National Census of Fatal Occupational Injuries, 1995

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Fatal work injuries fell 6 percent in 1995 to 6,210, according to the Bureau's Census of Fatal Occupational Injuries. Much of the decrease resulted from a 35-percent drop in the number of workers killed in aircraft crashes and a 19-percent drop in the number of workers killed in firearm-related homicides. Most other types of job-related fatalities also declined in 1995. Although truckdrivers continued to have the highest number of fatal work injuries of any occupation, fishers and timber cutters had the highest risk of fatal injury on the job.

This article, which is based on BLS fatality census data, describes the major types of events which resulted in worker fatalities and profiles the most dangerous jobs in 1995. The BLS census, which began collecting data nationally in 1992, uses diverse data sources to identify, verify, and profile fatal work injuries. Key information about each workplace fatality, such as occupation and other worker characteristics and the circumstances of the event, is obtained by cross-referencing source documents, including death certificates, workers' compensation records, and reports to Federal and State agencies. This method assures counts are as complete and accurate as possible.

Major fatal events

Highway traffic incidents and homicides led all other events that resulted in fatal work injuries in 1995. These two events accounted for over a third of the work injury deaths that occurred during the year. Both categories experienced a slight reduction in fatalities from the previous year. (See table 1.)

Highway fatalities. Highway traffic incidents accounted for 21 percent of the 6,210 fatal work injuries in 1995. Slightly over half of highway fatality victims were driving or riding in a truck. The following tabulation summarizes the major types of vehicles in which the worker was riding at the time of the fatal incident.[1]

About half the highway fatalities resulted from collisions between two or more vehicles. One-fifth of the fatalities resulted from a crash with an object other than a vehicle, such as a tree, bridge abutment, or utility pole; another fifth occurred when the vehicle jackknifed or overturned. Patterns varied somewhat according to the type of vehicle involved. Collisions with other vehicles, crashes with objects on the side of the road, and jackknifings and overturnings contributed about equally (roughly 30 percent each) to the deaths of those riding in tractor trailers. For workers killed while

	Number	*Percent*
Total job-related highway fatalities	1,329	100
Highway motor vehicle	1,271	96
Truck	729	55
Semitrailer, tractor trailer	359	27
Pickup truck	136	10
Automobile	344	26
Van	74	6
Tractors	29	2
Machinery	20	2

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Table 1. Fatal occupational injuries by event or exposure, 1992-1995

Event or exposure[1]	Fatalities				
	1992	1993	1994[2]	1995	
	Number	Number	Number	Number	Percent
Total	6,217	6,331	6,632	6,210	100
Transportation incidents	2,484	2,501	2,762	2,560	41
Highway	1,158	1,243	1,343	1,329	21
Collision between vehicles, mobile equipment	578	657	654	634	10
Moving in same direction	78	99	120	125	2
Moving in opposite directions, oncoming	201	244	230	244	4
Moving in intersection	107	123	144	97	2
Vehicle struck stationary object or equipment	192	190	255	268	4
Noncollision	301	336	373	350	6
Jack-knifed or overturned—no collision	213	237	274	260	4
Nonhighway (farm, industrial premises)	436	392	409	388	6
Overturned	208	212	226	210	3
Aircraft	353	282	426	278	4
Worker struck by a vehicle	346	365	391	385	6
Water vehicle	109	120	94	84	1
Railway	66	86	81	82	1
Assaults and violent acts	1,281	1,329	1,321	1,262	20
Homicides	1,044	1,074	1,080	1,024	16
Shooting	852	884	934	754	12
Stabbing	90	95	60	67	1
Other, including bombing	102	95	86	203	3
Self-inflicted injury	205	222	214	215	3
Contact with objects and equipment	1,004	1,045	1,017	915	15
Struck by object	557	566	590	546	9
Struck by falling object	361	346	372	340	5
Struck by flying object	77	82	68	63	1
Caught in or compressed by equipment or objects	316	309	280	255	4
Caught in running equipment or machinery	159	151	147	131	2
Caught in or crushed in collapsing materials	110	138	132	99	2
Falls	600	618	665	643	10
Fall to lower level	507	533	580	573	9
Fall from ladder	78	76	86	97	2
Fall from roof	108	120	129	142	2
Fall from scaffold	66	71	89	82	1
Fall on same level	62	49	63	50	1
Exposure to harmful substances or environments	605	592	641	598	10
Contact with electric current	334	325	348	347	6
Contact with overhead powerlines	140	115	132	139	2
Contact with temperature extremes	33	38	50	55	1
Exposure to caustic, noxious, or allergenic substances	127	115	133	101	2
Inhalation of substances	83	68	84	62	1
Oxygen deficiency	111	111	109	94	2
Drowning, submersion	78	89	89	74	1
Fires and explosions	167	204	202	208	3
Other events or exposures[3]	76	43	24	24	-

[1] Based on the 1992 BLS Occupational Injury and Illness Classification Structures.

[2] The BLS news release issued August 3,1995, reported a total of 6,588 fatal work injuries for calendar year 1994. Since then, an additional 44 job-related fatalities were identified, bringing the total job-related fatality count for 1994 to 6,632.

[3] Includes the category "Bodily reaction and exertion."

NOTE: Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. Dashes indicate less than 0.5 percent or data that are not available or that do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

riding in other types of highway vehicles, collisions between vehicles accounted for slightly over half of the fatalities.

