

MARINE CASUALTY REPORT

SS PANOCEANIC FAITH
FOUNDERING WITH LOSS OF LIFE
NORTH PACIFIC OCEAN, 9 OCTOBER 1967

U.S. COAST GUARD
MARINE BOARD of INVESTIGATION REPORT
and COMMANDANT'S ACTION

ACTION BY
NATIONAL TRANSPORTATION SAFETY BOARD

DEPARTMENT OF TRANSPORTATION
WASHINGTON D.C. 20591

RELEASED 1 JULY 1969

FOUNDERING OF THE SS PANOCEANIC FAITH IN THE NORTH
PACIFIC OCEAN WITH LOSS OF LIFE ON OCTOBER 9, 1967

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 USC 239) and the regulations prescribed by 46 CFR 136. The Marine Board of Investigation convened in San Francisco, California, 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 USC 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 GMT, 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 life-saving 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 two 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 PANOCENIC 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 1/2 to 15 hours.

The first rescue aircraft to reach the PANOCENIC 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 radio operator who normally guards the distress frequency eight hours a day. Cargo ships over 1,600 gross tons are required to be equipped with a radiotelegraph auto-alarm which sounds an alarm on the bridge when keyed by the auto-alarm signal of four or more long dashes. When the alarm is tripped, the radioman is notified to guard 500 kHz. Under normal conditions, the auto-alarm signal is effective in tripping alarms on other ships within a 200-mile radius. The SAR radio station at Adak heard a weak auto-alarm 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 auto-alarm 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 auto-alarm 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 auto-alarm 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 auto-alarm 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 auto-alarm 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.

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 auto-alarm 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 PANOCEANIC 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.
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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 be required, and attributed loss of lives to lack of such a signaling device.

The Safety Board recommends that:

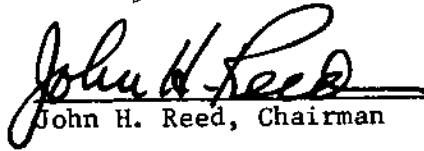
1. The Coast Guard consider amending the applicable regulations to require that each life preserver be equipped with a waterproof battery-powered light.
 2. The Coast Guard consider requiring sufficient inflatable liferaft capacity to accommodate all persons on board cargo vessels.
 3. The Coast Guard 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.
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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 auto-alarm signals and actuation of the auto-alarm 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
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dropped by SAR aircraft, which would facilitate recovery
and use of these liferafts by persons abandoning ship.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD:

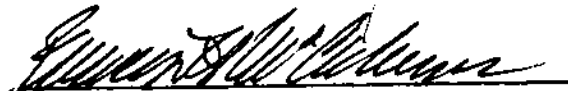
Adopted this 14th day of May, 1969:


John H. Reed, Chairman


Oscar M. Laurel, Member

Joseph J. O'Connell, Member


Louis M. Thayer, Member


Francis H. McAdams, Member



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER
Twelfth Coast Guard District
630 Sansome St.
San Francisco, Calif. 94126

5943
1 March 1968

From: Marine Board of Investigation
To: Commandant (MVI)

Subj: SS PANOCEANIC FAITH, ON 245 134; foundering in the North Pacific Ocean
on or about 9 October 1967, with loss of life

FINDINGS OF FACT

1. At approximately 1505, +11 zone time on 9 October 1967, the SS PANOCEANIC FAITH, a U.S. Flag freight vessel bound from San Francisco, California, to Bombay, India, via Yokohama, Japan, laden with 10,269.5 long tons of bulk ammonium sulphate, foundered in the North Pacific Ocean in approximate position Latitude 44°-30' North, Longitude 164°-50' West. As a result the Master and thirty-five (35) crew members out of the forty-one (41) persons on board were lost.
2. The SS PANOCEANIC FAITH, Official Number 245 134, of New York, was a 6000 horsepower steam turbine propelled, C2-S-AJ1 type freight vessel of 8157 gross tons and 4832 net tons. Her registered dimensions were 441.2 feet in length, 63.2 feet in breadth and 36.7 feet in depth. She was built by North Carolina Shipbuilding Co., at Wilmington, North Carolina in 1944. The vessel was owned and operated by Panoceanic Tankers Corporation of 17 Battery Place, New York, N.Y., 10004. The Master on the last voyage was John F. Ogles, Z-208 261, License 287 099, of 6304 Yellowstone Drive, Alexandria, Virginia.
3. The SS PANOCEANIC FAITH had five cargo holds with the following grain capacities in cubic feet:

Number 1 upper tween deck -----	25,678
Number 1 lower tween deck -----	22,491
Number 1 lower hold -----	41,013
Number 2 upper tween deck -----	33,785
Number 2 lower tween deck -----	34,396
Number 2 port, forward deep tank -----	16,406
Number 2 starboard, forward deep tank -----	16,399
Number 2 port, after deep tank -----	16,166
Number 2 starboard, after deep tank -----	16,178
Number 3 upper tween deck -----	37,968
Number 3 lower tween deck -----	40,553
Number 3 lower hold -----	63,975
Number 4 upper tween deck -----	37,789
Number 4 lower tween deck -----	39,409
Number 4 lower hold -----	63,152

Number 5 tween deck -----	30,621
Number 5 lower hold -----	46,866

4. Fuel tanks of the following capacities in tons were provided:

Number 1 double bottom tank, port -----	90
Number 1 double bottom tank, starboard -----	87.5
Number 2 double bottom tank, port inboard -----	91.5
Number 2 double bottom tank, starboard inboard -----	91.5
Number 2 double bottom tank, port outboard -----	61.5
Number 2 double bottom tank, starboard outboard -----	61.5
Number 3 double bottom tank, port inboard -----	105
Number 3 double bottom tank, starboard inboard -----	105
Number 3 double bottom tank, port outboard -----	89.5
Number 3 double bottom tank, starboard outboard -----	89.5
Machinery space, port settler tank -----	81
Machinery space, starboard settler tank -----	81
Number 5 double bottom tank, port inboard -----	90.1
Number 5 double bottom tank, starboard inboard -----	90.1
Number 5 double bottom tank, port outboard -----	62.3
Number 5 double bottom tank, starboard outboard -----	62.3
Number 6 double bottom tank, port -----	43.6
Number 6 double bottom tank, starboard -----	43.6

Additionally, deep tanks port and starboard located below number 5 hold could be utilized for either fuel or ballast with capacities of 176 and 142 tons of fuel, respectively.

5. Normal fresh water tankage with capacities in tons was provided as follows:

Number 3 hold, potable or domestic water tank -----	174
Number 3 hold, distilled water tank -----	27
Number 4 double bottom, port inboard tank -----	74
Number 4 double bottom, starboard inboard tank -----	70.5
Number 4 double bottom, port outboard tank -----	39.5
Number 4 double bottom, starboard outboard tank -----	41

The fore and after peak tanks of 98.46 and 92.12 tons salt water capacities, respectively, could also be utilized for fresh water.

