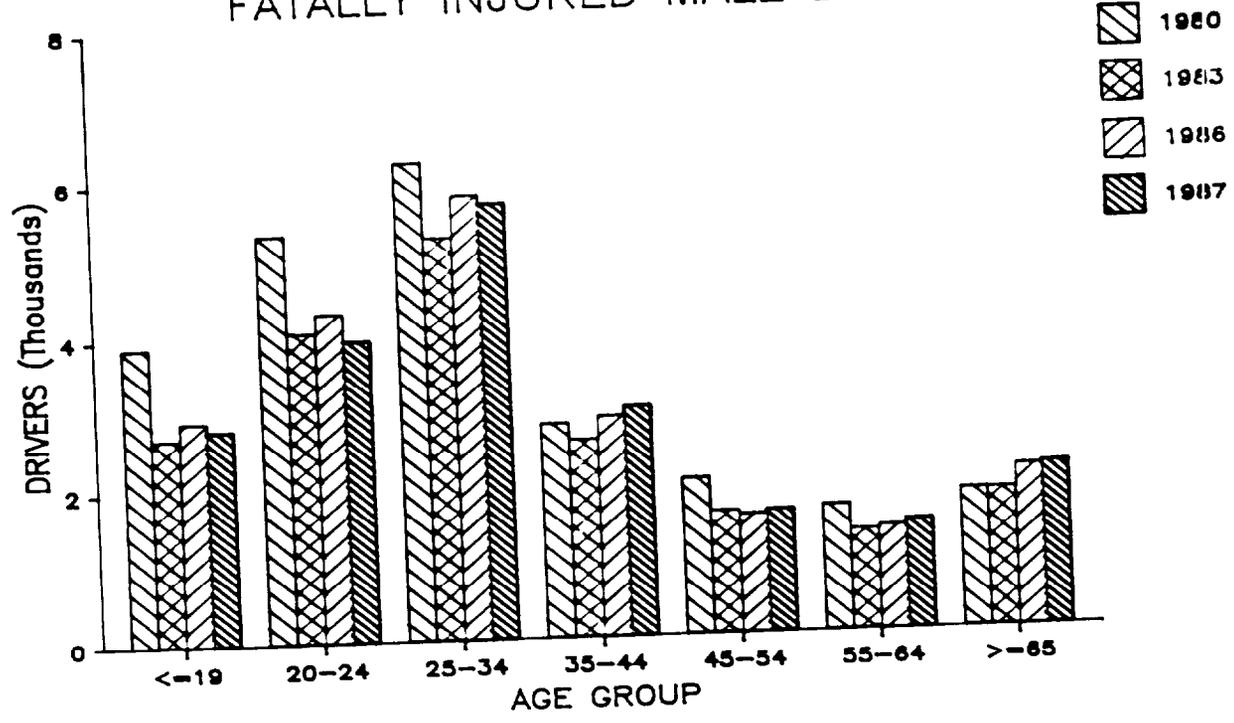
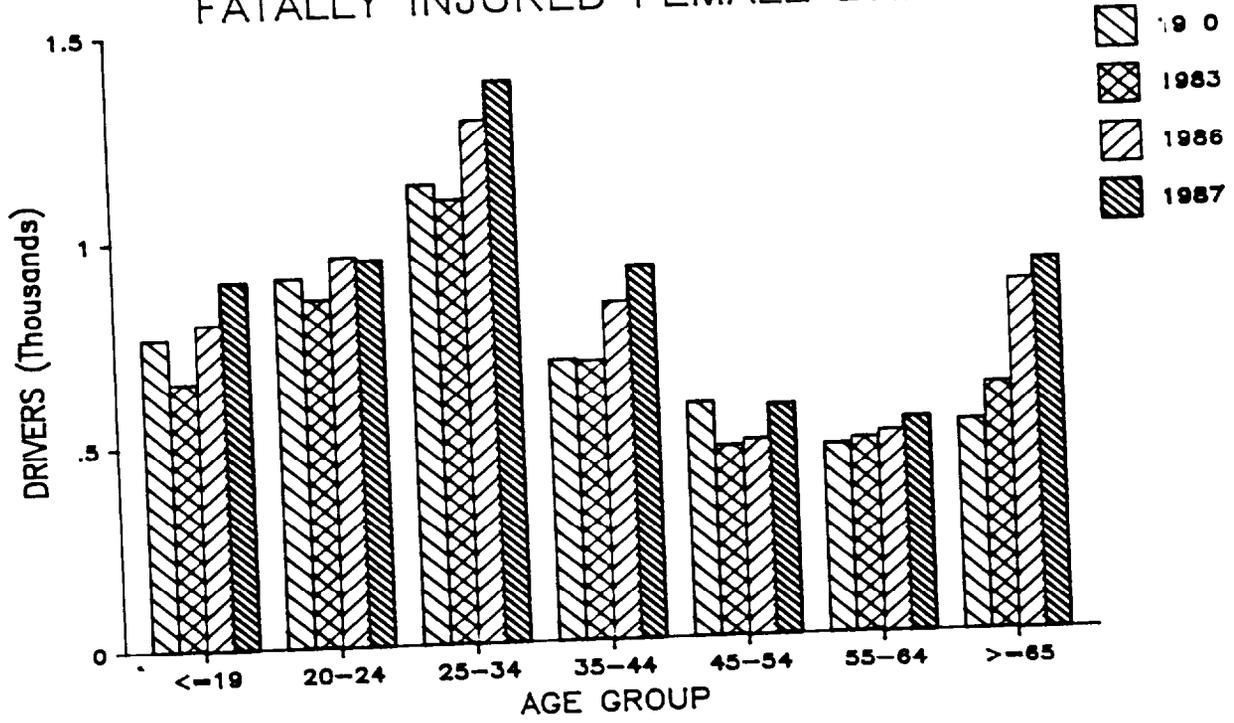


FIGURE 23

FATALLY INJURED FEMALE DRIVERS



Passengers

The number of passenger deaths increased by only 1 percent during 1987, in contrast to the 8 percent increase experienced the previous period (1983 to 1986). As with drivers, there was a reduction among young adults and an increase among older people. The increase was 11 percent for children under 5, 9 percent for adults between the ages of 35 and 54, 7 percent for people over 64, and 5 percent for people aged 5 to 14 and 25 to 34. (Tables 29 and 30 and Figures 24 and 25)

TABLE 29

AGE OF PASSENGERS OF MOTOR VEHICLES

AGE OF PASSENGER	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
4 YEARS & UNDER	2,875	2,609	2,386	2,203	8%	9%	10%
5 TO 14 YEARS	5,388	5,042	4,029	4,354	-7%	25%	7%
15 TO 19 YEARS	8,923	8,905	8,099	10,618	-24%	10%	0%
20 TO 24 YEARS	6,090	6,340	6,165	7,420	-17%	3%	-4%
25 TO 34 YEARS	6,312	5,944	5,329	5,863	-9%	12%	6%
35 TO 44 YEARS	3,043	2,810	2,532	2,488	2%	11%	8%
45 TO 54 YEARS	1,854	1,721	1,706	1,806	-6%	1%	8%
55 TO 64 YEARS	1,627	1,597	1,561	1,659	-6%	2%	2%
65 YRS OR OLDER	2,909	2,767	2,312	2,242	3%	20%	5%
UNKNOWN AGE	2,179	2,203	1,930	1,205	60%	14%	-1%
TOTAL	41,200	39,938	36,049	39,858	-10%	11%	3%

TABLE 30

AGE OF PASSENGER FATALITIES

AGE OF PASSENGER	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
4 YEARS & UNDER	680	615	623	698	-11%	-1%	11%
5 TO 14 YEARS	992	947	834	1,027	-19%	14%	5%
15 TO 19 YEARS	2,476	2,615	2,322	3,395	-32%	13%	-5%
20 TO 24 YEARS	1,810	1,968	1,979	2,472	-20%	-1%	-8%
25 TO 34 YEARS	1,925	1,840	1,653	1,922	-14%	11%	5%
35 TO 44 YEARS	935	859	801	867	-8%	7%	9%
45 TO 54 YEARS	623	571	573	692	-17%	-0%	9%
55 TO 64 YEARS	631	647	622	688	-10%	4%	-2%
65 YRS OR OLDER	1,557	1,455	1,245	1,241	0%	17%	7%
UNKNOWN AGE	81	87	53	109	-51%	64%	-7%
TOTAL	11,710	11,604	10,705	13,111	-18%	8%	1%

FIGURE 24

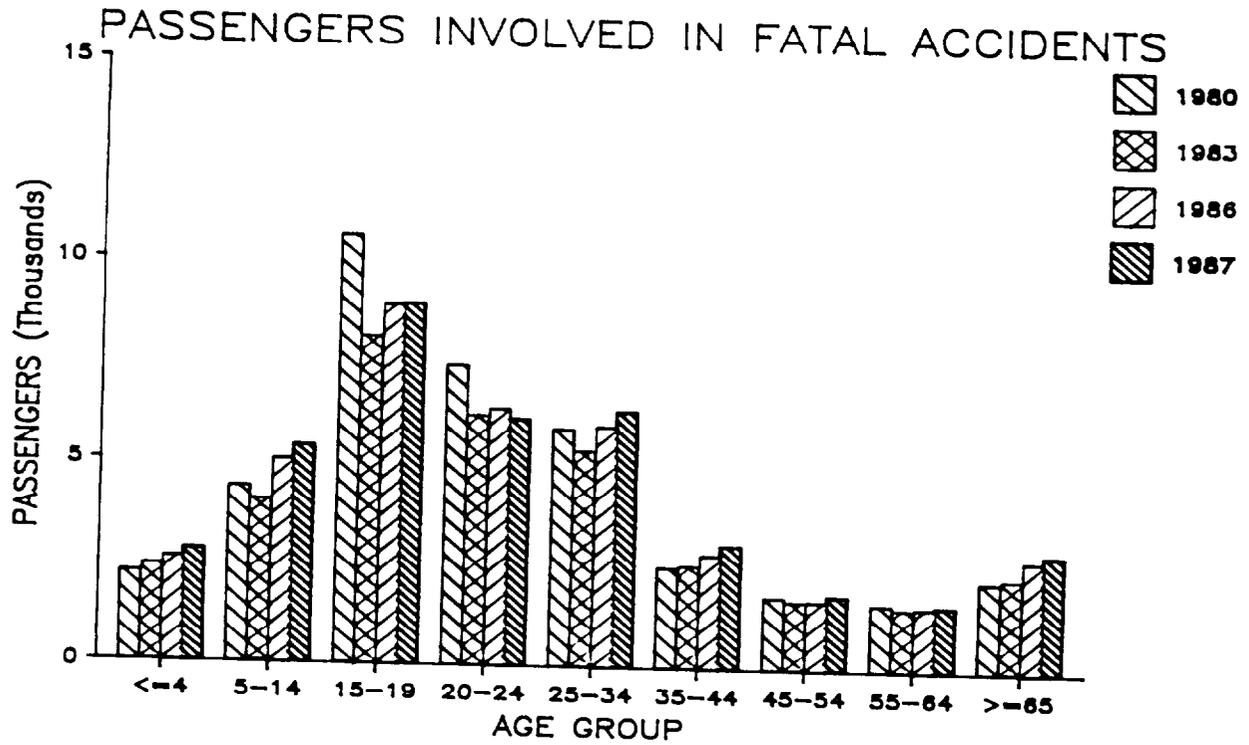
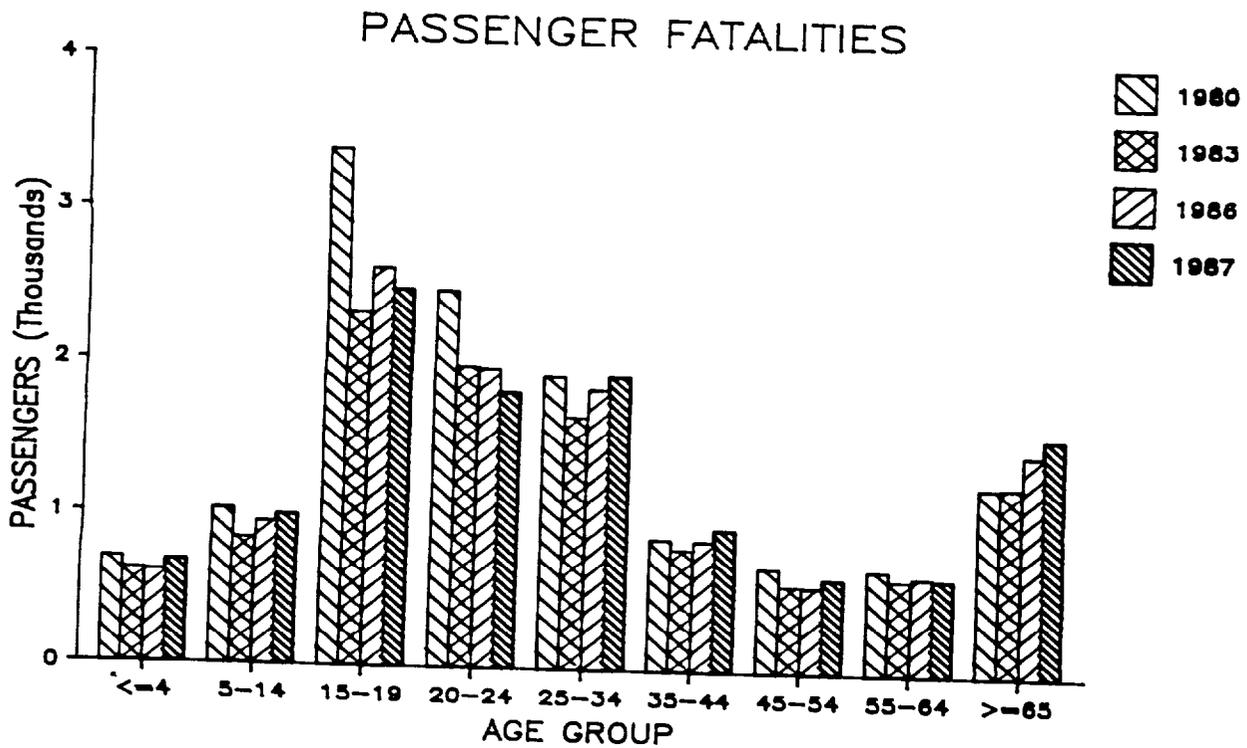


FIGURE 25



Nonoccupants

An estimated 7,860 nonoccupants died in traffic crashes in 1987. About seven-eighths were pedestrians and the remainder pedalcyclists. The total number of nonoccupant fatalities did not change from the number in 1986, and shows only a 1 percent increase since 1983.

