



UNITED STATES COAST GUARD

**REPORT OF INVESTIGATION
INTO THE
COMMERCIAL FISHING VESSEL MARY B II
(O.N. 274604)
SINKING AND LOSS OF THE VESSEL WITH MULTIPLE
LOSS OF LIFE AT THE YAQUINA BAY BAR ENTRANCE,
NEWPORT, OREGON
ON JANUARY 8, 2019**



MISLE ACTIVITY NUMBER: 6607968

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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16732/IIA # 6607968
28 December 2023

CAPSIZING AND LOSS OF LIFE OCCURRING ON THE COMMERCIAL FISHING VESSEL MARY B II (O.N. 274604) AT THE YAQUINA BAY BAR ENTRANCE NEWPORT, OREGON ON JANUARY 8, 2019

ACTION BY THE COMMANDANT

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved subject to the following comments. This marine casualty investigation is closed. Safety Recommendation 5 was directed to the 13th Coast Guard District for action.

ACTION ON RECOMMENDATIONS

Recommendation 1: Recommend that the Commandant of the Coast Guard partner with the National Commercial Fishing Safety Advisory Committee (NCFSAC) to establish a working group to draft and accept a Task Statement addressing safety of Commercial Fishing Vessels of less than 200 gross tonnage (GT). The Task Statement should specifically address the issues raised by this marine casualty, the total loss with fatalities of the MARY B II, to include addressing the following items:

- 1) Review multi-year statistics (provided by the Coast Guard) regarding commercial fishing vessels' less than 200 gross register tonnage (GRT) accidents or losses that resulted in fatalities, injuries, or property damage. Major marine casualties such as the losses of the fishing vessels "DESTINATION," "NO LIMITS," and other fishing vessels with multiple fatalities could be reviewed as examples.
- 2) Propose initiatives and actions to be taken onboard commercial fishing vessels less than 200 GT to eliminate all drug and alcohol usage when operating.
- 3) Ensuring that commercial fishing vessels (CFVs) are maintained with rigid standards for material condition, construction, and design of the vessels that maintains seaworthiness under all operating conditions.
- 4) A process to review and implement commercial fishing vessel mariner fitness-for-duty for service onboard CFVs of less than 200 GT. Fitness for duty and service should include an assessment of overall health and physical fitness and contain provisions for the elimination drug and alcohol usage and management of fatigue.
- 5) A process to assess, document, and maintain mariner competency to operate CFVs of less than 200 GRT, including local knowledge and recency.

- 6) Development of a joint Industry and Coast Guard effort to complete the implementation of 2010 and 2012 legislation for commercial fishing vessels as specified in those Coast Guard Authorization Acts. These efforts should address at a minimum, enacting the provisions in the Coast Guard Authorization Act of 2010 regarding certifying CFV operators' competency.
- 7) Feasibility of a multi-year phase-in implementation that all CFV mariners on CFVs of less than 200 GT and operating three miles beyond the baseline in a near-coastal zone obtain and maintain a Merchant Mariner Credential (without a Transportation Worker Identification Credential (TWIC) requirement).
- 8) Feasibility of a multi-year phase-in implementation that all CFV mariners serving as a Master/Operator of a CFVs of less than 200 GT and operating three miles beyond the baseline in a near-coastal zone obtain and maintain an Operator of Uninspected Passenger Vessels (OUPV) Merchant Mariner Credential (without a TWIC requirement).
- 9) Identify steps and make recommendations to promote marine safety of CFVs less than 200 GT with all commercial entities, companies, owners, and managing operators to develop and implement a Safety Management System (SMS) for their vessels and personnel, in accordance with and as defined in 33 Code of Federal Regulations (CFR) § 96.120.
- 10) Develop guidance and make recommendations on fatigue limiting strategies as well as work/rest hour logging requirements.

Action: I concur with the intent of this recommendation. The Coast Guard will present this case and supporting data at the next NCFSSAC meeting for their consideration to determine if a Task Statement to address the identified recommended topics is appropriate.

Recommendation 2: Recommend that the Commandant of the Coast Guard obtain the legislative authority to require CFVs to undergo mandatory inspections with expanded standards beyond the limited requirements within 46 CFR § 28. The current regulatory standards for CFVs do not adequately address the seaworthiness of vessels in light of the hazards associated with fishing operations.

Action: I do not concur with this recommendation. The investigation recommendation did not convey a clear reasoning that supports mandatory inspections for Commercial Fishing Vessels, or how regulatory standards do not adequately address seaworthiness associated with fishing operations. Current regulations and guidance address seaworthiness, good marine practices and recommendations. Had the operator embraced current best marine practices including those addressed in the Commercial Fishing Vessel Safety Initiatives and Best Practice Guide, Coast Guard websites, and Marine Safety Information Bulletins (MSIBs), the outcome could have been influenced without regulatory inspections.

