National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation LDG M-310

Date: February 22, 1990

In reply refer to: M-90-9 through -21

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About 1530, on September 15, 1988, the 46-foot-long passenger vessel COUGAR began to take on water while returning from a fishing trip off the Oregon coast. Aboard were nine persons consisting of the master, the mate (who assisted the master at the helm), the deckhand, and six passengers. An inspection of the engine compartment and lazarette revealed substantial flooding. The passengers and the crew fought the rising water with buckets and pumps for 1.5 hours without success. About 1615, a distress message was repeatedly transmitted over the vessel's VHF-FM and citizenband radios until the master abandoned the COUGAR. About 1650, the passengers and crew abandoned the vessel. The passengers had sufficient time to launch a buoyant apparatus before leaving the vessel. At 1700, the COUGAR sank quickly by the stern. Pieces of wreckage that broke free of the vessel were gathered by the survivors and used to remain afloat in the 55°F water. During the following 18 hours, the master, the deckhand, and two passengers succumbed to hypothermia and drowned. At approximately 1048, on September 16, 1988, search and rescue air units of the U.S. Coast Guard located the mate and four surviving passengers. About 1100, the five survivors were rescued and transported to a hospital ashore for treatment for hypothermia and exposure.[1]

The testimony obtained from the mate, surviving passengers, individuals familiar with the COUGAR, and the information provided through photographs of the vessel's weather deck, indicate that the flush-mounted hatch covers aboard the COUGAR were never constructed to be watertight.

When operated as an inspected small passenger vessel, the weather deck hatches aboard the COUGAR were required to be fitted with gaskets that were clean (unpainted and flexible enough to provide a tight seal) and with

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[1] For more detailed information, read Marine Accident Report--"Sinking of the Passenger Vessel COUGAR off the Coast of Oregon, September 15, 1988" (NTSB/MAR-90/02).

securing devices (that were sound and operate freely). The contractor who performed maintenance on the COUGAR between 1976 and 1984 stated that, to his knowledge, none of the flush-mounted hatchcovers aboard the COUGAR had ever been fitted with either gaskets or securing devices. The mate and several passengers stated that they observed the flush-mounted hatch cover, located just forward of the transom, pop up and float along the deck as a result of the flooding of the lazarette. The Safety Board believes that the flush-mounted hatch covers located on the weather deck of the COUGAR were never fitted with gaskets or proper securing devices and therefore could not have been watertight on the day of the accident nor when the vessel was inspected for certification during May of 1988.

The Safety Board concludes that the flooding of the engine compartment and lazarette occurred when the seas, which swept through the freeing ports and across the weather deck, leaked past the non-watertight hatch covers installed on the weather deck of the COUGAR into the lazarette and engine compartment.

The Coast Guard Marine Safety Manual (MSM) requires that the watertight integrity of hatch covers be determined at inspection for certification. In addition, the MSM suggests different methods for testing the hatches. The manual, however, does not require that the watertight integrity of hatch covers be tested at each and every reinspection for recertification.

The adequacy of Coast Guard inspections for watertight integrity of small passenger vessels has been an issue in previous accidents investigated by the Safety Board. Following the investigation of the sinking of the passenger vessel PEARL-C[2] on September 16, 1976, the Safety Board made the following safety recommendation M-77-28 asking that the Coast Guard:

> Require Coast Guard Inspectors to strictly enforce the regulations regarding the watertight integrity of weather decks, including the requirements for securing devices and means of attachment.

On February 17, 1978, the Coast Guard responded to the recommendation, stating:

> The Coast Guard will amend the Marine Safety Manual, advising Coast Guard inspectors to strictly enforce regulations regarding the watertight integrity of weather decks, including the requirements for securing devices and means of attachment.

Therefore, on October 30, 1979, Safety Recommendation M-77-028 was classified as "Closed--Acceptable Action."

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[2]Marine Accident Report--"Charter Vessel PEARL-C Sinking on the Columbia River Bar Near Astoria, Oregon, September 13, 1976" (NTSB-MAR-77-1).