Males as a group show a 1 percent increase, while female nonoccupant fatalities decreased by 2 percent. Among males, nonoccupant fatalities decreased for all age groups under 35, with the exception of the 5 to 14 group which shows a 2 percent increase. Among females, significant reductions were present for the 15 to 19 and the 45 to 54 age groups, 17 and 20 percent, respectively. All other age groups show no significant change. (Tables 31 through 35 and Figure 26)

TABLE 31

AGE OF NONOCCUPANT	AGE OF NONOCCUPANTS IN FATAL ACCIDENTS				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
4 YEARS & UNDER	363	385	406	481	-16%	-5%	-6%
5 TO 14 YEARS	1,261	1,250	1,267	1,582	-20%	-1%	1%
15 TO 19 YEARS	748	773	847	1,096	-23%	-9%	-3%
20 TO 24 YEARS	800	880	946	1,106	-14%	-7%	-9%
25 TO 34 YEARS	1,428	1,443	1,335	1,381	-3%	8%	-1%
35 TO 44 YEARS	1,027	936	805	832	-3%	16%	10%
45 TO 54 YEARS	720	742	678	847	-20%	9%	-3%
55 TO 64 YEARS	727	678	736	851	-14%	-8%	7%
65 YRS OR OLDER	1,600	1,549	1,481	1,823	-19%	5%	3%
UNKNOWN AGE	166	164	142	241	-41%	15%	1%
TOTAL	8,840	8,800	8,643	10,240	-16%	2%	0%

TABLE 32

AGE OF DRIVER	AGE OF DRIVERS IN NONOCCUPANT FATALITIES				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
14 YEARS & UNDER	10	10	7	11	-36%	43%	0%
15 TO 19 YEARS	890	858	812	1,153	-30%	6%	4%
20 TO 24 YEARS	1,315	1,380	1,377	1,728	-20%	0%	-5%
25 TO 34 YEARS	1,987	2,014	1,937	2,293	-16%	4%	-1%
35 TO 44 YEARS	1,155	1,166	1,149	1,158	-1%	1%	-1%
45 TO 54 YEARS	696	671	708	857	-17%	-5%	4%
55 TO 64 YEARS	465	453	487	521	-7%	-7%	3%
65 YRS OR OLDER	426	396	361	366	-1%	10%	8%
UNKNOWN AGE	916	905	908	1,077	-16%	-0%	1%
TOTAL	7,860	7,853	7,746	9,164	-15%	1%	0%

TABLE 33

AGE OF NONOCCUPANT	AGE OF NONOCCUPANT FATALITIES				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
4 YEARS & UNDER	308	339	357	440	-19%	-5%	-9%
5 TO 14 YEARS	1,133	1,125	1,139	1,412	-19%	-1%	1%
15 TO 19 YEARS	590	646	703	940	-25%	-8%	-9%
20 TO 24 YEARS	670	743	805	930	-13%	-8%	-10%
25 TO 34 YEARS	1,220	1,242	1,172	1,187	-1%	6%	-2%
35 TO 44 YEARS	918	829	719	723	-1%	15%	11%
45 TO 54 YEARS	660	676	626	772	-19%	8%	-2%
55 TO 64 YEARS	682	629	690	802	-14%	-9%	8%
65 YRS OR OLDER	1,553	1,495	1,426	1,777	-20%	5%	4%
UNKNOWN AGE	126	129	109	181	-40%	18%	-2%
TOTAL	7,860	7,853	7,746	9,164	-15%	1%	0%

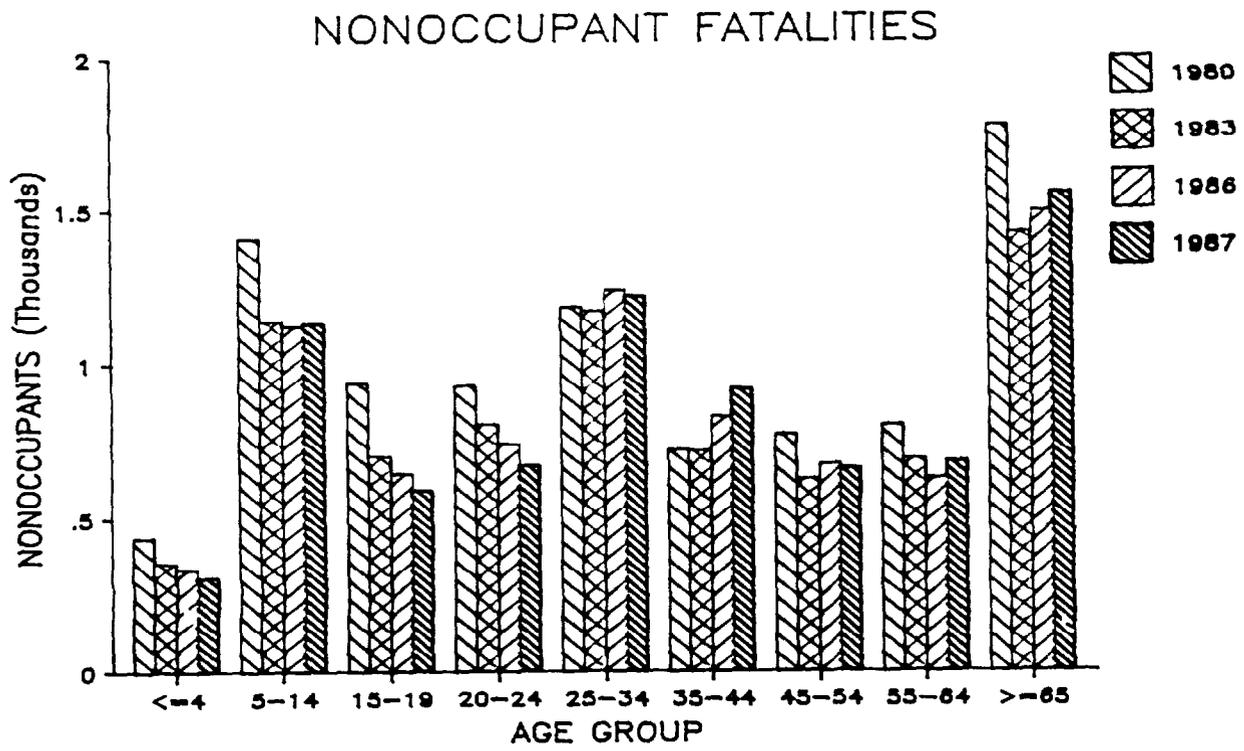
TABLE 34

AGE OF NONOCCUPANT	AGE OF NONOCCUPANT MALE FATALITIES				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
4 YEARS & UNDER	190	234	235	283	-17%	-0%	-19%
5 TO 14 YEARS	814	798	805	964	-16%	-1%	2%
15 TO 19 YEARS	445	472	527	700	-25%	-10%	-6%
20 TO 24 YEARS	543	615	649	729	-11%	-5%	-12%
25 TO 34 YEARS	950	977	892	915	-3%	10%	-3%
35 TO 44 YEARS	715	640	533	538	-1%	20%	12%
45 TO 54 YEARS	523	504	478	584	-18%	5%	4%
55 TO 64 YEARS	495	449	491	549	-11%	-9%	10%
65 YRS OR OLDER	952	882	844	1,096	-23%	5%	8%
UNKNOWN AGE	95	98	88	126	-30%	11%	-3%
TOTAL	5,722	5,669	5,542	6,484	-15%	2%	1%

TABLE 35

AGE OF NONOCCUPANT	AGE OF NONOCCUPANT FEMALE FATALITIES				% CHANGE	% CHANGE	% CHANGE
	1987	1986	1983	1980	80 TO 83	83 TO 86	86 TO 87
4 YEARS & UNDER	118	105	122	157	-22%	-14%	12%
5 TO 14 YEARS	319	327	334	448	-25%	-2%	-2%
15 TO 19 YEARS	145	174	176	240	-27%	-1%	-17%
20 TO 24 YEARS	127	128	156	201	-22%	-18%	-1%
25 TO 34 YEARS	270	265	280	272	3%	-5%	2%
35 TO 44 YEARS	203	189	186	185	1%	2%	7%
45 TO 54 YEARS	137	172	148	188	-21%	16%	-20%
55 TO 64 YEARS	187	180	199	253	-21%	-10%	4%
65 YRS OR OLDER	601	613	582	681	-15%	5%	-2%
UNKNOWN AGE	31	31	21	55	-62%	48%	0%
TOTAL	2,138	2,184	2,204	2,680	-18%	-1%	-2%

FIGURE 26



Reported Alcohol Testing

The reporting of alcohol data in the FARS file used in developing this report is not complete. Overall, 45 percent of the drivers involved were tested for BAC, with 90 percent of the results known. This means that the BAC was known for only 41 percent of all drivers involved in fatal crashes.

Besides revealing that only two-fifths of the drivers involved in fatal crashes had known BAC levels, the data show clear patterns in the selection of drivers being tested. The most obvious, shown in Table 41, are that:

- o Drivers who are fatally injured are much more likely to be tested than survivors, and

- o Surviving drivers in single-vehicle crashes are twice as likely to be tested as those in multi-vehicle crashes.

These disparities in testing cause serious bias in the alcohol data and point up the importance of having all drivers involved in fatal crashes tested for BAC.

Despite the statistical gaps, the reporting of data has improved appreciably in recent years. In 1987, the number of drivers in fatal crashes with reported blood alcohol level increased by several percentage points compared with the 1980 figures, 41 percent as compared to 28 percent. (Table 36)

FIGURE 27

TREND IN BAC TESTING
DRIVERS IN FATAL ACCIDENTS

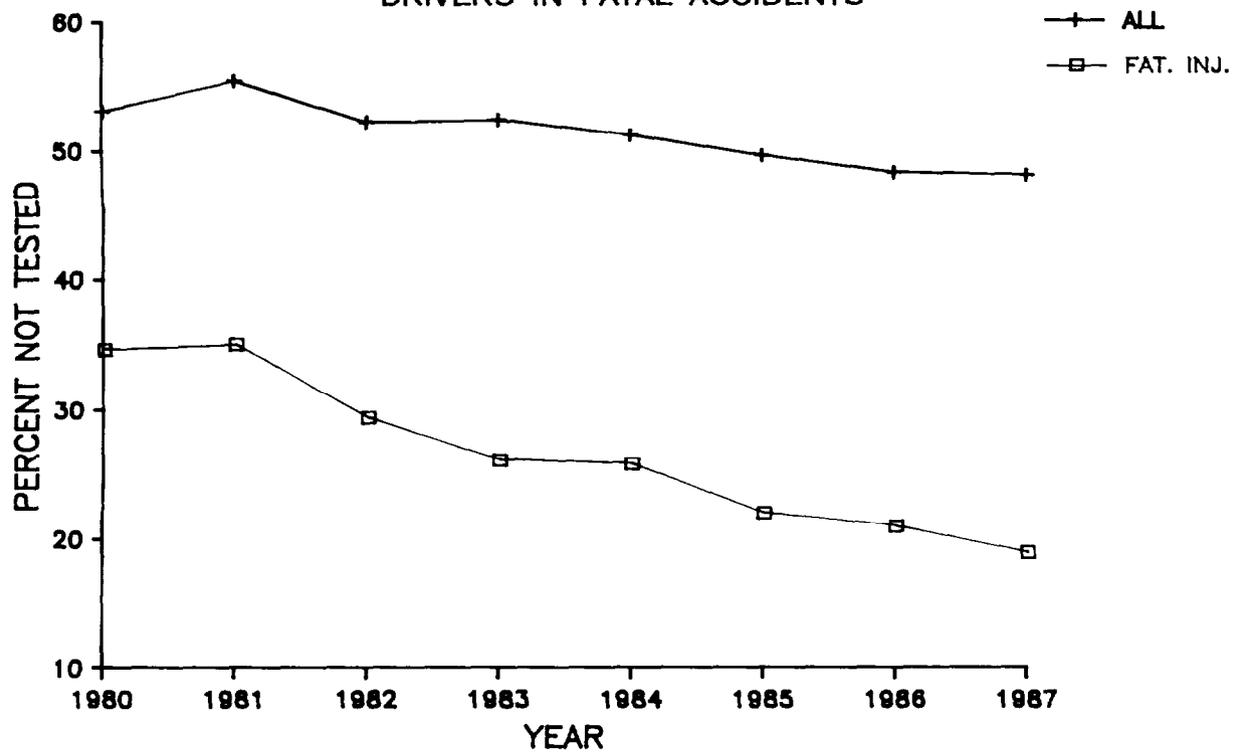


TABLE 36

B.A C. LEVEL	1987	1986	1983	1980	REPORTED B A.C. TESTING FOR DRIVERS IN FATAL ACCIDENTS		
					% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
ZERO	11,825	11,928	7,516	5,783	30%	59%	-1%
01 TO 05	1,512	1,683	1,113	1,258	-12%	51%	-10%
06 TO 09	1,464	1,619	1,123	1,260	-11%	44%	-10%
10 TO 15	3,161	3,639	2,815	3,103	-9%	29%	-13%
.16 TO 20	3,183	3,400	2,798	2,944	-5%	22%	-6%
OVER .20	3,960	4,209	3,424	3,778	-9%	23%	-6%
TEST REFUSED	139	186	220	309	-29%	-15%	-25%
NO TEST GIVEN	30,015	29,490	28,834	33,962	-15%	2%	2%
UNKNOWN RESULTS	2,688	2,843	4,234	5,009	-15%	-33%	-5%
UNKNOWN	3,763	1,795	3,029	6,659	-55%	-41%	110%
TOTAL	61,710	60,792	55,106	64,065	-14%	10%	2%

TABLE 37

B A C LEVEL	1987	1986	1983	1980	REPORTED B A C TESTING FOR FATALLY INJURED DRIVERS		
					% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
ZERO	8,448	8,531	5,616	4,427	27%	52%	-1%
01 TO 05	937	1,095	707	806	-12%	55%	-14%
.06 TO 09	873	962	698	791	-12%	38%	-9%
.10 TO .15	2,069	2,402	1,840	2,029	-9%	31%	-14%
.16 TO .20	2,299	2,503	2,046	2,202	-7%	22%	-8%
OVER 20	3,308	3,504	2,844	3,158	-10%	23%	-6%
NO TEST GIVEN	5,191	5,387	6,777	10,012	-32%	-21%	-4%
UNKNOWN RESULTS	1,443	1,578	2,506	3,178	-21%	-37%	-9%
UNKNOWN	2,192	668	1,104	2,213	-50%	-39%	228%
TOTAL	26,760	26,630	24,138	28,816	-16%	10%	0%

TABLE 38

B.A C LEVEL	1987	1986	1983	1980	REPORTED B.A.C TESTING FOR FATALLY INJURED NONOCCUPANTS		
					% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
ZERO	2,291	2,391	1,623	1,415	15%	47%	-4%
01 TO 05	205	219	165	176	-6%	33%	-6%
.06 TO 09	142	174	125	133	-6%	39%	-18%
.10 TO .15	291	398	259	286	-9%	54%	-27%
.16 TO .20	347	380	317	312	2%	20%	-9%
OVER 20	926	926	760	701	8%	22%	0%
NO TEST GIVEN	2,587	2,748	3,396	4,684	-27%	-19%	-6%
UNKNOWN RESULTS	321	371	625	649	-4%	-41%	-13%
UNKNOWN	750	246	476	808	-41%	-48%	205%
TOTAL	7,860	7,853	7,746	9,164	-15%	1%	0%