About two-fifths of the workers killed were truckdrivers, with the rest scattered throughout other occupational groups, such as sales workers, farm occupations, police officers, and executives and managers. A similar pattern is evident in the industry of the worker's employer. One-fourth of the workers fatally injured in highway incidents worked in the trucking and courier service industry. The remaining fatalities were widely dispersed among other industries.

Homicide. Job-related homicides accounted for 1 of every 6 of the fatal work injuries that occurred in 1995 and was the second leading cause of job-related deaths. The drop in firearm-related workplace homicides resulted in an overall decline in job-related homicide from the 1994 total, despite the bombing of the Alfred P. Murrah Federal Building in Oklahoma City, which accounted for 12 percent of the homicide total in 1995.

While three times as many male workers were murdered as female workers, homicide was the leading cause of job-related fatality for women, accounting for nearly half of women's work injuries. And, homicides of female workers went up by about one-third from 1994, while homicides of male workers went down by about one-eighth. Because of their occupations, homicide was also the leading cause of job-related death for the self-employed and for blacks, Asian and Pacific Islanders, and Hispanics.

The table below shows the circumstances surrounding the 1,024 job-related homicides that occurred in 1995.

Most of the workplace homicides resulted from robberies or robbery-attempts. Typically these robberies involved store personnel, gas station attendants, or taxicab drivers being shot for cash receipts. But several workers were killed during carjackings, muggings, and robberies of goods or services, such as robberies of beer trucks. One-seventh of the job-related homicide victims were police officers and security guards killed in the line of duty; one-eighth were victims of the bombing of the Alfred P. Murrah Federal Building in Oklahoma City (including some police officers). One-tenth of workplace homicide victims were killed by a current or former work associate, almost double the number from the previous year. And several workers, primarily women, were killed as a result of domestic disputes that filtered into the workplace.

Half the victims of workplace homicide worked in either a sales occupation (such as sales clerk, retail store owner, or cashier) or a service-related occupation (such as police officer, security guard, or food preparer). Taxicab drivers and various management-related occupations also reported high numbers of job-related homicides. Although job-related homicides in retail trade dropped by 21 percent from the previous year, they still accounted for 41 percent of all workplace homicides in 1995. Homicides in convenience and other grocery stores, eating and drinking places, and gasoline service stations predominated among retail establishments. Government workers accounted for one-fifth of the homicide victims, twice as many as the previous year because of the Oklahoma City bombing.

	Number	*Percent*
Total job-related homicides	1,024	100
Robberies and other crimes	727	71
Work associates	113	11
Coworker, former coworker	88	9
Customer, client	25	2
Police killed in the line of duty	81	8
Security guard killed in the line of duty	59	6
Personal acquaintance of the victim	44	4
Husband, boyfriend (current or former)	25	2
Wife, girlfriend (current or former)	4	-
Other relative or acquaintance	15	1

Falls. Falls accounted for 10 percent of the fatal work injuries in 1995. The demographics of those sustaining fatal falls mirrored those of all workers fatally injured during the year. They were overwhelmingly white, male, wage and salary workers, and most were in their prime working ages (25 to 54 years old). One-fourth of the fatal fall victims, however, were 55 years and older—double that age group's share of the work force.

Not surprisingly, falls accounted for about one-third of the fatal injuries to construction workers, given that working at elevations is common for several of the construction trades, such as roofers and structural metal workers. The construction industry as a whole accounted for half of the fatal falls, compared with a sixth of all fatal work injuries and about a twentieth of the total work force. Agriculture, forestry, and fishing, manufacturing, and services each accounted for about one-tenth of the fatal falls to workers.

The table on the following page summarizes the types of falls resulting in fatal work injuries in 1995.

While fatal job-related falls were down from 1994, falls from or through roofs rose slightly during 1995, accounting for about one-fifth of the fatal falls to workers. Working on roofs poses a variety of fall hazards. Workers can fall through an existing roof opening, through the roof surface itself, through a skylight, or off the roof edge.[2]

Fatal injuries due to falls from ladders also rose slightly during

	Number	Percent
Total falls	643	100
Fall to lower level	573	89
From roof	142	22
From ladder	97	15
From scaffold, staging	82	13
From floor, dock, or ground level	33	5
From building girder or structural steel	33	5
From nonmoving vehicle	32	5
Down stairs or steps	16	2
Fall on same level	50	8
To floor, walkway, or other surface	31	5
Onto or against objects	12	2
Other or unspecified	20	3

1995 and accounted for about one-seventh of the total. Falls from scaffolding or staging resulted in another seventh of the fatal falls to workers; and falls from building girders or other structural steel, falls from nonmoving vehicles, and falls to walkways on the same level each accounted for about 5 percent of the total.

Workers struck by objects. Nine percent of fatally injured workers were struck by objects, such as falling trees, machinery that had slipped into gear, and building materials. Fatalities from these types of incidents were at their lowest level since the fatality census began in 1992. Excluded from this category are transportation incidents that occur under normal operation of the vehicle, such as a worker struck by a vehicle backing up on a construction site. The category does, however, include instances where a vehicle coasts, rolls, slips into gear, or falls off a jack.

Over three-fifths of the "struck by" fatalities resulted from the worker being struck by a falling object, such as a tree being cut down, a cinder block falling from a construction scaffold, or a vehicle falling off a jack during repair. Another eighth of the fatalities resulted from flying objects, such as when an object becomes dislodged or is discharged from a machine. Examples of these types of incidents include a bullet accidentally discharging from a gun or a metal fragment dislodging from a lathe. Another eighth of the fatalities occurred when the worker was struck by a rolling object on the floor or ground level, such as when a tractor that is being jumpstarted slips into gear.

