

COAST GUARD

# PROCEEDINGS

International Labor Organization . . .

SS Panoceanic Faith . . .

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#### COVERS

FRONT COVER: The SS Indian Mail, one of five new C5 vessels of the American Mail Line fleet, makes the first commercial call at the recently completed terminal No. 4 in Tacoma, Wash. The \$4.2 million complex includes a 150,000-square-foot warehouse for breakbulk cargoes and a 24-acre asphalt yard for container operations. The 1,242-foot pier can accommodate two ocean-going vessels the size of the Indian Mail. Courtesy Morry, Calvo, Lane & Baker, Inc.

BACK COVER: A safety poster of the American Waterways Operators, Inc., marking 25 years of service to the barge and towing industry.

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#### OF THE

#### MERCHANT MARINE COUNCIL

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The Merchant Marine Council of The United States Coast Guard

Admiral W. J. Smith, USCG Commandant

Page

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## Monthly "PROCEEDINGS" Approved

The PROCEEDINGS OF THE MER-CHANT MARINE COUNCIL will continue to be published on a monthly basis, as in the past. This decision resulted from a recent study of the future of the PROCEEDINGS, a study in which many readers participated.

The November 1968 issue of the PROCEEDINGS included a Reader's Questionnaire containing questions regarding the possibility of decreasing the frequency of publication of the magazine, as well as questions designed to sample the opinions of readers regarding the magazine's content items. The results of the questionnaire were tabulated and used in preparation of a memorandum to the Bureau of the Budget. This memorandum advocated that the PROCEEDINGS continue to be published in its present size and format and on the present monthly basis. Funds were approved for the continued publication of the PROCEED-INGS in the present manner.

The "Reader's Questionnaire" proved to be a valuable tool in evaluating the PROCEEDINGS. Exactly 600 of the forms were returned in time for tabulation. The questionnaire covered a wide range of opinions, but some general trends were discernible. In reply to the most important question, regarding the possible adverse effect of decreasing publication, the results were as follows: 36 percent of the respondents indicated they would be adversely affected "quite a lot" by such a decision. Only 18 percent checked "not at all," while 44 percent checked "little." (Two percent of the questionnaire respondents had no opinion.) While "little" may be an ambiguous term, it can be reasonably concluded that 80 percent of the respondents would be adversely affected to some degree by decreasing the frequency of publication of the PROCEEDINGS.

Had it been necessary to reduce the frequency of publication, an overwhelming majority of the respondents (71 percent) indicated a preference for the appearance of the magazine every other month, rather than on a quarterly basis.

Responses to questions on the usefulness of the various content items of the PROCEEDINGS were of great interest and will be helpful in ensuring that the magazine will continue to meet its readers' needs and tastes. The most useful content items, judging by the questionnaire results, are: "Lessons From Casualties," feature articles, and National Transportation. Safety Board and Commandant's actions on maritime casualties. Such regularly published items of information as notices of changes to Federal regulations, activities of the Merchant Marine Council, and summaries of "Navigation and Vessel Inspection Circulars" were next in usefulness. Respondents indicated that "Nautical Queries," "Maritime Sidelights," "Approved Equipment," "Stores and Supplies," and "Affidavits" were least useful, yet these items all received 60 percent or better responses of "very useful" and "moderately useful." No content items of the PROCEEDINGS received "of little use" responses greater than 35 percent of the total, and most were considerably below that figure.

Of the 600 questionnaires tabulated, 343 (or 57 percent) included additional comments. Several respondents attached extra pages, and some wrote formal replies on company letterheads to emphasize their opinions. In all cases, comments were helpful and often laudatory. Many respondents expressed considerable concern over the possibility of limiting the "PROCEEDINGS," while others singled out parts of the magazine they particularly enjoyed. A number of specific suggestions for articles, regular departments, and improvements were received, and these comments will be considered in the continued publication of the PROCEEDINGS.

The staff of the PROCEEDINGS is grateful to all readers who took the time to complete the "Reader's Questionnaire" and offer words of encouragement and advice. A publication such as this can be effective only with the participation of its readers, and your opinions regarding the PROCEEDINGS and the subject of maritime safety are always welcome.

A reminder that any reader may become an author seems appropriate at this point. The PROCEEDINGS is dedicated to safety, and this is a vital subject to everyone working in the maritime industry. Everyone has ideas about safety, and there is much to be gained by the exchange of these ideas. The PROCEEDINGS staff is always looking for articles, anecdotes, and illustrations relating to safety.

There are numerous possible subjects for articles: Safety programs aboard your ship, personal experiences, safety awards, and technical innovations. If you have doubts about submitting, send a query describing your idea. The PROCEEDINGS' staff can assist in developing and writing articles. All material submitted will be carefully considered for publication.

There is no payment for material published in the PROCEEDINGS, other than the satisfaction of sharing your work with others. Credit for published material will be given to the author, and submissions may be selected and edited at the editor's discretion. Unused items will be returned if accompanied by a stamped, self-addressed envelope.

All correspondence should be directed to: Editor, Proceedings of the Merchant Marine Council, U.S. Coast Guard Headquarters, 1300 E Street NW., Washington D.C. 20591.

### ILO'S 50TH ANNIVERSARY



## The International 1919-19 Labor Organization Aids Seafarers

THE International Labor Organization was founded in 1919 to advance the cause of social justice and, in so doing, to contribute to the establishment of universal and lasting peace. In 1946 it became the first specialized agency associated with the United Nations. It is an intergovernmental agency, but employers and workers as well as governments take part in its work. The number of ILO member countries is 121.

One of the primary functions of the ILO has always been to raise standards by building up a code of international law and practice. International labor standards are set by the annual International Labor Conference in the form of conventions and recommendations. Each convention is a legal instrument regulating some aspect of labor administration, social welfare, or human rights; it is conceived as a model for national legislation. A convention is binding only on member countries which have ratified it.

The maritime industry, in view of its unique and highly international character, has always received the special attention of the ILO. This is reflected by numerous conventions and recommendations concerning seafarers adopted through the years by the International Labor Conference, which when taken together comprise a comprehensive set of international standards governing conditions of work in this industry. Other international instruments have been adopted dealing with the working conditions of fishermen, port workers, and inland boatmen. These instruments, which are primarily aimed at the establishment of minimum standards of life and work, have had an important influence both on determining the terms of collective agreements and upon the national legislation laying down labor conditions in the maritime industries of various countries throughout the world. The United States, which has ratified some of these instruments, is one of many countries which through the years have improved the employment conditions of seafarers to the point where they now compare very favorably with those enjoyed by workers in industries ashore.

Some of the various conventions and recommendations concerning the safety of maritime workers which have been adopted over the years are indicated on page 165.

The ILO is now marking its 50th anniversary of service. During the past half century the maritime industries of countries throughout the world have made great use of the ILO and its machinery in seeking solutions to numerous labor and social problems. The ILO will continue to play its role in the development of these industries, as well as in the promotion of greater efficiency and safer working conditions through the establishment and maintenance of progressive maritime labor standards.

Consideration of maritime problems begins with the Joint Maritime Commission, an ILO advisory body consisting of shipowners, seafarers, and representatives of the ILO's Governing Body. The Governing Body and the International Labor Conference take action on the recommendations and preparatory work of the Commission with a view to the adoption of international instruments. Seven sessions of the Conference have so far been held to discuss exclusively maritime questions, and it is expected that the next session will be convened in 1970.

Much of the ILO's work in the maritime field is carried out through various committees, and by participation in conferences and seminars. The Joint Maritime Commission recommends the convening of committees to explore specific matters in detail. These and other meetings unite representatives of governments, shipowners, and seafarers.

