

DEPARTMENT OF TRANSPORTATION



COAST GUARD

MARINE CASUALTY REPORT

LOSS OF NUMEROUS VESSELS DURING HEAVY WEATHER
IN THE VICINITY OF CHETCO RIVER, OREGON ON OR
ABOUT 16 AUGUST 1972; WITH LOSS OF LIFE

U.S. COAST GUARD
MARINE BOARD OF INVESTIGATION REPORT
AND COMMANDANT'S ACTION

ACTION BY
NATIONAL TRANSPORTATION SAFETY BOARD

REPORT NO. USCG/NTSB - MAR-74-7

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16. Abstract On August 16, 1972, approximately 69 small boats operating off the coast of northern California and southern Oregon suddenly encountered high winds and rough seas. Although the U.S. Coast Guard, assisted by numerous private vessels, conducted extensive rescue operations, 13 persons are missing or dead. More than \$132,000 worth of damage was incurred by the small boats. This report contains the action taken by the National Transportation Safety Board in determining the probable cause of the casualty and in making recommendations to prevent its recurrence. The report also contains the Marine Board of Investigation report and action taken by the Commandant, U.S. Coast Guard. The National Transportation Safety Board determines that the probable cause of the loss of life and damage to the small boats at sea was: (1) The fact that the National Weather Service (NWS) and the U.S. Coast Guard did not provide timely information about the approaching storm to various small boats, and (2) the inadequate communications between small boats in distress and Coast Guard rescue units. Contributing to the inadequate communications was the inability of the Coast Guard to monitor requests for assistance that were transmitted on Citizens Band frequencies.					
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IN THE VICINITY OF CHETCO RIVER, OREGON ON OR
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NATIONAL TRANSPORTATION SAFETY BOARD
DEPARTMENT OF TRANSPORTATION
WASHINGTON, D.C. 20591

LOSS OF SMALL BOATS WITH FATALITIES
DURING HEAVY WEATHER OFF THE NORTHERN
CALIFORNIA/SOUTHERN OREGON COAST

16 August 1972

ACTION BY THE NATIONAL TRANSPORTATION SAFETY BOARD

This casualty was investigated by a U. S. Coast Guard Marine Board of Investigation convened at Crescent City, California, on August 26, 1972. A representative of the National Transportation Safety Board observed part of the proceedings. The National Transportation Safety Board has considered only those facts in the investigative record which are pertinent to the Safety Board's statutory responsibility to determine the cause or probable cause of the casualty and to make recommendations. The Safety Board's analysis of the casualty is based on the testimony and evidence presented at the Marine Board of Investigation, and should be read in conjunction with the Marine Board's Findings of Facts.

SYNOPSIS

On August 16, 1972, approximately 69 small boats operating off the coast of northern California and southern Oregon suddenly encountered high winds and rough seas. Although the U. S. Coast Guard, assisted by numerous private vessels, conducted extensive rescue operations, 13 persons are missing or dead. More than \$132,000 worth of damage was incurred by the small boats.

The National Transportation Safety Board determines that the probable cause of the loss of life and damage to the small boats at sea was: (1) The fact that the National Weather Service (NWS) and the U. S. Coast Guard did not provide timely information about the approaching storm to various small boats, and (2) the inadequate communications between small boats in distress and Coast Guard rescue units.

Contributing to the fact that timely information was not provided were: (1) NWS did not make sufficient use of available Coast Guard facilities which could have reported weather information; (2) the delay in the receipt of warning advisories by the Portland Weather Service Forecast Office (WSFO), the Eureka Weather Service Office (WSO), and the Crescent City Coastal Warning Display Station; (3) the failure of Coast Guard Group Humboldt Bay and the CAPE CARTER to inform Coast Guard Station Chetco River of the expected change in offshore weather conditions; and (4) the fact that the NWS did not use Citizens Band (CB) networks at Crescent City and Brookings to disseminate weather information to small boats.

Contributing to the inadequate communications was the inability of the Coast Guard to monitor requests for assistance that were transmitted on CB frequencies.

ANALYSIS

The Safety Board believes that a disparity exists between testimony given at the Coast Guard Marine Board's proceedings and Finding of Fact No. 23. Testimony indicates that Mr. Byrum, of the Eureka WSO, on his own initiative, took decisive action during the early morning of August 16. At 0558, Coast Guard Group Humboldt Bay was informed by the Eureka WSO that a small but severe storm was developing and that no boats should be allowed to leave the harbor. Eureka requested that the information be relayed to the Coast Guard at Crescent City.

Forecasting the Storm

Information about the storm was available soon enough for a forecast to be made and transmitted to the boats in the accident area. The northerly track of the storm can be traced from the evening of August 15, 1972, when a fishing vessel encountered

50- to 60- knot winds in the vicinity of Cape Mendocino, California, 100 miles south of Chetco River, Oregon. The Coast Guard Cutter CAPE CARTER, proceeding north from the area, recorded winds of 40 knots before 0400 on August 16. At 0530, the CAPE CARTER, offshore at Eureka, California, continued to experience 50-knot winds.

Southerly winds gusting to 40 knots were reported in the Humboldt Bay area at 0500 on August 16. At 0700, winds of 50 to 60 mph prevailed in Orick, California. A sudden wind shift offshore between the Klamath River and Point St. George, California, occurred at 0910. Five minutes later, strong winds suddenly appeared in the area of the St. George Reef. At 0930, winds estimated to be more than 70 knots prevailed in Crescent City, California; Brookings, Oregon, experienced winds gusting to more than 60 knots at 1045.

Despite this information, the surface weather chart used by the NWS to forecast the early morning weather of August 16 did not show the storm. The Coast Guard Lightship BLUNT'S REEF, previously stationed offshore of Cape Mendocino, had been used by the NWS to report weather. In June 1971, however, the ship was replaced by a large navigational buoy, which did not contain any weather-recording equipment. If the ship had been in operation on August 16, the San Francisco and Portland WSFO's would have received earlier notification of the storm.

Another source of weather information that could have advised the San Francisco and Portland WSFO's of the storm was the Coast Guard Cutter CAPE CARTER, on patrol off the northern California coast. Although the vessel was authorized to report abnormal weather conditions, since the vessel did not usually receive weather reports at sea, the commanding officer could not evaluate the importance of reporting the increasingly severe weather. Not until after discussing the weather with Coast Guard Group Humboldt Bay did the commanding officer send a weather message.

The failure of the NWS to use Coast Guard resources to collect offshore weather data prevented a more realistic forecast. Use of such information by the NWS in collecting weather information is stressed in Federal legislation. 14 USC 147 states:

"In order to promote the safety of life and property on and over the high seas and waters over which the United States has jurisdiction and to facilitate the preparation and dissemination by the Weather Bureau of the weather reports, forecasts, and warnings ... the Commandant may cooperate with the Chief of the Weather Bureau by procuring, maintaining, and making available, facilities and assistance for observing, investigating, and communicating weather phenomena and for disseminating weather data, forecasts and warnings, the mutually satisfactory terms of such cooperation in weather service to be agreed upon and arranged between the Commandant and the Chief of the Weather Bureau."

Dissemination of Weather Information

Coastal Warning Display Stations. On August 16, the San Francisco WSFO issued small-craft and gale warning advisories at 0600 and 0615, respectively. These advisories were not transmitted to the Crescent City Coastal Warning Display Station. Finding of Fact No. 28 in the Marine Board of Investigation Report does not definitely determine who is responsible for relaying the advisories to the Crescent City station. The Coastal Warning Display Station Record for Crescent City (WB Form 530-30) requires that a supervisory office initially send the weather advisory and that "Humboldt Bay will send message via USCG radio at no cost to the Weather Bureau." Since the record is on NWS form, the supervisory office probably is the Eureka WSO; "Humboldt Bay" is Coast Guard Group Humboldt Bay, situated at Samoa, California.

The Eureka WSO "Small Craft, Gale, and Storm Warning Call List," shows that the Eureka WSO first notifies the Coast Guard at Samoa and requests that the warning be relayed to the Coast Guard at Crescent City. The commanding officer of the CAPE CARTER stated, however, that he always received instructions to raise weather warning flags via Coast Guard Group Humboldt Bay from the Coast Guard Radio Station in San Francisco. Both avenues of communication were available on August 16. At 0558, the Eureka WSO requested Coast Guard Group Humboldt Bay to relay informal weather information about the impending storm to the Coast Guard at Crescent City. At 0607, the San Francisco Coast Guard Radio Station directed Humboldt Bay to relay the San Francisco WSFO small-craft warning advisory to CAPE CARTER.

Since the commanding officer of the CAPE CARTER had already advised Humboldt Bay that he was encountering severe weather, he did not believe that there was any reason for Coast Guard Group Humboldt Bay to relay the 0558 Eureka WSO warning. At 0614, the small-craft warning advisory issued by the San Francisco WSFO was sent to the CAPE CARTER, and at 0657 the gale warning advisory issued by the San Francisco WSFO was also relayed to the CAPE CARTER. But even though the Coast Guard Group Humboldt Bay forwarded this weather information, the harbormaster at Crescent City, who was responsible for hoisting the station display, remained uninformed of the impending storm. There was no requirement that the CAPE CARTER while at sea notify the harbormaster of weather warnings relayed by Humboldt Bay. The lack of understanding among the NWS offices and the Coast Guard units suggest that the instructions in the Crescent City Coastal Warning Display Station Record need to be reevaluated and clarified.

The Chetco River Coastal Warning Display Station at Brookings, Oregon, did not receive an NWS advisory soon enough to warn small boats of the impending severe weather. The Marine Board of Investigation did not sufficiently explore the 3-hour delay in the receipt of the San Francisco weather advisories by the Portland WSFO or the inadequate action taken by the Portland WSFO after receipt of the advisories.

Although the departure time of most of the boats is unknown, if the DIXIE LEE was the first boat to depart from Crescent City or Brookings on August 16, the display stations would have had to hoist the weather warning flags before 0545 to be totally effective. From the available evidence, it cannot be determined that if the proper procedures were followed, the flags would have been put up in time. However, if the existence of the storm had been made known to the NWS during the evening of August 15, when it was in the area of Cape Mendocino, adherence to procedures would have assured that correct weather advisories were disseminated.

There is a need for a better coordination between NWS and Coast Guard to assure timely and nonconflicting safety advisories.

Radio broadcasts. The effectiveness of the Coast Guard weather advisory broadcasts on 2670 kHz, the NWS broadcasts on 162.40 MHz, and three bulletins on a local commercial radio station in discouraging boats from departing for sea could not be determined by

the available evidence. There was no testimony to indicate that any of the approximately 69 boats offshore were informed of the impending severe weather by these broadcasts. To ensure maximum weather dissemination to small boats at sea, the communication capabilities of the boats should be explored by the NWS.

Most of the 69 boats relied upon CB radios for adverse weather warnings. CB networks in Crescent City and Brookings could have relayed weather information as early as 0615. Early notification would have allowed the boats to return safely to port before the storm. But these networks were not on the call list of the Eureka WSO. As a result, information about the storm was not transmitted on CB networks until its arrival was imminent.