TABLE 39

REPORTED BAC TEST RESULTS FOR FATALLY INJURED PERSONS - 1987

PERSON TYPE	PERSON BAC							UNKNOWN NO TEST			TOTAL
	ZERO	01- 05	06- 09	10- 15	16- 20	G T	20	RESULTS	GIVEN	UNKNOWN	
NONOCCUPANT	2,291	205	142	291	347	926		322	2,587	749	7,860
DRIVER	8,448	937	873	2,069	2,299	3,308		1,443	5,192	2,191	26,760
PASSENGER	2,662	410	329	568	385	525		127	5,327	1,377	11,710
TOTAL	13,401	1,552	1,344	2,928	3,031	4,759		1,892	13,106	4,317	46,330

TABLE 40

REPORTED DRIVER BAC TEST RESULTS BY TYPE OF VICTIM - 1987

TYPE OF VICTIM	DRIVER BAC							UNKNOWN NO TEST			TEST	TOTAL
	ZERO	01- 05	06- 09	10- 15	16- 20	G T	20	RESULTS	GIVEN	REFUSED		
NONOCCUPANT	800	114	109	193	137	109		213	5,810	29	346	7,860
DRIVER	8,448	937	873	2,069	2,299	3,308		1,443	5,192	2,191	0	26,760
PASSENGER	2,071	464	466	812	656	509		712	5,141	54	825	11,710
TOTAL	11,319	1,515	1,448	3,074	3,092	3,926		2,368	16,143	2,274	1,171	46,330

TABLE 41

BAC TESTING PATTERNS FOR DIFFERENT GROUPS OF DRIVERS

TESTING PATTERN, 1987
(Percent)

DRIVER GROUP	KNOWN RESULTS	UNKNOWN RESULTS	UNKNOWN IF TESTED	NOT TESTED	TOTAL PERCENT	TOTAL NUMBER OF DRIVERS
DRIVERS IN COLLISION WITH NONOCCUPANTS	19%	3%	4%	74%	100%	6,897
DRIVERS IN OTHER S V ACCIDENTS						
Fatally Injured	70%	6%	8%	16%	100%	12,942
Surviving	40%	8%	8%	44%	100%	4,334
All	63%	7%	8%	23%	100%	17,276
DRIVERS IN MULTI VEHICLE ACCIDENTS						
Fatally Injured	64%	5%	8%	23%	100%	13,818
Surviving	18%	3%	4%	75%	100%	30,616
All	35%	4%	6%	55%	100%	37,537
DEAD DRIVERS	67%	5%	8%	19%	100%	26,760
SURVIVING DRIVERS	21%	4%	5%	70%	100%	34,950
ALL DRIVERS	40%	5%	7%	48%	100%	61,710

