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Issues of safety in the Alaskan commercial fishing fleet : where do we go from here?

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ISSUES OF SAFETY IN THE ALASKAN COMMERCIAL FISHING FLEET
Where do we go from here?

By

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in

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DECLARATION

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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Title of dissertation**:** **Issues of Safety in the Alaskan Commercial Fishing Fleet: Where Do We Go From Here?**

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The dissertation is a study of today's Alaskan Commercial Fishing Industry with regard to safety. Statistics support the thought that commercial fishing is the most dangerous occupation in the United States and government is looking at ways to enhance the safety of that industry. Increased safety legislation has been a recent recommendation for the fleet.

Specific factors that affect the Alaskan Fleet in particular will be examined as well as a brief discussion of International and National Initiatives to enhance safety. The initiatives' strengths and weaknesses as well as their respective influences on the United States' Commercial Fishing Fleet and the Alaskan Commercial Fishing Fleet are investigated.

The author believes that there are other, more affective ways other than legislation to increase commercial fishing vessel safety. Individual non-legislative strategies in the United States and abroad for making the commercial fishing industry a safer one are explored for their affectiveness as well as their applicability within the Alaskan Commercial Fishing Fleet.

The concluding chapter puts forth a plan for combining these strategies into one cohesive plan that may be implemented on a community level, as well as recommendations for the United States Government, United States Coast Guard, and the Alaskan Commercial Fishing Fleet.

KEYWORDS: Alaska, Commercial Fishing Industry, Legislation, Professional, Safety, Strategies

TABLE OF CONTENTS

Table of Contents Continued

Table of Contents Continued

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADF&G	Alaska Department of Fish and Game
AMSEA	Alaska Marine Safety Education Association
AWO	American Waterways Operators
CFR	Code of Federal Regulations
F/V	Fishing Vessel
FAO	Food and Agricultural Organisation
IFQ	Individual Fishing Quota
IMO	International Maritime Organisation
ILO	International Labor Organisation
NIOSH	National Institute for Occupational Safety and Health
NRC	National Research Council
NTSB	National Transportation Safety Board
NPFVOA	North Pacific Fishing Vessel Owners' Association
SOLAS	International Convention for the Safety of Life at Sea
STCW	International Convention on Standards of Training. Certification and Watchkeeping
STCW-F	International Convention on Standards of Training, Certification and Watchkeeping for Fishing Personnel
UFA	United Fisherman of Alaska
USCG	United States Coast Guard
USA	United States of America

CHAPTER ONE
THE PROBLEM OF FISHING VESSEL SAFETY

1.1 Introduction

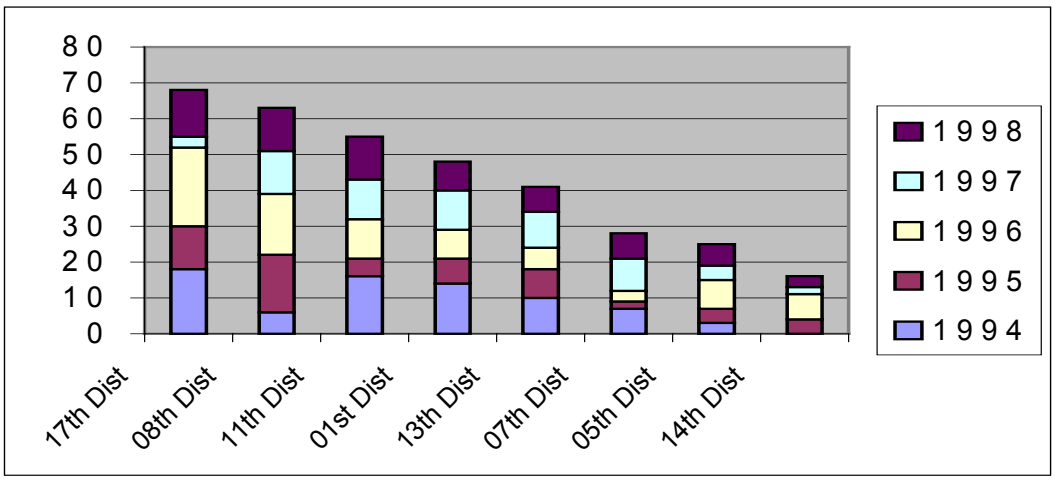
The commercial fishing industry worldwide has always been a dangerous one, claiming a high percentage of lives and vessels since the first fishermen put to sea. In 1987 the National Transportation Safety Board (U.S.) undertook a study to address commercial fishing vessel safety in the United States. The study focused on data, which included United States Coast Guard information from 1981 through 1983 as well as a review of the NTSB's investigation activities from the previous 18 years. National statistics provided by the USCG in testimony before the U.S. Congress indicated the following:

- There are 33,000 documented U.S. commercial fishing vessels.
- Annual losses of documented fishing vessels of more than 5 net tons averaged nearly 250 between 1981 and 1984. During the previous 10 years, losses had ranged between 150 and 200 each year.
- The number of large (more than 100 gross ton) fishing vessels lost is five to seven times greater than the loss rate for U.S. ocean going ships.

- The death rate for fishermen is seven times the national average for all industry groups. Between 1981 and 1984, an average of 75 lives per year were lost in fishing vessel casualties.

The study concluded "the commercial fishing industry is one of the highest risk industries in the world and has the poorest safety record of any industry in the United States." (NTSB,9,1987)

Alaska's commercial fishing fleet has been and continues to be a major contributor to the statistics that have caused the NTSB to make such a dramatic statement. The following graph (Figure 1.1) illustrates where the United States Coast Guard's 17th District (Alaskan waters) falls in relation to the seven other United States Coast Guard District with regards to dead and missing fishermen from the year 1994 through 1998. Clearly one can see that the 17th District ranks the highest.



Source: USCG (1999)

Figure 1.1 Dead and Missing Fishermen by District

1.2 The author's relationship to the Alaskan Commercial Fishing Industry

Fishing Vessel Safety is an issue of significant importance to the author on a personal level, as she has been a commercial fisherman in Alaska for the past 22 years, participating in the majority of the fisheries Alaskan waters offer. These fisheries include salmon and herring seining, longlining halibut, pot fishing for king, tanner and dungeness crab, as well as trawling for shrimp, cod and pollock. She has been personally involved in casualties that have fortunately not ended in any loss of life, but many of her friends and acquaintances made during her fishing career have not been so fortunate.

Having served recently as a member of the United States Coast Guard Commercial Fishing Industry Vessel Advisory Committee, she has been forced to look at and analyze these casualties, and by doing so has come to the conclusion that most of the casualties could have been prevented. Of course, she `straddles the fence´ so to speak, when it comes to debating the issue of more safety regulations in the commercial fleet. Having been a commercial fisherman for half of her life, she has the typical last frontier, 'leave us alone' attitude with regard to legislation, but as a teacher of fishing vessel safety and being one familiar with the issues of fishing vessel safety on a broader level than most fisherman, she has concerns about what more can be done to make the fishing industry, primarily Alaska's fishing industry, a safer one.

On a professional level, she has chosen a second career of teaching Maritime Skills, and most importantly Fishing Vessel Safety. She feels that by taking a closer look at the Alaskan commercial fishing industry and coming to a better understanding of the issues, that she may make valuable contributions to her own fishing community towards lessening the chances of needless loss of life in the fishing industry.

She is in a unique position with regard to fishing vessel safety. She has been employed as a commercial fisherman and has made her living on the fishing grounds for many years. She has real life fishing experience, which is something many fishing safety policy makers do not have. She has also worked with policy makers on a governmental level and has an understanding of the issues beyond the fishing grounds. It is her hope that by exploring the Alaskan fishing industry in depth, that she may develop a broader perspective of the Alaskan commercial fishing fleet and its specific issues of safety. The added benefit will be that she will improve her teaching skills and provide useful information and suggestions to fishermen as well as legislative bodies with regard to making the commercial fishing industry a safer one.

She does not believe that more legislation is the answer. In this paper the author will identify other strategies that might be just as beneficial if not more so, towards making the commercial fishing industry a safer on.

1.3 Purpose of study and research methodology

The objectives of this paper in addition to the author's own enhanced understanding of fishing vessel safety is to:

1. Identify and explain specific safety issues relevant to the Alaskan Commercial Fishing Fleet;
2. Identify and discuss International and National Safety Legislation and events that have had influence on the safety of the Alaskan Commercial Fishing Fleet; and
3. Consider strategies for improving the safety of the Alaskan Commercial Fishing Fleet.

The research methodology for this study included literature research, as well as interviews with visiting experts at the World Maritime University. Continuous

correspondence with fishing industry leaders including fishermen, insurance providers, safety consultants, safety instructors as well as USCG personnel has also been extremely valuable in helping to shape her ideas and conclusions presented in this study. Fundamentally, of course my own working experience of over 20 years in the commercial fishing industry of Alaska provides the underlying basis of her analysis and conclusions.

1.4 Definitions

For the purpose of this paper, the term *fishing vessel* will mean any vessel engaged in the commercial fishing industry, be it a catcher vessel, catcher processor or fish-tendering vessel. A *catcher vessel* is engaged in the task of catching fish only and transports its raw product to market. A *catcher processor* not only catches the fish, but also processes the fish onboard before delivering it to the market. A *fish-tendering* vessel transports raw product from the fishing grounds taken from catcher vessels and then delivers the product to a shore side processing facility. *Inspected Vessel is one inspected and certificated by the USCG*.) Motor vessels, tank vessels, and the majority of other non-public vessels over 300 gross tons are required to be inspected. (46 Code of Federal Regulations 18.01, Subchapter U) **This definition is not to be confused with voluntary dockside safety inspections given by the U.S. Coast Guard for the uninspected commercial fishing fleet**. *Uninspected vessel* is a vessel not certificated under the inspection laws or subjected to regular inspections by the United States Coast Guard. Fishing vessels, recreational motorboats, and oceanographic research vessels under 300 gross tons are examples. Uninspected vessels, however, are still subject to rules about safety and, in some cases, licensed personnel. (46 CFR 24, Subchapter C) Uninspected fishing vessels may be boarded at sea by the USCG for safety and fishing violations. If violations are found, the USCG has the authority to terminate the voyage until violations are rectified.

1.5 The 'Highliner'

When the author first moved to Kodiak, Alaska in 1976, she was awed by the commercial fishing industry. She was amazed at the tales that were told regarding fishing exploits, adventures and the money that could be made. She also heard about the few fishermen known as 'Highliners'. There was a book published about a Kodiak 'Highliner', an alcohol laden drink, popular at Kodiak drinking establishments named the 'Highliner' as well as a prestigious award given out every two years at the annual Northwest Fish Expo, recognizing the 'highliner' of the year. Every fisherman strives to be a 'Highliner'.

The author came across a short description of what it takes to be a 'Highliner', taken from a book written by a Pacific Northwest fisherman.

> This is what it takes to be a highliner. You have to be the first boat on the grounds in the morning and the last one to leave at night. You have to keep your lines clean at all times: you can't fish if you have jellyfish or junk fish hanging on your hooks. You have to go to find the fish before the other guy finds them and when you do you have got to make them bite better than the other guy. When the bite is on, you have to work your gear faster than the other guy. And you don't stop to eat as often as the other guy; better yet, you don't eat at all. Most of the time this will give you the little edge you need to beat the hell out of most. (Morton, Proctor. 1999)

The longline gear referred to in this statement can be changed to any fishing gear used in the state of Alaska. To be a successful fisherman in Alaskan waters, one needs to be competitive as well as face the many safety issues that are inherent to those waters. The author will strive to address the issues facing today's Alaskan commercial fisherman with regard to safety as well as identify strategies to help more fishermen live to attain the goal of being a 'Highliner'.

CHAPTER TWO
SAFETY ISSUES IN THE ALASKAN COMMERCIAL FISHING FLEET

2.1 Specific issues affecting fishing vessel safety

By far, the most blatant issue facing the Alaskan Commercial Fishing Fleet is the fact that, in spite of mandatory safety requirements, fishermen are still dying in casualties that could have been avoided. After the implementation of the Commercial Fishing Vessel Safety Act of 1988 (henceforth referred to as the CFVSA), the numbers of deaths and vessel losses went down dramatically, but in the past 5 years or so, numbers of casualties are on the rise. Why? Possibly, it may be that the Commercial Fishing Vessel Safety Act legislates reactive measures to be taken during a casualty. Reactive in this case would mean, activities that would commence after a casualty is taking place. Although the CFVSA mandates education for preventative measures to avoid a casualty, the focus of the CFVSA mandates emergency drills training. For example, fighting a fire instead of preventing the fire or launching a life raft instead of preventing the cause of sinking. The Commercial Fishing Vessel Safety Act has in the author's opinion adequately addressed the need for training in an emergency situation.

> The impressive progress made during the early 1990s in reducing mortality has occurred primarily by the use of immersion suits and life rafts, keeping fishermen afloat and warm after evacuating capsized or sinking vessels and being able to locate them readily via EPIRBS. (Emergency Position Indicator Radio Beacon) (Niosh,1997,7)

Many of the casualties are due to the fact that a substantial number of fishermen are not adhering to the mandatory requirements for safety equipment and training. Initially, more fishermen were living through their ordeals, but the number of incidents is on the rise, and unfortunately the number of deaths.

> Each year in Alaskan waters, an average of 34 vessels and 24 lives are lost in the commercial fishing industry, which equates to an occupational fatality rate of 140 per100,000 workers/year, 20 times the national average. Within Alaska, during 1991 – 1996, a total of 427 occupational fatalities occurred Commercial fishermen made up 146 (34%) of these fatalities. (NIOSH, 1997,iii)

What is causing these casualties? Vessel losses and deaths due to those losses are still a big problem in the commercial fishing industry. Following are issues that the author believes are contributing singly or combined to cause this problem.

