Table US-6. Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by State of Death, US, 1980-1989.

STATE	DEATHS	RATE
ALABAMA	1,143	9.2
ALASKA	561	34.8
ARIZONA	398	3.7
ARKANSAS	874	12.0
CALIFORNIA	6,623	6.3
COLORADO	1,110	8.9
CONNECTICUT	255	1.8
DELAWARE	146	5.6
DIST COLUMBIA	191	4.5
FLORIDA	3,681	9.1
GEORGIA	2,176	9.6
HAWAII	235	6.1
IDAHO	520	16.7
ILLINOIS	2,853	6.3
INDIANA	1,509	7.4
IOWA	962	9.0
KANSAS	784	8.6
KENTUCKY	1,392	11.6
LOUISIANA	1,438	11.0
MAINE	302	7.6
MARYLAND	862	5.3
MASSACHUSETTS	645	2.3
MICHIGAN	1,627	5.1
MINNESOTA	719	4.1
MISSISSIPPI	1,064	14.5
MISSOURI	1,052	5.3
MONTANA	525	20.9
NEBRASKA	653	10.9
NEVADA	504	10.8
NEW HAMPSHIRE	181	4.4
NEW JERSEY	1,009	3.3
NEW MEXICO	498	11.8
NEW YORK	1,783	2.6
NORTH CAROLINA	1,749	7.0
NORTH DAKOTA	304	13.5
OHIO	1,841	4.6
OKLAHOMA	894	8.6
OREGON	1,050	10.9
PENNSYLVANIA	2,564	5.9
RHODE ISLAND	125	3.3
SOUTH CAROLINA	784	6.8
SOUTH DAKOTA	331	14.2
TENNESSEE	1,392	7.8
TEXAS	6,664	11.3
UTAH	647	12.3
VERMONT	135	6.7
VIRGINIA	1,942	9.4
WASHINGTON	1,212	7.5
WEST VIRGINIA	770	15.7
WISCONSIN	1,156	6.2
WYOMING	454	29.0
TOTAL (CIVILIAN)	**62,289**	**7.0**

DISCUSSION

NTOF data for the decade, 1980 through 1989, provide valuable information for identifying specific worker groups at high-risk of traumatic occupational fatalities. Prevention efforts and resources should be targeted on specific, high-risk groups based on gender, age, race, industry, or occupation. Information on the leading causes of traumatic occupational fatalities and on the geographic and demographic distribution of these deaths facilitates the identification of risk factors for workplace injury deaths. Trends of fatal injuries over time, particularly within employment sectors and states, are useful in setting research and prevention priorities, for generating hypotheses for further research, and for monitoring progress. The rate of occupational injury deaths as well as the absolute number of events are important in the interpretation of these surveillance data; the rates depict the risk faced by workers and the numbers indicate

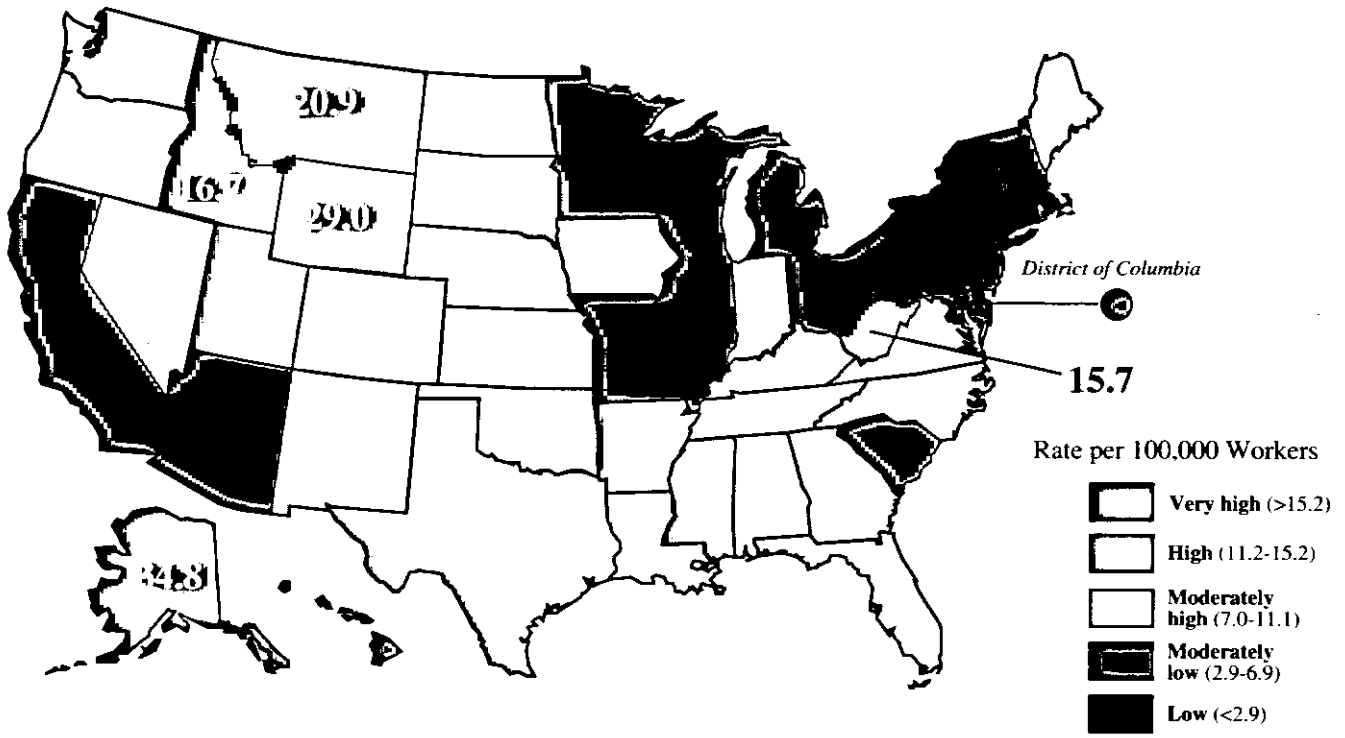

Figure US-22. *Average Annual Rate of Traumatic Occupational Fatalities by State, US, 1980-1989.*

the magnitude of the problem or the number of lives that would have been saved if these injuries had been prevented.

Consistent with previous findings,[2,6] NTOF results for 1980 through 1989 indicate that males are at much higher risk than females of traumatic occupational fatality. The rates for homicide are three times as high for males compared to females, but females are more likely to be killed as the result of a homicide in the workplace than from any other cause. Rates for Black workers are consistently higher than rates for Whites and workers of Other races throughout the 10-year period. Interpreting fatal injury risk by race requires quantifying risk by racial/ethnic groups within specific industries and occupations. These efforts would be enhanced by improved employment data for racial/ethnic groups.

As previous studies have reported,[2,6] workers aged 65 years and older have higher rates of occupational injury death than workers of other ages. The current analysis further examines age group-specific rates by gender, by industry division, by occupation division, and over time. Workers aged 65 years and older experience higher rates of traumatic occupational fatalities than other age groups for both males and females, for each of the 11 occupation divisions and in 9 of the 10 industry divisions. This disparity by age may be due, at least in part, to decreased ability to survive injury. Other factors, including reporting variations in employment data, may also play a role in the calculation of rates. Older workers are more likely to be working part time—52% of workers 65 years and older versus 17% of workers 25-64 years old are part time employees.[21] The use of employment data

Table US-7. Distribution and Average Annual Rate (per 100,000 workers) of Years of Potential Life Lost (YPLL) due to Traumatic Occupational Fatalities by State of Death, US, 1980-1989.

STATE	YPLL	RATE
ALABAMA	27735	222.9
ALASKA	16473	1013.8
ARIZONA	10736	98.6
ARKANSAS	22046	302.5
CALIFORNIA	173089	162.6
COLORADO	30753	245.6
CONNECTICUT	6294	43.1
DELAWARE	3531	136.9
DIST COLUMBIA	4790	114.3
FLORIDA	92330	227.8
GEORGIA	54052	235.5
HAWAII	5751	152.0
IDAHO	13181	423.1
ILLINOIS	65964	145.5
INDIANA	36787	181.3
IOWA	21250	197.9
KANSAS	19483	213.5
KENTUCKY	35114	292.8
LOUISIANA	42724	326.2
MAINE	8106	202.1
MARYLAND	22113	135.1
MASSACHUSETTS	16277	59.1
MICHIGAN	40563	125.8
MINNESOTA	16296	93.7
MISSISSIPPI	25574	343.8
MISSOURI	22127	110.6
MONTANA	12621	499.6
NEBRASKA	14616	244.7
NEVADA	13272	276.1
NEW HAMPSHIRE	4745	115.7
NEW JERSEY	23389	77.6
NEW MEXICO	12979	303.7
NEW YORK	42664	61.9
NORTH CAROLINA	42108	167.2
NORTH DAKOTA	7183	316.1
OHIO	44833	112.1
OKLAHOMA	24195	235.7
OREGON	26642	277.6
PENNSYLVANIA	59617	136.4
RHODE ISLAND	3060	80.6
SOUTH CAROLINA	19688	170.7
SOUTH DAKOTA	7295	310.9
TENNESSEE	33260	185.2
TEXAS	182815	311.6
UTAH	18136	345.8
VERMONT	3487	175.8
VIRGINIA	47772	227.9
WASHINGTON	31415	190.4
WEST VIRGINIA	20180	409.5
WISCONSIN	26002	138.5
WYOMING	12643	809.5
TOTAL (CIVILIAN)	**1567756**	**175.6**

which count each worker, without regard to the number of hours worked, may introduce bias in the calculation of age-specific rates resulting in artificially low rates. On the other hand, older workers, particularly part-time workers, may be undercounted in labor force data resulting in artificially high rates. Future research should incorporate the use of employment data based on actual hours of exposure.

Over the decade, mortality rates decreased within industry divisions, although patterns varied by industry. For example, rates for the mining industry showed peaks in years in which there were greater frequencies of multiple-fatality incidents. Rates for

the four highest risk industries—mining, construction, transportation/communication/public utilities, and agriculture/forestry/fishing—remained notably and consistently higher than rates for other industry divisions. Further research is needed to determine the reasons for the decreasing numbers and rates of occupational injury death in the United States. Economic conditions, distribution of the workforce, and changes in work practices and environments are important considerations. Changes in case ascertainment and data collection procedures, of both fatality and employment data, may have also contributed to declining mortality rates and are areas for further research.

Information on the causes of occupational injury death is essential to developing and implementing prevention programs. Motor vehicle incidents account for the largest proportion of fatal occupational injuries, with over 40% more cases than any other external causes of death. Moreover, occupational motor vehicle deaths are likely undercounted. Motor vehicle deaths rank within the three leading causes of occupational injury death within every industry division and in 10 of the 11 occupation divisions and should be considered high priority when targeting injury prevention efforts. Machinery-related deaths are the leading cause of death in two of the highest risk industries, mining and agriculture/forestry/fishing. Homicides are the leading cause of death in retail trade, services, and finance/insurance/real estate. Falls, electrocutions, and being struck by falling object incidents are other leading causes of occupational injury death.

The relative importance of each cause varies by industry and occupation division and research and prevention efforts should be focused using the information on the leading causes of death within industry and occupation divisions. Analytic epidemiologic studies are needed to determine causative factors and to elucidate the actual circumstances at the time of worker injury.

Studies designed to evaluate the effectiveness of intervention strategies in reducing occupational injury fatalities in specific industries and from specific causes are essential for effectively preventing future deaths. Rigorous evaluations of existing technology for the design of motor vehicles and machines to prevent crashes, entanglements, and other problems which occur at the human-machine interface are required to reduce the frequency and rate of these events. Evaluations of fall protection technologies, and of personal protective equipment and work practices that may reduce exposure to electrical energy are also required. Deaths due to being struck by falling objects are due in large part (at least 30%) to falling trees. Research and prevention efforts should focus on these leading causes of death. The implementation of effective prevention strategies for fatal occupational injury will likewise have a positive impact on the prevention of non-fatal injuries.

On average, more than 17 workers die each day from an injury at work. The data presented here provide a starting point for targeting public health efforts and resources toward workers at high risk of dying from an injury on the job. Efforts to improve surveillance data and to design, implement, and evaluate intervention strategies are urgently needed. As long as families are deprived of mothers, fathers, brothers, sisters, sons, and daughters as a result of occupational injury deaths, we must work together in a concentrated effort to provide a safe and healthful working environment for every working man and woman of this country.

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STATE-SPECIFIC ANALYSES

METHODS

The state-specific analyses which follow were conducted using data from the National Traumatic Occupational Fatalities (NTOF) surveillance system. Please see the METHODS section of the U.S. summary (page 1-4) for a discussion of death certificates, employment data, industry and occupation coding, and calculation of Years of Potential Life Lost (YPLL). Methodological issues of special concern for the state-specific analyses are described below.

As in the U.S. summary, industry and occupation divisions follow standardized coding protocols laid out in the ***Standard Industrial Classification Manual, 1987*** for industry divisions and in the Bureau of the Census ***1980 Alphabetic Index of Industries and Occupations*** for occupation divisions.

