

TABLE A-9. Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Total	6,026	13.8	2.4	19.4	11.5	15.0	3.8	9.4	1.5	12.6
Primary source ²										
Vehicles	2,695	16.8	1.3	10.5	7.8	24.9	5.0	6.5	1.4	12.7
Air vehicle	229	5.7	-	-	5.7	25.3	1.3	4.4	-	22.7
Aircraft--powered fixed wing	121	9.1	-	-	9.9	24.8	-	5.8	-	27.3
Jet	16	-	-	-	-	-	-	-	-	25.0
Propeller-driven aircraft	71	9.9	-	-	11.3	28.2	-	5.6	-	29.6
Aircraft--powered rotary wing	74	-	-	-	-	25.7	-	-	-	10.8
Aircraft--nonpowered	7	-	-	-	-	-	-	-	-	71.4
Highway vehicle, motorized	1,915	6.0	1.1	13.0	7.9	29.3	6.4	8.1	1.7	13.0
Automobile	436	3.4	-	6.2	6.4	10.6	4.4	13.1	5.5	24.3
Bus	13	-	-	-	-	38.5	-	-	-	-
Truck	1,234	7.1	1.7	15.7	8.1	39.1	6.6	5.3	.4	7.6
Delivery truck	48	-	-	-	14.6	27.1	10.4	29.2	-	10.4
Dump truck	110	7.3	3.6	43.6	5.5	21.8	-	-	-	3.6
Pickup truck	251	13.9	2.8	26.7	9.2	8.4	6.8	7.6	2.0	9.6
Semitrailer, tractor trailer, trailer truck	530	2.6	1.3	6.2	7.9	66.6	7.4	2.6	-	3.6
Van--passenger or light delivery	127	2.4	-	11.8	13.4	12.6	10.2	13.4	2.4	19.7
Highway vehicle, nonmotorized	3	100.0	-	-	-	-	-	-	-	-
Animal or human powered vehicle	3	100.0	-	-	-	-	-	-	-	-
Offroad vehicle, nonindustrial	18	38.9	-	-	-	-	-	-	-	50.0
All terrain vehicle (ATV)	8	62.5	-	-	-	-	-	-	-	-
Golf cart, powered	6	-	-	-	-	-	-	-	-	66.7
Plant and industrial powered vehicles, tractors	369	66.1	.8	7.6	8.7	4.9	2.4	1.9	-	4.9
Forklift	90	4.4	-	17.8	28.9	16.7	7.8	7.8	-	11.1
Pallet lift truck--motorized	5	-	-	-	-	-	-	-	-	-
Platform lift truck--high or low lift	8	-	-	37.5	37.5	-	-	-	-	-
Powered industrial carrier, except forklift	3	-	-	-	-	-	-	-	-	-
Tractor	272	87.5	-	4.4	1.8	-	-	-	-	2.6
Rail vehicle	35	-	-	14.3	22.9	28.6	-	-	-	17.1
Water vehicle	117	59.0	5.1	-	4.3	20.5	-	-	-	5.1
Barge	17	-	17.6	-	-	47.1	-	-	-	-
Canoe, kayak, rowboat, raft	4	-	-	-	-	-	-	-	-	-
Motorboat	4	75.0	-	-	-	-	-	-	-	-
Ships--other than sail powered	14	-	-	-	-	64.3	-	-	-	-
Tugboat, commercial fishing boat	60	96.7	-	-	-	-	-	-	-	-
Structures and surfaces	791	7.0	4.3	54.5	7.6	4.3	2.1	3.9	1.8	9.9
Floors, walkways, ground surfaces	679	7.7	2.1	56.7	7.2	3.7	2.2	4.1	1.9	9.9
Floors	228	2.6	1.8	52.6	13.2	2.6	3.5	8.3	1.3	9.6
Ground	302	14.2	2.6	57.0	4.3	5.0	1.3	1.0	1.7	8.9
Sidewalks, paths, outdoor walkways ..	34	-	-	64.7	-	-	-	-	8.8	11.8
Street, road	14	-	-	71.4	-	-	-	-	-	-
Surfaces below ground level, n.e.c.	32	-	-	75.0	-	-	-	-	-	-
Ditches, channels, trenches, excavations	27	-	-	74.1	-	-	-	-	-	-
Parking lots	16	-	-	56.2	-	-	-	-	-	18.8
Other structural elements	49	-	-	55.1	14.3	8.2	-	-	-	8.2
Doors	6	-	-	-	50.0	-	-	-	-	-
Gates	5	-	-	-	-	-	-	-	-	-
Roof	9	-	-	33.3	-	-	-	-	-	-
Walls	21	-	-	81.0	-	-	-	-	-	-
Structures	55	-	32.7	34.5	-	5.5	-	-	-	10.9
Buildings--office, plant, residential	19	-	21.1	42.1	-	-	-	-	-	-
Mines, caves, tunnels	10	-	90.0	-	-	-	-	-	-	-