2.2 Uninspected vessels

In the United States, attempts were made during the 1930s to enact safety legislation for motorized fishing vessels. The fishing vessel and towboat interests defeated these attempts and, as a result, the classification known as "uninspected vessel" was established. With the classification, of "uninspected vessel", (vessels under 300 gross tons) came serious limitations on the ability to develop safety regulations pertaining to fishing vessels. For example, the problem of requiring equipment on board a vessel if there is no mandate for authority to check to see if the equipment is actually there, which is what takes place on an inspected vessel.

Another issue related to the uninspected classification of a vessel is that tonnage measurement rules for vessels permit many large fishing vessels to measure just under 200 gross tons, (vessels above this tonnage are required to have a licensed master) thereby avoiding licensed operator requirements as well.

Alaska's commercial fishing fleet is comprised of 11,913 vessels, of those vessels 10,476 are catcher vessels, 1,248 are fish tender vessels and 189 catcher processors. Of all these vessels, there is only one vessel, a catcher processor that is classified as inspected. This issue of uninspected vessels is not unique to the Alaskan commercial fishing fleet, as the majority of the United States' commercial fishing fleet is classified as uninspected.

Because of their uninspected category, fishing vessels are not subject to regular Coast Guard inspections. An uninspected fishing vessel found deficient at the dock, with regard to safety equipment may not be legally detained from a voyage and may come and go without any legal means of detainment. Only uninspected vessels that are

boarded and inspected ***at sea*** and found deficient with regard to safety can have their voyage terminated.

This poses a strategic nightmare for the USCG as their missions at sea are primarily geared towards illegal activity pertaining to species of fish on board, drugs and illegal immigration. These are all 'high seas' activities pertaining to the large vessel trawl fleet as well as the catcher processors who operate off shore. The majority of Alaska's commercial fleet operate near shore. It is the author's opinion that not only does the USCG have inadequate access to the fleet they do not have the number of vessels or required personnel in District 17 to be affective for at sea safety inspections.

Facing financial cutbacks, the Coast Guard is struggling to maintain its present services. In a recent editorial in the CAPE COD TIMES entitled "ALWAYS PREPARED, CONGRESS SHOULD FULLY FUND THE COAST GUARD; A 10 PERCENT CUT IS UNACCEPTABLE." The author states "Here is the reality:

- The Coast Guard's staffing is at 1963 levels. It has 4,000 fewer billets than it did just five years ago.
- Despite the lack of personnel, the Coast Guard has been mandated by Congress to pick up more and more responsibilities. In 1963, the Coast Guard was not involved in migrant interdiction, drug enforcement, marine environmental protection and pollution prevention, all major components of its work today." (Cape Cod Times, April,26,2000)

As well, in 1963, the United States Coast Guard was not in charge of monitoring compliance with the Fishing Vessel Safety Act of 1988.

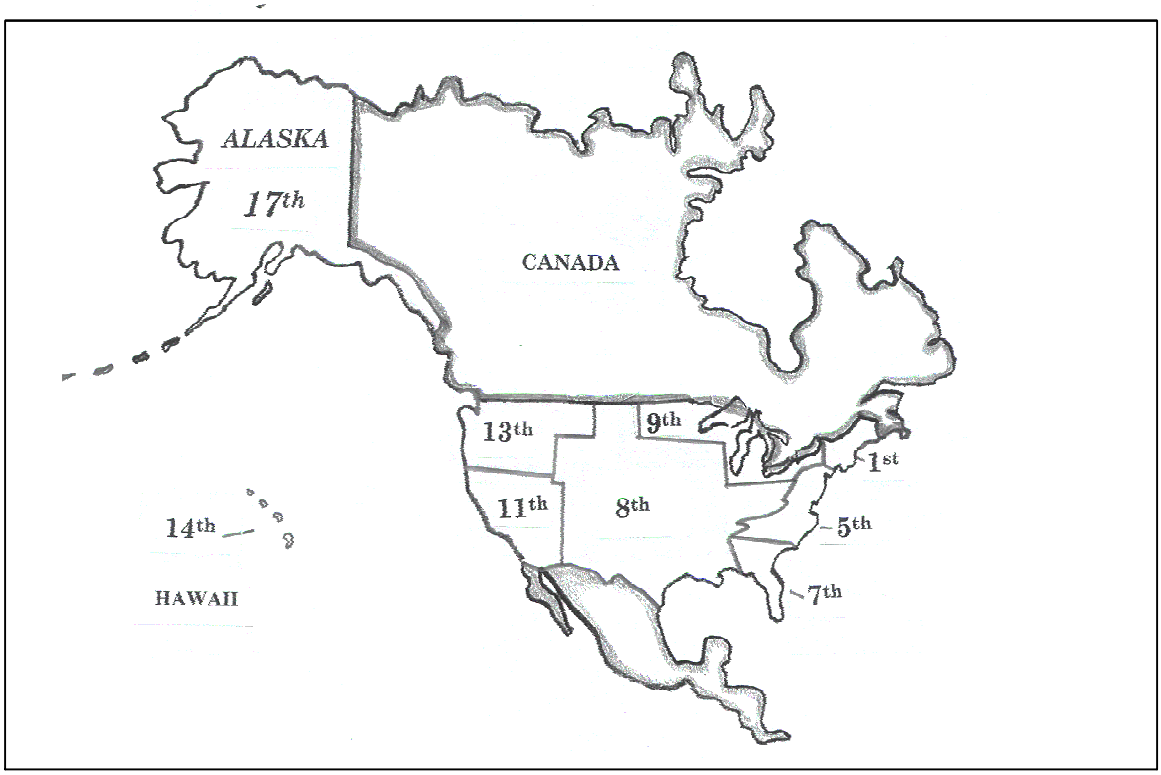
In another article READINESS PROBLEMS PLAGUE COAST GUARD in the May 16th addition of USA TODAY, Andrea Stone states " 'Coasties' will still answer every call for help, but safety inspections and patrols to catch drug smugglers, illegal migrants and foreign vessels illegally fishing in U.S waters have been scaled back. (Stone, 2000)

2.3 Remoteness of the fleet

The United States is divided into nine districts, which are served by the United States Coast Guard. Each district has its own USCG Commander and personnel. To give the reader an idea of the vastness of District 17, which comprises the whole of the state of Alaska, the author offers the following quote.

> Nearly nine hundred thousand square miles of open water fell within the station's watch, nearly twice as much as the entire land mass of the continental U.S. Add in tens of thousands of islands within the two-hundred-mile U.S. coastal boundary, and the Coast Guard station's responsibility can be compared to watching over a small galaxy. (Dillon,1998,80)

The following FIGURE 2.1, a map created by the author, should give the reader an idea of the comparison in the size of District 17, in relation to the various Coast Guard Districts. District 17 truly has a large task at hand when protecting and monitoring the Alaskan Commercial Fishing Grounds with regard to safety as well as domestic and foreign fishing violations.



Source: USCG

FIGURE 2.1 United States Coast Guard Districts

Part of the Alaskan Commercial Fishing Fleet is homeported in areas that have a large Coast Guard presence. Although the fleet is under the protection of United States Coast Guard District 17 (a portion of the fleet is homeported in Seattle, Washington as well as smaller Washington and Oregonian ports), access to Coast Guard personnel for voluntary vessel safety inspections might be inconvenient if the vessel's homeport is not in one of the major harbors of Alaska. (Kodiak, Sitka, Juneau, Ketchikan, Dutch Harbor.) Although a fisherman may request an inspection anywhere in the state, arranging an inspection time that is convenient for both the USCG as well as the fisherman may be difficult. Many of the fleet's vessels reside in the ports of villages and small communities that may not have easy or consistent access to a voluntary safety inspection. Since inspections up to this point have been voluntary only, the incentive

has been low for owners to have their vessels inspected. Of the 11,913 commercial fishing vessels in Alaska, only 5278 of them have met the safety requirements and been awarded Safety Exam decals by the United States Coast Guard after a voluntary examination.

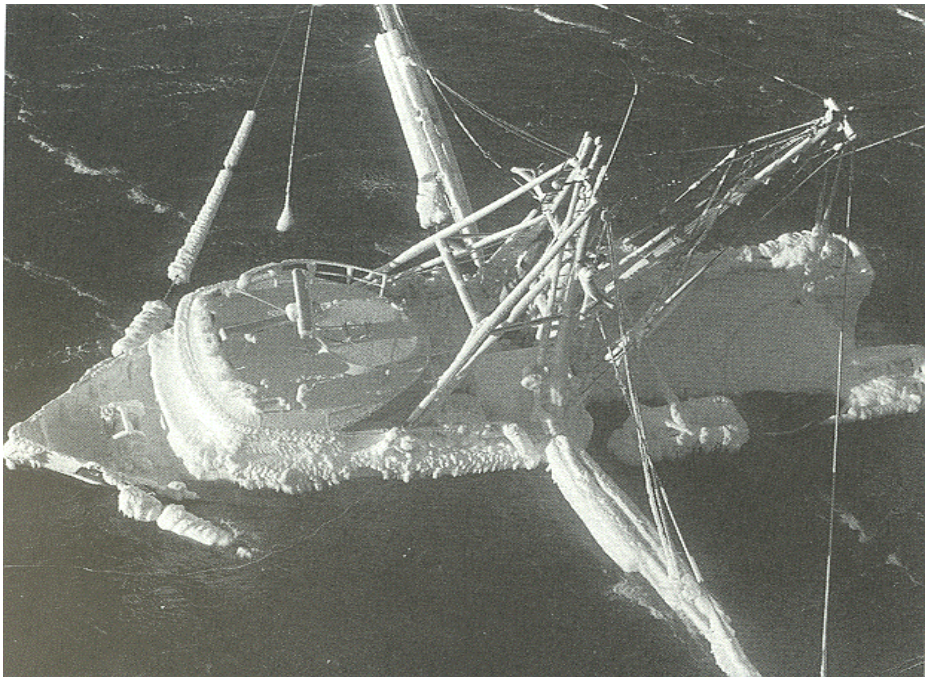
2.4 Weather conditions

Weather itself is often a factor in fishing vessel casualties. Fishing conditions with regard to weather in Alaskan waters are extremely challenging. First, all waters in Alaska have been classified as "cold" waters in which hypothermia can lead to death by drowning within minutes of immersion. Secondly, although Alaskan fishermen do experience flat calm conditions, this is the exception rather than the rule. Alaska is situated in the North Pacific where cold, dry polar air moves south and then collides with the warm, moist air over the Japanese current. During winter months these air masses meet near the Aleutian Chain and create great storms that move into the Gulf of Alaska. Weather conditions can also change quickly, and for the most part, whether fishing in winter or summer, weather conditions can be extreme. Fishing and traveling to and from the fishing grounds during a gale warning is a common practice and is considered business as usual.

Icing conditions during the winter months are frequent and often crews are forced to put down their fishing tools and pick up bats, which are used to pound off ice that has built up on their vessel. Icing of a ship's superstructure can rapidly compromise the stability of any vessel and predispose it to capsizing.

The photo on the next page, Figure 2.2, shows the degree to which icing can get out of control. This vessel did not sink and ended up washed ashore where it was unable to be

salvaged. Unfortunately, the crew abandoned ship before she reached the shore and did not live through their ordeal.



Source: National Research Council

Figure 2.2 Iced Vessel in Alaskan Waters

An example of the tragic effects of icing as well as the swiftness that the problem can get out of control is illustrated in the following incident taken from the National Transportation and Safety Board study of Uninspected Commercial Fishing Vessel Safety.

The fishing vessel ALERT, a trawler, was working off the south end of Kodiak Island in the Shelikof Strait on February 14th 1985. About 0300 the captain of the ALERT informed the captain of the fishing vessel MARGARET LYN that due to heavy icing on

his vessel, he had changed course and was heading for safe refuge in Bumble Bay which is situated on the south end of Kodiak Island. The captain of the MARGARET LYN reported that there were 100-mph winds from the northwest, heavy freezing spray, extremely low temperatures, and blowing snow. About 0400, the captain of the MARGARET LYN, which was about 10 nautical miles north of the ALERT stated, he likewise was going to head for Bumble Bay and they agreed to hourly communications. However, the ALERT never made another communication. The five crewmembers were never found. The Safety Board determined that the probable cause of the catastrophic loss of the ALERT was capsizing due to icing during severe weather. (NTSB,1987,23-24)

2.5 Fishermen's attitude toward safety

Some ten years ago the author was listening to a radio interview with a Coast Guard official who was taking over a command of one of the airbases in Alaska. During the interview he was asked about his thoughts on fishing vessel safety, and he related the experience of visiting a ship's chandler on the East Coast, looking for the safety department. After looking up and down the aisles for quite some time and not seeing the familiar safety orange colors of safety equipment, he decided to ask the proprietor of the store for help. The proprietor gave directions, telling him that it was at the end of a specific aisle. When the Coast Guard official went to that aisle, where all he found were lead weights attached to leather straps. When he asked the clerk what they were for, the clerk explained that they were boot weights. They were to be put on when a situation got out of control, so as to not prolong the mariner's suffering!

