

Occupational Fatality Count Declines from 1995 to 1996

by Talitha Lukshin

This Bureau of Labor Statistics program collects data in all 50 states and in Alaska is conducted cooperatively with the Alaska Department of Labor. The census records workplace fatalities of the self-employed, civilian and military government employees, as well as all private sector wage and hour employees.

Occupational fatalities in Alaska increased from 1994 to 1995, but dropped again in 1996, according to the latest results of the Census of Fatal Occupational Injuries (CFOI). (See Figure 1.)

Of 78 occupational deaths in 1995, 24 occurred in the crash of a military AWACS jet. Without this incident, occupational deaths would have declined in 1995. In 1996, there were 63 occupational fatalities, almost half of which were related to water vehicle accidents.

Alaska CFOI fatalities differ greatly from national CFOI trends

As shown in Table 1, Alaska CFOI water vehicle and aircraft accidents accounted for nearly 65 percent of the 358 Alaska fatality cases from 1992 to 1996. Nationally, however, the majority of the cases are classified in "other transportation" and "violent acts" categories.

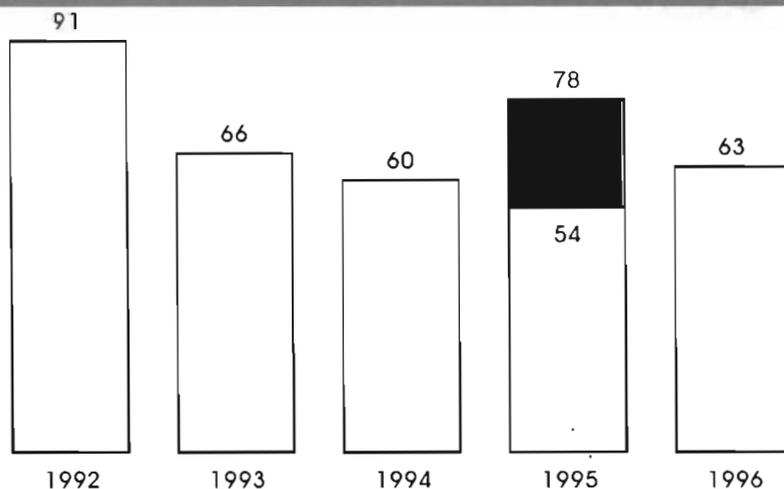
An incident rate calculated using a five-year average indicates that Alaska's rate of occupational fatality is four times the national rate. (See Table 2.) From a high of 31 to a low of 19, the fatality incidence rate for five years averaged 22 per 100,000 workers. Air and water transportation accidents contribute greatly to the difference. Overall low state employment relative to the high number of occupational fatalities in a few industries, such as commercial fishing and air transportation, results in a much higher rate for Alaska.

Water vehicle accidents account for 46% of deaths in 1996

In 1992, the first year of the census, fatalities related to water vehicle accidents peaked at 38, dropping to a low of 14 in 1994. However, this accident group increased to 22 in 1995 and again in 1996 to 29. In all, 11 workers died in vessels that sank or capsized in 1995, increasing to 13 in 1996. (See Tables 3 and 4.)

Figure • 1

Census of Fatal Occupational Injuries, Number of Deaths, Alaska, 1992-1996



Source: Alaska Department of Labor, Research and Analysis Section.

Note: 24 deaths in 1995 were related to a single military air crash.

These counts were greatly influenced by the loss of a crabbing vessel's entire crew in each of the past two years. In 1995, the *F/V Northwest Mariner* capsized resulting in six fatalities. Two of the six crew were found without survival suits in a life raft, dead of hypothermia. The U.S. Coast Guard (USCG) investigation indicated that the capsizing was most likely related to environmental factors including high winds, heavy seas, and icing. In 1996, the crabbing vessel *F/V Pacesetter* went down with seven crewmembers aboard. The USCG investigators suspect "free surface effect," or the effect of water in the hold moving freely

