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AN APPEAL TO THE 111th. CONGRESS ON LIFESAVING ISSUES THAT AFFECT OUR LIMITED TONNAGE MARINERS

*[**Publication History:** This report supersedes Report #R-208 (July 1999), and Report #R-235 (Feb. 19, 2000) and incorporates portions of Report #R-230, Jan. 17, 2000 and updates Report #R-354 first released on Feb. 7, 2003, updated on Oct. 16, 2004, and revised on Nov. 19, 2006. We updated the report on Jan. 7, 2008 and again on Mar. 21, 2009. By directly appealing to the House Transportation and Infrastructure Committee and the Senate Commerce, Science and Transportation Committee in Nov. 2006 we reiterated that our Association **was unable to make suitable progress with the Coast Guard on the lifesaving issues described herein** and that further delay only places the lives of our mariners and other members of the public at continued risk We updated the report in Jan, 2008 to reflect compelling information on cold-water risk by a report issued by the Transportation Safety Board of Canada.]*

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EXECUTIVE SUMMARY

The U.S. Coast Guard has a well established lifesaving equipment approval program that rarely is seriously questioned because of its close association with the serviceôs world-renowned leadership in the search and rescue field. From the standpoint of a well-functioning bureaucracy, the lifesaving program is an unqualified success. However, our mariners have serious concerns that the Coast Guard refuses to address.

The National Mariners Association (NMA) (formerly GCMA) represents ñlower-levelò mariners that work on a variety of vessels of less than 1,600 gross register tons including tugs, towboats, offshore supply vessels, and small passenger vessels. Over the past decade, our mariners found serious flaws in lifesaving equipment and Coast Guard lifesaving policies that affect not only our mariners but also members of the public (e.g., ñpassengers,ò ñindustrial workersò, and ñpersons in addition to the crewò) that travel or work on the water. Unfortunately, many ñlower-levelò mariners seriously injured, disabled, or killed in the line of duty were denied adequate compensation by their employers and aggressive corporate attorneys.(1) *[(1)Refer to Reports #R-333, Rev.3. Donôt Count On Corporate Compassion or Coast Guard Concern – True Stories of Our Lost, Injured, and Cheated Mariners.* ***Also*** *Report #R-440, Employers Abuse Mariners On Health & Medical Issues.* ***Also*** *Report # R-370., The Verret Case.]*

In the past, maritime accidents dominated the Coast Guardôs safety agenda. However, with the introduction of deliberate acts of terrorism in the attacks of ñ9/11,ò the past agenda must be reconsidered because maritime disasters on the scale of the World Trade Center can be crafted by terrorists with evil intent.

Unfortunately, based on our experience, our ñlower-levelò mariners are unable to count on the Coast Guard to discover and remedy many of the problems on its own doorstep because their close ñpartnershipò with industryôs fixation on the ñbottom lineò overwhelms many legitimate safety concerns. Working mariners are concerned that ñscienceò can be manipulated and government regulatory agencies like the Coast Guard can be corrupted to meet the desires of ñindustryò to conduct ñbusiness as usualò and ignore legitimate safety concerns.

During the 1990s, the NTSB championed necessary safety improvements in the marine industry ï but it worked in a vacuum with a regulatory agency that often ignored or rejected its recommendations. Many of our knowledgeable mariners watched these ñBeltwayò tactics with great dismay. However, in the closing days of 2007, the Chairman of the NTSB assured our Association(1) that the NTSB was still actively working for change. *[(1)Documented in NMA Report #R-354-A.]*

Since most ñlower-levelò mariners are non-union ñemployees-at-will,ò we were powerless to protest the Beltway bureaucrats as they ñpartneredò with industry to create a solid phalanx of denial on almost every safety issue important to mariners. The ñrevolving doorò carries many senior Coast Guard officers into the executive management positions where they remained aloof from the rank-and-file of lower-level mariner and often ignorant of their day-to-day problems.

It is unfortunate that the Coast Guardôs operational expertise in lifesaving and search and rescue never has been represented in Washington in proportion to the influence their acts of valor and heroism reflect on the Coast Guardôs own traditions and reputation. The Coast Guard bureaucrats ride high on the reputation earned by its true heroes.

Serious problems in innovating lifesaving equipment for use aboard commercial vessels currently exist and directly affect our mariners as well as members of the public that rely on waterborne transportation in the United States.

The factual representations in this report point to the need for a ñBlue Ribbonò commission of safety experts including working mariners and former Coast Guard SAR experts to re-evaluate current Coast Guard policies for the reasons mentioned in this report to protect our mariners in their workplaces as well as members of the public.

A sweeping review would be timely because The Coast Guard and Maritime Transportation Act of 2004 created an initiative to correct the egregious regulatory shortcomings that placed mariners on thousands of uninspected towing vessels at risk. The Coast Guard clearly recognized this risk in May 1994(1) but did nothing about it. *[(1)Refer to our Report #R-351,Rev. 1, How Safe is the Towing Industry?]*

Previous NTSB recommendations need to be re-evaluated and acted upon to provide ñout-of-waterò survival craft for many vessels that need them for legitimate safety reasons. These arguments are heightened as a result of the report issued by the Transportation Safety Board of Canada revealing the true risks of cold water immersion. The life of each mariner must be viewed in the same light as the life of a passenger and in the same terms the government uses to set the monetary value on saving a human life in each of its rulemaking projects, i.e., $2,700,000.

A FALL OVERBOARD INTO COLD WATER MAY BE A DEATH SENTENCE

Falling overboard is all too common.
It is not simply an occupational hazard, but can be a death sentence.

As winter approaches, so does the cold water season. This article is an extract from a Canadian research report that we urge every mariner to read immediately. With the current emphasis on ñhypothermia,ò our mariners may find they are blindsided by their lack of knowledge of additional factors like ñ**cold shock**ò and ñ**swimming failure**.ò Although these terms are well known to Coast Guard search and rescue experts, officials apparently prefer to ignore it and still continues to approve ñin the waterò lifesaving equipment like ñlife floatsò

[Source: *We are indebted to the Department of Transport, Canada, for its copyright permission covering their work entitled "Survival in Cold Water: Staying Alive" from which we extracted the following selection from the report's "Executive Summary" and from Chapter 1. We accept responsibility for "accurately reproducing" the selected material and do not hold the Department of Transport responsible for its manner of presentation. We wish to credit and praise its author, Dr. C.J. Brooks for a well-referenced and researched paper and to the Department of Transport for its leadership in the field of cold water survival.]*

*[**Editorial Note**: Although we removed the reference numbers that appeared in the original text, we left the name(s) of the researchers and the dates their works were published. We replaced the Celsius temperatures in the original report with their Fahrenheit equivalents (°F) for the convenience of our American readers. The full report is available on disk from Transport Canada, Marine (AMSRE), Place de Ville, Tower C, 330 Sparks St., Ottawa Ontario, Canada K1A ON8.. We added emphasis by underlining, comments, and vocabulary to assist our target audience.]*

Survival in Cold Water: Staying Alive
Executive Summary[(1)]
[(1)A summary of the entire book not just this excerpt.]

1. It is quite astonishing that over the centuries, hundreds and thousands of humans have drowned in cold water, and it is only in the last 50 years that anyone has taken this death toll seriously. Death was attributed to drowning from an inability to stay afloat and vague terms, such as exposure. This is because death at sea was, and to some degree still is considered an occupational hazard. Fishermen for instance, who are most at risk, simply considered it as on occupational hazard and fate. Any attempt at protection was to float the person in rather than out of the water.[(1)] *[(1)* ***Comment: In Report #R-354, Rev.1.*** *A Direct Appeal to Congress on Lifesaving Issues Affecting Lower-Level Mariners, we reported that the U.S. Coast Guard still approves life floats and buoyant apparatus that require survivors to remain in the water awaiting rescue on tugs, towboats, small passenger vessels and OSVs directly threatening the lives of our lower-level mariners.]*

2. It took until the middle of the Second World War for the UK and Germany, and post-Korean war for the US to realize that there was a problem from sudden cold water immersion.

3. As a result, internationally over the last half of the 20th century, there has been considerable human experimentation in cold water physiology.[(1)] The pioneering work was done in the mid-1940s and 1950s, but by the 1960s, it appears to have been forgotten and needed to be relearned. The advent of the offshore oil industry created a demand for more research to produce better immersion suits. This created a flurry of experimentation in the 1980s and 1990s. A number of these experiments have been cited to give the reader the wide scope of them. *[(1)**Vocabulary: Physiology** = the science dealing with processes and functions of living organisms and their parts.]*

4. Although the four stages in which death may occur in the cold water accident were known since the Second World War, stage one **(cold shock)** and stage two **(swimming failure)** were considered only of academic interest. As a result, regulators, teaching establishments and survival suit manufacturers all concentrated their efforts on protecting the human from hypothermia. In this regard they have done a very good job.

5. Even though there are well established teaching programs, good regulations and much improved life saving equipment, there are still in the order of 140 000 open water deaths each year. What has been ***overlooked*** is the

significance of the first two stages - cold shock and swimming failure as a cause of death. The severity of the effects of cold shock is directly proportional to the water temperature peaking between 50°F and 59°F.

6. The layperson and accident investigators are often surprised that some people do not survive a lengthy immersion. Theoretically they are within the "safe" boundaries of one or more of the survival curves that have been developed to predict death from hypothermia. These people do not die of hypothermia per se. They die from a variety of problems in which moderate hypothermia is enough for them to lose their physical ability and mental determination to keep their backs to the waves. They thus inhale the next wave and die from drowning in spite of wearing a life jacket.

7. In regard to immersion suits, Eskimos have used "spring pels" to protect themselves from sudden cold water immersion since they took to the water. Crude suits have been available to mariners since the mid 19th Century. A concentrated effort to produce a practical, commercially available suit did not occur until post 1945. Between the 1950s and the late 1970s, the suits were criticized due to poor design, poor fit, leakage and quality control in the manufacturing process. In the last 20 years, with the introduction of several standards, including the 1983 IMO SOLAS[(1)] standard, improvement in fabrics, zips[(1)] and better inspection procedures, the water tightness of the suits has improved, and acceptance has improved. *[**Vocabulary: IMO SOLAS** = The International Maritime Organization's, Convention on the Safety of Life at Sea. **Zips** -= zippers.]*

8. Fundamental principles of the immersion suit design and development are discussed, particularly the requirements for a dry suit, the necessity for it to be integrated with the lifejacket, the profound, negative effect of leakage on the immersed Clo insulation value,[(1)] the difficulty of protecting the hands and the penalties for the use of poor materials and quality control in the manufacturing process. *[[(1)]**Vocabulary: Clo value** = a technical term of measurement of the amount of insulation value. It is discussed extensively in chapters we did not include.]*

9. Thermal manikin technology for evaluating the thermal protection of an immersion suit moved rapidly forward in the 1980s, but has stagnated basically due to lack of funding. Although there are pros and cons for manikin use, the way ahead is to develop a simple manikin for suit thermal testing against a standard. Humans should only be used for new concepts and major modification to already approved suits. More research is needed to clarify the proportional contribution of torso, head and limbs to the heat equation in order to fine tune the next generation of manikins.

10. In regards to who should be protected and what regulations require modification or initiation, there are thirteen professional categories that require either a constant wear suit (Group I), a ship abandonment suit (Group II), or a passenger immersion suit system (Group Ill). Modifications are required to the standards related to the Group I and II suits, but most important, the Group III (passengers sailing in water below 59°F) are currently unprotected. In the next two years, Transport Canada[(1)] should require the carriage of a Navy style quick don immersion suit, within the next five years, an integrated passenger immersion suit system must be developed. *[[(1)]These Canadian goals are worthy of our government's careful consideration.]*

11. In regards to the practical advice regarding the regulations requiring the carriage of liferafts and training of operators of passenger carrying vessels.

(a) Wherever possible, entry into water below 59°F should be avoided. Direct entry into a life raft should be the objective. *[[([1])]**Comment: The** (U.S.) National Transportation Safety Board made this point in their 1986 report on the Pilgrim Belle grounding.]*
(b) Transport Canada should use this philosophy in the design, development and implementation of all new legislation in a step wise fashion. All vessels operating in Canadian lakes and rivers at 59°F or below should carry liferafts[(1)] that can easily be launched and boarded by the entire crew and passengers. *[[(1)]**Comment:** This refers to inflatable liferafts **not** life floats. We agree!]*
(c) The only exception to this should be where it is physically or practically impossible to stow a liferaft. Under such conditions the passengers must wear inflatable lifejackets when on board.
(d) Operating a vessel close to the shore or in groups or the carriage of EPIRB are not reasons for waiving this requirement because death from cold shock will occur within 3-5 minutes, swimming failure in under 30 minutes, and darkness only hampers escape and rescue.
(e) The Marine Emergency Duties curriculum should be amended to include the two new Canadian videos on cold shock, swimming failure, hypothermia and post-rescue collapse.

12. A correctly designed and fitted lifejacket plays a vital role in the effort to protect the human from cold shock. Introduction of legislation and regulations since 1945 have had a dramatic effect on drowning statistics. These are at an all time low in Canada of 1.2 per 100,000 population.

13. This does not allow any complacency because work still needs to be done on the nomenclature[(1)] of flotation devices (lifejacket v. PFDs), improvement in self righting tests, a review of self- righting requirements, co-ordination of new standards with the IMO/ISO/CEN standards, and the question of legislation of the wearing of flotation devices on small passenger vessels. More attention should also be paid to how fashion positively or negatively affects the wearing of lifejackets and personal flotation devices. *[(1)**Vocabulary: Nomenclature** = names or descriptive terms. "Life Jackets" and PFDs are examples of lifesaving devices with different functions.]*

14. If the decision is made to develop new standards for lifejackets (inshore and offshore) and PFDs (generally domestic and recreational) then because there is so much commonality between them, neither must be developed in isolation of each other. Furthermore, it is essential that preferably the committee chairman or senior representative for both standards should both attend each other's meetings and also international meetings with IMO/ISO/CEN. If this does not happen an incongruous situation may occur where common essential parameters may not be in agreement.

15. For those destined to develop the integrated immersion suit system, it must be remembered that:
(a) getting wet is potentially very dangerous.
(b) a dry system must be provided to achieve protection from the four stages of immersion.
(c) leakage of as little of one-half litre of water into the system will reduce insulation by 30%.
(d) the maximum insulation that can be added to a suit to prevent heat loss and still be wearable is 4.5 Clo in air.
(e) protection of the hands in the longer term is problematic, but not essential to survival, providing function is maintained for critical tasks.
(f) testing should be as realistic as possible to avoid disappointment with the function of the final product in the survival situation.

Golden and Hervey (1981)[(1)] identified four distinct stages in which a human immersed in cold water may become incapacitated and die. However, what is most important to note is that stages 1, 2 and 4 [described below] were largely regarded as of academic interest only; so they did not have a large effect on survival policy, international regulations and survival equipment. All of the effort was concentrated on stage three, that of hypothermia, on predicting the onset and prevention of hypothermia. Thus, there is still no consideration given to the physiological impact resulting from the first two stages of immersion in the design of emergency equipment. For instance, flares are still vacuum packed in polythene bags and as in the Estonia accident were not usable simply because no one had the grip strength or the tactility to open the bags. The bailer in the Estonia liferaft was wrapped in polythene and after attempting to open it with his teeth, one survivor finally gave up after he had lost several teeth!! Anyone who works, flies or plays over cold water, those who design equipment for emergency use, and coroners and pathologists who investigate deaths in marine accidents must know about these four stages. *[(1)Identifies authors of published research projects. These references appear in the full report.]*

Stage 1 – Initial Immersion Responses or "Cold Shock"

On initial immersion, there is a large inspiratory gasp followed by a four-fold increase in pulmonary ventilation (i.e., severe hyperventilation). This on its own can cause small muscle spasms and drowning. Along with this, there is a massive increase in heart rate and blood pressure. These latter cardiac responses may cause death, particularly in older, less healthy people. These effects last for the first two to three minutes, just at the critical stage of ship abandonment. (Tipton, 1989 & Tipton et al., 1994)

Death from cold shock is not uncommon. é Typical examples é continue to be regularly reported in the Canadian press each year demonstrate the practical evidence that cold shock kills.

Stage 2 – Short Term Immersion or "Swimming Failure"

Death at this stage, between three and thirty minutes after immersion, appears to affect those who try to swim.

It has now become apparent that much more emphasis must be put on swimming failure as a cause of death. It must also be understood that ability to swim in warm water is no indication of how well a human can swim in cold water. The classic testimony heard in the coroner's court is: ñWe saw him go over the side, he started to swim and by the time we had the boat turned around and tried to identify where he was lost, he had disappeared. How could that be? He was an excellent swimmer.ò

The cause was thought to be due to the respiratory and cardiovascular responses already started in the initial immersion. An alternative theory was that the cold water contact with the nose and mouth induced the ñdiving response.ò This causes breathing to stop (apnea), a slowing of the heart rate (bradycardia) and even cardiac arrest (asystole).

These are not rare events either and are commonly reported in the newspaper.

There are ***several common threads in these types of accidents***:

- the victims were good swimmers
- the water was cold
- death occurred within a matter of only minutes ï much too early for hypothermia to set in
- they were all healthy people
- they were often in shallow water
- the accidents occurred within feet of the shore.

Most important, there was potential help at the scene of the accident, but ***no one recognized the danger of sudden death from cold shock in an otherwise healthy person***. This is the precise reason why standards for wearing lifejackets and/or carriage of liferafts must not be relaxed when operating in cold water. Carriage of EPIRBs (with their 90 minute to 2 hour response time), and the fact that the vessel may be operating in a group or close to shore are not reasons for a waiver.

The clear message is that ***sudden entry unprotected in cold water is very dangerous*** and should be avoided wherever possible. This applies to everyone whether commercial operators or recreational boaters.

Stage 3 – Long-Term Immersion or "Hypothermia"

Heat Balance: The Basic Physics

In order to understand the cause of hypothermia, it is important to understand the basic physics of how a human maintains heat balance.

Heat flows down a thermal gradient from high to low temperatures. Thus, in the cold, a thermal gradient is established, down which heat ñflowsò from the warmer deeper tissues to the cooler tissues near the surface of the body. Heat then escapes from the body to the environment.

In normal circumstances in air, the body can exchange heat with the environment via four physical processes: radiation (R), convection (C), conduction (K), and evaporation (E).

R (Radiation). All objects possessing heat, including the body, emit thermal radiation from their surfaces.

C (Convection). This is the process by which heat is exchanged with the environment by the movement of air or water molecules adjacent to the skin, as they move away they are replaced by colder molecules.

K (Conduction). This term is used to describe heat exchange between the skin and surrounding surfaces with which it is in direct contact.

E (Evaporation). Evaporation is the process by which energy transforms liquid to a gas. The heat required to drive this process is removed from the surface of the object on which evaporation is occurring, and it cools.

For body temperature to remain stable in a cool environment, the heat produced by the body at rest or through exercise or shivering (M), must match that lost by R, C, K and E, or combined, R+C+K+E=M.

Several factors influence the amount of heat exchanged by R, C, K, and F. The most common are: the surface area involved in heat exchange; the temperature gradient between the body and the environment; and the relative movement of the fluid (air or water) in which the body is placed. This explains why someone will cool faster if: they are in colder water (gradient); if they are partially immersed compared to completely immersed (surface area*);* if they are in fast flowing as opposed to still water (movement of the fluid); and if they move about compared to staying still (relative movement of the fluid).