6. The after ends of number 1 lower hold, number 2 forward and after deep tanks, number 3 lower hold, engine room and number 4 lower hold, both port and starboard sides, were fitted with bilge wells. The fore and aft dimensions were approximately two (2) feet and the athwartship dimensions were approximately six (6) feet. Each bilge well was fitted with a suction line of three (3) inch pipe connecting to a manifold in the engine room containing non-return valves. The manifold was piped to a bilge pump where bilge water was then pumped overboard. Number 5 lower hold

drained into the shaft tunnel well which was also pumped from the engine room overboard. The bilge pump, general service pump, and if necessary, the steam fuel oil transfer pump could be used for this purpose. They were double acting simplex pumps with piston diameters of approximately $10\frac{1}{2}$ inches. An eductor was used to pump the chain locker.

7. The hatch openings to the cargo compartments below decks are capable of being secured with wooden hatch boards fitted between steel hatch beams. Each cargo hatch on the main or weatherdeck was fitted with steel pontoon type hatch covers, 5 feet by 20 feet in dimension, stowed athwartships. Number 1 hatch was fitted with five pontoons, number 3 with seven, and number 2, 4, and 5 with six each. The main deck hatch pontoons were then covered with three or four tarpaulins of which the outer two were tucked under flat bar battens around the perimeter of the hatch coamings and secured by cleats and wooden wedges. Three to four flat bar cross battens were then used to secure each hatch. They were placed athwartships and each fitted with a turnbuckle near the centerline.

8. The primary lifesaving equipment of the SS PANOCCEANIC FAITH consisted of two steel motor lifeboats, 65 person capacity each, and one inflatable liferaft, 25 person capacity. The motor lifeboats were built by Welin Boat and Davit Corporation, the starboard or number 1 boat in 1945 and the port or number 2 boat in 1947. The boats were equipped with Mills type disengaging apparatus which cannot be activated under tension. Mechanical disengaging apparatus of the Mills type has not been approved for use on ocean and coastwise vessels over 3000 gross tons at least since 1947. However, existing regulations provide that vessels having lifeboats equipped with such apparatus may continue to retain this equipment in use so long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. The davits were of the Welin gravity type with wire rope falls led to electric winches. The electric winches were fitted with a weighted lever hand brake so constructed that lifting the lever permits the boat to descend. The davit heads were fitted with cast steel horns or hooks projecting outboard which engaged the travelling blocks of the falls until the davits were positioned at the lower or outer end of the davit tracks. In accordance with the applicable rules and specifications, the travelling blocks should automatically free themselves from the horn or hook with an adverse list of 15 degrees and with a 10 degree trim either fore or aft providing that the winch weighted lever brake is in the raised position. The 25 person inflatable liferaft was manufactured in 1966 by the U.S. Rubber Company and stowed on the starboard side of the flying bridge. The raft was delivered to the vessel on 26 August 1966, by Andros Marine Supply Co., Wilmington, California.

9. Past U.S. Coast Guard and American Bureau of Shipping records introduced into evidence disclose that during the period from January 1960 to June 1967 that repairs pertinent to this investigation were made as follows:

(a) January 1960 - while on drydock at Oakland, California, three (3) fractures in the bottom plating were found and shell plates A-10, B-7, C-10 starboard, A-10, B-7, C-10, port, and flat keel plate 9 were renewed. These plates are located at the after part of number 3 hold and double bottoms, the so-called hinge-area of a vessel of this type.

(b) February 1966 - while on drydock at Portland, Oregon, U.S. Coast Guard drydock examination and American Bureau of Shipping surveys of hull and machinery were carried out. Extensive repairs in the amount of \$171,925 were made during this period.

(c) May 1966 - Twenty-seven (27) steel pontoon hatch covers were repaired by Superior Machine Shop, Concord, California, to comply with U.S. Coast Guard inspection requirements.

10. On 18 April 1967, five (5) canvas tarpaulins were delivered to the vessel.

11. On 16 June 1967, the SS PANOCENIC FAITH drydocked at the Todd Shipyard Corp., Yard, Alameda, California, to undergo Coast Guard drydock examination and inspection for certification. On 17 June 1967, an American Bureau of Shipping surveyor attended the vessel to conduct a drydock survey, annual boiler survey and test of the forward starboard 5 ton steel cargo boom and of the after 5 ton steel cargo boom of number 2 hatch. On 17 June 1967, the vessel was undocked and on 19 June 1967, the American Bureau of Shipping, San Francisco, California, recommended that the vessel be retained in class with the Bureau and that there were no outstanding requirements. Her classification was +A1 E, +AMS.

12. On 20 June 1967, the Officer in Charge, U.S. Coast Guard Marine Inspection, San Francisco, California, issued a Certificate of Inspection and a Cargo Ship Safety Equipment Certificate to the vessel, said certificates to expire on 20 June 1969. The vessel was required to replace the temporary repair to the discharge line from the main circulator between the expansion joint and the main condenser not later than 1 October 1967. The repair was inspected and found satisfactory on 17 August 1967. Also, on 20 June 1967, the American Bureau of Shipping, San Francisco, California, recommended the issuance of a Cargo Ship Safety Construction Certificate to the vessel. Said certificate was issued at New York, N.Y., 10004, on 11 September 1967, to expire on 28 February 1971.

13. The following crew members are known to have survived:

Edwin D. Johnson, Able Seaman, Z-563 293

Oscar C. Wiley, Jr., Ordinary Seaman, Z-1239 950

Lewis E. Gray, Jr., Ordinary Seaman, Z-1000 150

Gordon L. Campbell, Oiler, Z-1240 417

John O. L. Kirk, Fireman/Watertender, Z-1249 582

14. The following crew members are known to have lost their lives:

Antonio A. Apolito, Boatswain, Z-753 578

Niel J. Leary, Able Seaman, Z-845 711-D3
Robert C. Russ, Able Seaman, Z-1058 517-D1
Henry O. Limbaugh, Able Seaman, Z-559 576
Czeslaw Kwiatkowski, Able Seaman, Z-979 615-D3
Robert E. Janes, Jr., 3rd Assistant Engineer, Z-1230 134, License 349 142
James Bechtold, 3rd Assistant Engineer, Z-1230 120, License 349 125
Evangelos G. Makris, Chief Electrician, Z-1221 641
Clement H. Daniels, Wiper, Z-1227 252
Donald E. Wright, 3rd Cook, Temporary letter
Lester L. Corum, Messman, Z-329 156-D1
Raymond R. Eden, Messman, Z-749 293
Joseph Diblasio, Messman, Z-353 879-D2