Major Event Groupings¹, CFOI, Alaska and U.S., 1992 to 1996

	Alaska							U.S.					
	'92	'93	'94	'95	'96	Total	Percent	'92	'93	'94	'95	Total ²	Percent
Total	91	66	60	78	63	358		6,217	6,331	6,588	6,210	25,346	
Water Vehicle	38	21	14	22	29	124	34.6	109	120	92	84	405	1.6
Aircraft	26	22	10	34	16	108	30.2	353	282	424	278	1,337	5.3
Other Transportation	4	4	6	11	6	31	8.7	2,022	2,099	2,224	2,198	8,543	33.7
Contact with object	10	4	9	4	4	31	8.7	1,004	1,045	1,015	915	3,979	15.7
Violent Acts	4	12	6	3	6	31	8.7	1,281	1,329	1,308	1,262	5,180	20.4
Falls	-	-	-	1	0	7	2.0	600	618	661	643	2,522	10.0
Fires & Explosions	0	1	3	0	1	5	1.4	167	204	202	208	781	3.1
Exposure	6	0	10	2	1	19	5.3	605	592	638	598	2,433	9.6
Other	-	-	-	1	0	2	0.6	76	43	24	24	167	0.7

¹The event grouping is coded using the Bureau of Labor Statistics, Occupational Injury and Illness Classification Structure (OIIICS).
²U.S. data for 1996 will not be available in time for release in this article.
 - = not publishable as presented.

Source: Alaska Department of Labor, Research and Analysis Section and the U.S. Department of Labor, Bureau of Labor Statistics.

from side to side. Traveling to the fishing grounds, the vessel had its deck fully loaded with crab pots which added to its roll, compromising stability.

Other factors in the 1996 increase were six cases reported in the cruise ship industry and three diving accidents aboard fishing vessels. Five crewmembers were lost in a fire aboard the *M/V Universe Explorer*. In another cruise ship incident, a deckhand was struck by a snapped line during a wind storm. Two fishermen died while scuba diving to clear line or net material from the vessel's propeller. Another fisherman died while diving to gather sea cucumbers. Faulty diving gear or entanglement caused these diving accidents.

Importance of survival suits/smoke alarms evident in 1995 and 1996

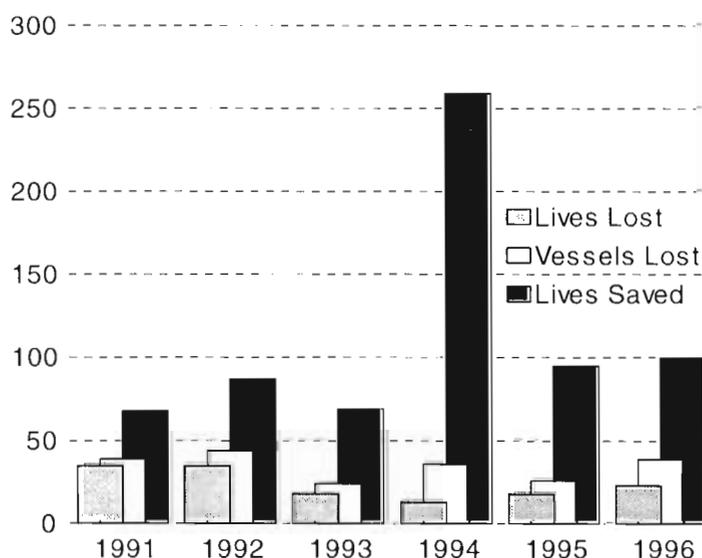
The importance of properly fitted survival suits was evident again in 1995 and 1996. Workers died after abandoning ship without having the hoods of their suits on and/or the zippers se-

cure. In some cases, there was not enough time to get the suit on at all. In prior hypothermic drowning cases, the person entering the water without the hood secure became hypothermic within 20 minutes.

Six lives were lost in two vessel fires during 1995 and 1996. Surprisingly, no smoke alarms were installed in the area of the fire for either the fishing

Figure • 2

Fishing Industry Losses, Alaska, 1991-1996



Note: In 1994, 132 crew were saved in a single rescue.

Source: United States Coast Guard, 17th District, Fishing Vessel Safety Office.

Census of Fatal Occupational Injuries (CFOI) Incidence Rates¹, Alaska and U.S., 1992-1996

Year	AK CFOI ²	Alaska CPS Employment ³	Alaska Rate per 100,000	U.S. Rate per 100,000
1992	82	261,155	31	5
1993	64	274,788	23	5
1994	54	281,417	19	5
1995	51	281,502	19	5
1996	61	291,246	21	NA
Average	62	278,022	22	5

¹An incidence rate is calculated as $(N/W) \times 100,000$ where N is the number of occupational fatal injuries and W is the number of workers employed, multiplied by a base number of workers. In this case, 100,000 workers is used.

²These CFOI counts shown here exclude military personnel, volunteer workers and workers under 16 years of age.