In water, heat is conducted to the molecules of water in contact with the skin (ñboundary layerò). These molecules are warmed and rise (Convection), and are replaced by cooler ones. Thus, in water only two of the four primary pathways for heat exchange are available, and heat loss is principally by convective and conductive heat exchange. Despite this, a naked individual in cold water will cool approximately four times faster than in air at the same temperature. This is because thermal conductivity of water is 25 times that of air, and its volume-specific heat capacity is approximately 3500 times that of air. Therefore, water has a much greater capacity to extract heat [than air of the same temperature]. The volume-specific heat capacity is obtained by multiplying the specific heat of a substance by its density. It represents the amount of heat required to raise the temperature of a given volume of water by 1°K. At 98.6°F (i.e., normal body temperature) the volume-specific heat capacity of water is 3431 times that of air. Furthermore, when in water, unlike air, the surface area available for heat exchange with the environment comes close to 100%. This is the reason why cold water is so dangerous. The corollary to this is that hot water is a very good medium to re-warm hypothermic victims.

After thirty minutes or more of immersion, death may occur from hypothermia. The reason for this is that water has a specific heat 1000 times that of air and a thermal conductivity of about 25 times that of air. Thus, when a body is immersed in water below body temperature (98.6°F), it will inevitably cool to hypothermic levels at a rate dependent on:

- Temperature differential
- Clothing insulation
- Rate of agitation of the water
- Body heat production produced by shivering and exercise
- Ratio of body mass to surface area
- Subcutaneous fat thickness
- State of physical fitness
- Diet prior to immersion
- Physical behaviour and body posture in the water

As the deep body temperature falls, humans lapse into unconsciousness. Death may occur in two ways ï drowning through incapacitation, and cardiac arrest. Death from drowning will occur in a lightly dressed individual even wearing a lifejacket, approximately one hour after immersion in water at 41°F, or two hours in water at 50°F, or in six hours or less at 59°F.

If the deep body temperature continues to fall, death occurs on average from cardiac arrest somewhere below a body core temperature of 75.2°F. The lowest recorded survival temperature in an accidental victim is 56.6°F. However, after surgical induction of hypothermia, there has been one reported incident of resuscitation from a body core temperature of 48.2°Fé

Example: COMET,[(1)] May 1973

The COMET had 27 persons on board and sank in Block Island Sound, Rhode Island, about seven miles offshore, in 48º F water. The COMET had no EPIRB and the only lifesaving apparatus was a 20-person buoyant apparatus. About 15 of the survivors held onto the buoyant apparatus at some point, including two of three who set out in a swamped dinghy to get to the buoyant apparatus. Six others were able to use an 8-ft by 10-ft piece of flotsam for partial support. Almost everyone on board had a lifejacket on when they abandoned ship. The two or three people who were not able to get a lifejacket were able use either the buoyant apparatus or the flotsam. The, first death occurred in the dinghy about one-half hour after the sinking Deaths continued until rescuers happened on the scene 4 hours later. A total of 16 persons died in this time. *[(1)NMA file #M-157]*

Example: JOAN LA RIE III,[(1)] October, 1982

The JOAN LA RIE III had 22 persons on board and sank about 8 miles off of the New Jersey coast in 53°F water. Life saving apparatus consisted of a 7-person buoyant apparatus and a 15-person life float. Most of the passengers were resting in the deckhouse when the vessel was hit by a rogue wave, heeled over, and began to flood. Two persons are missing as a result of this casualty. They may have drowned in the deckhouse. The remaining 20 persons were able to escape into the water, but none was able to put on a life jacket. Apparently all but two persons made it to the life float and buoyant apparatus, which were secured together. Those two died. Of the remaining 18 gathered at the life float and the buoyant apparatus, 14 survived and 4 died in the 90 minutes it took for the rescue to arrive. . *[(1))NMA file #M-107. M/V Joan La Rie III, Capsizing and Sinking in the Atlantic Ocean on 24 October 1982 with multiple loss of life. Report #USCG-M-84-2 (16732/0004 HQS 82).]*

Stage 4 – Post-Rescue Collapse

Up to twenty percent of immersion deaths occur during extraction from the water, or within hours after rescue. This was first noticed in 1875, by Reinke**,** a police surgeon in Hamburg. He recorded cases of sailors who had fallen into the canals and harbour and died within 24 hours of being rescued. During the Second World War, the Germans and Allies noted that some of those who were rescued alive, died shortly afterwards. Matthes noted how ditched German aircrew who had been conscious in the water and aided in their own rescue, became unconscious and died shortly afterwards. McCance et al, (1956) found that seventeen percent of those shipwrecked survivors rescued from the water at 50°F or less died within 24 hours of rescue. None of the people rescued from water above 68°F died.

When the Wahine Ferry sank in 1969 in Wellington Harbour, Mercer reported that, of the 51 lives lost, twelve were alive on rescue, but died shortly afterward. In the 1994 Estonia accident, at least one person who was noticed to be alive in the water, lost consciousness when in a helicopter hoist, fell back into the sea and died. An extensive list of post rescue collapse incidents is reported in Golden's articles on shipwreck and survival and Golden and Hervey's article on the after-drop and death after rescue from immersion in cold water.

Initial Responses to Immersion (Stages 1 & 2)
New Scientific Information Since 1975

It has now become clear that over half of the immersion-related deaths occur during the first two stages of immersion, i.e., cold shock and swimming failure. However, as stated previously, investigators still concentrate on the cause of the marine accident and not the precise cause of an individual's death. It is still hard to accurately document at what stage of the immersion death occurred. This is because little history has been gathered from survivors or by investigators; it is only possible, to a limited degree, to estimate the cause of death from a newspaper report or the scant information in the accident investigation.

The problem is further compounded by the fact that such a good job has been done educating people on the dangers of cold water, immersion and hypothermia, that even the pathologists now list the cause of death as hypothermia, even though the cold, wet body on their autopsy table actually died from cold shock or swimming failure and drowning.

Although cold shock or an increased respiratory response to cold water has been known for many years (Falk, 1884), the practical significance of this response has only really been evaluated in terms of its practical importance in the last 20 years. When considering at what water temperature protection should be provided against the initial responses to cold-water immersion, it is now known that the cold shock response begins at water temperatures below 77°F and peak at a temperature between 50 and 59°F. This is in part, the explanation for deaths that occur in water as high as 59°F long before standard survival curves would predict. It is now thought by many that the pressing threat to otherwise healthy individuals is the respiratory distress evoked by immersion and the consequent inability to control breathing and breath hold

Swimming

Swimming has a massive impact on the rate of body cooling and can increase the rate between 30-40% Tipton et al (1999) studied the deterioration of swimming performance after the subjects had adapted to the stage 1 cold shock respiratory responses. All ten competent swimmers completed a 90-minute swim in 77°F water; eight completed the swim in 64.4°F water. In 50°F water, five swimmers completed 90 minute swims, four were withdrawn between 22 and 50 minutes close to swim failure and one was withdrawn at 61 minutes close to swim failure. Stroke rate and length were similar in 77°F and 64.4°F water throughout the swims, but in 50°F water the stroke rate was increased and the stroke length decreased. These changes were most pronounced in those close to swim fatigue. Stroke length decreased by 50% during the last 30 minutes for the swimmer who reached swim failure in 61 minutes.

Coincident to this, the average swimming angle increased from an average of 18° at the start of the swim to 24° at the end of the swim. The swimmer who reached swim failure finished with a swim angle of 35°. After 15-30 minutes in 50°F water, swimmersô fingers were splayed and started to flex. At the end of the swims, swimmers reported that it became increasingly difficult to straighten their limbs and coordinate swimming movements. Grip strength was not altered by swimming in water at 77°F, but in water at 64.4°F and 50°F, it was significantly decreased by 11% and 26% respectively.

Wallingford et al (2000) investigated the factors, which limit cold-water swimming distance while wearing a personal flotation device. Five female and twelve male subjects took part in a swim in 57.2°F water. The subjects swam an average of 889 metres before swim failure. There was no correlation between distance swum and percentage body fat, aerobic fitness and abdominal skinfold thickness. However, those who swum the greatest distance had a significantly larger tricep skinfold thickness.

Wallingford et al. agreed with the conclusion made by Giesbreicht (1995) that the majority of the decrement in arm performance is due to the local cooling of arm tissue and not due to hypothermia. Wallingford's study did not support the assumption made by Hayward et al (1975) that hypothermia could be responsible for the inability to swim in cold water while wearing a personal flotation device. If Hayward's prediction were correct, the swimmers would have covered a distance of 2058 metres before incapacitation. This was more than double the distance of 889 metres covered by the subjects long before incapacitation from hypothermia (end average core temperature of 96.4°F).

Markle (1991) correctly noted that persons in the water with and without lifesaving equipment died at a much higher rate than predicted by the estimated survival graph. This supports Golden's theory that many victims drown during the cold shock and swimming failure stage of immersion, not from hypothermia per se. Even if they survive long enough to cool, cold-induced muscle incapacitation can prevent their keeping their backs to the waves, and thus their oro-nasal cavities clear of water, sometime after their body core temperature is reduced by 3.6 ï 5.2°F. This is why it is essential to wear a lifejacket with good sea keeping properties, i.e. self-righting, good freeboard and a face shield to protect from hypothermia.

Markle further concluded that ñThe present requirements for lifejackets, life floats and buoyant apparatus have proven adequate in all studied casualties where water temperature was 59.0°F or lessò. This might have been the case in this study, but it is still possible to die from hypothermia and post rescue collapse as in the case of the Lakonia in 1965 that sank in 64.2°F water off Madeira

The provision of a buoyant apparatus in which the survivor is basically floating with head only out of the water clinging to a becketed line in water below 59°F is only a last ditch measure if everything else has failed. Drowning is very likely from cold shock and swimming failure, in the short term, and hypothermia and post rescue collapse in the long term. The colder the water, the greater the chance of death. Again, as Markle clearly pointed out, in the case of the Cougar accident, the two people who managed to get themselves on top of a buoyant apparatus were the two not to be hospitalized. The remainder had to remain clinging to it in water at 13°C, three died. Similarly, in another case referred to by Markle (Zephyr II accident), if the device had been a liferaft instead of a buoyant apparatus, the person without the lifejacket would have been able to board it and would have survived the few minutes in the water. In this accident, eight of the survivors got separated from the boat. They decided to swim to an island, only one was alive six hours later when he called for help when almost ashore.

A Typical Case Where Death was Incorrectly Attributed to Hypothermia

Paradoxically, as previously stated, we have done a very good job of educating the public about hypothermia. As a result, local rescuers, police, the Red Cross, coroners and pathologists always assume that someone who has been pulled out of cold water drowned from hypothermia, yet this often is not the case. Because this assumption has been made, little further questioning has been conducted to find out precisely how, when and where the victim met his/her demise.

The Ocean Ranger sank in near freezing water on the Grand Banks off Newfoundland in February 1982 with the loss of all 84 men. No one was outfitted with a survival suit, although some wore lifejackets. The cause of death was attributed to drowning from hypothermia, yet from the testimony available, many died after only a matter of a few minutes in the water.

Below is the testimony from the Master of the [rescue vessel] Seaforth Highlander:

It was at that time that the lifeboat began to capsize to port in a very slow manner, like watching a slow motion picture. The men standing on top of the boat were thrown into the sea. The boat remained capsized. I believed during the capsize of the lifeboat the line we had made fast to it parted. After it had capsized it was approximately 12 feet maybe off the Seaforth Highlander, and I could see what I estimated to be eight or nine men clinging to the boat in the water. I could see all these men. They had lifejackets on, and there was a light on each lifejacket. We were still along the lifeboat, and after maybe a minute and a half or two minutes ï it is very difficult to estimate ï the men clinging to the boat began to let go, and they drifted down my port side. At that point I shouted down to the mate on the deck via the loud hailer system to throw over a liferaft. I saw the men running up forward on my deck to go for the liferaft, and they threw a liferaft over the side, which inflated right beside the men in the water. No effort was made by any man in the water to grab hold of the liferaft. No effort was made by any of the men in the water. No apparent effort was made by any of the men in the water to reach the lines, which my men had been throwing to them after the boat capsized. I saw a life ring with line attached landing close to the men clinging to

the boat, and they didn't make any effort to reach the life ring. At this time there were some men drifting down my port side, but the lifeboat was still off the port quarter of the ship with two or three men clinging to it. It was close to my port propeller at this time, so I had to stop my port propeller in case the men got caught in it é

I maneuvered the ship back around to an upwind position from the lifeboat and steamed down close to the lifeboat, the men and the lifejackets in the water. There was no sign of life at all. We could see all the men floating with their heads under the water, some of them with their arms outstretched, no sign of life, and the men on the deck were trying to pick up bodies.

Death obviously in this case was caused by cold shock and possibly swimming failure, but certainly not hypothermia.

Breath Holding Ability and Ability to Control Breathing Rate

This is very critical for all who abandon ship into cold water. If they abandon dry shod into a liferaft, there is no problem. However, if they abandon ship into cold water, unless they are mentally and physically prepared for the cold shock, are protected with a survival suit, a lifejacket and a spray hood, they may drown in the immediate abandonment due to the inability to control breathing in the first three minutes of immersion. It is not just a problem of not being able to breath hold; if you are in choppy water, there is an inability to coordinate and control breathing with wave splash. This is a typical scenario for passengers on tourist vessels in Canada's lakes and rivers in spring and early summer.

Sterba et al (1979) investigated breath-holding capability of humans in water ranging from 59°F ï 95°F. They concluded that breath-holding ability at 59°F was approximately 30% of the non-immersed values.

Hayward et al (1984) showed clearly that there is an inverse relationship between water temperature and breath hold ability. Thus, for abandonment in 77°F water, average breath holding is 38 seconds, whereas for 59°F, 50°F and 41°F water it is 28, 24, and 19 seconds respectively. They concluded that breath-holding time in water below 59°F was 25-50% of the pre-submersion level. Their predictive curve was recently validated at the higher end of the scale by Cheung et at (2001) in 77°F water following a breath holding experiment. Two hundred and twenty eight subjects participated and the average breath hold time was a mean of 39.8 ± 21.1 seconds.

Potential for Cardiac Arrhythrnias

Tipton (1989) had already documented the initial cardio-respiratory responses to immersion in cold water, i.e. the massive increase in heart rate and blood pressure within the first three minutes of immersion. Then in 1994, Tipton et at investigated the cardiac responses to submersion in water of 41°F and 50°F. Ectopic arrhythmias (irregular heartbeats) were observed in 11 of the 12 subjects in 29 of the 36 submersions. These occurred immediately after breaking of breath hold (i.e. just at the time after jumping into the water and having to take a breath). They were benign in most cases, (i.e. they were of short duration, supraventricular in origin and producing no symptoms).

However, this may not be the case for an aging population of tourists that may have to abandon a vessel in cold water, such as the St. Lawrence River or one of the Great Lakes. For those with a potential heart conduction defect, the heart is likely to be very susceptible to sudden immersion in water of 50°F, resulting in a cardiac arrest or death. Sudden immersion in cold water to the neck makes the heart much more susceptible to arrythmias, due to an increase in output of the stress hormones (i.e. Adrenaline, Noradrenaline). The frequency of these arrhythmias is higher when the face is immersed.

Manual Dexterity

There has now been more research done on loss of tactility in cold water during the first 10-15 minutes of immersion. During this time, the cold water renders the limbs useless, and particularly the hands. It can become impossible to carry out any self-rescue procedures. This only enhances the possibility of perishing before hypothermia is established.

The ability to do such tasks as activate the life jacket inflation device (if fitted), climb into a life raft, cling to a becketted line[1] or activate a flare depends on manual dexterity and grip strength. The ability of muscle to produce force is reduced when its temperature falls below 80.6°F. This can occur in as little as 20 minutes in water at 53.6°F. Vincent and Tipton (1988) showed that the maximum voluntary grip strength (MVGS) of subjects who immersed their unprotected hands or forearms in 41°F water was reduced by 16% and 13% respectively, and that wearing a glove significantly reduced the MVGS by 16% in air and with the hand glove and water immersion combination, the reduction was 31%. Research has also shown that handgrip strength was reduced by up to 60%, manual dexterity was reduced by 30% and speed of finger flexion was decreased by 15 to 25%. A recent study by Heuss et al (1995 identified minimum hand temperature criteria for safety and performance ï local skin temperature

59°F, nerve temperature 68°F and muscle temperature 82.4°F. The sinking of the Hudson Transport on Christmas Day 1981 in the freezing water off the Gulf of St. Lawrence is a classic example where cold extremities contributed to the death of five seamen. *[(1)**Vocabulary: Becketed line** = a short line with or without an eye, such as one attached to a life float or other lifesaving device.]*

The raft was overcrowded. The night was pitch black. The deck lights had gone out a short time before. They could hear air escaping. They could feel freezing water coming up around them. A spirit of sauve qui peut seized them all. Six men made it back to the deck. They were helped by the captain and Kennedy to scramble up the ship's side. Their desperate plight may be imagined from the fact that some of them were so chilled by wind and water that they climbed the ladder using knees and elbows rather than hands and feet. Five others fell into the sea and were lost. Perhaps some of them were simply too cold to be able to climb up the ladder.

Should Passengers Wear Lifejackets Prior to Abandonment,

This question was raised after several rapid sinkings occurred. Particular accidents cited have been the loss of the MV George Prince (1976) in the Mississippi River where 76 people died, the loss of the USCGC Cuyahoga (1978) in Chesapeake Bay where 11 people died; the loss of the Marchioness (1989) in the River Thames, UK, where 51 people died; and the loss of the MV Miss Majestic (1999) on Lake Hamilton, Arkansas where 13 people died.[(1)] The problem in each of these accidents was that many of the people were trapped between decks. The wearing of an inherently buoyant life jacket would have further hampered their escape if it were possible. Nevertheless, for those who found themselves in the water and in the dark in two of the accidents, a life jacket was critical to their survival. *[(1)**Comment**: Add to that the 20 deaths on the M/B Ethan Allen on Lake George, NY on Oct. 2, 2005]*

If one is therefore going to regulate that passengers must wear a lifejacket on a passenger-carrying vessel that does not have the ability to carry a liferaft, then the lifejacket must be an inflatable one. The modern inflatable lifejacket is an excellent piece of life-saving equipment; it is comfortable, unobtrusive and very reliable. The Europeans have been using them for recreation and commercial boating operations on their lakes, rivers and canals for years. Canada has simply been slow in effecting new legislation for approval and it is only in the last five years that they have started to come into general use.

The argument from ship's operators that they are expensive to purchase and maintain is only partially true. The fact is that once operators start to use them and passengers become familiar with them, then the confidence in their merit will go up, the price (due to a higher demand) will go down, and maintenance costs will correspondingly go down due to the general public starting to respect a very good piece of equipment that will potentially save their life. The two children in the True North II accident would have likely been alive and well today if they had worn a good inflatable lifejacket as they stepped on board the boat.

Summary

This [section] discusses essentials to know about the applied physiology of a sudden cold-water immersion accident.

- Up until fifty years ago, no one really understood the reason why people suddenly immersed in cold water died. It was attributed to an inability to stay afloat and vague terms such as ñexposureò. Nor was anyone particularly concerned about the steady cost of life. It was simply accepted as an occupational hazard and fate.

- Any early attempt at saving shipwrecked mariners was to provide them with flotation in rather than out of the water.
  Death may occur from one of the four stages of immersion:
  - Stage 1 Cold shock (3 - 5 minutes)
  - Stage 2 Swimming failure (3-30 minutes)
  - Stage 3 Hypothermia (after 30 minutes)
  - Stage 4 Post rescue collapse (during or hours after rescue)
- Although the four stages have been known since World War II stages 1 and 2 were considered only of academic interest. As a result, regulators, teaching establishments and survival suit manufacturers all concentrated their efforts on protecting the human from hypothermia. Indeed, in this regard they have done a very good job.