15. The following crew members are missing:

John F. Ogles, Master, Z-208 261, License 287 099
Max E. Ware, Chief Mate, Z-696 828, License 290 626
Joseph P. Nowd, Third Mate, Z-1230 111, License 349 115
John R. McPhee, Third Mate, Z-1230 107, License 349 111
Carlos Griffith, Radio Officer, Z-284 331-D4, License R 13773
Alex A. Andreshak, Deck Maintenance, Z-760 050-D1
James A. Dhein, Able Seaman, Z-1062 857
Morris W. Shubin, Ordinary Seaman, Z-461 471
Harry K. Bradley, Chief Engineer, Z-424 197-D1, License 344 770
John M. Ward, 1st Assistant Engineer, Z-1200 920, License 315 445
John P. Dunphy, 2nd Assistant Engineer, Book-340 859, License 375 631
Donald Joyce, 2nd Electrician, Z-845 131-D3

Albert B. Blain, Oiler, Z-1214 165
Larry G. Howard, Oiler, Z-1214 185
Edward McGee, Jr., Fireman/Watertender, Z-1118 645
Earl M. Richardson, Jr., Wiper, Temporary letter
Julius A. Batill, Wiper, Z-329 109-D2
Kenneth L. B. Collins, Chief Steward, Z-978 926-D1
Teodoro C. Rabaria, Chief Cook, Z-888 170
Kong C. Wong, Cook/Baker, Z-837 251
Charles R. Hood, Messman, Z-1227 974
Vernon A. Ratering, Messman, Z-1056 749
Armas W. Lehtonen, Messman, Temporary letter

16. At 1245, P.D.T., 15 August 1967, the SS PANOCCEANIC FAITH arrived at Howard Terminal, Oakland, California, discharged the crew and lay in temporary idle status until 25 September 1967. Upon arrival, the agent's port log indicated that the vessel had on board 4200 barrels of fuel and 300 tons of fresh water. During this period, minor maintenance was performed by the Chief Engineer, Harry K. Bradley and a skeleton crew. There is no record that either fresh water or fuel was taken on board during the period.

17. On 12 September 1967, Captain Arthur L. Deckard, National Cargo Bureau examined the vessel for readiness to load a cargo of ammonium sulphate. The cargo holds and deep tanks were examined for cleanliness and the bulkheads for tightness. The strainers of the bilge wells were covered with burlap and cemented around the perimeters to prevent cargo from entering the bilge wells and still permit any water present to be pumped from the holds. No other fittings were required to be installed in the holds. The preparations were performed by the ship's crew. Follow up examinations were made by Captain Deckard on 13, 14, and 15 September 1967. On 14 September 1967, a Certificate of Readiness was issued to the vessel by Captain Deckard on behalf of the National Cargo Bureau, Inc..

18. At 0450, P.D.T., on 25 September 1967, the SS PANOCCEANIC FAITH shifted to Pittsburg, California, to load a cargo of bulk ammonium sulphate fertilizer. The vessel shifted on one boiler with the aid of a tugboat. Captain Oscar L. Mapes, was the pilot. At 0940, P.D.T., on 25 September 1967, the SS PANOCCEANIC FAITH arrived at the Diablo Service Corp., terminal, Pittsburg, California.

19. At 1300, on 25 September 1967, loading of cargo commenced in number 3 lower hold. The sequence of loading and the tonnage loaded in each compartment was as follows:

Number 3 lower hold - 1560 long tons.
Number 2 forward deep tanks - 768 long tons.
Number 2 lower tween deck - 985 long tons.
Number 2 upper tween deck - 335 long tons.
Number 4 lower hold - 1200 long tons.
Number 4 lower tween deck - 840 long tons.
Number 4 upper tween deck - 360 long tons.
Number 1 lower hold - 1200 long tons.
Number 1 lower tween deck - 336 long tons.
Number 5 lower hold - 1200 long tons.
Number 3 lower tween deck - 1200 long tons.
Number 3 upper tween deck - 285 long tons.

Total: 10,269 long tons.

The final weight calculated by Diablo Service Corp., was 10,269.5 long tons.

20. The cargo was loaded from trucks that discharged onto a conveyor in a fixed fore and aft position on the pier. From the conveyor the cargo entered a high speed trimming machine in the hold which stowed the cargo laterally to the skin of the vessel. The vessel had to be shifted fore and aft to be positioned under the conveyor in order to load a particular hold. Each truck contained approximately twenty-four (24) long tons of cargo.

21. The bulk ammonium sulphate was purchased from Shell Chemical Company, by the India Supply Mission, Washington, D.C., and the consignee was to be the Director of Food, Ministry of Food and Agriculture, New Delhi, India. The cargo was a crystalline, light brown to white material. Other properties were as follows:

Percent of Nitrogen by weight -----	21.07
Percent of moisture by weight -----	.014
Percent of acid by weight -----	.01
Angle of repose -----	28 degrees

22. On 27 September 1967, the crew signed shipping articles before a U. S. Coast Guard Shipping Commissioner for the pending voyage to India. With the exception of the Master, John F. Ogles; Radio Officer, Carlos Griffith; Boatswain, Antonio A. Apolito; Chief Engineer, Harry K. Bradley; Wiper, Julius A. Batill, and certain members of the Steward's Department, the remainder of the crew had not previously sailed on the SS PANOCÉANIC FAITH.

23. The following summary of exhibit 72 reflects the sea experience of deck and engine personnel.

Max E. Ware, Chief Mate - $7\frac{1}{2}$ months as Chief Mate out of 6 years, 4 months as a licensed deck officer.

Joseph P. Nowd, Third Mate - 4 months as a licensed officer.

John R. McPhee, Third Mate - $3\frac{1}{2}$ months as a licensed officer.

Antonio A. Apolito, Boatswain - 3 years $9\frac{1}{2}$ months in the deck department

Alex A. Andreshak, Deck Maintenance - 16 years, 3 months in the deck department.

Niel J. Leary, Able Seaman - 1 year, $11\frac{1}{2}$ months in the deck department.

Robert C. Russ, Able Seaman - 5 years, 10 months in the deck department.

Edwin D. Johnson, Able Seaman, 1 year, 3 months in the deck department.

Czeslaw Kwiatkowski, Able Seaman - 9 months in the deck department.

James A. Dhein, Able Seaman - 7 years, $9\frac{1}{2}$ months in the deck department.

Morris W. Shubin, Ordinary Seaman - 6 years, 8 months in the deck department.

Oscar C. Wiley, Jr., Ordinary Seaman - First voyage in the deck department.

Lewis E. Gray, Ordinary Seaman - $8\frac{1}{2}$ months in the deck department.

