

**THE COMMERCIAL FISHING SAFETY RECORD:
A NATIONAL PERSPECTIVE**

Prepared for
National Fishing Industry Safety and Health Workshop
Anchorage, Alaska
October 9, 1992

by

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Introduction

Commercial fishing safety is an important problem in Alaska. As different speakers will no doubt point out, the kinds of problems which exist differ for different fisheries in Alaska. The safety problems in the Bering Sea crab fishery are different than those in the southeast troll fishery. This makes it more difficult to define the nature of the Alaska commercial fishing safety problem or to figure out how to deal with it.

The same things are true at the national level. Commercial fishing safety is an important problem throughout the United States. The safety problems in the Gulf of Mexico shrimp fisheries are different from those in Alaska fisheries. These kinds of differences contribute to the difficulty of defining or addressing the commercial fishing safety problem at the national level.

This conference will focus primarily on Alaska commercial fishing. But I'd like to first review the commercial fishing safety record in a national perspective.

Two years ago, I served on the National Research Council's Committee on Fishing Vessel Safety, which prepared a report entitled *Fishing Vessel Safety: Blueprint for a National Program*.¹ In preparing this report, the committee looked at the kinds of safety problems which exist in fisheries throughout the United States, and approaches for dealing with them. Today I'll briefly review with you the picture that emerged of safety problems at the national level. All of the data and graphs are from the committee's report, except that I have added some additional data for Alaska. Any opinions expressed are my own rather than the committee's.

Some Terminology

Let me begin by defining some basic terminology which is used by the Coast Guard and which our committee also used.

Casualties are any kind of incident which involve damage to a vessel or injury or death to a fisherman. **Vessel casualties** are incidents in which fishing vessels are damaged or lost. There are many **natures** of vessel casualties, such as capsizings, floodings, collisions, fires, groundings, and equipment failures. Many vessel casualties involve several natures, such as a grounding which lead to flooding, or an equipment failure which leads to a fire. Vessel casualties can have widely varying consequences. Some lead to serious vessel damage, in the most extreme cases to **total vessel losses**. Some but not all vessel casualties result in injuries or deaths.

Personnel casualties are incidents in which fishermen die or are injured. Many but not all personnel casualties are **vessel-related**, such as when a boat capsizes and the crew drown. But many personnel casualties are **non-vessel-related**, such as when fishermen fall overboard, or are injured by equipment on board.

¹National Academy Press, Washington, D.C. 1991. 282 pages.

Data Source

The major data source for fishing vessel casualties in the United States is the Coast Guard's "main casualty data base," or CASMAIN, which is based on Marine Accident Reports. These are required to be filed with the Coast Guard for incidents which result in significant vessel damage, injury or death.

The CASMAIN data base is far from perfect as a record of commercial fishing safety problems. Many incidents, including most non-serious incidents, are never reported to the Coast Guard. Only a fraction of non-fatal injuries are reported. Moreover, there is nothing in the CASMAIN data base that corresponds to the "near miss" data that the FAA collects for aircraft incidents.

Our committee reviewed major casualty incidents from the Coast Guard's CASMAIN data base for the six-year period from 1982-1987. We limited our analysis to those casualties which resulted in at least \$25,000 in damages, a fatality, or both. In other words, we studied only the most serious incidents reported to the Coast Guard, which are not necessarily the only serious incidents which occur.

Number of Vessel Casualties

On average, nationwide there were almost 1100 major vessel casualties (resulting in more than \$25,000 damage) per year during the six-year period 1982-1987. Of these, there were an average of 216 total vessel losses per year nationally. Vessel casualties resulted in an average of 58 fatalities per year (but recall that there are numerous additional fatalities which do not result from vessel casualties).

TABLE 3-2 Casualties Involving Documented Fishing Industry Vessels: 1982-1987

Year	Number of Vessel Casualties	Number of Vessel Total Losses	Number of Fatalities Associated with Vessel Casualties	Total Vessel Damages (millions of dollars)
1982	983	259	33	93.6
1983	1,203	247	88	68.3
1984	974	241	52	71.0
1985	1,209	241	61	53.3
1986	1,095	151	46	39.5
1987	1,094	159	68	51.8
Total	6,558	1,298	348	377.5
Average	1,093	216	58	62.9

Source: USCG 1982-1987 CASMAIN data.