The National Transportation Safety Board has previously recognized inadequacies in the system used to warn small boats at sea of bad weather. The use of CB networks to disseminate emergency weather information would provide more effective communication.

Distress Calls

Shortly after the starboard outrigger on the DIXIE LEE was damaged, the two persons on board sighted a 44-foot Coast Guard patrol boat. They used a portable "fog horn" hailer, but the hailer was not heard by the crew of the patrol boat. The DIXIE LEE was equipped with a CB radio. After the DIXIE LEE sank, one of the persons on board was drowned.

The persons on board the KAREN I, the MINDY LYNN, and the DONNA N used CB radio to transmit distress messages before their vessels foundered. They did not have radios with authorized distress frequencies. None of the nine persons on board the three boats was rescued. The Coast Guard rescue units were not equipped with CB radios and could not monitor the distress messages.

In January 1974, the Coast Guard "Boating Safety Letter" reiterated the Coast Guard's policy regarding the use of CB equipment. (See appendix.) The maritime VHF-FM system is the most effective means of communications with small boats in distress. However, the safety mission of the Coast Guard justifies using all types of communication used by the boating public, even if inferior. In declining to utilize CB equipment, even though it may be the most

effective means of communication in a particular situation, the Coast Guard reduces the efficiency of its search and rescue capabilities.

Commandant's Action

The Coast Guard Marine Board of Investigation recommended that the Commandant initiate an internal study on the communication capabilities between units of the 12th and 13th Coast Guard Districts. The Commandant replied that the study had been completed and that rapid and reliable communications were available. The Commandant further stated that improved procedures for communicating weather warnings and emergency information are not needed, since all Coast Guard units in the relevant area were in constant communication with each other. This comment cannot be substantiated by record of the Marine Board's investigation.

The Chetco River Coast Guard Station had a search-and-rescue responsibility for the northern California offshore area whenever the CAPE CARTER was on law-enforcement patrol. On August 16, both Coast Guard Group Humboldt Bay and the CAPE CARTER had about a 3-hour advance warning that the storm would strike. This information was not passed to the Chetco River station. The first action taken by the commanding officer of the Chetco River station after he overheard northern California units discussing the gale warning was to attempt to notify small boats offshore. This action suggests that earlier communications of the gale warning to the Chetco River station might have prevented at least some of the foundering and casualties.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the loss of life and damage to the small boats at sea was: (1) The fact that the National Weather Service (NWS) and the U. S. Coast Guard did not provide timely information about the approaching storm to various small boats, and (2) the inadequate communications between small boats in distress and Coast Guard rescue units.

Contributing to the fact that timely information was not provided were: (1) NWS did not make sufficient use of available Coast Guard facilities which could have reported weather information; (2) the delay in the receipt of warning advisories by the Portland Weather Service Forecast Office (WSFO), the Eureka Weather Service Office (WSO), and the Crescent City Coastal Warning Display Station;

(3) the failure of Coast Guard Group Humboldt Bay and the CAPE CARTER to inform Coast Guard Station Chetco River of the expected change in offshore weather conditions; and (4) the fact that the NWS did not use Citizens Band (CB) networks at Crescent City and Brookings to disseminate weather information to small boats.

Contributing to the inadequate communications was the inability of the Coast Guard to monitor requests for assistance that were transmitted on CB frequencies.

RECOMMENDATIONS

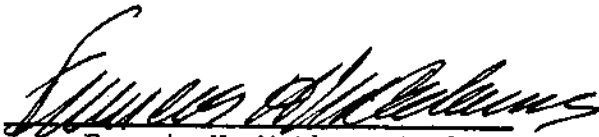
The National Transportation Safety Board recommends that:

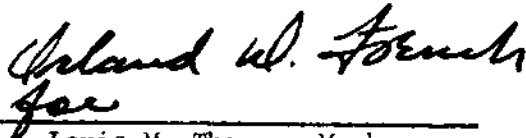
1. The National Weather Service and the U. S. Coast Guard, under 14 USC 147, provide a more effective means of collecting weather information. (Recommendation M-74-32)
2. The National Weather Service provide a rapid and more informative transfer of weather information between San Francisco and Portland Weather Service Forecast Offices. (Recommendation M-74-33)
3. The National Weather Service amend its present procedures to provide the most effective methods of disseminating local weather information to small boats including the use of available Coast Guard facilities. These methods should include the direct transfer of weather information from National Weather Service offices to established Citizens Band networks, in addition to all commercial radio and television media in the local area. (Recommendation M-74-34)
4. The U. S. Coast Guard amend its internal procedures to ensure rapid and efficient transfer of weather and emergency information between group commands and stations in adjoining Coast Guard Districts. (Recommendation M-74-35)
5. The U. S. Coast Guard use all available means of communications, including Citizens Band radio, in situations where a more rapid rescue response could be provided. (Recommendation M-74-36)

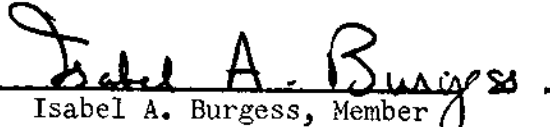
BY THE NATIONAL TRANSPORTATION SAFETY BOARD:


Adopted this 28th day of August 1974:


John H. Reed, Chairman


Francis H. McAdams, Member


Louis M. Thayer, Member


Isabel A. Burgess, Member


William R. Haley, Member

Communications...

CB Radio on Recreational Boats

The Coast Guard recently completed a re-evaluation of Citizens Radio Service as a tool for providing small boat safety. This re-evaluation included a review of a study completed in 1968 by the Jansky and Bailey Systems Department of the Atlantic Research Corporation. As a result of this review and in light of changes that have occurred since 1968, the following Coast Guard policy has been established concerning the Citizens Band Service:

- 1) The Coast Guard will not participate directly in the Citizens Radio Service by fitting with and/or providing a watch on any Citizens Band channel.
- 2) The Coast Guard will continue to seek appropriations to extend and improve VHF-FM coverage and not for providing direct interface with CB.
- 3) The Coast Guard will continue to strongly advocate the use of maritime VHF-FM as the primary short range safety communications system.
- 4) The Coast Guard will continue to prohibit CB installations or operations on board Coast Guard units.

To give some background on the CB problem, it is necessary to go back a number of years. The Coast Guard first became concerned in 1961 over the trend of the boating public to rely on Citizens Band radio, because it was cheap and readily available for safety communications. It was decided that the Coast Guard should not guard or monitor Citizens Band

radio frequencies since the characteristics of the Citizens Radio Service precluded any reasonable reliance upon it for distress communications purposes. Accordingly, on 21 September 1964, the Coast Guard policy of not permitting Citizens Band installations or operations on board Coast Guard units was established.

Since 1964, the use of Citizens Band radios by the boating public has continued to increase. In light of the increased use of CB radio, and to insure that the best possible marine distress communications system is in use, the Coast Guard on 25 June 1968 engaged the Jansky and Bailey Systems Department of the Atlantic Research Corporation to:

- 1) Investigate the usefulness and effectiveness of the Citizens Radio Service in providing for small boat safety.
- 2) Determine the feasibility and/or desirability of Coast Guard direct participation in the Citizens Radio Service should CB be proven useful in enhancing small boat safety.

The completed study was received in mid-September 1968. A number of conclusions were made which prompted the following recommendations by the study group:

- 1) The Coast Guard should not participate directly in the Citizens Radio Service by fitting with and/or providing a watch on any Citizens Band channel.
- 2) In those areas in which a portion of the boating public considers it an advantage to use Citi-

zens Band aboard boats to the exclusion of VHF-FM, these boatmen should arrange with the FCC to authorize the use of VHF-FM at appropriate Citizens Band interface stations at locations such as marinas and yacht clubs.

3) The Coast Guard should use such appropriations as are available from the federal government to extend and improve VHF-FM coverage and not for providing direct interface with CB, and should study the feasibility of remoting Coast Guard shore stations and establishing new satellite shore stations.

4) FCC, Coast Guard, state and local governments should continue to advocate the use of maritime VHF-FM as the primary short range marine safety system.

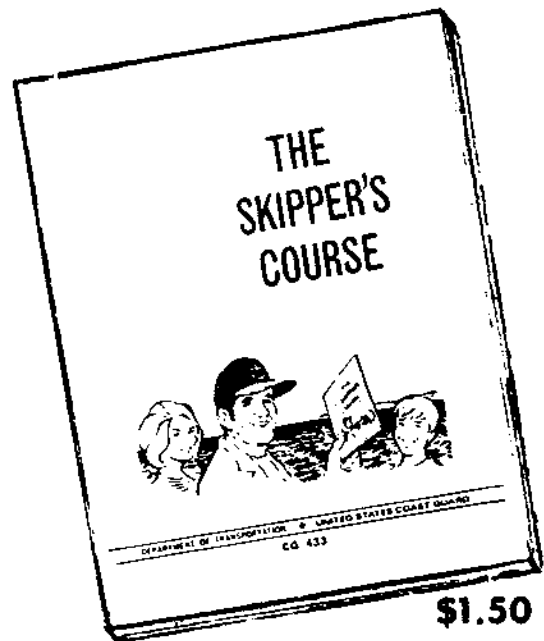
5) Coast Guard, state and local governments should extend and improve techniques for homing to include Citizens Band frequencies as a means of finding small boats in distress that are equipped solely with Citizens Band radio.

It is apparent that there is a large number of boatmen using the Citizens Radio Service. The Coast Guard has an obligation to educate boatmen as to its limitations as a safety system while recognizing that CB service could be used as an interface to advise the Coast Guard of safety information. Accordingly, the Coast Guard will establish a positive educational program to acquaint boatmen with the limitations of the Citizens Radio Service, and the advantages of the use of VHF-FM. Coast Guard Auxiliary participation in this program is encouraged.

The Coast Guard will also examine the use of CB radio by boating groups in their areas. In areas where boating groups have voluntarily established informal CB marine safety systems, steps

will be taken to insure that these groups are provided with information on how to notify appropriate rescue agencies and what information to obtain from distressed vessels. These stations will then contact the Coast Guard or the appropriate state/local authorities by telephone or marine radio. Close liaison with State Boating Law Administrators and other local officials will be required to determine the methods and procedures these interface stations should use to notify the appropriate agency of distress or emergency information. The Coast Guard shall not encourage the establishment of CB marine nets, but where these nets exist, information can be extracted from them to aid the safety mission.

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DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
U.S. COAST GUARD (GMVI-3/83)
400 SEVENTH STREET SW.
WASHINGTON, D.C. 20590
PHONE:

5943/LOSS OF NUMEROUS
VESSELS
A-12 Bd
25 SEP 1973

Commandant's Action

on

The Marine Board of Investigation convened to investigate circumstances surrounding the Loss of Numerous Vessels during heavy weather in the vicinity of Chetco River, Oregon on or about 16 August 1972 with loss of life

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 by the National Transportation Safety Board.

REMARKS

1. Concurring with the Marine Board of Investigation it is considered that the cause of the collective casualties was an unpredicted, severe, and highly localized storm which struck the Northern California and Southern Oregon coasts. Those affected vessels from which people died or are missing and presumed dead were in the nearby vicinity of St. George Reef.