Overall average annual fatality rates and YPLL rates by state are based solely on private sector employment; U.S. rates include all civilian workers. Employment data for public administration are not reported by state. Numbers, rates, and percentage distributions by industry divisions, occupation divisions, and gender are based on deaths to civilian workers. Employment data for the calculation of fatality rates by gender and occupation division for each state were taken from the annual averages reported in the yearly publication, ***Geographic Profile of Employment and Unemployment.**** As in the U.S. summary analyses, employment data by industry division were taken from County Business Patterns.†

Numbers for occupation divisions are provided for the 10-year period, 1980 through 1989, but due to the availability of comparable denominator data, rates for occupation divisions are provided for the 7-year period, 1983 through 1989.

In the presentation of fatalities by Race/Ethnicity (Table 1 in each of the state sections), the "Other" category includes workers of other racial/ethnic groups and workers for whom race/ethnicity was unknown. For the presentation of State of Residence (Table 2 in each of the state sections) the "Other" category includes other states, foreign countries, and cases for which state of residence was unknown.

As discussed previously, work-related homicide data were not available from four states prior to 1985. Homicide estimates were generated for New York, Oklahoma, and Louisiana using data on work-related homicides from other states in the NTOF system applied to data on homicide in the general population of those states for which data were not available for the entire period of analysis. The proportion of work-related homicides out of all homicides was used to generate the estimates and the confidence intervals for the estimates. A range for the confidence intervals values is provided in the text. These estimates were not included in any totals reported for these states. Estimates were not generated for Nebraska due to administrative inconsistencies between work-related homicide data reported prior to 1986 and subsequent years.

For all tables and figures, data were suppressed for any category where there were less than three cases. If a state-specific rate could not be calculated for an industry division (Figure 3. in each of the state sections) or for an occupation division (Figure 4. in each of the state sections), the U.S. rate was not presented. On bar charts, rates or numbers smaller than 0.20 may not be discernible.

***U.S. Bureau of Labor Statistics: Geographic Profile of Employment and Unemployment. Washington, D.C.: 1980-1989: Bulletins 2111, 2156, 2170, 2216, 2234, 2266, 2279, 2305, 2327, 2361.**

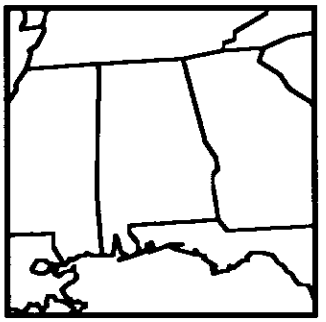
†U.S. Department of Commerce: County Business Patterns [state files and public use data tapes]. Washington, D.C.: Bureau of the Census, 1980-1988.

State of Alabama

AL

Average Annual Fatal Injuries: **115**

Average Annual Fatal Injury Rate
(deaths per 100,000 workers): **9.2**



Industries with the Highest Number and Rate of Fatal Injuries:
Number: **Manufacturing (282)**
Rate: **Mining (36.5)**

Occupations with the Highest Number and Rate of Fatal Injuries:
Number: **Precision Production/Craft/Repair (234)**
Rate: **Farmers/Foresters/Fishers (20.8)**

The State of Alabama had 1,149 traumatic occupational fatalities from 1980 through 1989. Civilian workers accounted for 1,143 of these deaths. The **average annual rate** of fatalities per 100,000 workers was 9.2 for Alabama compared to 7.0 for the United States. The average annual rate for years of potential life lost (YPLL) was 222.9 per 100,000 workers for Alabama compared to 175.6 for the United States.

Males accounted for 94% of the civilian occupational fatalities in Alabama and had a fatality rate of 11.8 per 100,000 workers compared to 1.0 for females. The fatality distribution by **race/ethnicity** for the State of Alabama shows that Whites accounted for 74% of the total fatalities and Blacks for 25% as shown in **Table AL-1**. As shown in **Figure AL-1**, workers aged 30 to 34 years old accounted for the largest number of fatalities (13%). Of all Alabama occupational fatality victims, 90% were Alabama residents (**Table AL-2**).

Table AL-1. Traumatic Occupational Fatalities by Race/Ethnicity, Alabama, 1980-1989.

Race/Ethnicity	Number	Percent
White	853	74.2
Black	290	25.2
Other	6	0.5

Figure AL-2 presents the distribution of fatalities by external cause of death for the State of Alabama and for the U.S. The three leading causes of death among employees in Alabama were homicides (18%), machine-related incidents (15%), and motor vehicle incidents (13%).

In Alabama, the **industry divisions** in which the largest number of fatalities occurred were manufacturing (25%), construction (19%), transportation/communication/public utilities (13%), and retail trade (12%). The mining industry had the highest fatality rate at 36.5 per 100,000 workers, followed by construction (27.6), and transportation/communication/public utilities (20.5) (**Figure AL-3**). **Table AL-3** provides the number of deaths in each industry division by year of occurrence, and the total number and rate of fatalities for each industry division for the 10-year period.

The **occupation divisions** in Alabama with the largest number of fatalities were precision production/craft/repair (21%), laborers (16%), and transportation/material movers (15%). The occupations with

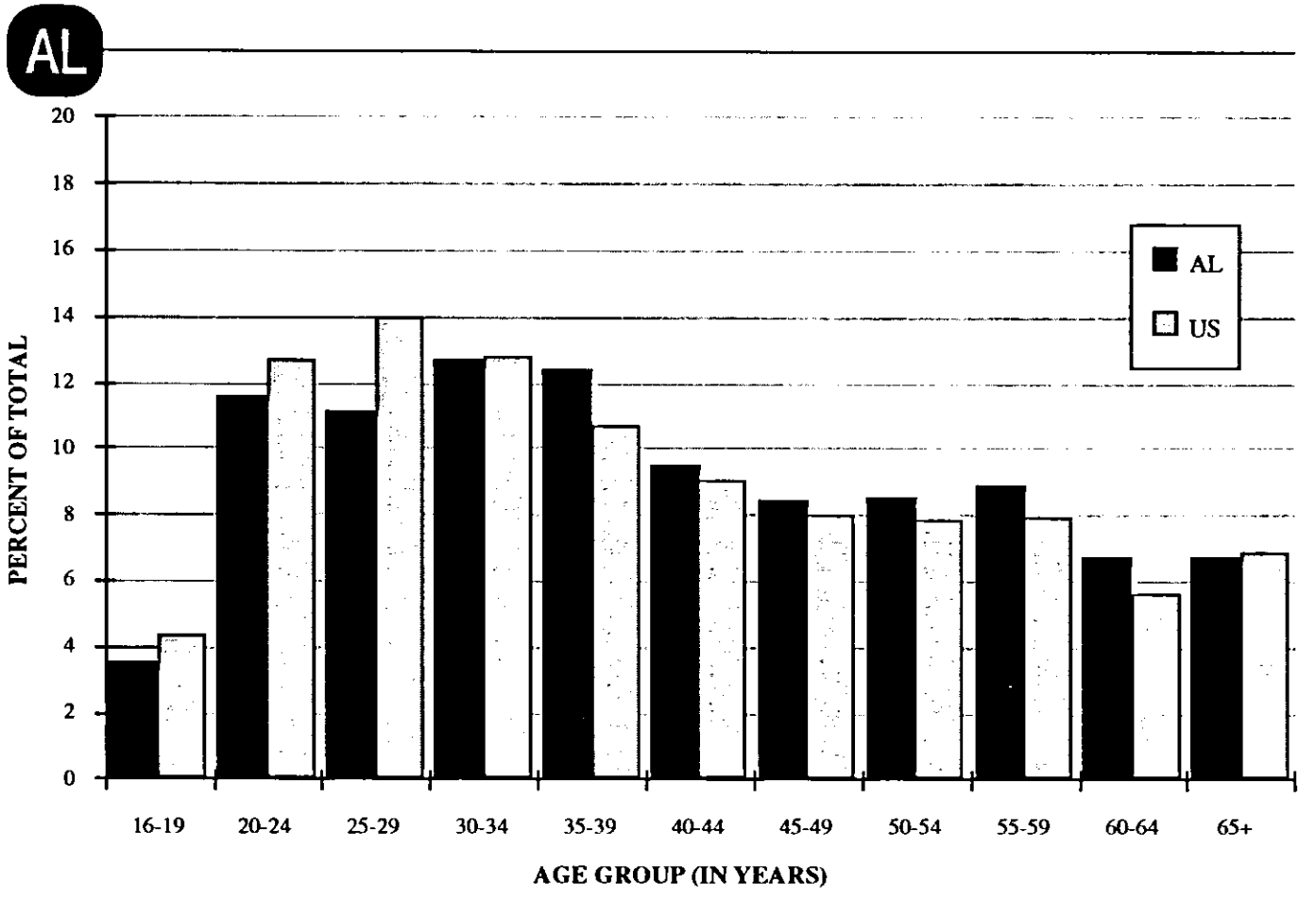


Figure AL-1. *Traumatic Occupational Fatalities by Age Group, US and Alabama, 1980-1989.*

Table AL-2. *Traumatic Occupational Fatalities by State of Residence, Alabama, 1980-1989.*

State	Number	Percent
Alabama	1039	90.4
Mississippi	31	2.7
Georgia	23	2.0
Florida	12	1.0
Tennessee	12	1.0
Louisiana	7	0.6
Texas	4	0.3
Ohio	3	0.3
Other	18	1.6

the highest rates were farmers/foresters/fishers (20.8 deaths per 100,000 workers), transportation/material movers (20.1), and laborers (18.9) (**Figure AL-4**). **Table AL-4** provides numbers and rates of work-related deaths for each occupation division.

During the decade, the **fatality rates** in Alabama decreased 6%, from a high of 11.2 in 1980 to 10.5 in 1989. A low of 7.3 deaths per 100,000 workers was reported in 1984 and 1985 (**Figure AL-5**).

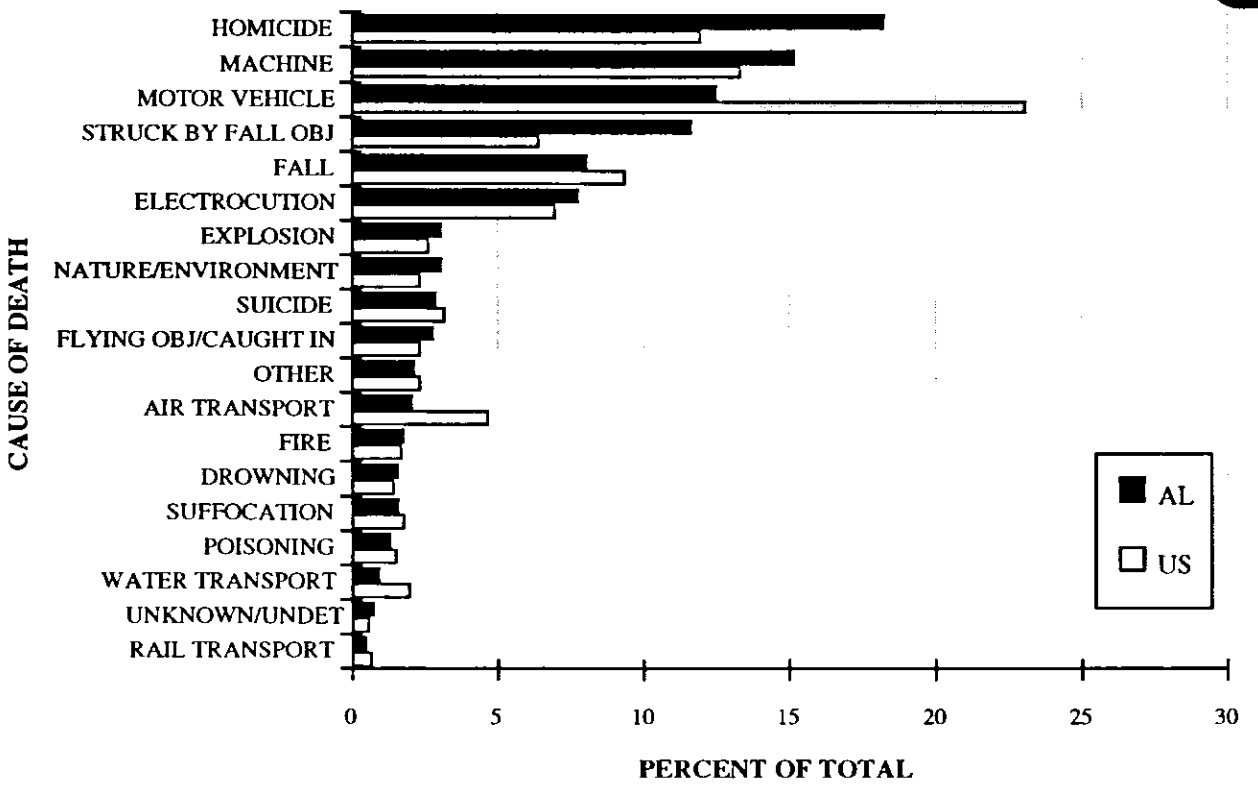


Figure AL-2. *Traumatic Occupational Fatalities by Cause of Death, US and Alabama, 1980-1989.*