Trees and tree branches accounted for one-fourth of the objects which fatally struck workers, more than any other single source. Machines and vehicles together accounted for about one-third of the objects, and building materials, such as lumber, bricks, and pipes, accounted for about one-eighth.

Almost a third of the fatalities occurred to workers in a manufacturing industry, half of which were in logging. Agriculture, forestry, and fishing and construction each accounted for almost one-fifth of the "struck by" fatalities.

Electrocutions. Contact with electric current accounted for 6 percent of the worker deaths in 1995. While most other major fatal event categories declined in number from the 1994 total, job-related electrocutions remained virtually at the same level as last year. Two-fifths of these fatalities resulted from the worker or the equipment being used coming in contact with overhead power lines. The table below summarizes the type of electric current involved in the job-related electrocutions.

The construction industry accounted for half the fatal contacts with electric current. Construction workers came into contact with electric current while on bucket trucks, cranes, bulldozers, and ladders. Several were electrocuted while in crawl spaces under houses or in ceilings or while drilling through paneling.

The services and agriculture, forestry, and fishing industries each accounted for about one-tenth of the job-related electrocutions. Service workers were typically electrocuted while installing or repairing machines, appliances, or other equipment such as neon signs and billboards. Workers in agriculture, forestry, and fishing were electrocuted when equipment they were moving, such as irrigation pipes or grain augers, came into contact with a power line. Several farmers were struck by lightning.

Dangerous jobs

Fatality counts. Truckdrivers continued to have the highest number of job-related injury fatalities of any single occupation. (See table 2.) They accounted for 1 out of every 8 workers killed on the job. About two-thirds of these fatalities resulted from highway crashes and jackknifings. Workers in various

	Number	Percent
Total electrocutions	347	100
Overhead power lines	139	40
Wiring, transformers, or other electrical components	94	27
Machine, tool, appliance, light fixture	55	16
Lightning	17	5
Underground, buried power lines	5	1
Other or unspecified	37	11

Table 2. Fatal occupational injuries by occupation and major event or exposure, 1995

Occupation[1]	Fatalities		Major event or exposure[2] (percent)				Rate[4]
	Number	Percent	Highway[3]	Homicide	Struck by object	Fall to lower level	
Total	6,210	100	21	16	9	9	5
Managerial and professional specialty	699	11	24	28	3	6	2
Executive, administrative, and managerial	467	8	22	34	3	7	3
Professional specialty	232	4	30	16	3	5	1
Technical, sales, and administrative support	815	13	19	46	2	2	2
Technicians and related support occupations	189	3	13	7	2	2	5
Airplane pilots and navigators	111	2	-	-	-	-	97
Sales occupations	492	8	19	61	2	2	3
Supervisors and proprietors, sales occupations	212	3	13	63	3	1	5
Sales workers, retail and personal services	213	3	15	73	-	1	3
Cashiers	116	2	3	92	-	-	4
Administrative support occupations, including clerical	134	2	25	47	-	5	1
Service occupations	533	9	20	40	1	6	3
Protective service occupations	314	5	21	45	-	2	14
Firefighting and fire prevention occupations, including supervisors	39	1	28	-	-	-	13
Police and detectives including supervisors	174	3	27	47	-	2	17
Guards, including supervisors	101	2	9	58	-	-	11
Farming, forestry, and fishing	864	14	10	2	20	6	23
Farming operators and managers	332	5	10	3	11	7	23
Farmers, except horticultural	244	4	10	2	9	7	20
Managers, farms, except horticultural	73	1	12	-	18	7	45
Other agricultural and related occupations	359	6	12	3	13	7	17
Farm workers, including supervisors	262	4	12	2	11	5	30
Forestry and logging occupations	116	2	4	-	74	4	90
Timber cutting and logging occupations	98	2	-	-	81	3	101
Fishers, hunters, and trappers	57	1	-	-	-	-	97
Fishers	48	1	-	-	-	-	104
Precision production, craft, and repair	1,041	17	10	4	9	25	8
Mechanics and repairers	265	4	15	6	14	9	6
Construction trades	607	10	8	2	6	36	12
Carpenters and apprentices	96	2	9	-	14	42	8
Electricians and apprentices	117	2	4	-	3	16	16
Electrical power installers and repairers	35	1	-	-	-	17	28
Painters	45	1	-	-	-	38	9
Roofers	60	1	-	-	-	75	29
Structural metal workers	38	1	-	-	11	66	64
Operators, fabricators, and laborers	2,051	33	32	8	11	8	11
Machine operators, assemblers, and inspectors	238	4	5	6	19	10	3
Transportation and material moving occupations	1,148	18	50	10	6	2	22
Motor vehicle operators	918	15	61	12	4	2	24
Truck drivers	749	12	68	3	5	2	26
Driver-sales workers	33	1	42	36	-	-	21
Taxicab drivers and chauffeurs	99	2	18	70	-	-	46
Material moving equipment operators	167	3	10	-	16	5	15
Handlers, equipment cleaners, helpers, and laborers	665	11	10	5	15	16	13
Construction laborers	309	5	9	1	16	27	39
Laborers, except construction	212	3	13	4	16	8	16
Military	143	2	22	6	6	-	11

[1] Based on the 1990 Occupational Classification System developed by the Bureau of the Census.

[2] The figure shown is the percent of the total fatalities for that occupational group.