- Even though there are well-established teaching programs, good regulations and much improved life saving equipment, there are still in the order of 140,000 open water deaths each year. What has been overlooked is the significance of the first two stages ï cold shock and swimming failure as a cause of death. The severity of the effects of cold shock is directly proportional to the water temperature peaking between 50 ï 59°F.

- The layperson and accident investigators are often surprised that some people do not survive a lengthy immersion. Theoretically they are within the ñsafeò boundaries of one or more of the survival curves that have been developed to predict death from hypothermia. These people do not die of hypothermia per se**.** They die from a variety of problems in which moderate hypothermia is enough for them to lose their physical ability and mental determination to keep their backs to the waves. Thus, they inhale the next wave and die from drowning in spite of wearing a life jacket.

- From all the combined research on cold-water accidents and scientific research, it has become clear that sudden immersion in cold water (i.e., below 59°F) is very dangerous; it should be avoided if at all possible. It has now been shown that a person's swimming ability in warm water bears no relationship to that in cold water. A conscious decision to swim (and rescue oneself) or stay floating still in the water (and be rescued) should not be taken lightly without assessing the pros and cons. In water below 59°F, crew and passengers must abandon ship dry shod. If it is not practical to stow a liferaft on small vessels, then passengers must wear a modern inflatable lifejacket at all times.

THE 1951 PELICAN DISASTER AWAKENED CONGRESS

On the morning of September 1, 1951, the 42-foot motorboat PELICAN embarked 62 passengers and two crew members at Montauk, NY, for a fishing trip off Montauk Point. Since the vessel was less than 15 gross tons, it was not required to be inspected by the Coast Guard at the time.

After fishing for about an hour, the wind began to kick up and the Captain, a Coast Guard-licensed motorboat operator, headed back for the dock. As the PELICAN rounded Montauk Point, two successive seas hit on her starboard quarter causing her to capsize at 2:10 PM one mile north of Montauk lighthouse and in plain view of persons on shore. Although there were 86 life jackets in two deck lockers, there was no lifesaving equipment that offered **out-of-water protection** for any of the passengers and crew. Consequently, forty-five (45) persons including the Captain perished within 30 minutes of the accident.

[NMA Comment: Reports from our mariners indicate that passenger ferries and "head boats" still run these waters without "out-of-water" survival craft for crew and passengers.]

In studying the Coast Guard report almost a half-century after the fact, certain points stand out clearly. Although the Coast Guard had licensed motorboat operators since April 25, 1940, Congress finally assigned the Coast Guard the task of inspecting all ñsmall passenger vesselsò carrying six or more passengers for hire after the PELICAN disaster. Although many small passenger vessels now must carry lifesaving appliances in addition to lifejackets, the National Transportation Safety Board (NTSB) recommended in 1986 following the grounding of the M/V PILGRIM BELLE that lifesaving appliances capable of keeping all passengers and crew **out-of-water** be carried on all small passenger vessels to prevent loss of life from hypothermia.

It is painfully evident to our Association that the Coast Guard made a clear decision NOT to follow the recommendations of the National Transportation Safety Board following the PILGRIM BELLE and other accidents of a similar nature. We can only hope that the NTSB will continue to do the ñright thingò for our mariners and that Congress will direct the Coast Guard to follow their recommendations. Unfortunately, in recent years our association witnessed more ñarmchair sailorò types from the Coast Guard bureaucracy infiltrating the ranks of the NTSB.

THE 1985 PILGRIM BELLE ACCIDENT

In terms of maritime disasters, and certainly in comparison to the PELICAN accident, the grounding of the small passenger vessel PILGRIM BELLE on Sow and Pigs Reef in Vineyard Sound, MA, on July 28, 1985 was hardly a disaster for the record books although it contained many seeds with potential for future disasters. The NTSB explored them all in detail.

The PILGRIM BELLE was a 192-foot coastwise cruise ship designed to carry 104 passengers and 25 crewmembers in overnight accommodations. Although its displacement was 890 tons, it was designed to admeasure at less than 100 gross tons ï a magic number that allowed the Coast Guard to classify it as a ñsmall passenger vesselò inspected under regulations at 46 CFR Subchapter T At the time of the grounding, the vessel was on a 7-day cruise carrying 84 passengers and 16 crewmembers.

The Officer in Charge Marine Inspection (OCMI) in Mobile, AL, where the vessel was built determined that the PILGRIM BELLE was ñé not the type of vessel to which Subchapter T[(1)] was intended to apply. A lengthy and technical administrative process followed in which the vesselôs Certificate of Inspection (COI) was amended and vessel ownership was changed several times as the vesselôs service was changed from warmer, subtropical climates into more northerly waters. However, in defense of the Coast Guard, it is only fair to say that a number of reasonable regulations that generally govern large (Subchapter H) passenger vessels were put in place on this ñsmallò passenger vessel. *[(1)Subchapter T contains regulations for small passenger vessel regulations in 46 CFR Parts 175-185.]*

The lifesaving equipment aboard at the time of the accident met the stated requirements in the Certificate of Inspection although the existing COI incorporated several significant administrative errors that are not uncommon when a vessel with complex requirements moves from one inspection zone to another. Among the required lifesaving equipment was 6 life floats, each having the capacity of 22-persons, to accommodate a total of 132 persons ï the full number of persons the vessel was certificated to carry.

Prior to issuing the initial Certificate of Inspection, the OCMI in Mobile required inflatable life rafts for the vessel. Inflatable liferafts are costly but provide passengers and crew with ñ**out-of-water**ò protection against hypothermia. However, the owners of the vessel appealed the decision to Coast Guard Headquarters that upheld the OCMIôs ruling. The Coast Guardôs reason for denying the owners request was stated as follows:

ñThe requirement for lifeboats on passenger vessels is to provide for out-of-water flotation in the event that the vessel has to be abandoned. Buoyant apparatus (e.g., life floats) do not support survivors out of the water. Substitution of buoyant apparatus for the required lifeboats and life rafts is appropriate only on certain protected waters, and then only at times of the year when the risk of injury from immersion hypothermia is low. The M/V PILGRIM BELLE will not meet these operational limitations and must therefore carry lifeboats and inflatable liferafts for all persons on board.ò

It is clear at the time that Coast Guard Headquarters understood the importance of ñout-of-waterò survival craft. The owners also understood the requirements as well since, earlier in the year they rented inflatable liferafts to meet requirements in an inspection zone where they were operating in Florida.[(1)] However, by choosing to take advantage of the monetary savings offered by an unfortunate administrative error, they initiated a controversy that still rages two decades later. *[(1)Refer to Report #NTSB/MAR-86/08, pgs. 16, 17]*

The PILGRIM BELLE ran aground because the master piloted the vessel carelessly and allowed it to drift off course. The vesselôs was holed in several places but never sank. Fortunately, none of the passengers or crew was injured in this incident. However, the NTSB had the foresight to see the full potential of this disaster and sounded the alarm that a number of practices needed to be changed. The vessel was salvaged, changed owners, and sails today in Alaska as the SPIRIT OF ô98 ï and, unfortunately grounded again in 1999 as a result of another human error.[(1)] *[(1) NMA File #M-194]*

The accident, that put 84 passengers and 16 crewmembers ñat risk,ò had a number of different facets reflected in 16 wide-ranging ñrecommendationsò by the National Transportation Safety Board. The Coast Guard substantially revised the regulations governing small passenger vessels in 1996 using some of the NTSB findings in this accident.

Unfortunately, the new regulations[(1)] still allow life floats to be used on many small passenger vessels in domestic operation: ñAny buoyant apparatus in use on an existing vessel on March 11, 1996 may be used to meet the requirement for life floats as long as the buoyant apparatus is in good and serviceable condition.ò *[(1)46 CFR 180.16(d)]*

[NMA Comment: Existing life floats are rugged, durable and can be renewed and rebuilt relatively cheaply for years to come – and therefore remain a continuing threat.]

The fact that the Coast Guard never effectively implemented the NTSB ñrecommendationò on ñ**out-of-water**ò lifesaving gear points to a fundamental difference in philosophy between these two agencies. The NTSB recognized that the PILGRIM BELLE and the way it was operated and managed was a potential disaster waiting to happen ï and took steps to prevent it. On the other hand, the Coast Guardôs approach is ñreactiveò ï in effect, show us the bodies and we will see that it never happens again. The Coast Guard approach is often influenced more by the economics of the industry it regulates more than it is influenced by safety (i.e., the ñcost-benefit analysisò required by the Office of Management and Budget on regulatory projects).

[NMA Comment: We regret that the Coast Guard approach to lifesaving has been "reactive" in contrast to the NTSB approach that has been "pro-active."]

The fact that inflatable life rafts provide **out-of-water** protection to save people from hypothermia is counter-balanced by the fact that inflatable life rafts cost ten-times as much to buy and maintain as life floats. If you look closely at the problem, the cost of providing an inflatable liferaft for a few thousand dollars pales into insignificance when compared to the value of saving a single human life set at $2,700,000 established by the U.S. Department of Transportation. The cost of an inflatable liferaft pales into insignificance when balanced against the victimôs claims following fatal transportation-related accidents.

[NMA Comment: The value placed on a working mariner's life by his employer and their insurance carriers make $2,700,000 look like a pie in the sky. For example, in preparing our Report #R-311, The Loss of the M/V CHERAMIE BOTRUC 26 With Two Fatalities, the family of one of young victims of this negligent accident sued to raise the proffered settlement offer beyond the meager $50,000 offered.]

There is another and more subtle consideration. The NTSB understands that many of the accidents it investigates affect the traveling public whereas many of the accidents the Coast Guard investigates involve ñonlyò seamen. NMA can cite many instances where employers as well as the Coast Guard treat our mariners as ñsecond-classò citizens.

ñLower-levelò mariners have never had an effective voice at the national level unless they have union representation. Although NMA has done its best to improve the condition of our mariners, working mariners do not receive the protections they deserve. As one family member of the Botruc 26 accident told the National Offshore Safety Advisory Committee (NOSAC) in a packed meeting room at Coast Guard Headquarters, term life insurance should be a required part of any companyôs ñbenefit packageò to protect the marinersô families in light of the hazards of the occupation.

Even though the Coast Guard is charged with general superintendence over the merchant marine and is obliged to correctly and uniformly administer statutory requirements in the interest of marine safety and seamensô welfare, mariners generally have less influence with the Coast Guard than do their employers. Consequently, mariners often must find redress for their grievances through the courts with the help of attorneys while their employers are comfortable using more convenient and less confrontational means like letters and phone calls to the Marine Safety Office to affect change, or protective shield of membership in a trade association, or a seat on a Federal advisory committee. The personal expense for ñlower-levelò mariners to participate in these meetings in distant cities often precludes mariners from active participation.

LIFE THREATENING PROBLEMS WITH LIFE FLOATS AND BUOYANT APPARATUS

The great appeal of life floats and buoyant apparatus for many boat owners is that they are simple to use, easy to maintain and, above all relatively cheap. That says it all!

In August 1999, the our Association representing thousands of lower-level mariners serving on inspected and uninspected commercial vessels of less than 1,600 gross tons, pointed out significant problems with existing Coast Guard ñapprovedò lifesaving appliances to Coast Guard officials at the highest level ï with predictable results.

Lifesaving appliances, known as ñlife floatsò and ñbuoyant apparatus,ò are used on many commercial vessels including small passenger vessels, offshore supply vessels, tugboats, and other workboats our mariners serve on.

A life floatôs outstanding advantage for boat owners is its relatively inexpensive price. Our Associationôs Board of Directors continues to be much more concerned with protecting human life than risking it with outmoded equipment. We find that this equipment has certain definite inherent disadvantages:

Disadvantages of Life Floats

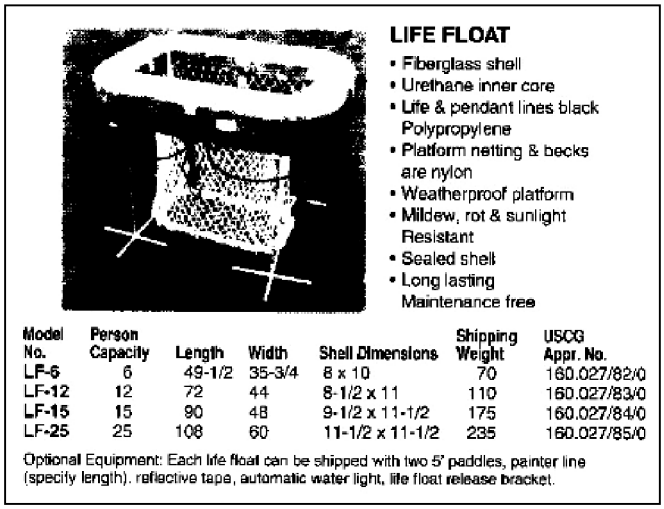
- A life float is designed to hang onto not to climb on or into.
- To use a life float, you must first enter the water. Your body remains immersed in the water. Body heat loss of a person immersed in the water is up to 25 times as great as for a person in air of the same temperature. Survival time diminishes correspondingly.

- Survivors are supposed to hang onto Ę" polypro ñlifelinesò attached to straps sewn around the body of the life float. These ñlifelinesò are of very small diameter and do not even have loops to hold onto. Your hold on these lifelines depends on your grip that, in turn, depends on your time in the water, the water temperature, your physical condition, and the onset of hypothermia.
- In calm weather, one or two people may possibly be able to balance themselves on a life float's body with their

feet inside the shark net ï as is quite popular in summer camps and resorts. In cold water, it would be to their very great advantage to do so. However, the Coast Guardôs-rated ñcapacityò of any life float is much greater than 1 or 2 persons and ranges from 6 to 25 persons. This barely allows enough space to hang onto around the float's periphery.

- In heavy weather a life float typically weighing between 70 and 235 lbs. (when not waterlogged) will batter survivors in the water making it difficult if not impossible to survive for any length of time.
- Water temperature from weather data buoys in the Gulf of Mexico during the coldest winter months regularly is reported as 60°F but may dip as low as 55°F. On the western rivers that flow into the Gulf of Mexico water temperatures are considerably lower because of colder surrounding land temperatures found in more northerly latitudes than on the Gulf Coast. Remember that a person begins to lose body heat the moment he or she gets into the water.
- Although it is painted a bright international orange, has reflective tape on it, and is ñCoast Guard Approvedò the life float is not a state-of-the-art survival craft. While it may give the illusion of safety, there are other survival craft such as ñinflatable liferaftsò and ñinflatable buoyant apparatusò (IBA) that offer passengers and crew a much greater chance of survival. Coast Guard officials in Washington, however, find life floats ñgood enoughò as long as they risk the lives of other people. These people are not always mariners!
- Hypothermia has a record as a killer from the loss of over 1,500 persons on the RMS TITANIC in 1912, through two World Wars, to the PELICAN disaster, and on to the present. Thousands of people lost their lives from cold-water (ñcold shockò) immersion and hypothermia because they were unable to pull their bodies clear of the water. One thing as certain as death and taxes is that dead people do not vote! It is up to us, the living, to initiate changes.

[NMA Comment: Although "terrorism" is the term in current use, inhumanity can take many forms. It is timely to point out that not all maritime disasters are accidents. For example, the deliberate sinking of the liner LUSITANIA in May 1915 took almost 1,200 lives – many from hypothermia. Ask the people of Cork, Ireland.]

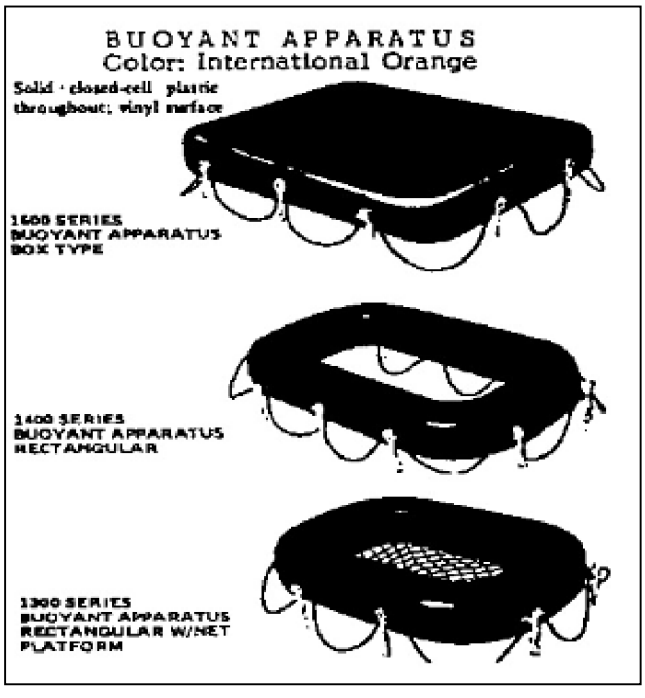


LIFE FLOAT

- Fiberglass shell
- Urethane inner core
- Life & pendant lines black Polypropylene
- Platform netting & becks are nylon
- Weatherproof platform
- Mildew, rot & sunlight Resistant
- Sealed shell
- Long lasting Maintenance free

Model No.	Person Capacity	Length	Width	Shell Dimensions	Shipping Weight	USCG Appr. No.
LF-6	6	49-1/2	35-3/4	8 x 10	70	160.027/82/0
LF-12	12	72	44	8-1/2 x 11	110	160.027/83/0
LF-15	15	90	48	9-1/2 x 11-1/2	175	160.027/84/0
LF-25	25	108	60	11-1/2 x 11-1/2	235	160.027/85/0

Optional Equipment: Each life float can be shipped with two 5' paddles, painter line (specify length), reflective tape, automatic water light, life float release bracket.



- Do not confuse ñbuoyant apparatusò with ñinflatable buoyant apparatusò (IBA). IBAs are relatively new survival equipment that ***do*** provide survivors with a reasonable chance to get out of the water. The National Transportation Safety Board is more willing to accept this whereas the Coast Guard stubbornly will not consider it! Modern ñbody countsò by Coast Guard statisticians overlook the ñTitanicò and ñPelicansò as their lessons learned painfully by earlier generations become lessons forgotten. Winston Churchill, at one time Great Britainôs First Lord of the Admiralty and wartime Prime Minister and a witness to huge losses of life in the cold,

green waters of the Atlantic in World War II, reminds us that, ñThose who fail to learn the lessons of History are destined to repeat them.ò

- Life floats and buoyant apparatus are better suited for people swimming in a lake or bay in the summer months than they are for lifesaving purposes.
- Regulations in the SOLAS convention regulations do not even list life floats and buoyant apparatus as ñsurvival craft.ò So, why does the Coast Guard continue to permit their use in domestic regulations?

BELTWAY TURF WARFARE IMPACTS OUR MARINERS AND PUBLIC SAFETY

Concern about addressing safety considerations on small passenger vessels peaked in the mid-1990s during a period when the Coast Guard considered changes in small passenger vessel regulations promulgated as a Final Rule on Jan. 10, 1996.

Two months earlier on November 14, 1995, the NTSB published an accident report titled Fire Aboard U.S. Small Passenger Vessel ARGO COMMODORE in San Francisco Bay, California, Dec. 3, 1994.

The fire erupted on this 61-foot small passenger vessel during an evening dinner cruise on San Francisco Bay. Fortunately, the 41 passengers and crew did not have to enter the 48-degree water or use the vesselôs two 12-person life floats (total capacity 24) or lifejackets.

While entering 48-degree water could have a serious impact on health of all concerned and might even have taken some lives, the NTSB report was of lasting significance because on an obscure ñAppendix Fò they added to the report.