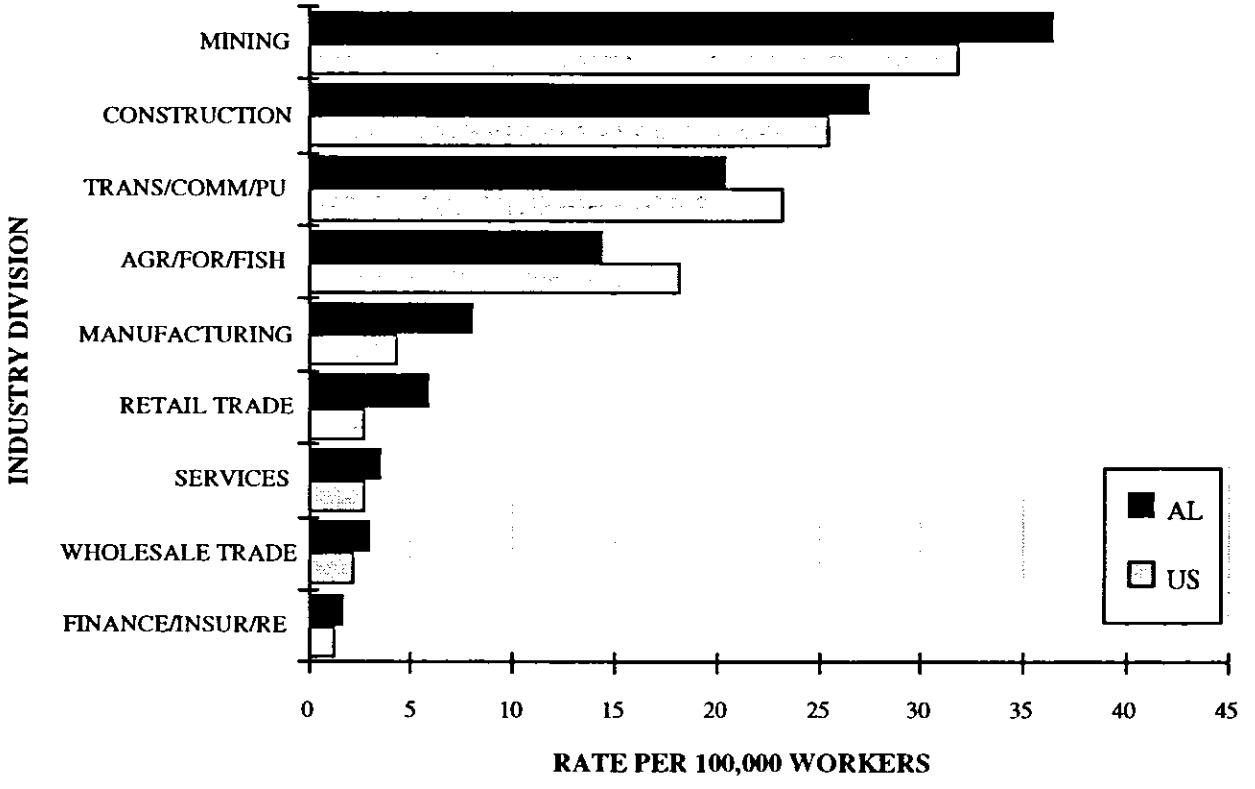


Figure AL-3. *Average Annual Rate of Traumatic Occupational Fatalities by Industry Division, US and Alabama, 1980-1989.*

Table AL-3. Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Industry Division and Year, Alabama, 1980-1989.

Industry Division	Annual Number										Total Number	Average Annual Rate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989		
MINING	6	7	6	3	4	5	6	6	5	3	51	36.5
CONSTRUCTION	25	19	11	19	17	20	31	21	29	22	214	27.6
TRANS/COMM/PU	13	6	7	10	6	9	23	20	22	29	145	20.5
AGR/FOR/FISH	13	8	8	5	5	8	11	10	8	13	89	14.4
MANUFACTURING	34	30	17	23	26	26	25	30	32	39	282	8.1
RETAIL TRADE	15	15	17	11	10	11	11	14	15	16	135	6.0
SERVICES	13	8	4	4	6	4	12	10	9	15	85	3.6
WHOLESALE TRADE	--	--	--	--	5	--	4	3	--	3	23	3.1
FINANCE/INSUR/RE	--	--	--	--	--	--	3	--	--	--	12	1.8
PUBLIC ADMIN	7	5	4	--	4	4	12	11	7	5	61	N/A
NOT CLASSIFIED	8	8	7	3	--	--	4	7	--	3	46	N/A
STATE	**134**	**108**	**85**	**83**	**87**	**90**	**142**	**133**	**132**	**149**	**1143**	**9.2**

NOTE: Dashes denote categories with fewer than three cases.

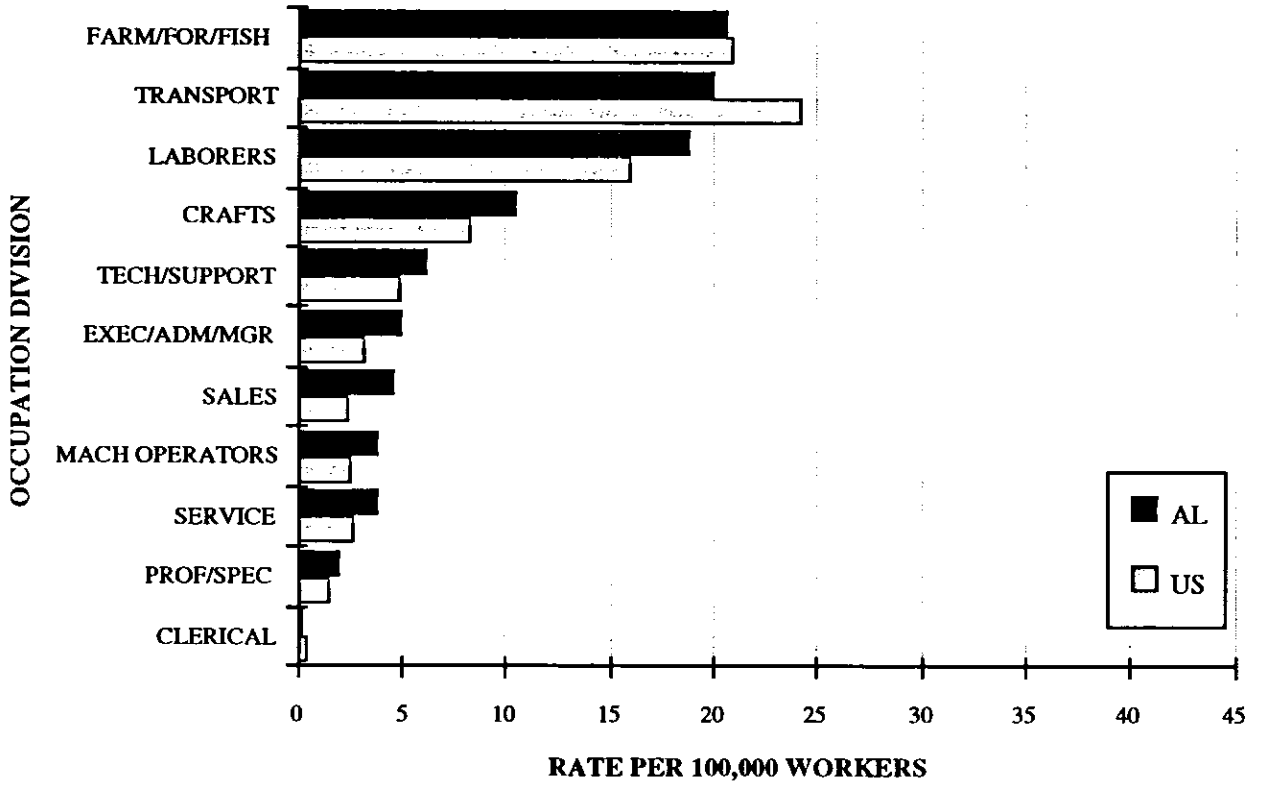


Figure AL-4. Average Annual Rate of Traumatic Occupational Fatalities by Occupation Division, US and Alabama, 1983-1989.

Table AL-4. *Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Occupation Division, Alabama.*

Occupation Division	Total Number (1980-1989)	Average Annual Rate (1983-1989)
FARM/FOR/FISH	126	20.8
TRANSPORT	166	20.1
LABORERS	184	18.9
CRAFTS	234	10.6
TECH/SUPPORT	23	6.4
EXEC/ADM/MGR	75	5.2
SALES	89	4.8
MACH OPERATORS	75	4.0
SERVICE	88	4.0
PROF/SPEC	36	2.1
CLERICAL	11	0.4
NOT CLASSIFIED	36	N/A

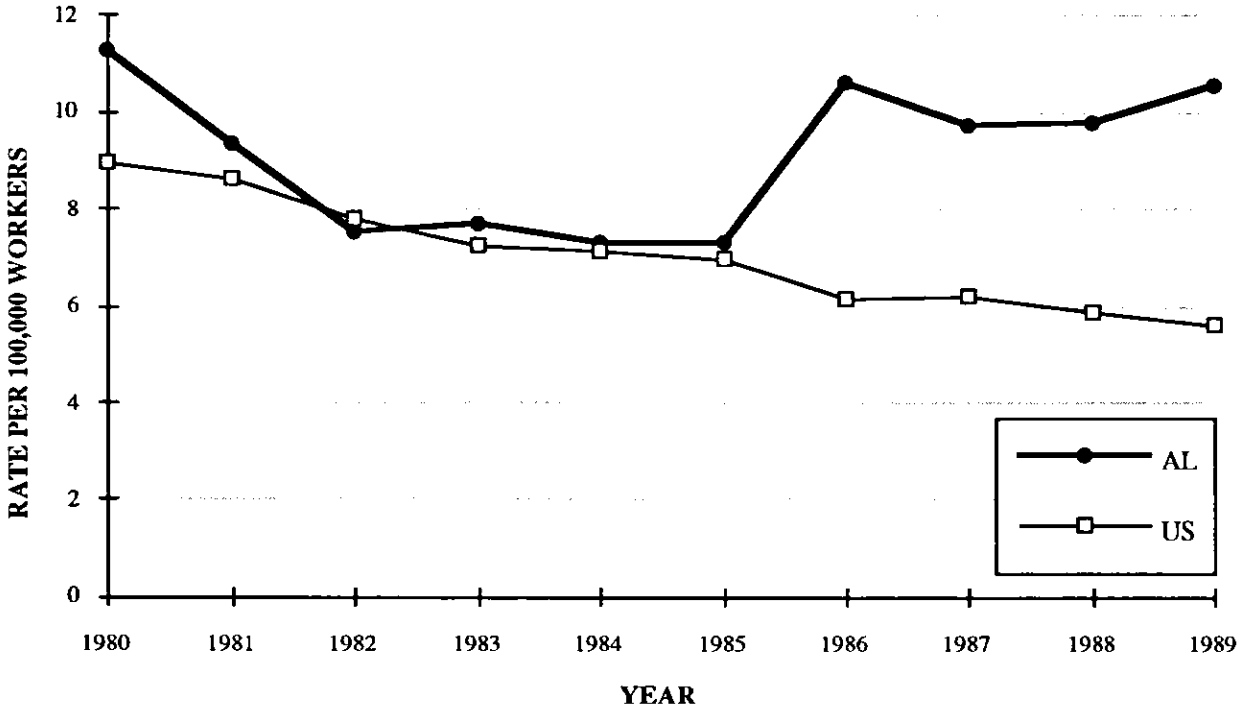


Figure AL-5. *Rate of Traumatic Occupational Fatalities by Year, US and Alabama, 1980-1989.*

State of Alaska

AK

Average Annual Fatal Injuries: **58**

Average Annual Fatal Injury Rate
(deaths per 100,000 workers): **34.8**

Industry with the Highest Number and Rate of Fatal Injuries:
Number: **Agriculture/Forestry/Fishing (176)**
Rate: **Agriculture/Forestry/Fishing (149.2)**

Occupation with the Highest Number and Rate of Fatal Injuries:
Number: **Farmers/Foresters/Fishers (159)**
Rate: **Farmers/Foresters/Fishers (330.7)**

The State of Alaska had 583 traumatic occupational fatalities from 1980 through 1989. Civilian workers accounted for 561 of these deaths. The **average annual rate** of fatalities per 100,000 workers was 34.8 for Alaska compared to 7.0 for the United States. The average annual rate for years of potential life lost (YPLL) was 1,013.8 per 100,000 workers for Alaska compared to 175.6 for the United States.

Males accounted for 96% of the civilian occupational fatalities in Alaska and had a fatality rate of 46.8 per 100,000 workers compared to 2.2 for females. The fatality distribution by **race/ethnicity** for the State of Alaska shows that Whites accounted for 80% of the total fatalities, Native Americans for 9%, and Asians for 6% as shown in **Table AK-1**. As shown in **Figure AK-1**, workers aged 25 to 29 years old accounted for the largest number of fatalities (19%). Of all Alaska occupational fatality victims, 68% were Alaska residents (**Table AK-2**).

Table AK-1. Traumatic Occupational Fatalities by Race/Ethnicity, Alaska, 1980-1989.

Race/Ethnicity	Number	Percent
White	466	79.9
Native American	55	9.4
Asian	34	5.8
Hispanic	8	1.4
Black	7	1.2
Other	13	2.2

Figure AK-2 presents the distribution of fatalities by external cause of death for the State of Alaska and for the U. S. The three leading causes of death among employees in Alaska were water transportation (29%), air transportation (22%), and motor vehicle incidents (8%).