On October 24, 1982, the Safety Board investigated the sinking of the JOAN LA RIE III[3] off Manasquan Inlet, New Jersey. The Board concluded that water entering through a non-watertight hatch cover caused the flooding and subsequent sinking of the vessel. The Board also determined that the non-watertight hatch cover was not designed to be watertight even though a previous Coast Guard inspection of the vessel showed that all "hatches and securing devices" on the JOAN LA RIE III were checked as satisfactory. On January 20, 1984, the Safety Board issued safety recommendation M-84-15 asking that the Coast Guard:

> Direct Inspectors of charter fishing boats to make one-time verification during their next inspection that watertight hatch closures are equipped with adequate securing devices which are being properly maintained, and to inform the boat operators of the importance of keeping hatch covers secured to preserve the watertight integrity of the hull.

On May 15, 1984, the Coast Guard responded to the recommendation, stating:

> This recommendation is concurred with. Verification during the next inspection will be made to ensure that watertight hatch enclosures are equipped with adequate securing devices and that they are being properly maintained. In addition, operators will be reminded of the importance of keeping hatch covers secured to preserve the watertight integrity of the hull.

Therefore, on January 9, 1985, Safety Recommendation M-84-015 was classified as "Closed--Acceptable Action."

The Safety Board believes that the failure of Coast Guard marine inspectors to determine that the hatch covers aboard the JOAN LA RIE III and the COUGAR were neither designed nor constructed to be watertight indicates that Coast Guard marine inspectors are, in some cases, failing to take a close look at the condition of hatches when they conduct inspections for certification.

The Safety Board believes that all hatches required to be maintained in a watertight manner should be tested before a Certification of Inspection (COI) is issued or renewed and that the inspection procedures should be recorded in the Small Passenger Vessel Inspection Book (CG-840T).

The contractor stated that even though the ballast in the lazarette was installed after the pilothouse was added, the COUGAR remained slightly trimmed by the bow. Further, the addition of the pilothouse and the ballast

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[3]Marine Accident Report--"Sinking of the Charter Fishing Boat JOAN LA RIE III, Off Manasquan Inlet, New Jersey, October 24, 1982" (NTSB-MAR-84-02).

caused the COUGAR to ride lower in the water, reducing the freeboard between the freeing ports and the waterline. Further, the installation of the rubber flaps to the inside of the gunwale did little to restrict the seawater from entering the freeing port but it did restrict the drainage of seawater overboard. As a result, over a period of several hours, a standing pool of water collected on the weather deck over the lazarette. As the vessel moved in the seaway, the water periodically swept across the hatch covers installed over the engine compartment.

The Safety Board believes that the existence of a standing pool of water which swept over non-watertight hatch covers on the day of the accident hastened the flooding of the lazarette and engine compartment. As flooding progressed throughout the day, the combined weight of the water on deck and the water in the flooding compartments gradually and, imperceptibly to passengers and crew, trimmed the COUGAR by the stern until the freeing ports became partially submerged. Efforts to block off the freeing ports with pieces of the foam mattress taken from the pilothouse slowed the flow of seawater onto the weather deck for a short time; however, the blocked freeing ports also restricted the water on the weather deck from draining overboard. The Safety Board believes that the master should have had the rubber flaps attached to the outside of the gunwale.

The COUGAR had bilge pumps on board with a total capacity of 4,000 gallons per hour. On the day of the accident, however, the only pump on board that was operational was the main bilge pump and portable hand pump. The submersible pump, which constituted over 60 percent of the pump capacity aboard the COUGAR, was inoperative for an unknown reason. When the master discovered that flooding had occurred in the engine compartment, he immediately activated the bilge pump. It took the master over 30 minutes to dewater the compartment. The main bilge pump, which was unable to dewater the lazarette on the day of the accident, did not have sufficient capacity to handle catastrophic flooding.

The Board believes that if the main bilge system (including the submersible pump) had been fully operational, the master would have had the capability to dewater the engine compartment and lazarette once the flooding was detected at 1530 and the accident would not have occurred.