ALASKA AVERAGE ANNUAL DATA:	
Vessel casualties:	128
Total vessel losses:	45
Fatalities associated with vessel casualties:	16
Vessel damages:	\$21 million

Nature of Vessel-Related Casualties

The most frequent casualty natures resulting in total vessel losses are foundering and fires. However, the most frequent casualty natures resulting in fatalities are capsizing, foundering, and "disappearances"--many of which probably also resulted from capsizing or foundering. Although relatively few capsizings occur compared with other kinds of other incidents, they are particularly serious causes of fatalities.

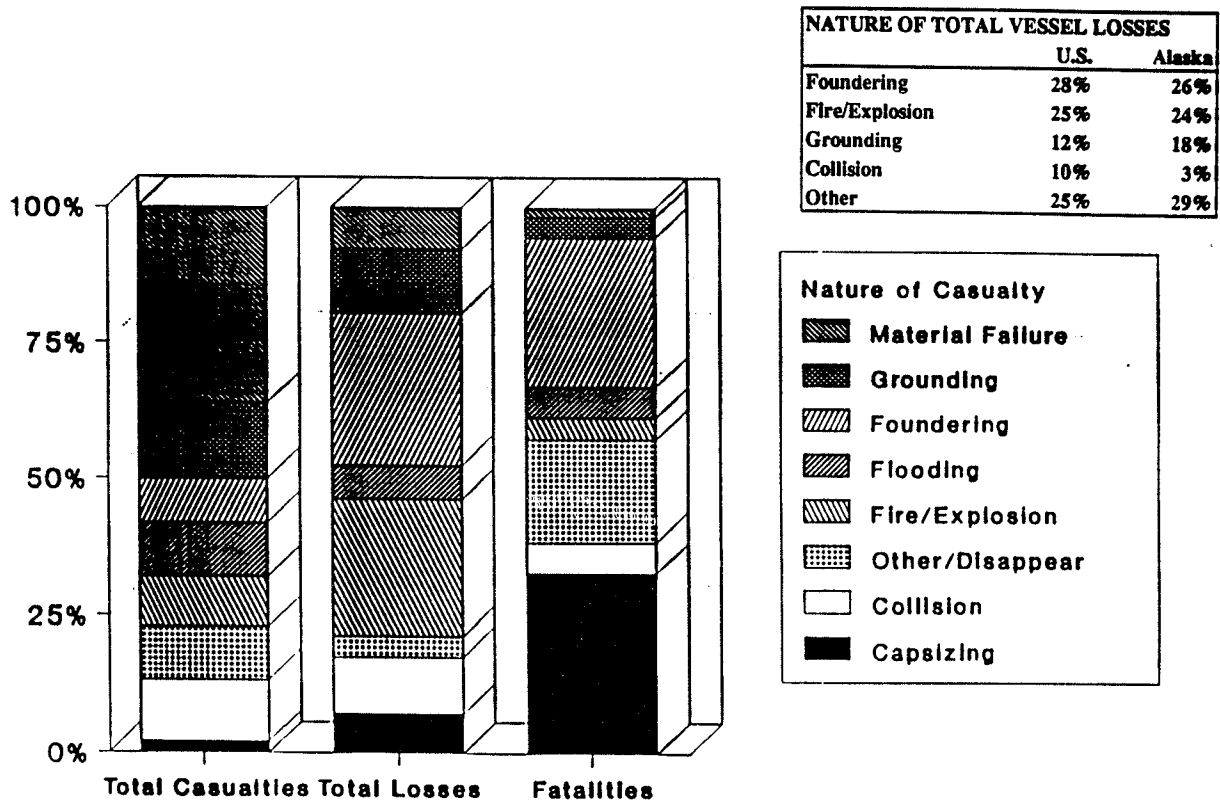


FIGURE 3-1 Nature of vessel-related casualties. Source: USCG 1982-1987 CASMAIN data for documented vessels.