In Alaska, the **industry divisions** in which the largest number of fatalities occurred were agriculture/forestry/fishing (31%), transportation/communication/public utilities (18%), construction (11%), and public administration (11%). The agriculture/forestry/fishing industry had the highest fatality rate at 149.2 per 100,000 workers, followed by transportation/communication/public utilities (62.2), and manufacturing (53.8) (**Figure AK-3**). **Table AK-3** provides the number of deaths in each industry division by year of occurrence, and the total number and rate of fatalities for each industry division for the 10-year period.

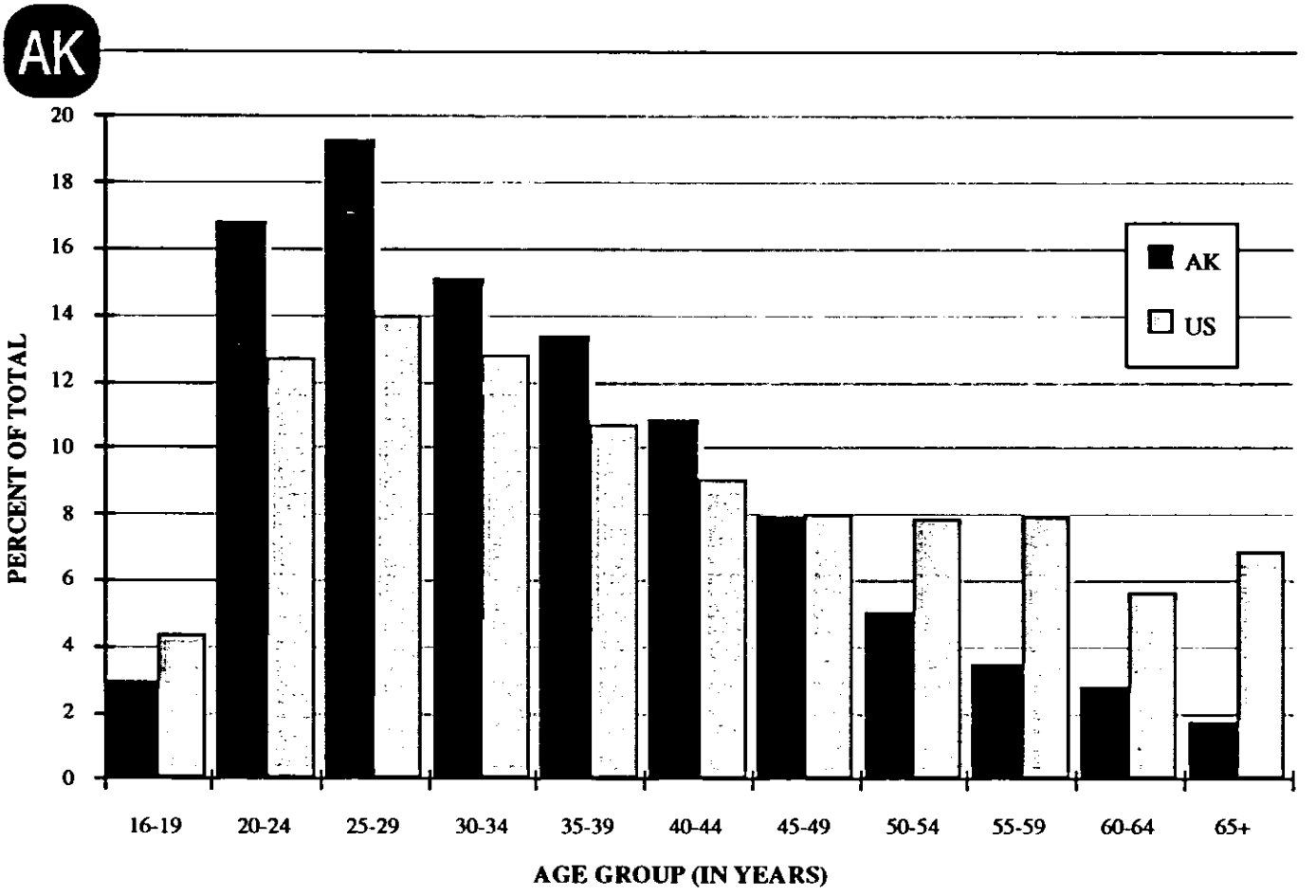


Figure AK-1. *Traumatic Occupational Fatalities by Age Group, US and Alaska, 1980-1989.*

Table AK-2. *Traumatic Occupational Fatalities by State of Residence, Alaska, 1980-1989.*

State	Number	Percent
Alaska	396	67.9
Washington	57	9.8
Oregon	16	2.7
California	10	1.7
Louisiana	5	0.9
Virginia	5	0.9
Alabama	3	0.5
Florida	3	0.5
Texas	3	0.5
Other	85	14.6

The **occupation divisions** in Alaska with the largest number of fatalities were farmers/foresters/fishers (28%), technicians/related support (13%), and transportation/material movers (12%). The occupations with the highest rates were farmers/foresters/fishers (330.7 deaths per 100,000 workers), technicians/related support (92.8), and transportation/material movers (83.6)(**Figure AK-4**). **Table AK-4** provides numbers and rates of work-related deaths for each occupation division.

During the decade, the **fatality rates** in Alaska increased 25%, from 39.8 in 1980 to 49.9 in 1989. A high of 56.9 and a low of 19.0 deaths per 100,000 workers were reported in 1985 and 1983, respectively (**Figure AK-5**).

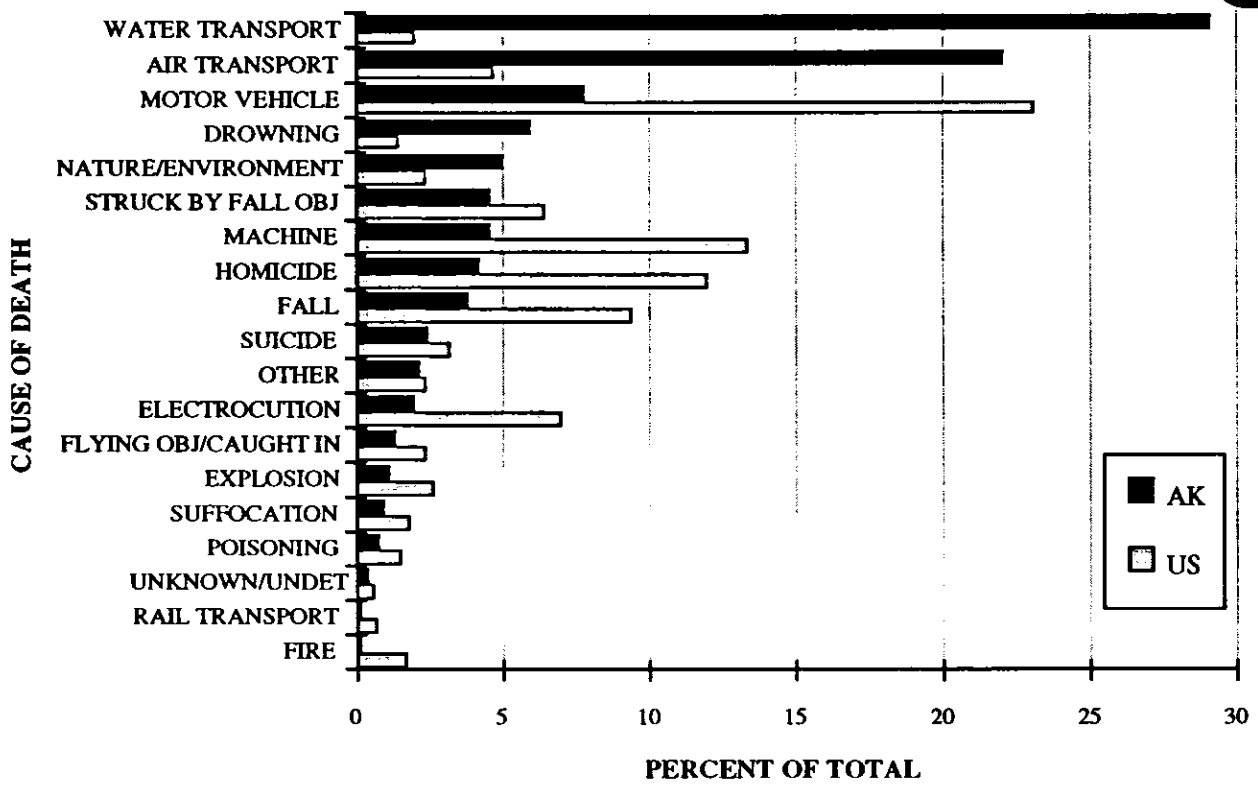


Figure AK-2. *Traumatic Occupational Fatalities by Cause of Death, US and Alaska, 1980-1989.*

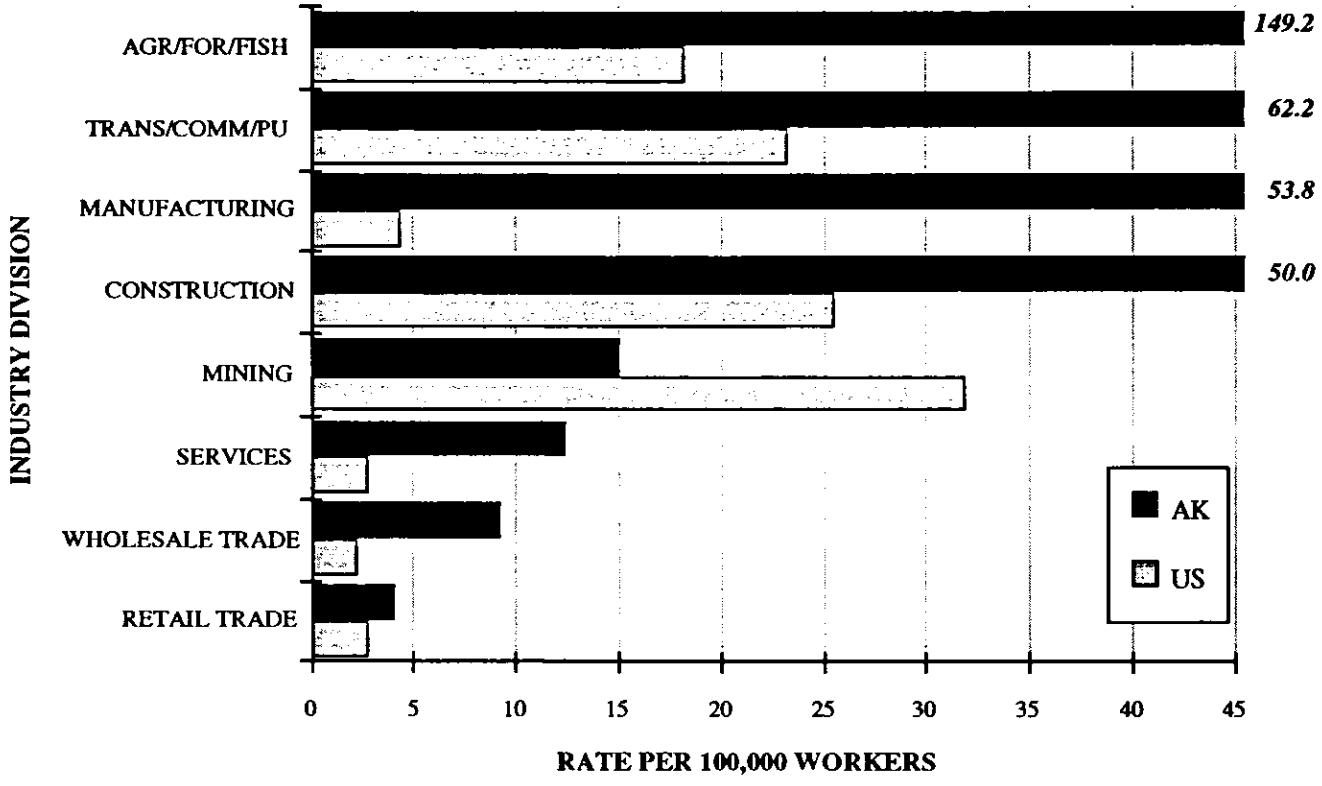


Figure AK-3. *Average Annual Rate of Traumatic Occupational Fatalities by Industry Division, US and Alaska, 1980-1989.*

Table AK-3. Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Industry Division and Year, Alaska, 1980-1989.

Industry Division	Annual Number										Total Number	Average Annual Rate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989		
AGR/FOR/FISH	12	13	5	8	19	30	5	17	23	44	176	149.2
TRANS/COMM/PU	9	15	5	4	6	20	5	10	14	11	99	62.2
MANUFACTURING	--	--	--	--	--	8	5	11	7	7	47	53.8
CONSTRUCTION	8	3	6	3	3	12	8	10	4	4	61	50.0
MINING	--	--	--	--	--	--	3	--	--	--	13	15.2
SERVICES	4	--	3	4	--	9	5	5	5	6	45	12.4
WHOLESALE TRADE	--	--	--	--	--	--	--	--	--	--	7	9.3
RETAIL TRADE	--	--	--	--	--	--	--	--	--	3	13	4.1
FINANCE/INSUR/RE	--	--	--	--	--	--	--	--	--	--	--	N/A
PUBLIC ADMIN	6	7	6	4	--	5	12	8	6	4	59	N/A
NOT CLASSIFIED	6	6	--	--	--	9	--	6	--	4	39	N/A
STATE	50	50	32	31	36	96	46	70	65	85	561	34.8

NOTE: Dashes denote categories with fewer than three cases.