Harry K. Bradley, Chief Engineer - 7 years, 2 months as a licensed engineer.
At sea less than 5 months since October 1955.

John M. Ward, First Assistant Engineer - 1 year, $6\frac{1}{2}$ months; first voyage as temporary First Assistant Engineer.

John P. Dunphy, Second Assistant Engineer - 1 year, 5 months; first voyage as Second Assistant Engineer.

Robert E. Janes, Jr., Third Assistant Engineer - 5 months.

James Bechtold, Third Assistant Engineer - $4\frac{1}{2}$ months.

Albert B. Blain, Oiler - 10 months.

Larry G. Howard, Oiler - 10 months.

Gordon L. Campbell, Oiler - 6 months.

John O. L. Kirk, Fireman/Watertender - First voyage in the engine department.

Edward McGee, Jr., Fireman/Watertender - 3 years, 4 months in the engine department.

24. On 28 September 1967, a waiver to proceed to Bombay, India and return without a Second Mate was issued by the Officer in Charge, Marine Inspection, San Francisco, California. The vessel sailed with a Master, Chief Mate and two (2) Third Mates comprising the licensed deck officers. At 1530 on 28 September 1967, Evangelos G. Makris, Z-1221 641, was dispatched to the vessel as Chief Electrician by the San Francisco Office of the Seafarer's International Union. Makris did not sign shipping articles before the U.S. Shipping Commissioner, but did sail with the vessel upon departure.

25. On 28 September 1967, Captain Clyde L. Eddy, National Cargo Bureau Surveyor boarded the vessel at the Diablo Terminal to check the loading procedures. He remained on board approximately one (1) hour and then returned about 0030 on 29 September to witness the completion of loading. At 0345, on 29 September 1967, loading was completed. No stability calculations were made by Captain Eddy nor was he requested to do so. Such calculations are not required for this bulk cargo. Although not required, a certificate of loading from the National Cargo Bureau, Inc., was issued to the owners on 2 October 1967. The original certificate was signed by Captain Allan Currie, Deputy Chief Surveyor, National Cargo Bureau, on behalf of Captain Eddy.

26. Number 1 upper tween deck, number 2 aft deep tanks and number 5 tween deck remained empty after completion of loading. Number 1 lower tween deck and number 2 upper tween deck were slack with the cargo stowed against the after bulkhead of the compartments and trimmed to the skin of the vessel on both sides. Number 3 upper tween deck and number 4 upper tween deck were also slack and similarly stowed, but against the forward bulkhead of the compartments. Number 5 lower hold was slightly slack and stowed with a dish-shaped depression in way of the square of the hatch. The National Cargo Bureau, Inc., recommends flat stowage of this general type of bulk cargo in upper slack compartments.

27. Prior to the completion of loading, approximately fifty (50) tons of fresh water was taken on board at the Diablo Service Corp., Terminal. The amount taken was reported by the Chief Mate. After completion of loading cargo, the draft was read on the port or inshore side and was determined to be 28' -11" forward and 29' -03" aft and the freeboard was measured by tape from the deck line to the waterline midships on both sides and was determined to be 11' -01 $\frac{1}{2}$ "

port and 10'-11" starboard. The water density at the Diablo Corp., berth at Pittsburg, California, was not determined. Captain Eddy testified that after the freeboard measurements were taken, the Master ordered the Chief Engineer to pump water overboard with a view of loading additional cargo. Since additional cargo was not loaded, the amount of water pumped overboard, if any, is not known.

28. A load line certificate issued to the vessel on 11 January 1967, assigned a summer freeboard of 11'-06 7/8" and a fresh water allowance of 7 1/2". The applicable load line regulations permitted the vessel to load to her summer seasonal load line. The tons per inch immersion at the summer load line was 50.8.

29. During the loading, the hatch beams were in place on the tween deck hatches and forward number 2 deep tanks, but the wooden hatch boards were not installed. The after number 2 deep tank hatches were covered with hatch boards fitted between hatch beams, two layers of paper and a tarpaulin over the top. At the completion of loading, the steel pontoon cargo hatch covers were installed and covered with three (3) or four (4) tarpaulins on each hatch with the upper two (2) tucked under the flat bar battens, and then secured with cleats and wooden wedges. The bottom tarpaulin of each hatch was folded or dummied on each of the four (4) sides. Four cross battens were placed athwartships on each of the hatches and secured. The tarpaulins in the worst condition were utilized as the bottom one of each hatch. The middle ones used were the second best, and the tarpaulins used on the top were in good condition.

30. At 0825 P.D.T., on 29 September 1967, the vessel departed Pittsburg, California, for the Mobil Oil Co., Terminal, Oakland, California, to load bunkers. Captain Oscar L. Mapes, again acted as pilot. The ship arrived at 1425 and loaded 155.04 long tons or 978.75 barrels of fuel oil. The distribution of the fuel oil is unknown. No fresh water was taken. The Agent's Port Log filed on 3 October 1967, by General Steamship Corp., Ltd., stated that the vessel on departure, had on board 4162 barrels of fuel and 180 tons of fresh water and that the draft was 28'-06" forward and 28'-08" aft as reported by the Master prior to the completion of bunkering.

31. Both the former Chief Engineer and First Assistant Engineer testified that the minimum amount of fuel oil required by the vessel on a voyage from San Francisco, California, to Yokohama, Japan, was between 4,500 to 5,000 barrels and that the minimum amount of fresh water for such a voyage was 150 tons, 100 tons for domestic purposes and 50 tons of boiler water. Under normal conditions the vessel consumed an average of .8 barrel of fuel per mile at sea and 15 tons of fresh water per day. It was reported that the evaporators were capable of making eight (8) to ten (10) tons of fresh water per day.

32. At 1658 P.D.T., +7 zone time, on 29 September 1967, the SS PANOCCEANIC FAITH sailed from the Mobil Oil Co., Terminal, Oakland, California, bound for Yokohama, Japan, her next assigned bunkering port, en route to Bombay, India. The vessel took departure at 1805, on 29 September 1967. The distance from the Diablo Corp., Terminal, where freeboard measurements were made, to the demarcation line dividing

the inland waters and international water is 55 nautical miles. En route to sea, the crew stowed the cargo booms, mooring lines, other loose gear and the anchor chain spill pipes were plugged and cemented.

33. From departure to the day that the ship was lost, the following machinery casualties were reported:

(a) Starboard boiler developed leaky tubes and handhole plates. At least one boiler tube was plugged. Other boiler repairs were not made due to heavy weather.

(b) The main condenser condensate indicated leaking tubes. Initial repair attempts were made by the introduction of sawdust. Finally the condenser head was removed and three (3) or more tubes were plugged.