Vessel Casualty and Total Loss Rates

The rate of vessel casualties and total losses increases as vessel sizes increase. Perhaps this is because larger vessels are fished more intensively, and in more dangerous conditions. I want to emphasize that the data on which these rates are based are particularly reliable. As I've said before, the Coast Guard data don't necessarily pick up all the casualties that occur. In addition, we don't have very good data on how many vessels there are in each size class. So these are crude estimates. But I think it's noteworthy that each year perhaps 2.9% of large vessels--those above 79 feet in length--are total losses.

TABLE 3-3 Estimated Vessel Casualty and Vessel Total Loss Rates (1982-1987)

Length (feet) ¹	Average Annual Vessel Casualties	Average Annual Vessel Total Losses	Number of Documented Vessels	Casualties per 1,000 Vessels	Total Losses per 1,000 Vessels
26-49	508	104	23,400	22	4
50-64	203	42	3,600	56	12
65-78	243	46	3,200	76	14
79+	130	23	800	163	29
All Vessels	1,084	215	31,000	35	7

¹Excludes vessel casualties for which length was not known.

Regional Distribution of Vessel-Related Casualties

Vessel-related casualties, including total losses and fatalities, occur in all regions of the United States. However, the more serious casualties--total vessel losses and fatalities--occur disproportionately on the West Coast and in Alaska.

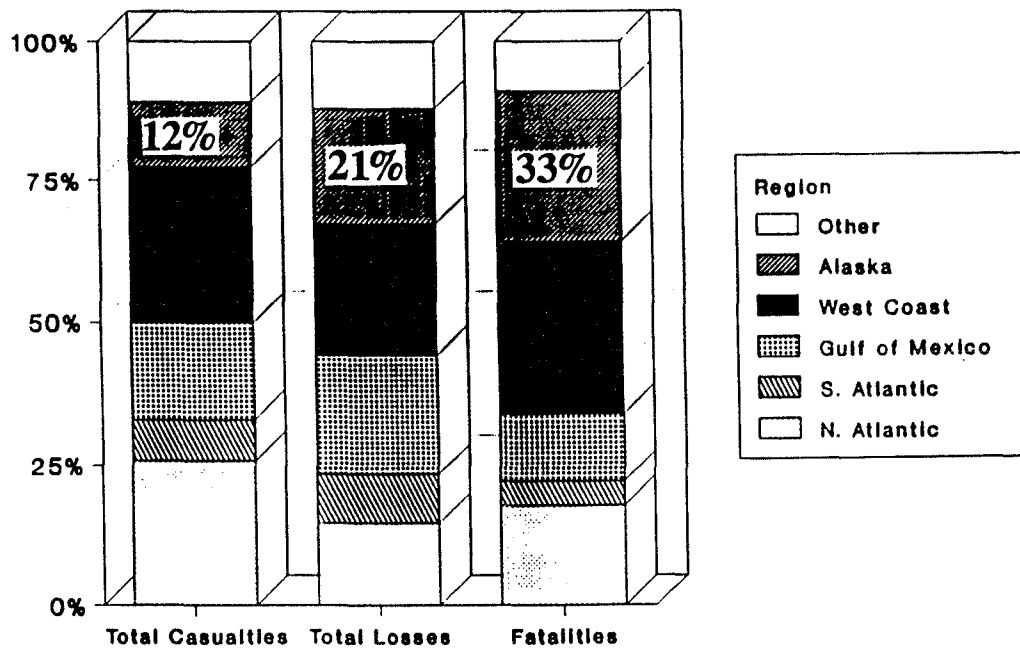


FIGURE 3-2 Regional distribution of vessel-related casualties. Source: USCG 1982-1987 CASMAIN data for documented vessels.

example, those which occur on inland rivers such as the Kuskokwim and the Yukon.²

TABLE 3-5 Estimated Commercial Fishing Fatality Rates (All Fatalities)

Vessel Category	Total Fatalities	Annual Fatalities ¹	Employment (thousands) ¹	Annual Fatality Rate per 100,000 Workers ¹
All Vessels	648	108	229	47
Documented Vessels (feet)	507	85	109	78
26-49	198	33	70	47
50-64	76	13	14	88
65-78	116	19	16	121
79+	117	20	8	244
Undocumented Vessels	141	24	120	20

¹Rounded numbers.