[3] "Highway" includes deaths to vehicle occupants resulting from traffic incidents that occur on the public roadway, shoulder, or surrounding area. It excludes incidents occurring entirely off the roadway, such as in parking lots and on farms; incidents involving trains; and deaths to pedestrians or other nonpassengers.

[4] The rate represents the number of fatal occupational injuries per 100,000 employed workers and was calculated as follows: (N/W) x 100,000, where N = the number of fatal work injuries, and W = the number of employed workers. The employment is an annual average of employed civilians 16 years of age and older, plus resident armed forces, from the BLS Current Population Survey, 1995. There were 26 fatally injured workers under the age of 16 that were not included in the rate calculations to maintain consistency with the CPS employment.

NOTE: Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. There were 64 fatalities for which there was insufficient information to determine an occupation classification. Dashes indicate less than 0.5 percent or data that are not available or that do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

farm occupations, such as farm operator and manager, farm supervisor, and farm worker, accounted for almost 10 percent of the fatal work injury total. Half of their deaths occurred in vehicle-related incidents, both on and off the highway.

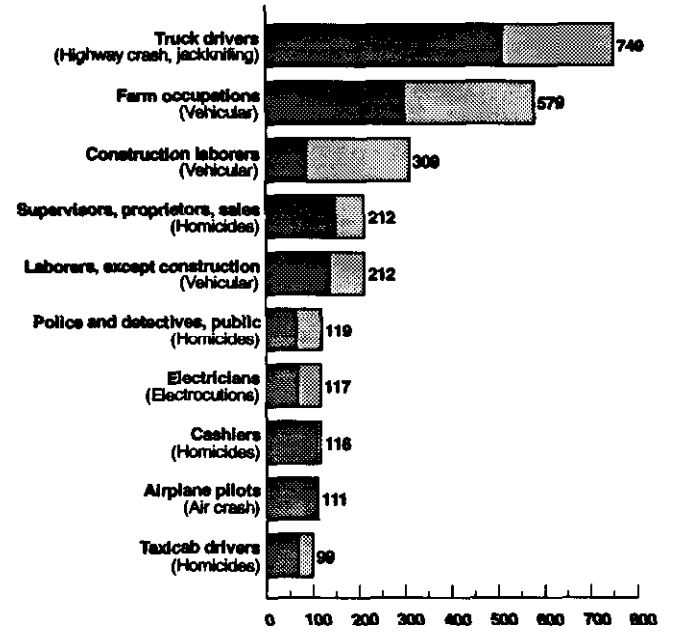
Laborers also incurred large numbers of fatal work injuries. Job-related fatalities to construction laborers rose by 25 percent over 1994 totals and resulted mainly from vehicle-related incidents and falls. Job-related fatalities to other laborers also resulted primarily from various vehicle-related incidents. Workplace homicide was the main cause of death among sales supervisors and proprietors.

Fatality rates. Occupations with large numbers of worker fatalities are not always those at highest risk. For example, truckdrivers had the highest number of fatal work injuries in 1995, but several other occupational groups experienced higher risks of fatal work injury. (See charts 1 and 2.)

The number of workers killed in a particular group, indicates the *magnitude* of the problem for a given employment group. Rates allow comparison of fatality risk among worker groups with varying levels of exposure. (However, there is more than one way to calculate fatality rates that measure the incidence of fatal work injuries for groups of workers. An hours-based rate measures the risk of fatality per standardized length of exposure; an employment-based rate measures the risk for those employed during a given period of time. The rates in chart 2 are employment based.)

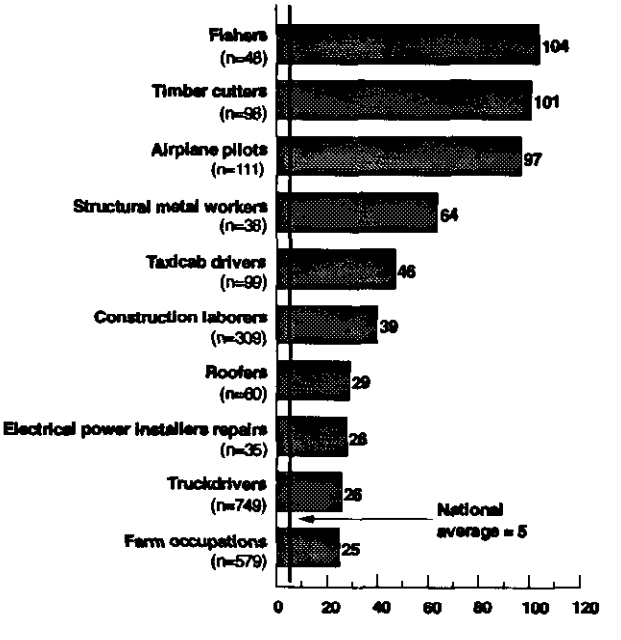
Five of the 10 occupations with the highest fatality totals were also among the occupations with the highest rate of fatal work injury: Airplane pilots, taxicab drivers, construction laborers, truckdrivers, and farm occupations. Of the 10 occupations with the highest fatality rates in 1995, only 1, construction laborers, showed an increase over

Chart 1. Occupations with large numbers of worker fatalities and the leading event, 1995



NOTE: Leading fatal event for each occupation is shown in parentheses.