Current regulations require that an operational test of the bilge system is required when the vessel is inspected for an original inspection and when the vessel is inspected for recertification (which occurs every 3 years). The Coast Guard marine inspector, who conducted the in-water inspection during May 1988, was unable to conduct an operational test of the bilge system because the main engine was inoperative on the date he conducted his inspection. The Coast Guard Small Passenger Inspection Book, however, indicated that the bilge pumping system aboard the COUGAR had been inspected and found to be in satisfactory condition. The bilge pumping system is not normally tested during the drydock examination unless it is listed as one of the discrepancies to be reexamined before a certificate of inspection is issued.

The responsibility for maintaining the bilge system, as well as all of the other equipment and machinery on board, in good operating order belongs to the owner and operator of the COUGAR. However, the Coast Guard is responsible for determining that such equipment is in good operating condition before it issues or renews a Certificate of Inspection (COI). This was not done when the Coast Guard inspected the COUGAR during May 1988. The Safety Board believes that the main bilge pump and the submersible pump aboard the COUGAR should have been inspected and tested by a marine inspector before the COI was renewed during May 1988.

On the day of the accident, the COUGAR was operated in accordance with Coast Guard regulations as an uninspected passenger vessel and, therefore, was not required to carry survival craft on board. Because the COUGAR was certificated by the Coast Guard, the vessel did have a buoyant apparatus on board; however, it was not capable of supporting the passengers and crew of the COUGAR out of the water.

Survivors stated that after abandoning the sinking COUGAR, they attempted to climb onto the buoyant apparatus. Their efforts to pull themselves out of the water were only partially successful. As a result, some of the passengers and crew were able to drape themselves across the apparatus and the portion of the canopy, which had broken free of the COUGAR before the vessel sank, while others were forced to remain almost completely immersed in the water. The effects of immersion in the cold water gradually sapped the strength of the survivors, and, thus, they were unable to assist the master, deckhand, and two passengers who later succumbed to the effects of hypothermia and drowned. The Safety Board believes that had the COUGAR been required to carry survival craft capable of supporting 100 percent of the persons on board out of the water instead of a buoyant apparatus, additional lives would have been saved.

Since 1984, the Safety Board has investigated four passenger vessel accidents[4] involving one collision, one fire, one capsizing, and one grounding. In each case it was determined that the Coast Guard survival craft requirements were inadequate. The four passenger vessels, together, carried more than 290 persons. In each of the accidents, the Safety Board expressed concern to the Coast Guard about the use of buoyant apparatus and life floats aboard passenger vessels in lieu of liferafts. Neither buoyant apparatus nor life floats are capable of protecting persons from immersion in the water, and hypothermia can result. In addition, the Safety Board was concerned that the Coast Guard did not require that the vessels carry survival craft sufficient to provide out-of-the-water support for 100 percent of the persons on board. The Safety Board's concern has increased due to the fact that many small passenger vessels are capable of carrying hundreds of passengers at a time, thus increasing the risk that many lives could be lost if persons had to enter the water as a result of any future accidents.

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[4]National Transportation Safety Board Marine Accident Report(s): NTSB/MAR-84/05; NTSB/MAR-85/09; NTSB/MAR-86/08; and NTSB/MAR-87/11.

The Coast Guard has stated that persons immersed in water that is at least 59°F (15°C) would not be subjected to an immediate threat from hypothermia. However, the Coast Guard's own SAR Manual states that there are a number of factors (other than the temperature of the water) which affect the life expectancy of persons immersed in water that is less than body temperature.