Scaffolds, staging	4	-	-	75.0	-	-	-	-	-	-
Towers, poles	15	-	26.7	46.7	-	-	-	-	-	-
Other structures	5	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Primary source ²										
Machinery	480	25.2	4.2	27.9	22.5	4.2	3.1	1.5	—	7.3
Agricultural and garden machinery	101	83.2	—	—	3.0	—	3.0	—	—	5.0
Harvesting and threshing machinery ..	29	93.1	—	—	—	—	—	—	—	—
Balers	10	80.0	—	—	—	—	—	—	—	—
Combines	5	100.0	—	—	—	—	—	—	—	—
Harvesters, reapers	7	100.0	—	—	—	—	—	—	—	—
Mowing machinery	36	75.0	—	—	—	—	—	—	—	13.9
Lawn mowers--riding	8	—	—	—	—	—	—	—	—	50.0
Mowers, tractor	28	92.9	—	—	—	—	—	—	—	—
Plowing, planting, and fertilizing machinery	9	100.0	—	—	—	—	—	—	—	—
Plowing and cultivating machinery	5	100.0	—	—	—	—	—	—	—	—
Construction, logging, and mining machinery	175	14.9	8.0	44.0	16.0	2.9	2.9	—	—	5.7
Excavating machinery	64	9.4	6.2	64.1	6.2	—	—	—	—	6.2
Backhoes	28	—	—	75.0	—	—	—	—	—	10.7
Bulldozers	25	12.0	12.0	52.0	12.0	—	—	—	—	—
Trenchers	3	—	—	—	—	—	—	—	—	—
Loaders	49	28.6	8.2	24.5	14.3	—	6.1	—	—	8.2
Bucket loaders	3	—	—	—	—	—	—	—	—	—
Front end loaders	31	22.6	9.7	22.6	12.9	—	—	—	—	12.9
Logging and wood processing machinery--specialized	20	20.0	—	—	80.0	—	—	—	—	—
Forwarder/yarder, skidder	7	—	—	—	71.4	—	—	—	—	—
Skidder--cable and grapple	7	—	—	—	85.7	—	—	—	—	—
Mining and drilling machinery	13	—	23.1	53.8	—	—	—	—	—	—
Drilling machines, drilling augers	9	—	—	66.7	—	—	—	—	—	—
Road grading and surfacing machinery	18	—	—	61.1	—	—	—	—	—	—
Graders, levellers, planers, scrapers	12	—	—	58.3	—	—	—	—	—	—
Steam rollers, road pavers	3	—	—	100.0	—	—	—	—	—	—
Heating, cooling, and cleaning machinery and appliances	19	—	—	15.8	31.6	—	—	—	—	26.3
Cooling and humidifying machinery and appliances	11	—	—	—	—	—	—	—	—	36.4
Heating and cooking machinery and appliances	3	—	—	—	—	—	—	—	—	—
Washers, dryers, and cleaning machinery and appliances	4	—	—	—	—	—	—	—	—	—
Material handling (cranes, conveyers, jacks)	108	9.3	3.7	41.7	20.4	6.5	3.7	—	—	10.2
Conveyors--powered	24	12.5	12.5	—	41.7	20.8	—	—	—	—
Cranes	53	7.5	—	54.7	13.2	—	—	—	—	13.2
Cranes--mobile, truck, rail mounted	18	—	—	61.1	—	—	—	—	—	16.7
Cranes--overhead	9	—	—	44.4	44.4	—	—	—	—	—
Elevators	22	—	—	63.6	—	—	—	—	—	—
Bucket or basket hoist--truck mounted	5	—	—	100.0	—	—	—	—	—	—
Elevators--electric	3	—	—	—	—	—	—	—	—	—
Elevators--hydraulic	3	—	—	—	—	—	—	—	—	—
Manlifts	6	—	—	83.3	—	—	—	—	—	—
Metal, woodworking, and special material machinery	34	—	—	8.8	79.4	—	—	—	—	—
Bending, rolling, shaping machinery ...	3	—	—	—	100.0	—	—	—	—	—
Extruding, injecting, forming, molding machinery	11	—	—	—	100.0	—	—	—	—	—
Casting machinery	3	—	—	—	100.0	—	—	—	—	—
Plastic injection molding machinery	5	—	—	—	100.0	—	—	—	—	—
Lathes	3	—	—	—	—	—	—	—	—	—
Presses, except printing	5	—	—	—	100.0	—	—	—	—	—