Some of the more recent results of the ILO's efforts include the establishment of international standards relating to the training of seafarers in the use of aids to navigation, the proper handling of lifeboats and other lifesaving apparatus, and in the use of firefighting equipment. These standards were developed in collaboration with the Intergovernmental Maritime Consultative Organization (IMCO). Future meetings will be held to consider the development of training standards for officers and crew of large ships and vessels carrying hazardous cargoes.

Special committees recommended by the Joint Maritime Commission have discussed such questions as conditions of work in the fishing industry and employment conditions of Asian seafarers. Research is being carried out on many levels into such matters as recruitment, decasualization, crew accommodation, vocational training, certificates of competency, welfare, and safe working conditions. Plans are underway to develop standards relating to dockworkers and inland boatmen. Other problems to be studied include noise abatement on board ship, labor problems arising from shipboard technical changes, vocational training of seafarers, and accident prevention on board ship.

Publishing is an important facet of the work of the ILO. In a recent ef-

## CONVENTIONS

#### SEAFARERS

No. 53—Officers' Competency Certificates, 1936 No. 58—Minimum Age (Sea) (Revised), 1936

No. 69-Certification of Ships' Cooks, 1946

No. 73—Medical Examinations (Seafarers), 1946 No. 74—Certification of Able Seamen, 1946

No. 109-Wages, Hours of Work and Manning (Sea) (Revised), 1958 DOCKWORKERS

No. 32-Protection Against Accidents (Dockers) (Revised), 1932

FISHERMEN

No 112-Minimum Age (Fishermen), 1959

No. 113-Medical Examination (Fishermen), 1959

No 125-Fishermen's Certificates of Competency, 1966

#### RECOMMENDATIONS

SEAFARERS No. 77-Vocational Training (Seafarers), 1946 No. 105-Ships' Medicine Chests, 1958 No. 106-Medical Advice at Sea, 1958 No. 108—Social Conditions and Safety (Seafarers), 1958 No. 109-Wages, Hours of Work and Manning, 1958 DOCKWORKERS No. 34—Protection Against Accidents (Dockers) Consultation of Organization, 1929 No. 40-Protection Against Accidents (Dockers) Reciprocity, 1932 FISHERMEN No. 4-Hours of Work (Fishing), 1920 No. 126-Training of Fishermen, 1966 INLAND BOATMEN No. 8-Hours of Work (Inland Navigation), 1920.

fort, a joint committee of the ILO and the World Health Organization (WHO) on the health of seafarers unified, modernized, and coordinated the three existing forms of medical assistance to ships at sea: The ships' medical guide, the medicine chest, and, again in cooperation with IMCO, the means of obtaining medical advice by radio. Thus the new International Medical Guide for Ships, which includes the text of the medical section of the International Code of Signals, represents the first attempt to give an international approach to the problems encountered by a ship's captain faced with injury or disease on board his ship.

Technical cooperation activities of

the ILO have expanded rapidly in recent years, to the point where they now account for more than half of the work of the Organization. In recent technical assistance to the maritime industries, the ILO is executing a project establishing and initially operating a training center for masters and deck personnel of the inland water transport industry in East Pakistan and has carried out feasibility studies for the training of seafarers in the Ivory Coast and fishermen in Tunisia. It has also furnished fellowships for the study of labor administration in inland water transport and technical advice for the port industries and for maritime labor legislation of several countries. t

## SS PANOCEANIC FAITH OF LIFE NORTH PACIFIC

#### COMMANDANT'S ACTION

1. The record of the Marine Board of Investigation<sup>1</sup> convened to investigate subject casualty has been reviewed and the record, including the Findings of Fact, Conclusions and Recommendations, is approved subject to the following comments and the final determination of the cause of the casualty by the National Transportation Safety Board.

#### SYNOPSIS OF FINDINGS OF MARINE BOARD OF INVESTIGATION

1. On 9 October 1967, the SS Panoceanic Faith foundered in the North Pacific Ocean after departing from San Francisco, Calif., on 29 September 1967, bound for Yokohama, Japan, her next scheduled bunkering port, with a cargo of 10,269.5 tons of bulk ammonium sulphate for Bombay, India. The casualty resulted in the loss of 36 lives with only five survivors out of the crew of 41 persons.

2. On 4 October 1967 the ship was encountering heavy seas and had averaged 8 knots since departure. The forepeak spaces were flooding and weathertight doors and portholes in the forward part of the midship house commenced leaking. By 6 October 1967 the vessel was shipping heavy seas forward. By early afternoon on 7 October 1967, the tarpaulin on the starboard forward corner of No. 1 hatch was adrift and the corner of the hatch pontoon exposed. On 8 October 1967 the vessel was down by the head, and a starboard list was developing. The weather did not improve and a shortage of fuel and water developed. Advice concerning the nearest bunkering port was requested from the owners. There had been numerous repairs to the condenser, boilers, and auxiliaries. The speed was 4 knots.

3. During the early morning on 9 October 1967 several attempts were made to bring the ship about to port, but wind and sea conditions forced the ship back to a westerly heading. As daylight broke it was seen that the steel pontoon hatch covers of No. 1 hatch were missing.



The Panoceanic Faith noses downward to a watery grave. Abortive efforts to launch a lifeboat contributed to the loss of 36 of the 41 persons on board.

The port door of the mast house between No. 1 and No. 2 hatches was open and cargo booms were adrift. At 0618 the SS *Panoceanic Faith* requested any ships in the area to stand by for assistance. At 0820 she reported that immediate assistance was required. A report by the vessel at 0905 advised that the seas and swells were intensifying and that she was developing a heavy starboard list. She was unable to change course, unable to increase speed due

<sup>&</sup>lt;sup>1</sup> Due to space limitations the Coast Guard record of the Marine Board of Investigation is not printed herein.

## FOUNDERING WITH LOSS OCEAN, 9 OCTOBER 1967



Floating debris was all that remained of the Panoceanic Faith. Two crewmen managed to cling to pieces of the debris and were rescued by vessels converging on the scene.

to boiler trouble, and unable to maintain lube oil suction due to the list. At 1045 she reported that her speed was 3 knots. Aircraft arrived on the scene and found the ship listing with its forward decks awash. At about 1415 tubes in the port boiler ruptured due to the inability to maintain the water level in the boiler and the fires were put out. Shortly thereafter the master ordered the engine room evacuated and the vessel abandoned. 4. Attempts to launch the port lifeboat, on the lee side of the ship, by releasing the winch brake were unsuccessful. The combined pushing efforts of several men started the davits down the tracks. The davits reached the bottom of the tracks but the boat failed to lower. Slack was observed in the wire runner to the falls after the lifeboat winch was turned with a hand crank. When 25 crewmembers with lifejackets were placed in the boat to take up the slack the forward davit arm collapsed and the boat fell spilling most of the men in the water. Soon thereafter the ship sank bow first.

5. Three of the survivors who were able to board one of the inflatable liferafts dropped by aircraft were picked up on the morning of 10 October 1967 by one of the ships participating in the search. The other two survivors were found on wooden debris that had floated free and were rescued by another ship on the night of 9 October 1967.

#### REMARKS

1. The cause of the casualty to the extent determinable and the contributory factors are set forth in considerable detail in Conclusions No. 1, No. 2, and No. 3 of the Marine Board of Investigation.<sup>2</sup> There is ample evidence that the tarpaulins on No. 1 hatch were observed adrift 2 days prior to the loss of the vessel and that remedial action was not initiated in sufficient time to prevent flooding in No. 1 hold and the eventual loss of the No. 1 hatch steel pontoon covers in heavy weather. While there is a possibility that there may have been a failure of the bulkhead between holds Nos. 1 and 2 to cause progressive flooding as concluded by the Board, there is no direct evidence of such a structural failure. Other possibilities such as the entrance of seawater into No. 2 hold through other means such as the open masthouse door or through the bilge system in sufficient quantity to dissolve the cargo should not be overlooked.

See footnote 2 on page 168.