Chart 2. The rate of fatal injuries per 100,000 workers in "high-risk" occupations, 1995



NOTE: The employment-based rates shown were calculated as follows:
(N/W) x 100,000, where
N = the number of fatally injured workers in a particular group (for example, roofers) and,
W = the annual average number of workers employed in that group.
Employment data are from the 1995 Current Population Survey.

last year's fatality rate. Although the rate for roofers remained the same as the previous year, their total number of fatal work injuries increased slightly.

Industry highlights

The construction industry accounted for 1 out of every 6 fatal work injuries that occurred during 1995. (See table 3.) This industry, along with government and finance, insurance, and real estate were the only ones that had increases in fatal work injuries over their 1994 levels. Retail trade had the largest decrease in fatal work injuries; fatalities went down 16 percent during 1995, primarily as a result of the drop in workplace homicides.

Industry divisions with large numbers of fatalities relative to their employment include agriculture, forestry, and fishing; construction; transportation and public utilities; and mining.

Worker characteristics

Men accounted for about 91 percent of all fatal work injuries in 1995, but only 54 percent of the employment total. (See table 4.) The self-employed and workers 55 years old and over also had high fatality rates relative to their employment.

The events responsible for fatal injuries varied among worker groups, reflecting their occupations and other characteristics. While highway crashes were cited as the most frequent fatal event for many of the worker groups, homicides accounted for the greatest portion of worker deaths for the self-employed, women, blacks, Asians and Pacific Islanders, and Hispanics.

State highlights

In general, States that have the largest number of persons employed also reported the largest number of work-related fatalities. Three of the largest States accounted for one-fourth of the total fatality count: California (614), Texas (475), and Florida (376). (See table 5.) A State's industry mix also must be considered when evaluating its occupational fatality profile, especially when large numbers of workers are employed in relatively dangerous industries, such as agriculture, mining, and construction.

Eight States reported changes in fatalities of 20 or more that also represented a difference of at least 20 percent compared with 1994's totals. Major disasters, such as the Oklahoma City bombing or an airline crash, can cause substantial year-to-year fluctuations in occupational fatality totals. (See table below.)

State	*1994*	*1995*	*Numeric change*	*Percent change*	*Contributing factor*
Indiana	195	156	-39	-20	Airline crash in 1994
Iowa	74	54	-20	-27	Fewer vehicular incidents
Louisiana	187	139	-48	-26	Fewer transport-related incidents
Nebraska	83	54	-29	-35	Fewer multiple fatality incidents
Oklahoma	97	199	102	105	Federal building bombing in 1995
Pennsylvania	354	233	-121	-34	Airline crash in 1994
South Carolina	83	103	20	24	Increase in transport-related incidents
Virginia	64	132	-32	-20	Fewer highway fatalities

Technical Notes

Definitions

For a fatality to be included in the census, the decedent must have been employed (that is working for pay, compensation, or profit) at the time of the event, engaged in a legal work activity, or present at the site of the incident as a requirement of his or her job. These criteria are generally broader than those used by Federal and State agencies administering specific laws and regulations. (Fatalities that occur during a person's commute to or from work are excluded from the census counts.)

Data presented in this release include deaths occurring in 1995 that resulted from traumatic occupational injuries. An injury is defined as any intentional or unintentional wound or damage to the body resulting from acute exposure to energy, such as heat or electricity, or kinetic energy from a crash; or from the absence of such essentials as heat or oxygen caused by a specific event, incident, or series of events within a single workday or shift. Included are open wounds, intracranial and internal injuries, heatstroke, hypothermia, asphyxiation, acute poisoning resulting from a short-term exposure limited to the worker's shift, suicides and homicides, and work injuries listed as underlying or contributory causes of death.

Information on work-related fatal illnesses are not reported in the BLS census and are excluded from the attached tables because the latency period of many occupational illnesses and the difficulty of linking illnesses to work makes identification of a universe problematic. Partial information on fatal occupational illnesses, compiled separately, is available for 1991-1993 in BLS Report 891.

Measurement techniques and limitations

Data for the Census of Fatal Occupational Injuries are compiled

Table 3. Fatal occupational injuries and employment by industry, 1995

Industry	SIC code[1]	Fatalities			Employment[2] (in thousands)		Rate[3]
		1994 (revised)	1995				
		Number	Number	Percent	Number	Percent	
Total		6,632	6,210	100	126,248	100	5
Private industry		5,959	5,438	88	106,522	84	5
Agriculture, forestry and fishing		852	793	13	3,515	3	22
Agricultural production - crops	01	443	362	6	1,042	1	34
Agricultural production - livestock	02	172	161	3	1,301	1	12
Agricultural services	07	163	155	3	1,082	1	14
Mining		180	156	3	625	1	25
Coal mining	12	41	43	1	114	-	38
Oil and gas extraction	13	99	77	1	336	-	23
Construction		1,028	1,048	17	7,153	6	15
General building contractors	15	190	175	3	-	-	-
Heavy construction, except building	16	246	245	4	-	-	-
Special trades contractors	17	592	613	10	-	-	-
Manufacturing		789	702	11	20,389	16	3
Food and kindred products	20	79	74	1	1,700	1	4
Lumber and wood products	24	199	182	3	815	1	22
Transportation and public utilities		949	880	14	7,138	6	12
Local and interurban passenger transportation	41	114	116	2	523	-	22
Trucking and warehousing	42	505	462	7	2,323	2	20
Transportation by air	45	99	75	1	792	1	9
Electric, gas, and sanitary services	49	89	91	1	1,094	1	8
Wholesale trade		271	254	4	4,973	4	5
Retail trade		808	675	11	20,999	17	3
Food stores	54	237	188	3	3,428	3	5
Automotive dealers and service stations	55	123	122	2	2,087	2	6
Eating and drinking places	58	184	164	3	6,266	5	3
Finance, insurance, and real estate		113	124	2	7,761	6	2
Services		853	737	12	33,970	27	2
Business services	73	255	211	3	5,282	4	4
Automotive repair, services, and parking	75	91	114	2	1,454	1	8
Government[4]		673	772	12	19,726	16	4
Federal (including resident armed forces)		211	299	5	4,790	4	6
State		114	124	2	5,185	4	2
Local		338	338	5	9,751	8	3
Police protection	9221	117	110	2	-	-	-

[1] Standard Industrial Classification Manual, 1987 Edition.