³Current Population Survey (CPS) employment for the civilian labor force 16 and older are estimates based on a monthly survey of Alaska households.

NA = Not Available (The U.S. 1996 incidence rates using the CPS will not be available until later this year.)

Source: Alaska Department of Labor, Research and Analysis Section.

according to the National Institute of Occupational Safety and Health (NIOSH), Alaska Field Station. The field station identified vessel design enhancements and careful attention to both loading and environmental factors as solutions to stability.* Personal flotation device use by fishermen was identified as an appropriate intervention for MOB drownings, other than line entanglements.

vessel or the cruise ship. Instead, heat-activated alarms were in place, delaying the response time.

Man-overboard hazards during crabbing or long-lining remain unchanged

Fishermen crabbing or long-lining were also at risk of being pulled overboard by lines attaching strings of crab pots or long lines of baited hooks. Since 1992, seven such cases have occurred with three recorded in 1996. The details are tragically similar. While the lines are going out, the crewmember becomes entangled, for example, while throwing out the anchor or freeing tangled pots, and is immediately pulled overboard with the gear.

In all, pulled over accounted for 21% of the man-overboard (MOB) cases from 1992 to 1996. Loss of footing or hold on a vessel, other than a skiff, accounted for nearly half of the MOB cases but the circumstances were varied and in some cases unknown. Alcohol was a factor in at least seven cases. There were five falls from skiffs and four workers were swept over by large waves in the five-year period from 1992-1996. Together, these two groupings accounted for 27% of the MOB cases. Except for one case, personal flotation devices were not used in any of the MOB cases documented.

NIOSH forwards primary prevention proposals for fishing industry

Primary prevention efforts are needed to address compromised vessel stability and falls overboard

Since the enactment of the Commercial Fishing Industry Vessel Safety Act in 1988, the USCG is now requiring survival suits, Emergency Position Indicating Radio Beacons (EPIRB), and life rafts to be carried onboard. Also, there must be one safety certified crewmember on each vessel to instruct others and conduct drills.

With these changes have come dramatic increases in the number of lives saved. (See Figure 2.) Fishing fatalities related to vessel sinkings are trending down. Fishermen are now able to stay alive longer and are located sooner after a vessel loss. However, the number of fishing fatalities is still high. Emphasis must now switch to prevention by addressing vessel stability and work hazards before the accident.

The number of air transportation deaths increases in 1996

Less the 24 deaths from a single military crash, 10 workers died in aircraft accidents in 1995. Of these, nine were pilots, with six specifically employed in the air transportation industry. In 1996, the number of pilots killed in air transportation accidents rose to 10, excluding self-employed.

An average of six pilots have been lost each year since 1992. Using employment data from the Alaska Department of Labor (AKDOL), Occupational Database, the fatality risk of pilots operating in unscheduled air transportation was 563 per 100,000 pilots from 1992 to 1996. (See Table 5.) In comparison, the 1995 national occupation-specific incidence rate for pilots was 97.

Census of Fatal Occupational Injuries, Alaska, 1995

Event Grouping ¹	Cause	Total Cases	Occupation	Industry ²
Water Vehicle				
	Sinkings or capsized	10	Fishers	Commercial Fishing
		1	Ship Captain	Transportation, Water
	Fell overboard	3	Fishers	Commercial Fishing
		1	Technician	Manufacturing, Seafood
	Unknown	2	Trappers	Hunting, Trapping
	Onboard fire	1	Fisher	Commercial Fishing
	Fall from ladder	1	Stevedore	Transportation, Water
	Diving, clearing line or net from propeller	1	Fisher/Diver	Commercial Fishing
	Caught in winch	1	Fisher	Commercial Fishing
	Rescuing man-over-board	1	Fisher	Commercial Fishing
Aircraft				
		24	Military	Government, Armed Forces
		6	Pilots	Transportation, Air
		1	NR	NR
		2	Pilots	Commercial Fishing
		1	Pilot	Services, Recreational Camps
Other Transportation				
Highway	Military roadway accident	2	Military	Government, Armed Forces
	Brake failure	1	Laborer	Manufacturing, Wood Products
	Lost control on sharp curve	1	Truck Driver	Transportation, Trucking
	Defective brakes	1	Truck Driver	Manufacturing, Logging
	Mechanical failure	1	Truck Driver	Manufacturing, Logging
Nonhighway	Fell from/struck by front-end loader	1	Construction Trades	Government, Local
	Overtuned crane	1	NR	Transportation, Water
	Overtuned boom truck	1	Operator	Commercial Fishing
	Overtuned tractor	1	Operator	Manufacturing, Wood Products
	Overtuned water truck	1	Truck Driver	Construction, Highway
Exposure				
	Swept down river-drowning	1	Pilot	Transportation, Air
	Equipment contact with overhead powerlines	1	Helper	Construction, Miscellaneous
Contact with objects				
	Wind swept shipping containers over	1	Deckhand	Transportation, Water
	Beached boat roll over-blocked for repair	1	Fisher	Commercial Fishing
	Struck by falling derrick	1	Mining Occupations	Mining, Oil & Gas Field Svcs.
Falls				
	Fell from ladder replacing light bulbs	1	Electrician	Construction, Building
Violent Acts				
	Convenience store robbery	1	Clerk	Retail, Miscellaneous Sales
	Other	3	NR	NR
Unknown				
		1	Processor	Manufacturing, Seafood