2. Known information as to the causes or contributing causes of individual casualties is scanty. The M/V DIXIE LEE suffered a broken outrigger which caused the vessel to list and subsequently founder in the heavy seas. The M/B KAREN I probably lost power and either swamped or broke up from the seas. The broaching of the M/B D ANN D can also be attributed to loss of power due to an anchor line being fouled in the screw. There is some evidence of inexperience on the part of the operator of the M/B BOUNDING MAIN which may have contributed to the loss of that vessel. There is no known information as to how the M/B RO ANN, M/B MINDY LYNN and the M/V DONNA N were lost. The vessels involved were not designed to operate in the severe weather encountered in this storm. These vessels simply could not cope with existing weather conditions and other contributing factors such as a broken outrigger and loss of propulsion power.

3. The Coast Guard has received numerous requests for the Coast Guard to monitor Citizens Band (CB) radio. In view of the continued public interest an ad hoc committee to examine the Coast Guard's position relative to Citizens Radio Service was formed in the early part of 1973. The results of the committee study confirm the position the Coast Guard has held in the past, i.e. the Coast Guard should not participate directly in the Citizens Radio Service by fitting with and/or providing a watch on any Citizens Radio Channel, but will improve the VHF-FM system.

4. The Coast Guard is constantly striving to educate the public in the value of having proper radio equipment on board their vessels. In addition to the Federal Regulations dealing with the use of the authorized distress frequency, the Coast Guard publishes "Marine Communications for the Boating Public", CG-423, which provides detailed information on marine radio communications. The Coast Guard and the Coast Guard Auxiliary are also endeavoring to educate the boating public in the use of radiotelephone equipment through various boat safety courses now being offered.

5. The conclusion which suggests that improved communication procedures and/or equipment between the Twelfth and Thirteenth Coast Guard Districts are necessary for more effective weather warnings and emergency information dissemination is not concurred with. All Coast Guard units in the relevant area were in constant communication with each other. The time difference between receipt of storm warnings at Humboldt Bay Station and the Chetco River Station appears to be due to the fact that the stations in question are at the boundary between two areas of weather forecasting responsibility.

6. Appropriate commendatory action has been taken for the accomplishments of those personnel noted by the Board.

ACTION CONCERNING THE RECOMMENDATIONS


1. The recommendation that the Commander, Pacific Area, U. S. Coast Guard, in coordination with the Commander, Twelfth Coast Guard District and the Commander, Thirteenth Coast Guard District, conduct a communication study to encompass direct communication capabilities between Group Coos Bay, Group Humboldt Bay, and associated units was accomplished. The study revealed that there are rapid and reliable communications for the exchange of vital information between the Groups and associated units.

2. A copy of the report and record of the proceedings was forwarded to the National Weather Service, National Oceanic and Atmospheric Administration, U. S. Department of Commerce for any action that agency may consider appropriate. Likewise, copies of the report were forwarded to the Federal Communications Commission, the Director, Department of Navigation and Ocean Development, and the Director, Oregon State Marine Board as indicated in the Board's recommendations 4, 7 and 8.

3. At the present time, the Coast Guard does not have any floating units assigned the responsibility of maintaining a coastal weather warning display station. The assignment of the CAPE CARTER was an isolated instance. Future assignments of vessels to this duty will be made on a case by case basis.

4. Recommendation 3 is generally concurred with. However, while the need for greater public information is recognized, the Coast Guard must share with the states and voluntary boating safety interested organizations the responsibility of promulgating and disseminating boating safety information. The concerned District Commanders will be directed to critically review their boating safety education programs.

5. Federal Regulations require the marking of all lifesaving equipment with the name of the vessel on all Coast Guard inspected vessels. The alternative recommendation concerning the marking of lifesaving equipment on recreational craft will be adopted. Boaters will be encouraged to mark their equipment with the name or number of the vessel through various boating safety educational programs on a voluntary basis.


C. R. BENDER
Admiral, U. S. Coast Guard
Commandant

5943/Loss, Numerous
Vessels Off Chetco
River, Oregon, Bd.
9 April 1973

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

Subj: Loss of numerous vessels during heavy weather in the vicinity
of Chetco River, Oregon on or about 16 August 1972; with loss
of life

FINDINGS OF FACT

1. At approximately 0930 PDT on 16 August 1972, a severe storm struck the Northern California and Southern Oregon Coast. The storm, with reported sixty knot winds, was highly localized and effectively centered in the St. George Reef, California area at the approximate location of 41°48'N Latitude and 124°20'W Longitude. Coastal damage was reported as extending from just south of Crescent City, California to the north of Gold Beach, Oregon, a distance of about seventy statute miles. Approximately sixty nine fishing and recreational type vessels with one hundred and eighty one persons on board were reported to be affected by the storm. All known or presumed deaths associated with these vessels are attributed to six boats that foundered or remain missing as of the date of the report. These fatalities include five known deaths and eight missing persons. An additional untold number of boats were torn from their moorings and grounded on the beach or rocks. Twelve other identifiable vessels, with thirty five persons on board, were rendered assistance which enabled them to safely return to port. Assisting units had reporting difficulties caused by the large number of assistance cases during such a short period of time. Indications are that significantly more vessels were assisted than the report shows. The extent of the utilization of approved lifesaving devices in the case of missing persons is unknown. On the other hand, lifesaving device utilization played a major role in the survival of seven identifiable persons. All bodies recovered were likewise equipped. At least fifteen additional approved lifesaving devices were found floating in the storm debris or washed ashore. None of these devices were marked in any manner which would identify the vessel that they were associated with, nor are such devices required to be marked by Federal Statutes or Regulations. All boats associated with known or presumed fatalities were reported to have approved lifesaving devices on board. Property damage was reported to be in excess of 132,000 dollars.

2. The following is a list of the missing and/or foundered boats which were involved in the known or presumed loss of life. None of the vessels so described were certificated by the U. S. Coast Guard. All operators were familiar with St. George Reef Area.

a. NAME:	M/V DIXIE LEE (Foundered)
O.N.	241769

SERVICE:	Fishing	
GROSS TONS:	7	ay
NET TONS:	5	iture
LENGTH:	33.2'	
BREADTH:	8.5'	
DEPTH:	3.6'	
HULL:	Wood	
PROPULSION:	Diesel	
HORSEPOWER:	100	
YEAR BUILT:	1941	
OWNER/OPERATOR:	Clayton D. Dooley P.O. Box 1255 Brookings, Oregon 97415	
REPORTED EXPERIENCE LEVEL OF OPERATOR:	Longtime Commercial Fisherman	

b. NAME: M/B KAREN I (Foundered/Capsized)

NUMBER:	OR 372 DC
LENGTH:	25' 11"
WIDTH:	9' 7"
PROPULSION:	Gasoline Inboard/Outboard
HORSEPOWER:	365
HULL:	Fiberglass
MFG:	Stamas (1969)
FLOIATION:	Foam (85 cubic feet)
CAPACITY:	12 persons
FREEBOARD/WEIGHT DISTRIBUTION:	Unknown

OWNER/OPERATOR:	William C. Friend, Jr. Route 1, Box 68 Brookings, Oregon 97415
REPORTED EXPERIENCE LEVEL OF OPERATOR:	Over 500 hours
c. NAME:	M/B RO ANN (Missing)
NUMBER:	CF 3071 BM
LENGTH:	18'
WIDTH:	6'
PROPULSION:	Outboard
HORSEPOWER:	45
HULL:	Fiberglass (White Hull, Red Cabin)
MFG:	Glasspar (1961)
FLOTATION:	Unknown
CAPACITY:	N/A (1 Occupant)
FREEBOARD/WEIGHT DISTRIBUTION:	Unknown
OWNER/OPERATOR:	Joe F. Leoni P. O. Box 738 Yreka, California 96097
REPORTED EXPERIENCE LEVEL OF OPERATOR:	Over 500 hours
d. NAME:	M/B MINDY LYNN (Missing)
NUMBER:	CF 3782 ED
LENGTH:	17' 8"
WIDTH:	6' 8"
PROPULSION:	Outboards (2)
HORSEPOWER:	18 (1) 55(1)
HULL:	Fiberglass (Blue)

MFG:	Sea :
FLOTATION:	Unkno
CAPACITY:	N/A
OWNER/OPERATOR:	Robert 6468 Young
REPORTED EXPERIENCE LEVEL OF OPERATOR:	Over

e. NAME:	M/V I
O.N.	2814
SERVICE:	Fish
GROSS TONS:	9
NET TONS:	7
LENGTH:	30.9
BREADTH:	10.8
DEPTH:	4.2'
HULL:	Wood
PROPULSION:	Dies
HORSEPOWER:	80
YEAR BUILT:	1960
OWNER/OPERATOR:	Richard P.O. Box Harbor
REPORTED EXPERIENCE LEVEL OF OPERATOR:	Long

f. NAME:	M/B
NUMBER:	CF 1
LENGTH:	25'
WIDTH:	8'

PROPULSION:	Gasoline Inboard
HORSEPOWER:	120
HULL:	Wood (White Hull, Black Trim)
MFG:	Homemade (1971)
FLOTATION:	Unknown
CAPACITY:	Unknown
FREEBOARD/WEIGHT DISTRIBUTION:	Unknown
OWNER/OPERATOR:	Dennis E. Main 35 Mathew Street Crescent City, California 95531
REPORTED EXPERIENCE LEVEL OF OPERATOR:	Over 500 hours

5. The following is a list of the deceased or missing persons reported to be on board the boats described in paragraph 2. above at the outset of the storm.