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Primary source²										
Other metal, woodworking, and special material machinery	7	-	-	-	42.9	-	-	-	-	-
Spot welding machinery	7	-	-	-	42.9	-	-	-	-	-
Special process machinery	20	-	-	-	75.0	-	-	-	-	-
Food and beverage processing machinery--specialized	6	-	-	-	66.7	-	-	-	-	-
Packaging, bottling, wrapping machinery	3	-	-	-	100.0	-	-	-	-	-
Paper production machinery	3	-	-	-	100.0	-	-	-	-	-
Miscellaneous machinery	20	-	-	15.0	20.0	25.0	-	-	-	-
Street sweeping and cleaning machinery	5	-	-	-	-	-	-	-	-	-
Parts and materials	404	6.4	3.5	37.1	23.3	11.1	2.7	4.7	-	6.7
Building materials--solid elements	112	4.5	6.2	37.5	30.4	10.7	2.7	3.6	-	-
Bricks, blocks, structural stone	17	-	-	58.8	-	-	-	-	-	-
Pipes, ducts, tubing	27	-	14.8	25.9	18.5	22.2	-	-	-	-
Structural metal materials	43	-	7.0	39.5	39.5	-	-	-	-	-
Bars, rods, reinforcing bar (rebar) ..	6	-	-	66.7	-	-	-	-	-	-
Plates, metal panels	3	-	-	-	-	-	-	-	-	-
Wood, lumber	17	-	-	17.6	64.7	-	-	-	-	-
Other building materials--solid elements	7	-	-	57.1	-	-	-	-	-	-
Fasteners, connectors, ropes, ties	41	9.8	-	12.2	22.0	17.1	-	12.2	-	14.6
Fasteners	3	-	-	-	-	-	-	-	-	-
Ropes, ties	34	11.8	-	-	26.5	17.6	-	11.8	-	14.7
Rope, twine, string	13	-	-	-	-	-	-	23.1	-	-
Valves, nozzles	3	-	-	-	-	-	-	-	-	-
Machine, tool, and electrical parts	188	6.9	3.2	48.9	17.6	10.1	-	3.2	-	5.3
Electric parts	159	6.9	3.1	52.8	11.3	11.9	-	3.8	-	4.4
Electrical wiring	56	-	-	58.9	16.1	-	-	-	-	8.9
Power lines, transformers, convertors	70	11.4	-	48.6	5.7	20.0	-	4.3	-	-
Relays, rheostats, starters, controls	3	-	-	-	-	-	-	-	-	-
Switchboards, switches, fuses	9	-	-	66.7	-	-	-	-	-	-
Metal materials--nonstructural	7	-	-	-	71.4	-	-	-	-	-
Metal sheets, ingots, bars--nonstructural	3	-	-	-	-	-	-	-	-	-
Tars, sealants, caulking, insulating material	5	-	-	80.0	-	-	-	-	-	-
Vehicle and mobile equipment parts	43	7.0	-	14.0	20.9	14.0	-	9.3	-	20.9
Tires, inner tubes, wheels	24	-	-	16.7	-	12.5	-	16.7	-	20.8
Wheels, tire rims	10	-	-	-	-	-	-	-	-	-
Engine parts and accessories	3	-	-	-	-	-	-	-	-	-
Trailers	8	-	-	-	-	-	-	-	-	-
Persons, plants, animals, and minerals	262	26.0	3.8	11.5	30.9	4.2	1.5	4.2	1.5	11.1
Animals and animal products	40	62.5	-	-	-	-	-	-	-	20.0
Insects, arachnids	9	-	-	-	-	-	-	-	-	44.4
Mammals, except humans	27	77.8	-	-	-	-	-	-	-	14.8
Cattle	14	92.9	-	-	-	-	-	-	-	-
Horses	8	87.5	-	-	-	-	-	-	-	-
Food products--fresh or processed	15	53.3	-	-	20.0	-	-	-	-	-
Nonmetallic minerals, except fuel	39	12.8	23.1	43.6	15.4	-	-	-	-	-
Dirt, earth	18	16.7	-	83.3	-	-	-	-	-	-
Rocks, crushed stone	13	-	61.5	-	-	-	-	-	-	-
Sand, gravel	5	-	-	-	80.0	-	-	-	-	-
Person--other than injured or ill worker ..	34	-	-	-	-	-	-	26.5	8.8	32.4
Co-worker, former co-worker or injured worker	3	-	-	-	-	-	-	-	-	-
Plants, trees, vegetation--not processed ..	125	22.4	-	8.0	55.2	4.0	-	-	-	4.0
Cash grain crops	8	-	-	-	-	37.5	-	-	-	-