Recommendation 3: Recommend that the Commandant of the Coast Guard request a review of the Fishing Vessel Casualty Task Force report, March 1999, with the aim of implementing all of the recommendations. In 2011, the National Transportation Safety Board (NTSB) released five safety recommendations for CFV operations which were presented to the Coast Guard. These included addressing stability, subdivision, and watertight integrity on CFVs under 79 feet.

Additionally, the NTSB recommended all owners and masters receive training and be able to demonstrate competency in stability and watertight integrity. Despite the overwhelming recognition of the hazards of commercial fishing, and the statistical data showing high rates of fatalities and vessel losses, a long list of recommended regulations and laws have not been enacted. Voluntary programs, education and dissemination of best marine practices do not stop CFV casualties and fatalities when negligent owners and operators fail to adhere to well-intentioned suggestions. Comprehensive requirements should include the following: enrollment in drug testing program, watertight integrity and subdivision requirements, requirements to not only conduct but have and keep a log of safety drills, requirements for equipment maintenance and dry dock exams to ensure the integrity of the hull and other watertight components.

Action: I partially concur with this recommendation. As mentioned in the response to Recommendation 2, the Coast Guard does not believe that increased stability, subdivision, and watertight integrity standards would have changed the outcome of this incident. However, the report of investigation made a compelling case that the competency and fitness of the master in this instance was substandard. As a result, the Coast Guard compiled and reviewed past NTSB and Coast Guard safety recommendations stemming from CFV marine casualty investigations where CFV master performance of duty was found to be a contributing factor to the incident. The review and this investigation support the need to ensure that CFV masters have the necessary competency to safely operate their vessels. The Coast Guard can address competency gaps and enhance the safety of the fishing vessel industry by requiring CFVs masters of vessels less than 200 GRT operating beyond the U.S. baseline to hold a merchant mariner credential (MMC). Prerequisite training courses could be incorporated into obtaining the CFV master MMC. The MMC would also enable the Coast Guard to hold CFV masters accountable for acts of misconduct, negligence, violations of law and regulation, and for the misuse of drugs and alcohol.

As noted in Recommendation 1, I have directed NCF SAC to evaluate CFV master competencies that could support obtaining statutory authority for the credentialing of CFV masters of vessels less than 200 GRT operating beyond the U.S. baseline.

Recommendation 4: Recommend that the Commandant of the Coast Guard obtain legislative authority to require CFV operators of less than 200 GT hold a valid Coast Guard issued Merchant Mariner's Credential (MMC). In addition, legislative authority should be obtained to require crewmembers on CFVs hold crew competency certificates or Merchant Mariner's Document. This would help ensure standardized levels of competency, ensure the medical fitness of CFV operators and crew, and it would enhance crew's safety mindset. Along with medical certificates, the licensing requirements means these mariners are subject to enrollment in a mandatory drug testing program. The program includes requirements for all types of testing: pre-employment, random, periodic, reasonable suspicion testing and post-casualty. This is a much-needed tool for owners and operator to ensure a drug-free working environment on their CFVs, something which affects the safety of life and property on the waterway.

Action: I partially concur with this recommendation. The benefits of a competent, accountable, and drug-free master are critical to the safe operation of a vessel. As described in the response to Recommendation 3, the Coast Guard will use this

investigation and other casualty data history to evaluate the potential need for an LCP related to credentialing of CFV masters for vessels less than 200 GRT, informed by ongoing tasking to the NCFASC.

Of note, there are concurrent international initiatives that are advancing mariner competencies with “smaller fishing vessels”, indicating that there is also an international focus to enhance the safety of the fishing vessel industry.

The Coast Guard does not agree that crewmembers on CFVs should hold competency certificates or MMCs at this time.

Recommendation 6: Recommend that the Commandant of the Coast Guard in concert with District CFV Safety Program Managers collaborate with entities like the North Pacific Fishing Vessel Owner’s Association (NPFVOA) and AMSEA to amend their curriculums and develop a concentrated outreach campaign as appropriate for operating areas with bars to increase visibility of the risks and dangers of bar crossings and discussion of potential courses of action including not crossing the bar under certain conditions. Working in concert with Coast Guard Districts, Commercial Fishing Vessel Programs and Small Boat Station Stations should encourage CFV owners and captains to attend trainings and workshops that go well beyond drill conductor training that may include stability, navigation, Occupational Safety and Health, fatigue reduction measures, and accentuating the importance of maintaining a drug and alcohol-free workplace on CFVs. In addition, in partnership with public industry, the Coast Guard should conduct additional and continuing public outreach programs concerning commercial fishing vessel safety as a result of this tragic accident. The goal is to expand and elaborate on communicating the risks of bar crossings and Coast Guard escort availability and procedures.

Action: I partially concur with this recommendation. I support the continued District level outreach measures that emphasize safe bar transit, including the Coast Guard 13th District MSIB 01-20, *Crossing Hazardous Bars in the Pacific Northwest*.