- a. M/V DIXIE Let, U.N. 241769
 - Clayton D. Dooley (Age 57) - Deceased
 - P. O. Box 1255
 - Brookings, Oregon 97415
 - N.O.K. Hallie S. Dooley (Widow) - Same address

- b. M/B KAREN I, OR 372 LC
 - (1) William C. Friend, Jr. (Age 47) - Missing
 - (2) Virginia M. Friend (Age 38) - Deceased
 - (3) William C. Friend III (Age 12) - Missing
 - (4) Brian C. Friend (Age 10) - Deceased
 - Route 1, Box 68
 - Brookings, Oregon 97415 (All of same address)
 - N.O.K. Ronald Friend (Son)
 - c/o Dr. W. Judy
 - Grants Pass, Oregon 97526
 - (5) Donald C. Higgins (Age 54) - Missing
 - Route 1, Box 68
 - Brookings, Oregon 97415
 - N.O.K. Marjorie Higgins (Widow) - Same address

- c. M/B RO ANN, CF 3071 BM
 Joe F. Leoni (Age 52) - Deceased
 P.O. Box 738
 Yreka, California 96097
 N.O.K. Theora I. Leoni (Widow) - Same address

- d. M/B MINDY LYNN, CF 3782 ED
 Robert B. Wilson (Age 72) - Missing
 6468 Washington Street
 Yountville, California 94599
 N.O.K. Nila Wilson (Widow) - Same address

- e. M/V DONNA N, O.N. 281472
 - (1) Richard B. Crook (Age 46) - Missing
 - (2) John M. Crook (Age 10) - Missing
 P. O. Box 2006 Harbor, Oregon 97415
 N.O.K. Charlotte Crook (Widow and mother) - Same address
 - (3) Joel M. Crook (Age 17) - Missing
 609 Easy Manor Drive
 Brookings, Oregon 97415
 N.O.K. Donald Crook (Father) - Same address

- f. M/B BOUNDING MAIN, CF 1335 EM
 - (1) Dennis E. Main (Age 44) - Deceased
 - (2) Mathew D. Main (age 10) - Missing
 35 Mathew Street
 Crescent City, California 95531
 N.O.K. Beverly Main (Widow and mother) - Same address

4. The weather in the vicinity of St. George Reef was considered good during the late hours of 15 August 1972, and the early morning hours of 16 August 1972. (All dates referred to hereafter in this report will assume the year 1972 unless specifically identified otherwise.) The winds were described as northerly, northeasterly, at less than ten miles per hour. The only unusual aspect of sea condition was an ominous calm, which was reported to prevail just north of the Reef the entire day of 15 August. A sharp deterioration in the weather was reported to the south and west of the Reef as early as 0530 PDT on 16 August when the U. S. Coast Guard Cutter CAPE CARTER (WPB 95309) reported forty-five to fifty knot southerly winds at a location approximately twenty miles west of Eureka, California. The seas were described as building and the barometer as falling rapidly. At approximately 0730 PDT 16 August, similar wind and sea conditions were reported north of Eureka at a position approximately fifteen miles south of St. George Reef. This worsening weather continued its northward track, and by approximately 0800 PDT on 16 August, St. George Reef was receiving southerly winds in excess of fifteen knots. By 0930 PDT 16 August, the Reef was in the grasp of a severe storm with reported eight to ten foot seas and forty knot winds. The mean air temperature during the course of the storm was approximately 57°F and the water temperature was 58°F. A detailed weather summary is contained in Findings 17 through 25. A geographical presentation of the area is contained in Appendix I hereto.

- c. M/B RO ANN, CF 3071 EM
 Joe F. Leoni (Age 52) - Deceased
 P.O. Box 738
 Yreka, California 96097
 N.O.K. Theora I. Leoni (Widow) - Same address

- d. M/B MINDY LYNN, CF 3782 ED
 Robert B. Wilson (Age 72) - Missing
 6468 Washington Street
 Yountville, California 94599
 N.O.K. Nita Wilson (Widow) - Same address

- e. M/V DONNA N, O.N. 281472
 - (1) Richard B. Crook (Age 46) - Missing
 - (2) John M. Crook (Age 10) - Missing
 P. O. Box 2006 Harbor, Oregon 97415
 N.O.K. Charlotte Crook (Widow and mother) - Same address
 - (3) Joel M. Crook (Age 17) - Missing
 609 Easy Manor Drive
 Brookings, Oregon 97415
 N.O.K. Donald Crook (Father) - Same address

- f. M/B BOUNDING MAIN, CF 1335 EM
 - (1) Dennis E. Main (Age 44) - Deceased
 - (2) Mathew D. Main (age 10) - Missing
 35 Mathew Street
 Crescent City, California 95531
 N.O.K. Beverly Main (Widow and mother) - Same address

4. The weather in the vicinity of St. George Reef was considered good during the late hours of 15 August 1972, and the early morning hours of 16 August 1972. (All dates referred to hereafter in this report will assume the year 1972 unless specifically identified otherwise.) The winds were described as northerly, northeasterly, at less than ten miles per hour. The only unusual aspect of sea condition was an ominous calm, which was reported to prevail just north of the Reef the entire day of 15 August. A sharp deterioration in the weather was reported to the south and west of the Reef as early as 0530 PDT on 16 August when the U. S. Coast Guard Cutter CAPE CARTER (WPB 95309) reported forty-five to fifty knot southerly winds at a location approximately twenty miles west of Eureka, California. The seas were described as building and the barometer as falling rapidly. At approximately 0730 PDT 16 August, similar wind and sea conditions were reported north of Eureka at a position approximately fifteen miles south of St. George Reef. This worsening weather continued its northward track, and by approximately 0800 PDT on 16 August, St. George Reef was receiving southerly winds in excess of fifteen knots. By 0930 PDT 16 August, the Reef was in the grasp of a severe storm with reported eight to ten foot seas and forty knot winds. The mean air temperature during the course of the storm was approximately 57°F and the water temperature was 58°F. A detailed weather summary is contained in Findings 17 through 25. A geographical presentation of the area is contained in Appendix I hereto.

5. The Board unsuccessfully attempted to identify any one on the affected boats that had knowledge of an impending storm. This focus was directed at determining whether or not any significant number or geographical group of boats possessed information that would distinguish them from the remainder of the storm affected boats. The Board also discovered that the affected boats were of varying sizes which had little in common except that they were nearly all under thirty two feet in length. The general area, which accounted for the overwhelming majority of the affected boats and all of those involving fatalities, was the St. George Reef or in the vicinity thereof. The concentration of boats in this area was precipitated by reports of good salmon fishing the previous day. Specifically, excellent fishing was reported approximately two miles north of the St. George Reef Light (LL 71). Most boats in the area were equipped with either a loran or fathometer or both. A combined loran line and water depth reading was the principal source of any navigation fix or estimated position. Coast Guard small boats, such as those attached to the Chetco River Station, are not equipped with loran sets.

6. The six boats which accounted for all of the known or presumed deaths were of varying sizes, were all fishing on or near St. George Reef, and their operators had no knowledge of the impending storm. Thus, Findings 7 through 12 provide a detailed account of the conditions which were typical of those influencing all of the affected boats. Findings 13 and 14 offer additional examples of these conditions.

7. a. The F/V DIXIE LEE departed the Chetco River, Oregon, Harbor at approximately 0545 PDT on 16 August with Clayton D. Dooley as operator and his grandson, David A. Shinkle, on board. The weather conditions were described as moderate with only a slight chop attributed to the six knot southeasterly wind. There were no reported operating or material difficulties which would affect the seaworthiness of the DIXIE LEE at the time of its departure. The boat remained underway for approximately an hour and a half before its fishing gear was extended. Mr. Dooley and his grandson continued their trolling, for about another one and a half hours, until the weather began to worsen. At this time, their estimated position was about four miles north of St. George Reef Light (LL 71). At some time around 0910 PDT on 16 August, a weather report of impending bad weather was received on the CB radio from the F/V MABEL JEAN which was moored in Brookings, Oregon.

b. As a result of this weather warning, the DIXIE LEE personnel retrieved their fishing gear and headed for the Chetco River Inlet. At this time, David Shinkle observed Butch Crook operating the F/V DONNA N with his fishing gear in the water and still headed out. As the DIXIE LEE began its northeasterly transit, they encountered strong winds and heavy seas. Both outriggers and stabilizers were rigged outboard, and the vessel was riding without too much difficulty, until the chain securing the starboard outrigger in position parted. As the

unrestricted outrigger snapped back to the vertical, the DIXIE LEE heeled sharply to port. A combination of wind and the moment developed by the length of the outrigger, caused the vessel to remain heeled to port. The now listing 32' wooden boat became entrapped in a trough from which the operator was unable to extricate it. As the seas broke over the boat, water began spilling into the open gaffing hatch on the stern, until finally it foundered at about 1030 PDT on 16 August.

c. Mr. Dooley and David Shinkle had donned lifesaving devices, which by their description were buoyant vests, and entered the water shortly before the DIXIE LEE sank in the vicinity of Chetco River Whistle Buoy (LL 73). David Shinkle and Mr. Dooley struck out for shore with David attempting to assist the older man in their difficult task. David made periodic checks on Mr. Dooley's physical condition, from the time that they entered the water until approximately 1300 PDT on 16 August, at which time David presumed Mr. Dooley had expired. Less than an hour later, Mr. Dooley's body and David Shinkle were sighted by the F/V PAH BAY about one-half mile west of Goat Island, Oregon. David Shinkle was taken on board the PAH BAY, but the vessel was unable to bring Mr. Dooley's body on board. David was subsequently examined by a doctor and returned to his home the same date. Mr. Dooley's body was recovered later that day by the CG-44311 in the same area where David was rescued. Mr. Dooley's remains were buried in the Gold Beach Cemetery, Gold Beach, Oregon, on 19 August 1972. The cause of death was attributed to accidental drowning.

8. a. The M/B KAREN I was described by a neighbor of the owner/operator as a 26' Stamas, which its manufacturer lists as a 25' 11" fiberglass inboard/outboard cabin motorboat. This boat departed Brookings, Oregon during the early morning hours of 16 August, for the avowed purpose of salmon fishing offshore in the Pacific Ocean. There were five persons reported on board including: the owner/operator William C. Friend, Jr., his wife, Virginia Mae Friend, their son, William Carl Friend III, their son, Brian Coy Friend, and a neighbor, Donald Carl Higgins. The Friend family and Mr. Higgins resided in the Surfside Trailer Park, Brookings, Oregon.

b. Witnesses to the actual departure of the KAREN I were not located; however, Elmer B. Matson, a neighbor of both the Friend family and Mr. Higgins, was advised on the night of 15 August that the cited boat, and its described occupants, would depart the trailer court at approximately 0500 PDT on 16 August. The first established sighting of the KAREN I was about 0800 PDT on 16 August by the F/V TAU TOG in the vicinity of Goat Island, Oregon. Phillip C. Evanow, owner/operator of the TAU TOG, described the weather as deteriorating at the time of the encounter. He described the sea as flat with white caps forming, and the wind as southerly at about fifteen knots. As a result of the deteriorating weather, Mr. Evanow attempted to dissuade the

the occupants of the KAREN I from continuing their trolling. After the group refused to heed his warnings regarding the impending bad weather, he offered to take a boy, woman, and another "guy", occupants of the other boat, on the TAU TOG. Mr. Evanow departed the scene after being advised that his assistance was not necessary.

c. The KAREN I was reported to be experiencing difficulties shortly before 0930 PDT on 16 August. At approximately 0940 PDT that date, Mr. Higgins, on CB radio channel 11, gave the position of the boat as eighteen miles off of the Chetco River Whistle Buoy (LL 73). Shortly thereafter, Mr. Friend amended this position to two or three miles west of the Chetco River Whistle Buoy. At the same time he advised that his engine was dead, and that his fishing gear was still in the water. At some unspecified time on that day, Boyd Mabry, owner/operator of the charter boat, OCEAN KING, intercepted a MAY DAY from the KAREN I as he was returning to his home port, Harbor, Oregon. The MAY DAY was initiated by a woman who identified herself as Virginia Friend on board the KAREN I, with her husband, two children and a neighbor also on board. She described the boat as dead in the water about a mile and a half from the "Stack", and going in that direction. The "Stack", used as a local landmark, is located in Brookings, and Mr. Mabry headed toward it. After failing to sight the disabled boat, he again contacted the KAREN I whereupon he received the report that it was about five miles west of Goat Island in forty-nine fathoms. This position would have placed them approximately west of a log chimney located three miles north of the "Stack." Attempts by Mr. Mabry to maintain communications with the KAREN I were unsuccessful, and the last transmission from the stricken boat was approximately 1045 PDT on 16 August, when Mrs. Friend declared that they were going down.

d. At some time after 1600 PDT on 16 August, the KAREN I wreckage was sighted by Coast Guard aircraft in the vicinity of House Rock, Oregon. The CG-44311 located the body of Brian Friend in the vicinity of the capsized boat at about 1720 PDT the same date. The body was attired in an adult lifesaving device which was tied loosely, and thereby permitted the body to slump down into the jacket. He was found face up with his body submerged. A short time later, the same boat located the body of Virginia Friend, also attired in a lifesaving device, floating face up. The remains of Brian Coy Friend and Virginia Mae Friend were cremated at Hillcrest Crematory, Grants Pass, Oregon, on 23 August 1972. The cause of death for both Brian Friend and his mother, Virginia Friend, was attributed to accidental drowning. The other three reported persons on board, William C. Friend, Jr., William C. Friend III and Donald Carl Higgins, remain missing as of the date of this report.