(c) Both boilers lost their fires due to water in a settler tank. The tank was purged and no further problems were reported.

(d) Lube Oil pressure was lost and the condition was corrected by shifting to the alternate pump.

(e) The make-up feed evaporator was removed from service for an unexplained reason. The contaminated evaporator was repaired and it and the salt water evaporator were put into service. Witnesses testified that for several days prior to sinking, the potable water tasted salty.

Other than the above, the machinery operated satisfactorily.

34. At 0000 GMT, 4 October 1967, the Master radioed the owners that the PAN-OCEANIC FAITH was encountering boisterous weather and that average speed since departure was 8 knots. Weather conditions did not improve and at 2230 GMT, 8 October the Master sent a message to the owners that due to continuous gales and mountainous seas, swells, and numerous repairs to boilers, condensers and auxiliaries that the fuel and water conditions were very critical. Average speed was 8 knots, fuel on hand 2000 barrels, distance to go was 2500 miles. Present position, latitude 45°-00' North, longitude 163°-20' West. The owner was asked to advise the nearest bunkering port. The owners responded at 0517 GMT, 9 October 1967, asking for distance to Hokkaido Island, Japan, and to keep them closely advised as to position, speed, weather and fuel. At 0910 GMT, 9 October the Master informed the owner that they were experiencing continuous gales, speed was 4 knots, that boiler tubes and handhole plates were leaking badly, that repairs were impossible because of the weather and that a gale was advancing from Hokkaido. The Master also advised that fuel consumption was 250 barrels per day and that two (2) evaporators were in operation. The Master again asked for the nearest bunkering port. Further instructions from the owners to the Master were drafted and sent, but undelivered prior to the sinking.

35. On deck the voyage from departure until about 4 October appears to have been, for the most part, routine. The cement plugs in the anchor chain pipes washed away and were replaced on 1 October 1967, and the chain locker pumped out. The crew was mustered for fire and boat drill on 4 October 1967. Neither boat was lowered nor were the engines operated at any time.

36. Survivors testified that during heavy weather commencing on about 4 October 1967, that the weather tight doors leading from the deck house forward onto the main deck commenced leaking and that it was necessary to close the steel dead lights over two or three port holes in the forward bulkhead of the mess room. It was also reported that the forepeak was flooding. There is no testimony as to whether or not an attempt was made to pump out the forepeak.

37. On about 6 October 1967, the vessel began shipping heavy seas on board forward. By early afternoon on 7 October 1967, the tarpaulin on the starboard forward corner of #1 hatch was observed by the watch on the bridge to be adrift and the corner of the hatch pontoon exposed. Since the mast house aft of number one hatch obscured all of the after portion of the number one hatch, the condition of the rest of the tarpaulins is not known. In view of testimony received, it is possible that much of the tarpaulin was adrift at this time. The former Chief Mate, who had served on board the SS PANOCIANIC FAITH for approximately 5 years, testified that on one occasion heavy seas boarding the vessel swept across the break water forward of number one hatch and upon striking the mast house aft of the hatch, returned with enough force to peel off the after corners of the hatch tarpaulins. He further testified that this could not be seen from the bridge and it was found only after he insisted on going forward to determine the security of conditions about the deck.

38. On 8 October the vessel remained in heavy weather. Evidence was received that the forepeak was flooded and that the vessel was trimmed by the head. A starboard list was developing.

39. At approximately 0400, +11 zone time, 9 October, the Master, Chief Mate and Second Mate were on the bridge. At that time the ship had a noticeable starboard list and was trimmed by the head. An unsuccessful attempt was made to illuminate the foredeck to ascertain conditions then prevailing. In the next two hours several attempts were made to bring the ship about to port, but wind and sea conditions always forced the ship back to a westerly heading. The vessel's westerly course was maintained thereafter. As daylight broke, it was seen that number 1 hatch had opened up during the night and that the port door of the mast house between number 1 and 2 hatches was open. Also, two (2) or three (3) cargo booms were seen adrift in the area of number 1 and 2 hatches.

40. At 0600, 9 October, the Chief Mate, Max E. Ware, aroused the crew and mustered them in the crew's mess room. The Master appeared shortly thereafter and instructed all hands to don warm clothing and life preservers and to standby for an emergency; he also reassured the crew. During the remainder of the morning, the crew was engaged in bailing out the midship passageways and securing gear that was adrift. An attempt was made to weld shut the forward starboard weathertight door to the midship house on the main deck. The port lifeboat was readied and additional equipment was placed therein, including a portable lifeboat transmitter. During the morning, the First Engineer, John M. Ward and Chief Electrician, Evangelos G. Makris, attempted to start the port lifeboat engine with the use of lighter

fluid and a spare battery. The head gasket blew and the engine was never started due to the unavailability of spare parts. Edwin D. Johnson, Able Seaman, and Oscar C. Wiley, Jr., Ordinary Seaman, were sent to drain water from the starboard lifeboat.

41. At 0618, (1718 GMT), on 9 October 1967, the Coast Guard Radio Station at Adak, Alaska, reported to Commander, 17th Coast Guard District, Juneau, Alaska, that they had intercepted a call on 500 KCS from the SS PANOCEANIC FAITH in position Latitude $44^{\circ}-50'$ North and Longitude $165^{\circ}-00'$ West. The vessel reported taking water in number 1 and number 2 holds, that a pontoon was stove in number 1 hold, and requested any ships to standby for assistance. At 0621 (1721 GMT), the Commander, 17th Coast Guard District requested an AMVER surface picture, or merchant vessel position plot, within 300 miles of the position reported by the PANOCEANIC FAITH. The request was made to the Coast Guard's Automated Merchant Vessel Reporting System at New York. At 0647 (1747 GMT) a surface picture listing eleven (11) vessels was received. At 0636 (1736 GMT) the Commander, 17th Coast Guard District issued a distress broadcast and at 0805 (1905 GMT) an urgent Notice to Mariners requesting any vessels in the area of Latitude $44^{\circ}-50'$ North and Longitude $165^{\circ}-00'$ West to proceed and assist the SS PANOCEANIC FAITH.

42. At 0820 (1920 GMT), the SS PANOCEANIC FAITH advised that immediate assistance was required and that the vessel was taking on much water in the holds. At 0905 (2005 GMT), the SS PANOCEANIC FAITH reported that she was developing a heavy starboard list and was unable to change course, that the seas and swells were intensifying greatly. Also, that she was unable to increase speed due to boiler trouble and was unable to maintain lube oil suction due to the list. She reported her 0845 (1945 GMT) position as Latitude $44^{\circ}-45'$ North, Longitude $164^{\circ}-35'$ West, and required immediate assistance.