Appendix F listed 55 ñopenò small passenger vessel safety recommendations, some extending back to 1977 that the Coast Guard still had not resolved within two months of the time when new Coast Guard regulations governing over 3,000 small passenger vessels were ready to be promulgated. Our mariners confronted the Coast Guard with this matter and received replies from the Project Officer that were far from satisfactory. No matter how you look at it***, the Coast Guard bureaucracy at the highest levels arrogantly thumbed its nose at National Transportation Safety Board safety recommendations for years and got away with it!*** This simple ñappendixò attached to an important but ultimately obscure accident report caught the Coast Guard in the act.

Apparently, the NTSB tendered undeserved olive branches to the Coast Guard after 2000 with very questionable results for the safety of our mariners. Recent inter-agency agreements limit the NTSB oversight on most accidents that involve many smaller vessels crewed by our ñlower-levelò mariners and place these investigations in the hands of the Coast Guard. We openly questioned the quality of Coast Guard investigations in our Report # R-429, Report to Congress: How Coast Guard Investigations Adversely Affect Lower Level Mariners.

We also seriously question the quality of Coast Guard investigations in two other reports by the agency itself that appear on our website as:

- Report #R-429-A. (Series) U.S. Coast Guard Investigations. (Reprint of the 1994 Coast Guard R&D Report.).
- Report #R-429-B. (Series) Coast Guard Marine Casualty Investigations. (Reprint of the Quality Action Team Report, 1996)
- Report #R-429-C. Coast Guard Marine Casualty Investigations.

Our Mariners' Lives Are on the Line

The purpose of the RESOLUTION our members and Board of Directors endorsed in 1999 (below) was to openly condemn the practice of allowing many of the vessels we work on to carry lifesaving equipment that puts our lives and the lives of our crew, and passengers in jeopardy.

For more than 15 years, the Coast Guard ignored formal recommendations made by the National Transportation Safety Board to provide out-of-water protection for all persons on commercial vessels of all types. This type of lifesaving gear requires survivors of maritime accidents to await rescue for unknown and often unpredictable periods clinging to inadequate equipment while in the water é sometimes in very cold water and for long periods including possibly overnight. To do so, possible survivors of all ages, injured or uninjured, are immersed in the water, threatened by hypothermia, fear, possible drowning, and by various sea creatures both real and imagined.

It is obvious to our Association that the Coast Guard leadershipôs principal concern does not lie with the safety of our mariners or, for that matter, with the general public carried on many commercial vessels less than 1,600 gross tons. Although their policies appear to be well designed and plausible, they dissolve as soon as you find yourself in the water.

Since 1999 we also carried our complaint to two Federal advisory committees dominated by boat owners and businessmen without satisfaction.

GCMA RESOLUTION ON LIFESAVING EQUIPMENT FOR OFFSHORE SUPPLY VESSELS AND TOWING VESSELS

WHEREAS our Association's membership is composed of licensed, documented, and undocumented mariners who work in the marine transportation sector of the offshore oil industry operating every type of OSV, towing vessel, and small passenger vessel...

WHEREAS our Association's overriding concern is for the safety and protection of all ñcrewmembers,ò ñpersons in addition to the crew,ò ñpassengers,ò ñoilfield workers,ò or other individuals aboard oilfield, uninspected towing vessels, and small passenger vessels é

WHEREAS these vessels operate not only in the Gulf of Mexico but also in other areas of our nation and the world, in fair weather and foul, in all seasons of the year, and under all sea and weather conditions ranging from benign to dangerous, on waters from inland waterways to oceans, and in areas near rescue and in areas remote there fromé

WHEREAS the National Transportation Safety Board in Safety Recommendations M-86-61 and M-94-26 recommended as early as 1986 that the U.S. Coast Guard require out-of-the-water survival craft for all passengers and crew on board small passenger vessels to prevent immersion in the water for all passengers and crew é

WHEREAS ñlife floatsò fail to meet the National Transportation Safety Board's criteria of lifesaving equipment that prevents immersion in the water and virtually assures that survivors will be immersed in the water until the time of their rescue or death from hypothermia or other causes é

WHEREAS the Coast Guard has repeatedly failed to take action acceptable to the National Transportation Safety Board or to our Association in this regard ...

WHEREAS members of our Association assert that all ñcrewmembers,ò ñpersons in addition to the crew,ò ñpassengers,ò ñoilfield workers,ò and other individuals aboard oilfield vessels and uninspected towing vessels deserve the same degree of safety, care and consideration as crewmembers and paying passengers on small passenger vesselsé

WHEREAS statistical research presented by the Coast Guard for regulatory purposes shows that American society is willing to pay $2,700,000 to save even just one life[(2)]é

WHEREAS 46 CFR §160.027 describes Coast Guard approved life floats for merchant vessels; 46 CFR §199.30 classifies ñlife floatsò and ñbuoyant apparatusò[(1)] as survival craft and continues to allow their use on U.S. flag vessels; 46 CFR §131.870 continues to allow their use on oilfield vessels; 46 CFR §117.137 and §180.137 continues to allow their use on small passenger vessels; and existing Coast Guard regulations fail to require an uninspected towing vessel to carry any lifesaving equipment capable of preventing immersion in the wateré

THEREFORE BE IT RESOLVED THAT THE GULF COAST MARINERS ASSOCIATION petition the United States Congress to require suitable lifesaving equipment by statute for all oilfield and uninspected towing vessels that prevents immersion in the water of all persons on board the vessel that satisfies the National Transportation Safety Board's safety recommendations.

[(1)Our complaint does not extend to new "inflatable" buoyant apparatus. (2)Refer to CGD 94-041, 59 FR 53756, Oct. 26, 1994 et al. Our resolution was adopted at the Gulf Coast Mariners Association Board of Directors meeting on August 11, 1999 and presented to the membership on August 16, 1999. Since that time, we have been unable to work with the Coast Guard to resolve these important lifesaving issues.]

FIRST SCENARIO: THE "MAN OVERBOARD" PROBLEM

Man Overboard from a "Fleet Boat"

We will consider severalò man-overboardò scenarios. The first involves a ñfleet boatò that transfers barges to and from large tows pushed by large linehaul towboats on the Mississippi River. Fleet boats also move barges on short hauls on the river, in canals, and at industrial plants as well.

Moving barges is a dangerous occupation and involves long hours, exhausting physical labor with crude tools, minimal manning levels coupled with marginal working conditions that were never effectively regulated or supervised either by OSHA or the Coast Guard.

We must point out that the American Waterways Operators (AWO), the trade association for the tug and barge industry, promotes as reasonable a fifteen-hour workday in its ñResponsible Carrier Program.ò The Coast Guard embraced this program and never alerted Congress to the dangerous conditions many crewmembers on towing vessels face. The toll of industry deckhands working on towboats and barges is exceptionally high as reported in the Coast Guard documents cited in our Report #R-351, Rev. 1, How Safe Is The Towing Industry?.

The Lower Mississippi River (LMR) has swift currents especially during its high water seasons. River water can be cold, especially in Winter and Spring where snowmelt flows downstream at temperatures between 32 and 59 degrees F. The Coast Guard classifies water temperatures below 59°F as ñcold waterò in their important guidance document Navigation and Vessel Inspection Circular (NVIC) 7-91 that they use to specify protection against hypothermia in many regulations other than those that apply to our mariners working on rivers.

In most ñcold waterò areas along the east and west coasts, the Coast Guard either ñencouragesò or requires vessels to carry ñimmersion suitsò for crewmembers to avert hypothermia if they fall overboard. Unfortunately, even through our persistent efforts to urge the Coast Guard to make changes in this basic ñguidanceò document, NVIC 7-91 still entirely omits any reference to cold water found in rivers such as the entire Mississippi River System where thousands of our mariners work throughout the year. What kind of ñguidanceò is this?

Many ñfleet boatsò and hundreds of other small towing vessels only carry a crew of two men ï a Master (often called a ñPilotò) and a ñdeckineerò who is expected to do all of the work on deck and occasionally look in on the engines and pump the bilge. Fleet boat crews generally rotate after every 12 hour shift.

A Coast Guard/AWO Quality Action Team report[1] indicates that the greatest loss of life in the towing industry results from ñfalls overboard.ò *[[1]Refer to our Report #R-428-B, Report of the Coast Guard-AWO Quality Action Team on Towing Vessel Crew Fatalities.]*

Also see below: **A FALL OVERBOARD, AND A MEMORY RE-VISITED**

ñMy deckineer just fell overboard"

Letôs give our ñdeckineersò in the water every possible ñadvantageò that could lead to his successful rescue. In reality, he rarely has all these advantages underlined below. In fact, if you do not have any one of these so-called ñadvantages,ò the occurrence of a simple ñfall overboardñ may result in serious injury or even death. Not every fall overboard results in a happy ending ï as the statistics in our Reports #R-351 and #R-428-B that cite Coast Guard data clearly indicateé .

- The pilot sees his deckineer fall overboard in daylight.
- The deckineer surfaces and is alive.
- The deckineer did not injure himself or lose consciousness when he fell or entered the water.
- The pilot never loses sight of the man in the water.
- The pilot is running ñlight boatò (i.e., without a barge in tow).
- The pilot is a good boat-handler and can easily maneuver his small twin-screw towboat quickly and easily to the vicinity of the man overboard in unrestricted open water.
- The man in the water is wearing his life vest that keeps him afloat.
- The manôs life vest is donned properly and is buckled.
- It is mid-summer and the LMR water is warm. *[We document actual river temperatures in the Lower Mississippi River later and in detail in this report.]*
- There is no wind, no waves, and little current.
- An old tire used as a fender is hanging over the side and can be grasped easily by the man in the water. This means that the pilot does not have to leave his controls to launch a ring life buoy to retrieve the man overboard.
- Both the pilot and the man overboard respond so quickly that there is no need to go to the radio and try to

summon help from other vessels or from the Coast Guard.

- The man overboard is in good physical condition.
- The man overboard is strong enough and the tire is positioned well enough so he can pull himself up and over the vesselôs low bulwarks and needs little or no assistance in doing so. However, the pilot must leave the pilothouse unmanned and put his vessel at risk to assist the man overboard.
- The man has a change of warm, dry clothes and does not require medical assistance or other help and can finish his watch.

The story may end well if the scenario follows this script very closely. However, that does not always happen. If any one of these ñadvantagesò is not in place, a serious injury or death may result.

[NMA Comment: Our Association discusses the need for "rescue boats" and small boat training in general for all crewmembers in detail in our Report #R-276, Rev. 9, Item #10, Survival Craft, and Item #77, Rescue Boat and Training.]

SECOND SCENARIO: ANOTHER LIFTBOAT (OSV) COLLAPSES IN THE GULF OF MEXICO

Nineteen (19) workers were rescued from the choppy waters off the Alabama coast in the early morning hours of Feb. 19, 2002 as the wreckage of the ñliftboatò M/V LUKE DAVID floated nearby.

Six workers were hospitalized for injuries ranging from broken bones to hypothermia.

The self-elevating liftboat was on site to repair an offshore platform in open water 25 miles south of Dauphin Island off the Alabama coast. Six workers were flown ashore by helicopter and hospitalized while all of the other workers were rescued by boat.

The liftboat was engaged on an offshore maintenance assignment when it collapsed into 102 feet of water in darkness at 5 oôclock in the morning amid 8-foot waves and 25 to 30 knot winds. The deck of the 98.2-foot vessel had been elevated to 55 feet above the water when a ñtiltò alarm sounded at 0435. The Captain attempted to jack down into the water, sounded the general alarm, and made distress calls on his VHF radio. With approximately 17 degrees of trim by the stern, the stern of the vessel stopped descending as it reached the surface of the water. Soon after reaching the water, main power failed because of down flooding in the engineroom. The vessel was plunged into darkness.

About an hour after the distress call, the crewboat GULF RAMBLER arrived on scene but was unable to approach near enough to retrieve the crew. At approximately 06:38 the M/V LUKE DAVID capsized and all 19 persons including the crew of eight, eight offshore workers, and three inspectors plunged into the choppy seas when one of the liftboatôs legs collapsed.

[NMA Comment: It is fortunate that all 19 persons were not in the water for one hour awaiting the arrival of the first rescue boat. It was mid-February and the water temperature was close to the 59°F "cold water" mark mentioned in NVIC 7-91.]

The GULF RAMBLER rescued nine men in the water and a Coast Guard 41-foot RTB from Dauphin Island rescued the remaining 10 men from the water.

Aside from this brief description, most of the Coast Guard accident report deals with technical matters related to the collapse and salvage operation on the vessel amounting to an estimated $7,000,000 loss.

[NMA Comment: Accidents with liftboats happen with distressing frequency. Refer to Report #R-363., Report From the Subcommittee on Liftboat Operations to the National Offshore Safety Advisory Committee (NOSAC).]

Unfortunately, the Coast Guard accident report released to us 2½ years after the accident under the Freedom of Information Act devoted little additional attention to any ñhuman factorsò or lifesaving issues of primary concern to our mariners. Apparently the ñlessons learnedò by the Coast Guard from this accident were in the ñtechnicalò rather than the ñhumanò area. Unfortunately, this is not unusual.

Newspaper accounts add only a bit more information relevant to lifesaving issues:

The boats got there first around 0545 said Petty Officer Don Smith who was riding in the second boat on the scene. But the waves were too high for the boats to approach the liftboat where the crew was standing on deck

waiting (i.e., out of water).[1] One of the liftboatôs legs was clearly damaged, tilting the deck precariously over the water. At about 06:00 a USCG aircraft arrived and dropped an inflatable liferaft on the liftboatôs deck, but the crew refused to get in and go overboard. It was a long drop and they were afraid to jump. Shortly thereafter, the liftboat collapsed and all 19 men were in the water anyway. *[[1]Neither the air temperature nor the wind direction were noted in the report but are extremely important and pertinent factors.]*

We will look at the same list of factors in this scenario and compare it to the first scenario in roughly the same order introducing new factors:

- Darkness not daylight was prevalent at the time of the accident.
- The actual injuries were not immediately life-threatening under the circumstances but could have been.
- Men were in 60-degree water for only a short time.
- Men in water were in sight.
- At least one on-scene USCG rescue boat was small and maneuverable. However, operating 25 miles offshore with a 41-foot boat in 8-foot seas and 25-30 knot winds speaks highly of the boat-handling ability of the Coastguardsmen that manned it. *[**Note:** We might comment in greater detail and a more laudatory manner if the wind direction and air temperature appeared in the USCG accident report.]*
- The vesselôs Certificate of Inspection shows the M/V LUKE DAVID had no installed davit-launched inflatable liferafts. She only had four ñlife-floatsò that would have required the crew to abandon ship directly into the cold water.

[NMA Comment: Was the "scientific" evidence that led the authors of NVIC 7-91 to define "cold water" at 59 degrees and below tainted by a "political decision" to exclude the entire offshore towing and mineral and oil industry along the north coast of the Gulf of Mexico from the expense of carrying immersion suits or thermal protective gear on commercial vessels?]

[NMA Comment: Why does NVIC 7-91 continue to omit reference to the "cold water" well below 59°F on the entire western river system and other waters? We provided evidence in the form of river water temperature readings later in this report to Coast Guard officials many years ago!]

[NMA Comment: Our mariners suspect corporate "bean-counters" and/or the political influence of industry trade associations like AWO and OMSA influenced Coast Guard regulators to hide safety issues in favor of corporate profit.]

[NMA Comment: Had this liftboat suddenly collapsed without any warning, all persons on board would have been immersed for at least 1 hour in "cold water" The outcome could have been quite different without any protection against hypothermia before help arrived. The USCG report does not mention whether any of the life floats or the inflatable liferafts dropped by air were actually deployed.]

- ðWe fault this accident report because it does not show that any recommendation to improve lifesaving equipment required by regulation resulted from this report.
- ðWaves, wind speed and wind direction were important factors but no information on hospitalized crewmembers was reported.
- ðMen had to be pulled out of the water by hand. Apparently, sufficient personnel were available to accomplish this.
- ðThe crewboat that reached the accident scene reportedly was unable to approach the stricken liftboat.
- ðThis liftboat was certificated to carry as many as 43 persons but, at the time of the accident, only carried 19. This scenario carried the seeds of an horrific calamity that were ignored and minimized.

[NMA Comment: By carrying only "life floats" that forces a crew to abandon ship directly into rough water in mid-winter meant that this was a disaster waiting to happen. Citing this inspected vessel's maximum certificated capacity of 43 persons, the loss of life could rival the death toll of 45 persons in the Amtrak/Sunset Limited accident (also near Mobile, AL) that profoundly affected the entire towing industry. We ask why Coast Guard officers avoid making this type of connection.]

COAST GUARD SEARCH AND RESCUE VETERANS RECOMMEND SOLUTIONS

A number of important issues involve lifesaving equipment, gear and policies that directly affect our lower-level

mariners who serve on all types of small commercial vessels.

While Coast Guard headquarters personnel may be the final authority in ñapprovingò lifesaving gear, it is experienced active duty and retired Coastguardsmen who perform the hands-on search and rescue work day after day that really understand what works and what doesnôt work.

Captain Larry Brudnicki (USCG, Retired) spoke at the Towing Safety Advisory Committee meeting at Coast Guard Headquarters in Washington on September 29, 2004. Captain Brudnicki, who spent much his Coast Guard career in search and rescue work, is well known to the public as the Commanding Officer of the Coast Guard Cutter TAMAROA in ñThe Perfect Storm.ò

In his presentation, Captain Brudnicki spoke of the need for performance-based lifesaving regulations rather than the rigid, prescriptive type regulations of the past. He also gained the attention of the audience by urging the Coast Guard to adopt many innovative common-sense technologies that are on the market to improve every commercial marinerôs chances of survival at sea.

[NMA Comment: We urge Congress to solicit the views of this distinguished retired Coast Guard officer and review the Coast Guard's lifesaving equipment approval process.]

We believe it is unfortunate that some true SAR professionals as well as individual inventors encounter administrative problems when they try to introduce new and innovative ideas to the Coast Guardôs entrenched Washington bureaucracy. It is the same stone wall that our Association faces when it argues on behalf of working mariners.

One item in particular has the potential for putting flotation in the hands of a man overboard in an accurate and timely manner. The ñPersonal Retrieverò provides immediate lifesaving flotation for a person in the water and provides the means for pulling him to a safe rescue platform.

Paul Driscoll, USCG, Ret., President of Life-Safer, Inc. enlisted in the Coast Guard in 1965, specialized in Search and Rescue (SAR) throughout his career and retired with the rank of Master Chief. His invention, the ñPersonal Retrieverò solves several key problems involved in retrieving a man overboard.

His invention is the product of a seagoing mariner whose career gave him the opportunity to rescue many people from the water. He is, first and foremost, a practical mariner as were his father and grandfather ï as is his son today. Before entering the service, he was a commercial fisherman and shipyard worker in New England. He has experienced all the problems involved in conducting search and rescue missions first hand from hands-on experience. He is a true SAR professional with friends and acquaintances in that part of the Coast Guard that every merchant mariner deeply respects.

Paul demonstrated his ñPersonal Retrieverò lifesaving device to crews on Coast Guard cutters and proved to their satisfaction that the device was far superior to the ring life buoys used on commercial vessels and the heaving lines in current use. As a result, many cutters and patrol boats purchased this device from their own unit funds to improve their SAR mission performance.

While convincing the crews on Coast Guard cutters and patrol boats was a ñslam-dunk,ò convincing the Coast Guard bureaucracy in Washington, who seldom communicate with our working mariners, of its value was an entirely different matter.

Paul posed a simple question: ñWhy hasnôt the Coast Guard relied upon the same ring life buoys on its own cutters and patrol boats for the past 20 years that it requires to be carried on every commercial and many recreational vessels?ò Since a picture is worth a thousand words, he produced a convincing video showing a rescue from a frozen river in Massachusetts and moves on to a comparison of the ñPersonal Retrieverò and the ring life buoys and heaving lines it replaces as demonstrated from the deck of an active Coast Guard cutter.