FIGURE 28

BAC TESTING PATTERN FOR DRIVERS
ALL FATAL ACCIDENT - 1987

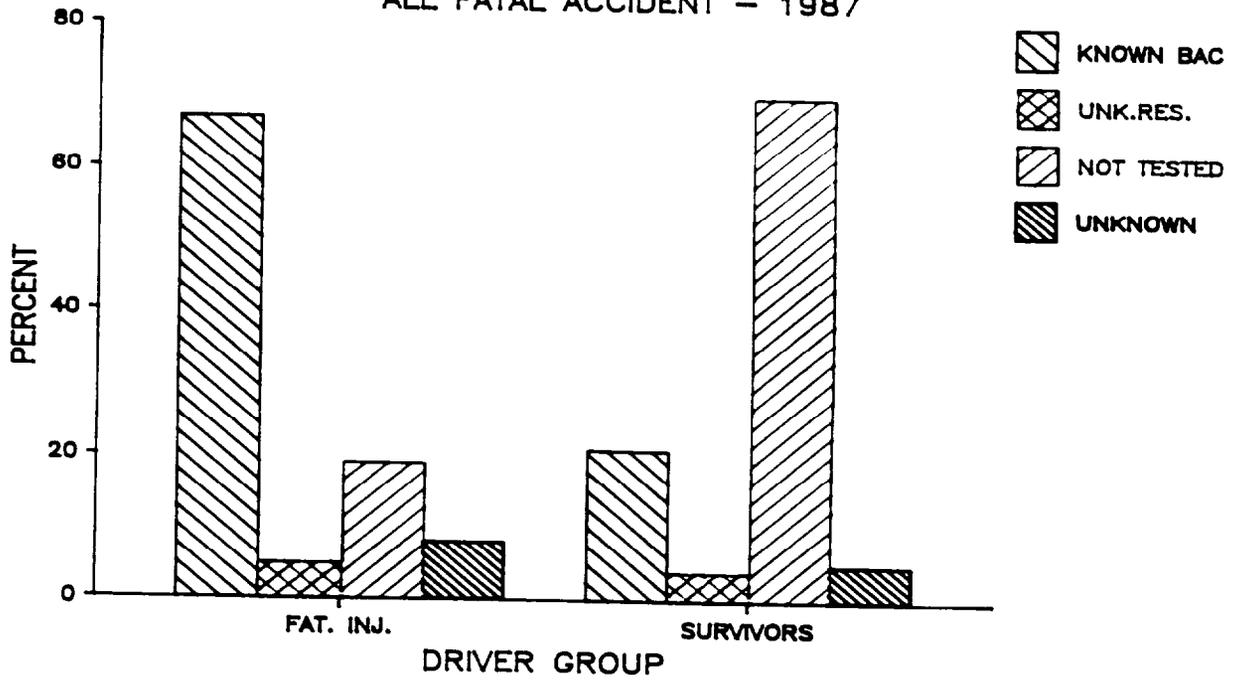


FIGURE 29

REPORTED BAC TEST RESULTS
ALL DRIVERS IN FATAL ACCIDENTS

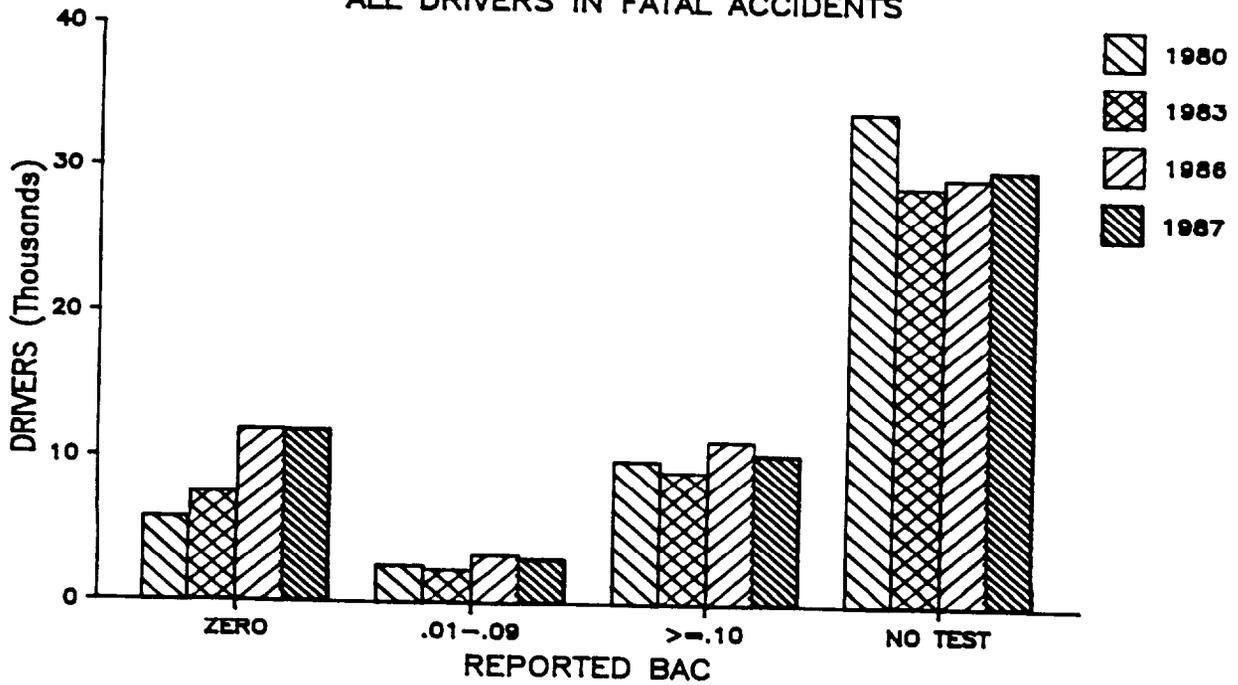


FIGURE 30

BAC TESTING PATTERN FOR DRIVERS
SINGLE VEHICLE FATAL ACCIDENTS - 1987

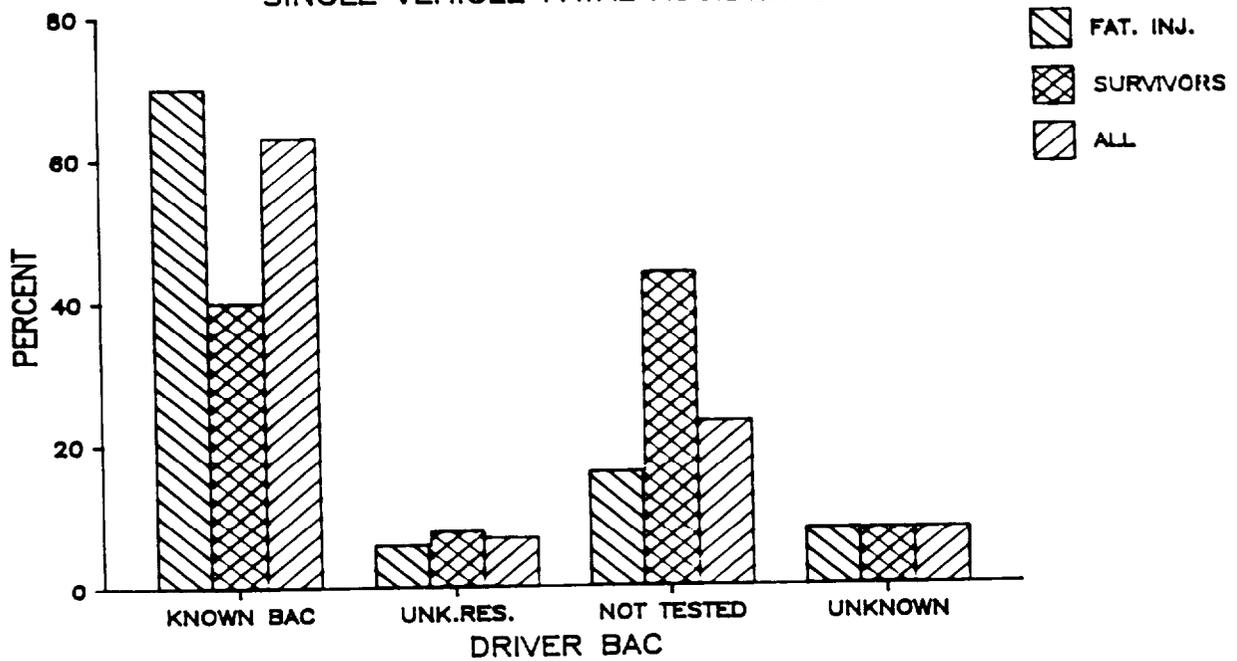


FIGURE 31

BAC TESTING PATTERN FOR DRIVERS
MULTI-VEHICLE FATAL ACCIDENTS - 1987

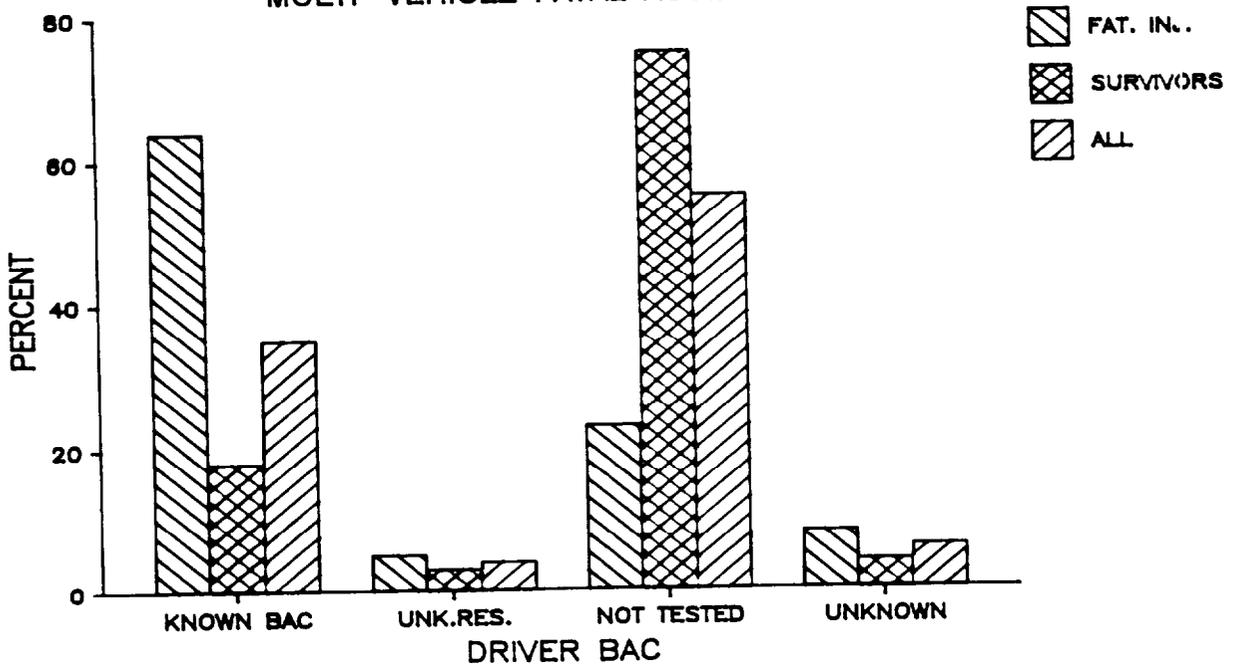


FIGURE 32

REPORTED BAC TEST RESULTS
FATALLY INJURED NONOCCUPANTS

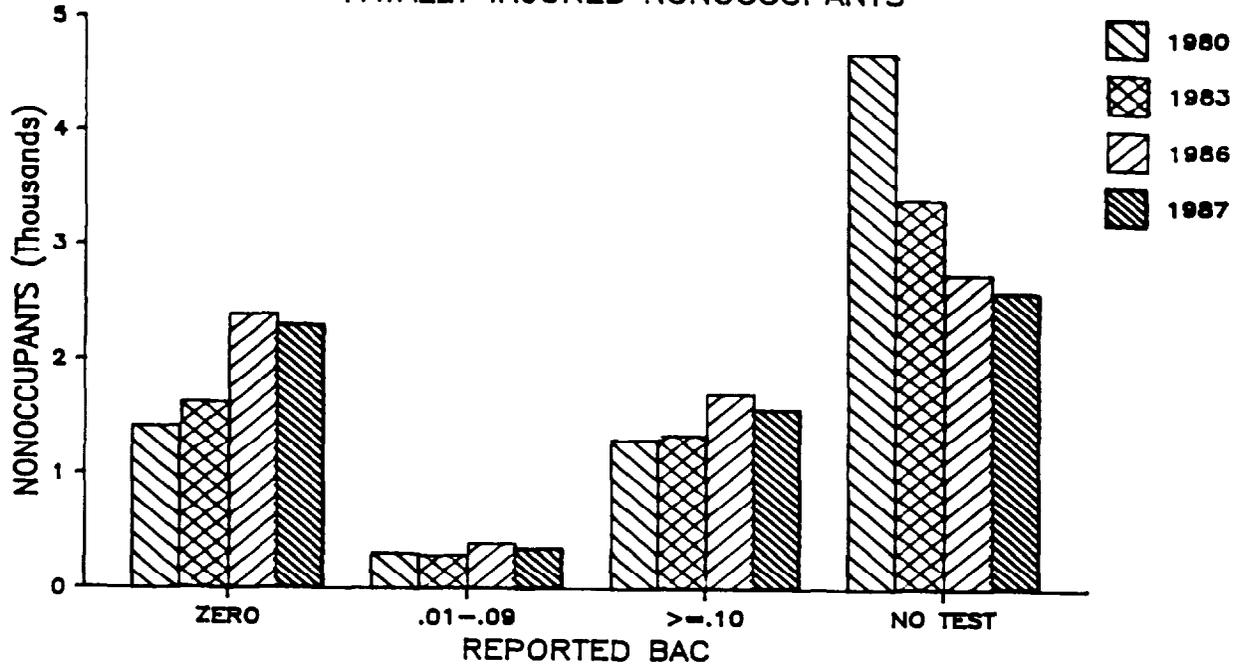
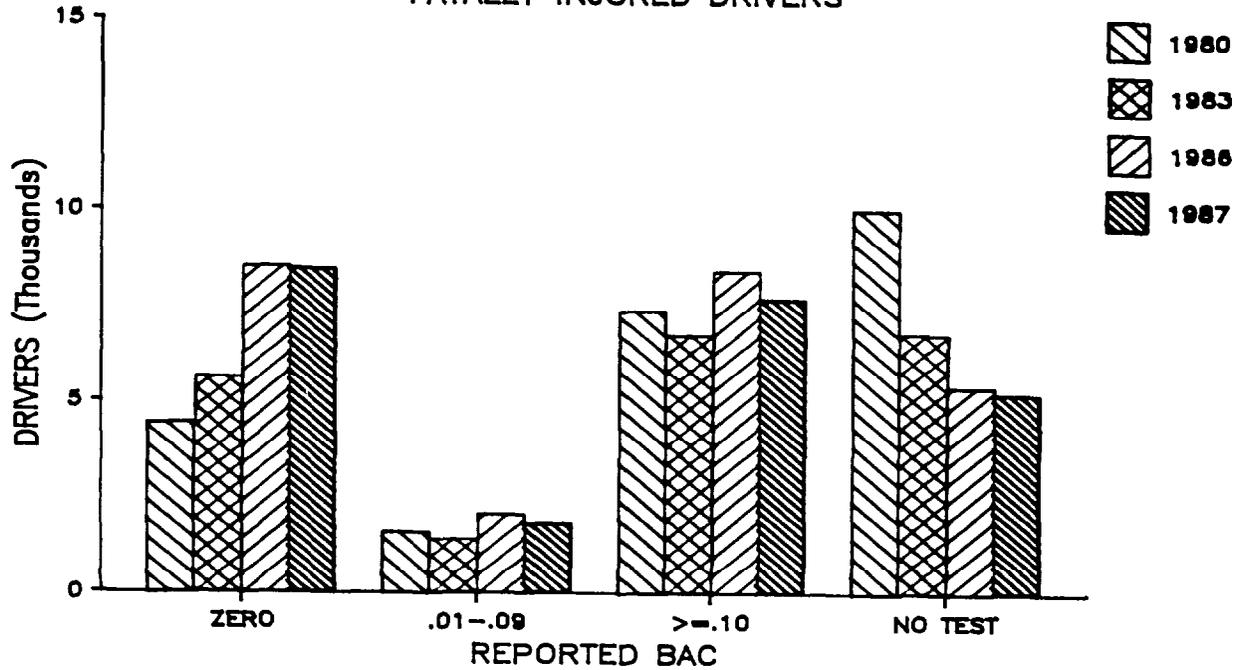


FIGURE 33

REPORTED BAC TEST RESULTS
FATALLY INJURED DRIVERS



Vehicles in Fatal Crashes and Occupant Fatalities

In 1987, an estimated 61,710 vehicles were involved in fatal traffic crashes. The number of passenger cars remained about the same as in 1986 but the number of trucks increased by 5 percent. The number of motorcycles involved decreased by 12 percent. The total was 2 percent higher for all vehicles combined.

The number of full-size cars involved in fatal crashes decreased by 20 percent, while the number of intermediates decreased by 11 percent. Compacts and smaller cars continued to increase but at a lower rate, up 3 percent over last year. (Table 42 and Figures 34 and 35)

Pickup trucks and vans (classified as light trucks in the tables) were involved in 8 percent more fatal crashes, while the number of heavy trucks involved decreased by 2 percent.

The number of motorcycle fatalities is down by 13 percent over last year. The estimated total of 3,979 is about 23 percent lower than the count in 1980. (Table 43 and Figure 36)

During 1986, an estimated 4,742 persons -- an decrease of 2 percent from the previous year -- were killed in crashes involving heavy trucks (26,000 pounds or more). About 713 were occupants of the trucks, down 8 percent from 1986; 449 were nonoccupants, and 3,580 were occupants of other vehicles -- 1 percent less than in 1986. The number of fatalities to occupants of heavy trucks involved in single-vehicle crashes decreased 6 percent. (Tables 47 and 48 and Figures 44 and 45)

Vehicle Occupant Fatalities in Types
Of Multiple-Vehicle Crashes, 1986

	Angle	Head-on	Rear-end	Sideswipe	Total
All Crashes	8,310	7,722	2,133	785	18,950
Crashes involving Heavy Trucks	1,500	1,127	775	223	3,625
Percent of Total	(18%)	(15%)	(36%)	(28%)	(19%)

The table above shows that collisions with heavy trucks account for about 19 percent of all multiple-vehicle fatalities. This proportion varies from a low of 15 percent in head-on crashes to a high of 36 percent in rear-end crashes.

TABLE 42

NUMBER OF VEHICLES IN FATAL ACCIDENTS BY TYPE

VEHICLE TYPE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
PASSENGER CARS							
MINI-COMPACTS	6,240	6,210	5,628	5,091	11%	10%	0%
SUB-COMPACTS	7,110	6,839	4,350	3,647	19%	57%	4%
COMPACTS	11,142	10,788	8,293	8,560	-3%	30%	3%
INTERMEDIATES	6,494	7,332	7,739	10,126	-24%	-5%	-11%
FULL SIZE CARS	2,290	2,853	3,921	6,287	-38%	-27%	-20%
UNKNOWN SIZE	2,783	2,173	3,367	5,309	-37%	-35%	28%
SUBTOTAL	36,059	36,195	31,298	39,020	-15%	9%	-0%
MOTORCYCLES	4,012	4,570	4,302	5,194	-17%	6%	-12%
TRUCKS							
LIGHT TRUCKS	14,041	13,035	10,937	12,607	-13%	19%	8%
HEAVY TRUCKS	4,296	4,406	4,182	4,284	-2%	5%	-2%
OTHER TRUCKS	982	983	876	1,168	-25%	12%	-0%
SUBTOTAL	19,319	18,424	15,995	18,059	-11%	15%	5%
BUSES	356	286	307	330	-7%	-7%	24%
OTHER TYPE	422	395	426	425	0%	-7%	7%
UNKNOWN TYPE	1,542	922	778	1,037	-25%	19%	67%
TOTAL	61,710	60,792	55,106	64,065	-14%	10%	2%

FIGURE 34

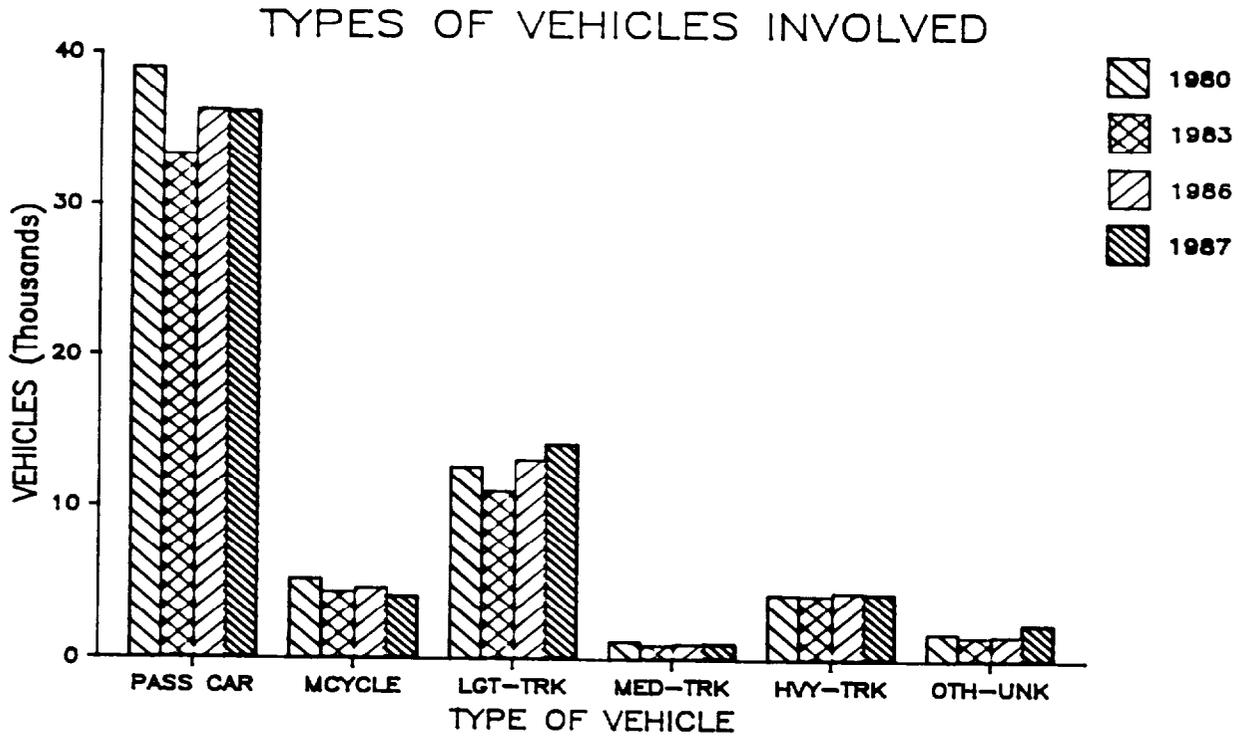


FIGURE 35

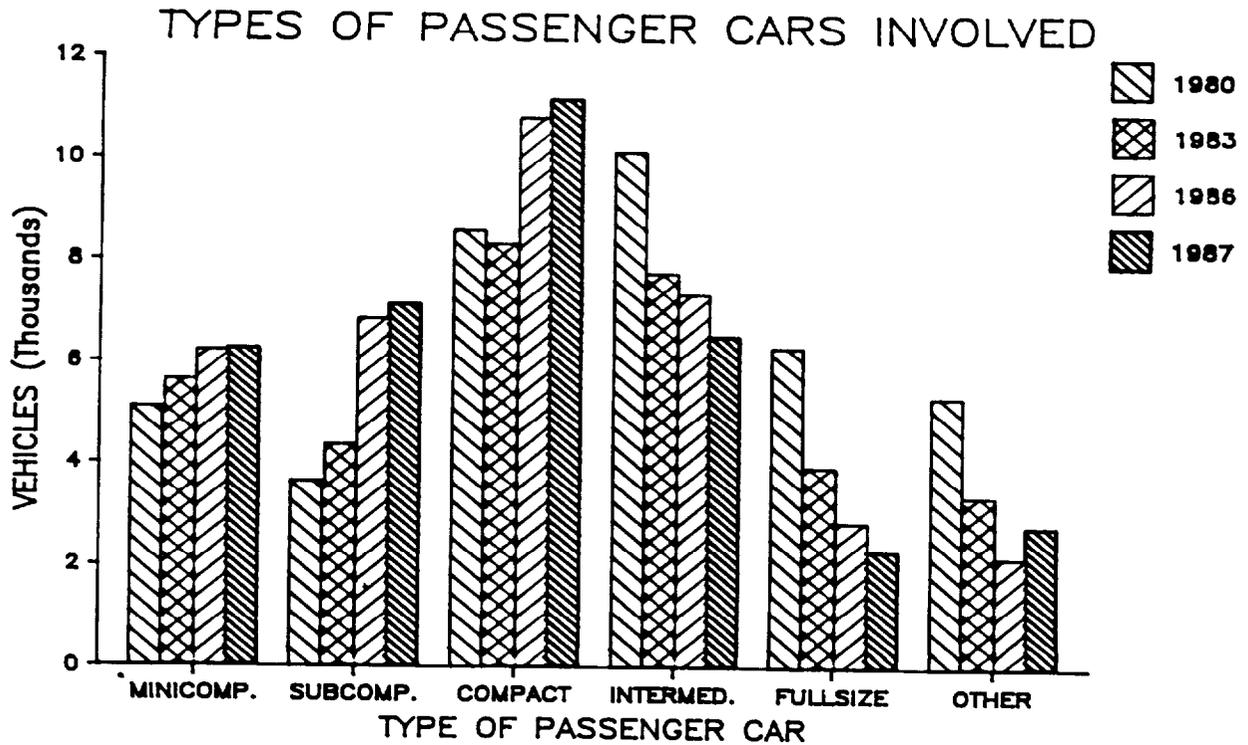


TABLE 43

OCCUPANT FATALITIES BY VEHICLE TYPE

VEHICLE TYPE	1987	1986	1983	% CHANGE			
				1980 TO 83	83 TO 86	86 TO 87	
PASSENGER CARS							
MINI-COMPACTS	5,075	5,045	4,725	4,492	5%	7%	1%
SUB-COMPACTS	5,423	5,270	3,437	3,032	13%	53%	3%
COMPACTS	7,749	7,655	5,869	6,292	-7%	30%	1%
INTERMEDIATES	3,613	4,149	4,622	6,260	-26%	-10%	-13%
FULL SIZE CARS	1,137	1,488	2,090	3,454	-39%	-29%	-24%
UNKNOWN SIZE	1,754	1,337	2,236	3,919	-43%	-40%	31%
SUBTOTAL	24,751	24,944	22,979	27,449	-16%	9%	-1%
MOTORCYCLES	3,979	4,566	4,265	5,144	-17%	7%	-13%
TRUCKS							
LIGHT TRUCKS	7,890	7,254	6,164	7,460	-17%	18%	9%
HEAVY TRUCKS	713	774	807	976	-17%	-4%	-8%
OTHER TRUCKS	180	215	213	312	-32%	1%	-16%
SUBTOTAL	8,783	8,243	7,184	8,748	-18%	15%	7%
BUSES	45	39	53	46	15%	-26%	15%
OTHER TYPE	287	242	267	257	4%	-9%	19%
UNKNOWN TYPE	625	200	95	283	-66%	111%	213%
TOTAL	38,470	38,234	34,843	41,927	-17%	10%	1%