43. At 0958 (2058 GMT), the SS PANOCEANIC FAITH transmitted her first S.O.S., repeated her 0845 position and stated that she was sinking and required immediate assistance.

At 1005 (2105 GMT), the Pacific sub-region direction finder station network was alerted by the Commander, 17th Coast Guard District.

At 1045 (2145 GMT) the vessel indicated that her course was 270° and her speed 3 knots.

At 1152 (2252 GMT), T50233 an Air Force C-141 aircraft diverted to the scene, received a report from the SS PANOCEANIC FAITH that the vessel was listing heavily, that the seas were 20 feet and that they did not think that they could hold on much longer. Air Force T50233 continued to orbit in the vicinity and acted as a radio relay for Navy V35569 until forced to depart due to low fuel.

At 1215 (2315 GMT), Navy P2H aircraft V35569 arrived at the scene and found the ship with it's forward decks awash. The pilot estimated that the ship had a 12 degree starboard list, however, the Master stated that he had a 20 degree starboard list.

44. At approximately 1300, the corners of the tarpaulins of number 3 hatch were seen to become adrift and at approximately 1400 this condition was similarly noted of number 2 hatch. At approximately 1330 the Master offered the crew a choice of either remaining on board the vessel to await another vessel to arrive or of going overboard in a lifeboat.

45. At about 1415 the superheater tubes of 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 vessel abandoned and the engine room evacuated. An attempt was made to lower the port lifeboat with Max E. Ware, Chief Mate, in charge, and eight (8) or nine (9) other men in the boat. The Boatswain, Antonio A. Apolito actuated the lifeboat winch brake counterweight lever with no effect. Approximately fifteen (15) men were positioned inboard of the boat, and after combined pushing efforts, started the davits down the tracks. The davits reached the bottom of the tracks but the boat failed to lower further. Alex A. Andreshak, Deck Maintenance and an Able Seaman were seen cranking the falls with a hand crank on the winch motor. Then slack was observed in the wire falls between the stationary blocks secured to the side of the midship house. The Chief Mate then ordered additional men into the boat in an attempt to weight it down in order to take up the slack in the wire falls. A total of approximately 20 to 25 men in the boat produced no effect. The forward davit either then collapsed forward or the forward end dropped as a result of a parted fall or sheave, spilling most of the men forward into the water. At this time, it was reported that the starboard list was approximately 35 degrees. A few seconds later, at 1505, +11 zone time, the vessel sank bow first maintaining a relatively stable starboard list. The Master and Chief Engineer were last seen on the port wing of the bridge just prior to the sinking. The starboard lifeboat was not utilized since the starboard side was the weather side. Prior to the sinking, the vessel's heading was approximately 240 degrees.

46. At 1451, 9 October 1967, (0151 GMT, 10 October 1967), Coast Guard Radio Station Adak, Alaska, intercepted a distress signal from the SS PANOCENIC FAITH stating that they were abandoning ship.

47. Weather conditions at the time of the sinking as nearly as could be determined were:

Cloudy with occasional rain; visibility 3 to 6 miles; winds northwesterly 35 to 40 knots; seas northwesterly 20 to 25 feet and increasing; sea and air temperatures 48 to 50 degrees F.

48. When the vessel sank, Navy P2H V33569 dropped three 7 man and two 12 man rafts of which three (3) probably inflated. Oscar C. Wiley, Jr., and John O. L. Kirk, were thrown forward from the boat into the water. Edwin D. Johnson was washed from the deck of the vessel into the water by a green sea at this approximate time. When surfacing all three swam to a group of men on three (3) hatch boards which were secured together with line that was attached to some of the boards. Seen in the water were Carlos Griffith, Radio Officer; Antonio Apolito, Boatswain; Kenneth L.B. Collins, Chief Steward; Teodoro C. Rabaria,

Chief Cook; Czeslaw Kwiatkowski, Able Seaman; John P. Dunphy, Second Assistant Engineer; an unidentified Mate, Messman, and Able Seaman. Later 15 to 20 men were seen in the water. Also seen was the vessel's inflatable liferaft which was inflated upright, but had drifted beyond swimming distance from the men. It is not known whether the sea anchor deployed automatically when the raft painter parted.

49. At approximately 1700, Johnson, Wiley and Kirk reached and boarded a liferaft which was dropped by Navy P2H aircraft V35569. The raft was boarded also by Robert E. Janes, Jr., and James Bechtold, Third Assistant Engineers; Czeslaw Kwiatkowski, Able Seaman, and Niel J. Leary, Able Seaman. Holding on at the side of the raft was Kong C. Wong, Cook and Baker and one or more unidentified seamen. A sea anchor was deployed from the raft, but the line was purposely cut when it became entangled around Wiley's leg while boarding. The raft was equipped with a hand cranked blinking light which was operated several times and then became inoperative. No other light was available. During the evening three vessels were seen passing the vicinity of the raft. During the night of 9-10 October 1967, the men partially rigged the canopy of the raft, bailed water with a binocular case and attempted to keep one another awake with calls, singing, etc..

50. At 0910, on 10 October 1967, the Norwegian Motor Vessel VISUND located the raft and brought it alongside with the use of a heaving line. By 1050 all persons in the raft had been brought on board. Wiley, Kirk and Johnson were alive when brought aboard. Bechtold, Janes, Kwiatkowski and Leary were deceased. No other men were seen or retrieved by the VISUND. When on board the VISUND, the three survivors were given first aid and treated for exposure. Wiley sustained a back injury as a result of the abandonment. The M/V VISUND proceeded to Long Beach, California, with the recovered survivors and bodies.

51. Gordon Campbell, oiler, slid down the side of the lifeboat into the water when the forward end dropped. When he surfaced, he boarded a section of a wooden awning which had covered the fantail of the vessel and which floated free as the vessel sank. Evangelos G. Makris, Chief Electrician, later joined Campbell on the awning. Makris removed his life preserver and some clothing, refastened his life preserver and began to swim for a liferaft which was dropped by an aircraft. He was never seen again. At approximately 1830, the Japanese M/V IGAHARU MARU, on the scene searching for survivors, collided with the awning section, Campbell jumping into the water just prior to the collision. The vessel then spotted Campbell and after two (2) seamen attached a line to his life preserver, he was brought aboard the M/V IGAHARU MARU at 1850.

52. Lewis E. Gray, Ordinary Seaman, jumped out of the lifeboat into the water and swam to a life ring buoy which floated free of the vessel as she sank; he later obtained a wooden hatch board. Max E. Ware, Chief Mate, and an unidentified messman were seen in the water by Gray. Gray remained on the hatch board until after sunset when he attracted the attention of the M/V IGAHARU MARU with a flashlight that he had in his possession. Gray was then taken on board the M/V IGAHARU MARU at 1922. No survivors were found other than those recovered

by the M/V IGAHARU MARU and M/V VISUND. Campbell and Gray were treated for exposure as the M/V IGAHARU MARU proceeded to Yokohama, Japan.