Prudent situational awareness is essential when considering bar crossing. Commercial Fishing Vessel owners/operators should be cognizant of crew capabilities, safe operating parameters of their vessel, and be aware of hazardous bar crossing procedures (33 CFR 165.1196 and 33 CFR 165.1325).

The following are some of the informational resources that exist to notify mariners of conditions and aid in risk decision making.

- Bar conditions and restrictions: <https://www.weather.gov/pqr/AllBars>
- Information for each bar along the Oregon Coast:
<https://www.oregon.gov/osmb/boater-info/Pages/Water-Level-and-Chart-Information.aspx>
- Coast Guard 13th District Local Notice to Mariners:
<https://www.dco.uscg.mil/Featured-Content/Mariners/Local-Notice-to-Mariners-LNMs/District-13/>

Recommendation 7: Recommend that the Commandant of the Coast Guard amend 46 CFR Part 28 to require CFV owners and captains implement shipboard policies to address crew rest, work hours, and fatigue. The shipboard policies should reflect the basic principles of the Coast

Guard's Crew Endurance Management System (CEMS) used to identify and control crew endurance risk factors. Requiring owners and captains to implement crew rest policy would give crewmembers the opportunity to reduce their risk of fatigue-related accidents and help prevent casualties.

Action: I concur with the intent of this recommendation. The investigation does not provide causal factors that clearly present a link to crew fatigue. Due to the nature of how this casualty occurred, these standards would not have prevented the casualty from occurring; however, I recognize the advantages for owners/operators to implement shipboard policies to address crew rest, work hours, and fatigue. The Coast Guard has produced and made available resource tools that detail Crew Endurance Management System (CEMS) guidance. The CEMS model has been successfully incorporated by numerous maritime industry operators (e.g., ferries, deep draft, towing industries).

The Coast Guard highly recommends the CFV owners and operators consider adopting the following available CEMS resources:

- Crew Endurance Management: https://www.dco.uscg.mil/Portals/9/DCO Documents/5p/5ps/Design and Engineering Standards/Human Element and Ship Design Division/crew endurance brochure_091814.pdf?ver=2017-06-21-102717-553
- CEMS Navigation and Vessel Inspection Circular (NVIC) 2-08: https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2008/NVIC_2-08.pdf

ACTION ON ADMINISTRATIVE RECOMMENDATIONS

Administrative Recommendation 1 was directed towards Marine Safety Unit (MSU) Portland.

Administrative Recommendations 2-4 were directed toward the 13th Coast Guard District.

Administrative Recommendation 5: Recommend that Commandant of the Coast Guard accelerate the acquisition for a replacement for the 52-foot special purpose craft (SPC). Built in the mid-1950s, the four highly capable heavy displacement vessels cannot operate indefinitely and have a speed of 11 knots.

Action: I concur with this recommendation. The Office of Boat Forces has completed several of the acquisition documents and is ready to request Acquisition Decision Event 1 (ADE-1) approval once funding is identified.

Administrative Recommendation 6: Recommend that Commandant of the Coast Guard close the gap as outlined in COMDTINST M16500.7 (series) between Waterway Analysis and Management System (WAMS) reports and the more complex Port and Waterway Safety Assessment (PAWSA) and determine the appropriate and mandated interval for the risks associated with "critical waterways." The WAMS are specifically centered on aids to navigation (ATON) for the waterways and marginally explore actual waterway conditions and specific hazards. The 16 waterways that are identified as regulated navigation areas (RNAs) for hazardous bars are navigationally critical as defined in COMDTINST M16500.7 and require special attention and an expanded WAMS study. In addition, the Coast Guard 13th District

Prevention Office should examine reduction in size of the RNAs contained in 33 CFR § 165.1325 so that the RNAs actually represent the areas of risk to mariners rather than a broad geographic area. There is a gap for waterways with unique hazards such as the RNAs for hazardous bars as outlined in 33 CFR §165.1325 along the Pacific Northwest Coast. These ports do not qualify for a Port and Waterway Safety Assessment (PAWSA) due to the complexity of these studies.

Action: I do not concur with this recommendation. The Office of Navigation Systems (CG-NAV) is not aware of “gaps” between the WAMS process and the PAWSA process. They are two distinct analysis/assessment tools used to study risk and identify mitigation measures such as aids to navigation, RNAs, and routing measures.

The WAMS is a tool for managing competing interests and uses of a waterway. Some of the aspects addressed by a WAMS include, but are not limited to, ATON, waterway safety and risk management, effectiveness, efficiency and user input. The WAMS Completion Guide is a step-by-step guide for Coast Guard units to complete a WAMS report and can be found on the Aids to Navigation and Positioning, Navigation and Timing Division (CG-NAV-1) and the National Aids to Navigation (NATON) Portal Page.