[2] The employment is an annual average of employed civilians 16 years of age and older, plus resident armed forces, from the BLS Current Population Survey, 1995.

[3] The rate represents the number of fatal occupational injuries per 100,000 employed workers and was calculated as follows: (N/W) x 100,000, where N = the number of fatal work injuries, and W = the number of employed workers. The employment is an annual average of employed civilians 16 years of age and older, plus resident armed forces, from the BLS Current Population Survey, 1995. There were 26 fatally injured workers under the age of 16 that were not included in the rate calculations to maintain consistency with the CPS employment.

[4] Includes fatalities to workers employed by governmental organizations regardless of industry.

NOTE: Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding. There were 69 fatalities for which there was insufficient information to determine a specific industry classification, though a distinction between private sector and government was made for each. Dashes indicate less than 0.5 percent or data that are not available or that do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, in cooperation with State and Federal agencies, Census of Fatal Occupational Injuries.

Table 4. Fatal occupational injuries and employment by selected worker characteristics, 1995

Characteristics	Fatalities		Employment (in thousands)[1]		Most frequent event[2] (percent of total)	Rate[3]
	Number	Percent	Number	Percent		
Total	6,210	100	126,248	100	Highway (21 percent)	5
Employee status						
Wage and salary workers	5,024	81	115,610	92	Highway (24)	4
Self-employed[4]	1,186	19	10,638	8	Homicide (17)/Nonhighway(16)	11
Sex						
Men	5,676	91	68,556	54	Highway (19)	8
Women	534	9	57,692	46	Homicide (46)	1
Age[5]						
Under 16 years	26	-	-	-	Highway (19)	-
16 to 17 years	40	1	2,574	2	" (18)	2
18 to 19 years	128	2	3,934	3	" (26)	3
20 to 24 years	484	8	12,868	10	" (25)	4
25 to 34 years	1,395	22	32,880	26	" (21)	4
35 to 44 years	1,555	25	34,474	27	" (20)	5
45 to 54 years	1,242	20	24,213	19	" (22)	5
55 to 64 years	811	13	11,436	9	" (23)	7
65 years and over	514	8	3,666	3	Nonhighway(18)/Highway(17)	14
Race						
White	5,061	82	107,533	85	Highway (22)	5
Black	689	11	13,537	11	Homicide (30)	5
Asian or Pacific Islander	161	3	-	-	Homicide (56)	-
American Indian, Aleut, Eskimo	27	-	-	-	Highway (22)	-
Other or unspecified	272	4	-	-	" (26)	-
Hispanic origin						
Hispanic[6]	610	10	11,208	9	Homicide (21)	5

[1] The employment is an annual average of employed civilians 16 years of age and older, plus resident armed forces, from the BLS Current Population Survey, 1995.

[2] "Highway" includes deaths to vehicle occupants resulting from traffic incidents that occur on the public roadway, shoulder, or surrounding area. It excludes incidents occurring entirely off the roadway, such as in parking lots and on farms. "Nonhighway" includes transport-related deaths of vehicle occupants that occur or originate entirely off the roadway. Incidents involving trains and deaths to pedestrians or other nonpassengers are excluded from both categories.

[3] The rate represents the number of fatal occupational injuries per 100,000 employed workers and was calculated as follows: (N/W) x 100,000, where N = the number of fatal work injuries, and W = the number of employed workers. The employment is an annual average of employed civilians 16 years of age and older, plus resident armed forces, from the BLS Current Population Survey, 1995. There were 26 fatally injured workers under the age of 16 that were not included in the rate calculations to maintain consistency with the CPS employment.

[4] Includes paid and unpaid family workers, and may include owners of incorporated businesses, or members of partnerships.

[5] There were 15 fatalities for which age was not available.

[6] Persons identified as Hispanic may be of any race. Hispanic employment does not include resident armed forces.

NOTE: Totals may include subcategories not shown separately. Percentages may not add to totals because of rounding. Dashes indicate less than 0.5 percent or data that are not available or data that do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, in cooperation with state and federal agencies, Census of Fatal Occupational Injuries.