The Safety Board does not believe that the survival craft requirements proposed in the NPRM, published by the Coast Guard in the Federal Register on January 30, 1989, are adequate to protect passengers and crew aboard small passenger vessels from the effects of hypothermia. The Board's primary concerns with the proposed regulations are:

- the criteria used to determine survival craft requirements and exemptions (i.e. the time of the year, the number of persons permitted on board, the distance from shore, or the routes that a passenger vessel is permitted to operate on) do not necessarily take into account the temperature of the water in the area in which a vessel is operating;

- the "grandfather" provision which states that survival craft that do not meet the requirements of the proposed rules on the effective date of the regulation can be used to satisfy the requirements of the proposed regulations as long as the survival craft is in use on the vessel and is in good and serviceable condition. Such provisions significantly reduce the effectiveness of the proposed rules;

- the proposed rules would continue to permit vessels that are not required to carry survival craft under current regulations, to use survival craft that are not capable of supporting persons out of the water, and in some cases on inspected small passenger vessels on lakes, bays, and sounds. The proposed rules would require survival craft for only 30 percent of the persons on board; and

- the Coast Guard NPRM would allow the substitution of life floats and buoyant apparatus on passenger vessels on an oceans, coastwise, Great Lakes, or lakes, bays, and sounds route under certain circumstances. These devices are not designed to protect persons from immersion in the water.

The Safety Board recently adopted a report on the safety of passenger vessels.[5] The report stated the Board's concerns with many of the proposals in the NPRM, including "the provisions that would allow small passenger vessels operating on lakes, bays, and sounds, and on newer routes to carry buoyant apparatus." In the study report, the Safety Board stated that, in addition to providing protection from hypothermia, survival craft would:

- o provide protection from marine predators;
- o provide support for exhausted, injured, or unconscious survivors;
- o prevent survivors from exerting energy to maintain themselves out of the water and thus saving precious strength;
- o provide a platform that permits the use of survival equipment such as distress flares, orange smoke distress signals, and electronic homing devices (EPIRBs); and
- o provide protection from the inadvertent ingestion of sea water.

Therefore, the Safety Board continues to believe that all small passenger vessels on an oceans, coastwise, Great Lakes, or lakes, bays, and sounds route (with the exception of ferries on river routes operating on river routes on short runs of 30 minutes or less) be provided with survival craft of sufficient number and type to support 100 percent of the persons on board out of the water regardless of the time of year, sea temperature, or the number of persons permitted on board.

The Safety Board understands the need for a grace period whenever major changes are being made to regulations. In a letter dated November 15, 1989, to the Coast Guard, the Safety Board stated:

> Life floats (and non-inflatable buoyant apparatus) are antiquated pieces of survival gear that should no longer be allowed on board inspected vessels. They should be phased out of service, just as the cork life preserver and the calcium carbide water light were phased out of service. The Safety Board opposes the continued use of life floats and non-inflatable buoyant apparatus as primary lifesaving devices.

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[5] "Passenger Vessels Operating from U.S. Ports," National Transportation Safety Board, 1989 (NTSB/SS-89/01).

The Safety Board believes that the interests of the seagoing public would not be well served by an indefinite grace period and that all existing life floats and buoyant apparatus carried aboard small passenger vessels should be phased out within a 5-year period and replaced with survival craft capable of providing protection for persons out of the water.

Because the COUGAR had more than enough life preservers for the nine persons on board, it exceeded those requirements which state that an uninspected passenger vessel shall carry at least one life preserver for each person on board. Because most of the survivors managed to grab at least two life preservers before entering the water, the additional buoyancy provided by the surplus of life preservers enabled the survivors to keep a portion of their upper body from total immersion and this probably helped protect the survivors from the effects of hypothermia.

None of the life preservers carried aboard the COUGAR was fitted with personal flotation device (PFD) lights. The weather following the accident was good. According to the survivors, the atmosphere was clear (visibility was about 15 miles) and the seas were running between 3-5 feet. Several survivors stated that they observed aircraft in the vicinity during the early morning hours on September 16. The Safety Board believes that if each of the life preservers had been fitted with PFD lights that were operating properly, the lights might have attracted the attention of the pilot of the first Coast Guard aircraft that was searching offshore and additional lives might have been saved.

The Safety Board discussed the issue of PFD lights in four recommendations (M-69-53, M-70-2, M-71-4, and M-76-10) to the Coast Guard between 1969 and 1976. In addition, as a result of the collision between the passenger vessel MISSISSIPPI QUEEN and the towboat CRIMSON GLORY[6] in the Mississippi River on December 12, 1985, the Safety Board issued Safety Recommendation M-86-74 on June 10, 1986, asking that the U.S. Coast Guard:

> Require that life preservers on all passenger vessels be equipped with lights.