District commanders must conduct initial Waterway Analysis and Management System (WAMS) analysis for all critical waterways in their respective area of responsibility. Once initial analyses are completed, each critical waterway will be scheduled for review at least once every five years. Waterways which need more frequent review due to significant user changes, waterway configuration changes, or marine accidents may be reviewed on a more frequent basis at the discretion of the District Commander.

A District Commander, Sector Commander or a Captain of the Ports (COTP) may request a PAWSA to identify major waterway safety hazards, estimate risk levels, evaluate potential mitigation measures, and set the stage for implementation of selected measures to reduce risk. Nothing precludes a PAWSA from being requested for the Yaquina Bay, or any other RNA with a hazardous bar, in the Pacific Northwest area.

The 16 Regulated Navigation Areas (RNA) along the coast of Oregon and Washington (33 CFR § 165.132) appropriately outline the geographical regions which require additional regulation due to the hazardous bar conditions to ensure the safety of life and vessels. An area larger than the bar is designated as the RNA to regulate actions of vessels transiting Yaquina Bay, ensuring caution and safe passage for vessels in these coastal bar offshore conditions. Marking of specific hazards such as the Yaquina Bay Bar, a seasonal hazard to mariners in this area, are designated on Navigational Charts, and further discussed with extreme detail in U.S. Coast Pilot 7.

Coast Guard Station Yaquina Bay also displays a heavy weather flag on the western corner of the Coast Guard station, visible to mariners from both directions to indicate that winds 48 knots and above are forecast for the area. Display of flags is from one hour before sunrise to one hour after sunset. The Coast Guard has also established Yaquina Bay Entrance Regulated Navigation Area Warning Sign (44°37'29"N., 124°03'27"W.) at the Coast Guard station on the north side of the river at Newport. The sign is 22 feet above the water and diamond-shaped and painted white with an international orange

border, with the words ROUGH BAR. The sign is equipped with four quick flashing lights that will be activated by Coast Guard Station Yaquina Bay personnel when hazardous conditions exist, and the bar is restricted to recreational and uninspected passenger vessels. Vessel operators are cautioned, however, that if the lights are not flashing, it is no guarantee that sea conditions are favorable.

Administrative Recommendation 7: Recommend that the Commandant of the Coast Guard commission a workgroup to study the need for replacement of the navigation buoys placed at the entrance of hazardous bars and similar waterways that are subjected to extreme sea conditions. Recommend the findings of this work group drive the design, construction and implementation of a buoy type that can withstand extreme sea, current and mooring challenges.

Action: I concur with this recommendation. The Coast Guard is already taking actions that comply with the above recommendation.

In October 2019, the Coast Guard Research and Development Center (RDC) initiated a project to study ATON in an attempt to develop the next generation of buoys. The project examines alternatives to traditional steel buoys, including plastic and foam options. The first phase of the project consisted of market research, examining current plastic and foam buoy technology worldwide. This market research informed the buoy designs deployed for field testing, the second phase of the project. Prototype buoys were deployed in New England and on the Western Rivers, and there are plans to deploy prototypes in the Pacific Northwest. These tests will show how the alternative designs perform in a variety of environments, including in rough conditions on the Columbia River bar.

This project is expected to conclude by December 2023. The findings will be presented to Coast Guard stakeholders, who can then use the information to make any appropriate changes to the ATON program.

In addition to studying buoy design, the Coast Guard employs Automatic Identification System (AIS) aids to help mariners navigate the waterways. The Coast Guard uses synthetic AIS, which broadcasts a signal over the position of an existing aid, and virtual AIS, a signal broadcast over a position without a physical aid. AIS aids help mariners navigate waterways, while also improving the resiliency of the ATON system against environmental challenges such as those observed in Yaquina Bay, Oregon.

Administrative Recommendation 8: Recommend that the Commandant of the Coast Guard direct the Coast Guard SAR community to incorporate into guidance and standard operating procedures that the survival time determinations in the Probability of Survival Decision Aid, Probability of Survival Decision Aid (PSDA) program include the likelihood of sudden immersion shock in waters below 68°F in catastrophic and sudden vessel accidents. Cold water immersion can adversely affect the estimated functional survival time for an average person who would be wearing PVC rain gear as opposed to an immersion or survival suit. These same considerations also affected the cold-water survival time of 12.62 hours for the same individual exposed to the air and water temperature on the accident night wearing only clothing and possible rain gear.

Action: I do not concur with this recommendation. The PSDA is a search planning aid. Coast Guard SAR policy states that “the PSDA application shall be used for all cases involving persons in the water (PIW) and where persons are at risk of hypothermia or dehydration when not immersed.” PSDA provides a prediction of survival times for persons subject to hypothermia and dehydration. These predictions are informed by water temperature, air temperature, other environmental conditions, PIW anthropogenic characteristics, flotation devices, and clothing. The purpose of PSDA is to provide decision makers with a general understanding of how long a person may survive in the given conditions.

PSDA does not account for cold water shock/cold water incapacitation, swim failure, injury, and starvation. PSDA assumes that people survive all non-predictable events and survival depends solely on the degree of hypothermia and/or dehydration.