When aircraft arrived on the scene, the distressed Panoceanic Faith was listing to starboard, her forward decks awash. Inflatable liferafts were dropped near the sinking ship, but only three men managed to survive aboard one of the rafts.

#### ACTION CONCERNING THE RECOMMENDATIONS

1. Recommendation No. 1 of the Marine Board of Investigation contained a proposal that all gravity davits on U.S. vessels be modified if a design study indicates

1. It is concluded that the primary cause of the casualty was the progressive flooding of Nos. 1 and 2 holds resulting in a large reduction of freeboard and an increased trim by the bow. This condition, aggravated by the large angle of heel, resulted in a loss of longitudinal stability sufficient to cause the vessel to plunge by the bow. The large angle of heel was caused by unsymmetrical flooding and shift of the cargo.

2. The flooding of No. 1 hold occurred as the result of the canvas hatch covers loosening and eventually being lost in heavy weather. During the night of 8 October the steel pontoon hatch covers were lost and the hold was completely filled and open to the sea. Since the hatch covers on No. 2 hold appear to have been reasonably secured until shortly before the ship sank it is probable that the principal flooding of No. 2 hold resulted from a failure of the bulkhead between holds Nos. 1 and 2.

3. That remedial action was not taken in sufficient time to prevent flooding of No. 1 hold when the canvas hatch covers were observed to be loose two (2) days prior to the loss of the vessel. At this time the master had sufficient control of his vessel to slow or come about as necessary to permit the hatch to be secured. When such action was apparently attempted on the morning of 9 October, the maneuver could not be accomplished. This failure to take remedial action or at least to have made the plight of the vessel known, is considered to constitute evidence of negligence on the part of the master. that there is any mechanical feature which will prevent the boat from being lowered when the davit arms are extended and the degree of adverse list exceeds 15°. A review of davit specification and plans shows that the design is such as to insure that the cradle hooks (called "horns" in the Report of the Marine Board of Investigation) will release the traveling blocks to allow the lifeboat to lower against an adverse list only up to 15°. The design criteria for this equipment on inspected U.S. Merchant vessels complies with the regulations prescribed by the Coast Guard and the International Conventions for the Safety of Life at Sea. Although there is no requirement on either the national or international level for provisions to enable lifeboats to be lowered against adverse lists in excess of 15° the davits may nevertheless do so under certain conditions, especially when subjected to dynamic forces associated with vessel movement. There is a possibility that this is what happened on the SS Panoceanic Faith as parts of the transcript of the testimony indicate that the traveling blocks did disengage from the cradle hooks, allowing No. 2 lifeboat to lower 1 or 2 feet. Testimony of the survivors indicates that No. 2 lifeboat was swinging freely on the falls, and that they were of the opinion that the lifeboat failed to lower further due to frozen sheaves. This also accounts for the action of the chief mate in using the weight of additional crew members in the boat in an effort to make it lower to the water.

Although davits have been built that will lower lifeboats against adverse lists much greater than 15° their opera-

<sup>&</sup>lt;sup>2</sup> Conclusions No. 1, No. 2, and No. 3 of the Marine Board of Investigation follows:

tion is not the same as those currently approved. A requirement for their use on merchant vessels would compromise the simplicity and reliability of existing davits which require only the release of a brake to lower a boat. A simple modification of the cradle hooks on existing davits would not significantly improve their ability to lower boats against greater adverse lists and would sacrifice some of the safety and automatic operating features incorporated in their design. To make provisions for adverse lists in excess of 15° the regulations for cargo vessels require sufficient lifeboats on each side to accommodate all persons on board (a 200-percent total lifeboat capacity) as well as sufficient liferafts to accommodate one half of the total persons on board.

There is a possibility that the collapse of the forward davit arm was due to an additional load imposed by the trim of the vessel, a parted fall, or a broken sheave. A sudden release of the slack in the runner could also have been a contributory factor. For such vessels contracted for on or after 26 May 1965 there is an additional requirement in the regulations that the design, arrangements, and installation of davits be such that loaded lifeboats can be safely lowered with a 10° trim. The davit arms on vessels built after that date were strengthened to meet this additional requirement. Inoperable sheaves and defective falls are the most common causes of failure and these can be prevented by a proper maintenance and replacement program.

2. The feasibility of a requirement for lifejacket lights as proposed in Recommendation No. 2 of the Marine Board of Investigation has now been under active review for a number of years. Although the "International Convention for the Safety of Life at Sea, 1960," and Coast Guard regulations pertaining to vessels on international voyages have adopted requirements for a whistle attached to each lifejacket to facilitate the rescue of persons in the water as more practical and reliable than lifejacket lights it is possible that technological developments will make a requirement for lights feasible in the future. A proposal to require lifejacket lights was rejected by the Intergovernmental Maritime Consultative Organization Subcommittee on Life-Saving Appliances at a meeting only a few weeks prior to the SS Panoceanic Faith casualty. Since this casualty did not add materially to the information already available at a time when all of the problems involved were fully considered, further action is not immediately indicated.

3. Mechanical disengaging apparatus which will simultaneously release both ends of the boat when under tension is already required by regulations applicable to vessels contracted for on or after 19 November 1952. Recommendation No. 3 would extend this requirement retroactively to vessels in ocean and coastwise service regardless of their date of construction. The requirement for means of simultaneous release under tension was adopted to facilitate the release of lifeboats in the water and it was not considered feasible to make the requirement applicable to existing lifeboats where alterations would be necessary. This case does not illustrate a need for an amendment to the regulations as recommended because the hazards associated with dropping loaded lifeboats from the height of the davit heads are obvious and it is doubtful that provisions for dropping the lifeboat by actuating a simultaneous release mechanism inside the boat before it was lowered would have saved any additional lives.

4. Although there is evidence in the record that orders were given to launch the inflatable liferaft and that the liferaft was afloat after the ship sank, it appears likely that proper abandon-ship procedures were not followed and that there is need for the additional training recommended by the Marine Board of Investigation. There are requirements for training in abandon-ship procedures already in force on both the national and the international level. Before they may serve as such on U.S. vessels, able seamen and lifeboatmen are examined in the procedures prescribed in CG-175 "Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department." This publication is available at no cost at USCG Marine Inspection Offices. Existing regulations include the preparation and launching of lifeboats and liferafts in the list of special duties that must be set forth in the station bill and require the master to conduct such drills and give such instructions as are necessary to insure that all hands are familiar with those duties. Joint voluntary efforts, as recommended by the Marine Board of Investigation, as well as individual efforts on the part of ship operators, unions, and the Government are now affording better training in the care and handling of inflatable liferafts. The number of maritime schools and training facilities has been increasing and training films have been prepared by two liferaft manufacturers to supplement other training aids. A copy of this report will be provided the U.S. Maritime Administration, the Government agency having primary statutory responsibility for the training of maritime personnel. The report will also be widely disseminated for the use of other persons and organizations involved in the training of seamen.

> W. J. SMITH, Admiral, U.S. Coast Guard, Commandant.

28 October 1968.

#### September 1969

359-158-69-2

#### ACTION BY THE NATIONAL TRANSPORTATION SAFETY BOARD

This casualty was investigated by the United States Coast Guard under the authority of R.S. 4450 (46 U.S.C. 239) and the regulations prescribed by 46 CFR 136. The Marine Board of Investigation convened in San Francisco, Calif., beginning on October 26, 1967. A Member of the National Transportation Safety Board attended the proceedings. The report of the Marine Board of Investigation and the Commandant's action thereon are included in and made a part of this report. In accordance with sec. 5(b)(1) of Public Law 89-670 (49 U.S.C. 1654(b)(1)), the National Transportation Safety Board has considered only those facts in the Coast Guard report which are pertinent to the Board's statutory responsibility to make a final determination of cause or probable cause, and to make recommendations to prevent recurrence of similar accidents.