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Primary source²										
Trees, logs	114	21.9	—	7.9	58.8	—	—	—	—	4.4
Chemicals and chemical products	133	9.0	6.8	14.3	19.5	9.8	2.3	6.0	3.0	21.8
Acids	3	—	—	—	—	—	—	—	—	—
Alkalies	3	—	—	—	—	—	—	—	—	—
Halogens and halogen compounds	3	—	—	—	—	—	—	—	—	—
Chemical products--general	61	6.6	—	13.1	14.8	16.4	—	6.6	—	29.5
Drugs, alcohol, medicines	50	8.0	—	10.0	10.0	18.0	—	6.0	—	34.0
Explosives, blasting agents, n.e.c.	9	—	—	33.3	44.4	—	—	—	—	—
Other chemicals	54	14.8	7.4	18.5	20.4	—	—	5.6	—	14.8
Cyanide and cyanide compounds, n.e.c.	3	—	—	—	—	—	—	—	—	—
Oxygen and oxygen compounds, n.e.c.	31	22.6	—	19.4	9.7	—	—	9.7	—	19.4
Carbon monoxide	21	14.3	—	23.8	—	—	—	14.3	—	28.6
Sulfur and sulfur compounds	12	—	—	—	41.7	—	—	—	—	—
Tools, instruments, and equipment	127	9.4	—	20.5	7.1	7.9	—	26.0	3.1	15.7
Handtools--nonpowered	77	7.8	—	5.2	6.5	9.1	—	37.7	5.2	19.5
Cutting handtools	55	5.5	—	—	5.5	10.9	—	43.6	—	23.6
Knives	50	—	—	—	6.0	12.0	—	48.0	—	24.0
Striking and nailing handtools	5	—	—	—	—	—	—	—	—	—
Turning handtools, screwdrivers, wrenches	7	—	—	—	—	—	—	—	—	—
Handtools--powered	18	22.2	—	27.8	16.7	—	—	—	—	—
Boring handtools	6	—	—	50.0	—	—	—	—	—	—
Cutting handtools	8	50.0	—	—	37.5	—	—	—	—	—
Welding and heating handtools	4	—	—	—	—	—	—	—	—	—
Handtools--power not determined	3	—	—	—	—	—	—	—	—	—
Ladders	18	—	—	77.8	—	—	—	—	—	—
Ladders--movable	16	—	—	81.2	—	—	—	—	—	—
Extension ladders	11	—	—	81.8	—	—	—	—	—	—
Containers	82	18.3	—	25.6	20.7	11.0	6.1	3.7	—	6.1
Containers-nonpressurized	35	14.3	—	37.1	14.3	—	—	—	—	11.4
Barrels, kegs, drums	5	—	—	—	—	—	—	—	—	—
Boxes, crates, cartons	3	—	—	—	—	—	—	—	—	—
Tanks, bins, vats	22	22.7	—	36.4	18.2	—	—	—	—	—
Containers-pressurized	22	—	—	27.3	31.8	—	—	—	—	—
Hoses	5	—	—	—	—	—	—	—	—	—
Pressure lines, except hoses	4	—	—	—	—	—	—	—	—	—
Propane tanks	3	—	—	—	—	—	—	—	—	—
Containers-variable restraint	19	47.4	—	—	15.8	15.8	—	—	—	—
Bundles, bales	14	64.3	—	—	—	—	—	—	—	—
Reels, rolls	5	—	—	—	—	—	—	—	—	—
Skids, pallets	6	—	—	—	—	—	—	—	—	—
Other	1,052	6.6	2.1	7.3	8.4	8.7	3.3	26.9	2.5	18.3
Furniture and fixtures	19	—	—	36.8	—	—	—	21.1	—	21.1
Cases, cabinets, racks, and shelves ..	5	—	—	—	—	—	—	—	—	—
Other fixtures	9	—	—	55.6	—	—	—	—	—	—
Ammunition	720	3.5	.4	3.8	6.4	9.2	3.1	35.8	3.2	18.6
Bullets	697	2.7	.4	3.7	6.3	9.5	3.2	36.3	3.3	18.4
Atmospheric and environmental conditions	181	13.3	7.7	14.4	17.1	6.1	5.0	6.1	—	14.9
Fire, flame, smoke	114	4.4	10.5	7.0	22.8	4.4	7.0	8.8	—	17.5
Fire, flame	84	6.0	14.3	9.5	22.6	3.6	7.1	8.3	—	17.9
Smoke, fire gases	14	—	—	—	—	—	—	—	—	—
Temperature extreme	36	33.3	—	27.8	—	11.1	—	—	—	—
Steam, vapors, liquids	85	21.2	4.7	12.9	7.1	10.6	—	—	—	21.2
Scrap, waste, debris	4	—	—	—	—	—	—	—	—	—
Chips, particles, splinters	3	—	—	—	—	—	—	—	—	—