At the end of his career in the Coast Guard, Paul offered to donate his patented invention to the Coast Guard because he believed it had a real potential to save lives. The bureaucracy faced a dilemma ï a person from outside the Beltway with a radical new idea. In reality, Paul is a true Coastguardsman through and through whether in or out of uniform.

The defensive bureaucrats placed insurmountable hurdles before him. Our Association faces the same types of obstruction in trying to work with the Coast Guard on many issues and understands. Finally, Paul determined to go into business so he could effectively produce and market his invention to professional mariners as well as to the Coast Guard boat crews he knew so well.[1] In his business endeavors, Paul encountered other talented innovators that ran into exactly the same barriers he encountered. *[[1]Life-Safer, Inc. 1360 Rosecrans St., Suite "H", San Diego, CA 92106. Phone (888)-222-0373).]*

The ñPersonal Retrieverò does more than take the place of a ring life buoy because it has a ñreachò of up to 100 feet. So that our mariners could compare apples to apples, our Association measured how far we could throw a

standard ring life buoy in comparison to the ñPersonal Retrieverò ï unencumbered with a heavy waterlight. We ask, ñWould you ever throw the equivalent of a brick to a drowning man?ò We tried both the ring buoy and the Personal Retriever on the lawn and in the water. Even more important than the throwing distance alone, we compared the accuracy with which we could reach a target like a person in the water 25, 50 or 75 feet away. Like anything, practice makes perfect and some practice is necessary ï at least 10 to 15 minutes of it.

During our live instruction, our instructor, a retired Coast Guard officer from Houston who had come up through the ranks, reminded us that there was a drowning person on the other end of the line and that the accurate and rapid deployment of the device is of the essence.

The ñPersonal Retrieverò bridges the gap between a person in the water and his rescuer on the dock, on the bank, in a boat or on a ship. It puts enough flotation within reach for a person to keep his head above water and a line to pull him to safety. For example, if a passenger falls from a ferry, or a crewmember falls off a barge, OSV, fishing boat etc, these vessels are usually maneuverable and can pull up close enough to the person to get him a line quickly. As a result, our Association recommends this device to our mariners.

Bringing a soaked and potentially helpless ñman overboardò aboard your vessel is a related problem that still needs serious attention.

DANGERS AFLOAT; COAST GUARD TIGHTENS SAFETY RULES FOR PASSENGER VESSELS

[By Jim Morris, Houston Chronicle. Copyright 1996 Houston Chronicle Publishing Company. Reprinted with permission. All rights reserved. We added editorial notes.]

In New Orleans, the perils of Algiers Point are obvious even to the untrained eye. Here the Mississippi River, a third of a mile wide, makes a 90-degree turn as it runs through downtown New Orleans. The current is often swift, and shipping traffic ï a tangle of passenger boats, tankers and barges ï is heavy. In high water, a 175-foot-deep hole known as ñThe Boilò creates a whirlpool effect that can turn a vessel around.

It is possible to contemplate any number of catastrophic accidents in this setting, where tourists share the river with the hard-nosed mariners. The FLAMINGO,[(1)] a floating casino, could be rammed by a breakaway barge, or radio miscommunication could cause the Canal Street ferry to be blindsided by a tanker. In either case, hundreds of people could find themselves in water that gets below 40 degrees in winter. Even those wearing lifejackets could succumb quickly to hypothermia.

[(1)NMA Comment: The casino boat(s) are no longer on the New Orleans riverfront. However, on Dec. 14, 1996, near its former berth, the fully loaded 735-foot Liberian freighter M/V BRIGHT FIELD crashed into and demolished the Riverwalk and portions of a hotel narrowly missing several tour boats and a cruise ship. Refer to NTSB/MAR-98/01.]

The U.S. Coast Guard classifies such accidents as ñlow-probability, high-consequence. The chance, however remote, that one of them might occur has persuaded the agency to strengthen lifesaving requirements for about half of the nation's 5,700 passenger vessels.

The new rules, scheduled to take effect in 2001, vary widely, depending on vessel size, route and water temperature. The Coast Guard has been refining them since 1984 but continues to take flak from two distinct camps.

The National Transportation Safety Board (NTSB) wants the industry held to a more rigorous standard, but vessel owners loathe the idea of further regulation.

The regulatory patchwork falls far short of what the NTSB and other marine-safety advocates consider essential: life rafts or other **out-of-the-water** protection for every passenger on every vessel, big or small, oceangoing or inland.

ñI know what it's like to be underway in winter,ò said Capt. Ray Bollinger, who has worked as an excursion boat pilot and in other capacities on the Mississippi in New Orleans for 31 years. ñAnything goes wrong and I'm going to be stuffing men and women and children into lifejackets, and half of them don't have a snowball's chance in hell of surviving in that cold water.ò

ñMost people get on these vessels assuming there's some kind of (survival) craft for them,ò Bollinger said. ñThey're wrong. We have a whole bunch of inland TITANICs waiting to happen in this country.ò

In a Feb. 6 letter to the Coast Guard's Commandant, Adm. Robert Kramek, NTSB Chairman Jim Hall noted: ñPeople have died of hypothermia in the Gulf of Mexico, in the waters of southern California, and the Caribbean, as well as in northern waters. Clearly, hypothermia is a significant cause of death in marine accidents. Without out-of-the-water flotation, such deaths will needlessly continue to occur.ò

Owners of the largest affected vessels ï ferries, floating casinos and excursion boats ï are unhappy with the Coast Guard as well, although for a different reason. They complain that the rules are pointless and will prove costly.

ñThis company has been in business 38 years and we've never put anyone in the water,ò said Elmer Schmidt, director of marine operations for Pittsburgh-based President Casinos, which operates 11 gambling, party and shuttle boats in Pittsburgh, St. Louis, Davenport, IA and Gary, IN. ñIn the city of Pittsburgh, if my vessels were to sink and everyone went to the top deck, they wouldn't get their feet wet.ò

No fatalities in 40 years. The nation's largest ferry system has operated in Washington state's Puget Sound and adjoining waters for 40 years without a passenger death, said chief naval architect Stan Stumbo. ñWe're asking the Coast Guard, `What are you trying to improve?ò Stumbo said.

A Washington ferry that holds 2,500 people now must provide rafts or lifeboats for only 36 persons. Under the Coast Guard plan, that number would rise to 1,675.

[NMA Comment: This "plan" was changed by industry comments. In October 2004, major national television news broadcasts described a possible terror threat to the Washington State ferries – the nation's largest ferry fleet. According to U.S. Coast Pilot #7, the mean annual water temperature at Seattle is slightly more than 50 degrees F.]

The Coast Guard has long required all passenger vessels to carry enough lifejackets for everyone onboard. Lifejackets, however, offer no protection against cold shock and hypothermia, the stupefying effects of which can be felt in a matter of minutes in cold water.

Ray Bollinger, 48, was swept into the Mississippi near Venice, LA, as a young Coast Guard petty officer during a winter search-and-rescue mission in 1968. He spent only a few minutes in the water before being pulled out by the crew of a passing boat; still, he got a taste of hypothermia.

ñIt just takes your breath away,ò Bollinger said. ñYou get kind of numb. The biggest effect isn't real pain, it's a loss of mental function. You're in a complete fog. You're incapable of helping yourself.ò

Most passenger vessels operating in the United States today conform to such exacting standards that they are unlikely to sink or incinerate. The Coast Guard's thinking has been: Keep people out of the water and the matter of hypothermia becomes moot. And indeed, with a few exceptions, the industry's safety record has been good.

Gambling boats proliferate. Five years ago, however, the first of the inland gambling boats appeared, and now there are about 50 of these vessels on southern and mid-western rivers and lakes.

The largest of them holds 2,500 people. The stakes of a single accident at, say, Algiers Point have risen considerably.

For a big vessel, the cumulative cost would be substantial ï and, it would seem, unnecessary if the vessel operates on a well-traveled river, lake, or bay. People forced into the water presumably would be rescued quickly by nearby craft or could swim to shore.

A young, fit Bollinger, however, was so addled during his brush with hypothermia that he was unable to swim 50 yards to the riverbank. A child or an old person surely would have fared worse.

And there is reason to believe that an accident involving even a modest-sized inland passenger vessel would tax the search-and-rescue capabilities of emergency-response authorities.

An exercise in disaster. A January 1994 exercise conducted by the Coast Guard on the Mississippi in New Orleans, for example, was a debacle.

The idea was to simulate a collision between a large cargo ship and an excursion boat carrying 200 passengers. Blocks of wood were thrown into the river to represent people, and only 25 were recovered within 30 minutes.

[NMA Comment: Blocks of wood are much easier to recover than human bodies.]

A table published by the federal government shows that the life-threatening effects of hypothermia ï exhaustion or unconsciousness ï can occur in 30 to 60 minutes if the water temperature is between 40 and 50 degrees and in 15 to 30 minutes if the temperature is between 32° and 40°F.

Experience indicates that two hours in even 65-degree water can be incapacitating.

In a report prepared after the 1994 mock disaster, Coast Guard Captain A.S. Tangeman wrote: ñI fear that the outcome of an actual incident similar to the one depicted in this exercise and measured in terms of lives saved would be horrific.ò

Recent drills have gone more smoothly in the Louisiana cities of Baton Rouge and Lake Charles, both home to gambling boats. The Coast Guard seems convinced that certain types of vessels do not need a full complement of rafts or lifeboats to be safe, and this thinking ï to the NTSB's dismay ï is reflected in the new regulations.

The NTSB first asked the Coast Guard to require out-of-the-water protection for all passenger vessels in 1985. It has kept up the pressure.

In a 1989 study, the board lamented the Coast Guard's failure to complete action ñin a timely mannerò and listed a number of accidents in which hypothermia was or could have been a killer.

Four years later, another accident underscored the hazards of cold water. On Dec. 5, 1993, the wooden hulled EL TORO II, a charter fishing boat, sank in Chesapeake Bay during a storm. Although all 23 people aboard were rescued, two passengers and a young deckhand died in hospitals from the effects of hypothermia.

NTSB closes the books. The NTSB's pleas to the Coast Guard have gone largely unheeded for 11 years, and the board is considering abandoning its lifesaving recommendation, filing it under ñclosed-unacceptable action.ò

ñThe Coast Guard allows you to just be in the water, hanging on to the side of a float, and we don't think that's right,ò said Barry Sweedler, Chief of the NTSB's Office of Safety Recommendations. ñMy own view is that they get pressure from the operators of these vessels. The operators don't want to go to the expense, and I think the Coast Guard is swayed by them.ò

Jack Deck, a retired Coast Guard officer in Ohio who participated in hypothermia experiments on the Great Lakes in the early 1970's, also has a dim view of the rulemaking process.

ñThe present Coast Guard administration is trying to reach accommodations with industry through partnerships,ò Deck said. ñQuite frankly, I think this is a Boy Scout approach, and it doesn't work. The Coast Guard is a law enforcement and regulatory agency. It's not the Boy Scouts.ò

The Coast Guard's position is that modern casualty statistics offer little justification for the sort of blanket regulation sought by the NTSB. Indeed, it has been 20 years since the United States experienced a major passenger-vessel accident.

It happened on the Mississippi near Luling, LA, about 26 miles upriver from Algiers Point, on Oct. 20, 1976. The GEORGE PRINCE, a state ferry, was struck portside and upended by the FROSTA, a Norwegian tanker. Seventy-seven ferry passengers died.

[NMA Comment: In 2004 the tankship ASTRO ALTAIR crashed into the ferry terminal at Algiers, LA. Fortunately, the ferry was across the river at the time.]

A Coast Guard investigation placed the blame on the GEORGE PRINCE's captain, who, ñdue to complacency, fatigue, and/or the effects of alcohol consumptioné failed to detect the approaching SS FROSTA until seconds before the collision.ò

Although there have been a number of domestic passenger-vessel accidents since 1976, none has approached the severity of the GEORGE PRINCE. Most have involved older, wooden charter fishing vessels.

The Passenger Vessel Association, which represents about 300 operators, makes note of this fact at every opportunity. In an Oct. 30 letter to the Coast Guard's Marine Safety Council, PVA technical and safety consultant Peter Lauridsen[(1)] demanded that the proposed lifesaving rules for the biggest vessels ñbe withdrawn immediatelyò in acknowledgement of ñthe impeccable safety record of our domestic passenger vessel industry.ò *[[(1)]A retired Coast Guard Captain.]*

Lauridsen's argument would seem to have merit. In a 1991 study of small-vessel casualties, however, the Coast Guard's top lifesaving official offered a caveat.

Low chance, but high risk. "The loss of a large passenger vessel is a rare event,ò wrote Robert Markle, ñbut one which could result in a large loss of life if it were to occur. Very low-probability, high consequence accidents are impossible to predict. Statistical models are not meaningful.

To be sure, there's been no shortage of close calls. On Dec. 12, 1985, for instance, the MISSISSIPPI QUEEN, a steamboat with overnight accommodations, collided with the towboat CRIMSON GLORY on the Mississippi between New Orleans and Baton Rouge.

No one went into the river, but the MISSISSIPPI QUEEN had inflatable rafts for only 13 percent of its passengers. And anyone who had entered the water without a raft ñwould have had difficulty swimming to shore in the strong 4- to 6-mph river current and the 52-degree water temperature, a temperature at which prolonged exposure would lead to hypothermia and perhaps deathò, the NTSB said in its 1989 study.[(1)]

[[(1)]NMA Comment: On the evening of April 4, 1998, 14 barges in tow of the M/V ANNE HOLLY slammed into the PRESIDENT CASINO ON THE ADMIRAL afloat in St. Louis harbor. The accident sent 16 people to the hospital and 50 more for first aid treatment. The accident caused $11,000,000 damage. The NTSB reported 2,000 customers and 250 staff members were onboard the permanently moored vessel with no lifesaving equipment on board. The water temperature was 53° and the air temperature was 42°.

Fortunately, nobody fell overboard. If the casino had broken loose, it could have caught and capsized under the Eads Bridge with loss of life almost comparable to the 9/11 attack on the World Trade Center. Refer to NTSB/MAR - 00/01]

Bolivar ferry concerns. More recently in Galveston, there have been problems with the state-run Bolivar ferry system, used by 6.8 million people last year. One of the six ferries, the 19-year old GIBB GILCHRIST, experienced six failures of its propulsion-control system in the past two years and hit the dock three times.

ñThey've had an unacceptably high rate of failures on that vessel,ò said LCDR Greg Buie with the Coast Guard in Galveston. ñYou lose power and you lose the ability to maneuver.ò

Loss of power is a chilling prospect on the ferries' 2.7-mile route, which takes them through the heavily traveled waterway known as Bolivar Roads. Collisions are possible, as evidenced by the Sept. 22 ramming of a small fishing boat by the ferry DEWITT C. GREER.

A valve malfunction had caused the GREER's steering-control system to lock, and ñthe captain has no control whatsoeverò, said D.K. Daniel, the ferry system's operations manager. ñIt was an absolute freakish happening.ò

The fishing boat was badly damaged, although no one on either vessel was hurt. The faulty valve on the GREER was replaced, and the GILCHREST was taken out of service until an engineering firm can find the source of its mystifying propulsion failures.

The Bolivar ferry mishaps lend credence to the view that it is better to have too much lifesaving equipment than not enough. What if the GREER had struck a tanker instead of a fishing boat? And what if such a collision had happened in January instead of September?

ñIn the wintertime it does get cold enough down here for hypothermia to be a concern,ò said Coast Guard Lt. Perry Mackey in Galveston.

Owners of the nation's 5,500 or so "small" passenger vessels ï all of which are less than 100 gross tons but some of which still hold hundreds of people, thanks to creative design ï have voiced little opposition to the new lifesaving rules because they are more flexible than what the Coast Guard was proposing in 1994.

At that time it appeared that virtually all of these vessels would have to carry enough inflatable buoyant apparatus ï rafts without canopies or supplies ï to accommodate all their passengers.

After the industry objected, the Coast Guard agreed that there should be exemptions. A dinner-cruise boat operating in San Francisco Bay, for example, would be allowed to carry life floats ï rectangular devices with net bottoms ï rather than the more expensive (inflatable life) rafts. People hanging on to such life floats would get wet but, the reasoning went, probably wouldn't be in the water very long.

[NMA Comment: U.S. Coast Pilot #7 lists the mean surface water temperature for all months at Alameda, CA, as 61 degrees F and at San Francisco (Fort Point) at 56°F.]

Granting exemptions. A charter fishing boat operating in the frigid Pacific, far off the Oregon coast, would have to carry liferafts, as would other vessels on isolated, cold-water routes. Some vessels would have to provide out-of-the-water flotation for all passengers, others for a certain percentage.

The granting of exemptions amounted to a ñhuge concession on the part of the Coast Guard,ò said Lt. Eric Christensen, director of the small-vessel rulemaking project. ñWhat we did was, we focused on cold water.ò

The industry group that remains indignant consists of owners of the nation's 161 biggest passenger vessels ï most of the floating casinos and the larger ferries and excursion boats.

For rulemaking purposes, the Coast Guard has segregated these from the other passenger vessels because of the larger numbers of people they carry. The plan is to make them provide rafts or lifeboats for 67 percent of their passengers; most currently cover 10 percent or fewer.

The requirement could be waived if the vessel owner submitted a detailed contingency plan that met with local Coast Guard approval. The fear among some owners is that such plans would be subjected to unreasonable scrutiny.

On the bridge of the country's largest floating casino ï the 2,500-passenger GRAND PALAIS, which sails an easy two-mile route on Lake Charles ï Capt. Mike Lombardo questioned the logic of equipping the 360-foot vessel with more rafts.

ñYou could spit to land from any place on our route,ò said Lombardo, director of marine operations for Isle of Capri Casino, which owns the GRAND PALAIS and the 2,000-passenger CROWN CASINO.

Marine-safety experts point out, however, that gambling boats are not like other vessels. The expansive gaming areas of the GRAND PALAIS, for example, lack windows and have the same frenetic atmosphere as hotel casinos.

Passengers on such vessels tend to immerse themselves in gambling and may even forget they are afloat. At a

recent sea-survival conference in Galveston, John Ayer, a Seattle excursion-boat captain, presented the findings of a Coast Guard-industry study of gambling boats and other high-capacity vessels.

Ayer explained how passengers on a boat like the GRAND PALAIS easily could become disoriented by alcohol and the ñcacophonyò of slot machines. ñThere's almost no indication of movement on these boats,ò he said. ñEverything on board focuses your attention inward. There's little exterior deck space.ò

The issue of crew competence. The competence of the gambling boats' crewmembers ï very few of whom are professional mariners ï also is a worry. Duke Schneider, a Houston maritime consultant who specializes in emergency procedures, was summoned to train crews of six of these vessels in the past two years.

ñI've been on gaming boats that carry 1,000 passengers and they only have a 10-person nautical crew,ò Schneider said. His task in such cases is to teach waiters, dealers, and security officers how to get passengers to safety in the event of a fire, collision, or grounding.

One training session in particular ï on a vessel Schneider declined to identify ï was telling. As Schneider was discussing the importance of orderly passenger evacuation in a crisis, a crewman announced, ñLook, I'm a dealer. If you think I'm going to stick around, you're crazy.ò

[Jim Morris, author of this article, is now an investigative reporter for U.S. News and World Report. Another important article pointing out the shortage of out-of-the-water lifesaving equipment was Danger on Board, a special report by Gary Stoller that appeared in the January 11, 1999 edition of USA Today (NMA Document #R-192).]