In a letter dated December 1, 1986, the Coast Guard responded to the recommendation, stating:

> The Coast Guard does not concur with this recommendation. Lights on life preservers might facilitate the rescue of survivors under certain conditions, but for vessels in river or lakes, bays and sounds service, the potential benefit is limited. All of the life preservers on board these vessels have retroreflective material. This material reflects the light from searchlights in such a way that its apparent brightness would probably be

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[6]Marine Accident Report--"Collision Between U.S. Passenger Vessel MISSISSIPPI QUEEN and U.S. Towboat CRIMSON GLORY, in the Mississippi River Near Donaldsonville, Louisiana, December 12, 1985" (NTSB/MAR-86/09).

> greater than the life preserver lights, in most cases. Life preserver lights provide their greatest benefits in locating survivors on large expanses of open water where their approximate location is not known...
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> A practical problem with life preserver lights on passenger vessels is the maintenance and operational problems they present. If the MISSISSIPPI QUEEN had been equipped with these lights, the crew would have had over 700 lights to keep in operational condition; and in order for them to be useful, the passengers would all have to be informed about the lights and how to operate them.
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> Overall, we do not believe that life preserver lights have the potential to be effectively used on passenger vessels, other than those in the ocean, coastwise, and Great Lakes service where they are already required.

On March 23, 1987, the Safety Board responded to the Coast Guard, stating:

> The Safety Board is disappointed that the Coast Guard does not agree with the merits of this recommendation. The subject of life preserver lights was addressed in four previous safety recommendations issued to the Coast Guard between 1969 and 1976. The Safety Board continues to believe that life preservers on passenger vessels should be equipped with lights, regardless of the waterways on which they operate. It is apparent that the Coast Guard does not intend to reconsider its position on this matter; therefore, Safety recommendation M-86-74 has been classified "Closed--Unacceptable Action."

Current regulations specifically exempt small passenger vessels, with a certificate of inspection endorsed for routes that do not extend more than 20 miles from a harbor of safe refuge, from the requirements. Uninspected passenger vessels, however, are required to have PFD lights attached to each life preserver on board when operating in oceans, coastwise, or Great Lakes service. The COUGAR was permitted by the Coast Guard to operate as an uninspected passenger on the day of the accident. As a result, the COUGAR should have had PFD lights attached to each life preserver carried on board.

The NPRM proposes, in addition to maintaining the current PFD requirements, to exempt all ferry vessels (of less than 100 gross tons) from the PFD light requirements. Ferries (many of which are very large "small" passenger vessels over 79 feet in length and capable of carrying hundreds of passengers) transiting the waters of Massachusetts Bay, Nantucket Sound, Block Island Sound, and Long Island Sound, for example, often must cross many miles of open and unprotected waters well out of sight of land. In addition, according to the Coast Guard preamble to the NPRM, the trend towards larger small passenger vessels continues.

The Safety Board believes that if passengers were forced to abandon a passenger vessel capable of carrying hundreds of passengers during the hours of darkness, it would take a significant period for the Coast Guard or other vessels or aircraft to arrive on scene. In the meantime, the wind and current could spread the survivors over a wide area and locating each of the hundreds of passengers in a timely manner would be difficult and probably would result in an increase in fatalities.

The sinking of the COUGAR demonstrates many of the difficulties encountered by search and rescue units of the Coast Guard engaged in a search for survivors from an accident. Therefore, the Safety Board believes that all inspected and uninspected passenger vessels on an oceans, coastwise, Great Lakes, or lakes, bays and sounds route should have a PFD light attached to each life preserver on board.

The master did not deposit a passenger and crew list ashore before departing Depoe Bay on the day of the accident. The Coast Guard was able to learn from friends and acquaintances of the crew of the COUGAR the number of persons on board and the estimated time that the master intended to return to port. The process of locating and interviewing friends and acquaintances of the master and mate delayed the SAR mission, and without specific knowledge of the COUGAR's destination, the Coast Guard SAR effort could not be focused on a known probable location or track line.