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Secondary source ³										
Vehicles	1,023	8.5	1.3	11.2	10.9	22.0	7.0	8.3	2.2	13.6
Air vehicle	34	—	—	—	—	8.8	—	—	—	23.5
Aircraft--powered fixed wing	18	—	—	—	—	—	—	—	—	33.3
Jet	5	—	—	—	—	—	—	—	—	—
Propeller-driven aircraft	5	—	—	—	—	—	—	—	—	80.0
Aircraft--powered rotary wing	15	—	—	—	—	—	—	—	—	—
Highway vehicle, motorized	838	6.8	1.1	11.1	9.9	22.9	7.6	8.8	2.7	14.0
Automobile	192	3.1	—	13.0	10.4	17.2	7.3	13.0	4.7	16.7
Bus	13	—	—	—	—	—	—	—	—	—
Truck	527	8.2	1.7	9.5	9.5	26.4	8.0	6.5	2.1	13.3
Delivery truck	13	23.1	—	—	—	—	—	30.8	—	—
Dump truck	44	15.9	—	13.6	11.4	13.6	9.1	—	—	18.2
Pickup truck	83	13.3	—	12.0	9.6	7.2	7.2	8.4	7.2	9.6
Semitrailer, tractor trailer, trailer truck	268	4.9	1.9	6.7	6.7	35.8	7.8	6.0	—	14.6
Van--passenger or light delivery	32	—	—	25.0	9.4	18.8	9.4	9.4	—	—
Plant and industrial powered vehicles, tractors	64	34.4	—	21.9	17.2	6.2	7.8	7.8	—	4.7
Forklift	39	—	—	33.3	28.2	7.7	10.3	12.8	—	—
Platform lift truck--high or low lift	5	—	—	—	—	—	—	—	—	—
Tractor	25	84.0	—	—	—	—	—	—	—	—
Rail vehicle	61	—	4.9	11.5	18.0	27.9	4.9	6.6	—	13.1
Water vehicle	20	25.0	—	—	20.0	35.0	—	—	—	—
Barge	6	—	—	—	—	—	—	—	—	—
Motorboat	3	100.0	—	—	—	—	—	—	—	—
Ships--other than sail powered	6	—	—	—	—	—	—	—	—	—
Structures and surfaces	813	6.6	2.1	40.1	6.8	18.2	2.6	3.0	1.1	10.9
Floors, walkways, ground surfaces	224	12.1	—	17.0	10.3	17.0	4.5	2.2	1.8	17.4
Floors	25	—	—	48.0	16.0	—	—	—	—	20.0
Ground	119	14.3	—	2.5	9.2	22.7	4.2	—	—	18.5
Street, road	10	—	—	40.0	—	—	—	—	—	—
Surfaces below ground level, n.e.c.	33	15.2	—	27.3	12.1	15.2	9.1	—	—	—
Ditches, channels, trenches, excavations	27	14.8	—	29.6	—	18.5	11.1	—	—	—
Parking lots	3	—	—	—	—	—	—	—	—	—
Other structural elements	225	4.9	1.8	65.8	6.7	4.0	1.8	3.1	1.8	7.6
Doors	3	—	—	—	—	—	—	—	—	—
Fences, fence panels	15	20.0	—	20.0	—	20.0	—	—	—	—
Gates	3	—	—	—	—	—	—	—	—	—
Roof	122	—	—	80.3	6.6	—	—	—	—	6.6
Walls	22	—	—	18.2	13.6	18.2	—	22.7	—	—
Windows	4	—	—	—	—	—	—	—	—	—
Structures	359	4.2	2.8	38.4	4.7	28.1	1.7	3.3	—	9.2
Bridges, dams, locks	35	—	—	20.0	—	57.1	—	—	—	8.6
Buildings--office, plant, residential	22	13.6	—	—	—	18.2	—	—	—	31.8
Mines, caves, tunnels	15	—	—	60.0	—	—	—	—	—	—
Scaffolds, staging	94	—	—	89.4	3.2	—	—	—	—	3.2
Towers, poles	69	4.3	7.2	31.9	4.3	15.9	—	8.7	—	11.6
Other structures	112	4.5	2.7	8.0	8.0	57.1	2.7	2.7	—	6.2
Guardrails, road dividers	79	—	—	6.3	8.9	64.6	3.8	—	—	6.3
Machinery	232	13.4	5.2	25.0	25.9	6.0	5.6	3.0	—	12.9
Agricultural and garden machinery	17	76.5	—	—	—	—	—	—	—	17.6
Harvesting and threshing machinery ..	5	100.0	—	—	—	—	—	—	—	—
Mowing machinery	5	—	—	—	—	—	—	—	—	60.0
Construction, logging, and mining machinery	50	14.0	—	36.0	28.0	6.0	8.0	—	—	—
Excavating machinery	13	—	—	76.9	—	—	—	—	—	—
Backhoes	7	—	—	85.7	—	—	—	—	—	—
Bulldozers	4	—	—	75.0	—	—	—	—	—	—