PASSENGERS OUTNUMBER LIFEBOATS AND RAFTS
By Gary Stoller

[NMA Comment: In 1986, following the grounding of the PILGRIM BELLE, the NTSB urged the Coast Guard to provide "out-of water" lifesaving equipment for passengers and crewmembers of commercial vessels. In response to our letter of Oct. 8, 2007, Chairman Mark Rosenker of the NTSB furnished our Association with a History of these recommendations. Our Association has consistently supported NTSB "out-of-water" lifesaving recommendations[(1)] We are confident that Congress finally will address this issue in the next Coast Guard Authorization Bill.] *[(1)Refer to NMA Report #R-354-A, Basic Survival: The Regulatory Struggle for "Out-of-Water" Lifesaving Equipment]*

Special Report: Passenger Boat Safety

USA TODAY investigative travel editor Gary Stoller rode 10 boats on both sides of the USA to learn about their out-of-the-water lifesaving equipment. Most carry far more passengers than their lifeboats and rafts can handle. However, all met Coast Guard regulations for lifeboats and rafts. Coast Guard officials say passenger boats should publicly post inspection certificates that disclose the number and capacity of lifeboats and rafts aboard.

Anacortes, Wash., to Orcas Island, Wash.

Aboard the HYAK: The lifeboats and rafts could not be seen from the public areas on the ship, but ferry officials say there are enough to accommodate 195 of the 2,500 passengers permitted on board.

Stan Stumbo, a naval architect for the ferry system, says: "We wouldn't want to add any more survival craft" because all state ferries operate 2 miles or less from land and 15 minutes or less from a ferry slip. Stumbo says other options can be used in an emergency, including intentionally grounding the ferry or evacuating passengers onto nearby ships.

The boat's inspection certificate was inside a frame. Only its first page could be read, and it did not include any information about out-of-the-water lifesaving equipment.

Clinton, Wash., to Mukilteo, Wash

Aboard the CATHLAMET: Ferry officials say the ship, which shuttles commuters north of Seattle, carries out-of-the-water equipment for 195 of the 1,200 passengers permitted. The equipment and inspection certificate was out of public view.

Hyannis, Mass. to Nantucket, Mass.

Aboard the EAGLE: On a 135-minute trip to Nantucket in early December, the EAGLE is carrying out-of-the-water equipment for 945 passengers. The boat carries a maximum of 945 passengers in the winter and 1,494 in the summer, says Jim Swindler, director of maintenance for the Woods Hole, Martha's Vineyard & Nantucket Steamship Authority.

On the mezzanine deck, a safety placard that once said "Keep off stairways when vessel is docking" is broken and unreadable.

"That's a safety item that should be taken care of in 24 hours," Swindler says.

The ship's inspection certificate is not posted in public. A crewmember says itôs in the captain's office. Swindler says it should be posted publicly.

Nantucket, Mass. to Hyannis, Mass.

Aboard the GREY LADY II: Out-of the-water safety equipment is available for 75 people ï enough for everyone on board. Though the catamaran can accommodate 150 people, the GREY LADY II is limited to 70 passengers.

Murray Scudder, vice president of operations for Hy-Line Cruises, says Hy-Line's traditional ferryboats, which carry 450 to 800 passengers from Cape Cod to Nantucket and Martha's Vineyard during the summer, carry no out-of-the-water equipment.

He says the inspection certificate is kept in the pilothouse and, contrary to what Coast Guard officials say, doesn't have to be publicly posted. "We'd let in anyone wishing to see it," he says

Woods Hole, Mass. to Martha's Vineyard

Aboard the ISLANDER: This 192-foot ferry, which makes a 45-minute run between Cape Cod and Martha's Vineyard, carries out-of-the-water equipment for a total of 620 people.

In the cold-water winter months, the number of passengers is limited to 620, ensuring 100% out-of the-water protection, Swindler says. In summer, the same amount of out-of-the-water devices are carried, although the boat can carry up to 796 people. The boat does have an inspection certificate publicly posted that lists out-of-the-water equipment, but the information is difficult to understand.

Hingham, Mass. to Boston

Aboard the NORA VITTORIA: The out-of-the-water equipment on the high-speed catamaran accommodates 250 people ï 105 less than the boat's maximum occupancy. Rick Nolan, managing partner of Boston Harbor Cruises, says no out-of-the-water equipment is needed on the route, but it's carried because the NORA VITTORIA sometimes goes on winter whale-watching excursions.

The NORA VITTORIA has a crystal-clear sound system. A detailed safety announcement points out where the "life rafts" (actually inflatable buoyant apparatus) and life jackets are. The boat's inspection certificate hangs in the boat pilothouse, a restricted area. Coast Guard officials at the agency's headquarters in Washington say the certificate should be posted in an area where it is "likely" to be seen.

Boston to Hingham, Mass.

Aboard the LAURA: Although it travels the same route as its sister ship, the NORA VITTORIA, the 101-foot LAURA carries no out-of-the-water safety equipment. The boat seats a maximum of 350 passengers. A diagram posted on a wall points out the locations of life floats (which don't keep passengers out of the water) and fire extinguishers. The boat did not have life floats, however, and fire extinguishers were not in their designated positions.

Nolan says the life floats are not required on the Laura's current route and were removed several months ago. The discrepancies will be caught in an upcoming internal safety audit and corrected, he says. On the same route last December, a fire broke out in the engineroom of another of Nolan's commuter boats, the JAMES DOUGHERTY, which was carrying no out-of-the-water equipment. All 39 passengers had to don life jackets and evacuate onto another vessel. Nolan says the inspection certificate is posted in the pilothouse.

Boston Harbor

Aboard the FOSTER: This 38-foot boat, which shuttles passengers from downtown Boston to Logan airport, carries a maximum of 28 passengers and has no out-of-the-water lifesaving equipment. There is a life float for 15 people to hang onto in the water. No out-of-the-water equipment is needed, the captain says, because the boat operates within a mile of shore.

Instructions are posted on a wall in the indoor seating area if someone goes overboard: "Throw a ring buoy overboard as close to the person as possible." There are instructions for life jackets made by a manufacturer named APCO. A company named Stearns made the jackets aboard the ship. "With those directions, passengers could still figure out how to don the life jackets, but the Stearns directions should be posted," says Richard Hiscock, a marine safety consultant.

Its certificate is not publicly posted. Boston Harbor Commuter Service, which operates the FOSTER, did not return calls for comment.

Bridgeport, Conn., to Port Jefferson, N.Y., on Long Island.

Aboard the PARK CITY: The 288-foot ferry has out-of-the-water equipment for 500 people ï two lifeboats that can each carry 25 people and 18 life rafts that can each hold 25 passengers. The capacity of the equipment is half the maximum amount of passengers allowed on board from May 15 through Oct. 14. The boat would be required to carry more out-of-the-water equipment during the rest of the year, but its operators instead choose to restrict the number of passengers to 500 in the cold-weather months, says Fred Hall, vice president of Bridgeport & Port Jefferson Steamboat.

There are no signs saying where the life rafts are located. "I have no idea why there are no signs," Hall says.

"I've seen some life rafts on a lower deck, but the public generally knows that life rafts and equipment are usually on the top deck."

The certificate of inspection is not posted in a public area.

Port Jefferson on Long Island to Bridgeport, Conn.

Aboard the GRAND REPUBLIC: Like its sister ship, the PARK CITY, the GRAND REPUBLIC has out-of-the-water equipment for 500 of the maximum 1,000 passengers allowed on trips from May 15 through Oct. 14. During the rest of the year, Hall says, the maximum is 500. He says that since he joined Bridgeport & Port Jefferson Steamboat in 1976, no emergencies have required the out-of-the water equipment.

The GRAND REPUBLIC pulls out of the Port Jefferson harbor with only one of two engines operating. No signs inform passengers that they are traveling on a boat with only one engine working. "Maybe we could have communicated that better," Hall says. A certificate of inspection is not visible in a public area on this 261-foot ferry.

THE COAST GUARD'S POINT OF VIEW

Our Association's Board of Directors brought this matter to the attention of Rear Admiral Robert C. North, Assistant Commandant for Marine Safety, Security and Environmental Protection and (former) sponsor of the three Federal advisory committees our Association monitors.[1] *[[1]MERPAC, TSAC, and NOSAC]*

Admiral North's reply, expressed the Coast Guard's point of view in a letter dated February 16, 2000 as follows:

[NMA Position: We believe that safety experts in the field of lifesaving rather than Coast Guard officers without extensive experience in lifesaving need to reevaluate these views in light of the events of "9/11," provide "out-of-water" survival craft for every mariner on a towing vessel that current regulations neglect to mention, and a much more complete, transparent and realistic evaluation of the "cold water" in NVIC 7-91.]

ñThis letter is in response to your letter of October 29, 1999 concerning the Gulf Coast Mariners Association's (GCMA) position on lifesaving equipment that provides out-of-water protection. The Coast Guard appreciates your input and shares your concern for professional mariners and seagoing passengers when faced with a sea survival situation. However, rather than pursue mariner safety from a singular approach, the Coast Guard views mariner safety from a systems approach. The vessel itself is the best survival platform and we continue to strive to reduce the likelihood of a mariner finding himself in the water.

[NMA Comment: We agree with the general principle that "a mariner should stay with his ship as long as his ship stays with him."]

ñYour letter requests that the Coast Guard rescind approvals for buoyant apparatus (BA) and life floats (LF) and the GCMA resolution petitions the United States Congress to require suitable lifesaving equipment by statute on all oilfield and uninspected towing vessels that prevents immersion in the water for all persons on board the vessel.ò You also point out that the Coast Guard has not acted upon the recommendations of the National Transportation Safety Board (NTSB) with regard to out-of-water survival craft on all small passenger vessels. As you have requested, I will provide the Coast Guard's position on each of these concerns so that you may share them with your members.

ñFirst, it would not be appropriate to withdraw the approvals for BAs and LFs, which are, in fact, performing the function for which they were designed and produced. Although not suitable for extended survival, especially in cold water, in many instances these devices are appropriate and adequate for the level of risk associated with the vessels' route and operations. Even the NTSB recommendation from the PILGRIM BELLE that you reference, appears to recognize this point in indicating an exception for out-of-water survival craft on ferries on river routes of short runs of 30 minutes or less.

ñYou state that the Coast Guard's 1996 regulations for small passenger vessels ignored the NTSB recommendations on out-of-water survival craft and, instead, ñallowed short sighted economic considerations rather than good common senseò to carry the day.

Before promulgating regulations, the Coast Guard is required to fully consider the corresponding costs and benefits. Further, the Coast Guard must support any proposed regulations with relevant cost benefit data. An example of how casualty statistics supported a regulatory change is found in the preamble for the final rule for Subchapter T (Federal Register Vol. 62, No. 189, September 30, 1997). The Coast Guard noted that out-of-water survival craft would be required on wooden vessels less than 65 feet because they had accounted for more than 90 percent of the vessel/loss of life casualties over the previous 20 years. In that instance there was sufficient casualty history and justification for out-of-water survival craft. Following publication of the interim final rule for small passenger vessels, the Coast Guard addressed the NTSB recommendation on survival craft in a June 26, 1996 letter to Chairman Hall. It stated the following, which represents the Coast Guard philosophy on passenger vessel safety:

[NMA POSITION: Aside from a review of "statistics," we believe the Coast Guard should give equal consideration to a broader view of historic maritime disasters where cold shock and hypothermia played a role in the high loss of life. Examples: SS LUSITANIA (1915), RMS TITANIC (1912) and SS SULTANA (1865) and the losses of merchant seamen in the North Atlantic in World War II.]

ñThe Coast Guard does not believe that out-of-water survival craft is justified for all vessels equipped with life floats and buoyant apparatus. Based on a review of comments from the SNPRM and sinking casualties over the past 20 years, the survival craft requirements in 46 CFR Parts 117 and 180 were reduced in most cases from those proposed in the SNPRM. In Part 117, the Coast Guard generally focused out-of-water survival craft to vessels operating in cold water (<59 degrees F) offshore. In Part 180, the Coast Guard focused out-of-water survival craft to wooden vessels without watertight subdivision bulkheads and all vessels operating far offshore without subdivision bulkheads. The Coast Guard considered other requirements within the rule such as EPIRBs, fixed fire fighting and detection systems, bilge alarms and optional subdivision standards in determining the proper type and number of survival craft carried on board a small passenger vessel. All these features make up an entire vessel safety system designed to reduce the risk of a vessel loss and shorten emergency response time. Overall, the Coast Guard believes the requirements better align out-of-water survival craft requirements to casualty data and the perceived increased risk due to the vessel's scope of operation and number of passengers carriedò

ñThe Coast Guard followed a similar approach with offshore supply vessels (OSV) and uninspected towing vessels. Existing smaller OSVs are certificated under Subchapter T and will benefit from several of the changes noted above. Vessels subject to the new Subchapter L are now required to meet damage stability, which will increase overall vessel safety. Satellite EPIRBs, now required on all commercial vessels operating offshore, provide a rapid casualty alert and precise location, enabling a more rapid rescue. Following the tug SCANDIAôs fire and grounding of its tow, the tank barge NORTH CAPE, the Coast Guard developed regulations requiring enhanced fire fighting and detection systems, training and drills that should increase the safety of the vessel itself and reduce the risk of ending up in the water. However, the OCMI may determine, based on the risks associated with a particular route or vessel operation, that lifesaving requirements greater than the regulatory standards may be warranted.ò

[NMA Comment: Boat owners ordinarily have much better access to the OCMI than do working mariners. Our mariners can be fired for making suggestions to the Coast Guard that cost their employers money.]

ñThe enclosed graphs show the number of deaths on OSVs and towing vessels for the years 1996 and 1997. The greatest risk of death for that period was from falling into the water, but none of the casualties demonstrate an instance where a crewmember died because of lack of an out-of-water survival craft.

[NMA Comment: Our Report #R-390, Loss of the Tug Thomas Hebert (1993) off the New Jersey Coast Fails to Bring Needed Changes, clearly illustrates the importance of carrying inflatable liferafts on coastwise towing vessels.]

ñOur focus continues to be to improve overall vessel safety and to reduce the number of vessel and personnel casualties that result in people in the water. If you are aware of casualties on OSVs and towing vessels where the availability of liferafts would have prevented deaths or injuries, we would be interested in adding those cases to our database. If you have any further questions, please contact (the appropriate office) at (202) 267-1181.ò s/RADM R.C. North.

[NMA Comment: While we understand the Coast Guard's point of view, our mariners take much greater comfort in the NTSB recommendations to provide and properly maintain out-of-water lifesaving appliances.]

DEFICIENT LIFESAVING REGULATIONS LEAVE TOWING VESSEL MARINERS AT RISK

Like the PELICAN, most of the nation's 5,200+ towing vessels are uninspected. Nevertheless, this status is in the process of change as of Aug. 9, 2004 when Congress passed and the President signed the Coast Guard and Maritime Transportation Act of 2004.

Section 415 of the Act adds ñtowing vesselsò to the list of 14 other classes of commercial vessels that will come under Coast Guard inspection. It will take a number of years to draft the implementing regulations governing the inspection of towing vessels that (hopefully) will provide our mariners who work on towing vessels with the same degree of protection as governs inspected vessels of comparable size and horsepower.[1] *[[1]Refer to our Reports #R-276, Rev. 9, Towing Vessels Must Be Regulated Like Every Other Inspected Vessel, Report # R-276-A, Towing Vessel Inspection. Mariner Suggestions & Initiatives Submitted to the TSAC Towing Vessel Inspection & Licensing Work Groups and Report # R-276-B. Availability of the Draft Towing Vessel Inspection Regulations.]*

Until new regulations are in place, towing vessels still will not receive a scheduled annual ñinspectionò by a Coast Guard inspector and must only comply with a porous framework of existing maritime laws and regulations, many of which are outdated.

Like the PELICAN fifty years ago, the only required lifesaving gear required by law and regulation on towing vessels are lifejackets and a few ring life buoys. No Coast Guard regulation currently requires any towing vessel in domestic service to carry even a life float or a buoyant apparatus to say nothing of an approved rescue boat or an approved inflatable life raft. Nor are man-overboard drills required by any existing regulation. This, more than any other shortcoming shows how completely the Coast Guard neglected this regulatory area for over 35 years.

The Coast Guard, in its role of superintending the merchant marine, ***never took the initiative*** and asked Congress for a legislative change. Past Commandants should hang their heads in shame for the 32,600 lower-level mariners they arrogantly neglected. The vast majority of merchant mariners today are our ñlower-levelò mariners!

[NMA Comment: The Coast Guard claimed that it did not have the statutory authority to write the regulations for towing vessels that would protect our mariners caught in emergency situations. However, we are not aware that the Coast Guard ever approached Congress directly for such authority until 2003 when our Association took the initiative in Report #R-350, Mariners Seek Help From Congress on Safety-Related Problems and "knocked on doors" on Capitol Hill.]

In a report dated Aug. 8, 1994, Commandant Robert E. Kramek concluded in a letter directed to the Chairman of the Subcommittee on Coast Guard and Navigation ñé that a full inspection program is not a cost effective way to reduce towing vessel casualtiesé ò

[NMA Comment: As if the 1993 Amtrak accident at Bayou Canot wasn't enough, repeated groundings, oil spills, and bridge allisions over the next decade demonstrated how little the Coast Guard really understands about the towing industry.]

Approximately 32,600 licensed and unlicensed crewmembers serve on uninspected towing vessels. This is a very significant number of merchant mariners who were left without any protection because they were not covered by Coast Guard inspection regulations. This was more than just an insignificant oversight on the part of the Coast Guard!

[NMA Comment: Our Report #R-276, Rev. 9, written from our mariner's perspective, shows that the Coast Guard seriously neglected problems facing the towing industry until the impact of a series of major accidents finally caught the attention of Congress.]

Since 1994, more than 100 mariners have died in towing vessel accidents ï most from falls overboard. In 1994, the Coast Guard convened a Quality Action Team to review the subject. According to Department of Transportation figures cited in several rulemaking projects, the value of life for each fatality averted is estimated to be $2,700, 000. However, for years, the Coast Guard kept occupied with other items on its agenda and showed no intention of seeking authority from Congress to regulate towing vessels.

Although many towing vessel owners equip their boats with skiffs, many of these craft are ill-suited, ill-equipped, and often maintained in unsatisfactory condition to serve as satisfactory rescue platforms. Yet, there is a significant loss of life from falls overboard every year from towing vessels. The nature of the work on towing vessels is more dangerous than on other classes of commercial vessels such as crewboats, head boats, and offshore supply vessels and the opportunity to fall overboard is substantially greater.

While many coastal tugs voluntarily carry inflatable life rafts and newer inflatable buoyant apparatus (IBA) for out-of-water survival, many do not do so. Furthermore, there is no existing requirement that these survival craft if voluntarily provided by the vessel owner be unpacked, inspected, and repacked annually by skilled factory representatives as would be required on inspected vessels of comparable size and horsepower.

OUR ASSOCIATION'S TOWING VESSEL LIFESAVING EQUIPMENT RESOLUTION

[NMA Comment: Although similar to our earlier resolution, this resolution emphasizes the unique lifesaving problems facing mariners serving on many of the nation's 5,200 towing vessels.]

GCMA offers this resolution to urge Congress to require suitable survival craft and regular maintenance and inspection of these craft on uninspected towing vessels:

WHEREAS our Association's membership contains many mariners who work on uninspected towing vessels serving on river, inland, near-coastal and ocean routes in all climates and weather conditions...

WHEREAS our Association's overriding concern is for the safety, protection, and welfare of all licensed and unlicensed crewmembers serving on these vesselsé

WHEREAS existing Coast Guard regulations fail to provide approximately 32,600 crewmembers[(3)] serving on approximately 5,200 uninspected towing vessels[(1)] with any type of survival craft for use in an emergency similar to the craft required on inspected commercial vessels of comparable size, tonnage, or horsepower ...