The Safety Board supports the Coast Guard's NPRM proposal to require operators of certain small passenger vessels to keep track of the number of persons who embark and disembark the vessel. The Board determined during its investigation of the casualties involving the JOAN LA RIE III (MAR-84/02), YANKEE (MAR-84/05), FISH-IN-FOOL (MAR-87/11), AMAZING GRACE (MAR-85/07), and MERRY JANE (MAR-86/11), that the Coast Guard had difficulty determining the number of persons on board the vessels involved in these accidents. As a result, the Safety Board issued a series of safety recommendations asking that the Coast Guard require that all passenger vessels deposit a passenger and crew list at a suitable location ashore prior to departure. In 1986, the Safety Board issued Safety Recommendation M-86-76 asking that the Coast Guard:

> Require that the master or licensed operator of all passenger vessels, except ferries on short routes, deposit an accurate passenger and crew manifest ashore before sailing and update the manifest during the voyage. Require the master of ferries on short routes to keep an accurate count of all persons aboard.

The Safety Board believes that if the master of the COUGAR had left a record of his intended destination with either a friend or the management of Depoe Bay Sportfishing, the size, scope and costs of the SAR effort could have been significantly reduced and additional lives probably would have been saved. Because the Board continues to believe that knowing the number of persons on board, the destination, and the vessel's estimated time of arrival (ETA) in port are important in the event of an accident, the Safety Board reiterated Safety Recommendation M-86-76 in its recent safety study. In

addition, the Board is issuing a new recommendation requesting that the master and/or operator of inspected and uninspected passenger vessels making an oceans or coastwise voyage be required to deposit, at a suitable location ashore prior to departure, information containing the destination of the vessel, the intended route to and from the destination, and the vessel's ETA at the next harbor of safe refuge.

Inspected passenger vessels operating further than 20 miles from a harbor of safe refuge are required to carry an EPIRB. The COUGAR, which was operating as an uninspected passenger vessel on the day of the accident in accordance with 46 CFR 176.01-1, was not required to carry an EPIRB on board because uninspected passenger vessels are not required to do so regardless of their route.

According to the Coast Guard SAR Coordinator, if an EPIRB had been available, the Coast Guard would have been alerted that a vessel was in distress about 2015, would have known the precise location of the EPIRB, and would have been able to launch a search and rescue mission much sooner. With the location of the EPIRB known, SAR aircraft could have arrived on scene many hours earlier. If search aircraft had arrived on scene even 30 minutes earlier, the deckhand may have been saved.

Following the investigation of the sinking of the charter fishing vessel JOAN LA RIE III in October 24, 1982, which occurred off Manasquan Inlet, New Jersey, the Safety Board issued Safety Recommendation M-84-13 on February 7, 1984, asking that the Coast Guard:

> Amend 46 CFR Subpart 180.40 to eliminate the present exception from the requirement to carry an Emergency Position Indicating Radiobeacon (EPIRB) on coastwise vessels carrying passengers for hire that carry radiotelephone communication equipment that complies with Federal Communication Commission requirements.

The Coast Guard concurred in part with Recommendation M-84-13. In a letter dated May 15, 1984, to the Safety Board, the Coast Guard stated that EPIRBs should be required aboard inspected small passenger vessels on a coastwise route whose COI is endorsed for a route which does not extend more than 20 miles from a harbor of safe refuge.

Therefore, on January 1, 1985, Safety Recommendation M-84-13 was classified as "Open--Acceptable Action."

The Safety Board agrees with the Coast Guard that EPIRBs should be carried aboard all inspected small passenger vessels on ocean or coastwise routes. In addition, the Board believes that uninspected passenger vessels operating on an oceans or coastwise route should also be required to have an EPIRB on board. This is particularly important because uninspected passenger vessels, which are allowed to operate freely on oceans, coastwise, Great Lakes, or lakes, bays, and sounds routes, are not required to be inspected and are not closely supervised by the Coast Guard.