Alaskan fishermen have held on to this attitude through the years because of the 'last frontier' mentality. Although much has been tried to improve safety in the U.S. fishing industry, including government regulation and training and safety awareness programs,

fatality rates remain high. The author feels that one of the main reasons for the continuous high fatality rates is fishermen's attitudes towards safety and safety regulations. Many fishermen came to Alaska to escape the world of rules and regulations that other states were so inundated with. The Alaskan fishing grounds were essentially open game for anyone with drive and the ability to work hard.

In 1983, Dennis Petersen, an Alaskan crab fisherman was quoted in the book "Lost At Sea – An American Tragedy" as follows,

> It's a hard life. Every year you lose fifteen to twenty guys. Both my brother and I have been overboard, and we know what it's like. I don't care what kind of model you come up with, you're not going to solve the problem, I don't think. When it's your turn to go, you go." (Dillan, 1998, 141,142)

Another issue with regards to attitudes toward safety is the age of crewmen. Commercial fishing in Alaska is primarily a 'young mans' game. Crewmen on board vessels tend to be in their 20's and early 30's. There may be a connection between age of crew and perception of risk. Young people tend to think that they are impervious to accident, fatality and may take more risk. One observation the author has made, that is purely anecdotal, is that most of the fishermen she has met, tend to engage in risky forms of activity during their vacations or leisure time. Extreme skiing, snowboarding, mountain climbing, para-sailing and scuba diving are just a few of the 'risky' sports commercial fishermen engage in.

The Alaskan Fleet has come a long way though, in developing a safety culture which is illustrated in a 1998 letter to Leslie Hughes, Executive Director of the Pacific Northwest

Fishing Vessel Owners' Association, upon her being awarded the U.S. Coast Guard's Meritorious Public Service Award for her work in promoting fishing vessel safety. Robert Desautel of Nina Fisheries, Inc. writes "We Fishermen used to have a more fatalistic attitude to our profession: we knew it was dangerous, and we knew lives were often lost. But we accepted this, thinking that this was simply the way of fishing and not much could be done about it, but we were wrong and you helped prove us wrong." (USCG Fishing Vessel Casualty Task Force Report,1999,5-1)

Even in light of this shift of attitude, deaths and casualties are still considered part of doing business. The author does not mean to imply that casualty is taken lightly within the Alaskan commercial fishing community, but she has heard the statement made many times " We never thought it would happen to us." Fishing in Alaska is still a high stakes game with regard to finances where fortunes can be won and lost within a fishing season. Fishermen are constantly pushing the envelope, taking chances, so much so that it is no longer considered risk taking, but falls into the category of business as usual. This is especially true regarding stability issues. Fishermen want to haul the largest amount of fishing gear and fish that they possibly can, sometimes exceeding stability safety. Risk taking behavior becomes habit; habits are no longer considered risks. This is especially true when the habit equates to a positive economic outcome. As fish stocks decline, a fisherman's thoughts are more concerned with management issues, making boat payments and supporting a family. Safety typically, though not consciously, lies at the end of the list of things to worry about.

The United Fishermen of Alaska is an organization that represents 40 plus Alaska Commercial fishing groups and 450 individual fishermen. In a correspondence from a UFA Executive, he stated, "Since arriving at UFA, most of my time has been consumed on other issues that are more immediate threats to the industry (Governor, Legislative

actions, etc). Regulatory (safety) changes have not made it to the top of the list." (UFA email correspondence, May11, 2000)

2.6 Economic issues

There are many issues related to the economics of staying in the commercial fishing business. Decline of resource, drop in price and shortened fishing seasons all affect the commercial fisherman's ability to make a profit and be the safest he or she can possibly be. Safety risks are taken because of economic necessity or to maximize economic gains.

2.6.1 Shortened fishing seasons

The author remembers a time many years ago during a red salmon season when the boat she was working on was putting its net out, off a cape in an area known for its currents and winds. In this particular area, a vessel could be fishing in flat calm waters one hour, and then the next be faced with 8-foot seas and a 30-knot wind. The fish were running well on that particular day, and each time the crew put their net out and brought it back in, a process which takes approximately an hour and fifteen minutes, the boat was rewarded with a financial gain of approximately US$2000.00. The author's share of that was US $200.00. If the process is repeated enough times in one day, a crewman makes a good wage. One must remember that they do no have this great harvesting opportunity all summer long. These red salmon openers may only last for a few days, and then the chance of making a profitable red salmon season are over.

Towards the end of the day the weather turned for the worse and most of the 15 or so boats fishing in the area had run for sheltered waters. The author's vessel decided to stick it out and take their chances with one more set. So many things can go wrong when

the weather is working against you, which may include rendering your vessel dead in the water if the net gets fouled in the propeller. She distinctly remembers that she had doubts as to whether the set worth making, as she knew the crew would get physically "beat up" and may catch nothing in the process. But there is a certain adrenaline rush that comes with working on the edge and so was supportive of her skipper's decision.

They did make another set, they did get "beat up", they did not catch enough fish to say it was worth it and they did call it a day when finished with the set. The storm worsened enough that night, that in that particular anchorage three vessels broke their anchor lines and ended washed up on the beach. Would her skipper make the same decision again to take chances that may jeopardize the safety of the boat and crew? Yes, if the possible financial gain was big enough. This story typifies a scenario or similar ones that happen over and over in the commercial fishing industry. Some vessels and crews are not as lucky as the author's crew were that particular day, counting their losses in fish only.

As fish resources decline, fishery openings become shorter and sometimes nonexistent. 'Making hay while the sun shines' is a common attitude, and a necessary one if a person is to make a living in the commercial fishing industry. As most of the fisheries in Alaska are managed by a common property resource regime, there is always a race to harvest the resource that is available. Because of this, fishermen find themselves and their vessels in sea conditions that they and their vessels are not prepared for.

2.6.2 Fatigue

Fatigue also plays a major role in fishing vessel safety, as fishermen have only a short time to put in a season. Rest comes infrequently as the goal is to make the most of the short fishing time available and to deliver as much fish as possible. As a crewman, the author has heard many times the following statement made during the summer salmon

seasons where the average sleep per day is 4 hours, " You have all winter to sleep, now is the time to work." This statement is made during a *three-month* season so you can imagine the fatigue that goes along with a *three-week* crab season during the winter months in the Bering Sea. Crab Fishermen have to contend with constant wind, waves and icing, working on a slippery platform that is constantly in motion. When sleep is allowed it is only when traveling to and from the fishing grounds and short naps between sets of gear.

It is a proven fact that fatigue dulls the senses and that decisions made under fatigue may not always be the safest ones. A person's ability to react appropriately to a safety-threatening situation is also jeopardized. Add these issues to the reality that fishermen are going to take chances anyway and the safety issue compounds itself.

2.6.3 Drop in price

The author refers again to the salmon industry as that is the one that she is most familiar. In the summer, Kodiak's fleet also fish for pink salmon which in years past brought up to US$1.25 per pound. The price this year will be around 10 cents a pound. You can imagine that fishermen will be trying to put as many fish on board as possible during a fishing period to make their efforts pay off. Lifting heavy loads continuously and straining lifting gear such as booms, winches; cable and line take their toll eventually as the usual safe life of that gear is shortened due to increased equipment stress. A friend of the author's who is an owner operator of a salmon vessel in Kodiak suffered a disastrous consequence. While bringing on a net full of fish, his vessel's main boom gave way, killing the crewmen standing beneath it handling the net. The author would consider this skipper a very safety conscious skipper, but she does not think that the fleet in general takes into account the extra wear and tear their vessels are going through due to the increased fishing effort. Another example would be that a drop in fish prices

could put a squeeze on capital available for vessel maintenance or delay the upgrading of equipment.

2.7 Diversity of fishery participation

Because of a decline in resources, and its negative economic implications, fishermen are forced to diversify and participate with the same vessel in more than one fishery. This often is accompanied by changing deck configurations and types of fishing gear. Each of these issues can adversely effect the vessel's stability in such a way that the fisherman may be unaware of. In 1983, two fishing vessels, the ALTAIR and AMERICUS capsized and sank in the Bering Sea taking 14 men with them. Following is an excerpt from the national Transportation Board's marine Accident Report.

> About 0230 on February 14, 1983, the fishing vessel ALTAIR departed Dutch Harbor, Alaska, for the crab fishing grounds near the Pribilof Islands in the Bering Sea. About 0330, the helmsman of another fishing vessel en route to Dutch harbor saw the ALTAIR proceeding on a course toward the Pribilof Islands at about 10 knots. About 0830, the fishing vessel AMERICUS a sistership to the ALTAIR, departed Dutch harbor for the same crab fishing grounds. Both the AMERICUS and the ALTAIR were fully loaded with crab pots. About 1430, the capsized AMERICUS was sighted about 30 nautical miles north of Dutch harbor. The ALTAIR was never seen again. The AMERICUS' seven crewmembers and the ALTAIR's seven crew members are missing and presumed dead. (NTSB/Mar-86/01, Technical Report Documentation Page)

Both vessels were originally built as crab vessels but with the decline of the crab stocks, both had been refitted and modified to trawl fish as well. Net reels and stantions were added to the decks of both vessels. but neither vessel had any stability tests done after the addition of the trawl gear which occurred right before the vessels left for the 1983 crab season. After a two-year investigation, the NTSB report concluded that, because of the changes made to the vessels which increased their lightship displacement by 35 tons and raised the center of gravity about 1 foot, they were no longer able to carry out their usual fishing operations safely with regards to stability.

2.7 .1 Technology advancement with regard to stability

Referring again to the Kodiak salmon fisheries, salmon seining vessels were originally built not so much with seaworthiness in mind but to specifications to the actual fishery. Salmon caught with seines were traditionally caught in shallow, protected waters. Vessels built in the 1970s to use fishing gear manufactured in the 1970s are facing the same issues as the A Boats described in the previous paragraph. Vessel stability is not keeping up with gear technology. In general, modern gear of the 1990s is bigger and heavier. No longer do salmon fishermen fish with small nets up at the head of the bays in protected waters with the help of a small seine work skiff. (When traveling from one fishing area to another, the work skiff is usually brought on board the deck) No longer do Kodiak salmon fishermen wait up in the bays for the salmon to arrive. Fierce competition has forced fishermen to intercept the salmon before they make their way into the bays. Fishermen are now using the same fishing vessels that were designed for protected waters to work off the capes in less protected waters. They are using nets that are much larger and heavier, attaching heavier seine blocks to the end of their main booms to help with the retrieval of their nets, as well as using larger and heavier seine work skiffs with more horse power. Some fishermen are also installing refrigerated

seawater systems in their fish holds, enabling them to get a better price for their chilled product at delivery time. The author is not aware of any salmon fisherman who has had his or her stability booklet reworked to reflect the changes made to their specific fishing vessel.

New seining vessels are being built, but skippers still want the attributes of the older vessels and the ability to fish shallow waters if necessary as important salmon area fishing openers still take place at the head of bays. Quite frequently throughout the Kodiak salmon season, new areas will open where thousands of salmon have had the chance to make it up into shallow water, close to their final destination, the creeks and rivers that support their spawning cycle. It is not unusual to see up to thirty vessels at the head of a small bay waiting for the starting gun to go off, signaling the start of an opener. If the fishermen is lucky and manages to get his or her net around a substantial amount of salmon, thousands of dollars may be made in a matter of one or two hours.

Salmon fishermen also want the ability to pack as much fish as possible. When the fish are running hard, a vessel's hold can fill up fast with product. Unloading, even if on the fishing grounds to tenders that are standing by to take fish, can be a time costly task, taking as much time as two to three hours away from harvesting. The more fish a vessel can hold, the more time the vessel can spend fishing. To facilitate the issue of packing more fish as well as having a shallow draft, vessels have no where to grow but out. Seining vessels are becoming beamier, shallower as well as lighter to accommodate a faster speed through the water. Although by law, seaworthiness must be a factor of the design, seiners have truly become fish catching machines that are pushing the limits of stability when traveling and working in marginal weather.

Most of these vessels have escaped tragedy, but one vessel the seiner F/V Evanick was not so lucky. Traveling to the herring grounds in Togiak, Alaska from Kodiak, Alaska, a

journey which takes about 5 days, a journey that the operator of the vessel had made many times with the same vessel, the Evanick was caught in a rough following sea. On board the back deck the Evanick had a new seine skiff that weighed approximately 5,000 lbs., quite a bit heavier than the one he usually fished with. The Evanick rolled over so swiftly that it is the author's belief that they probably didn't know the extent of the danger they were in until the vessel rolled over. The capsize happened so fast that the crew had no time to get to the survival suits, which were still in their storage area when divers examined the overturned vessel. No crewmembers were ever found. (NTSB, DCA-98-mm-029)

2.8 Inexperienced crew

In the earlier years of the Alaskan fishing industry, vessels would maintain the same crews for years at a time. A deckhand could make a career out of fishing and earn enough money to support a family. Patrick Dillon writes in his novel "Lost At Sea – An American Tragedy" about the experiences of a long time Coastguardsman named Captain John De Carteret.

> De Carteret was acquainted with dozens of fishing families and know that in the old days, fishing had been a father-son occupation, a family enterprise. From their fathers, uncles, and other relatives, young men learned respect for what the sea was capable of doing to even the best boats. (Dillon, 1998, 115)

In modern times, with depleted resources and shortened fishing seasons, it is tough for a person to consistently earn enough year after year to maintain a home and family. Today, crewmembers are typically young persons, risk takers, looking for experience

that will lead them into the a skipper position, as well as adventure, an escape or a good amount of income in a relatively short amount of time. Because of this, significant proportions of crews are not experienced and frequently change. There is little if any time to properly train new crew persons with regard to safety during a hectic season and skippers often rely on a new crewmember's common sense to keep him/her out of harm's way or to react correctly during an emergency. All to often 'green' crew are the victims of marine casualties.