WHEREAS certain survival craft allowed on commercial vessels of comparable size, tonnage or horsepower also fail to provide the out-of-water survival craft recommended by National Transportation Safety Board[(5)] ...

WHEREAS statistical research presented by the Coast Guard for regulatory purposes shows that American society is willing to pay $2,700,000[(2)] to save just one life. Nevertheless, the Coast Guard has failed to offer a meaningful regulatory initiative for almost thirty years that would protect mariners on uninspected towing vessels by providing adequate and seaworthy out-of-water survival craft with suitable capacity and capable of protecting the entire crew from hypothermia and/or drowning...

THEREFORE BE IT RESOLVED THAT THE GULF COAST MARINERS ASSOCIATION petition the United States Congress to require suitable survival craft by statute for all uninspected towing vessels that prevents immersion in the water of all crewmembers on board the vessel and that satisfies the National Transportation Safety Board's safety recommendations.

(1) Excludes new "inflatable" buoyant apparatus which provide out-of-water. protection.
(2) CGD 94-041, 59 FR 53756, Oct. 26, 1994 et al. as updated in 1995 by DOT.
(3) Towing Vessel Occupational Safety Study, Planning Staff, Office of Marine Safety, Security and Environmental Protection, June 1994, p4, §IV, 2a.
(4) 64 FR 63223, Nov. 19, 1999, cot. 1.
(5) NTSB recommendations #M-86-61 and #M-94-26.

[NMA Comment: Our Association petitioned Congress in Report #R-350, Rev.3 Mariners Seek Help From Congress on Safety-Related Problems (Issue #18) as follows: "We ask Congress to direct the Coast Guard or successor agency to respect the National Transportation Safety Board recommendations from the 1985 PILGRIM BELLE accident and mandate out-of-water survival craft on all small passenger vessels, offshore supply vessels, and towing vessels to protect the lives of the crew and other persons on these vessels."

INLAND AND RIVER DECK CREWS NEED COLD WATER PROTECTION

Vice Admiral Card, at the time the Vice Commandant of the Coast Guard, brought this matter to the attention of the Towing Safety Advisory Committee (TSAC), a federal advisory committee mandated by Congress and appointed by the Secretary of Transportation. The Assistant to the Executive Director of TSAC prepared a memorandum to all TSAC members on October 22, 1999 reprinted below:

To: Members of TSAC

1. The purpose of this memo is to provide background information to committee members on **cold water survival in inland waters**.
2. Prior to the fall meeting of the Towing Safety Advisory Committee (TSAC) meeting, Mr. Richard Block, a director on the board of the Gulf Coast Mariners Association (GCMA), forwarded to the Coast Guard a copy of an editorial (Enclosure 1) that was published in the Waterways Journal of August 30, 1999. The article is based on a letter (Enclosure 2) written by Mr. Block to VADM James Card, Vice Commandant of the Coast Guard. In this letter, Mr. Block outlines the need to pay more attention to cold water survival of inland mariners by way of a revision to Navigation and Vessel Inspection Circular (NVIC) 7-91, Determination of Cold Water Areas, (Enclosure 5), that supports the cold water regulations in 46 CFR Part 28 (Enclosure 6). Enclosed with that letter was a document titled River Temperatures Along the Mississippi River and Tributaries (Enclosure 3). VADM Card responded by letter (Enclosure 4) informing Mr. Block that he was forwarding enclosure 1 to the American Waterways Operators (AWO) for their discussion and would also see that the matter was discussed at the fall 1999 meeting of TSAC.
3. Mr. Block requested that this editorial paper be distributed at the TSAC meeting. The Executive Director complied with the request and the committee briefly discussed the subject. Most members agreed that the advisory function of TSAC was more geared to regulatory projects. They noted that the AWO had already studied this matter in a Quality Action Team (QAT) and it could be referred to their Safety Committee. TSAC decided that before any committee action was taken, the Coast Guard would circulate background information to committee members including: weather resistant working suits (Enclosure 7), the editorial provided by Mr. Block, river temperature chart, NVIC 7-89, and copies of letters between Mr. Block and the Coast Guard. The committee members are requested to review the background information and determine whether to initiate any further study and subsequent recommendations.
4. A brief look at the approved equipment files shows that some worksuits are approved as Personal Floatation Devices (PFDs) and that others are approved as providing hypothermia protection. The worksuit pictured in enclosure 7 (Model IFS-580) is indeed approved as a floatation device, but the approval document does not extend to hypothermia protection. This, however, may be due to the original request from the manufacturer not having provided laboratory test results on hypothermia testing or not having requested Coast Guard consideration for such a rating. Alternately, this company's model 29-58 worksuit does carry anti-exposure approval as well as the type V PFD rating.
5. Other worksuits on file include: America's Cup, Inc. Model 7000 ñDecksuitò, which was approved for flotation only; and Mustang Eng. Technology's Model MS2175 ñAnti-exposure worksuitò, which was approved for both flotation and anti-exposure functions. Depending on how deep into the subject TSAC decides to go, it may want to investigate other sources of protection and encourage the manufacturer to submit their products to testing and then apply to the Coast Guard for approval.
6. Whatever the availability of such protective gear, we believe that TSAC will want to first decide if it wishes to take on the task of studying the ñomissionò of certain inland waters from the cold water definition. If the decision is affirmative, the next step would be to craft a recommendation to the Coast Guard that it integrate these waters into regulation and include them in a revision to NVIC 7-91. Alternately, the committee could opt for a non-regulatory approach and develop best practice recommendations that flotation/anti-exposure worksuits be worn by workers on deck when sailing in these waters during particular months.
7. This item will be included on the agenda of the next TSAC meeting under "Old Business" in order for the committee to discuss how it will proceed. s/G. P. Miante.

[NMA Comment: Neither the Coast Guard, nor the American Waterways Operators nor the Towing Safety Advisory Committee (TSAC) ever raised a finger to address this problem after it was presented at TSAC.]

Keeping in mind that the Coast Guard definition of ñcold waterò in NVIC 7-91 is 59 degrees F, the list of **river**

water temperatures for 1998 shows:

- Jan. 1, 48 degrees, New Orleans; LA
- Jan. 15, 50 degrees, St. Francisville; LA
- Feb. 1, 45 degrees, New Orleans; LA.
- Feb. 15, 46 degrees, Baton Rouge; LA
- Mar. 1, 46 degrees, New Orleans; LA.
- Mar. 15, 46 degrees, Natchez; MS.
- Apr. 1, 52 degrees, Memphis, TN.

In mid-April temperatures rose above the 59-degree level and remained there until mid-October when they reached 56 degrees at Dubuque. November readings at St. Francisville, LA, remained above the mark, but on December 1 dropped to 56 degrees. The reading was the same at New Orleans on December 15. Readings taken in 1999, January through March 15, were all in the 40s at Natchez, New Orleans, and Baton Rouge.

GCMA pointed out to TSAC that in south Louisiana during the winter, the Coast Guard outfits its small-boat crews with effective cold weather insulated flotation gear similar to Coast Guard-approved anti-exposure coveralls.

Adm. Card's July 14 response acknowledged that this was a good point about the weather-resistant working suit and that ñThe use of these suits would be a prudent safety measure during cold weather and one that the Coast Guard would encourage. He said he was forwarding a copy of his letter to the American Waterways Operators for discussion by their membership. ñI will also see that it is discussed at the next Towing Safety Advisory Committee meeting and the next AWO/USCG Partnership meeting,ò he wrote.

Falling off a tug, or towboat, or its tow is dangerous any time of year at any location. Sometimes circumstances like poor lighting or inattention cause victims to fall into ñduck pondsò (i.e., empty spaces) between barges in a tow, trip over loose manhole covers or raised hatch covers, wires or spilled cargo. Some men are crushed between barges, between barges and lock walls, or sucked under an underway vessel. If, somehow, a man overboard survives and reaches the surface of the water unscathed, he needs USCG-approved thermal and flotation gear to keep him above water and ward off hypothermia in ñcold waterò that is minimally defined in USCG NVIC 7-91 as water at 59 degrees F or below.

[NMA Comment: We call on the Coast Guard to update the data in NVIC 7-91 to identify ambient water temperatures on principal rivers and waterways that fall below the 59°F benchmark during any month of the year.]

[NMA Comment: Since the Coast Guard bases a number of lifesaving equipment regulations on NVIC 7-91, they should provide hypothermia protection for our mariners working on inland and river routes.]

Man Overboard: A Serious Challenge For River Mariners

[We reprint a personal letter from Captain John R. Sutton, former President of the American Inland Mariners Association (AIM) to Richard A. Block dated Jan. 8, 1997. Captain Sutton was at work on the Illinois River. The letter clearly demonstrates the need for adequate thermal and flotation protection for deck crews on river towing vessels.]

Richard,

I nearly lost a man today. My Mate fell in the river at Hennepin, Illinois at Illinois River Mile 207. It was 0700. There was a heavy frost on the barges from a heavy fog last night. He was in the water approximately 10 minutes. It was 10°F this morning and the water had to be at least 34°F.

My Mate was walking down the side of the tow in the process of turning the tow loose from the fleet. He slipped and fell between the barges. I was preparing the daily log and catching up my personal log at this time. There were several boats working in the harbor this morning. At approximately the same time both the fleet boat and I heard a microphone key up with garbled sounds. Nothing understandable. I believe this was my Mate's radio shorting out when he fell in the water.

A few minutes later my deckhand came running down the barges waving his arms signaling me by waving his own life jacket. He yelled that he heard the Mate screaming for help but could not find him.

I immediately called the tug to assist. I then called my watch to go to the tow and assist. By this time my deckhand had found the Mate located between the tow and fleet of barges. He was approximately 300 feet ahead of the boat. I shifted my engines in a full throttle twin screw to open up the space between the tow and the fleet. I did

not know whether the man had been crushed between the barges.

The deckhand on watch that came to his rescue was the Mate's brother-in-law. The deckhand later told me, that the Mate pleaded with him not to let him go and that he had been under once and was scared. The Mate had managed to wedge himself between the barges by placing his hands on one barge and his back to the other and pushing out. The Mate's hands immediately froze to the steel on the barge in the 10°F cold. The deckhand pried his hands loose, along with a couple layers of skin, and pulled him up to where he was able to put his forearms up on deck of the barge. His forearms froze to the deck.

By this time several more minutes had passed. The tugs arrived just as the barges were starting to close up again. The Chief Engineer arrived at almost the same time, realized the barges were closing, and made the decision to try and retrieve the Mate without the help of others.

The Mate is approximately six feet and weighs 265 pounds. With his winter garb and radio this man was easily over 300 pounds soaking wet and, by this time, was in no shape to help himself. Somehow, with God's helping hand, they managed to pull the Mate to the gunwale of the barge.

[NMA Comment: Lifting a helpless person out of the water is an extremely important factor the Coast Guard never addressed in its lifesaving regulations. One such device to assist mariners is "Jason's Cradle." We cannot imagine why this or a comparable device was never required aboard commercial vessels that carry small crews, sometimes a little as two men.]

Somehow, while standing witness to this happening before me, I had the forethought to call the fleet dispatcher for Emergency Medical Technicians. This was in between pleading for the tugs to hurry to my deckhand's assistance.

My Mate walked to the boat on his own power, while I sent the tug to retrieve the waiting EMTs that were only three blocks away from the fleet's office.

I met the Mate at his room and helped him strip out of his icy clothes. While I was pulling his coverall arms down and unlacing his boots, he was apologizing for getting the radio wet. As soon as he stripped, I put him in a warm shower. Approximately five minutes later the EMTs arrived to check him out.

When the Mate dried off, he was red as a beet from the cold and still shivering to the bone. He dressed in sweat pants and shirt. The EMTs covered him with four blankets and applied chemical warm packs under his arms. After a brief observation, they opted to take him to the hospital.

When I woke up early this afternoon, I had a bad dream. It was about an outcome that was not as bright as this event had been. He is shaken up and wants to go home for a few days. His wife is 8½ months pregnant and understandably concerned.

She has called six times today. He is going home tomorrow; but for the mean time I'm not letting him do anything but sleep.

This event has hit home for me. I've seen other people in the water during warmer weather; but I nearly lost this man today. Somehow, I am going to bring this to the attention of Admiral Card, the Towing Safety Advisory Committee, and industry. The error chain in this event had too many links. The major ones were:

- Lack of communications because <u>each man on a tow</u> should carry a watertight radio.
- Lack of manpower because I only had two men on the tow, and
- Lack of proper gear (i.e., a float coat or float coveralls). He was not capable of flotation dressed as he was.

This is a dangerous industry. Some of us tend to forget it when we are isolated three decks above the real action. There has already been one man lost on this river this winter at Beardston, Illinois, after falling off a tug.

Be careful my friend, and please exercise caution while you are around the water this winter.

Best wishes, your friend

John.

A FALL OVERBOARD, AND A MEMORY RE-VISITED

*[**Source:** Letter from Captain John R. Sutton, former President, American Inland Mariners (AIM) Association]*

Dear Richard,

In early January 1997 I wrote and shared with you my first real life emergency as a professional mariner with a fall overboard incident that happened on a towboat in the icy waters of the Illinois River in mid-Winter in which my Mate had fallen overboard.

You suggested that the story be told industry wide and you asked my permission to submit the letter to the Coast Guard to publish in their table-top magazine ñProceedings.ò I was grateful for your efforts to tell the story. Thirteen years later, I feel I must write to you again to relate another scary event in my career as a towboat Captain and Pilot.

Today I awoke to a sound that is unmistakable to a professional mariner, the continuous ringing of the boatôs general alarm. At approximately 0900 on Feb. 6, 2009, I was awakened by the general alarm, sprang to my feet slipping on nothing other than a pair of jeans. I exited my quarters traversing approximately seven paces and one flight of stairs with thirteen steps to find the Captain on-watch in the wheelhouse.

As the Captain began to maneuver the boat away from the fleet of barges we were next to, he told me we had a man-overboard (MOB). I immediately opened the port side wheelhouse door to grab a ring lifebuoy as I began to scan the water for the missing man. As I glanced downward to the head deck, I noticed the lead-deckhand had a ring lifebuoy in hand on the main deck. I quickly replaced the bridge wing buoy and hurried below to lend a hand.

As I arrived on the main deck, the Captain was maneuvering the boat in a downstream approach closer to the MOB and my fellow crewmember had just thrown the lifebuoy nearby for him to grab. As we pulled the young man of 21 years towards the headlog (bow) of the boat it was obvious this man was panicking and struggling in the cold waters of the Mississippi River. As the lead-deckhand pulled the MOB towards the bow, a fellow crewman and I lay flat of our stomachs with arms extended outward reaching toward our MOB. The distance was simply too great and we remained some eighteen inches short of reaching this manôs outstretched hand. We immediately reacted to pass the life-buoyôs retrieval line up and over the boatôs push-knee as the Captain shifted the boat head up in the current to bring the MOB alongside the starboard side of the boat. Again, my fellow crewman and I lay shirtless and flat of our stomachs on the cold steel deck ï a cold that was certainly nothing like that our deckhand was experiencing in the approximately 39-degree cold water. On this attempt, we did manage to secure him by grasping on to his work vest and outstretched arms. This time we were able to pull him close and reassure him we were not going to release him, and would try to get him out of the water while we encouraged him to calm down.

At this time I began to realize the size of the task that really lay ahead of us. The victim was 5 feet, 9 inches tall and weighed 260 lbs when dry. This young man was more than a hand full. After a few pulls, we quickly realized this was potentially a deadly problem. The man was wearing his work vest too loosely around his body for us to successfully pull him from the water by grappling him by his work vest. We were afraid we would pull him out of his work vest and doom him to a certain cold water drowning. By this time, he had obviously reached his near maximum exposure to the cold water and told us he could no longer feel his arms as we held him tightly.

I am 5-feet 11-inches tall and at 260 lbs and at age 47 think I am in reasonably good shape. My fellow crewmember is a strapping 25 years of age, 6-feet tall and 290 lbs. He was the 2001 High School power lifting champion from the state of Mississippi. Together, we simply were unable to retrieve this manôs dead weight up to the deckôs edge.

I am not certain where the idea come from or, for that matter even who uttered the actual words, but one of the other crewmembers tied off the lifebuoy to the nearby kevel in an effort to make a foot hold for man overboard to try to step on when we maneuvered him near the life ring. It was a desperate solution that just happened to work at the time. As we were doing this, I remember looking up to see crewmembers from a nearby company vessel putting men off on our main deck near the stern to assist our recovery efforts.

Even though the man overboard was able to raise himself enough, and with all available hands involved we managed one more gut-wrenching pull and recovered our man to the safety of the main deck.

I believe the towing industry with its thousands of boats as well as the Coast Guard regulators must focus and concentrate on solving the problem of getting an immobile man overboard out of the water and onto the deck. On inspected offshore supply vessels there is a ñRescue Zoneò on each side of the vessel and a workable, ñapprovedò plan for each vessel in place to bring the MOB out of the water onto the deck.

We were fortunate in having extra hands available to rig a substitute for a step. You know what happens if a company operates a fleet boat, for example, with only one Master and one deckhand and the deckhand falls in the water? You pointed out the problem to Congress in NMA Report #R-354, Rev. 3 on pages 18 and 19 ï the same report that includes my 1997 letter.

The industry knows about the problem but the Coast Guard has never required that they take concrete steps to solve it. In this case, a stiff leg ladder that would hang over the bulwarks would have sufficed as long as the victim had the strength to use his legs to stand on the platform. ***However, there really needs to be something better and the leadership to promote it***. As you know, the Coast Guard bureaucracy has not been helpful in introducing state-of-the art devices like the Personal Retriever. Our Association has been pushing the ñlifesavingò issue for years and has seen no progress whatsoever. Even the proposed amendment to 46 U.S. Code 3104 on survival craft that NTSB has been pushing since the PILGRIM BELLE accident in 1985 was never even discussed by the Senate last Fall.

As he lay motionless momentarily on the deck, I yelled out to get him up and into a shower. A fellow crewman assisted me in getting him to his feet, and we scurried inside the main deck cabin with the man and into a bathroom. As I pushed the man into the shower I started stripping the man as quickly as possible. I remember thinking as I removed his work boots the weight of those steel-toed boots and the trouble he must have experienced in the water. Those boots must have weighted 3 pounds each in their waterlogged state. As I removed his clothing it become visibly obvious at the intensity of our collective efforts to save this manôs life as he was already developing excessive purple and yellow bruising from our grasps to his upper body.

As we warmed our man in the shower crewmembers shuffled about gathering portable heaters and spare blankets from the boatôs linen locker. As we performed these acts, we learned that the Captain had previously called the local EMTôs and maneuvered the boat to the company dock.

After warming the man in the shower for approximately 10 minutes we assisted him in dressing and placed him on a chair around which we positioned heaters and tented him in blankets with the heaters under the tent. Within five minutes the local EMTs arrived on the scene and took over.

After a thorough exam the EMTs determined we had successfully restored the crewmanôs core body temperature and found no need take him to the local hospital for medical observation.

We relieved him of duty and he was taken home approximately 2 hours later. Company officials wisely recognized this man needed to go home and get his mind right before returning to work in light of his near-death experience.

As the company officials arrived to document the incident and analyzed the crewôs response, we returned to the scene of the fall and discovered a very slight amount of spilled cargo on the deck of the barge the crewman had fallen from. The last cargo was soybeans which, in their harden state, are like small ball bearings. Frankly, with my 32 years experience in the inland towing industry, I would have confidently stated that the barge was clean, because that is how few soybeans we saw on deck.

Over the next two watches none of my fellow crewmembers and I slept well. Our heads were spinning with instant replay after instant replay of the MOB rescue and the young manôs panicked, shivering voice. All of us were wondering if we could have done something differently and if we could make meaningful suggestions to the company for a lessons-learned analysis of the event.