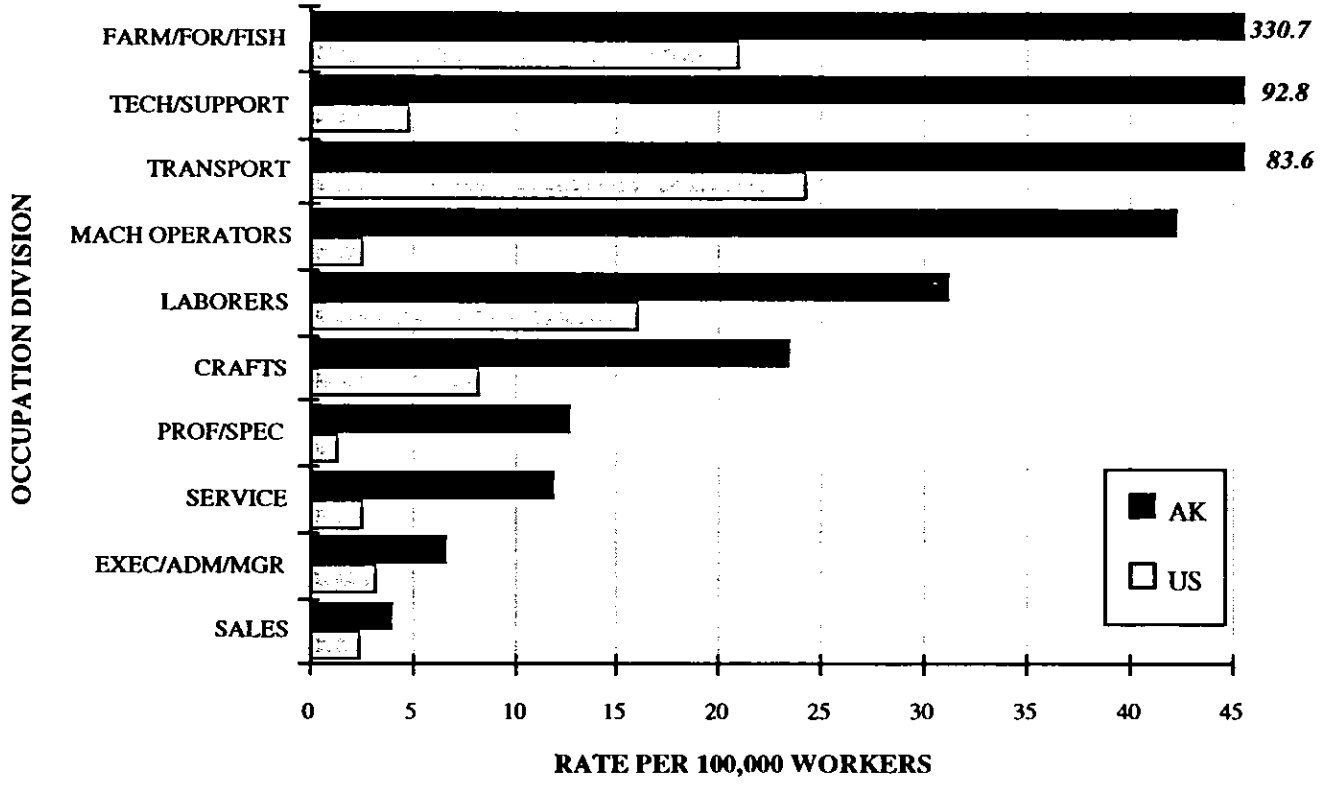


Figure AK-4. Average Annual Rate of Traumatic Occupational Fatalities by Occupation Division, US and Alaska, 1983-1989.

Table AK-4. *Distribution and Average Annual Rate (per 100,000 workers) or Traumatic Occupational Fatalities by Occupation Division, Alaska.*

Occupation Division	Total Number (1980-1989)	Average Annual Rate (1983-1989)
FARM/FOR/FISH	159	330.7
TECH/SUPPORT	71	92.8
TRANSPORT	68	83.6
MACH OPERATORS	19	42.4
LABORERS	33	31.3
CRAFTS	61	23.5
PROF/SPEC	35	12.9
SERVICE	31	12.1
EXEC/ADM/MGR	21	6.8
SALES	12	4.2
CLERICAL	3	N/A
NOT CLASSIFED	48	N/A

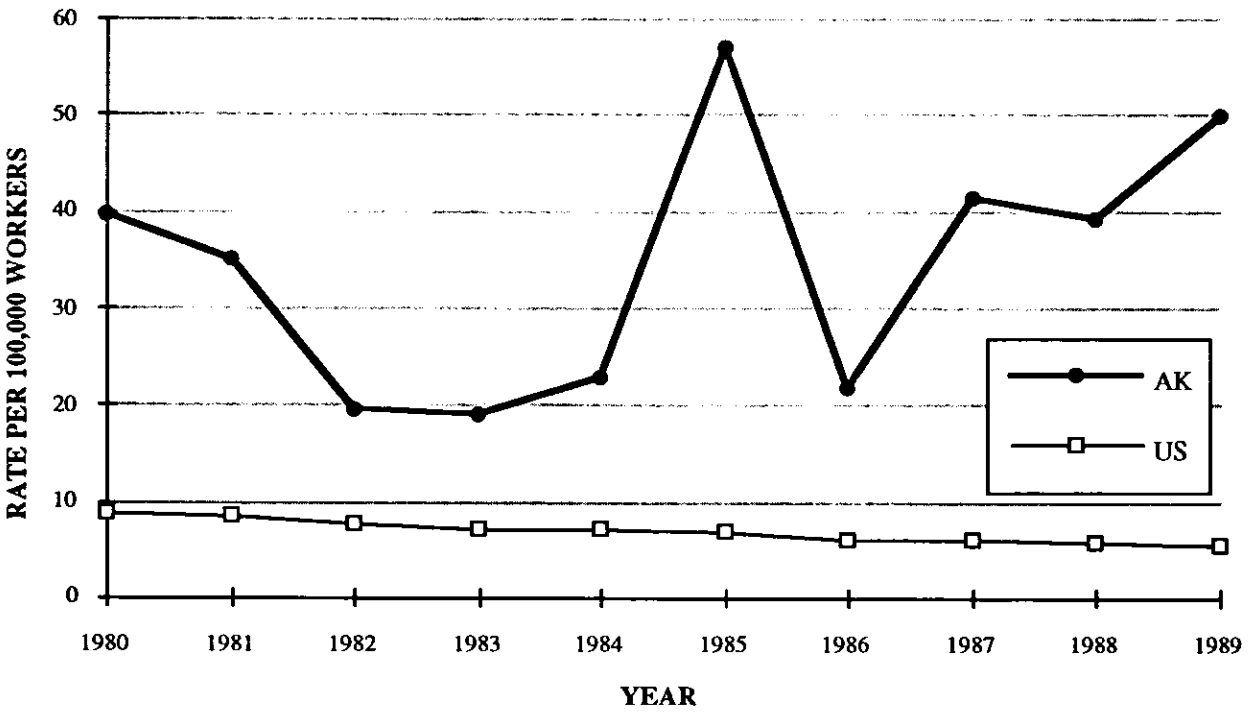
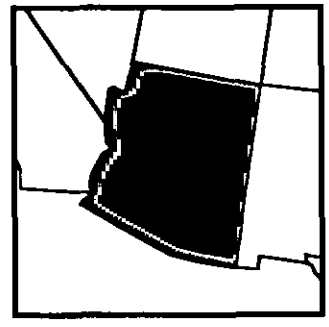


Figure AK-5. *Rate of Traumatic Occupational Fatalities by Year, US and Alaska, 1980-1989.*

State of Arizona

Average Annual Fatal Injuries: **41**

Average Annual Fatal Injury Rate
(deaths per 100,000 workers): **3.7**



Industries with the Highest Number and Rate of Fatal Injuries:
Number: **Construction (97)**
Rate: **Mining (20.9)**

Occupation with the Highest Number and Rate of Fatal Injuries:
Number: **Transportation/Material Movers (105)**
Rate: **Transportation/Material Movers (12.0)**

The State of Arizona had 409 traumatic occupational fatalities from 1980 through 1989. Civilian workers accounted for 398 of these deaths. The **average annual rate** of fatalities per 100,000 workers was 3.7 for Arizona compared to 7.0 for the United States. The average annual rate for years of potential life lost (YPLL) was 98.6 per 100,000 workers for Arizona compared to 175.6 for the United States.

Males accounted for 95% of the civilian occupational fatalities in Arizona and had a fatality rate of 4.9 per 100,000 workers compared to 0.4 for females. The fatality distribution by **race/ethnicity** for the State of Arizona shows that Whites accounted for 73% of the total fatalities, Hispanics for 19%, and Native Americans for 5% as shown in **Table AZ-1**.

Table AZ-1. Traumatic Occupational Fatalities by Race/Ethnicity, Arizona, 1980-1989.

Race/Ethnicity	Number	Percent
White	300	73.3
Hispanic	76	18.6
Native American	20	4.9
Black	13	3.2

As shown in **Figure AZ-1**, workers aged 30 to 34 years old accounted for the largest number of fatalities (14%). Of all Arizona occupational fatality victims, 82% were Arizona residents (**Table AZ-2**).

Figure AZ-2 presents the distribution of fatalities by external cause of death for the State of Arizona and for the U.S. The three leading causes of death among employees in Arizona were motor vehicle incidents (27%), machine-related incidents (14%), and falls (11%).

In Arizona, the **industry divisions** in which the largest number of fatalities occurred were construction (24%), transportation/communication/public utilities (24%), and agriculture/forestry/fishing (9%). The mining industry had the highest fatality rate at 20.9 per 100,000 workers, followed by transportation/communication/public utilities (17.2), and construction (11.1) (**Figure AZ-3**). **Table AZ-3** provides the number of deaths in each industry division by year of occurrence, and the total number and rate of fatalities for each industry division for the 10-year period.

The **occupation divisions** in Arizona with the largest number of fatalities were transportation/material movers (26%), precision production/craft/repair

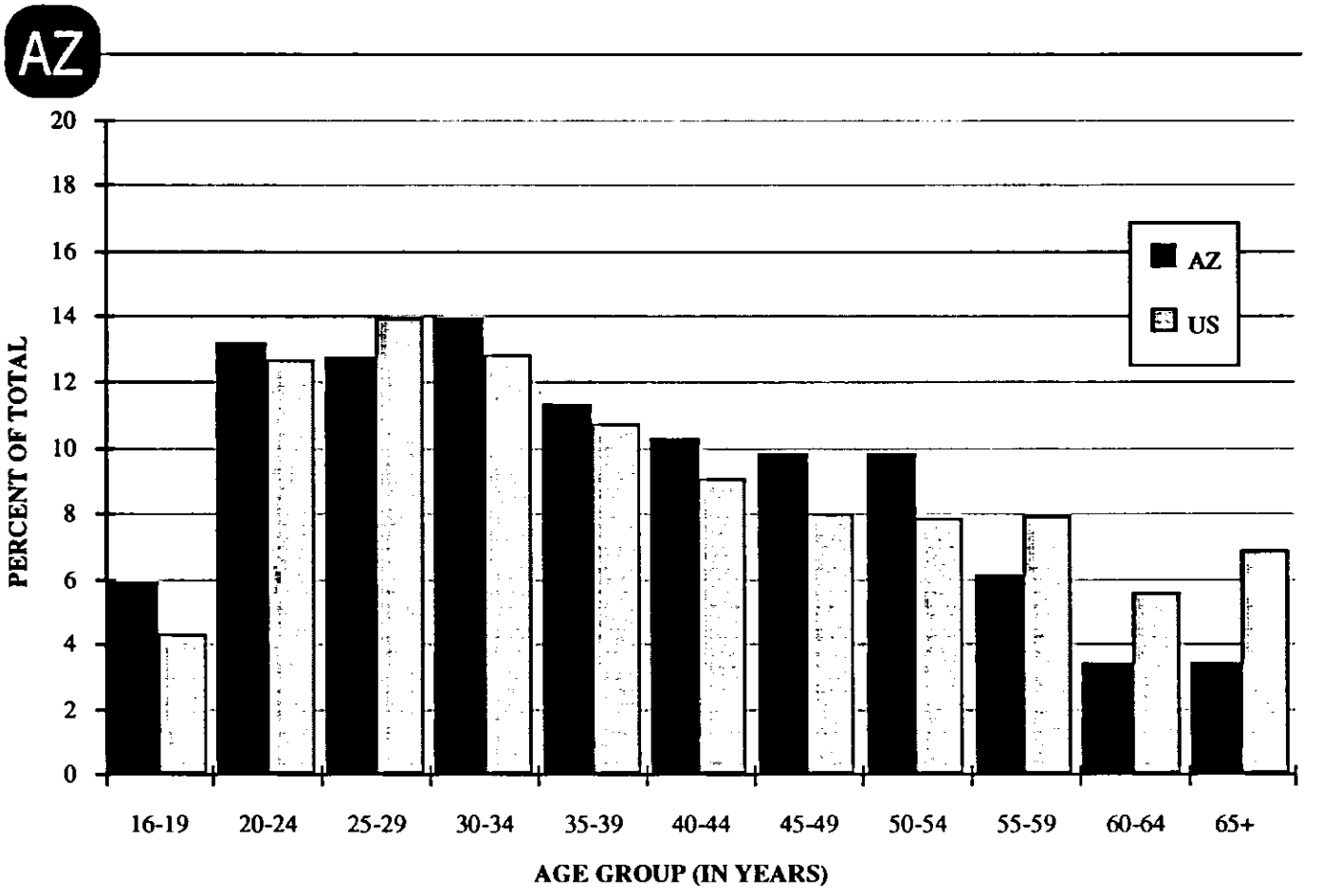


Figure AZ-1. *Traumatic Occupational Fatalities by Age Group, US and Arizona, 1980-1989.*

Table AZ-2. *Traumatic Occupational Fatalities by State of Residence, Arizona, 1980-1989.*

State	Number	Percent
Arizona	334	81.7
California	18	4.4
New Mexico	7	1.7
Texas	6	1.5
Utah	5	1.2
Oklahoma	4	1.0
Florida	3	0.7
Illinois	3	0.7
Nevada	3	0.7
North Carolina	3	0.7
Virginia	3	0.7
Other	20	4.9

(24%), and laborers (12%). The occupations with the highest rates were transportation/material movers (12.0 deaths per 100,000 workers), laborers (6.6), precision production/craft/repair (4.0), and farmers/foresters/fishers (3.8) (**Figure AZ-4**). **Table AZ-4** provides numbers and rates of work-related deaths for each occupation division.