9. a. The M/B RO ANN was an 18' Glasspar fiberglass motorboat with a 45 H.P. and an 18 H.P. outboard motor attached. Little details are known as to the departure time or date or number of persons on this boat. Residents of the trailer court where Joe F. Leonl resided,

reported observing him leaving the area at about 0535 PDT on 16 August with the RO ANN on a boat trailer. The boat did not contain any radio equipment which could be utilized for two-way communication. Mr. Leoni reportedly fished by himself.

b. James A. Leoni, nephew of Joe F. Leoni, located his uncle's truck and boat trailer on the Citizen's Dock, Crescent City, California on 17 August. On 19 August, the body of Joe F. Leoni was recovered in the approximate location of 41°49'N and 124°34'W, or about nine miles northwest of St. George Reef. Mr. Leoni's remains were buried in the Mt. Shasta Memorial Park, Eureka, California, on 23 August 1972. The cause of death was attributed to accidental drowning.

10. a. The M/B MINDY LYNN was an 18' Sea Swirl fiberglass boat owned by Robert B. Wilson. Mr. Wilson departed the Crescent City, California harbor at approximately 0615 PDT 16 August as the sole occupant of the MINDY LYNN. He was observed fishing in the area of St. George Reef during the early morning hours of that date. He was not in the habit of ascertaining weather conditions prior to his departure for the fishing area, but rather depended on other fishermen in the area who had radio equipment with broadcast/receiving capabilities. At approximately 0845 PDT on 16 August, he contacted Marlon Tolman, owner/operator of the F/V CARMORENG on channel 4 of the CB radio frequency. Mr. Wilson expressed some concern for his well-being, whereupon Mr. Tolman asked him for his position. Mr. Wilson responded that he was in "twenty-six fathoms and I'm halfway between the Light and Seal Rock." This position was questioned by Mr. Tolman since that depth was not consistent with the described geographical area. After a brief exchange between the two men regarding the accuracy of the position, Mr. Tolman proceeded toward the St. George Reef Light (LL 71). At about 0930 PDT that date he was unable to see Mr. Wilson, although he was in a position where he could observe the MINDY LYNN if the reported position was accurate. The two men again exchanged information regarding the position of the MINDY LYNN, with a decision that Mr. Wilson was probably further to the eastward. Mr. Tolman and the CARMORENG then headed toward N.W. Seal Rock, California where he eventually sighted the MINDY LYNN near the rock. Mr. Tolman described the seas as eight to ten feet at this time, and estimated the wind velocity to be forty-five knots. The MINDY LYNN was now bobbing uncontrolled in heavy seas, with Mr. Wilson relaying that he was unable to handle his boat.

b. Mr. Tolman maneuvered the CARMORENG to place the smaller boat in his lee, and headed toward Seal Rock with the MINDY LYNN northwest of him. This course was expected to place the MINDY LYNN in the lee of both the CARMORENG and the Rock. As the MINDY LYNN came abeam of the larger vessel, its distance was estimated as close as ten feet, and the wind suddenly picked up, causing grave concern to Mr. Tolman, who was now forced to a northeasterly heading. Mr. Tolman described the wind effect of the MINDY LYNN as "whipping it across the seas like

a piece of paper." As the CARMORENG came about, its rudder assembly snapped, thus leaving the boat without any means of steering. Mr. Wilson noted the apparent plight of the CARMORENG, and questioned its condition over the CB radio. Mr. Tolman responded by describing his boat as without steerage, and therefore unable to assist the MINDY LYNN any further. The MINDY LYNN then drifted from sight, and its operator offered that he would probably try to make Brookings, Oregon. Shortly thereafter, Mr. Wilson made his last identifiable radio transmission, by declaring that "my boat has a lot of water in it or I'm trying to ball and I don't think I can make it," or words to that effect. The approximate position of the MINDY LYNN at this time was 41°52'N and 124°22'W. Although there were three approved lifesaving devices reported to be aboard the boat in question, there is no evidence that any such device was being utilized by Mr. Wilson notwithstanding his reported consideration of such utilization. The whereabouts of the M/B MINDY LYNN, and Mr. Robert B. Wilson have not been reported to the United States Coast Guard as of the date of this report.

11. a. The F/V DONNA N departed the Brookings, Oregon, Harbor during the early morning hours of 16 August to fish in the vicinity of St. George Reef. The vessel's exact departure time is unknown, however, Richard (Butch) Crook (owner/operator of the DONNA N) was observed in two separate locations that morning, which indicates that his departure was shortly after 0600 PDT on 16 August. Gerald Lineman Hahn, Sr., ate breakfast with Mr. Crook in a dockside restaurant at Harbor, Oregon that morning. Mr. Hahn noted that Mr. Crook's son, whom he described as a ten year old boy, was with him at the time. Mr. Hahn departed the restaurant prior to Mr. Crook and proceeded down the dock to his own boat, the F/V SEA BREEZE. As he passed the DONNA N, which was also tied to the dock, he observed another boy leaving the boat whom Mr. Hahn described as another "Crook boy." Mr. Hahn advised this boy that "Butch would be there pretty quick to go fishing," or words to that effect, and shortly thereafter the two boats departed on their way out to the fishing grounds in the vicinity of St. George Reef. Mr. Hahn related that he called Mr. Crook on the radio and passed the time of day with him on his way to the reef as they were both fishing on the same general course.

b. Mr. Hahn and Mr. Crook fished in close proximity during the early part of the day on 16 August, until the weather began to deteriorate. At approximately 0910 PDT, Mr. Hahn and Mr. Crook overheard a transmission of Mr. James W. Carson from the F/V MABEL JEAN, which warned them of impending bad weather in their area. The nature of this transmission was a general warning over CB radio channel 8 that small boats fishing offshore should get out of the area. Mr. Crook questioned Mr. Carson over the same channel, "Jim, am I one of these small boats that should be getting out of here," or words to that effect. Mr. Carson advised him that considering the circumstances, that he (Mr. Carson) would leave. At about the time of this transmission, the DONNA N was observed by David Shinkle on the DIXIE LEE, to be slightly to the north of St. George Reef Light (LL 71). Within fifteen minutes of this sighting, both the DONNA N and the SEA BREEZE

were on their way to shore. As the two boats started to shore, Mr. Crook observed over the CB radio, that it was starting to blow very hard, and that they would be required to run in the trough all the way back. The DONNA N, at this time, was about a quarter of a mile astern of the SEA BREEZE, and on the same course. This is the last time Mr. Hahn observed the DONNA N, or that he had any communications with Richard (Butch) Crook.

c. Mrs. Jane Paula Gibney overheard what apparently was the last radio transmission from the DONNA N on CB channel 8 at approximately 1000 PDT on 16 August. Mrs. Gibney described herself as a member of a CB net monitoring group, who identify themselves as the Commercial Fishermen's Wives of Brookings. Mrs. Gibney relates the transmission to be either, "I haven't got time for more, I am sinking," or "I can't keep it up, I am sinking," or words to the effect that his boat was taking on water. The voice on the radio was positively identified as that of Richard (Butch) Crook. Debris, consisting of broken boards, was recovered which has been positively identified as the forward section of the flying bridge of the DONNA N. Although this boat was reported to have approved lifesaving devices on board, there is no evidence that such devices were so utilized. The whereabouts of the F/V DONNA N and the three reported persons on board, Richard (Butch) Crook, Joel Crook and John M. Crook, remain unreported to the U. S. Coast Guard as of the date of this report.

12. a. The M/B BOUNDING MAIN departed the Crescent City, California Harbor at some unknown time on the morning of 16 August, with Dennis E. Main and ten year old Mathew D. Main reported to be on board at the time of departure. Despite repeated appeals, during each public session of the Board in Crescent City, California, for persons to come forward with knowledge of this boat or the described persons on board, no eyewitness to the boat's departure was located. However, Mrs. Beverly Main, spouse of Dennis and mother of Mathew Main, provided information that the two had indicated on the night of 15 August that they planned to fish the following morning. This was in keeping with their practice of departing early each morning during the summer months, weather permitting. When Mrs. Main arose at about 0630 PDT on the morning of 16 August, both her husband and son were gone.

b. The first identified contact with the 25' wooden BOUNDING MAIN was on the CB radio channel 4 at about 0900 on 16 August. Carl A. Brower, owner/operator of the F/V MARKETTA, repeated a bad weather warning which was acknowledged by Mr. Main on board the BOUNDING MAIN. At this time, Mr. Main reported that he was in fifty-seven fathoms, and that he was going into Brookings or was going to try to go into Brookings. The BOUNDING MAIN's position at this time was about seven miles northwest of St. George Reef Light (LL 71). This estimated position is based on his relative location from the reported position of the MARKETTA. The next identifiable contact with Mr. Main

was at about 0930 PDT on 16 August. At this time, Mr. Main contacted Irvin Feyerisen, owner/operator of the M/B D ANN D, and requested advice as to operating characteristics of the BOUNDING MAIN as the two boats were identical. Mr. Main was cautioned to not get excited, and to just "wash along with it", and maintain only enough speed for steerage. Mr. Main advised Mr. Feyerisen that he (Main) was going to go to Brookings because he could not buck it. Neither Mr. Brower nor Mr. Feyerisen saw Mathew D. Main on board the BOUNDING MAIN, and neither man could recollect any radio transmission which reflected the whereabouts of the boy. Although lifesaving devices were reported on board the boat in question, any utilization thereof by Mathew Main was not established. On 17 August the body of Dennis E. Main was recovered with a non Coast Guard approved, inflatable CO2 life vest still affixed. The cause of death was attributed to an acute congestive heart failure due to low temperature water exposure. His remains were buried in Veteran's Cemetery, Del Norte County, California, on 23 August. The whereabouts of Mathew D. Main and the BOUNDING MAIN have not been reported to the U. S. Coast Guard as of the date of this report.