FIGURE 36

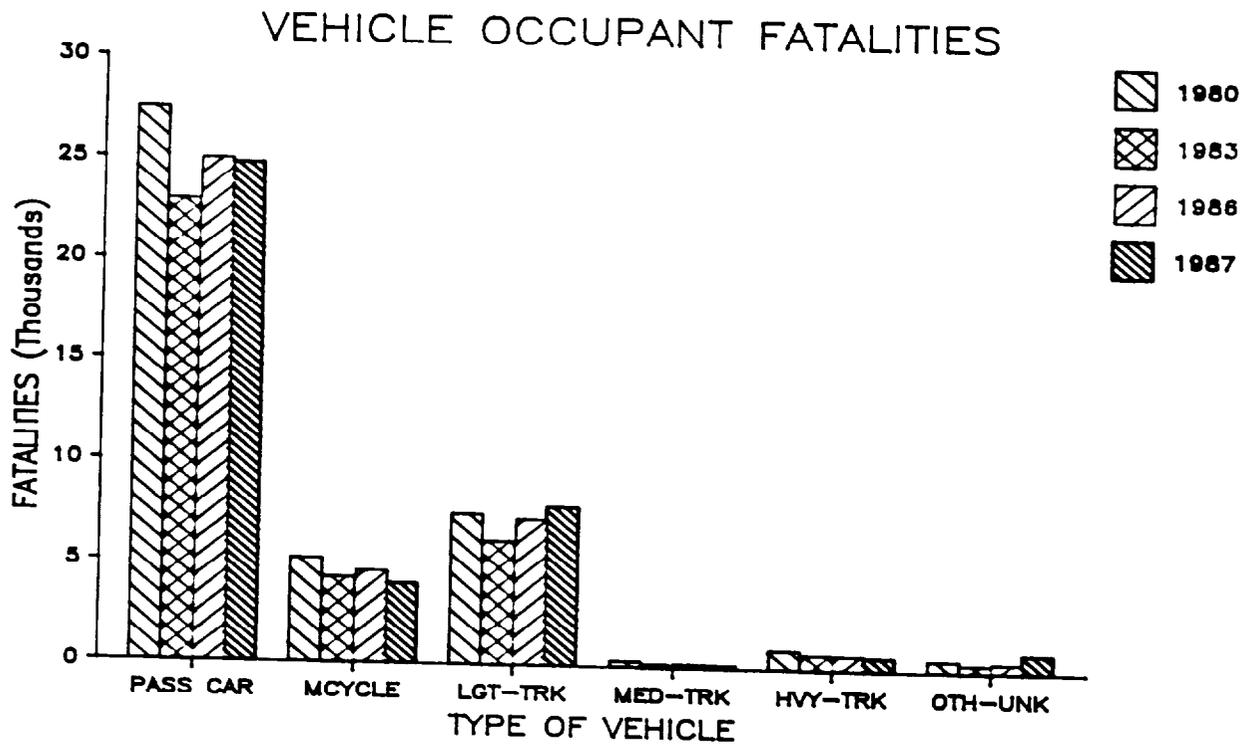


FIGURE 37

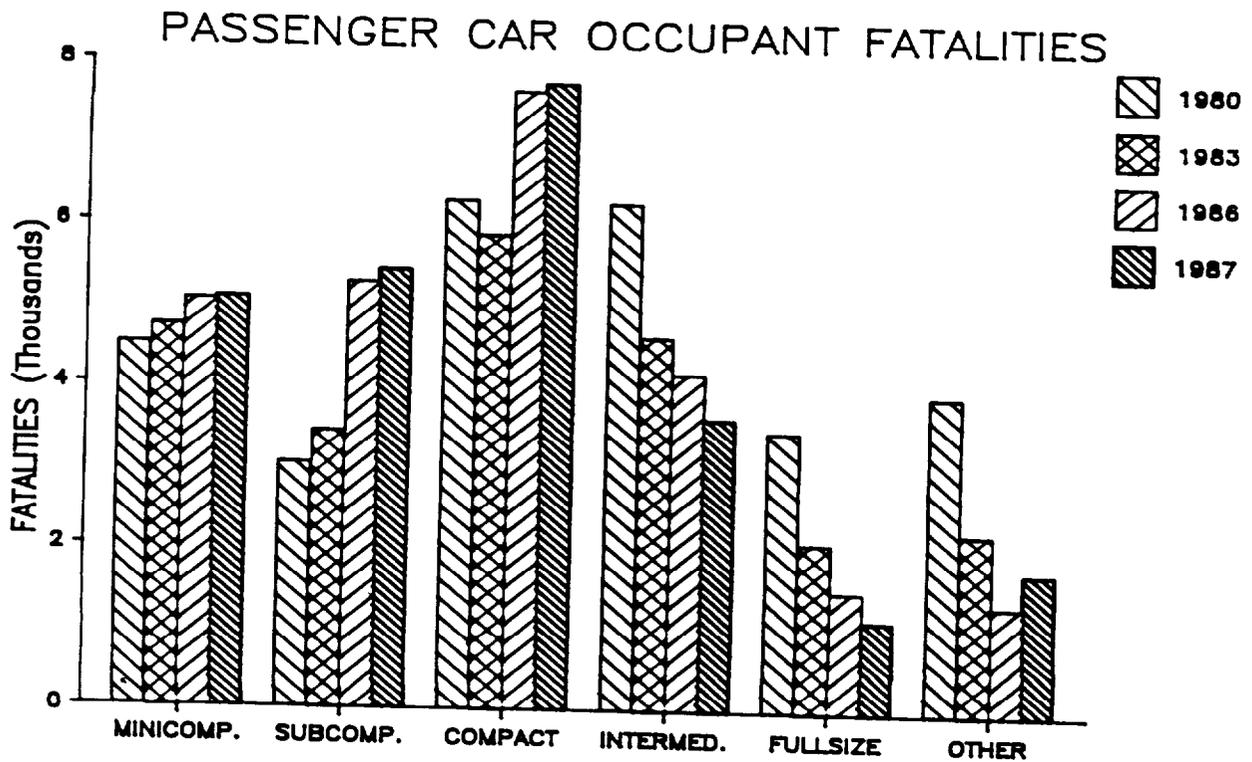


TABLE 44

DRIVER FATALITIES BY VEHICLE TYPE

VEHICLE TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
PASSENGER CARS							
MINI-COMPACTS	3,508	3,529	3,252	3,075	6%	9%	-1%
SUB-COMPACTS	3,608	3,478	2,333	2,055	14%	49%	4%
COMPACTS	5,146	5,021	3,820	4,088	-7%	31%	2%
INTERMEDIATES	2,362	2,690	2,967	4,039	-27%	-9%	-12%
FULL SIZE CARS	737	986	1,310	2,154	-39%	-25%	-25%
UNKNOWN SIZE	1,147	846	1,502	2,551	-41%	-44%	36%
SUBTOTAL	16,508	16,550	15,184	17,962	-15%	9%	-0%
MOTORCYCLES	3,544	4,019	3,729	4,474	-17%	8%	-12%
TRUCKS							
LIGHT TRUCKS	5,320	4,934	4,144	4,979	-17%	19%	8%
HEAVY TRUCKS	601	649	670	806	-17%	-3%	-7%
OTHER TRUCKS	123	159	142	225	-37%	12%	-23%
SUBTOTAL	6,044	5,742	4,956	6,010	-18%	16%	5%
BUSES	12	2	4	4	0%	-50%	500%
OTHER TYPE	220	175	203	181	12%	-14%	26%
UNKNOWN TYPE	432	142	62	185	-66%	129%	204%
TOTAL	26,760	26,630	24,138	28,816	-16%	10%	0%

FIGURE 38

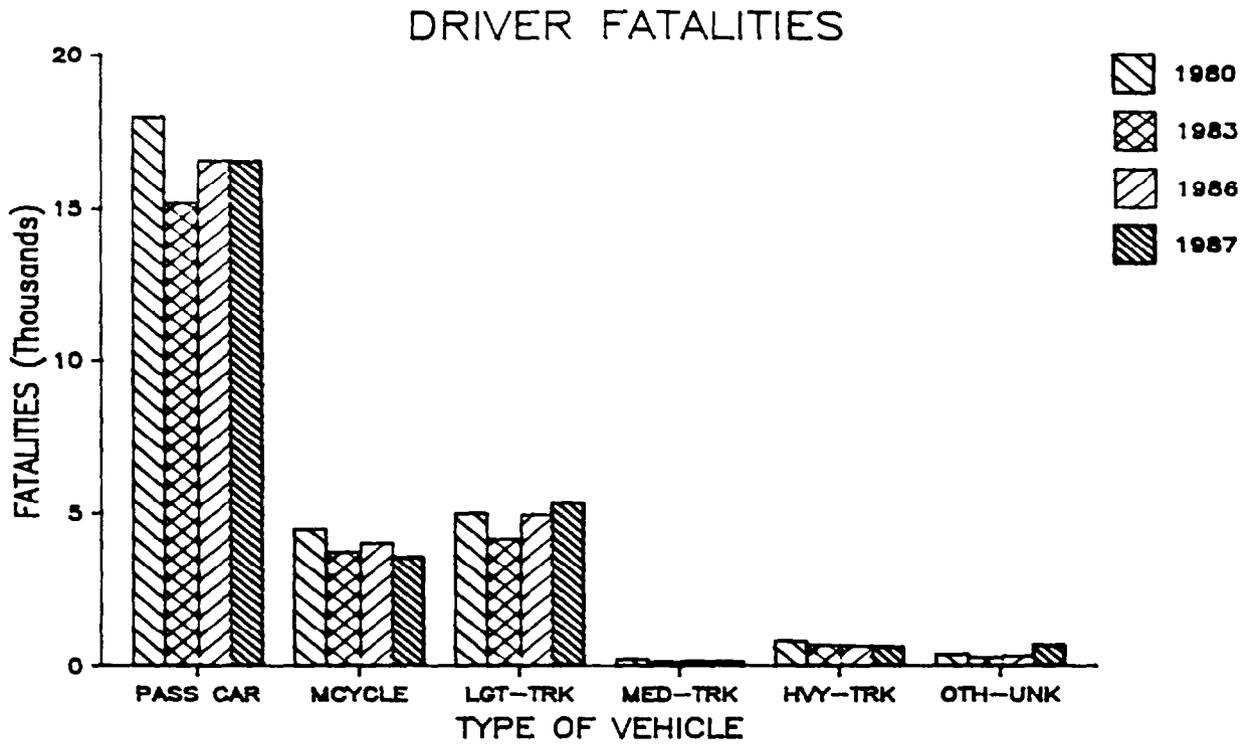


FIGURE 39

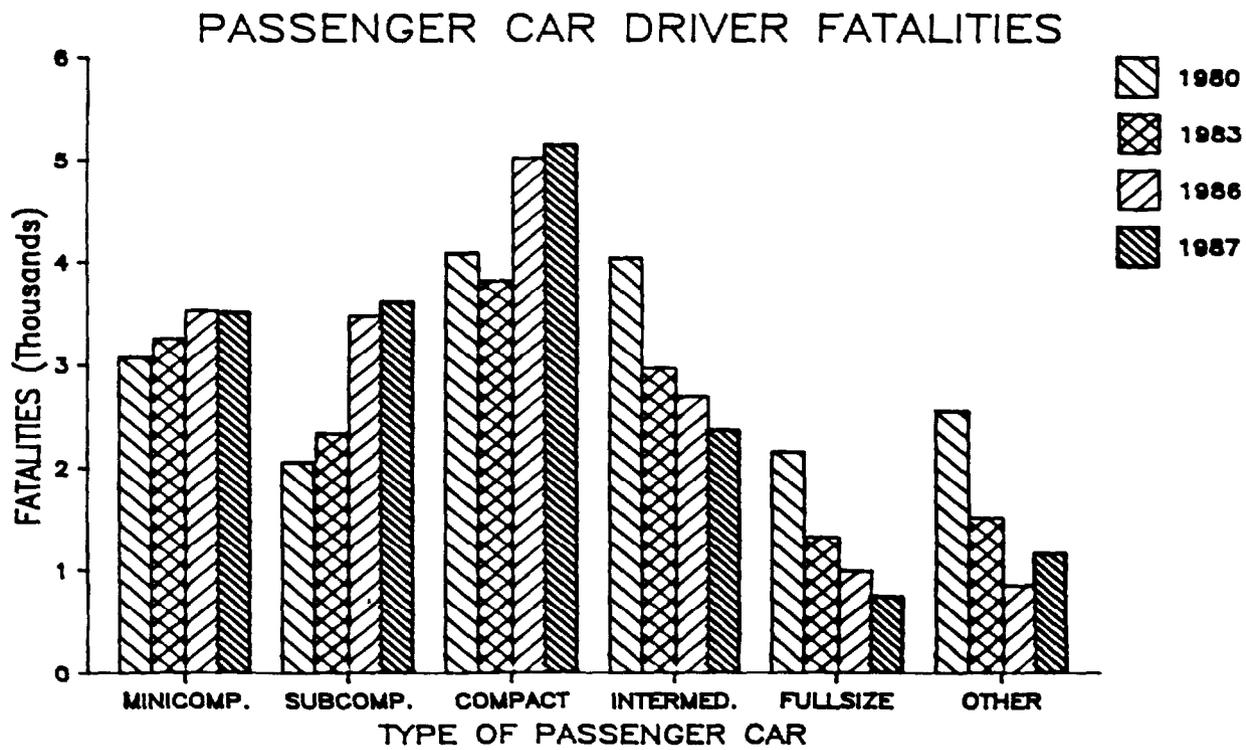


TABLE 45

PASSENGER FATALITIES BY VEHICLE TYPE

VEHICLE TYPE	1987	1986	1983	% CHANGE			
				1980 TO 83	83 TO 86	86 TO 87	
PASSENGER CARS							
MINI-COMPACTS	1,567	1,516	1,473	1,417	4%	3%	3%
SUB-COMPACTS	1,815	1,792	1,104	977	13%	62%	1%
COMPACTS	2,603	2,634	2,049	2,204	-7%	29%	-1%
INTERMEDIATES	1,251	1,459	1,655	2,221	-25%	-12%	-14%
FULL SIZE CARS	400	502	780	1,300	-40%	-36%	-20%
UNKNOWN SIZE	607	491	734	1,368	-46%	-33%	24%
SUBTOTAL	8,243	8,394	7,795	9,487	-18%	8%	-2%
MOTORCYCLES	435	547	536	670	-20%	2%	20%
TRUCKS							
LIGHT TRUCKS	2,570	2,320	2,020	2,481	-19%	15%	11%
HEAVY TRUCKS	112	125	137	170	-19%	-9%	10%
OTHER TRUCKS	57	56	71	87	-18%	-21%	2%
SUBTOTAL	2,739	2,501	2,228	2,738	-19%	12%	10%
BUSES	33	37	49	42	17%	-24%	11%
OTHER TYPE	67	67	64	76	-16%	5%	0%
UNKNOWN TYPE	193	58	33	98	-66%	76%	233%
TOTAL	11,710	11,604	10,705	13,111	-18%	8%	1%