During the decade, the **fatality rates** in Arizona decreased 85%, from 8.0 in 1980 to 1.2 in 1989. A high of 8.9 and a low of 0.8 deaths per 100,000 workers were reported in 1981 and 1988, respectively (**Figure AZ-5**).

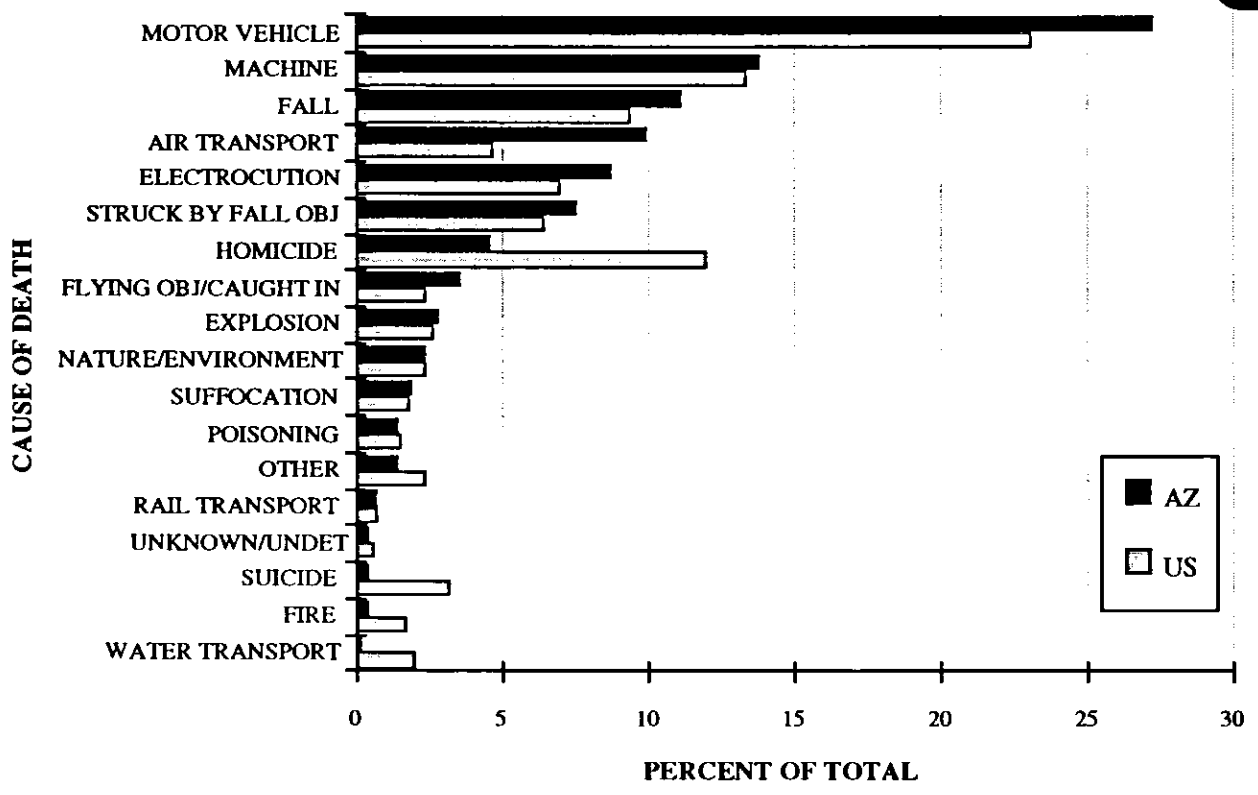


Figure AZ-2. *Traumatic Occupational Fatalities by Cause of Death, US and Arizona, 1980-1989.*

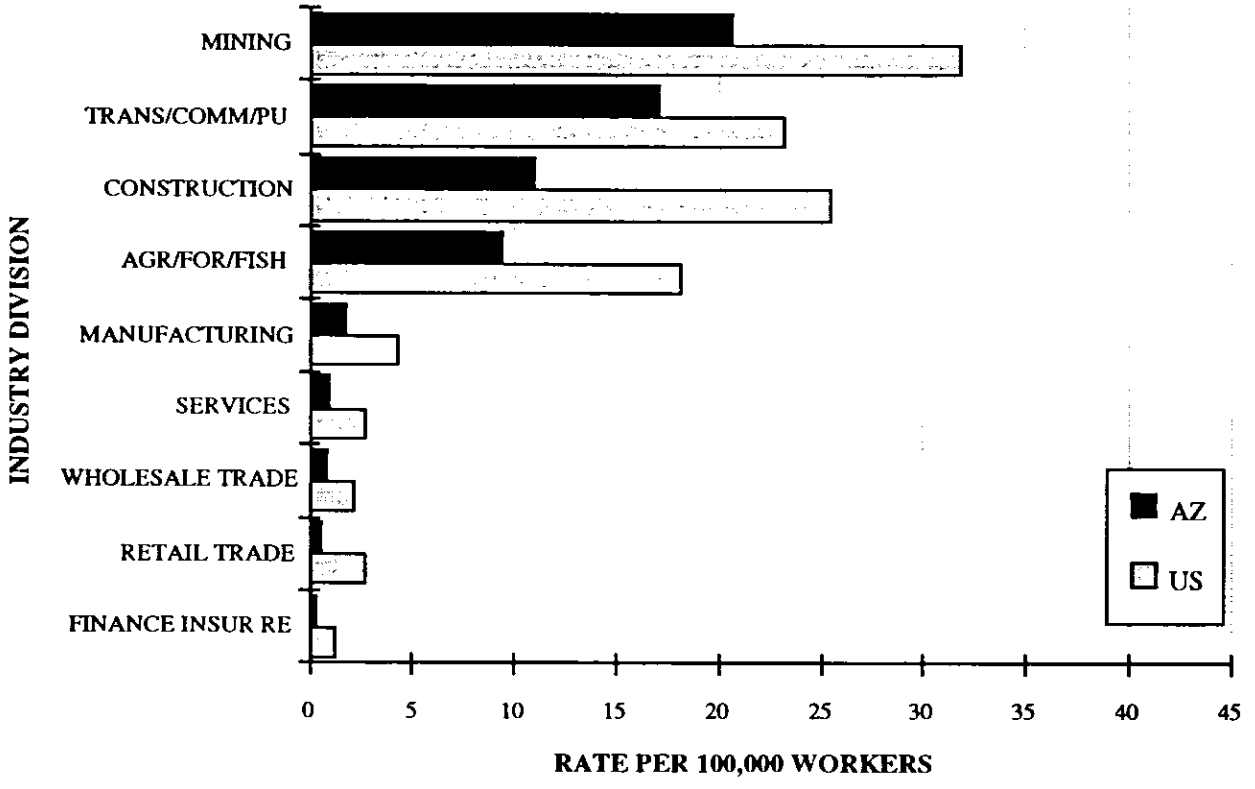


Figure AZ-3. *Average Annual Rate of Traumatic Occupational Fatalities by Industry Division, US and Arizona, 1980-1989.*

Table AZ-3. Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Industry Division and Year, Arizona, 1980-1989.

Industry Division	Annual Number										Total Number	Average Annual Rate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989		
MINING	7	5	6	--	6	--	--	3	--	--	34	20.9
TRANS/COMM/PU	21	22	12	13	19	3	--	--	--	--	95	17.2
CONSTRUCTION	15	15	9	9	10	19	6	5	3	6	97	11.1
AGR/FOR/FISH	8	8	5	5	5	4	--	--	--	--	36	9.6
MANUFACTURING	7	11	--	3	3	--	--	--	--	--	31	1.8
SERVICES	3	3	6	5	5	3	4	--	--	--	30	1.1
WHOLESALE TRADE	--	--	--	3	--	--	--	--	--	--	6	1.0
RETAIL TRADE	--	--	--	--	--	3	3	--	--	--	16	0.7
FINANCE/INSUR/RE	--	--	--	--	--	--	--	--	--	--	3	0.4
PUBLIC ADMIN	6	5	--	--	5	--	--	--	--	--	23	N/A
NOT CLASSIFIED	3	8	--	--	--	3	--	3	--	4	27	N/A
STATE	72	80	43	44	57	39	20	17	11	15	398	3.7

NOTE: Dashes denote categories with fewer than three cases.

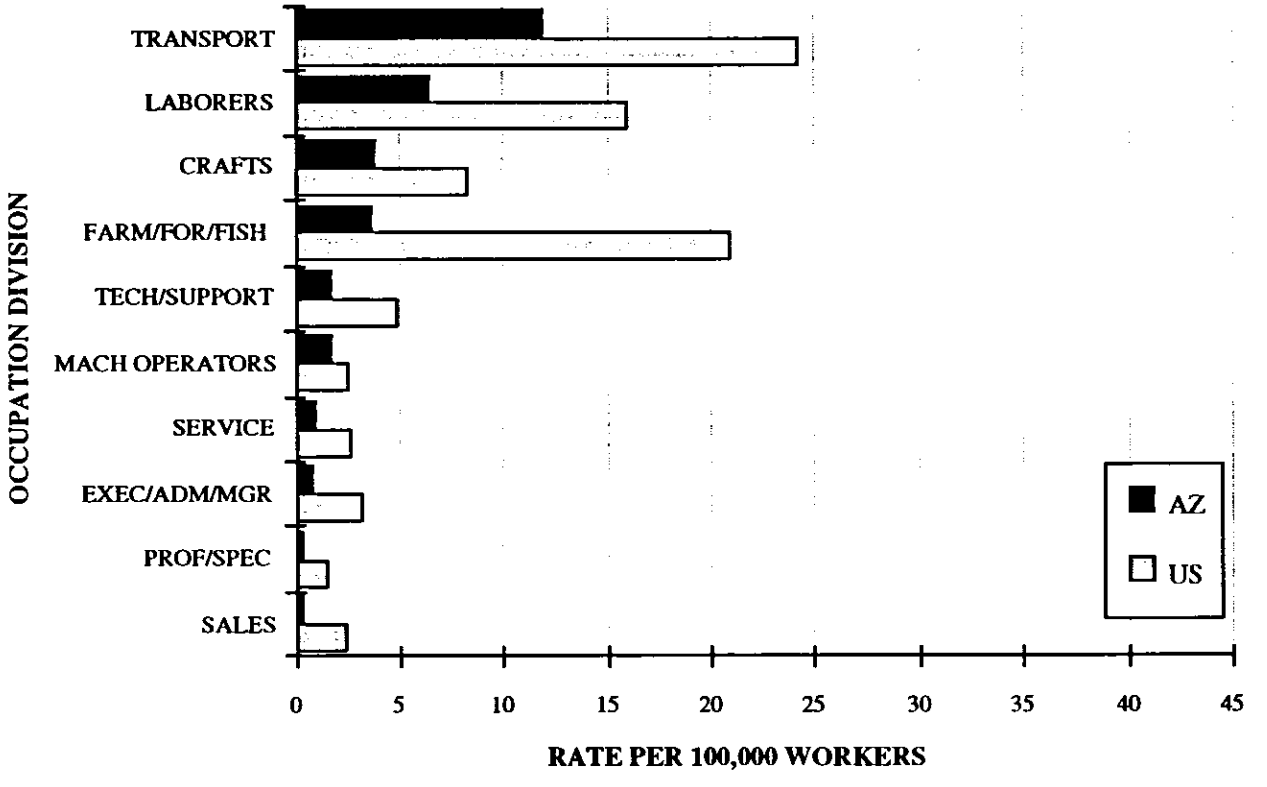


Figure AZ-4. Average Annual Rate of Traumatic Occupational Fatalities by Occupation Division, US and Arizona, 1983-1989.