53. At 1808 on 9 October 1967, (0508 GMT, 10 October 1967), Coast Guard aircraft CG-1341 arrived at the scene and dropped two (2) 12 man rafts, three (3) 7 man rafts, a Gibson Girl and numerous smoke-lights. At 2106 on 9 October 1967, (0806 GMT, 10 October 1967), the Japanese M/V KEISHO MARU arrived at the scene. At 2215 on 9 October 1967, the following vessels were participating in the search; The M/V IGAHARU MARU, M/V KEISHO MARU, SS STEEL SEAFARER, M/V VISUND, and the Soviet vessel OREKHOV. At 0529, 10 October 1967, Navy aircraft P2H 35598 and CG-1341 continued the search. At 1127 Navy 35569 arrived at the scene. The Japanese M/V OPPAMA MARU, west-bound, acted as a communications relay between the rescue vessels and Radio Station Adak. At 1144, the M/V KEISHO MARU departed the scene due to a shortage of fuel. At 1313, the M/V IGAHARU MARU was granted permission to proceed to her destination due to a shortage of fuel. At 1400, the M/V VISUND was granted permission to proceed to her destination. At approximately 1545, the Japanese vessel ROCKY MARU arrived at the scene, and at 1613, the Japanese vessel BRISTOL MARU arrived at the scene, both vessels to aid in the search.

54. The bodies of the following seamen were recovered by the Soviet Vessel OREKHOV at 1200 on 10 October 1967, and landed at Vancouver, B.C., Canada on 14 October 1967.

Antonio A. Apolito, Boatswain

Lester L. Corum, Messman

Clement H. Daniels, Wiper

Raymond R. Eden, Messman

Henry O. Limbaugh, Able Seaman

Joseph Diblasio, Messman

Evangelos G. Makris, Chief Electrician

Robert C. Russ, Able Seaman

55. At 1735, on 10 October 1967, the Japanese vessel BRISTOL MARU recovered the body of Donald E. Wright, 3rd Cook and at 2200 on 10 October 1967, proceeded to the Panama Canal Zone to dispose of the body. At 1810 on 10 October 1967, the M/V OREKHOV departed the search area en route to Victoria, B.C.

56. At 0930 on 11 October 1967, the CGC DEXTER arrived at the scene and the search continued with Navy P2H aircraft V35569, the Norwegian M/V DONEGAL, Japanese M/V ROCKY MARU and SS STEEL SEAFARER. The CGC STORIS, British M/V LA PRIMAVERA, and German M/V AMELIE THYSSEN also participated in the search with Coast Guard aircraft CG-1341, and Navy aircraft P3Q C-08. No other bodies were recovered. Items of equipment and debris were recovered by the various search units, but neither of the ship's lifeboats were seen.

57. At 1030, on 11 October 1967, the Japanese vessel ROCKY MARU lost a man overboard in position Latitude $44^{\circ}-00'$ North and Longitude $164^{\circ}-07'$ West, while attempting to recover a life preserver. The search was coordinated to include the man overboard but to no avail. At 1130, on 13 October 1967, the ROCKY MARU discontinued the search.

58. At 1751, on 13 October 1967, the search was suspended pending further developments. The total time spent in search by all aircraft was 133 hours and 57 minutes. The total search hours by all vessels military and merchant was approximately 484 hours.

59. On 1 through 3 November 1967, in response to testimony alleging insufficient buoyancy, two Model 3 type A, adult kapok life preservers recovered by the M/V VISUND were subjected to buoyancy tests by Tapatco, Inc., Fairfield, California, in accordance with Title 46 CFR 160.002. The buoyancy was found to be 32 pounds 8 ounces and 30 pounds 12 ounces, respectively. Also, three (3) Model 3 adult kapok life preservers recovered by other rescue vessels were similarly tested by the Yacht Safety Bureau, Inc., the buoyancy was found to be 31.9 pounds, 30.93 pounds and 31.38 pounds, respectively. The minimum buoyancy required is 25 pounds and they were therefore considered satisfactory.

60. Subsequent to the casualty, a stability analysis of the SS PANOCCEANIC FAITH was prepared covering the period of the voyage in question (Enclosure 56.) The analysis was based on a logical distribution of fuel and the assumption that the fresh water tanks were full upon departure. The cargo loading was assumed to have been stowed at a stowage factor of 37 cubic feet per ton based on the final loading plan. A fuel consumption of .8 of a barrel per mile for 1950 miles was used and it was assumed that the forward fuel oil double bottom tanks were used first. It was assumed that at the time of loss, the only fresh water on board was in the potable and distilled water tanks. All flooding was assumed to have entered the holds from above. The cargo was assumed to have a specific gravity of 1.77 and to take up a volume in the hold corresponding to its density in the flooded holds. The cargo had an angle of repose of 28 degrees.

61. Based on the above assumptions the analysis indicated the following:

(1) On departure from San Francisco, the vessel had a transverse metacentric height (GM) of approximately 4.22 feet.

(2) Prior to its day of loss, the vessel most probably had a transverse metacentric height well in excess of the minimum required by the applicable weather criteria as set forth in 46 CFR 74.10.

(3) On the day of loss, and up to its approximate time of loss, the transverse metacentric height of the vessel most probably decreased to approximately 1.5 feet on the basis of cargo holds numbers 1 and 2 and spaces further forward being flooded.

62. The analysis further indicated that the initial tendency to heel to starboard, which progressively developed on the day of its loss was attributed to one of, a combination of several of, or all of the following factors.

(1) Shift of cargo into voids which existed or may have existed in, below, and above the cargo.

(2) The addition of sea water to cargo holds numbers 1 and 2, favoring the starboard side, and the subsequent movement of cargo from port to starboard.

(3) Flooding of the starboard number 2 deep and/or double bottom tanks during large angles of heel and/or roll.

(4) Shifting of untrimmed cargo in holds 2, 3, and 4 from port to starboard.

63. The analysis also indicates that the developed large angle of heel to starboard could only be attributed to a general cargo shift. Such an angle of heel by various arrangements of flooding water and cargo in number 1 and 2 holds could not be obtained. Although it is difficult to reconstruct exactly all the parameters, as an example with the forward area and number 1 hold flooded and with a GM of 3 feet (condition V of enclosure (56), a 6 degree general cargo shift in the untrimmed holds 2, 3, and 4 would cause a permanent list of 11 degrees. As the GM decreases, this list would increase for the same degree of cargo shift. (See enclosure (g) of enclosure 56).