FIGURE 40

PASSENGER FATALITIES

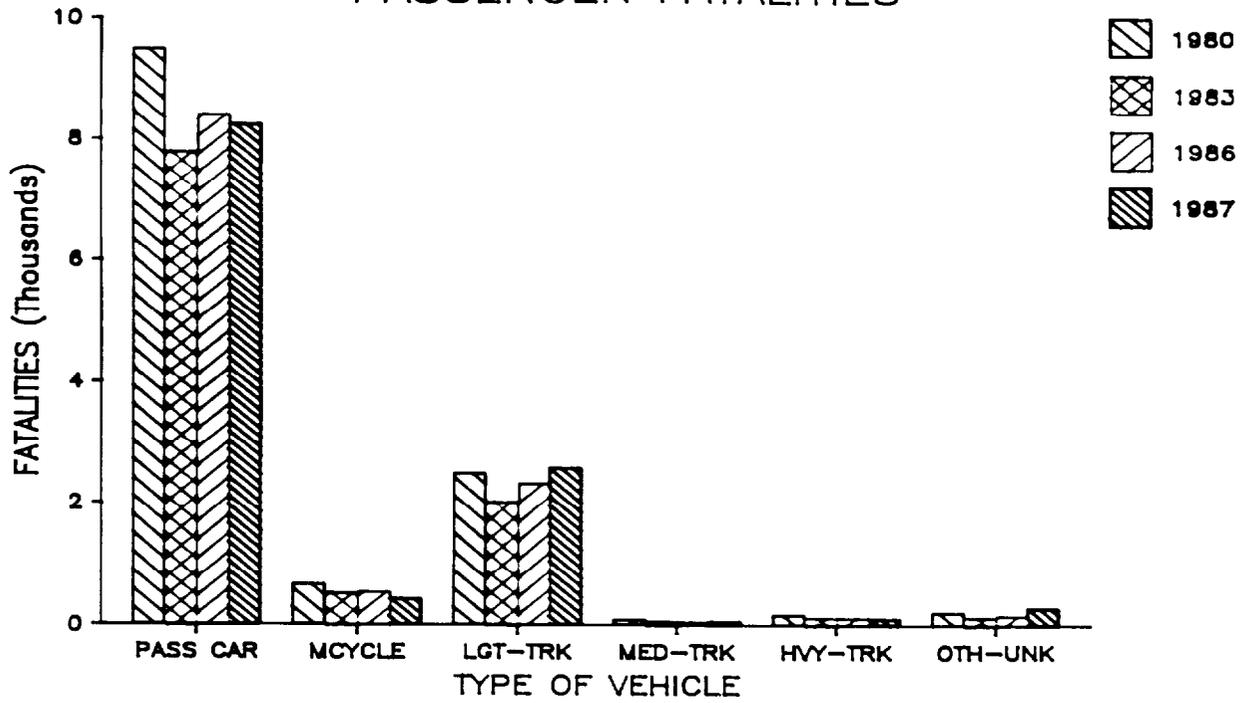


FIGURE 41

PASSENGER FATALITIES IN PASSENGER CARS

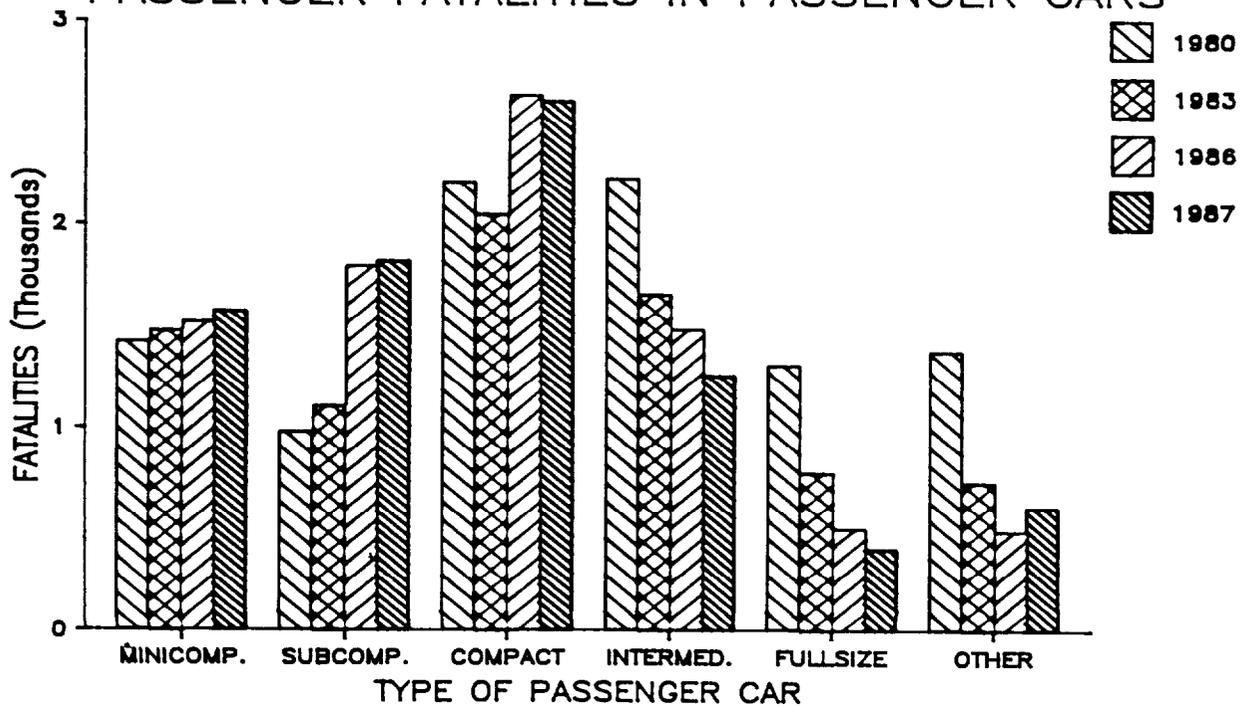


TABLE 46

NONOCCUPANT FATALITIES BY VEHICLE TYPE

VEHICLE TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
PASSENGER CARS							
MINI-COMPACTS	677	687	624	513	22%	10%	-1%
SUB-COMPACTS	789	737	490	413	19%	50%	7%
COMPACTS	1,348	1,311	1,129	1,118	1%	16%	3%
INTERMEDIATES	1,022	1,177	1,310	1,674	-22%	-10%	-13%
FULL SIZE CARS	379	468	714	1,108	-36%	-34%	-19%
UNKNOWN SIZE	538	435	536	703	-24%	-19%	24%
SUBTOTAL	4,753	4,815	4,803	5,529	-13%	0%	-1%
MOTORCYCLES	85	83	82	125	-34%	1%	2%
TRUCKS							
LIGHT TRUCKS	1,785	1,710	1,541	1,765	-13%	11%	4%
HEAVY TRUCKS	414	441	461	449	3%	-4%	-6%
OTHER TRUCKS	128	146	119	169	-30%	23%	-12%
SUBTOTAL	2,327	2,297	2,121	2,383	-11%	8%	1%
BUSES	105	112	121	147	-18%	-7%	-6%
OTHER TYPE	30	23	36	33	9%	-36%	30%
UNKNOWN TYPE	560	523	583	947	-38%	-10%	7%
TOTAL	7,860	7,853	7,746	9,164	-15%	1%	0%

FIGURE 42

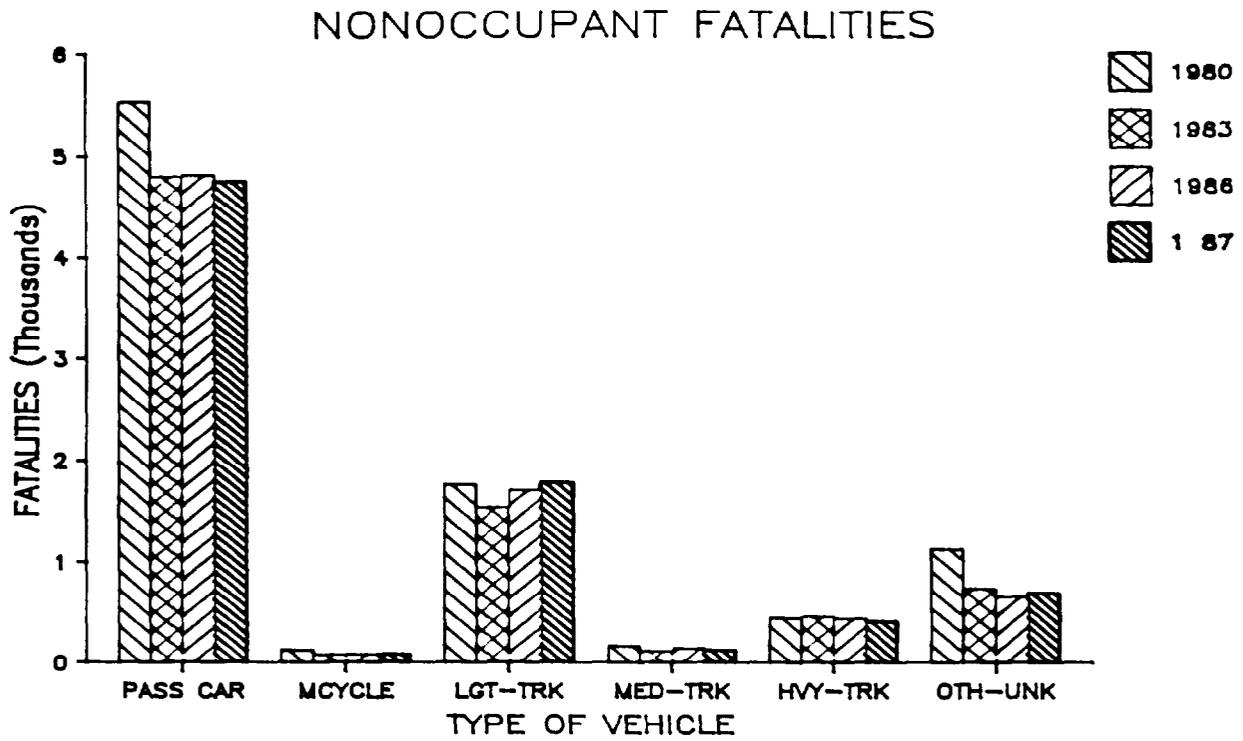


FIGURE 43

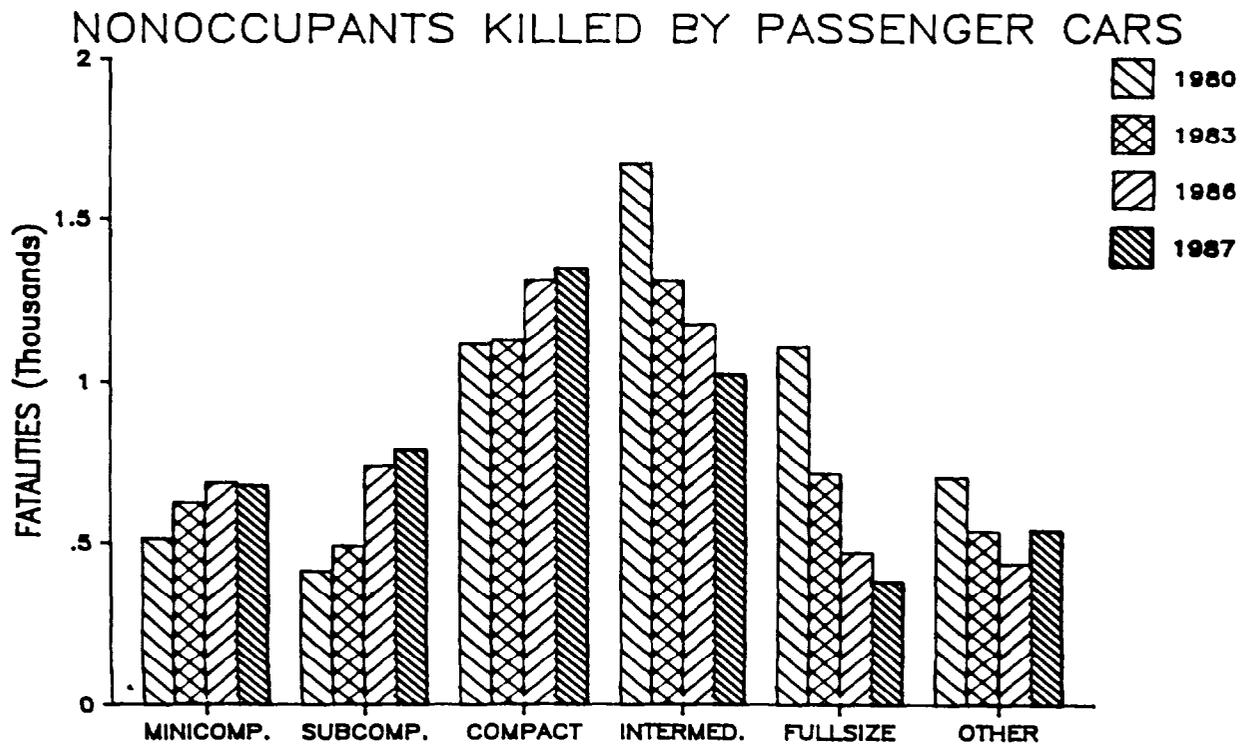


TABLE 47

FATALITIES IN ACCIDENTS INVOLVING HEAVY TRUCKS
BY VICTIM TYPE AND ACCIDENT TYPE

VICTIM TYPE/ ACCIDENT TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
NONOCCUPANTS							
COLLISION WITH NONOCCUPANTS	449	465	476	466	2%	-2%	-3%
TRUCK OCCUPANTS							
SINGLE VEHICLE	482	511	545	671	-19%	-6%	-6%
MULTI VEHICLE	231	263	252	305	-17%	4%	-12%
SUBTOTAL	713	774	797	976	-18%	-3%	-8%
OCCUPANTS OF OTHER VEHICLES	3,580	3,623	3,452	3,379	2%	5%	-1%
TOTAL	4,742	4,862	4,725	4,821	-2%	3%	-2%