I was amazed at how sore I was for the following 24-hours. My shoulders and triceps muscles all were sore from trying to hold and pull at this young man. When you go from a state of sleeping soundly in your bunk, to an adrenaline rushed life-and-death situation pulling with all your might in less than two minutes, the return to a state of normality leaves you drained both physically and emotionally.

As a professional mariner who has actively participated in regulatory projects from the public comments to tracking those regulatory projects that affect the towing industry and our mariners, I can say with absolute clarity that the recent requirement for towing vessels to install a General Alarm is what saved this manôs life. This was the result of the new fire suppression regulations. Given that our towboat had a six-man crew including a Master, Pilot and four deckhands, at the time the alarm sounded three crewmembers were in bed, one at the helm, one on deck, and one in the water. There was no way for the Master to hail the sleeping crew into an emergency alert status other than through the use of the General Alarm. Kudos to our regulators for ñfinallyò getting it right.

Additionally, in reflecting on our emergency I would like to also note that this company provides the best possible rescue boats on their vessels on the entire inland waterway system. They have ñZodiacsò as rescue craft, while most others have mere flat bottom skiffs, most very unstable with more than 2 men and 400 lbs. capacity. However, I can tell you with absolute certainty there was no time and there were no spare bodies available to recover this man by using any rescue craft. There was no time to launch that Zodiac, and had we attempted to do so, we would have certainly lost control of this man at the deckôs edge and likely cost him his life.

I hope I never have to write another one of these tales of a man overboard rescue, or for sure itôs at least another dozen years before I do anyway. Until we next talk, smooth sailing to you and your family.

Your Friend, John

Other Mariners Were Not As Fortunate
Reports of Two Fatalities from Falls from Barges

The number of fatalities from crewmen falling off barges and drowning in the towing industry is shocking. Yet, it is not a new phenomenon in the towing industry. It has been talked about for years. In fact, in 1996 the Coast Guard and the American Waterways Operators published a Report of the Coast Guard-AWO Quality Action Team on Towing Vessel Crew Fatalities.[1] They also published a ñLesson Plan[2] for Fall Overboard Prevention: Making and Breaking Towò However much the Coast Guard and AWO pontificate, it remains that the AWO does not write regulations, and the Coast Guard does not inspect or regulate the nationôs approximately 17,000 dry cargo barges.

[(1) NMA file A-1151. (2) Lesson plans are tools used by teachers. We ask, how many teachers are also towing

vessel officers? Also, how often is this lesson plan utilized on working towing vessels?]

We made this point in 2007 in our Report #R-426, Rev. 1. Report to **Congress**: Challenges Facing the Coast Guardôs Marine Safety Program ï Effectively Regulating the Towing Industry. By leaving the regulation of almost 17,000 dry cargo barges to OSHA but giving them no training, resources, or access to these barges essentially leaves most of these huge ñworkplacesò unregulated.

[NMA Comment: **We believe that the number of fatalities from falls overboard justify our asking Congress to look into properly regulating dry cargo barges since it is clear that the Coast Guard has never taken the initiative to do so.]**

[NMA Comment: The government says it is willing to spend $2,700,000 to prevent the loss of a human life. If this is so, isn't it reasonable to require companies hiring deckhands to perform barge work to insure the life of each mariner for this amount? Perhaps it is also time for Workman's Compensation to cover personal injuries on the water.]

Loss of Crewman from M/V Father Seelos

***[Source**: FOIA 09-1096; Activity #3413213.Only preliminary information is available. We await the release of additional information by the Coast Guard.]*

On Feb. 6, 2008, at about the same time of Captain Suttonôs letter (above) and ñacross the river,ò deckhand Christopher Homer fell to his death from a barge handled by the M/V FATHER SEELOS owned by Marquette Gulf Inland. He was wearing a life jacket at the time.

ñMarquetteôs internal investigation has revealed that the deckhand had secured a barge that was being dropped off at Kirby Fleet (LMR Mile Marker) 108 and proceeding to board the FATHER SEELOS again to proceed up-river to (LMR Mile Marker) 127. It is believed that the deckhand slipped while moving between barge and tug and fell in the river. Crew on the FATHER SEELOS immediately threw life ringsé but ***there was too much freeboard to reach the subject*** before he was pushed under the barge by the current.ò

[NMA Comment: The "height of freeboard" describes the same problem of recovering an individual in the water accurately described by Captain Sutton in two letters a dozen years apart.]

[NMA Comment: We believe the "Personal Retriever" has proven to be a far superior retrieval tool than the life ring. Why then do Coast Guard bureaucrats continue to hinder its inventor, USCG BMCM Paul Driscoll (retired) in the "approval" process. We continue to follow this issue closely.]

Man Dead After Falling Off Barge in River

***[Source:** WDSU Television, New Orleans]*

Reserve, LA, 11:23 Mar. 4, 2009. The Coast Guard has recovered the body of a man who fell off a barge into the Mississippi River near Reserve, officials said Wednesday.

Coast Guard officials said the man was last seen on the barge at 5:45 AM, but could not be accounted for after a shift change around 6:30 AM. Rescue crews searched an 11-mile stretch of the Mississippi River using two helicopters and two boats.

A crane operator in the area said he saw Coast Guard officials pull the manôs body from the water around 9:00 A.M. The man worked for a company called Associated Terminals, officials said.

[NMA Comment: Our Association's standard practice is to request additional information from the Coast Guard (CG-611) under the Freedom of Information Act. However, this procedure has become much more complicated as a result of recent restrictions imposed by the Department of Homeland Security.]

LIFESAVING PRACTICES AND EQUIPMENT ON OFFSHORE SUPPLY VESSELS

Our concern for some lifesaving equipment presently installed on inspected offshore supply vessels mirrors our concern with inadequate requirements for lifesaving equipment installed on the towing vessels our mariners serve on. While we expect closer oversight of ñinspectedò OSVs by the Coast Guard attracts better equipment and better

maintenance of that equipment, our experience convinces us that there are some areas where GCMA simply cannot take that for granted.

The Eighth District, where the large majority of domestic offshore supply vessels operate, promulgated a policy letter on ñRescue Boat Requirements on OSVsò on Nov. 12, 1998. That policy letter concludes by statingò ñWhether relying on a rescue boat, workboat, or rescue platform, the key to a vesselôs success at effecting a satisfactory rescue lies in crew training. The successful implementation of the above policies will hinge upon the Coast Guardôs ability to evaluate crew training and effectiveness during man overboard drills.

[NMA Comment: The Coast Guard inspects OSVs alongside the dock in calm water under ideal conditions. Inspections are NOT conducted offshore. The inspector may evaluate a man-overboard drill conducted by a specially selected "inspection" crew and not the vessel's regular crew.]

We asked our mariners to consider carefully their rescue boats, launching and recovery equipment, and rescue platforms where such items are required. We ask mariners who believe that this equipment or the drills conducted on their offshore supply vessel (OSV)[(1)] are not suitable for the purpose intended, or the equipment is not maintained properly, or cannot be used safely by the personnel assigned to your vessel, to report this to the Coast Guard[(2)] in writing giving full particulars. *[(1)The term OSV includes crewboats, utility boats and supply boats (2)As required of licensed officers by 46 U.S. Code §3315(a). NMA will assist our mariners upon request.]*

Eighth District OSV Rescue Boat Requirements

The intent of the Eighth Districtôs Policy Letter of Nov. 12, 1998 was to establish a reasonable standard for workboats being substituted for ñapprovedò[(1)] rescue boats on offshore supply vessels. *[(1)The "approved" boat is described at 46 CFR 160.056 as having a square stern, with three thwarts (seats), between 11 and 14 feet long, with internal buoyancy and weighing not more than 225 lbs.]*

The Coast Guard and many offshore vessel operators generally agreed that some OSVs carried small, unstable, oar-propelled workboats that were clearly unsuitable for their intended purpose as a rescue boat. The Coast Guard policy letter established a performance standard for ñworkboatsò that were substituted for ñrescue boats.ò

The policy letter required ñrescue boatsò on new and existing offshore supply vessels. The Coast Guard did not intend to remove all existing flat-bottom rescue boats from service immediately, only to provide options for those vessels whose rescue boats were determined to be inadequate.

While the Coast Guard allowed the use of oar-propelled flat-bottomed boats for rescue boats on OSVs, many marine Inspectors believed that these vessels were not adequate for their intended use.

[NMA Comment: Oar-propelled, flat-bottom rowboats are rarely suitable for use in open waters of the Gulf of Mexico.]

Lifesaving regulations in 46 CFR Part 133 require the use of more seaworthy SOLAS approved craft on new vessels. The regulations provided the mechanism for replacing inadequate rescue boats on previously certificated OSVs when replacement of existing rescue boats is necessary.[(1)] Appeals of OCMI decisions requiring replacement of existing units, and completion of a Quality Action Team looking into Eighth District policies regarding rescue boats ï and NOT our mariners ï were the catalyst for developing this policy.

[NMA Comment: Although most mariners recognize the importance of survival craft and lifesaving gear, they generally do not argue about equipment that fulfills the requirements on the vessel's Certificate of Inspection. In face of doubt about "approved" lifesaving equipment, many mariners remain silent to safeguard their jobs.]

The Coast Guard denied an appeal that argued that an existing flat-bottom, oar-propelled rescue craft should be replaced by the same type of boat because it was being replaced because of normal ñwear and tear.ò In doing so, the Coast Guard tried to accomplish the overall goal of protecting life at sea while considering any change to existing rescue boat arrangements.

[NMA Comment: We appreciate this type of action that protects the health and safety of our mariners.]

The policy letter goes on to explain that an OCMIôs decision to replace an existing rescue craft need not be based solely upon a determination that the craft is no longer serviceable. If the adequacy of an existing, but serviceable, rescue

boat is in question, the OCMI should call for a demonstration of its suitability by requiring a performance test. If the result of this test indicates that the craft is not suitable for its intended purpose, the OCMI is encouraged to replace it with a more suitable craft. This policy letter also provides guidance for conducting this performance test.

[NMA Comment: It might be difficult to demonstrate lifesaving equipment suitability properly and realistically alongside a dock.]

. Finally, 46 CFR §133.135 allows certain OSVs to operate without a rescue boat as long as they qualify as their own rescue platform. This policy provides criteria to evaluate the adequacy of a vessel to serve as a rescue platform and an option for vessels that are regularly constrained in their ability to maneuver due to activities such as anchor handling and towing. While 46 CFR §133.135 restricts this option to vessels operating solely on the outer continental shelf of the United States, a recent appeal resulted in a Commandant interpretation that any vessel which is not required to carry SOLAS certificates may use a rescue platform in lieu of a rescue boat.

What is a Suitable Workboat?

The District Policy Letter describes a ñsuitable workboatò as:

- ðA boat capable of being launched within five minutes.
- ðSufficiently seaworthy (i.e., with adequate positive buoyancy, stability, freeboard and/or deck coverage to allow for maneuvering in aò ñdisturbed seawayò with at east a three person complement. Although ódisturbed seawayô is not defined, it includes typical sea conditions as opposed to calm waters.
- ðWith adequate room for at least a two person crew with room for a third person lying down.
- ðCapable of marshalling and towing inflatable liferafts (or lifeboats if the vessel is so equipped) loaded with their full complement of equipment and persons.
- ðCan be used to recover a helpless person from the water.
- ðCan effect the recoveryôof a helpless person and return that individual to the parent vessel within fifteen minutes.
- ðIf freeboard constraints do not allow for proper launching and loading from the main deck, the workboat shall be equipped with a launching/recovery system that is located such that the stowed vessel can be quickly launched and will swing clear of all rigging, stacks, structures and overboard discharges. The davit and winch structural members must have a design safety factor of 4.5 times the Maximum Working Load (MWL) including the total of the weight of the boat, personnel, and boat equipment. The falls, suspension chains, links, blocks etc have a design safety factor of 6 times the MWL. The davit: shall he fitted with an electric, hydraulic, or hand-powered winch capable of raising and lowering the workboat at its maximum working load.
- ðIf electric/hydraulic powered, the davit winch shall be fitted with automatic cut-off devices in accordance with SOLAS Chapter III, Section VI.
- ðEach winch shall be designed to allow for lowering under the force of gravity or independent stored power.
- ðEach winch shall be fitted with a brake to control the rate of lowering to approximately 0.5 meters per second.

There are no firm rules on which boats may adequately serve as a ñworkboatò substitute for a rescue boat. However, experience shows that the buoyancy and stability of rigid hull inflatables. or inflatable boats with reserve buoyancy, deep ñVô hull, and double ñVò hull boats are all suitable candidates for this service. Additionally, boats with outboard engines in the 25-30 horsepower range have been determined to be adequate for this service.

A letter to the Offshore Marine Service Association dated Aug. 25, 1999 is revealing as to the propulsion power required: ñOur rescue boat policy letter states that workboats with sufficient buoyancy and stability equipped with outboard engines in the 25-30 horsepower range have been found to be adequate rescue boats. We have not mandated that a workboat serving as a substitute to an approved rescue boat must have a minimum 25-horsepower engine in all circumstances. Some rescue boats may perform satisfactorily with outboard engines as small as 15 horsepower. We do not, however, foresee accepting workboats with engines less than 15 horsepower.ò

[NMA Comment: We do not argue the "horsepower" issue. However, we ask why the Coast Guard does not require training for mariners operating outboard motors and in maneuvering or handling the rescue boat under adverse conditions.]

What is a Suitable Rescue Platform?

Many OSVs have the option of operating as their own rescue platform if they meet these qualifications:

- ðWhile 46 CFR §133.135 states that the vessel qualifying as a rescue platform must be arranged so any rescue can be observed from the navigating bridge, this is an impossibility for most vessels as they come alongside a man overboard. Therefore, vessels with an efficient and reliable method for providing two way communication between a person at the side of the vessel (most likely at the recovery station) and the person at the helm, may

be considered equivalent to this requirement.

- ðTo qualify as a rescue platform, **a** vessel shall demonstrate that it has the equipment and trained crew to effect the recovery of a helpless person within fifteen minutes. Although there is no one set of proscriptive requirements that are necessary to meet the above standard, experience has shown that the follow-ins elements are essential components of a vessel qualifying ass rescue platform:
- ðA trained person on the helm.
- ðEach member of the crew must be trained in his or her duties during a man overboard situation. Because there is no way to foresee who will go overboard, there must be sufficient cross training to provide for all contingencies.
- ðThe vessel must have a system to recover a helpless person from the water while minimizing injury to that individual. While there is no one system that can be used to accomplish this recovery, recent innovations have provided effective methods of accomplishing this task. To provide for all contingencies, equipment used to make the recovery should be provided at each side of the vessel or must be easily and quickly transferable to a recovery station at either side of the vessel. In addition to the recovery equipment, training and planning the procedures to position a helpless person in the recover apparatus must be planned and practiced.
- ð46 CFR §133.135 allows an OSV to act as its own rescue platform when it is not ñregularlyò restricted in its ability to maneuver. Vessels that are ñregularlyò restricted in their ability to maneuver due to towing or anchor handling operations, may at the discretion of the OCMI rely upon the rescue boat on the attended vessel to satisfy its rescue needs. To qualifyô for this provision, the vessel must prove to the OCMI that the rescue boat on the attended vessel meets all the above requirements for a rescue boat and that it is sufficiently manned at all hours of the day to effect a timely rescue.

OUR MARINERS SEEK CONGRESSIONAL ACTION

It is obvious that a person working on barges in cold weather needs both hypothermia protection as well as flotation. We believe that this safety equipment must be required by regulation just as lifejackets and immersion suits are required on various types of vessels.

While changing the scope of NVIC 7-91 by having it include river and inland waters would be commendable, a Navigation and Vessel Inspection Circular is only a guideline and does not have the force of a regulation. By regulation, employers should be required to provide insulated, Coast Guard-approved flotation safety equipment (i.e., anti-exposure suits) as personal protective gear for crewmembers that work on deck during the winter months.

Our Association tried to work through the existing system and made no headway. General discussion at the TSAC meeting was dismissive and a majority representing the interests of industry favored a ñnon-regulatoryò (do-nothing) approach. The committee never even prepared a task statement and the matter was never brought up again at subsequent meetings. The minutes of the March 16, 2000 TSAC meeting refers to the project as follows:

ñMs. Kelly told the Committee that she forwarded the ñcold water information packageò distributed at the last TSAC meeting to a colleague who chairs the AWO Inter-Region Safety Committee.ò If the American Waterways Operators, a towing industry trade association ever discussed it in their committee, that information never was passed on to either TSAC or NMA.

[NMA Comment: This is one of many examples of the dismissive attitude our mariners experience with the Congressionally authorized Towing Safety Advisory Committee. This is one of many reasons why we prepared Report #R-417, Request for Congressional Oversight on the Towing Safety Advisory Committee in 2005.]

While protecting lower-level merchant mariners from hypothermia appears to be of no concern to industry leaders, we note that Congress entered it on their agenda and protected Coastguardsmen on search and rescue duty.

The Maritime Transportation Security Act of 2002 contains Section 410, Hypothermia Protective Clothing Requirement that states: ñThe Commandant of the Coast Guard shall ensure that all Coast Guard personnel are equipped with adequate safety equipment, **including hypothermia protective clothing** where appropriate, while performing search and rescue missions.ò Captain Suttonôs letter clearly illustrates why hypothermia protection is necessary, and the tragic loss of lower-level mariners by falls overboard illustrates the need for flotation gear. We seek the same hypothermia protection for our lower-level mariners working on deck in Winter from their employers that Congress mandates for Coastguardsmen.

Although former Vice Commandant Card took the lead in this issue, it is clear that industry was unwilling to pick up the bill and run with it é even as a ñnon-regulatoryò approach. It is clear to us at, in light of inaction on the part of both TSAC and the Coast Guard that Congress must mandate a ñregulatoryò approach to adequately

protect our mariners who operate on vessels in ñcold waterò as well as in cold climates.

[NMA Comment: We urge Congress to require the marine industry to furnish USCG approved anti-exposure suits with adequate, suitable and approved flotation to protect merchant mariners working on deck on workboats, small passenger vessels and barges during the months when the water temperature falls below 59 degrees F.]

[NMA Comment: We ask Congress to request the National Academy of Sciences to perform a top-to-bottom study and safety evaluation of existing lifesaving regulations that govern all commercial vessels under 1,600 gross tons and examine issues submitted in this report.]

[NMA Comment: We urge Congress to require the Coast Guard to evaluate innovative lifesaving equipment specifically for use in the commercial marine industry and to provide the Coast Guard with future policy direction on lifesaving issues including those contained in this report.]

HOUSE BILL HR-2830 OFFERED HOPE FOR FUTURE CHANGE

*[**NOTE**: Although HR-2830 with tremendous bi-partisan support passed the House of Representatives by a vote of 395 to 7, it was never brought to Conference and died in the closing days of the 110th. Congress. Our Association believes it is essential to re-introduce and strengthen these proposals.]*

SEC. 314. APPROVAL OF SURVIVAL CRAFT.

(a) In General- Chapter 31 of title 46, United States Code, is amended by adding at the end the following new section:

`Sec. 3104. Survival craft

`(a) Except as provided in subsection (b), the Secretary may not approve a survival craft as a safety device for purposes of this part, unless the craft ensures that no part of an individual is immersed in water.

`(b) The Secretary may authorize a survival craft that does not provide protection described in subsection (a) to remain in service until not later than January 1, 2013, if--

`(1) it was approved by the Secretary before January 1, 2008; and

`(2) it is in serviceable condition.'.

(b) Clerical Amendment- The table of sections at the beginning of that title is amended by adding at the end the following:

`3104. Survival craft.'.