Twenty-two years ago the author was one of these green crewmembers. Fortunately her experience did not end in disaster, but it could have. She was hired as a deck hand for the 1979 salmon season on a 29-ft. vessel that was forty years old. She remembers many experiences of that summer vividly, but one experience could have ended in tragedy although she did not realize it at the time. Her vessel was returning from a salmon opener that took place on the mainland of Alaska, which was 20 miles away from Kodiak Island across a dangerous stretch of water called the Shelikof Strait. The vessel she was on had no survival suits, no emergency flares, no EPIRB and only a VHF radio for communication. One thing they did have though was a bilge pump that continuously gave the crew problems. A few miles into their trip, the weather quickly worsened and soon they were traveling in 8-10 ft seas. Not a big deal unless you are traveling on the vessel she just described. It was thrilling! She did not know to be concerned regarding her situation and none of the other crewmembers or skipper showed any concern that she was aware of. They arrived safely at their destination with only one mishap. Upon our arrival one of the crewmembers broke her hand when she got it caught between the vessel and their work skiff. In retrospect a minor issue when you think of what could have happened.

These were the days before mandatory safety equipment, so the author's skipper was not breaking any laws. The skipper and crew were not fully aware of what they could do to make their situations safer.

The preceding issues are not an exhaustive list of issues affecting safety in the Alaskan fleet, but are representative of the types of issues fishermen constantly face. Following, the reader will find in the form of legislation and proposed legislation, attempts at helping fishermen deal with these issues.

CHAPTER THREE

INTERNATIONAL AND NATIONAL INITIATIVES TO ENHANCE FISHING VESSEL SAFETY

"Those who cannot remember the past are condemned to repeat it."

The Life of Reason,
George Santayana, (1863 – 1952)

3.1 Overview

Although the fishing industry has been without strong safety legislation in the past, it has not been without an ongoing struggle to mandate safety. The battle between fishermen, who are fiercely independent and reject attempts to control their industry with regard to safety, and those within and outside the industry who have tried to exert control, continues to this day. The International Maritime Organisation as well as other United Nations agencies has produced an impressive list of documents relating to commercial fishing vessel safety which includes:

1. The International Convention for the Safety of life at Sea (SOLAS)
2. The Torremolinos International Convention for the Safety of Fishing Vessels, 1977, and the Torremolinos Protocol of 1993
3. International Convention of Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel, 1995 (STCW-Convention)
4. Code for the Investigation of Marine Casualties and Incidents
5. International Convention on Maritime Search and Rescue

6. Code of Conduct for Responsible Fisheries
7. FAO/ILO/IMO Code of Safety for Fishermen and Fishing Vessels
8. FAO/ILO/IMCO Voluntary Guidelines for the Design, Construction and Equipment of Small Fishing Vessels, 1980
9. FAO/ILO/IMO Document for Guidance on Fishermen's Training and Certification , 1985

Although there have been many attempts at guiding and mandating a safer commercial fishing industry, the author has selected a few, international and national (USA) initiatives to briefly describe what she believes have had an influence towards a safer fishing industry. The items following will be labelled as to whether they are mandatory or voluntary, and also what agencies are responsible for them.

3.1.1 International Convention for the Safety of Life at Sea – SOLAS

Mandatory

International Maritime Organisation

Even though the chapters of the International Convention for the Safety of Life at Sea are not concerned with fishing vessel safety specifically, I don't think a brief overview of safety legislation affecting fishing vessel safety would be complete with out mentioning SOLAS. It is the first major document, the oldest of its kind having been adopted in 1914 after the tragedy of the Titanic, claiming more than 1,500 lives. The Convention is the first of many *reactive* documents, following on the heels of marine disasters in an attempt to make maritime industry safer. Fortunately, the original SOLAS as well as the four succeeding versions have been successful in making the shipping industry in general safer. Fishing vessels are addressed indirectly in SOLAS as amended in 1978 and 1988 which provides general safety requirements for all vessels with regard to safety of navigation in Chapter V. Although most of the requirements are for ships operating on international voyages, basic requirements for safe navigation, such as the magnetic compass, radio

requirements as well as distress messages apply to smaller vessels that could be involved in commercial fishing are provided for.

Specific standards have also been taken from the SOLAS Convention by the US's fishing fleet with regard to liferafts, visual distress signals, personal flotation devices as well as immersion suits.

3.1.2 Torremolinos International Convention for the Safety of Fishing Vessels, 1977 and the Torremolinos Protocol of 1993

Mandatory, as yet not ratified
International Maritime Organisation

It is the author's opinion that the most comprehensive and ambitious instrument for fishing vessel safety on a world-wide level, is the Torremolinos International Convention for the Safety of Fishing Vessels. It is named the Torremolinos Convention, as the International Conference on Safety of Fishing Vessels took place in Torremolinos, Spain in March – April 1997. This convention marked the first time that compulsory safety regulations aimed at fishing vessels, specifically fishing vessels of 24 meters and over, were internationally agreed upon. This convention was never ratified as many of the states felt that the convention was too stringent. As of the year 1990, the ratifications represented only 19% of the world's fleet of fishing vessels 24 meters of length and over. (50% representation needed to ratify)

The need for technical changes as well as the lack of enthusiasm for the convention as written, led to another Conference in Torremolinos, Spain in 1993, which adopted a Protocol to the 1977 Convention. The Protocol, in the author's opinion is even more encompassing topic wise, but restricts obligatory provisions to vessels of 45 meters and above. For vessels 24 to 45 meters, the applications of safety requirements are left to regional decisions. There was a lot of optimism from the

industry as evidenced by an excerpt from the Safety at Sea International Magazine. In an article intitled *The 1993 Torremolinos Protocol* the following was written;

> At the 1993 conference, a protocol was adopted which amends and absorbs the parent Convention. It takes into account technological evolutions in recent years and the need to take a pragmatic approach towards the early ratification of an instrument which provides the appropriate legal regime needed to regulate the safety of fishing vessels and those who sail in them. Its purpose is to eliminate the provisions incorporated in the 1977 Convention which have caused difficulties for states, and to enable the protocol to be brought into force as soon as possible.

Again an attempt at making the fishing industry safer failed. As of February 2, 1999, only five countries; Cuba, Denmark, Iceland, Norway and Sweden have ratified the Protocol.

3.1.3 STCW-F - Convention - 1995

International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel
Mandatory once Adopted
International Maritime Organisation

This Convention, as its name implies is concerned with standards for the training, certification and watchkeeping skills of commercial fishermen on vessels 24 meters in length and over, operating in limited and unlimited waters. At the present time this Convention has not received enough signatures to ratify it. For the Alaskan fleet, even if and when this convention becomes law, its effectiveness will be limited, as the majority of the Alaskan fleet is less than 24 meters and does not fall under the

authority of the convention's scope. As of February 2, 1999, Denmark and the Russian Federation are the only countries to have ratified.

3.1.4 Code of Conduct for Responsible Fisheries - 1995

Voluntary

Food and Agriculture Organisation of the United Nations

The Code of Conduct for Responsible Fisheries was manifested in part due to the widespread overcapacity of the world's fishing fleets. The introduction in the mid-seventies of the exclusive economic zone (EEZ), gave rights and responsibilities to coastal states that had not, up until that time controlled the exploitation of their own fisheries resources. Many coastal states did not have the physical and financial resources as well as experience to manage there own fisheries affectively. (FAO, Code, 1995.v) Other countries, such as the United States, built up their own fleets to the point of overcapitalisation and in some cases overfishing has been the result.

The issues above, as well as others, "all of which threatened the long-term sustainability of fisheries and, in turn, harmed the contribution of fisheries to food supply", (FAO, Code, 1995,35) influenced the adoption of the Code of Conduct for Responsible Fisheries on October 31, 1995. Although this document is aimed at the responsible management of resource, in Article 8 - Fishing Operations, vessel safety as well as crew safety and health are specifically addressed. (FAO, Code, 1995 16,17)

3.2 Initiatives in the United States of America

3.2.1 Draft Safety Legislation of the 1930s

In the early part of the last century, lawmakers attempted to make the motor fishing vessel a safer vessel to work on. These attempts were thwarted by fishing vessel interests, and the end result was a new classification which is known today as the

"Uninspected vessel'. Only vessels over 300 gross tons are required to be inspected by the United States Coast Guard. As the majority of the American commercial fishing fleet is under 300 gross tons and because of the nature of this classification, lawmakers were and continue to be limited in their ability to develop safety regulations that will pertain to the fishing fleet.

This may well be the most affective legislation in a *negative* sense to have influenced the safety of the United States commercial fishing fleet, having placed the majority of the vessels out of the scrutiny of safety inspectors.

3.2.2 Fishing Vessel Safety Bill - 1941

Voluntary

United States Congress

In 1941, a bill (*H.R. 3254*) that specifically addressed fishing vessels was introduced to the United States House of Representatives. It proposed to "place fishing boats [15 gross tons or over, fishing outside inland waters] under the supervision of the Bureau of Marine Inspection and Navigation." This bill outlined specific requirements for watertight bulkheads, bilge pumps, ring buoys, life preservers, lifeboats, radio telephone, first aid kits, line throwing guns, annual inspection, and the licensing of operators. Although the Atlantic Fishermen's Union of Boston supported the bill, most other segments of the fishing industry opposed the measure, particularly the provisions for the watertight bulkheads and the licensing of operators. This initiative died in part due to the outbreak of WWII.
(USCG Fishing vessel safety task force report,1999,2-2)

3.2.3 The Commercial Fishing Vessel Safety Act of 1988

Mandatory

United States Department of Transportation / United States Coast Guard

By far, the document that has had the most profound positive affect on the Alaskan Commercial Fishing Fleet is the Commercial Fishing Vessel Safety Act of 1988. The act was spearheaded by the parents of Peter Barry, a young man who lost his life while on a fishing vessel during the Kodiak, Alaska salmon season of 1985. As a result of the investigation that followed the tragedy, Peter's parents found out that commercial fishing vessels in the United States were virtually unregulated when it came to safety. The timing was right for a grass roots campaign to change the status of safety in the commercial fishing fleet with regard to legislation. Mrs. Barry started a grass-roots campaign; enlisting other parents whom had suffered losses as well as other concerned citizens. Mrs. Barry worked hard campaigning through a growing list of political and journalistic contacts, pressuring lawmakers for mandatory safety measures. In the end the plea was heard and answered with the enactment of the Commercial Fishing Vessel Safety Act of 1988.

The Act contains regulations that apply to all commercial fishing vessels documented (greater than 5 net tons) or state registered, the requirements varying in scope depending on the area of operation, size of vessel and manning. Items covered by the act include mandatory monthly onboard emergency drills, safety training, vessel orientation, safety equipment and first aid training onboard fishing vessels as well as encouragement of fishermen to participate in the voluntary dockside safety exam. Since the passing of this act, the number or deaths has decreased nation-wide. Other outcomes of this legislation have been the development of United States Coast Guard Approved fishing vessel safety programs that have provided a venue of training for the commercial fisherman. Examples of these programs are being conducted by the Alaska Marine Safety Education Association, and the North Pacific Fishing Vessel Owner's Association.

3.2.4 Fisheries Management – Individual Fishing Quotas - 1995

Individual Fishing Quotas were originally conceived as a tool to prevent over harvesting in the Alaskan halibut fisheries. As catch effort increased, less time was given the fleet to harvest a declining stock. Even with the short fishery openers, harvest levels were consistently being exceeded. Fisheries' managers were unable to control the amount of fish caught during a specified amount of time (the last unregulated opener lasted only 12 hours) and the fleet had to fish in whatever weather presented itself during that opener. Many vessels were not suited to the storms that would appear during an opener, but skippers and crews felt pressured to fish anyway, as it might be their last chance for the year. Needless to say there was a high incident of marine casualty during these openers.

Fisheries' managers decided to award Individual Fishing Quotas to the vessels with the appropriate past history in the fishery. Basically, the vessels that received the quotas were guaranteed a percentage of each year's total allowable catch. They were also given the right to fish for them at their leisure over an 8-month season. Halibut fishermen are now able to choose the weather they will fish in and are not forced to participate in frenzied derby style fishing that accompanied the short openers. The lowering of casualties in that fishery has been significant over the past three years. (NRC, Sharing the Fish – Toward a National Policy on Individual fishing Quotas, 1999)

3.2.5 The Fishing Vessel Casualty Task Force: March 1999

During December 1998 and January 1999, the East Coast of the United States suffered terrible casualties when eleven lives and four clam and conch fishing boasts were lost. Although these accidents did not cause a statistical departure from historical casualty rates, the fact that the incidents occurred in such a short span of

time and in a geographically small area emphasised the need for concern. These incidents were brought to the attention of legislators on the East Coast, who then in turn asked that a task force be formed to look once again at the issues of commercial fishing vessel safety. The task force was made up of twelve members who represented the United States Coast Guard, National Marine Fisheries Service, Department of Labor, Occupational Safety and Health Administration, National Transportation Safety Board and The National Oceanic Atmospheric Administration. There were also five advisors that represented commercial fishermen, commercial fishing vessel insurers. The objectives of the task force were to:

1. evaluate recent serious casualties;
2. examine recent casualties in the context of historical dates;
3. provide quick feed back to the industry;
4. review the current fishing vessel safety program and past safety initiatives;
5. recommend significant measures to reduce loss of life and vessels; and,
6. develop direction for government in industry.