13. The D ANN D continued northeasterly toward Brookings maintaining only enough speed for steerage. Mr. Feyerisen alternately headed into the beach and back out, as the seas defeated attempts to pass in over the bar. These attempts continued until about 1500 PDT on 16 August, at which time Mr. Feyerisen decided to wait nearby the Chetco River Whistle Buoy (LL 73) until better conditions prevailed. As he neared the buoy, he temporarily disengaged the boat's shaft, and as he placed it in gear again, the engine stalled. Mr. Feyerisen discovered that the stalling was caused by his anchor line, which had washed over the side, and became fouled in the boat's screw. In order to unfoul the screw, it was necessary for him to raise the inboard/outboard engine outboard drive unit. During this exposed period, a wave broke over the boat, rendering it inoperative. The boat, now without power drifted in over the breaker line until it broached, thus tumbling Mr. Feyerisen's wife over the side, and causing him to become entangled in the boat's rigging. Mrs. Feyerisen was washed onto the beach by the breaking surf where she was grabbed by Engineman First Class Tommy G. BEADLE, who was serving as a "swimmer" with his lifeline being tended by other personnel on the beach. Petty Officer BEADLE, attached to the Chetco River, Oregon Coast Guard Station, grabbed Mrs. Feyerisen before she could be carried back to sea by the pounding surf. Another eyewitness at the scene described Mrs. Feyerisen's lifesaving device as "being clear up over her head, with just two bands hooked under her arms." Mr. Feyerisen was cut from the rigging of the D ANN D as he and the boat were in the surf. At the time the boat became inoperative, Mr. and Mrs. Feyerisen donned what he described as approved lifesaving devices. He depicted them as three compartment types, with a foam rubber compartment in the back, and a similar compartment on each side. Photographs of this dramatic rescue, and Mr. Feyerisen's description of this lifesaving device, identifies it as a Work Vest, Unicellular Plastic Foam (46 CFR 160.053). This device is approved only as a work vest, and cannot be

substituted for any life saving device required to be carried on board a vessel by law. Mr. Feyerisen categorically stated, that he and his wife could not have made it ashore without the devices utilized.

14. a. The Officer-in-Charge of the Chetco River, Oregon, Coast Guard Station, Chief Boatswain's Mate Donald B. McMichael, arrived at his station at about 0715 PDT on 16 August. His unit at that time had two 44' motor lifeboats (CG 44311, CG 44335), one 36' motor lifeboat, (CG 36496), and one 25' motor surfboat, (CG 253304), in an operational status. Three of the boats were normally attached to the station, while the fourth one (CG 44335) had just been reengined, and was at the station for temporary storage. On this morning, the CG 44311 was on Bar Patrol offshore from the Chetco River Inlet, and the remaining three boats were at the station. At approximately 0920 PDT on 16 August, the CG 44311 reported that they had monitored radio traffic, which indicated that gale warnings had been hoisted from Point St. George south. In consideration that their area might receive some of the bad weather forecast for the south, Chief McMichael dispatched the CG 44311 to warn small craft, known to be further offshore, of the possibility of bad weather. The CG 44335 was dispatched at about 0935 PDT the same date, to assume the Bar Patrol duties of the departing CG 44311.

b. At approximately 0955 PDT on 16 August, Chief McMichael received a call from the Crescent City Sheriff's Office, relating that several boats were coming to Brookings, Oregon to seek shelter from the now prevailing bad weather in the area, and that they would need an escort over the bar. As Chief McMichael listened to the telephone request, he overheard a MAYDAY coming in over the CB radio in the Sheriff's Office. The Chief diverted the CG 44311 toward the boats at St. George Reef, and requested that the sheriff obtain pertinent information as to number of boats, their description, their location, and persons on board. Shortly thereafter, the station received a MAYDAY from the M/B ALEGRIA, on 2182 kilohertz, whereupon the Chief diverted the CG 44335 from Bar Patrol to render assistance. The CG 36496 was then dispatched to advise all small craft of their potential danger. This boat was soon diverted to assist the F/V TERRIWYNN, who was reported two miles offshore calling MAYDAY. At about this time, the CG 44335 reported that they had suffered a fire in the engine room, and that one of their engines was partially disabled as was most of their radio equipment. The CG 44335 was directed to return to the station, and the CG 44311 diverted to assist the ALEGRIA. At this time, the station lookout tower reported that the M/B CRISTA was disabled, and was drifting into the rocks at Chetco Cove.

c. Chief McMichael, with no other experienced boat coxswains at his disposal, departed the station in the 25' motor surfboat with Engineman First Class Carl E. ECKARD, Jr. as the only other crew-member. The CG 253304 proceeded to the bar, where the swells were peaking quite high, and came about down onto the stricken CRISTA

which was broadside against the rocks and breaking up. The Chief was successful in removing a survivor from the CRISTA, and after determining that there was no one else aboard, he headed back out into the surf, and returned to the station. After the CG 44335 returned to the station, temporary repairs were initiated on the possibility that the boat might be returned to service. While these repairs were in progress, the CG 44311 advised the station that they had rendezvoused with the ALEGRIA off of St. George Reef in heavy seas, and removed the four persons on board. Shortly after this communication, the station lost power, and communications were lost until the station emergency generators could recover the service. Although it was impossible to record actual times at the station due to the situation, it is estimated that the power loss was at about 1050 PDT on 16 August, based on the time reported for the power loss of Broadcast Station KURY, Brookings, Oregon. The M/V LETA J, a charter boat with thirteen persons on board, now contacted the station, and advised that although he was presently all right, he was in open water. Two other charter boats were reported to be riding safely in the lee of Goat Island, Oregon. The CG 44335, now partially repaired, and with the FM radio as the only means of communication, was taken back out by Chief McMichael to assist boats crossing the bar. The communications system at this time was overloaded with continuous transmissions being received by radio, teletype, and landlines. In addition to the electronic transmissions, many persons appeared at the station with first hand reports of boats needing assistance.

d. As Chief McMichael crossed over the bar on the CG 44335, he encountered the F/V TINA MARIE and F/V KIA-HOA, both of whom related that they did not require assistance. The Chief established communications with the USCGC CAPE CARTER, and advised him to proceed to the LETA J, and standby in case it was necessary to evacuate the thirteen persons on board. The CG 44335 then proceeded toward Goat Island, where other small craft were known to be located. On his way to this location, the Chief observed the F/V PAM BAY with the F/V STORMY in tow, and the F/V ARNIE-P with another vessel in tow with neither towing vessel displaying any difficulty. Shortly thereafter, the station advised the CG 44335 that the PAM BAY had located some persons in the water. The CG 44311 by this time had deposited the survivors from the ALEGRIA at the station, and was also in the vicinity. The CG 44335 returned to the PAM BAY, which had now released its tow in order to pick up David Shinkle and attempt to retrieve his grandfather's body, and took the F/V STORMY in tow. Chief McMichael now directed the CG 44311 to conduct a search of the area in an effort to locate survivors and boats. The CG 44311 rendezvoused with the CG 36496, which was engaged in taking the F/V COMMANCHIE in tow and standing by the Charter Boat OCEAN KING. The CG 36496 towed the COMMANCHIE in over the bar with the OCEAN KING in company. As the CG 44311 continued its search, he observed the CG 253304 in the surf with the disabled D ANN D. The CG 44311 made a pass at the disabled boat, but encountered a huge swell which rolled it over nearly to the horizontal and also carried

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the D ANN D on into the beach where its two occupants were rescued by personnel on the beach.

e. The CG 44311 departed the area, after ascertaining that the persons on board the D ANN D were safe, and continued its search. The CG 253304 was dispatched to stand by inside the bar, and the CG 44311 was diverted from its search long enough to pick up the body of the operator from F/V DIXIE LEE, and deliver the remains to the station. The CG 36496, having secured its tow inside, relieved the CG 253304, and stood by at the bar, while the smaller vessel returned to the station. The CG 44335 arrived at the entrance buoy with the STORMY in tow, where they waited briefly for the CG 36496 to take the boat on in over the bar. Chief McMichael was advised by the station at this time, that the F/V DONNA N was reported to be rapidly taking on water off of the Winchuck River, which is south of the Chetco River. The CG 44335 then proceeded toward this location as soon as the CG 36496 took the STORMY in tow. After safely securing the STORMY, the CG 36496 returned to the buoy, and took over the F/V PEARL tow from the ARNIE-P, and towed the boat safely inside. The CG 44335 arrived at a position approximately two miles from the Winchuck River entrance, where they observed two Coast Guard aircraft searching the area. They did not sight any debris or vessels in the area, and proceeded back to the ALEGRIA where they placed the disabled boat in tow. In the meantime, the CG 44311 had picked up two bodies in the vicinity of the foundered KAREN I, and delivered them to the Chetco River Station, after conducting a thorough search of the area. The CG 44335 arrived at the Chetco River entrance at about 1940 PDT on 16 August, and relinquished its tow to the CG 36496, whereupon both boats continued on into port. During this interval, the CAPE CARTER escorted the LETA J to the entrance buoy, and subsequently proceeded offshore to render assistance to the disabled F/V CARMORENG off St. George Reef. The CG 44311, CG 36496, and CG 253304 returned to the search area, and continued to investigate reported flare sightings, in company with other Coast Guard air and surface craft until approximately 0200 PDT on 17 August.

15. Coast Guard Air and Surface Craft, assisted by local vessels continued their search for over eleven days. Coast Guard efforts totalled at least three hundred and fifteen hours of surface vessel time, and one hundred and seventy six hours of fixed wing aircraft and helicopter time. An area of eight thousand square miles was searched and re-searched.

16. The Coast Guard Cutter CAPE CARTER was on a law enforcement and fisheries patrol approximately twenty miles offshore, and nearly due west of Eureka, California, during the early morning hours of 16 August. At approximately 0530 PDT, the CAPE CARTER encountered fifty knot southerly winds, and reported this fact to the Commander, Twelfth Coast Guard District, by message, for passage to the National Weather Service at San Francisco, and Fleet Weather Facilities at Alameda,

California. This message was passed by voice to the Coast Guard Group, Humboldt Bay, California, where it was received at 0608 PDT on 16 August. The message was then relayed to the Commander, Twelfth Coast Guard District, by teletype where it was received at 0635 PDT on 16 August. This receipt time was twenty minutes after the Weather Service Forecast Office, San Francisco, originated a gale warning message and thirty five minutes after their small craft warning message.

17. The geographic area affected by the storm on 16 August is serviced by the National Weather Service Forecast Office (WSFO) in San Francisco, California, and Portland, Oregon, with the National Weather Service Office (WSO) in Eureka, California, as a contributing unit to the forecast office in San Francisco. The WSFO has the responsibility for forecasting within its assigned geographic limits. The WSO has the responsibility for local dissemination of the forecasts, and provides relevant local weather input to the forecast offices. The WSO has the latitude to make special local forecasts, if they are unable to contact the WSFO by telephone or special teletype. Coastal warnings, which would affect the residents of the area under consideration, must be issued by the two separate WSFO's. Specifically, the WSFO San Francisco's northernmost reference point would normally be Point St. George, California, while the southernmost reference point of the Portland WSFO is the same location. As a result of this boundary, the coastal warnings issued by the Portland WSFO, "Newport to Point St. George" can differ from the San Francisco WSFO "Point St. George to Cape Mendocino" to the degree that two different, and occasionally contradictory forecasts can be received in the relevant area.