64. The analysis indicated that the loss of the vessel was directly caused by the large reduction of freeboard and increased trim by the bow caused by the progressive flooding of the forward cargo holds and other spaces. With the forepeak area and number 1 hold completely flooded and with number 2 hold approximately three-fourths flooded, the forecastle and forward deck areas became submerged. In this flooded condition, the vessel had inadequate longitudinal stability to prevent its plunging by the bow. A major contribution to the loss of freeboard was the large angle of heel which developed to starboard.

CONCLUSIONS

1. It is concluded that the primary cause of the casualty was the progressive flooding of number one and two 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 number one 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 number two hold appear to have been reasonably secured until shortly before the ship sank it is probable that the principal flooding of number two hold resulted from a failure of the bulkhead between holds number one and two.
3. That remedial action was not taken in sufficient time to prevent flooding of number one 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.
4. While it is probable that the bulkhead between holds number one and two may have ruptured, there is no evidence of other structural failure although the flooding of the forward holds added greatly to the stresses of the hull girder.
5. The record contains evidence of engineering and machinery problems experienced during the voyage. These problems may, in part, be related to lack of experience on the part of engine room personnel. There is no evidence, however, that these difficulties contributed directly to the loss of the vessel.
6. The failure of the master to initiate a distress message when, at daylight on 9 October, it became known that number one hatch was open to the sea may have contributed to the loss of life. Although the crew was mustered at 0600 and instructed by the master to put on life jackets, the first alerting radio message was not transmitted until 0618 and a distress message (SOS) was not transmitted until 0958. If prompt action had been taken, other vessels may have arrived prior to darkness and many more lives saved.
7. It is concluded that number 2 (port) lifeboat could not be lowered because the ship had an adverse list of more than 15 degrees and the davit head horns would not permit the traveling blocks to lower. This is a design feature of this type of davit that is not generally known or understood. The regulations apparently were intended to ensure only that the gravity feature of the davit

would function against an adverse list of up to 15 degrees. In determining the degree of list and the fact that the boat did not lower, the board utilized photographs, exhibits 10(27) and 10(28), taken from Navy aircraft V35569 as the ship was sinking.

8. If the crew could have released the boat from the falls it may have floated free and, with the equipment on board, more lives may have been saved.

9. It is the conclusion of the board that the life preservers recovered and tested met the design specification and that the design specification exceeds the requirements of the International Convention of Life at Sea.

10. More lives would probably have been saved if, when difficulty was experienced in launching the boat, the 25 person inflatable life raft had been launched and boarded before the ship sank. Failing this, had the raft been retained within swimming distance of the survivors in the water more may have been recovered.

11. More lives probably would have been saved if the life preservers had been equipped with an adequate battery powered light.

12. The failure to hold a fire and boat drill within 24 hours of leaving port as required by 46 CFR 97.15-35 and the failure to operate the lifeboat engines at least once as required by 46 CFR 97.15-45(b), constitutes evidence of negligence on the part of the master.

13. Had the cargo been stowed flat in the upper slack portions of the holds as recommended by National Cargo Bureau rather than peaked against the bulkheads it may not have shifted.

14. The search and rescue operation, as coordinated by the Staff of Commander, 17th Coast Guard District was thorough, complete and utilized all available facilities. The response of merchant vessels, both foreign and American was in keeping with the time honored traditions of the sea.

15. That the officers and men of the SS PANOCCEANIC FAITH behaved calmly and well considering the gravity of the situation just prior to and during the sinking.

16. There is no evidence that personnel of the Coast Guard or other government agencies caused or contributed to the cause of the casualty.

17. Those crew members of the SS PANOCCEANIC FAITH who are missing are presumed to be dead.

18. That the International Convention of Load Lines 1966, which will become effective 21 July 1968, and the revision to the Load Line Regulations now before the Merchant Marine Council contains adequate provisions with regard to hatch closure.

19. According to the freeboard measurements taken by Captain Clyde Eddy, National Cargo Bureau Surveyor, when cargo loading was completed on the morning of 29 September and computations made by the Marine Board of Investigation concerning reduction of freeboard due to bunkers taken on board at the Mobil Oil Corp., Terminal at Oakland prior to sailing, the SS PANOCCEANIC FAITH was overloaded about two (2) inches on departure. Captain Eddy testified, however, that the density of the river water at the Diablo Corp. was not determined and that after the freeboard measurements were taken the Captain of the SS PANOCCEANIC FAITH ordered the chief engineer to have water pumped overboard with a view of loading additional cargo. Since no additional cargo was loaded the amount of water pumped overboard, if any, is not known. The board therefore concludes that while there is evidence that the vessel probably was overloaded, that probative evidence is considered insufficient to proceed with a load line violation penalty.

RECOMMENDATIONS

1. The board recommends that the Commandant initiate a design study of all gravity davits on U.S. Vessels to determine if 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 degrees. Where such features are found, the davits should be modified. Since such features have been observed on foreign passenger vessels they should be brought to the attention of the International Maritime Consultative Organization.
2. That the applicable regulations be amended to require that each life preserver be equipped with a waterproof battery powered light.
3. That the applicable regulations for vessels in ocean and coast-wise service be amended to require removal of any mechanical disengaging apparatus which will not simultaneously release both ends of the boat when under tension.
4. The failure of the crew to launch the inflatable rubber raft prior to the sinking of the ship suggests that merchant seamen need additional training concerning abandon ship procedures. The board recognizes that such training will require a joint voluntary effort on the part of operators, unions and the government. It recommends, however, that the Commandant use his resources to the extent practicable to provide such training.

Chester R. Bender

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5943/PANOCEANIC FAITH
A-12 Bd
28 OCT 1968

Commandant's Action

on

The Marine Board of Investigation convened to investigate the foundering of the SS PANOCEANIC FAITH in the North Pacific Ocean with loss of life on 9 October 1967

1. The record of the Marine Board of Investigation 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, California 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 thirty-six lives with only five survivors out of the crew of forty-one 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 #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 #1 hatch were missing. The port door of the

mast house between #1 and #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 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 twenty-five 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 #1, #2, and #3 of the Marine Board of Investigation. There is ample evidence that the tarpaulins on #1 hatch were observed adrift two days prior to the loss of the vessel and that remedial action was not initiated in sufficient time to prevent flooding in #1 hold and the eventual loss of the #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 number one and two 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 #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.

ACTION CONCERNING THE RECOMMENDATIONS

1. Recommendation #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 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 degrees. 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 degrees. 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 degrees 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 PANOCIANIC FAITH as parts of the transcript of the testimony indicate that the traveling blocks did disengage from the cradle hooks, allowing #2 lifeboat to lower one or two feet. Testimony of the survivors indicates that #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 degrees their operation 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 degrees 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 degree 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 #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 PANOCENIC 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 #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

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