¹Event grouping is coded using the Bureau of Labor Statistics, Occupational Injury and Illness Classification Structure (OIIICS).

²Industry is classified using the Standard Industrial Classifications Manual, 1987 Edition.

NR = not releaseable as presented. Data obtained from other than public information sources such as newspapers, OSHA, U.S. Coast Guard, or Workers' Compensation reports cannot be released.

Source: Alaska Department of Labor, Research and Analysis Section.

Census of Fatal Occupational Injuries, Alaska, 1996

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Source: Alaska Department of Labor, Research and Analysis Section.

Event Grouping ¹	Cause	Total Cases	Occupations	Industry ²
Water Vehicle				
	Sinking or capsized	13	Fishers	Commercial Fishing
	Onboard fire	5	Crewmen	Transportation, Water
	Fell overboard	4	Fishers	Commercial Fishing
	Pulled over by crab or longline gear	3	Fishers	Commercial Fishing
	Diving, clearing line or net from propeller	2	Fishers/Divers	Commercial Fishing
	Diving, harvesting sea cucumber	1	Fisher/Diver	Commercial Fishing
	Hit by snapped line	1	Deckhand	Transportation, Water
Aircraft				
		11	Pilots	Transportation, Air
		1	Biologist	Government, State
		1	Marine Pilot	Transportation, Water
		1	Pilot	Manufacturing, Logging
		1	Manager/Pilot	Manufacturing, Meat Products
		1	Pilot	Services, Religious Organizations
Other Transportation				
	Pedestrian backed over by mobile equipment	1	Ski Patrol	Services, Recreation
	Snowmachine through ice	1	Clergy	Services, Religious Organizations
	Snowmachine collision	1	Carpenter	Construction, Building
	Lost in storm	1	Doctor	Services, Health Care
	Auto accidents	1	Vessel Owner	Commercial Fishing
		1	NR	Retail, Auto Sales
Contact with Objects				
	Struck by falling tree	1	Timber Faller	Construction, Highway
	Struck by dislodged flying object	1	Fisher	Commercial Fishing
	Struck against stationary object	1	Clerk	Retail, Sales
	Compressed by equipment	1	Garbageman	Transportation, Local
Exposure				
	Equipment contact with overhead powerlines	1	Logger	Manufacturing, Logging
Fire				
	Plant fire	1	NR	Manufacturing, Meat Products
Violent Acts				
	Post office robbery	1	Postal Worker	Government, Postal Service
	Shot by co-worker	1	Cook	Services, Hotel
	Shot by assailant	1	Police	Government, Local
	Suicides at-work	3	NR	NR

Experimental Comparison of CFOI Data to Available Occupational Employment for Pilots in Air Transportation, 1992-1996

Air Transportation, Unscheduled (SIC 4522) ¹				Air Transportation, All (SIC 45)		
Year	CFOI	Employment ²	Incidence Rate per 100,000	CFOI	Employment	Incidence Rate per 100,000
1992	5	650	769	6	1,461	411
1993	3	672	446	5	1,537	325
1994	4	721	555	5	1,515	330
1995	4	726	551	5	1,510	331
1996	4	786	509	10	1,413	708
Average	4	711	563	6	1,487	404

¹Industry is classified using the Standard Industrial Classification Manual, 1987 Edition.

²Employment data were obtained from the Occupational Database, maintained by the Alaska Department of Labor (AKDOL), Research and Analysis Section.

Source: Alaska Department of Labor, Research and Analysis Section.