Source: USCG 1982-1987 CASMAIN data.

TABLE 3-6 Selected U.S. Industrial Fatality Rates (Estimated)

Industry	Annual Fatalities ¹	Employment (thousands) ¹	Annual Fatality Rate per 100,000 Workers ¹
Documented Fishing Industry Vessels	85	109	78
Undocumented Fishing Industry Vessels	24	120	20
All Fishing Industry Vessels	108	229	47
Mining	430	920	47
Construction	2,230	5,940	38
All industries	11,240	106,280	11

¹Numbers estimated and rounded.

Source: USCG 1982-1987 CASMAIN data.

²Patricia G. Schnitzer, Deborah Landen, and Julie C. Russell, "Occupational Injury Deaths in Alaska's Fishing Industry, 1980-1988." National Institute for Occupational Safety and Health, Division of Safety Research. Presented in part at the 40th Annual Epidemic Intelligence Service Conference, Atlanta, Georgia, April 8-12, 1991, and the 24th Annual meeting of the Society for Epidemiologic Research, Buffalo, New York, June 12-14, 1991.

Fatalities by Region

Fishing fatalities occur in all regions, with roughly equal numbers of total fatalities in the North Atlantic, the Gulf Coast, the West Coast, and Alaska.

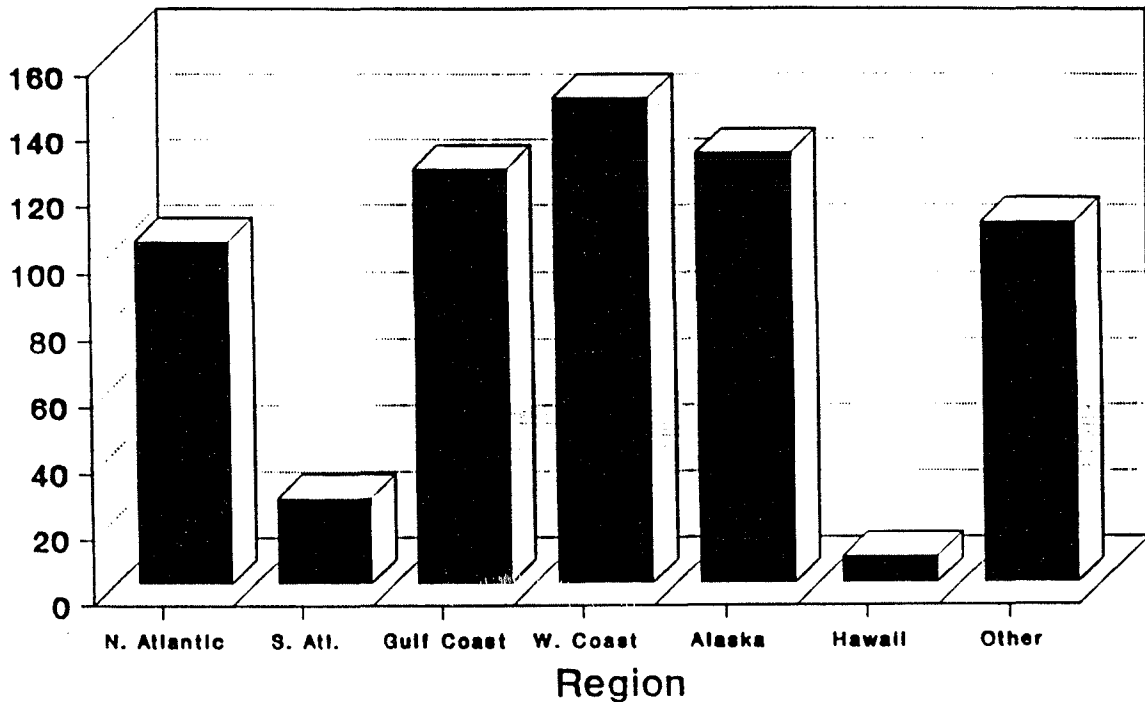


FIGURE 3-14 Commercial fishing fatalities: all fishing industry vessels. Source: USCG 1982-1987 CASMAIN data.