Although there were many recommendations made in the report, ranging from requiring safety warning signs being put on deck equipment, to legislating required training for crewmembers, the overall recommendation was that the industry needed stricter guidelines, tougher enforcement of what is already in place, and more legislative requirements regarding inspections, training and licensing.

The next chapter will discuss the affects that the previous mentioned legislation, documents and events have had on the Alaskan commercial fishing fleet with regard to casualty data.

CHAPTER FOUR

AFFECTS OF LEGISLATION ON COMMERCIAL FISHING VESSEL CASUALTY DATA

4.1 Torremolinos Convention

The legislation and events discussed in the previous chapter have all had an impact on fishing vessel safety world-wide. Most importantly, each one in some way has brought awareness to the safety issues of the commercial fisherman. Unfortunately, this awareness has been recognised more by bureaucratic agencies rather than fishermen themselves. As the author stated in the previous chapter, it is her opinion that the Toremolinos Convention was the most comprehensive safety initiative for the commercial fishing industry world-wide, but the 'world' was and is still not ready to accept it. The impact if ratified, on the commercial fishing fleet in the United States would be limited as the Convention only applies to commercial fishing vessels greater than 79 feet. The majority of the U.S. fleet is under 79 ft. (USCG Fishing Vessel Casualty Task Force, 1999,3-1)

Although not a mandatory document world-wide, the Torremolinos International Convention for the Safety of Fishing Vessels, 1997, as modified by the Torremolinos Protocol of 1993, has set the standards for mandatory commercial fishing vessel safety training in the United States. Safety training curriculum from both the Alaska Marine Safety Education Association as well as the North Pacific Fishing Vessel

Owner's Association, mirror the contents of Chapter VIII, Emergency Procedures, Musters and Drills from the Torremolinos document.

The Torremolinos document has also recognised that regionalization of safety standards is a positive way to develop appropriate standards for different fleets operating in different circumstances around nations. One of the problems with a world-wide standard is that each nation and regions within those nations have unique issues to be addressed. The United States is dealing with the same problem of developing safety standards that meet all the needs of all the fleets, but do not put excess burdens on any of the fleets.

4.2 STCW-F

Most of the mandatory safety training that masters and crews receive on the world's fishing vessels, are on vessels large enough to require an operator's license. In the United States these are vessels over 200 tons. STCW-F if ratified, would impact less than 20 commercial fishing vessels in the United States. In general, Safety Regulations coverage by the International Maritime Organisation in the world's fisheries would be as follows:

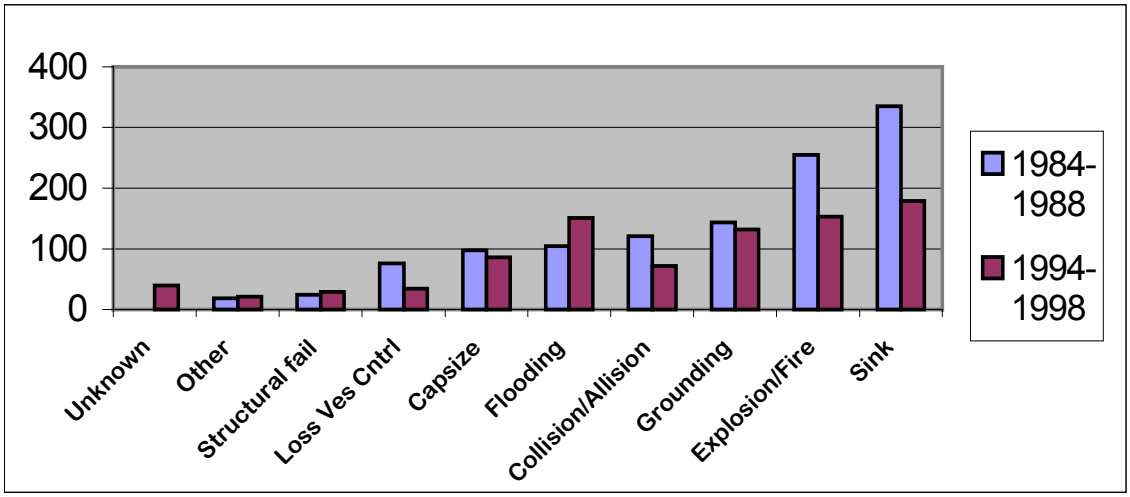
5,100 F/Vs in the world will come totally under IMO regulations.
2,100 F/Vs will have partial IMO coverage.
30,600 F/Vs in the 24-35 meter range will have less partial coverage.
1,000,000 to 2,000,000 fishing vessels in the world are under 100 gross tons and will not be covered by any IMO regulations at all. (Dzugan, 1997. Letter to Bill Gossard, NTSB)

As stated in the figures above, the majority of the worlds fleet as well as Alaska's fleet will not be covered by any IMO regulations, but STCW and STCW-F have not been without their influence on the current mandatory fishing vessel safety standards

for all size fishing vessels in the United States. In joint meetings of the USCG and the Commercial Fishing Industry Vessel Advisory Committee, both of the above mentioned documents are referred to frequently when looking at establishing higher standards in the U.S. fleet with regard to safety.

4.3 The Commercial Fishing Vessel Safety Act of 1988

The Fishing Vessel Safety Act of 1988 has had some positive impact on Fishing vessel casualty data for the United States. Following, the author has constructed a graph illustrating information taken from the Fishing Vessel Casualty Task Force Report of March, 1999, which compares the five years prior to the Act as well as the five years after. Figure 4.1 shows total fishing vessel losses before and after the act of 1988. Sinking continues to be the leading cause of vessel casualties.



Source: USCG

Figure 4.1 Total Fishing Vessel Losses Comparison Before and After the Fishing Vessel Safety Act of 198

Although in the areas of structural failure and flooding there appears to be no positive change, in all the other areas including capsizing, collision/allision, grounding, explosion/fire and sinking there was a marked change for the positive.

The author believes that that the overall statistics for the commercial fishing industry nation-wide were affected by the Commercial Fishing Vessel Safety Act as there was no other significant event that she is aware of that would have caused such a change.

The effects of the Commercial Fishing Industry Vessel Safety Act on the Alaskan Commercial Fishing Fleet however, are not so positive. According to the United States Coast Guard, Alaska experienced more than 20 commercial fishing fatalities per year from 1982 to 1987 (NIOSH, 1997, 1). In a study done by NIOSH in 1997, the average number of fatalities per year in Alaskan waters from 1991 to 1996 is 23.

It is obvious that more needs to be done. The author does not believe that more legislation is the answer. She thinks that the Commercial Fishing Vessel Safety Act of 1988 is an excellent tool to facilitate the lowering of fishing vessel casualties. The reason that this legislation is not as affective as it could be stems from the author's opinion that the current legislation is not being enforced to the fullest extent. Other issues contributing to the problems of the Fishing Vessel Safety Act have been, insufficiently trained USCG inspectors for voluntary inspections and mandatory safety drills enforcement as well as the negative impression fishermen had in the past of the USCG. This in turn jeopardised the effectiveness of the voluntary dockside exam and mandatory monthly drills.

Over half of the skippers in Alaska didn't want to subject themselves to, or want to be 'bothered' with the examination. Fear that their vessel would not pass the examination, or just not wanting to deal with the USCG in general has prevented fishermen from participating. Figure 4.2 gives totals for the numbers of exams completed in Alaska for each year since 1992 when the program went into effect, as well as the number of decals issued to vessel that were found to be in compliance with the Commercial Fishing Vessel Safety Act of 1988

5278 Alaskan commercial fishing vessels have been awarded Safety Decals. With the current fleet numbering 11,913 vessels it is sad to not that less then 50% of the Alaskan fleet has either chosen not to be inspected or did not pass the inspection, earning a Safety Decal.

YEAR	EXAMS	DECALS ISSUED
92	807	544
93	1249	684
94	1243	732
95	1177	694
96	1093	689
97	769	544
98	1064	736
99	1021	655
Total	8423	5278

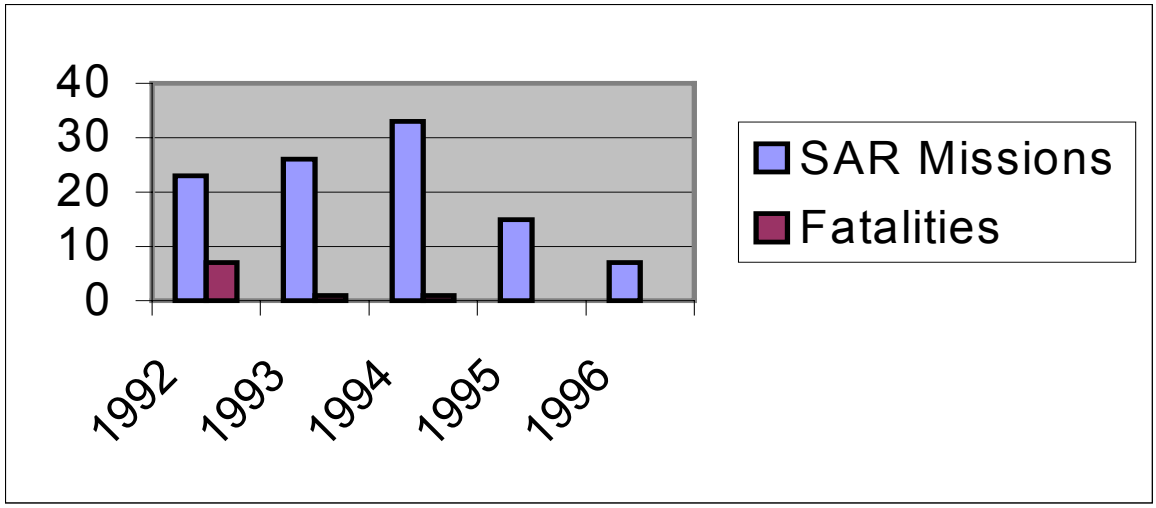
Source: USCG

Figure 4.2 Exams conducted and Decals Issued By the USCG in District 17

4.4 Fisheries Management - Individual Fishing Quotas

As stated in the previous chapter, Individual Fishing Quotas (IFQs) have lowered fishing vessel casualty rates. Supporters as well as critics of this management program recognised that this approach to preventing a race for fish and overharvesting arose in response to real and pressing fishery problems in which other types of regulation had failed. Economic efficiency, product quality and safety suffered as a result of the old style derby fishery as the short openers sometimes created incentives to waste other species caught in the process as well as force the fishing fleet to operate in dangerous weather. The derby style fisheries also contributed to fatigue, as fishermen felt pressure to harvest as mush fish as possible, before the Total Allowable Catch limit was reached. Dangerous fisheries such as

Bering Sea Crab that have no quota system in place find themselves fishing for days on end with out adequate rest.



Source: USCG

Figure 4.3 Halibut Fishery-Related Search and Rescue (SAR) Missions and Fatalities by Year in Alaska, 1992 – 1996

The above chart, Figure 4.3, illustrates the effectiveness of the 1995 Individual Fishing Quota management regime with regard to safety. This form of management is being looked at for other fisheries in Alaska and the United States, but the author has no further information on the status of those endeavours.

4.5 The Fishing Vessel Casualty Task Force

There was a lot of anxiety among the commercial fishing industry as to just what would be stated, and the ramifications of the recommendation that would be included in the Fishing Vessel Casualty Task Force report. The report came out in March 1999, and it is the author's opinion that the report was a knee jerk reaction to a lot of casualties happening in a short time span, but she also feels that it served as a venue to see how better the USCG could implement the current standards. The executive

summary of the Fishing Vessel Casualty Task Force Report states, "The unsafe conditions and failed defences that result in high casualty rates stem from inadequate safety standards, poor compliance with existing safety standards, and inadequate participation in voluntary safety initiatives." (USCG Fishing Vessel Casualty Task Force,1999,vi)

From an article dated April 11, 1999 in the Ashbury Park Press newspaper in the state of New Jersey,

> The long-awaited release of a Coast Guard report on fishing vessel safety surprised fishermen and safety advocates alike with the scope of its recommendations. But just how many of those ideas come to pass—from designing new lifejackets to licensing captains—depends in large part on how they are received by commercial fishermen.
>
> So far, area fishermen don't have a lot of good things to say about the report that was prompted by five sinkings and 11 deaths this winter. 'When the Coast Guard says they want to make fishing no more dangerous than other marine professions, what's the 'rest of the marine industry'? Five hundred- foot freighters? This is crazy. We're small boats', said James Lovgren, a trawler captain and president of the Fishermen's Dock Cooperative in Point Pleasant Beach.

As stated in this chapter, the Coast Guard had, up until this time, not been aggressive enough in educating the fishermen as well as enforcing to the extent possible the

requirements that are already in place. The learning curve has been high, both for the United States Coast Guard as well as fishermen.

The author believes that problems are just now starting to work themselves out (which the author will discuss in chapter 5) but the data has not had the time to reflect the positive changes.

CHAPTER FIVE

STRATEGIES FOR IMPROVING FISHING VESSEL SAFETY IN ALASKA

5.1 More legislation is not the answer

More legislation, in the author's opinion, is not the answer to making a safer commercial fishing industry because she feels that there are adequate rules on the books already. Are the rules being followed? The answer to that question is, no, but more legislation is not going to make the industry safer or make fishermen follow the rules that are already in place. It seems that in this day and age, society is always looking for a quick fix to deal with its problems. The author believes that a few good quality, workable rules are sufficient to protect the commercial fishing fleet with regard to safety. The question here is, how do we develop a safety culture within the commercial fishing fleet that would guide commercial fishermen to 'follow the rules'? In this chapter, some of the strategies that will be discussed will place more responsibility on the fishermen themselves, ideas that will possibly allow the commercial fishing industry to be in charge of their own destiny. The author agrees with and is inspired by Alan Dujenski, a writer for the Fishermen's News, who stated in a recent article regarding fishing vessel safety; "There are no quick fixes for vessel safety. It requires an attitude change on the part of the owners, operators and crews…. For all parties involved, its about time we grow up!"