The high number of Alaska fatalities is not a new trend. Data gathered from the AKDOL Workers' Compensation Division show an average of seven pilots died each year in air transportation crashes from 1985 to 1991.

Government and industry working to improve aviation safety

The NIOSH field station has recently released a study of Alaska work-related aviation fatalities from 1990 to 1994. Based on reports provided by the National Transportation Safety Board (NTSB), the primary cause of fatal occupational crashes was most often related to controlled flight into terrain during limited visibility. Visibility transitioned from visual meteorological conditions (VMC) with visibility of more than a mile to instrument meteorological conditions (IMC) with visibility of less than a mile during the flight. For all crashes examined in the NIOSH study, crashes in IMC weather were five times more likely than in VMC**.

The study reaffirms earlier recommendations of the Federal Aviation Administration (FAA) for Aeronautical Decision Making (ADM) training certification for pilots in the United States, but calls for Alaska-specific ADM rules to reduce the number of aircraft-related occupational fatalities. Also forwarded were earlier NTSB recommendations for increased protective equipment use by pilots. As part of the Alaska Interagency Working Group,** an aviation working group has formed with repre-

sentatives of the industry and the NTSB, FAA, and other government agencies to coordinate outreach for safety improvement in the industry.

State OSH jurisdiction covers five percent of the 1995 and 1996 CFOI fatalities

Of the occupational fatalities counted by CFOI, three in 1995 and four in 1996 were investigated by the AKDOL, Occupational Safety and Health (OSH) Unit. This is a significant drop from 1994 when OSH-investigated cases comprised 15% of the census. The drop was due to a decline in logging fatalities and the absence of oil field industry deaths.

Over the past two years, deaths investigated by Alaska's OSH unit crossed five different industry groups. (See Table 6.) However, there is some commonality among the cases. Six of the seven deaths were vehicle related. Workers operating or working around heavy equipment or moving vehicles are at risk, regardless of industry. Vehicle-related deaths among OSH-investigated fatalities were also high in 1994 when five of nine deaths were in this group. In that year, three workers were struck by the vehicle they were working around, one was killed in the vehicle under operation, and another was struck by a vehicle's falling load. The inexperience of the operator or worker moving around the equipment, or both, was a factor in some of these cases.

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1995 and 1996 Alaska OSH–Investigated Fatality Reports

Source: Alaska Department of Labor, Labor Standards and Safety Division.

Construction

A worker fell from a six-foot ladder and impacted his head on the floor. He was replacing light bulbs at the time.

Local Government

The worker was backing up a front-end loader while leaning out the door to get a better view. He fell from the cab to the ground after hitting a bump and was struck by the loader bucket.

Logging

The worker was extinguishing a fire that started when the boom of the truck came in contact with overhead power lines. The victim inadvertently touched the vehicle's frame and was electrocuted.

A Sky Crane helicopter had lifted off with a bundle of logs and was approximately 260 feet above the ground. Suddenly, the helicopter went out of control and crashed into the hillside.

Transportation

A dumpster was being lowered from a garbage truck when the worker was crushed between the hydraulic-operated dumpster lifting bar and the tailgate riding step of the truck.

Recreation

The worker was riding in the passenger compartment of a Snow Cat during snow grooming operations. He exited the equipment during a pause in grooming without signaling and was backed over.

Another was the lack of communication between the decedent and the operator of the vehicle.

In 1995, vehicle accidents on the highway contributed to a sharp increase in transportation deaths. Previously ranging between four and six, other transportation cases rose sharply to 11 in 1995. (See Table 3.) This rather broad category includes all highway and nonhighway motor-vehicle-related accidents. Six of the 11 cases were roadway vehicle accidents. For the first time since the start of the census, three deaths among independent trucking contractors occurred in various industries. Tragically, defective brakes, mechanical failure was cited as the cause of the crash in two of the three cases.

Summary

Both federal and state government agencies are working with industry to address the occupational safety needs of the state. As in the past, this partnership should work effectively for needed change.

FOOTNOTES FOR PAGES 12 & 15:

- * Public Health Reports, Volume 110, November/December, 1995.
- ** Morbidity and Mortality Weekly Report (MMWR), Centers for Disease Control and Prevention, Vol. 43/No. 22, June 6, 1997.
- *** The Alaska Interagency Working Group for the Prevention of Occupational Injuries is comprised of representatives from the NTSB, FAA, NIOSH, Occupational Safety and Health Administration (OSHA), U.S.C.G., and the Alaska Departments of Health and Social Services and Labor.