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Secondary source³										
Loaders	9	33.3	—	—	—	—	33.3	—	—	—
Front end loaders	3	—	—	—	—	—	—	—	—	—
Logging and wood processing machinery--specialized	13	23.1	—	—	76.9	—	—	—	—	—
Chippers	4	—	—	—	75.0	—	—	—	—	—
Log loaders, including heel boom ...	3	—	—	—	100.0	—	—	—	—	—
Forwarder/yarder, skidder	4	—	—	—	75.0	—	—	—	—	—
Mining and drilling machinery	5	—	—	—	—	—	—	—	—	—
Drilling machines, drilling augers	3	—	—	—	—	—	—	—	—	—
Road grading and surfacing machinery	5	—	—	80.0	—	—	—	—	—	—
Heating, cooling, and cleaning machinery and appliances	11	—	—	36.4	36.4	—	—	—	—	—
Cooling and humidifying machinery and appliances	4	—	—	—	—	—	—	—	—	—
Heating and cooking machinery and appliances	5	—	—	—	60.0	—	—	—	—	—
Material handling (cranes, conveyers, jacks)	118	8.5	7.6	26.3	17.8	8.5	5.9	4.2	—	17.8
Conveyors--gravity	4	—	—	—	—	—	—	—	—	—
Conveyors--powered	8	—	—	—	—	—	—	—	—	—
Cranes	37	—	10.8	32.4	29.7	10.8	—	—	—	8.1
Cranes--mobile, truck, rail mounted	3	—	—	—	—	—	—	—	—	—
Cranes--overhead	6	—	—	—	66.7	—	—	—	—	—
Cranes--portal, tower, pillar	3	—	—	—	—	—	—	—	—	—
Overhead hoists	7	—	—	42.9	—	—	—	—	—	—
Elevators	26	11.5	—	42.3	—	19.2	—	—	—	—
Bucket or basket hoist--truck mounted	13	—	—	30.8	—	30.8	—	—	—	—
Manlifts	4	—	—	—	—	—	—	—	—	—
Jacks	31	16.1	—	—	9.7	—	—	12.9	—	45.2
Metal, woodworking, and special material machinery	23	—	—	13.0	56.5	—	—	—	—	—
Extruding, injecting, forming, molding machinery	6	—	—	—	83.3	—	—	—	—	—
Forging machinery	4	—	—	—	75.0	—	—	—	—	—
Lathes	3	—	—	—	100.0	—	—	—	—	—
Presses, except printing	4	—	—	—	—	—	—	—	—	—
Sawing machinery, stationary	3	—	—	—	100.0	—	—	—	—	—
Other metal, woodworking, and special material machinery	4	—	—	—	—	—	—	—	—	—
Spot welding machinery	4	—	—	—	—	—	—	—	—	—
Special process machinery	7	—	—	—	57.1	—	—	—	—	—
Miscellaneous machinery	6	—	—	—	50.0	—	—	—	—	—
Parts and materials	252	11.1	2.4	46.8	13.5	9.5	1.6	—	2.0	7.1
Building materials--solid elements	48	6.2	6.2	43.8	22.9	—	—	—	—	6.2
Bricks, blocks, structural stone	6	—	—	83.3	—	—	—	—	—	—
Pipes, ducts, tubing	11	—	—	27.3	—	—	—	—	—	—
Structural metal materials	21	—	—	42.9	33.3	—	—	—	—	—
Plates, metal panels	3	—	—	—	100.0	—	—	—	—	—
Wood, lumber	7	—	—	42.9	—	—	—	—	—	—
Fasteners, connectors, ropes, ties	11	—	—	—	—	27.3	—	—	—	—
Ropes, ties	8	—	—	—	—	—	—	—	—	—
Hoisting accessories	3	—	—	—	100.0	—	—	—	—	—
Machine, tool, and electrical parts	154	13.6	—	59.1	9.1	6.5	—	—	1.9	5.8
Electric parts	147	13.6	—	59.2	9.5	5.4	—	—	2.0	6.1
Electrical wiring	22	—	—	54.5	13.6	—	—	—	—	13.6
Power lines, transformers, convertors	115	17.4	—	60.0	7.0	5.2	—	—	—	5.2
Vehicle and mobile equipment parts	35	—	—	14.3	8.6	25.7	—	—	—	11.4
Tires, inner tubes, wheels	13	—	—	—	—	30.8	—	—	—	—