Table AZ-4. *Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Occupation Division, Arizona.*

Occupation Division	Total Number (1980-1989)	Average Annual Rate (1983-1989)
TRANSPORT	105	12.0
LABORERS	49	6.6
CRAFTS	95	4.0
FARM/FOR/FISH	30	3.8
TECH/SUPPORT	19	1.9
MACH OPERATORS	10	1.8
SERVICE	23	1.1
EXEC/ADM/MGR	19	1.0
PROF/SPEC	14	0.5
SALES	5	0.4
CLERICAL	6	N/A
NOT CLASSIFIED	23	N/A

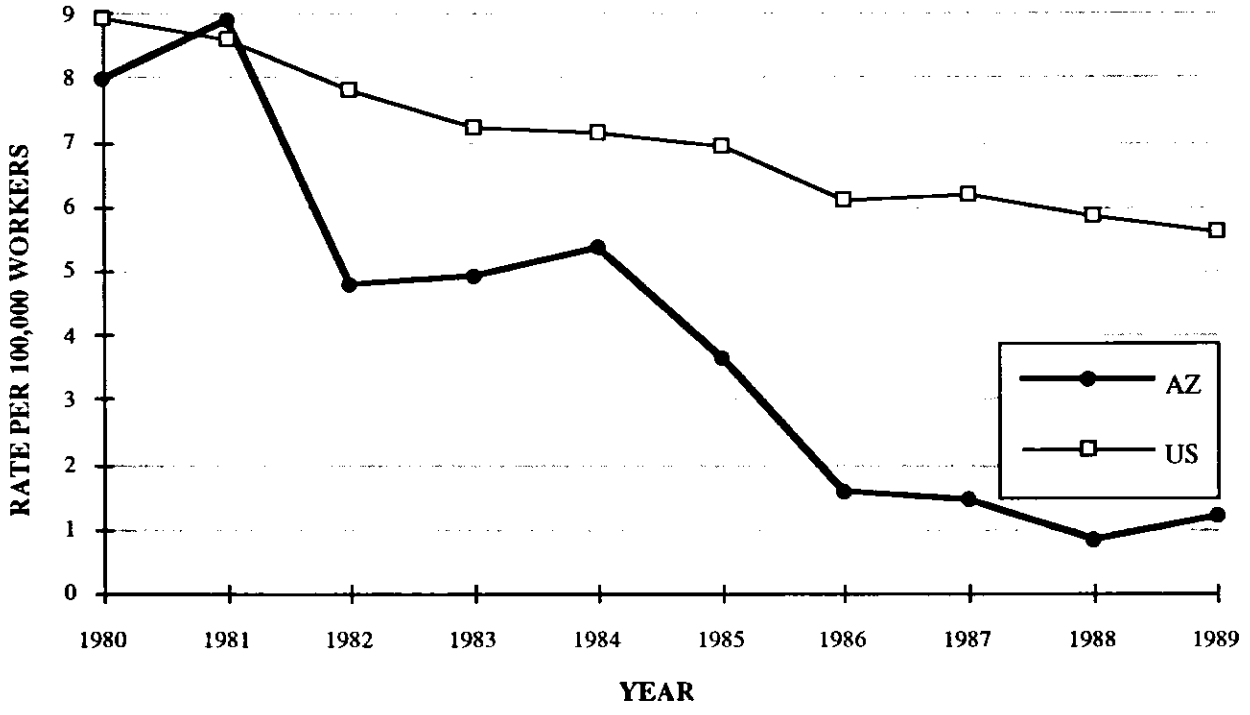


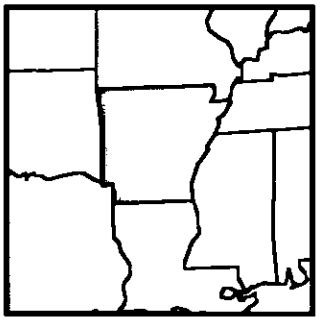
Figure AZ-5. *Rate of Traumatic Occupational Fatalities by Year, US and Arizona, 1980-1989.*

State of Arkansas

AR

Average Annual Fatal Injuries: **89**

Average Annual Fatal Injury Rate
(deaths per 100,000 workers): **12.0**



Industry with the Highest Number and Rate of Fatal Injuries:

Number: **Transportation/Communication/ Public Utilities (192)**

Rate: **Transportation/Communication/ Public Utilities (47.6)**

Occupation with the Highest Number and Rate of Fatal Injuries:

Number: **Transportation/Material Movers (211)**

Rate: **Transportation/Material Movers (39.9)**

The State of Arkansas had 891 traumatic occupational fatalities from 1980 through 1989. Civilian workers accounted for 874 of these deaths. The **average annual rate** of fatalities per 100,000 workers was 12.0 for Arkansas compared to 7.0 for the United States. The average annual rate for years of potential life lost (YPLL) was 302.5 per 100,000 workers for Arkansas compared to 175.6 for the United States.

Males accounted for 94% of the civilian occupational fatalities in Arkansas and had a fatality rate of 15.3 per 100,000 workers compared to 1.2 for females. The fatality distribution by **race/ethnicity** for the State of Arkansas shows that Whites accounted for 75% of the total fatalities, Blacks for 15%, and Hispanics for 10% as shown in **Table AR-1**. Workers aged 20 to 24, 25 to 29, and 30 to 34 years old each accounted for 13% of the fatalities as shown in **Figure AR-1**. Of all Arkansas occupational fatality victims, 83% were Arkansas residents (**Table AR-2**).

Table AR-1. Traumatic Occupational Fatalities by Race/Ethnicity, Arkansas, 1980-1989.

Race/Ethnicity	Number	Percent
White	666	74.7
Black	135	15.2
Hispanic	85	9.5
Asian	3	0.3
Other	2	0.2

Figure AR-2 presents the distribution of fatalities by external cause of death for the State of Arkansas and for the U.S. The three leading causes of death among employees in Arkansas were motor vehicle incidents (30%), machine-related incidents (11%), and being struck by falling objects (9%).

In Arkansas, the **industry divisions** in which the largest number of fatalities occurred were transportation/communication/public utilities (22%), manufacturing (19%), and construction (15%). The transportation/communication/public utilities industry had the highest fatality rate at 47.6 per 100,000 workers, followed by construction (41.5), and mining (38.4) (**Figure AR-3**). **Table AR-3** provides the number of deaths in each industry division by year of occurrence, and the total number and rate of fatalities for each industry division for the 10-year period.

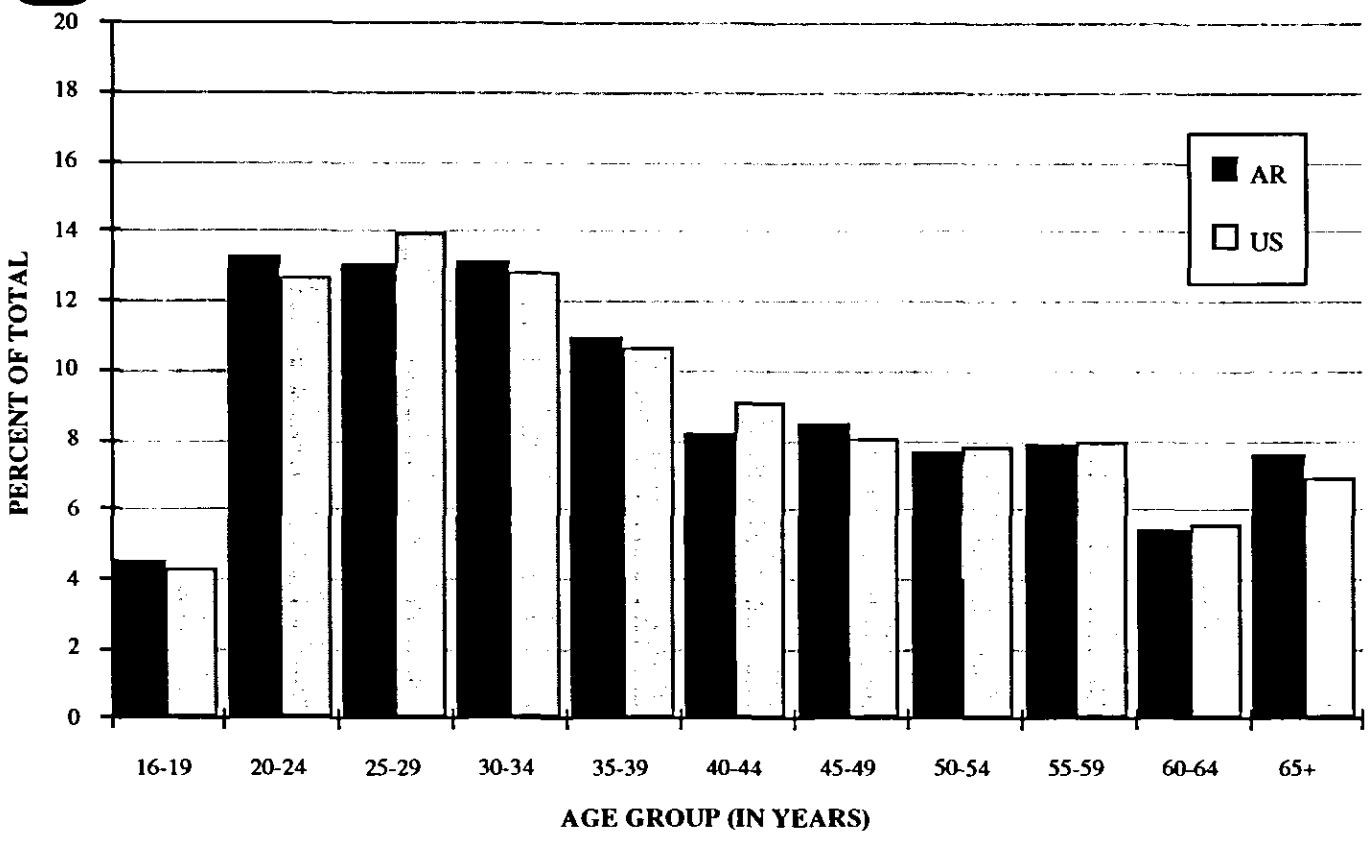


Figure AR-1. *Traumatic Occupational Fatalities by Age Group, US and Arkansas, 1980-1989.*

Table AR-2. *Traumatic Occupational Fatalities by State of Residence, Arkansas, 1980-1989.*

State	Number	Percent
Arkansas	740	83.1
Texas	32	3.6
Louisiana	24	2.7
Oklahoma	21	2.4
Missouri	15	1.7
Tennessee	12	1.3
Alabama	6	0.7
Mississippi	6	0.7
Illinois	4	0.4
Kansas	4	0.4
North Carolina	4	0.4
Other	23	2.6

The **occupation divisions** in Arkansas with the largest number of fatalities were transportation/material movers (24%), farmers/foresters/fishers (14%), and laborers (14%). The occupations with the highest rates were transportation/material movers (39.9 deaths per 100,000 workers), laborers (21.7), and farmers/foresters/fishers (21.1) (**Figure AR-4**). **Table AR-4** provides numbers and rates of work-related deaths for each occupation division.

During the decade, the **fatality rates** in Arkansas decreased 30%, from 11.9 in 1980 to 8.3 in 1989. A high of 15.5 and a low of 8.0 deaths per 100,000 workers were reported in 1985 and 1984, respectively (**Figure AR-5**).