Whereas the U.S. Army Research Institute for Environmental Medicine developed the PSDA, proposed improvements to the PSDA are being developed by the Office of Search and Rescue (CG-SAR) to include new insulation values for different clothing types and improving survival estimates at different water temperatures.

Administrative Recommendation 9: Recommend that the Commandant of the Coast Guard coordinate with appropriate Districts that have identified high-risk fisheries and establish an outreach and compliance program for the witnessing and increased participation in onboard drills on fishing vessels prior to the start of fishing seasons. These high-risk fisheries include the Dungeness crab fisheries and include others that have been identified through data from National Institute for Occupational Safety and Health (NIOSH) studies for fisheries with high incidents of deaths and vessel losses.

Action: I partially concur with this recommendation. Participation in onboard drills is advantageous to prepare vessel crews for emergency situations. Coast Guard Districts and Sectors should integrate novel approaches in their outreach strategies.

Coast Guard Districts facilitate outreach within their regional areas of responsibility, targeting select fisheries, unique operating conditions, vessel type, and trends. Outreach aims emphasize safe vessel operations, maintaining CFV dockside exams/safety equipment; and drills/training concepts.

Administrative Recommendation 10: Recommend that the Commandant of the Coast Guard and the National Weather Service (NWS) explore and consider incorporation of Oregon State University (OSU)’s coastal marine radar data as a tool to build a better weather and sea state picture for concerned mariners as well as for Coast Guardsmen preparing to conduct operations while they conduct risk assessment for bar escorts in adverse weather conditions. It was determined that the NWS does not utilize specially configured shore based marine radar designed to show the coastal wave spectrum to the level of granularity that is produced by OSU research facilities. Incorporation of this type of precision technology into Coast Guard risk assessment procedures and NWS products would aid mariners and Coast Guard responders in developing a better operating picture on which critical bar crossing, bar restriction, and bar closure decisions can be made.

Action: I concur with the intent of this recommendation. New weather products are integrated into the Coast Guard One View (CG1V) application via the Maritime Domain Awareness (MDA) application. Improvements to weather product delivery are in progress between the National Oceanic and Atmospheric Administration (NOAA) and the Coast Guard, specifically NOAA PORTS (Physical Oceanographic Real-Time System) data and PORT data transmission to the mariner. The recommendation to evaluate coastal marine radar data is a recommendation that could improve the NOAA weather product. It could facilitate decision makers on Bar opening/closing. This capability alone will not provide field mariners (without an AIS requirement) the ability to obtain automated weather products -- like the MARY B II incident. Alternative proposal is for the Coast Guard and NOAA to integrate weather products and publish to the mariner via current available NOAA methods (e.g., PORTS) via automated AIS transmission and web portal for public viewing.

Administrative Recommendation 11: Recommend that the Commandant of the Coast Guard have the Coast Guard Navigation Center (NAVCEN) examine and close the NAIS coverage gap that exists in the Yaquina Bay Bar, Oregon area to ensure the effectiveness of Coast Guard operations as well as national security requirements.

Action: I do not concur with this recommendation. The NAIS coverage in the area is not a contributor to this incident. The MARY B II was only 42 feet in length and did not have an AIS requirement to transmit.



W. R. ARGUIN

Rear Admiral, U.S. Coast Guard
Assistant Commandant for Prevention Policy



16711
21 FEB 2020

MEMORANDUM

From: [REDACTED]
A.J. Vogt, RAJMM
CGD THIRTEEN (d)

To: COMDT (CG-INV)

Subj: ENDORSEMENT OF SAFETY RECOMMENDATIONS REGARDING THE
SINKING OF THE MARY B II (O.N. 274604)

Ref: (a) Title 46 United States Code Chapter 63
(b) Title 46 Code of Federal Regulations Subpart 4.07
(c) Marine Safety Manual, Volume V, Part A, Ch. 6.B.4
(d) D13 memo 16732, Convening Order issued 14 Jan 2019

1. Pursuant to references (a) through (c), D13 convened a formal marine casualty investigation into the casualty as detailed in reference (d). The investigation and corresponding MISLE Activity 6607968 are forwarded for final action. The investigation confirms that the sinking of the MARY B II was a preventable accident. All three crewmembers and the vessel were lost on the north jetty tip at the entrance to Yaquina Bay, OR while the vessel was returning at night after a day of fishing for Dungeness crab. This investigation revealed various factors that led to the loss of the crew and the vessel. Factors included the vessel operator's apparent loss of situational awareness, failure to correct course to the center of the channel, and the impact of being struck by a series of large waves, capsizing and sinking the vessel. The vessel operator's lack of experience with the extreme weather conditions on the Yaquina Bay bar, and the operator's impairment caused by methamphetamine, alcohol and fatigue, all contributed to the loss of the MARY B II. I approve the findings of the investigation and recommend that the investigation be officially closed.