#### ANALYSIS AND CONCLUSIONS

Based on its review of Coast Guard casualty reports, the Board noted that this casualty resulted in more fatalities than any other single accident to inspected cargo vessels in the past 10 years. After completion of the drydock examination and load line survey by the Coast Guard and American Bureau of Shipping, June 17, 1967, and the Coast Guard biennial inspection, June 20, 1967, the SS Panoceanic Faith was reported to be in satisfactory condition and fit for ocean cargo service, and retained her classification. However, based upon the engineering casualties involving the starboard boiler, condenser, and auxiliaries during the fatal voyage, it would appear that at the time of departure, 2358 G.m.t., September 29, 1967, the vessel was not in all respects fit for this voyage. It was manned in accordance with the applicable Coast Guard regulations. She foundered in sea conditions which, while severe, were not unusual for the area and time of year. This vessel was equipped with the lifesaving equipment required by applicable Coast Guard regulations, as well as those specified by the Safety of Life at Sea (SOLAS) Convention of 1960. Communications alerting other vessels of her critical condition were initiated shortly after daybreak, but the first vessel reached her over 12 hours later, in darkness. Four vessels were reported to be within 100 miles of the Panoceanic Faith, and one only 53 miles from her position. The loss of 36 out of a crew of 41 involved a number of causal factors.

#### SINKING CAUSAL FACTORS

The primary cause of the vessel's sinking, as stated in the Coast Guard portion of the report, was progressive flooding of the forepeak compartments, then No. 1 hold, and subsequent partial flooding of No. 2 hold. This flooding, combined with loss of freeboard due to a starboard list of 35°, reduced the longitudinal stability below the minimum required for buoyancy, and the ship sank bow first. The list was caused by free water in the holds and shifting of the ammonium sulphate cargo. The Board concurs in the Commandant's hypothesis concerning the probable explanation of flooding in No. 2 hold through an open masthouse door. Failure of the Master to secure the loose tarpaulin on the corner of No. 1 hatch, when reported to him 2 days before sinking, ultimately resulted in this hatch becoming open to the boarding seas. Later efforts to bring the ship about were futile.

The master was lost in this accident, and his reasons for failing to slow or alter course to effect repairs will never be known. However, his messages to the Panoceanic Faith's operators indicates that he was concerned about shortage of fuel, and slow progress en route to Yokohama. He probably underestimated the danger of flooding and intended to await better weather. The heavy seas precluded sending personnel forward without losing distance towards his destination and burning additional fuel by altering course. The vessel was overloaded on departure, and had sacrificed reserve fuel to load the maximum amount of cargo. The delay in sending an urgent distress message requesting assistance is a further indication that he did not immediately recognize the danger to his vessel when the open hatch was observed at daybreak. Vision to No. 1 hatch was obscured by the masthouse between Nos. 1 and 2 hatches, and may have prevented the situation from being apparent to him sooner.

#### SURVIVAL CAUSAL FACTORS

The only lifesaving equipment of the *Panoceanic Faith* utilized after the vessel sank were the life preservers. Attempts to lower the No. 2 motor lifeboat were unsuccessful, as the starboard list exceeded 15°, beyond which the davits would not release the traveling boat block.

The Board noted in Coast Guard casualty reports two other sinkings in which the list of the ship precluded lowering a lifeboat; namely, the SS *Smith Voyager*, and the SS *Santa Leonor*. The inability to start the lifeboat engine is related to the fire and boat drill conducted on the second day of the voyage. At this drill, the lifeboat engines were not started, nor was the boat lowered to the rail, as required by regulations. Instructions on the handling of the ship's 25-person inflatable liferaft were not given.

Just prior to sinking, the liferaft was thrown overboard; it inflated properly with the canopy up, but it drifted away, out of reach of the crew in the water. Had the liferaft been controlled alongside, it is probable that many more survivors would have been rescued. The Board feels that inflatable liferafts would have withstood the sea conditions, and would have afforded better protection, than the lifeboats in the existing conditions. The life preservers worn were equipped with whistles, but not lights. Waterproof lights for life preservers are not required by current applicable regulations. Lack of signalling capability, coupled with arrival of the first rescue vessel after dark, resulted in the loss of a number of the crew. Estimates of survival in the 50° water vary from  $1\frac{1}{2}$  to 15 hours.

The first rescue aircraft to reach the *Panoceanic Faith*, a Navy P2H, dropped seven liferafts after the vessel sank, of which only three inflated. This type of liferaft requires manual actuation of the inflation system by the persons in the water. Crewmembers in the water experienced extreme difficulty in getting into one of these liferafts due to exhaustion, numbness, and lack of an embarkation ladder. The bailer and hand-generating signal light provided in this liferaft were ineffective. Only three out of seven crewmembers survived the night in the liferaft dropped by aircraft. During the night, lights of potential rescue vessels were sighted, but no means of signalling were available. One survivor was rescued the night of the sinking because he was able to attract attention with a flashlight he fortunately had in his pocket.

#### SEARCH AND RESCUE (SAR) FACTORS

Communications and rescue operational factors were also causal factors in the heavy loss of life in this casualty. The Coast Guard utilized its Automated Merchant Vessel Emergency Rescue (AMVER) system to locate vessels in the vicinity of the stricken Panoceanic Faith. This voluntary system uses a computer to advance the position, course, and speed of merchant ships subscribing to AMVER, and enables the search and rescue coordinator to determine which vessels are in the distress area and best able to render assistance to a vessel in distress. At the time of this distress, the AMVER surface picture showed the MV Kokusai Maru to be 53 miles away from the Panoceanic Faith, the Ionian Skipper 75 miles, the Silver Bay 95 miles, the MV Keisho Maru 100 miles, the General 125 miles, the SS Steel Seafarer 135 miles, and the MV Igaharu Maru 165 miles. The accuracy of these positions is dependent on voluntary updating of each vessel's predicted course and speed. Due to heavy seas, these positions probably were not accurate, as was noted in the AMVER surface picture and actual position of the Igaharu Maru. In this case, the Japanese MV Igaharu Maru was the first vessel to reach the position of the Panoceanic Faith the evening of her sinking, and the Norwegian MV Visund the next morning. Unfortunately, neither reached the scene before darkness. The vessels reported to be nearest the sinking ship either did not hear the Panoceanic Faith's distress messages, or were unable to reach her due to sea conditions or other circumstances.

Most of the ships reported to be nearest the *Panoceanic* Faith were cargo vessels, and under the 1960 SOLAS Convention were required to have on board only one

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radio operator who normally guards the distress frequency 8 hours a day. Cargo ships over 1,600 gross tons are required to be equipped with a radiotelegraph autoalarm which sounds an alarm on the bridge when keyed by the autoalarm signal of four or more long dashes. When the alarm is tripped, the radioman is notified to guard 500 kHz. Under normal conditions, the autoalarm signal is effective in tripping alarms on other ships within a 200mile radius. The SAR radio station at Adak heard a weak autoalarm signal transmitted by the Panoceanic Faith at 0630 (All times are zone +11 time). The signal was weak and there was considerable interference from other vessels transmitting on 500 kHz. The Panoceanic Faith requested the Coast Guard radio station at Adak to transmit the autoalarm signal shortly after the crew was mustered to advise them of the emergency condition of the vessel. Compliance with this request would not have been effective to alert ships in the vicinity of the distressed vessel. However, had one of these ships been requested to transmit the autoalarm signal, the nearest ships would have guarded the distress frequency and proceeded to render assistance sooner. No other ships in the vicinity of the Panoceanic Faith indicated they heard her autoalarm signal. No action was taken on this request, nor reason given in the Coast Guard communications summary. Apparently, her signal output strength was low, as difficulty was experienced by other vessels and shore stations in communicating with her. Had her autoalarm signal strength been adequate, it is probable that ships closer to her position would have received her urgent request for assistance, and reached her prior to sinking, or at least before dark.