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Secondary source³										
Trailers	19	—	—	21.1	15.8	26.3	—	—	—	—
Persons, plants, animals, and minerals	955	8.3	0.7	4.3	7.5	12.7	3.0	31.2	2.5	17.3
Animals and animal products	28	39.3	—	—	—	14.3	—	—	—	21.4
Mammals, except humans	23	39.1	—	—	—	13.0	—	—	—	26.1
Cattle	4	—	—	—	—	—	—	—	—	—
Horses	14	64.3	—	—	—	—	—	—	—	35.7
Food products--fresh or processed	9	—	—	—	—	—	33.3	—	—	44.4
Nonmetallic minerals, except fuel	17	17.6	29.4	17.6	—	17.6	—	—	—	—
Dirt, earth	7	—	—	42.9	—	—	—	—	—	—
Rocks, crushed stone	8	—	—	—	—	37.5	—	—	—	—
Person--other than injured or ill worker ..	683	2.6	—	2.9	5.1	10.1	2.5	40.3	2.9	18.6
Co-worker, former co-worker or injured worker	66	7.6	—	9.1	21.2	4.5	—	12.1	—	16.7
Health care patient or resident of health care facility	8	—	—	—	—	—	—	—	—	62.5
Relative of injured worker	19	—	—	—	15.8	—	—	31.6	—	21.1
Plants, trees, vegetation--not processed ..	175	24.0	—	8.0	17.7	24.0	4.0	5.7	—	10.3
Trees, logs	167	22.2	—	8.4	18.6	24.6	4.2	4.8	—	10.8
Chemicals and chemical products	87	4.6	13.8	17.2	27.6	9.2	4.6	6.9	—	12.6
Chemical products--general	22	—	—	—	59.1	—	—	—	—	—
Drugs, alcohol, medicines	3	—	—	—	—	—	—	—	—	—
Explosives, blasting agents, n.e.c.	12	—	—	—	91.7	—	—	—	—	—
Coal, natural gas, petroleum fuels and products	54	—	22.2	20.4	13.0	11.1	—	7.4	—	14.8
Natural gas	17	—	47.1	17.6	—	23.5	—	—	—	—
Petroleum fuels, distillates, products, unspecified	31	—	—	22.6	9.7	—	—	12.9	—	22.6
Gasoline, diesel fuel, jet fuel	19	—	—	26.3	—	—	—	—	—	31.6
Propane	6	—	—	—	—	—	—	—	—	—
Other chemicals	3	—	—	—	—	—	—	—	—	—
Tools, instruments, and equipment	238	8.4	2.5	30.7	10.9	4.2	3.8	10.9	3.8	13.0
Handtools--nonpowered	5	—	—	—	—	—	—	—	—	—
Handtools--powered	26	11.5	—	23.1	26.9	—	—	—	—	15.4
Cutting handtools	10	—	—	30.0	40.0	—	—	—	—	—
Welding and heating handtools	16	—	—	18.8	18.8	—	—	—	—	18.8
Ladders	111	9.9	—	50.5	4.5	2.7	3.6	10.8	5.4	4.5
Ladders--fixed	5	—	—	—	—	—	—	—	—	—
Ladders--movable	52	—	—	63.5	5.8	—	—	9.6	7.7	—
Extension ladders	20	—	—	70.0	—	—	—	—	—	—
Step ladders	9	—	—	55.6	—	—	—	—	—	—
Containers	67	26.9	6.0	14.9	19.4	10.4	6.0	—	—	9.0
Containers-nonpressurized	49	28.6	8.2	14.3	16.3	12.2	8.2	—	—	8.2
Boxes, crates, cartons	6	—	—	—	—	—	—	—	—	—
Buckets, baskets, pails	3	—	—	—	—	—	—	—	—	—
Tanks, bins, vats	38	31.6	7.9	10.5	21.1	13.2	7.9	—	—	—
Containers-pressurized	7	—	—	—	42.9	—	—	—	—	—
Hoses	3	—	—	—	—	—	—	—	—	—
Containers-variable restraint	8	50.0	—	—	—	—	—	—	—	—
Bundles, bales	5	80.0	—	—	—	—	—	—	—	—
Other	274	31.4	4.0	11.3	4.7	17.9	4.7	4.4	1.1	7.7
Furniture and fixtures	12	—	—	—	—	—	—	25.0	—	—
Cases, cabinets, racks, and shelves ..	5	—	—	—	—	—	—	60.0	—	—
Furniture	6	—	—	—	—	—	—	—	—	—
Chairs	3	—	—	—	—	—	—	—	—	—
Atmospheric and environmental conditions	99	9.1	—	19.2	3.0	26.3	5.1	5.1	—	8.1
Fire, flame, smoke	24	—	—	—	—	41.7	12.5	—	—	—