Nature of Vessel-Related Fatalities

As I mentioned earlier, capsizings account for more vessel-related fatalities than any other nature of incident--followed by sinkings and "disappearances."

Nature of Non-Vessel-Related Fatalities

By far the largest number of non-vessel-related fatalities occurred as a result of crew falling into the water. However, a variety of other types of incidents also occur.

Conclusion

I'd like to offer three simple conclusions to this brief overview of the national fishing safety record. First, the record shows that there has been a serious, nationwide problem in commercial fishing.

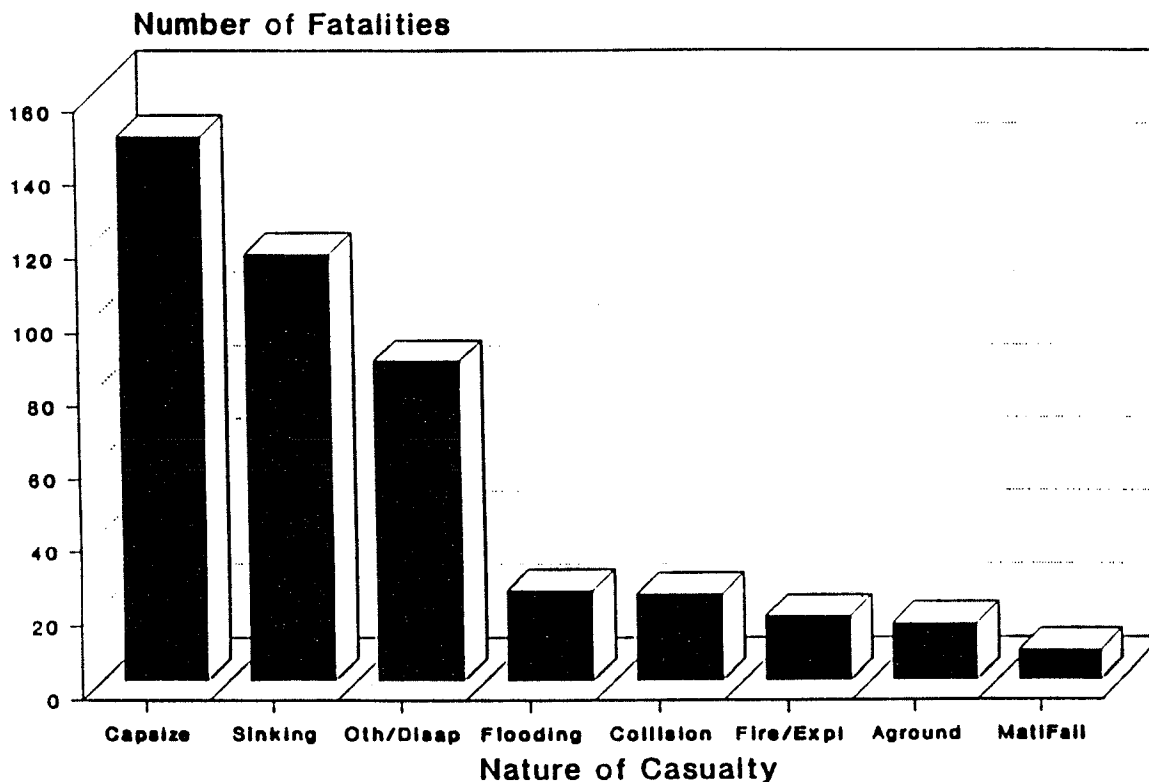


FIGURE 3-15 Vessel-related fatalities by nature of casualty. Source: USCG 1982-1987 CASMAIN data.