18. The Weather Forecast being disseminated by both the San Francisco WSFO and the Eureka WSO on the morning of 16 August, which was relevant to the residents in the storm area, is detailed herein. (The term relevant area will be used hereafter to define the coastal area from Trinidad Head, California, to Rogue River, Oregon). This forecast was promulgated by the San Francisco WSFO by a teletype message originating at 0334 PDT on 16 August.

"Point St. George to Point Arena, variable winds five to fifteen knots through Thursday, seas two feet with northwest swells to four feet, partly cloudy with chance of showers, Cape Mendocino north through Thursday, but most of area today or tonight."

The weather forecast being disseminated by the Portland WSFO in the relevant area on the morning of 16 August was

"North Head to Point St. George, coastal winds southwest ten to twenty knots today, tonight and Thursday, occasional rain mostly south portion today. Scattered showers and periods of partial clearing tonight and Thursday."

19. Charlie McFarlan was the morning announcer of Station KURY (910 kilohertz), Brookings, Oregon, on 16 August. Mr. McFarlan normally began his broadcasts at 0600 PDT, but arrived that morning at the station about 0400 PDT. He was unable to remember the exact weather forecasts that he received in the early morning hours of 16 August, but he described it as just typical weather. There were no warnings during the early morning hours, up until the station lost its power and went off the air at 1050 PDT on 16 August.

20. William A. Stamps is the owner and early morning broadcaster of Station KPOD (1310 kilohertz) Crescent City, California. On 16 August, Mr. Stamps began broadcasting at 0600 PDT with his first weather report being passed over the air at about 0615 PDT. This report was that received over the Associated Press Wire Service, and was not amended for any local condition. At about 0630, Mr. Stamps originated a call to the Eureka WSO over the air waves, as was his daily practice. This was an informal chat between Mr. Stamps and the WSO personnel, whereby he questioned whether there were any changes expected in local weather. On this particular day, Mr. Stamps was in contact with Garland M. Byrum, whom he described as rather frantic, as he advised listeners of KPOD over the air, "that things were happening fast, and that he was in the process of making a new forecast which included small craft and/or gale warnings, with winds of fifty to sixty knots." Mr. Byrum described the pressure as having fallen rapidly, reported that winds were observed offshore, and noted that "we were in for a severe weather warning." This live broadcast was taped, and the same information rebroadcasted again at 0700 PDT and 0800 PDT that date.

21. Mr. Byrum recognized the inaccuracy of the 0334 PDT teletype forecast when he came on duty, and observed twenty knot southerly winds prevailing in the area. At the Pacific Gas and Electric Power Plant in Humboldt Bay, the winds were southerly at twenty two knots, and gusting to forty knots, which further supported his evaluation of the report. As a result of the conflict between the forecast and actual conditions, Mr. Byrum attempted to reach the San Francisco WSFO by telephone, in order to recommend small craft warnings. After repeated unsuccessful telephone attempts, he initiated a teletype message at 0535 PDT requesting the warnings. At 0610 PDT the same day Mr. Byrum reached the San Francisco WSFO by telephone and requested that Mr. Beckman, the forecaster on duty, amend the small craft warnings to gale warnings. He cited the offshore wind and sea reports of the DAPE CARTER in support of his request.

22. The WSFO San Francisco message 161300 GMT, issued Coastal Warnings valid 0500 PST (0600 PDT) on 16 August, with instructions to hoist Small Craft Warnings from Point St. George to Point Arena. The weather was detailed as southerly winds fifteen to thirty knots with strong gusts. These warnings were relayed to the Coast Guard Group, Humboldt Bay, who in return rebroadcasted this warning at 0615 PDT on 16 August.

The Humboldt Bay Broadcast was initiated on 2182 kilohertz, and concluded on 2670 kilohertz. This warning was promptly followed by WSFO, San Francisco, message 161315 GMT which issued new Coastal Warnings valid for 0515 PST (0615 PDT) on 16 August from Point St. George to Point Arena. This warning instructed that Small Craft Warnings be changed to Gale Warnings, Cape Mendocino northward with forecasted southerly winds thirty to forty knots, with stronger gusts and continued Small Craft Warnings southward. This message was received by the Coast Guard Group Humboldt Bay at 0645 PDT on 16 August, and re-broadcasted at 0659 PDT in the same manner as the earlier Small Craft Warnings.

23. The Eureka WSO did not receive the Coastal Warnings of 0600 PDT and 0615 PDT of 16 August until approximately 0830 PDT the same date. After receiving the Coastal Warning by telephone the Office put out an official Gale Warning forecast. These apparent two and one half hours and two hours and fifteen minutes delay respectively were not resolved by the Board. However, the Board was advised by Mr. Charles Glenn, National Weather Service Regional Office, Salt Lake City, Utah, that a comprehensive analysis was being conducted unilaterally by his office. The Eureka WSO did, however, receive an amended forecast of Northwestern California which included "Gale Warnings Cape Mendocino North and Small Craft Warnings southward" which originated at the San Francisco WSFO at 0640 PDT on 16 August. This teletype amendment was acknowledged by Mr. Byrum at 0723 PDT the same date. Mr. Byrum chose not to act on this limited information waiting instead for the Coastal Forecast which would provide him with detailed wind and sea information.

24. The Portland, Oregon, WSFO reported that it first became aware of the San Francisco Gale Warning forecast at about 0930 PDT on 16 August. This forecast was compared with available charts, and information in the Portland WSFO with a resultant decision that the threatening weather was going to stay south. This evaluation was changed, however, after a paid observer in Brookings, Oregon, advised the Portland WSFO at 1045 that date, that the winds had picked up very strong, with southerly/southwesterly winds forty knots gusting to sixty four knots. Gale warnings were issued by the WSFO, Portland, at 1110 on 16 August from "Newport to Point St. George for southerly winds increasing to thirty to forty knots, with a few higher gusts spreading northward and diminishing to fifteen to twenty five knots this evening." These warnings were received at the Coast Guard Station Chetco River at 1114 PDT the same date. The storm moved rapidly out of the area, with winds steadily diminishing to ten knots by 1700 PDT on the date in question.

25. Prior to 15 August 1972, the surface weather charts from the San Francisco WSFO showed a weak low pressure area approximately 38° N, 140° W. There was no significant weather in this low, and surface winds reported by ships in the area were light. This low pressure

area dissipated by 0500 PDT on 15 August, and the surface chart showed a high pressure system in the same general area. The next surface weather chart, 1100 PDT on 15 August showed a new weak low pressure system generating at 45° N, 130° W. Again no significant weather, winds or precipitation were shown. Lack of ships transiting the area gave little offshore information for weather analysis and forecasting. The 0500 PDT, 16 August, surface weather chart showed an easterly movement of the low with falling barometric readings. However, winds were still reported as light and variable along the coast. At approximately the same time, the WSO at Eureka noted rapidly changing weather conditions, with increased winds and rapid fall of the barometric pressure. Weather information recorded on National Weather Service 500 mb analysis charts from 14 August to 17 August depicted a low pressure area aloft, 18,000 feet, at approximately 47° N, 128° W relative stationary, with colder temperatures than normal. The depth of this low, and its low temperature, were more indicative of a winter-time situation than a summer-time one. These charts provided information over a wide area of the Pacific coast of North America, but do not give sufficient data to display small systems or storms, such as the storm that struck the relevant area. Arthur F. Gustafson, San Francisco WSFO Meteorologist-in-Charge, testifies that there was no history of a storm or storms in August, such as the one that struck the coast on 16 August. ATS-1 and NASSA-8 Satellite pictures for 14, 15 and 16 August show the development of an indistinct elliptical cloud formation approximately 40° N and 130° W. Lack of offshore wind and barometric reading reports reduce the value of this for adequate analysis. The satellite pictures do not offer any means to evaluate wind velocity or barometric pressure.

26. Mr. Gustafson pointed out that the Coast Guard "Lighthouse Automation and Modernization Project (LAMP)", denied the forecast offices some representative and very important coastal observations. He particularly singled out the replacement of Blunt's Reef Lightship with a large navigational buoy (LL 63.10), as denying the forecasters the most important coastal observation in all of North California, if not the whole west coast of the United States. He related his forecaster's conclusion, that "if they still had the Blunt's Reef Lightship, they would have had Small Craft Warnings up earlier on 16 August", because of its offshore exposure. He repeatedly stressed that the replacement of this lightship, and others, with automated large navigational buoys containing no weather observing equipment, was a detriment to accurate forecasting. In effect, Mr. Gustafson stated that observations from the shore stations in their relatively sheltered locations, could not be effectively substituted for those received from the exposed offshore lightships. He concluded by recommending, in concern for future storms and possible loss of life, that the Coast Guard try to equip the buoys replacing lightships, particularly Blunt's Reef Lightship, with at least wind observing and pressure measuring equipment.

27. The Coast Guard Lighthouse Automation and Modernization Project (LAMP), is intended to update and modernize formerly manned Aids to Navigation with an attendant reduction in operating costs. The replacement of the Blunt's Reef Lightship with a Large Navigation Buoy (LNB), however, was not a part of this program. Although the two programs are separate, their objectives and considerations are the same. Specifically, both programs take into account the weather observing and/or reporting capability loss precipitated by the elimination of manning personnel. As a result of this awareness, the Coast Guard has made space available, and telemetry channels available to handle any National Weather Service (NWS) automated weather equipment. The lack of such equipment on the LNB replacement for the Blunt's Reef Lightship was a topic for discussion between the Coast Guard, the NWS and other concerned persons during a 29 July 1971 meeting at the Humboldt Bay Coast Guard station. The participants at this meeting, sponsored by the Marine Advisory Extension Service of Humboldt State College, learned that such equipment is not available. NWS personnel cited technical and fiscal considerations as being responsible for the delay.

28. Storm warnings were displayed at both the Coast Guard Stations Humboldt Bay and Chetco River shortly after National Weather Service messages ordering such action were received at their respective stations. The storm warnings at Crescent City, California were never displayed. The CAPE CARTER, which was responsible for the display, was absent from the city on a Fisheries and Law Enforcement Patrol at the time. The Commanding Officer of the CAPE CARTER assumed that the Crescent City Citizen's Dock Harbor Master would hoist the display in his (CAPE CARTER) absence. The Harbor Master, Darold Richcreek, acknowledged that he had in the past performed this task but denied that any formal agreement existed between the Weather Bureau and his office to display the signals. Carl A. Brower, who identified himself as a member of the Crescent City Harbor Commission for over fifteen years, similarly declared "there was absolutely no agreement." In contrast to this declaration is a notation in Block 38 of the Coastal Warning Display Station Record (WB Form 530-30) dated 23 June 1964 for the Crescent City, California Display Station. This notation "if Coast Guard vessel is out of the harbor, the Harbor Master will man the display. Telephone number 464-5559" suggests a formal or informal agreement does exist between the National Weather Service and the Crescent City, California Citizen's Dock. In any case, Mr. Byrum called this number at approximately 0903 PDT on 16 August and requested that Gale Warnings be displayed. The Harbor Master stated that he was unable to comply with this request as there were no warnings flags available.