The owners and operators of inspected small passenger vessels have been aware of the proposed EPIRB regulations since January 30, 1989. According to the Coast Guard, the final rule governing the inspection and certification of inspected small passenger vessels (which includes the proposals on EPIRBs) will not go into effect before the fall of 1991 at the earliest. The Safety Board believes that the proposed EPIRB regulations should not be delayed any further and that the Coast Guard should separate the proposed EPIRB regulations from the more general rulemaking and implement EPIRB rules as soon as practicable. Further, as was stated in the Board's passenger vessel safety study, the Safety Board believes that the proposed 6-year phase-in period is excessive.

As a result of the passenger vessel safety study, the Board issued Safety Recommendation M-89-121 asking that the Coast Guard:

> Include in the final rule on "Small Passenger Vessel Inspection and Certification" a phase-in period of 3 years for the full implementation of float-free 406.025 MHz satellite emergency position indicating radio beacons (EPIRBs) for small passenger vessels operating on ocean or coastwise routes.

The Safety Board now believes that 406 MHz EPIRBs should be required aboard all inspected and uninspected small passenger vessels on ocean or coastwise routes within 3 years from the date the rules go into effect. Therefore, Safety Recommendation M-84-13 has been superceded with a new recommendation to require that all uninspected vessels that operate on ocean or coastwise routes carry 406 MHz EPIRBs within 3 years. The Board also reiterates Safety Recommendation M-89-121.

The survivors of the COUGAR managed to ignite one red distress flare (night) and six orange smoke distress signals (day) in an attempt to attract the attention of passing vessels and aircraft. According to testimony from the survivors, the orange smoke distress signals were not effective because of their short burning time and the limited volume of smoke that they produced. The mate stated that the wind, which was estimated to be between 10-15 knots, quickly dissipated the orange smoke before the survivors could be spotted.

On the day of the accident, the winds were relatively light, seas were moderate, and the visibility was about 15 miles. The Safety Board believes that hand-held orange smoke signals should have been capable of generating orange smoke of sufficient quantity to have been able to attract the attention of search aircraft observed in the vicinity of the survivors.

The Safety Board believes that the Coast Guard needs to reevaluate the standards for orange smoke distress signals to determine if present standards (smoke quantity and density) are adequate.

On the day of the accident, the COUGAR was operated as an uninspected passenger vessel. As a result, the COUGAR, which was not allowed to operate further than 20 miles from a harbor of safe refuge when operating under the

authority of its COI, was free to operate, in accordance with Coast Guard regulations, on an ocean route because the vessel was carrying six or fewer passengers.

According to 46 USC 3313(a), "During a term of a vessel's certificate of inspection, the vessel must be in compliance with its conditions, unless relieved or an exemption granted under section 3306(e) of this title." The exemptions authorized in 46 USC 3306(e), however, do not include an exemption from the route restriction provided in the COI.

The Coast Guard has stated that for over 30 years they have permitted inspected small passenger vessels (of not more than 65 feet in length) to operate as uninspected small passenger vessels when carrying fewer than six passengers. However, they could not find any evidence in the legislative history affecting small passenger vessels which supports 46 CFR 176.01-1(b). In addition, the Coast Guard has stated that they have decided not to enforce the statutory requirements of 46 USC 3313(a) for two reasons:

1. Enforcement of the specific wording of 46 USC 3313(a) would require the Coast Guard to ignore a longstanding regulation (46 CFR 176.01-1(b)), without a public comment period which is normally required in the rulemaking process; and

2. Some small passenger vessel owners would lose a significant portion of their business if they were suddenly prohibited from operating as an uninspected vessel for commercial fishing, recreational boating, or the carriage of six or fewer passengers.

In the proposed NPRM, the Coast Guard proposes to allow owners of inspected small passenger vessels to request to have their COI endorsed to permit operation of the vessel as an uninspected vessel when carrying six or fewer passengers. The endorsement would require the vessel to be maintained and outfitted in accordance with the requirements except for manning and route.