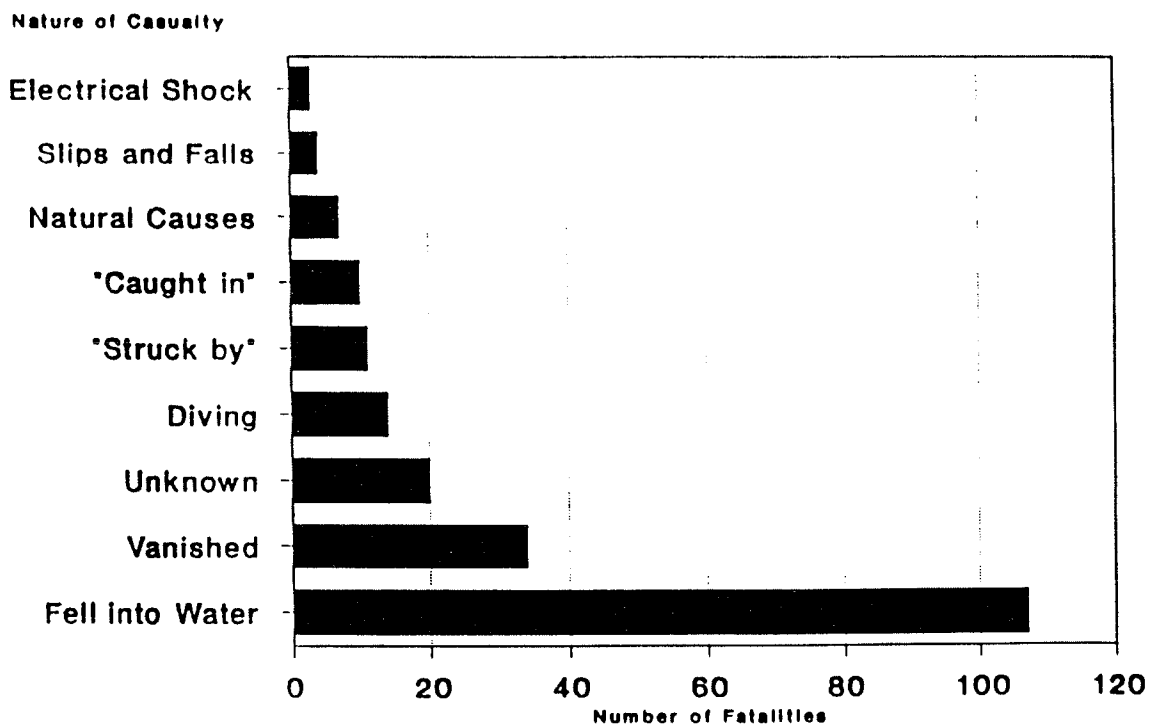


FIGURE 3-16 Non-vessel-related fatalities by nature of casualty. Source: USCG 1982-1987 CASMAIN data.

Second, a review of the record demonstrates that fishing safety is not a single problem with a single cause and a single cure. Many different kinds of casualties occur in vastly different circumstances for very different reasons. This suggests that there is no single solution to the problem.

Third, we won't really be able to describe or fully understand the problem until we have better data. Many of you probably have personal experience with fishing safety problems. You may have been on vessels which were damaged or on which people were hurt, or friends and relatives may have had these experiences. But each of our personal experiences and knowledge can only add up to a small part of the overall picture. To really understand the problem, we need reliable data.

But the data we have at present are not really reliable, and they are certainly not sufficient. Each graph I have shown you raises questions about *why* the numbers are what they are, but the data usually aren't complete enough to say why. Let me give you two simple examples.

I haven't talked about what fisheries these incidents occurred in. That's because the Coast Guard's CASMAIN data base doesn't include any information about what fisheries they occurred in. The Coast Guard does not routinely collect this information. Before we can identify the kinds of safety problems which have been occurring in specific fisheries, we will need to review each casualty incident and attempt to determine what fishery it occurred in.

I also haven't said anything about non-fatal injuries in commercial fishing, although we know that many people are hurt on fishing vessels. That's because there are no reliable national data on fishing injuries: in the past no one collected this information. A new reporting requirement has been established, but there are as yet no procedures for obtaining the data.