29. a. Radio communications to and from the small craft in the relevant area were normally conducted over CB radio, although many of the larger fishing vessels were equipped with what is commonly known as "Marine Radio". These transceivers are, in effect, radio telephones which operate in the Medium Frequency Band. Many boats in the area

that are equipped with these radio telephones do not normally utilize them, but prefer to utilize the less complicated and more popular CB radio. Moreover, their general use of the Marine Radio is reported to be restricted to the working frequency 2638 kilohertz. A notable exception to this generality was the ALEGRIA, which after failing to contact anyone on the CB radio, shifted to 2182 kilohertz, whereupon timely contact with the Coast Guard was established. There appeared to be little fishing boat monitoring of 2182 kilohertz while the vessels affected by the storm were fishing offshore, notwithstanding Federal Communication Commission Regulations to the contrary. These regulations, 47 CFR 83.223(b) require that ship stations licensed to transmit by telephony on one or more frequencies within the band 1605 to 3500 kilohertz, maintain an efficient watch on 2182 kilohertz, if said station is on the air, and not being utilized on a different frequency. The importance of this regulation is displayed by the CGC CAPE CARTER's failure to receive any distress calls on the prescribed 2182 kilohertz frequency. This unfortunate situation became apparent after the CAPE CARTER shifted its radio receiving equipment to the 2638 kilohertz frequency, and discovered that many boats in the relevant area were in distress.

b. The Coast Guard teletype circuitry in the relevant area does not permit normal communication between the Chetco River Station and the Group Humboldt Bay. Each unit is on the extremity of its net with no means of bridging or connecting the nets directly under the control of the respective units. This condition is a result of each individual unit being under the operational control of different Coast Guard Districts, i.e., the 13th and 12th, respectively. On the other hand, Coast Guard radio telephone capabilities in the relevant area, are such that all units were in constant communication with each other by use of medium frequency, very high frequency, and ultra high frequency bands. Supplementing this was the VHF-FM system, which was reported to be outstanding by unit personnel during the course of search and rescue operations.

c. Many witnesses appearing before the Board recommended that the Coast Guard monitor or guard the CB radio net. This recommendation is in conflict with the Coast Guard policy, which has been repeatedly set forth, whereby there are no plans to equip Coast Guard units with Citizens' Band Radio equipment. Part 95 of Title 47 of the Code of Federal Regulations provided tacit corroboration with this stand, with its language specifying that the Citizens' Band Radio may be used for Marine emergencies, but should not be considered a substitute for any currently authorized Marine distress system.

30. The Board was unable to establish the identity of any Coast Guard Auxiliary Unit that participated in search and rescue operations associated with the casualty under consideration. Direct communications between the Board and staff members of the Commanders 12th and 13th

Coast Guard Districts revealed that there was only one such Unit in the area. This Unit was a Brookings, Oregon Flotilla chartered on 12 August 1972 or just four days before the storm in question. This Unit when fully operational, as well as other Auxiliary and U. S. Power Squadron Units, can be most important in providing Boating Safety Education and safety inspections in the relevant area.

CONCLUSIONS

It is the Conclusions of this Board:

1. That the proximate cause of the casualty was an unpredicted, severe, and highly localized storm which struck the Northern California and Southern Oregon coasts while the affected boats were fishing offshore in the nearby vicinity of St. George Reef.
2. That, the M/V DIXIE LEE capsized and foundered as a result of the failure of the starboard outrigger restraining chain while the boat was on a heading that permitted its port deck to immediately become awash. This heeling moment, caused by the vertical outrigger and associated stabilizer, combined with the winds and seas to prevent Clayton D. Dooley from bringing the boat's bow up into the sea. Further, that Clayton D. Dooley was drowned as a result thereof and that David Shinkle's life was saved by his utilization of an approved lifesaving device.
3. That, the M/B KAREN I capsized and/or foundered as a result of the storm in question. Further, that William C. Friend Jr., William C. Friend III and Donald Carl Higgins are missing and presumed dead, and Virginia Friend and Brian Friend drowned, as a result of the foundering.
4. That, the M/B RO ANN is missing and presumed foundered as a result of the storm in question. Further, that Joe L. Leoni was drowned as a result of the assumed foundering.
5. That, the M/B MINDY LYNN is missing and presumed foundered as a result of the storm in question. Further, that Robert B. Wilson is missing and presumed dead as a result of the assumed foundering.
6. That the M/V DONNA N is missing and presumed foundered as a result of the storm in question. Further, that Richard B. Crook, John M. Crook, and Joel M. Crook, are missing and presumed dead as a result of the assumed foundering.
7. That, the M/B BOUNDING MAIN is missing and presumed foundered as a result of the storm in question. Further, that Dennis E. Main suffered a congestive heart failure due to low temperature water exposure, and Mathew D. Main is missing and presumed dead, as a result of the assumed foundering.
8. That, the lives of Mr. and Mrs. Irvin Feyerisen, on board the M/B D ANN D, were saved as a result of the utilization of the approved Work Vests, notwithstanding the fact that said lifesaving devices are not approved as required equipment under the provisions of 46 CFR 25.25-5(c).

9. That, the life of Brian Friend, on the M/B KAREN I, may have been saved if he had utilized a child's lifesaving device or the adult lifesaving device utilized had been, or remained, tied tightly about his body.

10. That, the responsibility assigned to the Coast Guard Cutter CAPE CARTER, or any other Coast Guard floating unit, for displaying storm warnings is not in the best interests of the Coast Guard, Weather Bureau, or the general public. The necessity for the Eureka, California WSO, or any other WSO, to determine the availability of the principal weather display station can affect the reliability of the Coastal Weather Warning Display Stations.

11. That, the failure of fishing vessels to monitor 2182 kilohertz in compliance with 47 CFR 83.223(b) denies them and all other vessels at sea a rapid and valuable means of identifying existing or potential distresses. In the instant case, a timely warning would have been provided to some of the vessels in the storm's path if the cited distress frequency was routinely monitored.

12. That, one or more persons on board the M/B ALEGRIA might have lost their lives if said boat had not utilized its radio equipment capable of transmitting on the marine distress frequency of 2182 kilohertz.

13. That, a factor instrumental in reducing the impact of the storm was the availability and utilization of an extra 44 foot motor lifeboat temporarily located at the Chetco River Station. The prompt response and assistance of local recreational and fishing vessels located both at sea and in the ports of Crescent City, California and Brookings, Oregon similarly reduced the storm's impact.

14. That, the public is unaware of the Federal Communications Commission recommendation regarding the substitution of CB equipment for any currently authorized Marine distress system. Thus, rescue operations involving the missing boats were hampered by the lack of information regarding the missing boats' positions that might have been passed over marine distress frequencies.

15. That, there was a three to four hour difference between the receipt of storm warnings at the Humboldt Bay Station and the Chetco River Station, both affecting the St. George Reef Area. This suggests that improved communication procedures and/or equipment between the 12th and 13th Coast Guard Districts are necessary for more effective weather warnings and emergency information dissemination.

16. That, it is not in the best interest of the Coastal Residents of the California-Oregon border to receive Coastal Weather forecasts from two separate Weather Service Forecast Offices. This presumption considers the fact that a single identifiable geographic area such as St. George Reef could be subject to contradictory forecasts.

17. That, lifesaving devices effectively marked to identify the vessel or boat where they are normally stored would materially aid in identifying their origin if they were ever found under circumstances suggesting a casualty or distress.
18. That, there is evidence of meritorious action on the part of Chief Boatswain's Mate Donald B. McMichael (570-52-3387) for his service as the Officer in Charge, Chetco River Station, on 16 August 1972 which is deserving of official recognition by the Coast Guard.
19. That, there is evidence of meritorious action on the part of Engineman First Class Carl E. Eckard, Jr. (557-58-5772) for his part in the rescue of the owner/operator of the F/V CRISTA on 16 August 1972.
20. That, there is evidence of meritorious action on the part of Engineman First Class Tommy G. Beadle (533-44-8607) for his part in the rescue of the woman survivor of the foundered F/V D ANN D.
21. That, there is no evidence that any personnel of the Coast Guard or any other government agency or any other person contributed to the casualty.

RECOMMENDATIONS

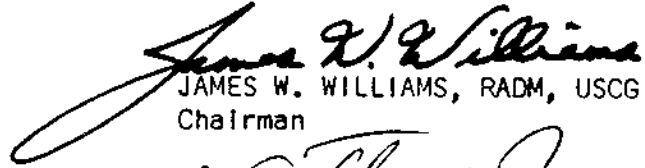
1. That, Commander Pacific Area, U. S. Coast Guard, in coordination with Commander, Twelfth Coast Guard District and Commander, Thirteenth Coast Guard District, conduct a communication study to encompass direct communication capabilities between Group Coos Bay, Group Humboldt Bay, and associated units. This study would be conducted for the primary purpose of developing procedures and/or associated communication lines or facilities to provide an exchange of vital information between these Twelfth and Thirteenth District Units by a direct and rapid means.
2. That, a copy of this report and record of the proceedings be forwarded to the National Weather Service, National Oceanic and Atmospheric Administration, Department of Commerce for any action that agency may consider appropriate.
3. That the Coast Guard not assign Coast Guard Floating Units, such as the CAPE CARTER, the responsibility of maintaining a coastal weather warning display station.
4. That a copy of this report be forwarded to the Federal Communications Commission for consideration within their general public education program. Specific consideration is indicated in promulgating the importance of 47 CFR 83.223(b) to the overall efficient use of the marine distress frequency. Detailed suggestions, but not limited thereto, are the use of decals, notices and/or educational pamphlets at the time of issuance and renewal of Ship Station Radio Telephony Licenses.
5. That the Coast Guard increase its efforts to improve boating safety in this area by an expanded Public Information program with local agencies, public service groups, and the news media. The dissemination of accurate information regarding National Weather Service, Coast Guard, and local agency capabilities can emphasize many facets of public service not well known to the boating public. Frequent publication in Notice to Mariners of information and services available would also be beneficial. Increased Coast Guard Auxiliary activities and educational programs should be considered in this effort.
6. That, the Coast Guard consider amending Part 25 of Title 46 Code of Federal Regulations to require all lifesaving equipment to be effectively marked with the name of the vessel or boat upon which it is stored;

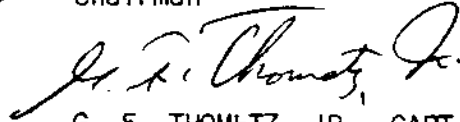
or alternatively

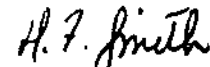
That, the Coast Guard, through its Recreational Boating Education Program, encourage all boaters to so mark all life saving equipment.

7. That, a copy of this report be forwarded to the Director, Department of Navigation and Ocean Development, Sacramento, California 95814 for any action that he may consider appropriate.

8. That a copy of this report be forwarded to the Director, Oregon State Marine Board, 190 Agriculture Building, Salem, Oregon 97310 for any action that he may consider appropriate.


JAMES W. WILLIAMS, RADM, USCG
Chairman


G. F. THOMETZ, JR., CAPT, USCG
Member


D. F. SMITH, CDR, USCG
Member and Recorder

APPENDIX I