2. Safety Recommendations:

- a. **Safety Recommendation #1 (8.1.1): Address safety for Commercial Fishing Vessels (CFVs) less than 200GT.** Concur. I recommend that Commandant work with the Commercial Fishing Safety Advisory Committee (CFSAC) to improve safety on commercial fishing vessels less than 200 GT. The specific topics of concern are listed in the paragraphs below 8.1.1.
- b. **Safety Recommendation #2 (8.1.2) Mandatory Inspections:** Concur. I recommend that Commandant seek legislative authority to require that CFVs undergo mandatory inspections with expanded standards beyond the limited requirements within 46 CFR § 28.

- c. **Safety Recommendation #3 (8.1.3). Review and implement Fishing Vessel Safety Task Force report of March 1999 and NTSB 2011 report:** Concur. I recommend that Commandant review and consider implementing the following recommendations: enrollment in drug testing programs; watertight integrity and subdivision requirements; conducting and logging safety drills; equipment maintenance requirements; and dry dock exams to ensure hull and watertight integrity.
- d. **Safety Recommendation #4 (8.1.4). Merchant mariner credentials:** Partially Concur. I recommend Commandant seek legislative authority to require CFV operators of less than 200 GT hold a valid Coast Guard issued Merchant Mariner's Credential (MMC).
- e. **Safety Recommendation #5 (8.1.5). Bar crossing education and outreach:** Concur. I have directed my (dpi) staff to conduct education and outreach related to hazardous bar crossings. D13 currently has bar crossing guides for each of the regulated navigation areas on the Oregon and Washington coasts. D13 will develop addendums that will target commercial fishing vessels. D13 has already released a Marine Safety Information Bulletin (MSIB) that addresses the hazards of crossing bars at night.
- f. **Safety Recommendation #6 (8.1.6). Bar crossing education and outreach with local training organization:** Concur. I have directed my (dpi) staff to reach out to training organizations such as the North Pacific Fishing Vessel Owners Association (NPFVOA) and the Alaska Marine Safety Education Association (AMSEA) as well as other commercial fishing training organizations like the Washington and Oregon Sea Grant to include bar crossing hazards in their course curriculums.
- g. **Safety Recommendation #7 (8.1.7). Implement Crew Endurance Management:** Concur. I recommend Commandant amend 46 CFR Part 28 to require CFV owners and operators to implement shipboard policies to address crew rest, work hours and fatigue.

3. Administrative Recommendations: I concur with all administrative recommendations and have directed my staff to provide appropriate recognition to the parties that assisted with the MARY B II response and investigation.

#

Copy: CG-CVC-3
CG PACAREA (PAC-54)
SECTOR COLUMBIA RIVER
SECTOR NORTH BEND

U.S. Department of
Homeland Security

United States
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16732
14 JAN 2019

MEMORANDUM

From: D. G. Throop, RADM
CGD THIRTEEN (d)

To: K. Denny, CDR
MSU Portland

Subj: FORMAL MARINE CASUALTY INVESTIGATION CONCERNING THE MARINE
CASUALTY OF F/V MARY B II

1. Pursuant to the authority contained in Title 46, United States Code (U.S.C.), Section 6301 and the regulations promulgated thereunder, you are to convene a formal investigation for the marine casualty of the F/V MARY B II (O.N. 274604) that occurred on 08JAN19. In conducting your investigation, you shall follow, as closely as possible, to the policy guidance and operational procedures for the Coast Guard Marine Investigations Program, as found in the Marine Safety Manual, Volume V, COMDTINST M16000.10A.

2. Due to the scope and complexity of the investigation, I have assigned the following persons to assist you with your investigation. For purposes of this investigation, the below persons are all designated as investigating officers as defined under 46 C.F.R. § 4.03-30, and therefore, shall enjoy the powers outlined in 46 C.F.R. § 4.07-5.:

- LT [REDACTED] Assistant Investigating Officer
- LT [REDACTED] Recorder
- LT [REDACTED] Legal Counsel
- LCDR [REDACTED] Technical Advisor

3. Upon completion of the investigation, you will issue a Report of Investigation (ROI) to me with the collected evidence, the established facts, conclusions and recommendations. Conclusions and recommendations concerning commendatory actions or misconduct that would warrant further inquiry shall be referred to me, by separate correspondence for consideration and action as appropriate. A weekly summary of significant events shall be transmitted to CGD THIRTEEN (dpi) while the investigation is in formal session.

4. You will complete and submit your investigative report to me by 15JUN19. If this deadline cannot be met, you shall submit a written explanation for the delay and notice of the expected

Enclosure (1)

Subj: FORMAL MARINE CASUALTY INVESTIGATION 16732
CONCERNING THE MARINE CASUALTY OF F/V MARY B II 14 JAN 2019

completion date. You are highly encouraged to submit any interim recommendations intended to prevent similar casualties, if appropriate, at any point in your investigation.