The master of the Panoceanic Faith sent his first distress message about 0618, shortly after daylight, when he observed the open No. 1 hatch. This message was intended to alert vessels in his vicinity as to his ship's condition. The master requested they stand by to assist his ship. He then transmitted the autoalarm signal, in hope that radio operators on vessels in the vicinity were listening on 500 kHz. Based on the radio logs of the SS Hawaiian Merchant and MV Igaharu Maru, the first urgent request for immediate assistance was received about 0720. The Coast Guard broadcast an urgent Notice to Mariners from the SAR center in Juneau at 0805, requesting any vessels in the vicinity to proceed and assist the Panoceanic Faith. At 0958, the Panoceanic Faith transmitted an SOS, giving her position and requesting immediate assistance. This position was later found by the Igaharu Maru to be in error by about 15 miles. The radio logs of several vessels recorded SOS and XXX signals from the Panoceanic Faith between the first and latter message. The delay in transmitting an urgent request for help, the error in her estimated position, and the rough seas, contributed to delay the arrival of potential rescue vessels on the scene before darkness.



Hatch covers such as pictured here were instrumental in the loss of the Panoceanic Faith. Two days before the foundering of the vessel, the hatch covers on No. 1 hold were loose. No remedial action was attempted until it was too late. Boarding seas flooded No. 1 hold, leading to further flooding and eventually a fatal loss of stability and buoyancy.

#### PROBABLE CAUSE

The probable cause of this vessel's foundering was failure of the master to have the tarpaulins secured on No. 1 hatch when they were observed to be loose. Neglecting to effect prompt repairs ultimately resulted in this hold being open to boarding seas and complete flooding. This flooding, combined with flooding in the forepeak spaces, and partial flooding of No. 2 hold, aggravated by loss of freeboard due to extreme starboard list, resulted in loss of longitudinal stability and sufficient buoyancy. The *Panoceanic Faith* sank bow first. It is possible that the master's concern about the fuel supply, and slow speed made good, may have influenced his actions. He obviously underestimated the seriousness of these conditions.

The high loss of life resulted from the following causal factors:

1. Failure of the master to recognize the critical condition of his vessel, and request assistance earlier.

2. Inability to lower the ship's lifeboats.

3. Failure to control and utilize the vessel's inflatable liferaft.

4. Cold air, low water temperatures, and rough seas.

5. Difficulty in reaching and boarding liferafts dropped by rescue aircraft.

6. Failure of the autoalarm systems on the Panoceanic Faith and other vessels in her vicinity to alert them of her distress.

7. Failure of the emergency communications system to effect the arrival of potential rescue vessels at the *Pan*oceanic Faith's position prior to her sinking or before darkness. 8. Lack of effective means for survivors to signal rescue vessels after darkness.

9. Inability of the survivors in the SAR liferaft to keep it bailed out, and keep dry, due to lack of an effective bailer.

#### RECOMMENDATIONS

The National Transportation Safety Board concurs in the Commandant's action on the recommendations of the Marine Board of Investigation, except for his deferral of the Marine Board's recommendation requiring lights for life preservers, which the Safety Board supports. In this casualty, all the survivors recommended that these lights he required, and attributed loss of lives to lack of such a signaling device.

The Safety Board recommends that:

1. The Coast Guard consider amending the applicable regulations to require that each life preserver be equipped with a waterproof battery-powered light.

 The Coast Guard consider requiring sufficient inflatable liferaft capacity to accommodate all persons on board cargo vessels.

3. The Coast Guard consider proposing to the Intergovernmental Maritime Consultative Organization, as an amendment to the Safety of Life at Sea Convention of 1960, the previous recommendation, and requirements for small, easily launched emergency boats, one on each side, in lieu of the presently required larger lifeboats, for future cargo vessel design.

4. The Coast Guard study means of improving embarkation methods and equipment, and procedures for controlling inflatable liferafts at embarkation stations.

5. The Federal Communications Commission study the effectiveness of radio autoalarm signals and actuation of the autoalarm systems, and, based on this evaluation, propose needed changes to SOLAS requirements, through IMCO.

6. The Coast Guard stress the need for compliance with the requirements for lifeboat, fire, and emergency drills, including instruction in the use and handling of inflatable liferafts.

7. The Coast Guard initiate an examination program of airborne SAR liferafts at Coast Guard, Navy, and Air Force units to insure that they are equipped with embarkation ladders, adequate signaling, and bailing equipment; and, consider the feasibility of trailing devices from liferafts dropped by SAR aircraft, which would facilitate recovery and use of these liferafts by persons abandoning ship.

By the National Transportation Safety Board: Adopted this 14th day of May, 1969:

- (S) JOHN H. REED,
  - Chairman.
- (s) OSCAR M. LAUREL,
  - Member.
  - (s) JOSEPH J. O'CONNELL, Jr., Member.
  - (s) LOUIS M. THAYER, Member.
  - (s) FRANCIS H. MCADAMS,

Member.

#### NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 4-69

26 JUNE 1969

Subj: Inclusion of Social Security numbers on Certificates of Discharge and Discharges for Masters

#### PURPOSE

The purpose of this circular is to provide instructions for including social security numbers on certificates of discharge (CG-718A and CG-718E) and instructions to commence issuing discharges for masters.

#### DISCUSSION

In accordance with a Government-wide policy, Federal agencies which are assigning numbers to persons for identification purposes are shifting to a single numbering system whereby only social security numbers will be used. In preparation for this change and an automated system of recordkeeping for merchant seamen, social security numbers are required on all copies of certificates of discharge.

Since masters have not been receiving discharges, complete records of their service are not readily available from Coast Guard records. In order to maintain complete statistics on a mariner's career, discharges for service as master shall be submitted on the same time basis as other crew members.

#### ACTION

Effective immediately, all masters, pursers, and shipping commissioners are requested to place the seaman's social security number in the lower left hand corner of the discharge and the copies thereto.

Discharges for masters shall be issued on the same time basis as other crew members; i.e., from the date the voyage or his employment commences until the date the voyage or his employment terminates as shown on the articles or CG 735T. Line No. 1 on the CG 735T should be used for the master's record. Discharges for coastwise voyages may be prepared and signed by the master.

## nautical queries

#### DECK

Q. Given the following data:

	Weight (tons)	Vertical Center of Gravity (feet)	Longitudinal Center of Gravity (from forward perpendicular) (feet)
Light Ship (including crew			
and stores)	4,000	20	300
#1 and 2 tanks	1,000	26	100
#3 and 4 tanks	1,500	25	175
#5 and 6 tanks	1,500	24	250
#7 and 8 tanks	1,500	24	325
Fuel oil and water	500	10	300
Displacement	10,000	-	

Vertical distance from keel to metacenter at 10,000 tons displacement is 26.1 ft.

Moment to trim one inch at 10,000 tons displacement is 800 ft/tons.

Mean draft at 10,000 tons displacement is 26 feet.

The longitudinal center of buoyancy at 10,000 tons displacement is 259.5 feet from the forward perpendicular. (at level trim).

The free surface correction is 0.5 foot.

\*\* .\* \*

REQUIRED: The Metacentric Height Corrected for Free Surface

The Forward and After Draft (assuming the tipping center is located at the mid-length of the vessel).