5.2 Creating a 'professional' fleet

"Our impression, gained through the experience of investigating several hundred fishing vessel accidents annually, is that the sector is failing to keep up with the rest of the maritime industry in developing a safety culture." (Coton,1999)

'Safe' and 'professional' have never been words associated with the commercial fishing industry in the United States. Fishermen have always been considered to be a hard working lot, but the adjectives rogue and free spirit have also been used to describe the typical fishermen; not exactly compatible terminology with the concept of professionalism. Other countries around the world facing the same safety issues in their commercial fleets are turning toward the idea of professionalism to facilitate a safer industry.

One definition of a professional fisherman taken from a Canadian publication 'Charting a New Course: Towards the Fishery of the Future' states,

> A professional fisherman is someone who is experienced, highly skilled and well trained in the fishing sector. This individual is a vessel owner/operator or is a steady crewmember who fishes for the full season, and depends on fishing for his livelihood and future. The professional fisherman is involved in the management and development of the fishery through fishermen's organisations. He is respected by his peers and the general public as an accredited member of a professional group. (Taskforce, 1993,68,69)

Although the document that this statement was taken from was addressing the social issues resulting from the collapse of the Canadian east coast resource base, and more concerned about restructuring the fishing industry towards a positive financial end,

the document further states, “Among the identified results of professionalization are significant improvements in conservation, management, enforcement, data acquisition, quality control, health and safety and marketing aspects of the industry.” (Taskforce, 1993 69,70.) Some of the other topics mentioned in this statement have been identified earlier in this paper as issues that are directly affecting fishing vessel safety in Alaska.

In further support of professionalism, when asked about her opinion regarding professionalism within the Alaskan Commercial fishing fleet, Sue Jorgenson from the Marine Safety Office in Juneau Alaska stated that, “I agree that the more professional operations and operators take safety to heart. The professionals are also the ones that have their crews attend safety training courses.” (USCG correspondence, 2000,1)

As an example with regard to professionalism, Denmark has established seven fishing safety councils that meet four times a year. These government-subsidised councils develop action plans as well as co-ordinate implementation of fishing safety legislation. Members of these councils are both employee and employer as well as trade union and fishing vessel owner representatives. All persons working on Danish fishing vessels are obliged to become affiliated with a council. (ILO-Safety and health in the fishing industry,1999,41)

Fishermen in the United States and Alaska are not ‘obliged’ to become a member of any professional organisation, and usually only join one if the organisation’s motives are financial gain. It is the author’s opinion that the average commercial fishermen in Alaska have not made the connection between finances and safety.

5.2.1 Professional commercial fishermen's organisations

There are many professional commercial fishermen's organisations in the United States, but few are dedicated to fishing vessel safety. The North Pacific Fishing Vessel Owners' Association is one of the few that the author is aware of. Developed in 1985 in co-operation with the United States Coast Guard, it is totally dedicated to safety education and training for fishermen and other mariners. More than 20,000 people have participated in classes since its inception.

NPFVOA is a non-profit association who's funding is mostly provided through the contributions of its members as well as tuition fees and sales of educational materials.

The ILO has recognised the NPFVOA as a professional commercial fishermen's safety organisation, as it was invited to participate in the International Labor Organisation Tripartite Meeting on Safety and Health in the Fishing Industry in Geneva, Switzerland this past December.

The author believes that there is need in Alaska for a professional fishermen's association dedicated to commercial fishing vessel safety. Although there are many Alaskan fishermen who are members of the NPFVOA, most of them are from the larger vessel fleet, as are most of NPFVOA'S members.

The author is impressed with a professional organisation in Canada called the Canadian Council of Professional Fish Harvesters. The mission statement of the council is: "To ensure that fish harvesters have appropriate knowledge, skills and commitment to meet the human resource needs of the Canadian Fishery of the future." (Canadian Council of Professional Fish Harvesters, ccpfh-ccpp.org/ccphf.shtiml)

Roles of the council include, promoting the education and training of Canadian fish harvesters as well as developing and implementing training initiatives that will give recognition to the Professional Canadian Fishery. Potential services offered by the Council are, training courses for upgrading skills for experienced fish harvesters in the areas of: business management, gear maintenance and repair, fishing technology and fishing methods, business management, conservation and the environment as well as **health and safety at sea.** The Council is currently offering insurance opportunities at competitive rates to all its members.

This council is a good model to study as a lot can be learned from this type of organisation. Certain aspects of this council could be incorporated into regional U.S. Organisations and the possibilities will be discussed later in this paper.

5.2.2 Fishermen's wives associations

During a discussion that took place a few months ago, between the author and a fisherman from Iceland, she questioning him about safety issues in his country and how did they get fishermen to comply with safety standards there. He replied, "the fishermen's wives are the ones that make sure that regulations are followed. They are the ones that actually control the industry, the wives and the mothers." This again reminded me of how our commercial fishing safety regulations came into being in the United States. It was a concerned mother who led the charge.

Women have always played an important role in the commercial fishing industry. It is true that more women today can be found running and working on board fishing vessels, but the main support in the past has been from the wives and mothers back home. Women that ran the households, represented their fishing husbands at management meetings, took care of finances and even made the decisions as to where the catch should be sold, to whom and for how much. Fishermen's Wives Associations have also played a vital role with regard to safety in the fishing

industry. In Alaska, the Kodiak Fishermen's Wives Association has been very influential in bringing safety issues to the forefront. The 'Wives' have founded and sponsored the Annual Norm Holm Memorial Survival Suit Race in Kodiak for the past 12 years. The race is one of the best-attended events at the yearly Crab Festival in that town, and is always a great venue for fishing vessel safety education on a large scale. They have also donated survival suits to the local school district for youth training as well as provided mandatory training for local fishermen.

In Stonington, Maine one of the primary goals of the Island Fishermen's Wives Association is to "develop and promote safety programs for commercial fishermen. Also in Maine, the Midcoast Fishermen's Wives association is working with the National Oceanic and Atmospheric Association to install a weather station to provide accurate local forecasts to commercial fishermen.

5.2.3 National trade associations

The author is not aware of any national trade associations for fishermen, but the American Waterways Operators is a national trade association representing the owners and operators of tugboats, towboats, and barges serving the waterborne commerce of the United States. Its mission is to, "Promote the long term economic soundness of the industry, and enhance the industry's ability to provide safe, efficient and environmentally responsible transportation, through advocacy, public information, and the establishment of safety standards." (American Waterways Operators, http://www.americanwaterways.com/mission.ht)

What especially caught the author's attention regarding this organisation is the partnership that it has with the United States Coast Guard. Since its inception in 1995, the USCG and AWO Safety Partnership has allowed the Coast Guard and the towboat, tugboat and barge industry, to work together to improve marine safety

through non-regulatory solutions. This is the first partnership of its kind between the Coast Guard and any segment of the U.S. maritime industry.

The AWO has initiated the Responsible Carrier Program (RCP) which is designed as a framework for constantly bettering the industry's safety performance. Members of the AWO use the RCP as a guide in company-specific safety development, built upon existing government regulations as well as surpassing them.

5.3 Creating a more positive relationship between the USCG and the commercial fishing industry

Fishermen have traditionally have had a love/hate relationship with the United States Coast Guard. There is not a more welcome sound to a distressed fisherman onboard a disabled vessel than a Coast Guard helicopter, C-130 aircraft or rescue vessel that is arriving on scene to render assistance. Fishermen are well aware that 'Coasties' risk their live to help others and are appreciative of and dependent upon them.

This love relationship ends when the USCG tries to initiate regulations that would mandate compliance with regard to safety. The majority of fishermen feel that the Coast Guard is out of touch with the realities of the fishing industry and the operations of fishing vessels. 'Blue Suits', as the Coast Guardmen are not so affectionately called at times are not a welcome site when approaching a fishing vessel on a mission that does not involve a rescue. Fishermen then regard the USCG as a Law Enforcement Agency, which to them has negative connotations.

The author has spoken with Coast Guard personnel whose billet has required them to perform voluntary dockside examinations when requested. One of the common thoughts shared with the author was that they felt inadequate when first starting out and felt that their competency was gained through on the job training rather than via any training they had received before they actually started performing inspections. A

common complaint in the past from fishermen who have requested a voluntary safety examination is that the examiner did not know what he or she was looking at or looking for, or that they were looking for ANYTHING, however small, that might not be in compliance. (For example the absence of a Marpol placard)

At sea safety compliance boardings have also had their share of complaints. Fishermen that had been awarded their safety decal from a prior inspection felt at times that their vessels were being boarded for the purpose of training new cadets. The United States Coast Guard, because of its relatively small population has to out of necessity, fill its billets with young inexperienced persons. Not only are these people young, many do not have a maritime background other than what they received in their initial Coast Guard training.

The author believes that the Coast Guard has made tremendous strides in the past few years towards changing their image with the commercial fisherman. The author also believes that in order for the current fishing vessel legislation to be affective the Coast Guard needs to continue those efforts. These efforts are paying off. Having worked with the Coast Guard, as a member of the Commercial Fishing Industry Vessel Advisory Committee, she has seen first hand the changes that have been made. The Coast Guard has made a sincere effort to make their boarding personnel and procedures more fishermen friendly and is conducting more in-depth training for Coast Guard boarding officers regarding material conditions found on board fishing vessels.

James Ruhle is a Mid-Atlantic Coast fisherman whose fishing vessel Darana R was boarded November 3, by a team of Coastguardsmen. Mr. Ruhle had been boarded in the past by the USCG for routine safety checks, (which left him with negative impressions) but was so impressed by their new procedure he wrote a letter to his USCG Area Command describing the experience.

> We were notified when they came aboard that this was a new operation being conducted for safety purposes. They were very courteous and professional and very thorough. I compliment them for their professionalism in the way they conducted the boarding… If all boardings during this operation are conducted in this manner, I think that the industry and the U.S. Coast Guard will suffer no damage to the working relationship we are trying to build. (Coming Home, http://www.uscg.mil/hq/g-cp/images/rc_rod.gif)

5.4 Enforcing current legislation

"Legislation is only as good as its enforcement"

The author has stated earlier in this paper that she believes that current legislation is sufficient enough in making the commercial fishing industry as safe as possible. The problem is not the legislation or lack of it, but the fact that current legislation is not being enforced. The Coast Guard, realising that this non-enforcement is a valid issue has included in a recently proposed National Action Plan for improving commercial fishing vessel safety, items that address this issue specifically. The Coast Guard is also conducting Listening Sessions around the nation to get feedback from commercial fishermen regarding their views of the Action Plan and to allow them to give input as to what they think the issues are with regard to safety. A survey was also sent out to commercial fishermen, giving them an alternate method to supply feedback and give input. (Copy of survey, Appendix 3)

The Action Plan consists of three short-term items and eight long-term items for Coast Guard action. The three short-term items are:

- increase the Fishing Vessel Safety staff to increase emphasis on the Fishing Vessel Safety Program

- share data and assist in profiling high risk fisheries and focus resources on those fisheries
- increase the Coast Guard's outreach by sharing lessons learned

The eight long-term items are:
- improve mandatory drill enforcement
- complete the regulatory project on stability and water tight integrity begun in 1992
- improve casualty investigations and analysis
- improve communications
- co-ordinate fisheries management with fishing vessel safety
- seek authority and funding for mandatory vessel examinations
- seek authority and funding for mandatory safety training
- request the line used for safety equipment be changed from the Boundary Line to the Territorial Sea Baseline

The author agrees that increasing the Fishing Vessel Safety staff to increase emphasis on the fishing vessel safety program is an excellent idea, but in these days of insufficient budget to carry out what they are already required to do, she does not see this as a reality. The Coast Guard will truly have to 'do more with less' and the author believes that the safety of the commercial fishing industry will suffer. The public is not as concerned about fishing vessel safety as they are regarding illegal drug traffic and illegal immigration. The American public needs to be made aware of what the commercial fishing industry is costing them in tax dollars. This issue will be addressed later in this chapter.

The Coast Guard has done a good job of carrying out the other **short term** items, at least in Alaska. They targeted the high risk Bering Sea Red King Crab season this past year, working in tandem with the Alaska Department Fish and Game during their tank inspections. Advertisement of the USCG boardings was put out to the fleet

in ADF&G news releases, reaching a very wide audience because it is the primary means for ADF&G to communicate with fishermen regarding crab management and season information issues.

ADF&G tank inspections are held just before the fishing season opens to ensure that only legal gear is onboard, examine the vessel's live tanks for the presence of crab and to sign up vessels for in-season reporting. While ADF&G personnel carried out their resource management obligations, Coast Guard personnel went over vessel loading and stability issues with the skipper as well as check for overloading. Most of the vessels lost in the Bering Sea are due to stability issues relating to improper loading of fuel, fishing gear and flooding of live tanks.