5. The National Transportation Safety Board (NTSB) is also charged with the responsibility of determining the cause or probable cause of this casualty by the Independent Safety Board Act of 1974 (49 U.S.C. § 1901, et. seq.) and may designate a representative to participate in this investigation. The NTSB representative may make recommendations regarding the scope of the inquiry, may identify and examine witnesses, and/or submit or request additional evidence.

6. CGD THIRTEEN will provide funding support and MSU Portland will provide administrative assistance to the Investigation.

7. CGD THIRTEEN will furnish such funding and technical assistance as may be required by the Investigation when deemed appropriate and within the requirements for the scope of the investigation. Your point of contact for funding and technical assistance is CDR Hsingyen Fu, CGD THIRTEEN (dpi).

#

Copy: CG-INV
PACAREA (PAC-54)
INCOE
CG Sector North Bend
CG Station Yaquina Bay

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List of Acronyms

ACOE	Army Corps of Engineers
AIS	Automatic Identification System, a vessel tracking system to enhance the safety of navigation
AHRS	Advanced Helicopter Rescue School
AMSEA	Alaska Marine Safety Education Association
ATON	Aids to Navigation
BNM	Broadcast Notice to Mariners via marine radio
BOSN	Boatswain, CG Chief Warrant Officer
CFR	Code of Federal Regulations
CFSAC	Commercial Fishing Safety Advisory Committee
CFV	Commercial Fishing Vessel
CG	Coast Guard
CG Helo 6527	CG Aircraft with aircraft ID number used as a call sign, rescue helicopter on the accident night.
CG STA	Coast Guard Station
CO	Commanding Officer
Coast Guard	United States Coast Guard
COMDT	Commandant of the Coast Guard
COMDTINST	Commandant Instruction, CG Communications outlining policy and direction
COTP	Captain of the Port
D13	Coast Guard Thirteenth District, comprising Washington, Oregon, Idaho and Montana
EPIRB	Emergency Position Indicating Radio Beacon
F/V	Fishing Vessel
GT	Gross Ton (Gross Registered Tons)
HP	Horsepower
IMO	International Maritime Organization
LIO	Lead Investigating Officer
LLNR	Light List Number
LNM	Local Notice to Mariners, published weekly
LT	Light (ATON)

LUC	Latent Unsafe Condition, determined by an assessment of the facts and then analysis
MISLE	Marine Information for Safety and Law Enforcement, a Coast Guard database for tracking vessel related activities
MLB	Motor Life Boat, MLB 47266
MMC	Merchant Mariner Credential, a document issued by the CG to commercial mariners
MRO	Medical Review Officer
MSIB	Marine Safety Information Bulletin
NAIS	National Automated Identification System, a Coast Guard capability for tracking vessels equipped with AIS equipment
NAVCEN	Coast Guard Navigation Center
NIOSH	National Institute of Safety and Occupational Health
NJ	New Jersey
NM	Nautical mile
NOAA	National Oceanic and Atmospheric Administration
NPFVOA	North Pacific Fishing Vessel Owner's Association
NTSB	National Transportation Safety Board
NWS	National Weather Service
O.N.	Official Number
OCMI	Officer in Charge, Marine Inspection
ODFW	Oregon Department of Fish and Wildlife
OIC	Officer in Charge
OR	Oregon
OSU	Oregon State University
PAWSA	Port and Waterway Safety Assessment
PFD	Personal Floatation Device
PII	Parties-in-Interest, people or organizations who have a statutory right or interest in the accident investigation.
PSDA	Probability of Survival Decision Aid, planning tool for search and rescue
PST	Pacific Standard Time; is 8 hours behind Coordinated Universal Time which is used on radio logs. The time offset from UTC can be written as -08:00. Casualty location switched to PST on Nov 4, 2018
RNA	Regulated Navigation Area
ROI	Report of Investigation

SAR	Search and Rescue
Sector	An operational unit that oversees a geographic segment of the maritime domain in the United States. E.g. Sector North Bend
SPC-HWX	Special Purpose Craft – Heavy Weather craft, VICTORY
TOX	Toxicology
USC	United States Code
UMIB	Urgent Marine Information Broadcast
USC	United States Code
USCG	United States Coast Guard
UTC	Coordinated Universal Time
VHF	Very High Frequency; Marine Band Radio, typically found on vessels
VMS	Vessel Movement System; NOAA Voluntary Fishing Vessel Tracking System
WAMS	Waterways Analysis and Management System, a tool used by the CG to plan and implement ATON on federally designated navigable waterways



16732
October 1, 2019

**COMMERCIAL FISHING VESSEL MARY B II (O.N. 274604)
SINKING AND LOSS OF THE VESSEL
WITH MULTIPLE LOSS OF LIFE
AT THE YAQUINA BAY BAR ENTRANCE, NEWPORT, OREGON
ON JANUARY 8, 2019**