See footnotes at end of table.

TABLE A-9. **Fatal occupational injuries by primary and secondary source of injury by major private industry division, 1998** —
Continued

Primary source and secondary source	Total	Private industry ¹ (percent)								
		Agriculture, forestry, and fishing	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services
Secondary source ³										
Fire, flame	13	—	—	—	—	46.2	23.1	—	—	—
Smoke, fire gases	8	—	—	—	—	37.5	—	—	—	—
Flood	3	—	—	—	—	—	—	—	—	—
Steam, vapors, liquids	126	50.8	5.6	4.0	4.0	15.1	4.0	—	—	7.1
Not reported	2,085	20.3	2.8	18.4	13.7	14.4	2.8	5.1	0.9	11.8

¹ Classified according to the *Standard Industrial Classification Manual, 1987*.

² The primary source of injury identifies the object, substance, or exposure that directly produced or inflicted the injury. For transportation incidents, the source identifies the vehicle in which the deceased was an occupant.

³ The secondary source of injury, if any, identifies the object, substance, or person that generated the source of injury or that contributed to the event or exposure. For vehicle collisions, the deceased's vehicle is the primary source and the other object (truck, road, divider, etc.) is the secondary source. For most homicides, the "bullet" is the primary source and the

"perpetrator" is the secondary source.

NOTE: Totals for major categories may include subcategories not shown separately. Percentages may not add to totals because of rounding.

Dashes indicate no data reported or data that do not meet publication criteria.

n.e.c. means "not elsewhere classified."

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