The Safety Board believes that inspected small passenger vessels should always operate under the provisions of their COI regardless of the number of passengers carried on board. The higher safety standards of the inspected vessels ought not to be compromised for the [occasional] opportunity to compete with uninspected vessels. The Board also believes that inspected small passenger vessels should remain in compliance with its COI unless relieved by a suspension or an exemption granted under 46 USC 3313(b) and 46 USC 3306(e) (i.e. lifesaving and firefighting equipment, muster lists, and bilge systems). The Safety Board believes that the COUGAR should not have been permitted by the Coast Guard to operate further than 20 miles from a harbor of safe refuge on the day of the accident. Therefore, the Board believes that 46 CFR 176.01-(b) of the current regulations should be

discontinued and 46 CFR 176.114, which is contained in the NPRM issued on January 30, 1989, not be included in any future rulemaking.

Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

> Provide in the Marine Safety Manual additional written guidance on the requirements of 46 CFR 171.124--"Watertight Integrity Above the Margin Line," explaining how the hatch covers should be tested at each Coast Guard inspection. (Class II, Priority Action) (M-90-9)
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> Require that hatches aboard small passenger vessels that are required to be watertight be tested before a Certificate of Inspection is issued or renewed and that the marine inspectors conducting such tests record the inspection procedures used in the Small Passenger Vessel Inspection Book (CG-840T). (Class II, Priority Action) (M-90-10)
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> Provide in the Marine Safety Manual additional written guidance to all marine inspectors explaining the importance of determining that freeing ports are maintained to allow rapid drainage of water from the exposed decks in all probable conditions of list and trim. (Class II, Priority Action) (M-90-11)
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> Require that bilge systems aboard inspected small passenger vessels be tested at each Coast Guard inspection. (Class II, Priority Action) (M-90-12)
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> Require that all uninspected passenger vessels be required to carry survival craft capable of supporting 100 percent of the persons permitted on board out of the water. (Class II, Priority Action) (M-90-13)
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> Require that life floats and buoyant apparatus aboard passenger vessels be replaced with lifeboats, liferafts, and inflatable buoyant apparatus within 5 years. (Class II, Priority Action) (M-90-14)
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> Require that all life preservers aboard inspected small passenger vessels operated on a coastwise route (not more than 20 miles from a harbor of safe refuge) and all ferries (regardless of route) have personal flotation device lights attached. (Class II, Priority Action) (M-90-15)
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> Require the master and operator of inspected and uninspected passenger vessels making an oceans or coastwise voyage to deposit at a suitable location ashore, prior to departure, information about the

destination of the vessel, the intended route to and from the destination, and the vessel's estimated time of arrival at the next harbor of safe refuge. (Class II, Priority Action) (M-90-16)

Require all uninspected passenger vessels that operate on an ocean or coastwise route to carry on board an EPIRB that operates on a frequency of 406.025 MHz. (Class II, Priority Action) (M-90-17)

Separate the proposed EPIRB regulations stated in the Notice of Proposed Rulemaking (NPRM) dated January 30, 1989 [CGD 85-080] from the NPRM and issue them as a separate rulemaking with a provision to allow a grace period of not more than 3 years from the effective date of the regulation. (Class II, Priority Action) (M-90-18)

Reevaluate the standards (smoke quantity and density) of hand-held orange smoke distress signals to improve the detectability of these signals. (Class II, Priority Action) (M-90-19)

Require that inspected small passenger vessels operate within the route restrictions on their Certificate of Inspection even when they are carrying six or fewer passengers. (Class II, Priority Action) (M-90-20)

Discontinue the practice of allowing vessels that are certificated under the laws and regulations for inspected vessels to operate under certain conditions as uninspected vessels. (Class II, Priority Action) (M-90-21)

In addition, the Safety Board reiterates the following safety recommendation to the U.S. Coast Guard:

M-89-121

Include in the final rule on "Small Passenger Vessel Inspection and Certification" a phase-in period of 3 years for the full implementation of float-free 406.025 MHz satellite emergency position indicating radio beacons (EPIRBs) for small passenger vessels operating on ocean or coastwise routes.

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, and DICKINSON, Members, concurred in these recommendations.

By: James L. Kolstad
Chairman