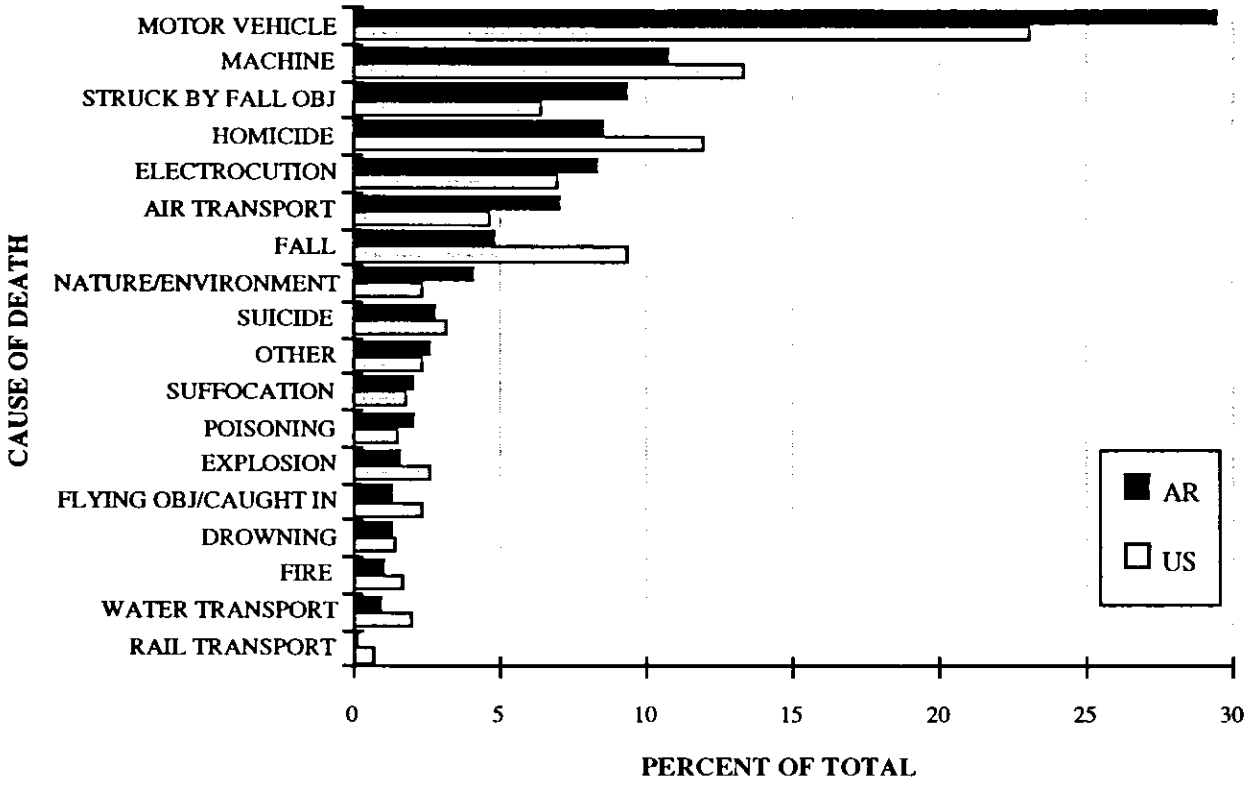


Figure AR-2. *Traumatic Occupational Fatalities by Cause of Death, US and Arkansas, 1980-1989.*

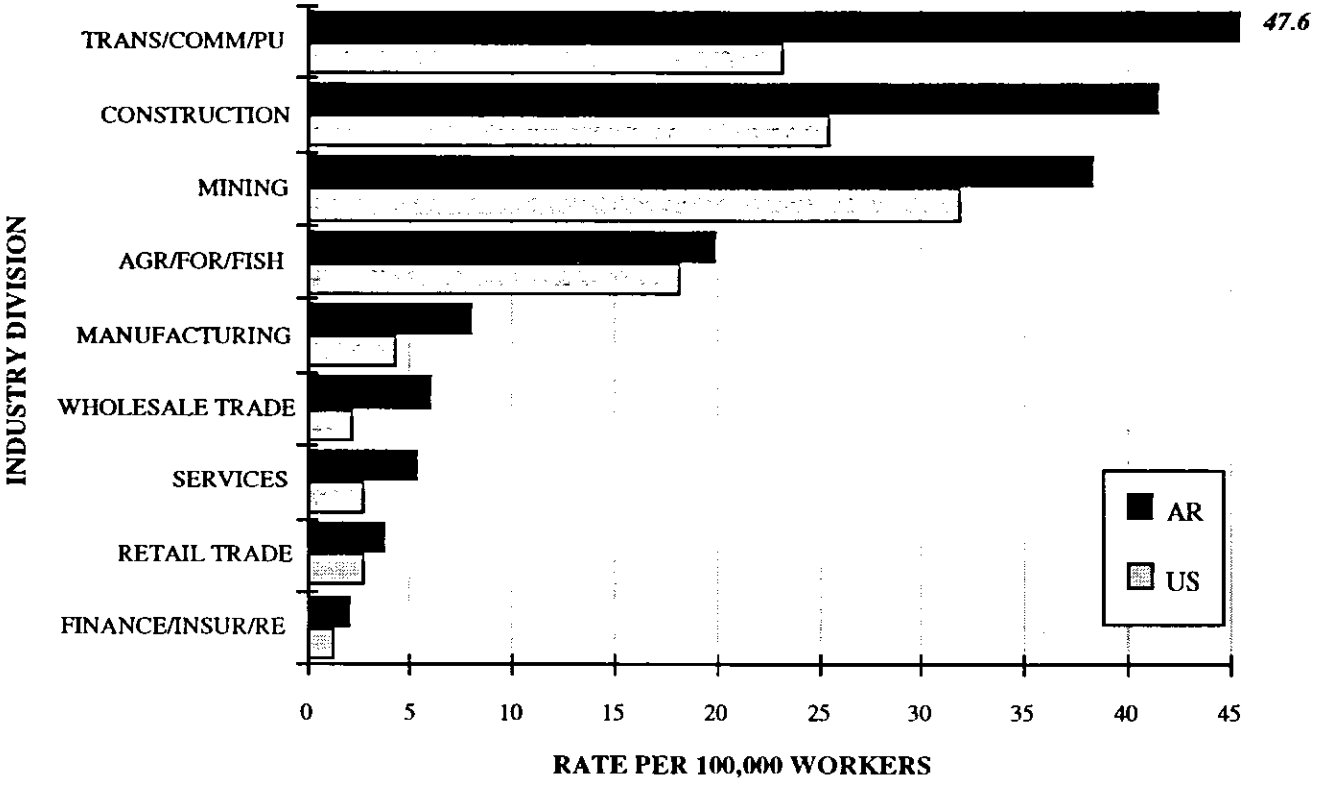


Figure AR-3. *Average Annual Rate of Traumatic Occupational Fatalities by Industry Division, US and Arkansas, 1980-1989.*

Table AR-3. Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Industry Division and Year, Arkansas, 1980-1989.

Industry Division	Annual Number										Total Number	Average Annual Rate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989		
TRANS/COMM/PU	15	13	16	14	11	25	31	25	24	18	192	47.6
CONSTRUCTION	17	11	13	8	10	17	16	17	12	10	131	41.5
MINING	--	3	3	--	--	--	--	--	--	--	18	38.4
AGR/FOR/FISH	11	7	15	7	11	16	13	11	16	8	115	20.1
MANUFACTURING	17	21	18	7	9	15	18	23	24	14	166	8.2
WHOLESALE TRADE	--	3	4	4	--	--	3	4	--	--	25	6.1
SERVICES	7	3	8	7	6	16	3	8	14	3	75	5.5
RETAIL TRADE	4	8	--	3	--	10	7	7	8	--	51	3.8
FINANCE/INSUR/RE	--	--	--	--	--	--	--	--	--	--	7	2.1
PUBLIC ADMIN	4	4	11	4	6	5	5	6	4	--	50	N/A
NOT CLASSIFIED	3	6	7	6	--	3	3	5	--	8	44	N/A
STATE	81	79	96	63	60	111	102	108	108	66	874	12.0

NOTE: Dashes denote categories with fewer than three cases.

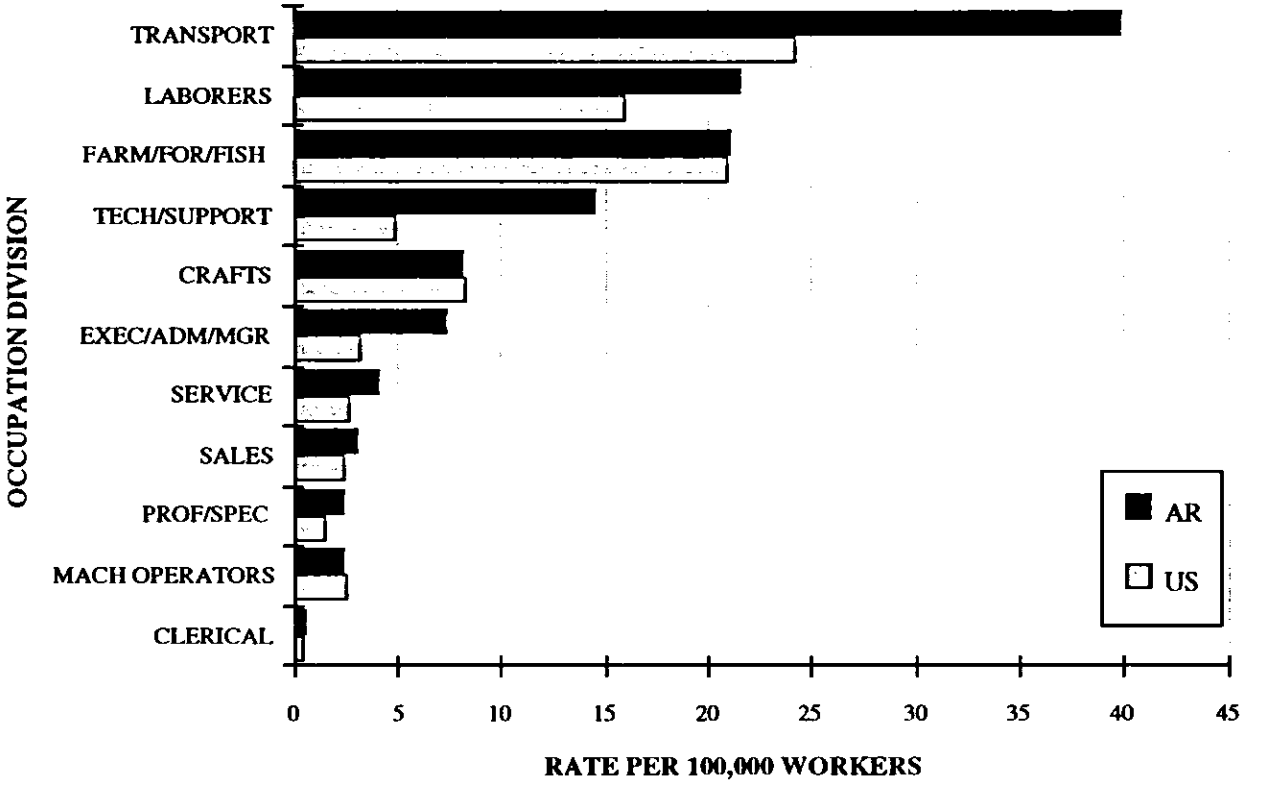


Figure AR-4. Average Annual Rate of Traumatic Occupational Fatalities by Occupation Division, US and Arkansas, 1983-1989.

Table AR-4. *Distribution and Average Annual Rate (per 100,000 workers) of Traumatic Occupational Fatalities by Occupation Division, Arkansas.*

Occupation Division	Total Number (1980-1989)	Average Annual Rate (1983-1989)
TRANSPORT	211	39.9
LABORERS	121	21.7
FARM/FOR/FISH	125	21.1
TECH/SUPPORT	33	14.7
CRAFTS	116	8.3
EXEC/ADM/MGR	67	7.4
SERVICE	51	4.3
SALES	39	3.2
PROF/SPEC	22	2.5
MACH OPERATORS	27	2.5
CLERICAL	8	0.6
NOT CLASSIFIED	54	N/A

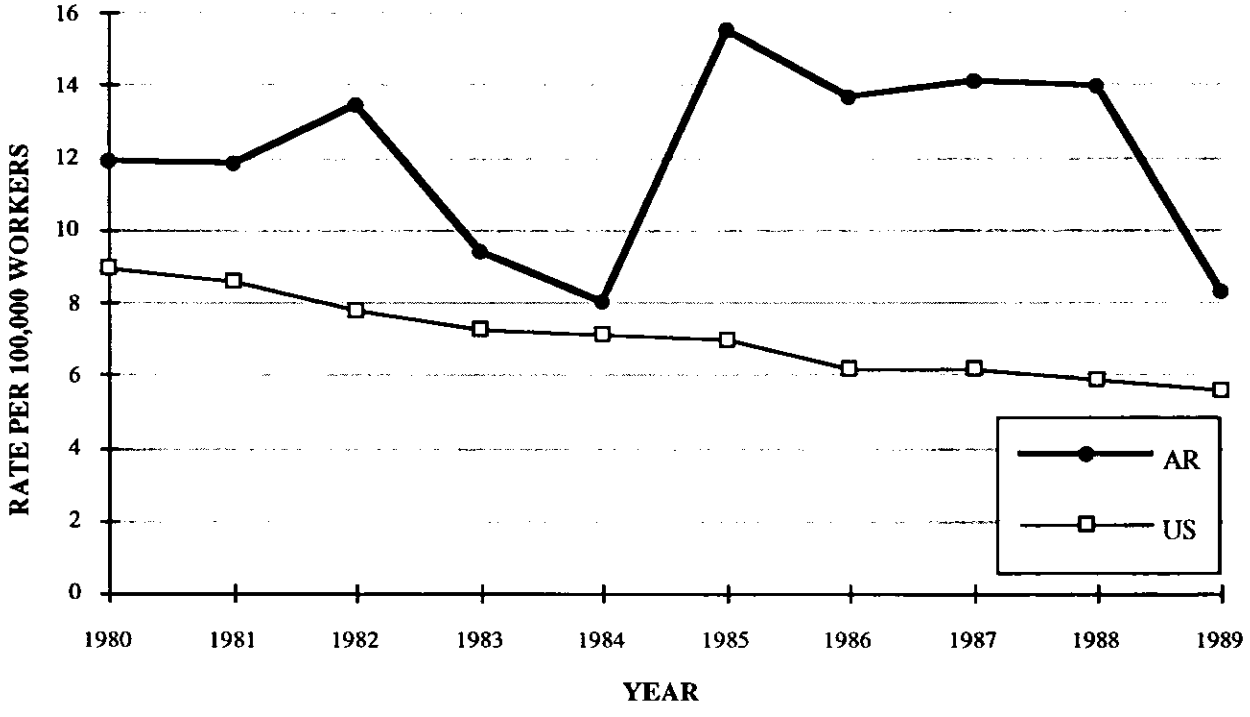


Figure AR-5. *Rate of Traumatic Occupational Fatalities by Year, US and Arkansas, 1980-1989.*