The goals of the USCG boardings were primarily educational and deterrent-based, providing a good opportunity for Coast Guard personnel to create positive nonthreatening relationships with the fleet as well as review safety issues with masters. The USCG was able to meet with 50 % of the fleet and the reception was positive. Due to overloading of fishing gear, two vessels were found on the first day to be in non-compliance with their respective stability books. Unless vessels complied with stability information they would be required to stay at the dock. Word spread quickly throughout the fleet that actions were being taken by the Coast Guard. (Woodley,1999,1-6)

> One master stated that his insurance pool had contacted him, warning him of the Coast Guard activities and warning him not to overload his vessel. Several other masters also stated that had removed excess gear prior to the Coast Guard's arrival on board. (Woodley, 1999, 8)

> Many fishermen stated that the initiative was "the best thing the Coast Guard had done in a long time for the crab fleet". There was also a high level of

> support to identify those vessels that were overloaded. In some instances, vessels suspected of overloading were pointed out to Coast Guard personnel by fellow crab fishermen. (Woodley, 1999, 8)

Although the author does not agree with any more legislation she does agree with the following **long-term** action items thinks they are especially important.

1. Improve mandatory drill enforcement. The law already states that Emergency Preparedness Drills must take place once a month on vessels engaged in fishing. Currently there is no way the Coast Guard can make sure these drills are being conducted. There is no requirement to document the drills in a logbook, and even that in itself is no guarantee that the drills are being carried out. This law is ineffective if no one enforces it.

In a recent article in the Portland (Maine) Press Herald that was written after the sinking of an east coast trawl vessel, Carey Gregor of Chase Leavitt & Co., which sells emergency equipment and arranges for safety courses stated. "The large majority of people fishing have not conducted these drills on a monthly basis. A lot of them are not aware that they are required to do it." He also stated that he is:

> troubled by the apparent lack of interest in safety because a few simple steps could prevent most of the accidents that take fishermen's lives. To do the job right, the Coast Guard would also have to put more manpower into the job of enforcing safety regulations for the fishing fleet. (Bradbury, Portland Press Herald, June, 2000)

2. Improve Communications. The more positive presence the Coast Guard makes, the higher safety awareness is within the fleet. Recent efforts by Coast Guard have included instituting a National Commercial Fishing Vessel Safety Week,

sharing of "Lessons Learned" and "Best Practices" on their web site as well as in local newspapers and fishermen's journals.

Excellent examples of how the Coast Guard is addressing these items with positive results follow.

5.4.1 Operation Safe Catch

Although not implemented in Alaska, the Atlantic and Gulf Coast Guard Districts recently completed the six-month program **Operation Safe Catch.** This program came on the heels of the 1999 Fishing Vessel Casualty Task Force Report which stated,

> Recent casualties are indicative of historical casualty rates. Most casualties are preventable. The unsafe conditions and failed defences that result in high casualty rates stem from inadequate safety standards, poor compliance with existing safety standards, and inadequate participation in voluntary safety initiatives. (USCG, Fishing Vessel Casualty Task Force Report,1999,vi)

Many fishermen, being as they are, will not comply with safety standards if no one is checking. Operation Safe Catch was a successful effort by the USCG to aggressively check vessels during at-sea boardings conducted by Coast Guard teams to ensure compliance of regulations by checking critical items on commercial fishing vessels. In one area that comprised 82,000 commercial fishing vessels, 592 were identified as high-risk vessels. High risk vessels were; in poor condition or with inadequate safety equipment, having a history of repeated search and rescue interventions, engaged in higher risk operations (one man operations, or far from shore). Of the 592 high-risk vessels identified, the Coast Guard examined 383 of them. 231 of those vessels

corrected their discrepancies and immediately resumed fishing operations. 92 vessels' voyages were terminated or issued captain of the port orders restricting them to port until repairs could be made. As of March of this year, only three months into the six-month program, the number of lives lost from the previous year has decreased by 50 percent. (Group Mayport Press Release, March 15th 2000,)

5.4.2 District 17 – Ready for Sea

Alaska's USCG District 17 has also stepped up its enforcement program. The "Ready for Sea " campaign provides fishermen a Top 10 list of items and factors to be aware of before setting out to sea. (See appendix 1,2) Not only is District 17 increasing it distribution of safety literature, it has also increased its at sea boardings. Due to increased boardings in Alaska, 10 vessels have had their voyages terminated. Following are examples of reasons for voyage termination during the campaign.

1. 47ft. F/V Cape Spencer. Life raft to small too accommodate the crew size. This vessel was operating 40 miles off shore.
2. 91 ft. F/V Tiffany. 22 different safety discrepancies. Non-serviceable immersion suits, improperly stowed life raft, acetylene and oxygen tanks stored in the galley, exposed electrical wiring in engine space, galley and pilot house, excess trash in engine spaces. This vessel was working out of Dutch Harbor, Alaska.
3. 34 ft. F/V Ipswich. More than three miles offshore. No EPIRB and of the two survival suits on board, one was unusable due to damage.

Life rafts, EPIRBs and Survival Suits are all INTREGAL safety components with regard to surviving a disaster at sea. Some fishermen are just not making the connection and refuse to believe that each and every one of them is susceptible to a marine tragedy. Education has and will continue to provide the necessary opportunity for fishermen to gain the skills they need to survive at sea.

5.5 Education

For fishing vessel safety programs to be affective, it is important to be aware of the fishermen's perception with regard to physical risks, and identifying training techniques and experiences that will increase the fisherman's level of awareness. In a survey of workers involved in the fishing industry conducted by Marian Binkley for a paper on fishermen's awareness of safety, she documented the fact that one "indication that fishermen do not acknowledge the danger in their work is their trivialization of injuries and accidents which they sustain during their work." (Brinkley,1991,170,172)

The author is aware of this first hand as well. One example of this triviliasation was witnessed when she watched a home video taken on board a friend's fishing vessel, documenting one of the crew members getting a halibut hook straight through the palm of his hand. Not only did the crewmember never outwardly show any concern for his injury, he proceeded to document in full detail for the video, the steps that needed to be taken to get the hook out of the hand. After showing the 'audience' the procedure, he bandaged himself up, but on a new glove and got back to work. The whole process took less than 15 minutes.

Education plays a vital role in enlightening fishermen as to issues to be aware of with regards to safety and risk. Following are two examples of educational programs that are making a difference.

5.5.1 North Pacific Fishing Vessel Owners' Association

The NPFVOA, as stated before is a professional fishermen's organisation dedicated to fishing vessel safety training. Three primary components of the NPFVOA vessel safety program include a 300-page comprehensive safety manual, which addresses

subjects ranging from vessel familiarity for deckhands to stability for the owner and skipper. Information in the manual is based on the experience of those who have fished in Alaska's Bering Sea as well as the North Pacific. A crew-training program, which uses hands-on practice to dramatise and make real, the information presented in the manual as well as the series of safety and survival at sea videotapes.

Averaging over 850 students per year since 1985, NPFVOA has trained 6613 persons in the following USCG required courses. Medical Emergencies at Sea, Advanced Medical Emergencies at Sea, Drill Instructor Workshop and Onboard Drill and Safety Orientation. Another 6512 persons have been trained in these other non-required safety courses as well; Safety Equipment and Survival Procedures, Fire Prevention and Control, Navigation/Stability and Industrial Safety/OSHA. (Hughes, NPFVOA, email correspondence, July, 2000)

5.5.2 Alaska Marine Safety Education Association

Education and Safety Training mandated by the Commercial Fishing Vessel Safety Act of 1988 has made a difference. In Alaska, Ron Perkins, the director of the Community Injury Prevention Program with Alaska Native Health Services was asked to conduct and evaluation of the Alaska Marine Safety Education Association's effectiveness in fishing vessel safety. AMSEA provides commercial fishermen with an intensive 18-24 hour course addressing emergency preparedness, emergency response, and survival training, and is modelled after the International Maritime Organisation's (IMO) Personal Survival Module. Course specifics include; emergency preparedness, survival training, vessel stability and loading, and the procedure for conducting safety drills. Participants are taught how to abandon ship, fight fires, use distress signals, make distress calls, launch survival craft, don survival suits, and recover people from the water. "The study is a retrospective evaluation of the effectiveness of the course in reducing drownings and hypothermia deaths among

commercial fishermen from January 1, 1991, to December 31, 1994**.** (Perkins,1995,701)

Of the 159 Alaskan incidents reported to the United States Coast Guard during the four-year study period, none of the documented deaths associated with these incidents were AMSEA Drill Course Graduates. Of the 277 identified survivors, 10 were AMSEA graduates from eight different vessels. It must be noted here that one person's knowledge of safety procedures during an emergency can save a whole crew or vessel. (Perkins,1995,702)

As the author is an AMSEA instructor herself, having personally been involved with the training of at least 100 fishermen, she has many anecdotal stories from fishermen regarding how the AMSEA training helped them avoid needing to call the Coast Guard for help, as they were better prepared to handle the emergency themselves. In addition to providing training for fishermen, she also teaches at the local secondary school, offering four and a half-month long classes in Basic Seamanship and Marine and Wilderness Survival Training. The training is fashioned after the Alaska Marine Safety Education Associations three-day training course and students receive their AMSEA certification for successful completion of the course. Because of the course's length students are able to experience more hands on activities and go more in depth into the topics that are covered which include:

- First Aid at Sea
- Signal deployment – Sending a May Day – Flares
- Life raft deployment, righting and entering a liferaft
- Survival Suits – donning out of water, in the water, maintenance
- Shipboard fire fighting
- Station Bills
- Damage Control
- Abandonship
- Station Bills

- Crew co-operation – Team work

Students range in age from 15 to 18 years old. Some students take the class because they already have commercial fishing experience and want to develop their skills further and others who are interested in getting a fishing job and hope to gain valuable experience that will look good on their resume when they go down to the docks looking for jobs. She has had skippers who are looking for a new crewmember, come to her and ask her for names of successful graduates from her courses. Many students from her classes have found jobs as a direct result of their training. Also, students have shared with her their experiences of having turned down job offers because they felt that the vessel or skipper offering the job did not meet the student's safety standards.

The author believes that one important component of education is starting early. She lives in a commercial fishing community, and it only stands to reason that many young people will choose commercial fishing as a career, or at least a means of earning money to put themselves through college. It only makes sense that fishing communities offer training at a young age to its future fishermen. This early safety education, and education in general only adds to the concept of professionalism as well.

Denmark offers another example of training for their fishermen, which is divided into two age groups, adult and ages 16 through 18. Adult newcomers to the fishing industry must attend a three-week course, which is very similar to U.S. Coast Guard approved training in the United States (e.g. AMSEA, NPFVOA). For the 16 through 18-year old age group the program lasts two years, broken into four periods of six months. Six months onboard a fishing vessel is followed by six months of theory at an approved fishing school. Theory includes "safety at sea; working safety; fire-fighting; first aid; economics and industrial relations; knowledge of fishery; navigation; engine maintenance; repair welding; galley service; maintenance of

fishing tackle; and radio equipment operation." (ILO– Sectoral Activities Programme Report on the Safety and Health in the Fishing Industry,42,1999) Another year at sea follows in which the student must have had experience in three different fishing techniques.

5.5.3 United States Coast Guard Fishing Vessel Safety Program

The USCG has been instrumental in developing hands-on educational devises to be used in fishing vessel safety training. One such devise, called the Stability Trainer, uses fishing vessel models and water tanks to demonstrate issues related to non-watertight bulkheads, free surface effect and downflooding. The trainer gives clear visual examples of these topics and their affects on stability.

Another teaching tool, the Damage Control Unit, is a towable facsimile of an engine room, allowing easy transportation to classrooms. Students get first hand experience controlling flooding situations as the unit contains replicas of split welds, broken hoses and pipes, all which are emergencies onboard vessels that fishermen need to be prepared for. The ability of the unit to run water through these holes at comparable pressures to a real emergency situation also adds to the realism. The training also instructs fishermen how to put together their own damage control kit that can be ready at all times in case of an emergency as well as drawing upon the experience of the fishermen taking the class to share their good advise and ideas.

5.6 Positive relationship between safety and economics

Economics has always played an important role in problem solving. The possibility of economic gain as well as the threat or reality of economic loss has inspired humans to find answers to problems. For the thousands of years of the maritime industry's history, money has been the key element affecting technology. One maritime problem that plagued sailors for centuries was the inability to ascertain

their position with regard to longitude. It was the loss of money caused by the death of men and destruction of cargo suffered during groundings, as well as the promise of money offered to anyone that could find a solution to the problem of finding longitude. A substantial monetary prize was offered in 1714 by English Parliament to anyone could find a solution. Although the perfecting of the solution took many years, a solution was found in the form of a marine chronometer. (Sobal, 1995)

The commercial fishing industry's situation with regard to safety has some parallels to the above situation. Money is lost or wasted due to accidents, and financial rewards await a fishing industry that is willing to change its attitudes with regard to safety. The goal of on board safety is basically to protect human life, but increased safety helps the fishing industry as well. "Accidents occurring in the course of work being performed by fishermen, apart from their direct detrimental effects, also adversely affect the economics of the fishing industry." (Plaza, 1990, 1) Following will be a discussion of those effects.

It is the author's opinion that are more victims related to a fishing vessels casualty beyond the crewmembers and their families. There are **Coast Guard personnel** put themselves in danger during search and rescue operations; other **fishing vessel owners** may have to pay higher insurance premiums due to the loss of vessels other than their own, and the **tax payers** who foot the bill for search and rescue operations, towing as well as pollution clean-up that may be needed as a result of an accident. Fishermen should be constantly reminded that it is not only them that pay when a fishing vessel casualty happens.