Weight (tons)	Center of Gravity (feet)	Vertical Moments (ft/tons)	Longitudinal Center of Gravity (feet)	Longitudinal Moments (ft/tons)
4,000	20	80,000	300	1, 200, 000
1,000	26	26,000	100	100,000
1,500	25	37, 500	175	262, 500
1,500	24	36,000	250	375, 000
1,500	24	36,000	325	487, 500
500	10	5,000	300	150,000
10, 000		220, 500		2, 575, 000
		=22.1 ft. 10,000		=257.5 ft. 10,000

A. 26.1-22.1=4 feet GM 4-0.5=3.5 feet Metacentric height corrected for free surface is 3.5 feet. 259.5-257.5=2 feet trim lever  $\frac{2 \times 10,000}{800}=25$  inches total trim

Mean draft is 26'00"

Fwd draft is 27'00½" Aft draft is 24'11½"

#### ENGINE

Q. What is meant by the term "saturated steam," and how does saturated steam differ from super-heated steam?

A. Saturated steam is dry steam; that is, steam with sufficient heat content to remove all moisture and convert it into steam, but without any more heat content than is required to do this. If the steam, at a certain pressure, has less heat than required for saturated or dry steam, it is no longer dry steam but becomes moist steam containing some water or moisture. If more heat than is required for the saturated condition is added, without rise in pressure, the steam becomes superheated; that is, there is some heat in excess of that required to have the steam dry.

If superheated steam is applied to a steam engine and work performed, the superheat is first converted into work. After this, the dry steam becomes moist and the percentage of moisture is increased as the work continues. Superheated steam can perform more work than dry saturated steam and dry steam more than moist steam, because the heat content per unit is greater as the steam becomes dry and as more superheat is added.

#### SAFETY VALVE

Q. Make a simple sketch showing the top section of a safety valve with a gag properly installed for a hydrostatic test. A.

## ABANDON SHIP!!

Lt. Commander R. G. Burns, USCG

It is hoped that the order to abandon ship will never be necessary on your ship. However, despite the reams of regulations, safety inspections, and improved maintenance programs, several ships are lost each year.

Should you have to abandon your ship and have adequate notice and good daylight weather conditions, proceed as follows:

Calmly and safely launch your lifeboats and rafts. After you are in the boats, do the following:

- Rig your antiexposure cover for protection and to aid rescue units in sighting you.
- (2) Locate the distress signals and have them ready for immediate use.
- (3) Set up and operate the emergency radio.

If your radio operator was able to pass your position to a shore radio station, you can expect rescue forces to be on the scene in a relatively short time. For this reason it is important that you remain as close to the position as possible. Rigging your sea anchor will help.

When a plane or ship is seen or heard, use your distress signals. However, should the plane or ship pass without seeing you, do not waste your distress signals. They are usually running a search pattern and can be expected to return in a reasonable time.

Now change the conditions. It is night, the ship is listing 20°, the wind is 35 knots, seas are running 20–25 feet, and the temperature is 25° F. Most casualties seem to occur in weather similar to this. You can't pick



ILLUSTRATED HERE is a cover installed on a 24-foot lifeboat. The cover was erected in 8 minutes, must still be secured, and ends must be attached.

the time, place, and conditions for trouble.

Under adverse conditions, every man must perform his job efficiently so that the boats and rafts can be launched without starting a disastrous chain of events. A mistake made during boat-lowering operations could result in the death or injury of many men and also render the boat useless.

Once the boat is launched the protecting cover must be immediately erected to protect you and your shipmates from the weather. Do you know how to erect the cover without reading the instructions? Can you find the flashlight in the boat by feel? Also the distress signals? Could you set up and operate the emergency radio?

Remember that should your ship sink, you could very easily find yourself in a boat without an officer. Or you could even be alone!

It will only take a few minutes for you to learn the above items. The equipment should be stowed in the same location in each boat.  $\ddagger$ 

## AMENDMENTS TO REGULATIONS

### Title 46 Changes

SUBCHAPTER I-CARGO AND MISCELLANEOUS VESSELS

#### PART 105—COMMERCIAL FISHING VESSELS DISPENSING PETRO-LEUM PRODUCTS

#### Requirements for Inspection, Equipment, Operation and Manning

On December 27, 1968, a notice of proposed rulemaking regarding an amendment to subchapter I of Title 46, Code of Federal Regulations by adding a new part 105 was published in the "Federal Register" (33 F.R. 19847). In accordance with the notice a public hearing regarding the proposed amendment was held on February 12, 1969, in the Customs Court Room, Federal Office Building, 909 First Avenue, Seattle, Wash., under the direction of the Commander, 13th Coast Guard District. Interested parties were given the opportunity of participating in the rulemaking by submitting written matter in advance of the hearing date and by submitting written and oral matter at the public hearing. After the public hearing, the Commander, 13th Coast Guard District forwarded to the Commandant (CMC), U.S. Coast Guard, Washington, D.C., the public hearing record, including the original written submissions, and his recommendations with respect to the submissions received. On March 25, 1969, in accordance with the provisions of 33 CFR 1.05-30, the Merchant Marine Council, in an executive session, duly considered all the relevant matter submitted. Thereafter, the Merchant Marine Council forwarded to the Commandant, U.S. Coast Guard appropriate recommendations regarding the proposed amendments.

A number of changes are made in the proposed regulations as a result of the oral and written comments received from the interested parties. The effective date of the regulations is changed from July 1, 1969, to December 1, 1969, in view of the fact that the earlier date falls within the fishing season. The proposal to limit the act of dispensing the petroleum products to other vessels only is deleted. The proposed prohibition against galley fires during cargo transfer operations is substantially relaxed. A new paragraph (c), is added to § 105.20-1 providing that plans or sketches of the cargo tanks and piping systems are not required if these installations have previously been accepted by the Coast Guard. Further, in response to the comments received § 105.90-1(h)(1) is amended to permit the continued use on vessels contracted for prior to December 1, 1969, of the associated piping systems of the tanks and containers, if in a satisfactory condition. Section 105.10-20 which defines the term permit is deleted since this term is not used in these regulations. Section 105.10-30 which defines the term tankerman is deleted as unnecessary view of the provisions of in § 105.50-5 Tankerman.

Prior to the enactment of the Act of July 11, 1968, the Coast Guard had instituted an interim voluntary program for inspecting these commercial fishing vessels. Some of the comments received have as their purpose the continuation of the interim requirements developed under this voluntary program. Specifically, it was suggested that the letters of compliance issued by the Coast Guard under the interim requirements be continued in force without further inspection of the vessels until the letters expire.

This suggestion cannot be adopted since most of the letters of compliance issued under the interim requirements contained no expiration date. In any event, the subsequent enactment of the statute does not permit the continued validity of the letters of compliance issued under a voluntary program without statutory sanction. It was further suggested that no cargo plans or sketches of the cargo tanks should be required since none were required under the interim requirements. This circumstance is not considered a valid reason for not requiring plans and sketches of installations not previously accepted. With respect to cargo tanks accepted under the voluntary program this comment has been adopted, as previously stated, by providing that plans or sketches of the cargo tanks and piping systems are not required if these installations have been previously accepted by the Coast Guard.

Comments were received that the fire pump pressure of 60 p.s.i. required by § 105.35-5(b) (2) is "too powerful." It is considered that this pressure is not excessive. This pump provides the minimum pressure required for an effective stream for firefighting purposes on these vessels, Finally, it was suggested that the tanks, the piping systems, the electrical installation, pumps, and firefighting equipment in use on these vessels prior to December 1, 1969, be permitted to be continued in use if in a good condition in the opinion of the Officer in Charge, Marine Inspection. This suggestion would have the effect of exempting existing vessels from practically all the requirements of these regulations and would in a large measure nullify the congressional intent. This suggestion cannot be accepted in this form. However, in response to this suggestion \$105.90-1(b)(1) is amended to permit the continued use of permanently or temporarily installed tanks or containers and their associated piping systems if in the opinion of the Officer in Charge, Marine Inspection they are in a satisfactory condition and are so maintained.