Table 5. Fatal occupational injuries by State and event or exposure, 1995

State of injury	Total fatalities[1]		Event or exposure[2] (percent of State total for 1995)					
	1994 (revised)	1995	Transportation incidents[3]	Assaults and violent acts[4]	Contact with objects and equipment	Falls	Exposure to harmful substances or environments	Fires and explosions
Total	6,632	6,210	41	20	15	10	10	3
Alabama	153	150	34	21	17	10	15	3
Alaska	60	78	86	-	5	-	-	-
Arizona	79	86	55	22	9	-	6	-
Arkansas	85	91	59	8	16	4	9	-
California	639	614	41	30	10	8	7	3
Colorado	120	112	43	21	14	11	9	-
Connecticut	35	32	41	25	19	-	-	-
Delaware	15	12	33	-	33	-	-	-
District of Columbia	21	16	-	69	-	-	-	-
Florida	358	376	39	21	10	15	12	2
Georgia	249	237	46	20	11	13	8	2
Hawaii	21	24	29	33	-	-	17	-
Idaho	50	53	60	13	8	-	8	-
Illinois	247	249	31	17	15	18	13	5
Indiana	195	156	41	15	15	11	13	5
Iowa	74	54	39	-	31	11	11	-
Kansas	106	95	46	15	15	9	11	4
Kentucky	158	140	59	6	16	4	10	4
Louisiana	187	139	37	17	19	13	10	3
Maine	22	18	56	-	22	-	-	-
Maryland	80	86	29	36	13	9	7	6
Massachusetts	74	65	34	17	17	23	6	-
Michigan	180	149	38	20	20	9	11	-
Minnesota	82	84	39	12	25	11	10	-
Mississippi	126	128	48	21	13	7	7	4
Missouri	155	125	34	13	23	14	11	3
Montana	50	34	44	-	18	12	18	-
Nebraska	83	54	43	11	24	17	-	-
Nevada	41	51	41	24	16	12	-	-
New Hampshire	14	12	33	-	-	-	-	-
New Jersey	114	118	35	23	14	12	10	6
New Mexico	54	58	52	9	16	10	9	-
New York (except N.Y.C.)	180	158	40	16	17	11	11	4
New York City	184	144	11	63	6	12	6	-
North Carolina	226	187	46	17	16	11	9	-
North Dakota	21	28	54	-	21	-	-	-
Ohio	209	186	51	13	10	10	12	4
Oklahoma	97	199	15	65	8	2	7	4
Oregon	80	73	53	7	22	11	5	-
Pennsylvania	354	233	40	16	14	13	9	8
Rhode Island	12	10	-	-	-	-	-	-
South Carolina	83	103	43	14	17	10	13	-
South Dakota	31	26	35	-	27	15	23	-
Tennessee	170	179	41	11	27	8	10	3
Texas	497	475	42	18	14	12	10	4
Utah	66	51	49	14	12	10	14	-
Vermont	8	16	69	-	25	-	-	-
Virginia	164	132	45	15	12	14	10	3
Washington	118	109	42	13	16	12	9	6
West Virginia	61	56	43	7	32	-	11	-
Wisconsin	109	117	43	15	21	5	11	3
Wyoming	35	32	62	-	16	-	12	-

[1] Includes other events and exposures such as bodily reaction, in addition to those shown separately.

[2] Based on the 1992 BLS Occupational Injury and Illness Classification Structures.

[3] Includes highway, nonhighway, air, water, and rail fatalities.

[4] Includes violence by persons, self inflicted injury, and assaults by animals.

NOTE: Percentages may not add to 100 because of rounding and because of dashes which indicate less than 0.5 percent or data that are not available or that do not meet publication criteria.

SOURCE: Bureau of Labor Statistics, U.S. Department of Labor, in cooperation with State and Federal Agencies, Census of Fatal Occupational Injuries.

from various Federal, State, and local administrative sources—including death certificates, workers' compensation reports and claims, reports to various regulatory agencies, medical examiner reports, and police reports—as well as news reports. Multiple sources are used because studies have shown that no single source captures all job-related fatalities. Source documents are matched so that each fatality is counted only once. To ensure that a fatality occurred while the decedent was at work, information is verified from two or more independent source documents, or from a source document and a follow-up questionnaire. Approximately 30 data elements are collected, coded, and tabulated, including information about the worker, the fatal incident, and the machinery or equipment involved.

Identification and verification of work-related fatalities. Because some State laws and regulations prohibit enumerators from contacting the next-of-kin, it was not possible to independently verify work relationship (whether a fatality is job related) for 306 fatal work injuries in 1995; however, the information on the initiating source document for these cases was sufficient to determine that the incident was likely to be job-related. Data for these fatalities, which primarily affected self-employed workers, are included in the Census of Fatal Occupational Injuries counts. An additional 67 fatalities submitted by States were not included because the initiating source document had insufficient information to determine work relationship, which could not be verified by either an independent source document or a follow-up questionnaire.

States may identify additional fatal work injuries after data collection close-out for a reference year. In addition, other fatalities excluded from the published count because of insufficient information to determine work relationship may be subsequently verified as work related. States have up to 1 year to update their initial published counts. This procedure ensures that fatality data are disseminated as quickly as possible and that no legitimate case is excluded from the counts.

Experimental fatality rates. Both absolute numbers (or frequencies) and rates are useful when examining fatal work injuries for research or prevention efforts. Frequency indicates "how many" fatal work injuries occurred; rate indicates the relative danger.

The relative danger of an occupation or industry group can be shown by combining frequency data with either employment or hours data to calculate a rate. An hours-based rate indicates the relative danger using time of exposure. An employment-based rate indicates the relative danger using the number of employed workers.

Employment-based fatality rates measure the incidence of fatal injury for all workers in the group regardless of exposure time. However, it does not take into consideration that part-time workers may have fewer fatal work injuries because they spend less time in the work environment. An hours-based fatality rate accounts for different time of exposure levels among workers. Hours-based measurements are especially useful for industry and occupation comparisons, when the number of workers can vary greatly among industry or occupation groups for a given period.