According to the 1997 study "Economic Impacts of Accidents on the Marine Industry", direct and indirect costs such as insurance premiums, deductibles, interruptions in operations or loss of contracts, among many others, accidents cost the fishing industry over $240 million annually. This is more than three times the annual cost identified in the same study for the tanker industry, and four times

greater than the passenger vessel industry. Not included in these statistics are losses of productivity, and the cost of United States Coast Guard search and rescues for fishing vessels. Data from 1992 and 1993 shows the Coast Guard conducted over 8,000 search and rescue cases for fishing vessels. These search and rescue cases expended over 38,000 resources hours and cost the American public approximately $45.7 million for those two years. (USCG Fishing Vessel Casualty Task Force Report, 1999, 4-15)

In Alaska, the average cost of a search and rescue mission is $6,800. There is an average of 1,100 each year, so the average annual cost is nearly $7.5 million. During the first three quarters of Fiscal year 1997, the 17th UDCG District has spent over 6.5 million dollars on search and rescue missions (Niosh, Jorgenson, 1997,8)

If the public was made aware of how their tax dollars were being spent for preventable accidents, the author thinks they might apply more pressure on the commercial fishing fleet to lessen their burden on the American public. Following are concepts that might help in creating a more positive relationship between safety and economics.

5.6.1 Insurance

There are basically four types of commercial fishing vessel insurance: hull and machinery, breach of warranty, cargo and protection and indemnity (P&I). *Hull and Machinery* policies pay for the repair or replacement of the vessel itself, including engine, deck machinery, and most contents, in the event of sinking, collision, fire, or other damage. *Breach of Warranty* insurance insures the lending institution from where the vessel owner received his/her loan. Lenders know that vessel owners sometimes fail to do all that they are supposed to do, so they usually require that policies on vessels for which they hold the mortgage also carry breach of warranty coverage. This policy pays off the lender what is owed, even if the operator violates terms of the hull and machinery policy. *Cargo* insurance is the means of protecting

the fisherman's fishing gear that is not permanently affixed to the vessel (nets, and other portable fishing gear) as well as the value of the fish in the fish hold. *Protection and Indemnity* insurance protects the vessel owner in case of an injured crewman. P&I may be a significant cost, because of the inherent danger to crew while fishing, and the favourable treatment the courts afford to crewmembers that are injured. (Johnson, 1996)

It is interesting to note that in the NTSB's Safety Study of Uninspected Vessels done in 1987 states that at that time, most marine insurance companies "neither provided requirements regarding the experience or training of fishing vessels captains or crewmembers for vessels they insure, nor have they taken any actions to reduce premiums for owners/operators/captains who have undertaken voluntary safety training." Unfortunately the same holds true today. After contacting 2 major fishing vessel insurance companies in the Pacific Northwest, both of them said that they like it when their captains have taken safety training, but it was not a requirement insure their vessel. She is surprised that training is not a prerequisite to obtaining insurance, especially now, since training is a federal requirement for all commercial fishing vessels.

5.6.2 Insurance Pools

Because of the high cost of insuring a commercial fishing vessel, fishermen are getting together and forming their own self insurance programs usually called insurance pools, to cover hull and machinery. To be admitted into an insurance pool, strict guide lines must be met regarding the initial shape the vessel is in, maintenance schedules as well as required safety equipment which often goes beyond what is federally required. As insurance rates are kept low due to the absence of claims made against the pool, individual members of insurance pools monitor each other, making sure that those requirements and standards are being kept up with. It is a kind of peer pressure. "The members have more control over each other and have forced marginal

members to clean up their operation. It is a real incentive when you have money invested and it will be returned if there are none or few claims against the pool." (USCG,Jorgenson, 2000)

For a self-insurance program to be successful it requires commitment from its members, organisation and good management. The positive economic relationship becomes lower insurance rates for the fisherman, and because of the high standard of safety required, there is less likelihood of an accident occurring, costing taxpayers money.

CHAPTER SIX

CONCLUSION

6.1 Defining a direction

Where does the Alaskan commercial fishing industry go from here with regards to safety? Certain issues discussed in Chapter Two will not disappear. Alaska will continue to have challenging weather, crews will most likely continue to change often and remain young. Fisheries resource management with regards to safety may be slow to change. There needs to be a solution that takes all these issues into account, but also takes advantage of the strategies that are already working to make the industry safer.

6.1.1 A solution

It is the author's belief that each of the strategies discussed in the previous chapter are part of a solution, but without a plan as to how they are all to work together, no significant change will take place. The bottom line is; the Alaskan commercial fisherman along with all U.S. fishermen need to take responsibility for their own destiny, individually and as a whole fleet. The fishermen can be told that this is what needs to happen, but without guidelines or a plan in place, most fishermen will not take the initiative to act. The author's opinion regarding harmonisation at a national and local level is echoed by a paragraph written in the Safety and Health in the Fishing Industry document published by the International Labour Office which states;

> While there are certain steps which might be taken by the ILO, FAO, and IMO to address safety…. In the fishing industry, the greatest share of such work must be done by others. The real key to improving the safety and health of fishermen on a global basis will be to determine what should be done at the international, regional, national and local levels, and who should take that action. This requires achieving, at each level, an appropriate blend of harmonisation and flexibility in laws and regulations in order to make real gains in safety…
> (ILO, 1999,83,84)

The author will stress again here that fishermen need to be the major impetus behind safety in the fishing industry. Commercial fishermen also need to be responsible for their debt to society in the form of taxpayers monies vested in search and rescue through the United States Coast Guard, as well as responsibility for creating a positive professional image of themselves, the commercial fisherman. Fishermen may argue that they don't care what the public thinks about them or their industry, but one cannot deny the fact that the more professional an industry is the more it profits economically. Economic prosperity is the key motivator to the commercial fisherman. A professional organisation wields power in determining its own fate and prosperity. Following is an example of a newly formed professional fisherman's organisation that has experienced success at the bargaining table when it comes to product payment.

In Kodiak, commercial salmon fishermen face the same struggle each year when the season approaches as to what the salmon processors are willing to pay the fishermen for their catch. The processors and the fishermen have been two different and

distinct groups; each concerned with their own economic benefit. The Kodiak salmon fishermen, a group that has been anything but cohesive in the past, had little recourse other than to strike, to combat low prices offered. Although strikes get the processor's attention and raise the offered price a little, in the end, the loss of catch due to the time not fishing during the strike end up in a financial loss for most fishermen. Fishermen that chose to fish during the strike also caused disharmony within the fleet, further fracturing any of the group's remaining cohesiveness.

Kodiak salmon fisherman as well as salmon fishermen around the state of Alaska have come together to form a **professional** group called the United Salmon Association (USA), which has hired professional negotiators to 'go to the table' with the processors when price is being settled for the season. The end result is that the processors are dealing more fairly with the salmon fishermen, prices are more acceptable, and the once mysterious workings of fish brokering is available to fishermen to inspect in the form of financial statements provided to the fishermen at the end of the season. Processors have been forced to open their books and support their price offerings as well as enter into a profit sharing with the salmon fishermen. Although this example has nothing to do with safety, it does illustrate how professional attitudes and organisations can change in a positive way how an industry functions.

The author was struck by a paragraph she read in an article contained in the June 2000 issue of the Telegraph, a professional merchant seaman's journal. Although the article was dealing with shipping safety, the message could be easily transferred to the commercial fishing industry.

> We certainly cannot continue the bolt-on approach to maritime regulation. We must carry out a root and branch overhaul to address the fundamental flaws to foster genuine responsibility and accountability, and to eradicate

the rotten elements that give the industry its unenviable reputation…

(NUMAST, 3, 2000)

The author believes the same is true in the Alaskan commercial fishing industry and proposes the following plan as a way to avoid further federal regulation, become more professional as well as take control of their own industry with regard to safety. It may also serve to 'address fundamental flaws as well as foster genuine responsibility and accountability' in Alaska's fleet. It is the author's hope that it may also lower fatality rates in the commercial fishing industry.

6.1.2 The Program

If professionalism is synonymous with efficiency and safety, and efficiency and safety go hand in hand with positive economic outcomes, both for the fisherman as well as his supporting public, than a professional fisherman's organisation that addresses these needs should be established. (Henceforth, this organisation will be referred to as the *Organisation*.) The important parts of the program (discussed in the previous chapter) are already in existence. These parts include; support groups and agencies, safety training programs, insurance pools that demand from and reward their members for safety, as well as monitoring agencies (e.g. USCG).

A statewide Alaskan commercial fisherman's *Organisation* dedicated to promoting safety issues should be organised. Due to the vastness as well as remoteness of many areas, local chapters should be set up. Services offered to fisherman would be training, (mandatory as well as special interest) insurance options or guidance, liaison services between the local fleet and the USCG as well as a lobbying force to the federal government in support of tax programs benefiting commercial fishermen with regards to cutting the safety costs of running a commercial fishing business.

6.1.3 Training

Excellent training programs are already in existence through the Alaska Marine Safety Education Association and North Pacific Fishing Vessel Owner's Association. Access to this training has been difficult for some fishermen in the past due to the fishermen's fluctuating fishing schedules, travelling expenses to training locations, cost of training, and inconvenient training dates. The author has witnessed situations where instructors have cancelled training due to lack of student sign-up, only to find out that more fishermen would have signed up if there had been better advertisement of the class. She is not faulting the instructors, as all the instructors that she knows, including the author herself have other full time jobs, and do not make a living out of teaching fishing vessel safety to commercial fisherman. The time and resources they have for effective advertisement of classes is small. The professional *Organisation* the author envisions would be in constant contact with the fleet as well as take the responsibility of surveying the fleet regarding their training needs, (mandatory and extracurricular) as well as co-ordinate training schedules and trainers. The *Organisation* would also be responsible for making arrangements with the specific agency (e.g. AMSEA, NPFVOA) selected for training. The *Organisation* would be in theory, a command central for training needs of the fleet. It might also be the responsibility of the organisation to be the monitoring source for the fleet as far as who has met the federal training requirements, and who has to renue specific training certificates to remain legal with the current federal mandates.

The *Organisation* could also set up training opportunities that are vessel specific for new crewmembers, taking some of the burden off skippers who feel that they don't personally have time to plan for such sessions. Although no one knows a vessel as well as it's skipper and during onboard training classes, the skipper should take the

lead, perhaps with the support of a representative from the *Organisation*, training sessions might become more palatable for the skipper and crew.

The office of the *Organisation* might also serve as a 'recommended' stopover for green perspective crew hoping to find jobs. (Maybe even a fishing job service center.) During their visit they could spend a few hours learning basic safety skills and receive an orientation on Kodiak's fishing industry. A little knowledge would only benefit them when they go down to the docks looking for work. Not only would it benefit skippers taking on new crewmembers, it would also prove that the perspective green guy was serious about gaining employment on a fishing vessel.

6.1.4 Training costs

Fishermen have complained in the past about the high cost of mandatory training. Training costs could be lowered if offered at group rates or could be covered wholly or partially by membership dues as well as fund raising that could be organised by support groups like the Kodiak Fishermen's Wives as well as the administrators of the *Organisation*. Possible governmental subsidising for fishing vessel training at the state or federal level could be investigated as well.

6.1.5 Coast Guard liaison

Although the author believes that the Coast Guard needs to keep up the great work they are doing with improving their image with commercial fisherman, with the current cutbacks in Coast Guard funding and the shrinking of their workforce, the *Organisation* could play a role in providing a link between the industry and the Coast Guard. Voluntary Fishing Vessel Safety Examinations could be set up through the *Organisation*, along with the *Organisation* helping the fishing vessel owner with a preliminary self examination. As many fishermen are leery of having Coast Guard personnel board their vessels for any reason (other than rescue) having some

guidance before hand given by a member of the fisherman's safety *Organisation* might take away some of the stress and doubt from the owner. This would also serve to guide the fishermen to take more responsibility of their vessel with regard to safety.

6.2 Conclusion

The author has reflected over her past 22 years of experience as a commercial fisherman as well as her time involved as a commercial fishing vessel safety trainer. She has observed the many changes that have taken place in an Alaskan industry that is besieged with challenges. Challenges in the form of adverse working conditions, attitudes towards safety, economics, technology as well as the changing demographics of crew. With regards to safety, historical data has shown that legislation up to this time has not had a marked affect over the long run on statistics with regard to casualties. It is the author's opinion that fishermen need to be given the responsibility of directing their own industry with regard to safety. They will only take that responsibility once their attitude with regard to current debt to the taxpaying public as well as cultivating a professional industry, change. It would be ridiculous to assume that commercial fisherman would take on the task of attitudinal change just because the public wills it. They need direction and encouragement. The professional *Organisation* that the author has proposed might just be the gentle guidance Alaska Commercial Fishermen need to help them take control of the industry's direction towards a safer and more profitable endeavour. In short, it may give every Alaskan Commercial Fisherman the opportunity to become a 'Highliner'.

6.3 Recommendations

The author offers the following recommendations to the United States Government, United States Coast Guard and to the Alaskan Commercial Fishing Fleet.

1. The U.S. Government should refrain from enacting further safety regulations with regard to fishing vessels.

2. The U.S. Government and USCG should work closely together with industry to develop fair fisheries management regimes that enhance safety.

3. The USCG should continue to improve its relations with the commercial fishing fleet.

4. The USCG should continue improved enforcement of current commercial fishing vessel safety legislation.

5. Alaskan Fishing Communities should organise fishing vessel safety specific, professional *Organisation*s.

6. The U.S. Government should promote the development of professional fishing vessel safety *Organisation*s at the local level as well as support these *Organisation*s.

7. The U.S. Government should investigate the possibility of offering tax breaks to commercial fishermen for the purchase and maintenance of safety equipment.

8. The USCG should work closely together, forming a team effort, with local professional fishing vessel safety *Organisation*s in promoting fishing vessel safety.

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