Accordingly, after due consideration of all the relevant matter presented by the interested parties and the recommendations of the Commander, 13th Coast Guard District and of the Merchant Marine Council, the amendment as so proposed in the "Federal Register" of December 27, 1968 (33 F.R. 19847), is hereby adopted subject to the following changes:

1. In the heading of part 105 and of § 105.90-1 and in § 105.50-5(a) the words, "to other fishing vessels", are deleted.

2. In §§ 105.01-1(a), 105.01-5 (a), and 105.01-5(d) and 105.45-1(a) the words, "to other vessels", are deleted.

3. In §§ 105.05-1 (a) and 105.05-1 (b) the words, "for the purpose of dispensing it to other vessels", are deleted and the words "installed permanent tanks or portable containers", are changed to "permanently or temporarily installed tanks or containers".

4. In § 105.15-1(a), fifth line, the words, "it to other fishing vessels, such a", are changed to, "those liquids, the".

5. In § 105.15–10(a), seventh line, the words, "it to other vessels", are changed to, "those liquids".

6. In § 105.50-5(a), last line, the words, "of inspected vessels", are deleted.

7. In the heading of § 105.90-1 and in §§ 105.01-10(a), 105.05-1(a), 105.05-1(b), 105.05-3(a), 105.05-3(b), and 105.90-1(b), the month, "July", is changed to "December".

8. In § 105.05-2(b), second line, the word, "temporary", is changed to "temporarily installed".

9. In § 105.15-1(c), first line, the

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word, "portable" is changed to "temporarily installed".

10. In § 105.10-15(a), sixth line, the word, "at", is changed to "of".

11. In § 105.15-1(d), in both the first and second lines, the word, "and", is changed to, "or".

12. Section 105.15-15(e) is deleted.

13. In § 105.20–1, a new paragraph (c) is added to provide that plans and/or sketches are not required if cargo tanks and piping systems have been previously accepted by the Coast Guard.

14. In footnote 3 of table 105.20-3 (a) (1), the last two words of the first line are corrected to read "with a" and the last word of the second line is corrected to read "the".

15. In § 105.20-3(a)(3), a new sentence is added between the first and second sentence which provides for limber holes at the bottom and air holes at the top of all baffles.

16. Section 105.20-3 (d) is amended to provide that all tanks vented to the atmosphere shall be hydrostatically tested to a pressure of 5 pounds per square inch or  $1\frac{1}{2}$  times the maximum head to which they may be subject to in service. It also provides that a standpipe of  $11\frac{1}{2}$  feet in length attached to the tanks may he filled with water to accomplish the 5 pounds per square inch test.

17. In § 105.20-5 the heading is changed from "Valves and Fittings" to "Piping Systems" and paragraphs (a) and (b) have been interchanged. In the main, the section is amended to provide that the piping shall be copper, nickel copper or copper nickel having a minimum wall thickness of 0.035 inches and that seamless steel pipe or tubing may be used for diesel cargo systems.

18. In §§ 105.20-10(c) and 105.-30-1(b), seventh line in each, the words, "C and", are deleted.

19. Section 105.30-1(a) is revised to provide that in compartments or areas containing tanks or pumps, handling other than Grade E petroleum products, no electrical fittings, fixtures, nor electrical equipment shall be installed or used unless approved for a Class I Group D hazardous location and so labeled by Underwriters Laboratories, Inc., or other recognized laboratories.

20. Section 105.45-5(a) is amended by permitting galley fires during cargo transfer operations provided that prior to transferring Grade B or C cargoes, the tankerman shall make an inspection to determine whether in his judgment galley fires may be maintained with reasonable safety during the transfer operations.

21. Section 105.10-20 Permit is deleted and § 105.10-25 Pressure vacuum relief valve is redesignated § 105.10-20.

22. Section 105.10-30 Tankerman is deleted and § 105.10-35 Commercial Fishing Vessel is redesignated § 105.10-25.

23. In § 105.60-5(a) the words, "dispensing fuel to other fishing vessels", are deleted.

24. Section 105.90-1(b)(1) is amended to substitute the words "Permanently or temporarily installed tanks or containers" for the words, "If installed, permanent tanks or portable tanks or containers"; to delete the words, "to other vessels", and to permit the use of the associated piping systems, if in a satisfactory condition.

25. Section 105.90-1 (b) (2) is amended to substitute the words, "permanently or temporarily installed tanks or containers" for the words, "permanent tanks or portable tanks or containers".

Effective date. Part 105 of Title 46 CFR, as set forth in full hereinafter, is effective December 1, 1969.

Dated: June 2, 1969.

[F.R. Doc. 69-7921; Filed, July 3, 1969; 8:47 a.m.]

The complete text of these changes was published in the Federal Register of July 4, 1969.

#### SUBCHAPTER E-LOAD LINES

#### PART 45—MERCHANT VESSELS WHEN ENGAGED IN A VOYAGE ON THE GREAT LAKES

#### Great Lakes Vessels; Load Lines

On June 24, 1969, a notice of proposed rulemaking regarding an amendment to subpart 45.15 of Part 45, Subchapter E, Title 46, Code of Federal Regulations, by adding a new § 45.15-100 was published in the "Federal Register" (34 F.R. 9754). Interested persons were given 30 days in which to submit written comments, suggestions, or objections regarding the proposed amendment.

No objections have been received and the proposed regulations are hereby adopted without change and are set forth below. Since this amendment is a substantive change which relieves a restriction, the Administrative Procedure Act (5 U.S.C. 553(d)) grants an exception to the 30 days effective date requirement.

(Sec. 2, 45 Stat. 1493, sec. 2, 49 Stat. 888, as amended, sec. 6(b), 80 Stat. 937; 46 U.S.C. 85a, 88a, 49 U.S.C. 1655(b); 49 CFR 1.4(a)(2))

*Effective date:* This amendment shall become effective on the date of its publication in the "Federal Register."

Dated: July 25, 1969.

W. J. SMITH, Admiral, U.S. Coast Guard, Commandant.

#### § 45.15–100 Reduced freeboards for steamers having superior design and operational features engaged on Great Lakes voyages.

(a) Subject to compliance with the additional conditions in paragraph (b) of this section but otherwise in accordance with the usual conditions of assignment, freeboards of steamers over 440 feet in length engaged on Great Lakes voyages, may be computed from the lesser tabular values given by the table 45.15-100(a) in lieu of those given by table 45.15-97(a). TABLE 45.15–100(a)—REDUCED BASIC MIN-IMUM SUMMER FREEBOARDS FOR STEAMERS ON GREAT LAKES VOYAGES

> Freeboard (inches)

#### Length of ship (feet)

440.			,		,										1			,	,							ļ		78	. 2
450.																				,								80	. 7
460.																												83	. 1
470.			Ĵ			2																						85	. 6
480								Ĵ	Ĵ	Ĵ	Ĵ	Ĩ	-				Ċ			Ĩ								88	1
490			`	Ċ	'		ľ		`	•	'	ì	`	'	'	`	•	•	•	•				•	Ì	ſ	Ť	90	6
500			1	•	•	•	•	1	1	•	•	•	ì	•	•	•	1	•	•	•		•	•	1	í	ì	•	93	1
510			1	Î	•	1	•		1	1	ľ	î	•	•	•	î	•	•		•			1		1		1	05	6
520		`	•		•	-	-	•	•	•	•	•	•	'	'	•	-	•	•	•	•	*	,	•	•	'	*	08	
520		1	-	•	•	•	•	'	1	•	•	1	-	•	•	1	•	•	*	۴	1	•	•	•	'	*	*	100	
540	•	1	Ŧ	1	•	1	•		-	1	•	1	1	•	•	•	•	*	*	٦	•	,	-	*	î	•	1	100	
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550.	*	•	•	•	•	•	٠	٠	-	•	•	•	•	•	•	•	•	+	+	*	•	•	•	+	•	•	'	105	. 4
500.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	*	-	•	•	,	,	*	*	•	*	107	- 1
570.	•	*	•	•	•	•	•	•	•	-	٠	•	•	٠	٠	•	•	-	-	•	•	•	•	•	•	•	•	110	. U
580.		٠	•	٠	٠	•	•	٠	-	•	•	•	•	•	•	•	•	*	٠	•	۰	•	•	•	•	•	•	112	. 3
590.	•	•	•	-	•	•	•	*	•	*	•	•	•	•	•	•	•	•	•	4	-	•	•	•	•	•	•	114	. 0
600.	-	,	,	,	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	,	•	٩	116	. 8
610.	•	۲	٠	•	•	•	•	•	•	•	•	•	•	-	•	•	•	٠	•	•		•	•	,	•	۰	•	119	. 0
620.	•	-	Ŧ	*	•	•	•	*	•		•	•	•	•	•	•	•	٠	•	٠		•	•	•	•	*	*	121	. 1
630.	•		•	÷		•	•	•	•	-	•	•	•	-	-	•	•	•		•				•		,	•	123	. 2
640.	•	•	•			•	•	•	•	•	•	•	•	-	-	•	•	•	•	•	•			•	ł	٩	•	125	. 3
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670.						-																	•					131	. 3
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Freeboards at intermediate lengths of ship shall be obtained by linear interpolation.