Work fatality counts from the Bureau's Census of Fatal Occupational Injuries (CFOI) can be combined with employment or hours at work data to produce a fatal work injury rate. Since hours at work and employment data are not collected by CFOI, experimental fatality rates were calculated using estimates of employed civilian workers (aged 16 and older) from the Current Population Survey (CPS). In addition, resident military figures, derived from resident and civilian population data from the Bureau of the Census, were added to the CPS employment figures to maintain consistency with the CFOI fatality data.

The fatality rates in tables 2-4 relate the total number of workplace deaths in 1995 to the annual average number of workers facing that risk. These measurements are developmental and do not reflect the movement of persons into and out of the labor force, the length of their work week or work year, or the effect of multiple jobholders.

The fatality rates presented in the tables were calculated as follows:

$$(N / W) \times 100{,}000,$$

where:

N = the number of fatally injured workers
W = the number of employed workers

The ratio N/W is multiplied by 100,000; the rate is expressed as a whole number and represents the number of fatal work injuries per 100,000 workers.

There were 6,210 total work fatalities in 1995 and there were 126,248,000 employed workers (124,900,000 employed civilian workers age 16 and older, and 1,348,000 resident military personnel).

As "N" must be adjusted to maintain consistency with "W," the 26 fatally injured workers under age 16 are not included in the rate calculation. (Adjustments of "N" are not reflected in the "Number" and "Percent" columns of the tables, which include all fatalities regardless of age.)

$$N = 6{,}210 - 26 = 6{,}184$$

$$W = 126{,}248{,}000$$

Therefore,

$$(6{,}184 / 126{,}248{,}000) \times 100{,}000 = 5,$$

or

5 fatalities per 100,000 workers.

The CPS employment data used to calculate rates are estimates that are based upon a sample of persons employed rather than a complete count. Therefore, the employment estimates and fatality rates have sampling errors; that is, they may differ from figures that would have been obtained if it had been possible to take a complete census of employed persons. See "Explanatory Notes and Estimates of Error" in the January 1996 Employment and Earnings for an explanation of CPS sampling and estimation methodology, and standard error computations. The relative standard errors of the CPS employment estimates can be used to approximate confidence ranges for the fatality rates.

Federal/State agency coverage. The Census of Fatal Occupational Injuries includes data for all fatal work injuries, whether they are covered by the Occupational Safety and Health Administration (OSHA) or other Federal or State agencies or are outside the scope of regulatory coverage. Thus, any comparison between the BLS census counts and those released by other agencies should take into account the different coverage requirements and definitions being used.

Several Federal and State agencies have jurisdiction over workplace safety and health. OSHA and affiliated agencies in States with approved safety programs cover the largest portion of America's workers. However, injuries and illnesses occurring in several other industries, such as coal, metal, and nonmetal mining, and water, rail, and air transportation, are excluded from OSHA coverage because they are covered by other Federal Agencies, such as the Mine Safety and Health Administration, the U.S. Coast Guard, the Federal Railroad Administration, and the Federal Aviation Administration. Fatalities occurring in activities regulated by Federal Agencies other than OSHA accounted for about 20 percent of the fatal work injuries for 1995.

Fatalities occurring among several other groups of workers are generally not covered by any Federal or State agencies. These groups include self-employed and unpaid family workers, which accounted for about 19 percent of the fatalities; laborers on small farms, accounting for about 2 percent of the fatalities; and State and local government employees in States without OSHA-approved safety programs, which account for about 4 percent. (Approximately one-half of the States have approved OSHA safety programs, which cover State and local government employees.)

The Census of Fatal Occupational Injuries, part of the BLS safety and health statistics program, provides the most complete count of fatal work injuries available because its use of diverse State and Federal data sources. This is the fourth year that the fatality census has been conducted in all 50 states and the District of Columbia. The BLS fatality census is a Federal/State cooperative venture in which costs are shared equally. Additional State-specific data are available from the State agencies participating with BLS in the census program. For a list of participating agencies and their telephone numbers, contact the Office of Safety, Health and Working Conditions at (202) 606-6175.

Since 1972, this office also has collected data on nonfatal injuries and illnesses through its Survey of Occupational Injuries and Illnesses. This survey profiles worker and case characteristics of nonfatal workplace injuries and illnesses resulting in lost worktime in addition to presenting frequency counts and incidence rates by industry. Copies of the 1994 news release are available from BLS by calling 202-606-6304. Incidence rates for 1995 by industry will be published in December 1996. Information on 1995 worker and case characteristics will be published in April 1997. For additional occupational safety and health data, access the BLS World Wide Web Internet site: **http://www.bls.gov/oshhome.htm**

—Endnotes—

ACKNOWLEDGMENTS: BLS would like to thank the participating States for their efforts in collecting accurate, comprehensive, and useful data on fatal work injuries. BLS also appreciates the efforts of all Federal, State, local, and private sector agencies that submitted source documents used to identify fatal work injuries. Among these agencies are the Occupational Safety and Health Administration; the National Transportation Safety Board; the U.S. Coast Guard; the Mine Safety and Health Administration; the Department of Defense; the Employment Standards Administration, Federal Employees' Compensation and Longshore and Harbor Workers' divisions; the Department of Energy; the National Association of Chiefs of Police; State vital statistics registrars, coroners, and medical examiners; State departments of health, labor, and industries, and workers' compensation agencies; State and local police departments; and State farm bureaus.

[1] A full summary of job-related highway fatalities is presented on pp. 57-61 of this issue.

[2] For more information on how falls are classified, see *Occupational Injury and Illness Classification Manual*, 1992.