TABLE 48

OCCUPANT FATALITIES IN ACCIDENTS INVOLVING HEAVY TRUCKS
IN MULTI VEHICLE ACCIDENTS - BY VEHICLE TYPE

VEHICLE TYPE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87
PASSENGER CARS							
MINI-COMPACTS	392	440	417	265	57%	6%	-11%
SUB-COMPACTS	448	456	296	236	25%	54%	-2%
COMPACTS	836	840	707	518	36%	19%	-0%
INTERMEDIATES	462	543	562	636	-12%	-3%	-15%
FULL SIZE CARS	160	212	298	372	-20%	-29%	-25%
UNKNOWN SIZE	194	115	207	313	-34%	-44%	69%
SUBTOTAL	2,492	2,606	2,487	2,340	6%	5%	-4%
MOTORCYCLES	165	170	153	208	-26%	11%	-3%
TRUCKS							
LIGHT TRUCKS	835	765	727	737	-1%	5%	9%
HEAVY TRUCKS	231	263	262	305	-14%	0%	-12%
OTHER TRUCKS	26	40	19	53	-64%	111%	-35%
SUBTOTAL	1,092	1,068	1,008	1,095	-8%	6%	2%
BUSES	7	6	26	5	420%	-77%	17%
OTHER & UNK TYPE	55	36	40	36	11%	-10%	53%
TOTAL	3,811	3,886	3,714	3,684	1%	5%	-2%

FIGURE 44

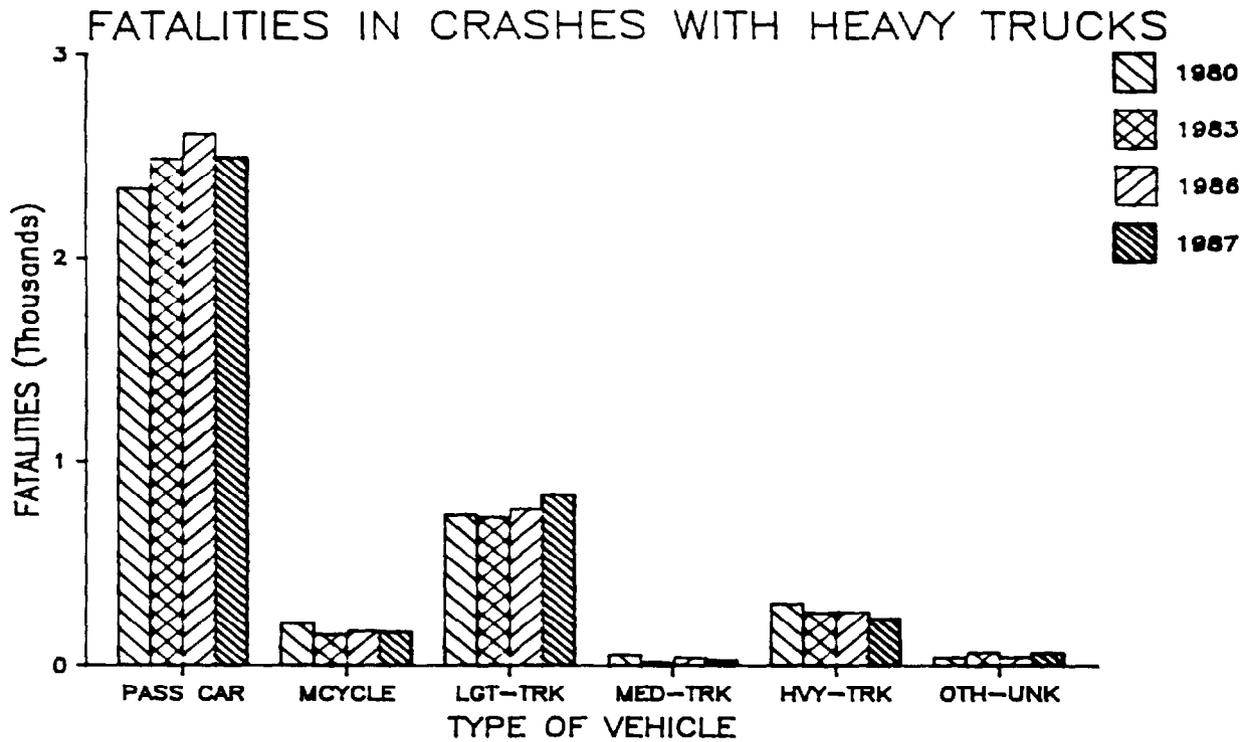
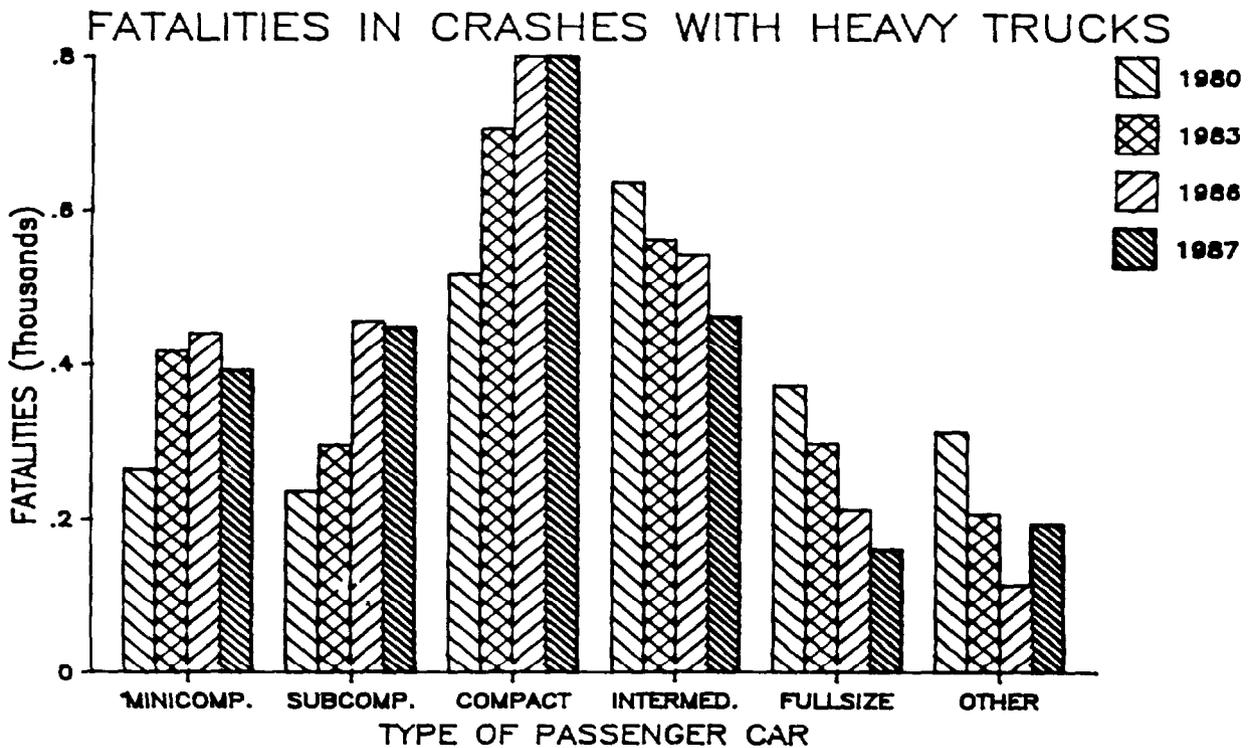


FIGURE 45



Restraint and Helmet Usage

While the reported number of passenger vehicle occupants in fatal crashes who used seat belts or other restraints has been rising since 1980, the increase was much more rapid between 1984 and 1987. In 1987, 34 percent of all drivers in fatal crashes were reported to have been restrained, compared to only 5 percent in 1983.

An increased number of State laws requiring the use of restraints and more widespread campaigns to persuade travelers to belt up undoubtedly have much to do with this trend. It should be noted, however, that in about 16 percent of the cases, restraint use is unknown. This leaves a possibility of a significant error in the estimated usage rate figures.

Of the passenger vehicle drivers who were killed, 3,439 or 18 percent of the total were belted, while almost three times as many of the survivors -- 10,847, or 38 percent -- were restrained. In this report, passenger vehicles include passenger cars, pickups and vans. (Tables 49, 50 and 51 and Figure 46)

There were 6,976 belted passengers who survived, about four times as many as the belted passengers who were killed (1,749). (The respective restraint use rates were 31 percent and 18 percent.) The usage rate among survivors rose from 9 to 34 percent since 1984, while that among the fatally injured passengers rose from 6 to 18 percent. (Tables 52, 53 and 54 and Figure 47; Tables 55, 56 and 57 and Figure 48)

The restraint usage rate for children under 5 years of age rose to 45 percent from 28 percent in 1984. Surviving children, like adults, were more likely to be restrained -- a usage rate of 50 as compared to a rate of 31 for those who were fatally injured.

Helmet usage has remained stable since 1980 at about 42 percent for motorcycle drivers and about 32 percent for passengers. The usage rate was essentially the same for both fatally injured and all riders. (Tables 58, 59 and 60 and Figure 49)

RESTRAINT USAGE FOR ALL OCCUPANTS OF PASSENGER VEHICLES

TABLE 49

RESTRAINT USAGE FOR DRIVERS OF PASSENGER VEHICLES

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE	% CHANGE	% CHANGE
					80 TO 83	83 TO 86	86 TO 87
NOT USED	27,358	28,685	32,190	37,838	-15%	-11%	-5%
USED	14,286	10,585	1,829	1,480	24%	479%	35%
UNKNOWN IF USED	8,087	9,105	9,891	11,915	-17%	-8%	-11%
TOTAL	49,731	48,375	43,910	51,233	-14%	10%	3%
USAGE RATE *	34	27	5	4	43%	401%	27%

TABLE 50

RESTRAINT USAGE FOR PASSENGERS OF VEHICLES

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE	% CHANGE	% CHANGE
					80 TO 83	83 TO 86	86 TO 87
NOT USED	23,593	24,150	24,894	28,604	-13%	-3%	-2%
USED	8,725	6,557	1,377	722	91%	376%	33%
UNKNOWN IF USED	5,189	5,954	6,500	7,241	-10%	-8%	-13%
TOTAL	37,507	36,661	32,771	36,567	-10%	12%	2%
USAGE RATE *	27	21	5	2	113%	307%	26%

TABLE 51

RESTRAINT USAGE FOR PASSENGERS LESS THAN 5 YEARS OLD

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE	% CHANGE	% CHANGE
					80 TO 83	83 TO 86	86 TO 87
NOT USED	1,395	1,370	1,550	1,640	-5%	-12%	2%
USED							
BELTS	509	376	103	47	119%	265%	35%
CHILD RESTRAINT	647	547	313	63	397%	75%	18%
UNKNOWN IF USED	232	287	359	378	-5%	-20%	-19%
TOTAL	2,783	2,580	2,325	2,128	9%	11%	8%
USAGE RATE *	45	40	21	6	237%	90%	13%

* USAGE RATE IS THE PERCENT USED OF TOTAL KNOWN USAGE

RESTRAINT USAGE FOR FATALLY INJURED OCCUPANTS OF PASSENGER VEHICLES

TABLE 52

RESTRAINT USAGE FOR DRIVERS OF PASSENGER VEHICLES

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	15,471	15,582	15,207	17,922	-15%	2%	-1%
USED	3,439	2,669	509	467	9%	424%	29%
UNKNOWN IF USED	2,898	3,285	3,612	4,552	-21%	-9%	12%
TOTAL	21,808	21,536	19,328	22,941	-16%	11%	1%
USAGE RATE *	18	15	3	3	28%	352%	24%

TABLE 53

RESTRAINT USAGE FOR PASSENGERS OF VEHICLES

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	7,793	7,934	7,841	9,540	-18%	1%	-2%
USED	1,749	1,336	315	204	54%	324%	31%
UNKNOWN IF USED	1,260	1,410	1,659	2,225	-25%	-15%	-11%
TOTAL	10,802	10,680	9,815	11,969	-18%	9%	1%
USAGE RATE *	18	14	4	2	84%	273%	27%

TABLE 54

RESTRAINT USAGE FOR PASSENGERS LESS THAN 5 YEARS OLD

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	414	420	474	538	-12%	-11%	-1%
USED							
BELTS	77	60	20	16	25%	200%	28%
CHILD RESTRAINT	111	85	58	17	241%	47%	31%
UNKNOWN IF USED	47	55	50	99	-49%	10%	-15%
TOTAL	649	620	602	670	-10%	3%	5%
USAGE RATE *	31	26	14	6	144%	82%	22%

* USAGE RATE IS THE PERCENT USED OF TOTAL KNOWN USAGE

RESTRAINT USAGE FOR SURVIVING OCCUPANTS OF PASSENGER VEHICLES

TABLE 55

RESTRAINT USAGE FOR DRIVERS OF PASSENGER VEHICLES

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	11,888	13,103	16,983	19,916	-15%	-23%	-9%
USED	10,847	7,916	1,320	1,013	30%	500%	37%
UNKNOWN IF USED	5,189	5,820	6,279	7,363	-15%	-7%	-11%
TOTAL	27,924	26,839	24,582	28,292	-13%	9%	4%
USAGE RATE *	48	38	7	5	49%	422%	27%

TABLE 56

RESTRAINT USAGE FOR PASSENGERS OF VEHICLES

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	15,800	16,216	17,053	19,064	-11%	-5%	-3%
USED	6,976	5,221	1,062	518	105%	392%	34%
UNKNOWN IF USED	3,929	4,544	4,841	5,016	-3%	-6%	-14%
TOTAL	26,705	25,981	22,956	24,598	-7%	13%	3%
USAGE RATE *	31	24	6	3	122%	315%	26%

TABLE 57

RESTRAINT USAGE FOR PASSENGERS LESS THAN 5 YEARS OLD

RESTRAINT USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	981	950	1,076	1,102	-2%	-12%	3%
USED							
BELTS	432	316	83	31	168%	281%	37%
CHILD RESTRAINT	537	462	255	46	454%	81%	16%
UNKNOWN IF USED	185	232	309	279	11%	-25%	-20%
TOTAL	2,135	1,960	1,723	1,458	18%	14%	9%
USAGE RATE *	50	45	24	7	266%	88%	10%