(b) In order to be eligible for the reduced freeboards permitted by this section, vessels shall comply with following supplementary conditions:

(1) Vessels shall be built of steel complying with the amended classification society specifications issued in 1948, or thereafter.

(2) Hatch covers shall be one piece weathertight steel or equivalent material.

(3) A protected underdeck fore and aft passage shall be provided.

(4) Deck houses and superstructures shall be of steel or equivalent material.

(5) Vessels shall be structurally suitable for the resulting load draft in all operating conditions.

[F.R. Doc. 69-8864; Filed, July 25, 1969; 8:49 a.m.]

(Federal Register of July 26, 1969)

### Approved Equipment

### Commandant Issues Equipment Approvals; Terminates Others

U.S. Coast Guard approval was granted to certain items of lifesaving, and other miscellaneous equipment and materials. At the same time the Coast Guard terminated certain items of lifesaving, and other miscellaneous equipment and materials.

Those interested in these approvals should consult the Federal Registers of July 1, 15, and 17, 1969, for detailed itemization and identification.

#### FUSIBLE PLUG

The regulations prescribed in subpart 162.014, subchapter Q, specifications require that manufacturers submit samples from each heat of fusible plugs for test prior to plugs manufactured from the heat used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from June 15, to Jnly 15, 1969, is as follows:

Lunkenheimer Corp., Cincinnati, Ohio 45214, HEAT NO. 755.

#### MERCHANT MARINE SAFETY PUBLICATIONS

The following publications of marine safety rules and regulations may be obtained from the nearest marine inspection office of the U.S. Coast Guard. Because changes to the rules and regulations are made from time to time, these publications, between revisions, must be kept current by the individual consulting the latest applicable Federal Register. (Official changes to all Federal rules and regulations are published in the Federal Register, printed daily except Sunday, Monday, and days following holidays.) The date of each Coast Guard publication in the table below is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

The Federal Register will be furnished by mail to subscribers, free of postage, for \$2.50 per month or \$25 per year, payable in advance. The charge for individual copies is 20 cents for each issue, or 20 cents for each group of pages as actually bound. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated January 1, 1969 are now available from the Superintendent of Documents, price: \$3.75.

CG No.

#### TITLE OF PUBLICATION

- Specimen Examination for Merchant Marine Deck Officers (7-1-63). 101
- 108 Rules and Regulations for Military Explosives and Hazardous Munitions (5-1-68).
- 115 Marine Engineering Regulations and Material Specifications (3-1-66). F.R. 12-6-66, 12-20-67, 6-1-68, 12-18-68.
- Rules and Regulations for Tank Vessels (5-2-66). F.R. 12-6-66, 12-9-67, 12-27-67, 1-26-68, 1-27-68, 2-10-68, 123
- 4-12-68, 6-1-68, 10-2-68, 12-18-68, 12-28-68. 129 Proceedings of the Merchant Marine Council (Monthly).
- 169 Rules of the Road-International-Inland (9-1-65). F.R. 12-8-65, 12-22-65, 2-5-66, 3-15-66, 7-30-66, 8-2-66, 9-7-66, 10-22-66, 12-23-67, 6-4-68.
- 172 Rules of the Road—Great Lakes (9-1-66). F.R. 7-4-69.
- 174 A Manual for the Safe Handling of Inflammable and Combustible Liquids (3-2-64).
- Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3-1-65). 175
- Load Line Regulations (1-3-66). F.R. 12-6-66, 1-6-67, 9-27-67, 7-12-68, 6-5-69, 7-26-69. 176
- 182 Specimen Examinations for Merchant Marine Engineer Licenses (7-1-63).
- Rules of the Road—Western Rivers (9-1-66). F.R 9-7-66, 5-11-67, 12-23-67, 6-4-68. 184
- Equipment Lists (8-1-68). F.R. 11-7-68, 11-8-68, 11-16-68, 11-19-68, 11-20-68, 12-11-68, 12-18-68, 2-11-69, 2-18-69, 2-21-69, 2-26-69, 3-15-69, 3-27-69, 4-4-69, 4-12-69, 4-19-69, 4-25-69, 4-26-69, 190 4-28-69, 5-3-69, 5-9-69, 6-18-69, 6-19-69, 7-1-69, 7-15-69, 7-17-69.
- Rules and Regulations for Licensing and Certificating of Merchant Marine Personnel (5-1-68). F.R. 11-28-68. 191
- 200 Marine Investigation Regulations and Suspension and Revocation Proceedings (5-1-67). F.R. 3-30-68.
- 220 Specimen Examination Questions for Licenses as Master, Mate, and Pilot of Central Western Rivers Vessels (4-1-57).
- 227 Laws Governing Marine Inspection (3-1-65).
- 239 Security of Vessels and Waterfront Facilities (5-1-68).
- 249 Merchant Marine Council Public Hearing Agenda (Annually).
- Rules and Regulations for Passenger Vessels (5-2-66). F.R. 12-6-66, 1-13-67, 4-25-67, 8-29-67, 12-20-67, 1-27-68, 4-12-68, 10-2-68, 12-18-68, 12-28-68. 256
- Rules and Regulations for Cargo and Miscellaneous Vessels (1-3-66). F.R. 4-16-66, 12-6-66, 1-13-67, 12-9-67, 257 1-26-68, 1-27-68, 2-10-68, 4-12-68, 6-1-68, 10-2-68, 12-18-68, 12-28-68, 7-4-69 Rules and Regulations for Uninspected Vessels (3-1-67). F.R. 12-27-67, 1-27-68, 4-12-68, 12-28-68, 3-27-69.
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- Electrical Engineering Regulations (3-1-67). F.R. 12-20-67, 12-27-67, 1-27-68, 4-12-68, 12-18-68, 12-28-68. 259
- Rules and Regulations for Bulk Grain Cargoes (5-1-68). 266
- Rules and Regulations for Manning of Vessels (5–1–67). F.R. 4–12–68. 268
- 293 Miscellaneous Electrical Equipment List (9-3-68).

Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (1:-1-68), F.R. 320 12-17-68.

- Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (1-3-66), F.R. 12-6-66, 1-13-67, 323 12-27-67, 1-27-68, 4-12-68, 11-28-68, 12-18-68, 12-28-68.
- Fire Fighting Manual for Tank Vessels (7-1-68). 329

#### CHANGES PUBLISHED DURING JULY 1969

The following have been modified by Federal Registers:

CG-190, Federal Registers, July 1, 15, and 17, 1969.

CG-172, CG-257, Federal Register, July 4, 1969.

CG-176, Federal Register, July 26, 1969.