* USAGE RATE IS THE PERCENT USED OF TOTAL KNOWN USAGE

HELMET USAGE FOR ALL RIDERS OF MOTORCYCLES

TABLE 58

HELMET USAGE FOR DRIVERS OF MOTORCYCLES

HELMET USAGE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87	% CHA 80 TO
NOT USED	2,069	2,082	1,967	2,304	-15%	6%	-1%	
USED	1,486	1,650	1,511	1,707	-11%	9%	-10%	
UNKNOWN IF USED	452	788	824	1,183	-30%	-4%	-43%	
TOTAL	4,007	4,520	4,302	5,194	-17%	5%	-11%	
USAGE RATE *	42	44	43	43	2%	2%	-5%	

TABLE 59

HELMET USAGE FOR PASSENGERS OF MOTORCYCLES

HEMET USAGE	1987	1986	1983	1980	% CHANGE 80 TO 83	% CHANGE 83 TO 86	% CHANGE 86 TO 87	% CHA 80 TO
NOT USED	502	507	508	603	-16%	-0%	1%	
USED	232	276	302	337	-10%	-9%	-16%	
UNKNOWN IF USED	105	203	217	321	-32%	-6%	+8%	
TOTAL	839	986	1,027	1,261	-19%	-4%	-15%	
USAGE RATE *	32	35	37	36	4%	-5%	-10%	

* USAGE RATE IS THE PERCENT USED OF TOTAL KNOWN USAGE

HELMET USAGE FOR FATALLY INJURED RIDERS OF MOTORCYCLES

TABLE 60

HELMET USAGE FOR DRIVERS OF MOTORCYCLES

HELMET USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	1,821	1,828	1,733	2,012	-14%	5%	-0%
USED	1,328	1,487	1,318	1,498	-12%	13%	-11%
UNKNOWN IF USED	395	678	678	964	-30%	0%	-42%
TOTAL	3,544	3,993	3,729	4,474	-17%	7%	-11%
USAGE RATE *	42	45	43	43	1%	4%	-6%

TABLE 61

HELMET USAGE FOR PASSENGERS OF MOTORCYCLES

HEMET USAGE	1987	1986	1983	1980	% CHANGE		
					80 TO 83	83 TO 86	86 TO 87
NOT USED	273	296	265	337	-21%	12%	-8%
USED	114	141	148	175	-15%	-5%	-19%
UNKNOWN IF USED	47	100	123	158	-22%	-19%	-53%
TOTAL	434	537	536	670	-20%	0%	-19%
USAGE RATE *	29	32	36	34	5%	-10%	-9%

* USAGE RATE IS THE PERCENT USED OF TOTAL KNOWN USAGE

FIGURE 46

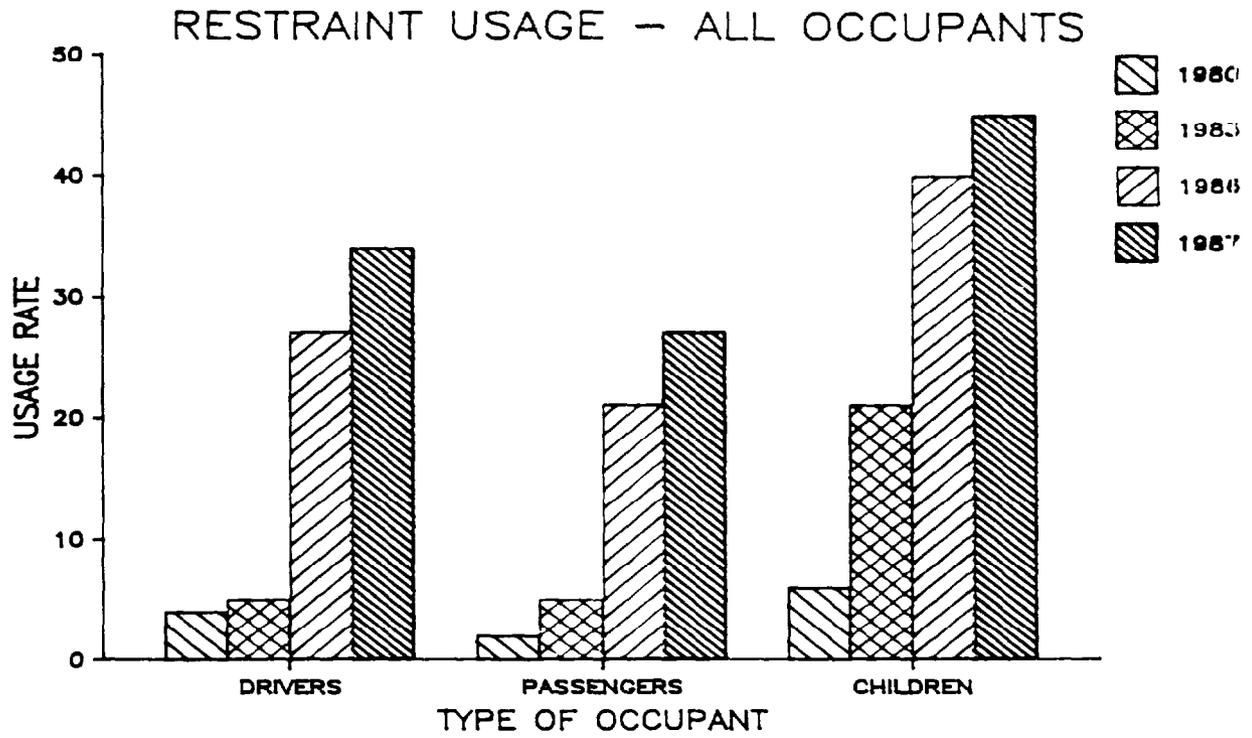


FIGURE 47

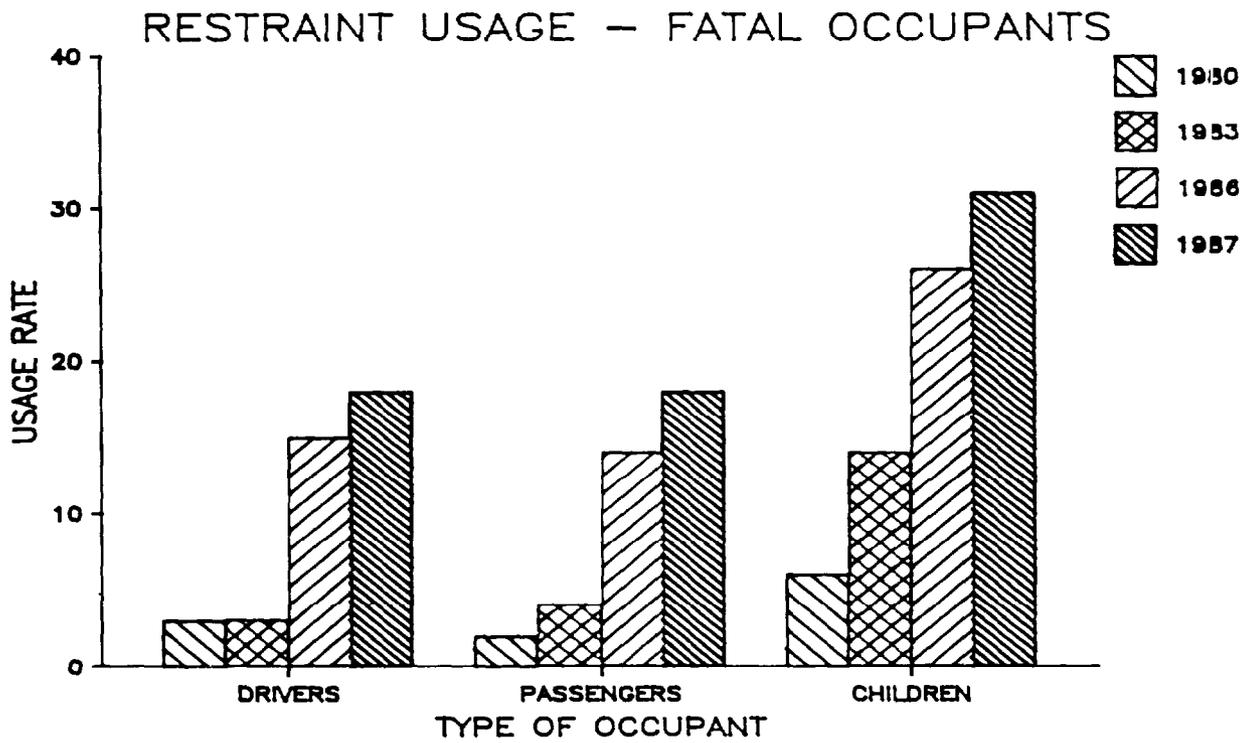


FIGURE 48

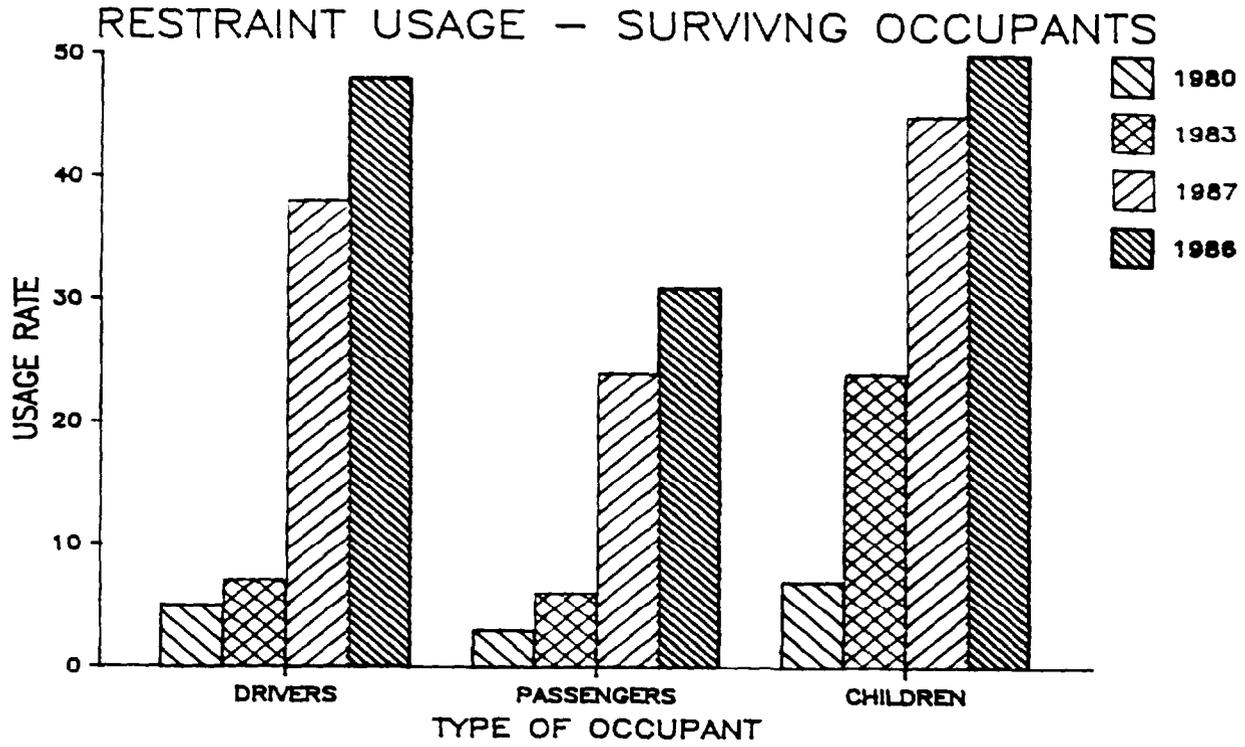
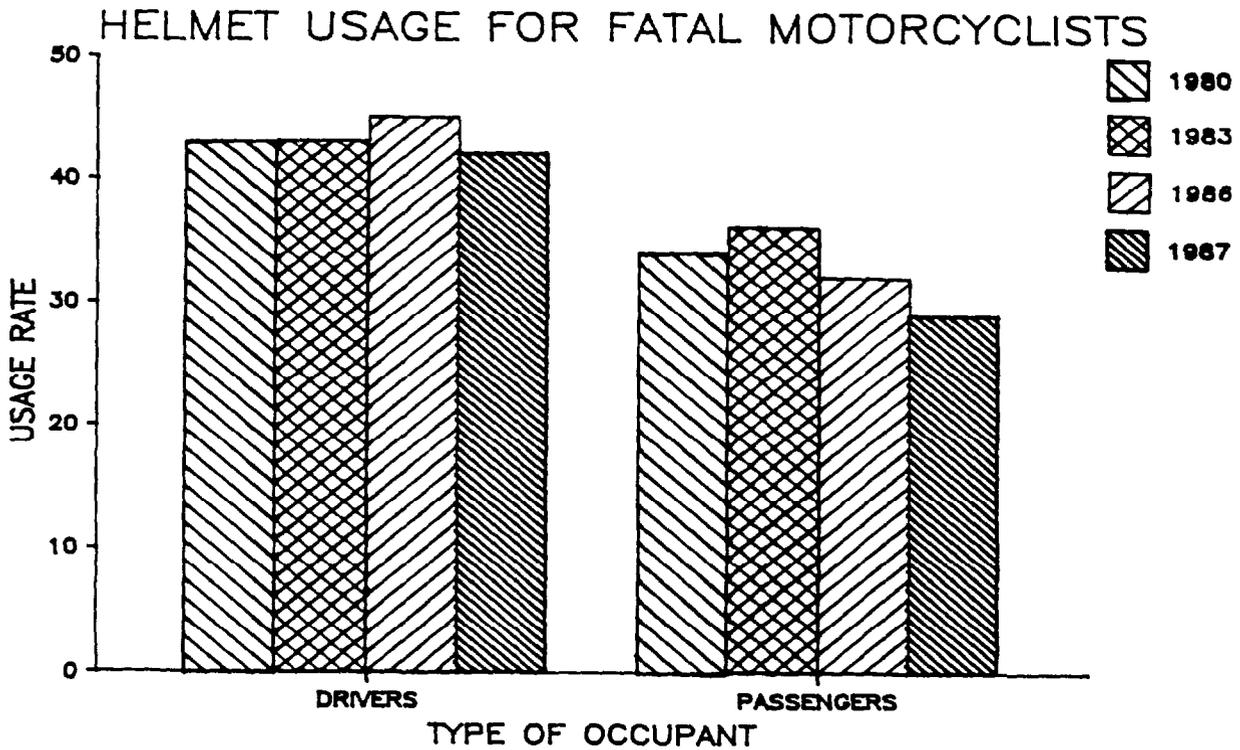


FIGURE 49



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