EXECUTIVE SUMMARY

In the early hours of January 8, 2019, the U.S. flagged Fishing Vessel (F/V) MARY B II (O.N. 274604) departed the Yaquina Bay harbor, near Newport, OR, with three crewmembers aboard to engage in crab harvesting. The vessel had a permit to fish for Dungeness crabs. Due to commercial pressure, certain times in this nine month season mimic “derby”¹ style crabbing. The Yaquina Bay Bar is a Regulated Navigation Area (RNA) due to its hazardous bar conditions.²

That day, there were a number of commercial vessels engaged in offshore crabbing. In anticipation of deteriorating weather conditions and gale warnings, local mariners began to cross the bar and return to port. The National Weather Service (NWS) and the local Yaquina Bay Coast Guard Station were advising mariners of approaching severe weather including gale warnings forecast for the outer waters beginning in the afternoon. At 4:45 p.m., the Coast Guard implemented restrictions preventing all recreational and uninspected commercial passenger vessels to cross the bar. In other words, these vessels could travel no further seaward than Yaquina Bay Channel Lighted Buoy 7, well inside the harbor.

After local fishing vessels crossed the bar, it was determined that the MARY B II was still offshore several miles south of the Bar. The Coast Guard initially had difficulty contacting the MARY B II, an issue compounded by the renaming of the vessel and a change in ownership late in 2018. At approximately 9 p.m., the Coast Guard was in communication with the MARY B II as the vessel was making way towards the Yaquina Bay Bar entrance. Noting the high risk associated with deteriorating bar conditions, Coast Guard vessels got underway and made preparations to escort the MARY B II across the bar.

¹ “Derby” or “Olympic” style fishing is described as a derby-style race for fish system where vessels compete directly with each other to maximize catch and revenues within the limitations of the guideline and fleet-wide harvest level. See Section 5.7 for a fuller explanation as it pertains to the Oregon Dungeness Crab fishery.

² A regulated navigation area (RNA) is defined in 33 CFR § 165.10. A RNA is a water area within a defined boundary for which regulations for vessels navigating within the area have been established under this part. 33 CFR § 165.1325 (a) (10) covers the section of the waterway where the accident took place.

Shortly before 10 p.m., the MARY B II began its approach to the Yaquina Bay Bar. The vessel was escorted by two Coast Guard boats, the VICTORY following astern and the motor life boat (MLB) 47266 identifying the center of the channel with a blue flashing light. The waterway at the bar was methodically illuminated by rocket propelled illumination flares (MK-127s) launched from the escort vessels. During the inbound transit, seas were building and breaking at heights up to 14-16 feet. At 10:04 p.m., the MARY B II slowed to approximately 2-4 knots and began to move off the center of the channel towards the dangerous seaward end of the North Jetty. Approximately two minutes later, the CG escorts observed a series of larger waves interact with the MARY B II near the North Jetty and as a result, the MARY B II capsized and sank. Search and Rescue efforts were immediately initiated, including the dispatch of a CG helicopter and local fire department assets. All three of the crew perished in the sinking and the vessel was a total loss.

This investigation determined that the initiating event occurred when the operator of the MARY B II began an uncorrected movement off the center of the channel towards the extreme dangers associated with the seaward end of the North Jetty. Subsequent events include failing to correct course back towards the safer portion of the channel,³ the vessel being struck by a series of larger waves, the vessel's capsizing and subsequent sinking.

The primary causal factors that directly contributed to the casualty are: 1) the vessel operator's lack of experience of with the extreme winter conditions of the Yaquina Bay Bar; 2) vessel operator's impairment caused by methamphetamine, alcohol and fatigue; and, 3) the commercial pressures created by the harvesting of Dungeness crab in the Pacific Northwest.

Other causal factors include: 1) the lack of a drug and alcohol regulatory policy for the commercial fishing industry; 2) the lack of a skill assessment and credentialing or licensing of mariners operating Commercial Fishing Vessels (CFVs) under 200 GT; 3) the RNAs for Hazardous Bars permit commercial vessels, such as the MARY B II, to cross the dangerous bars even in conditions that are close to the operating limits of specially trained Coast Guard crews equipped with vessels built specifically for the extreme surf conditions found on these waterways; 4) the "Bar Crossing Plans" requirement contained in the RNA regulations is vague and inadequate in identifying a practical plan to ensure the safety of crews crossing a dangerous and breaking bar, and 5) the configuration and maintenance of aids to navigation (ATON) for Yaquina Bay.

Also contributing to the casualty was the managing owner's lack of knowledge of a vessel owner's responsibilities. Specifically, the MARY B II's managing owner: 1) failed to ensure a drug and alcohol free working environment, despite knowing the vessel's operator used cannabis; 2) was unaware of the specific dangers associated with of the vessel's operating area with respect to breaking bar conditions; and; 3) failed to select a prudent vessel operator with the appropriate level of experience in transiting dangerous bars.

³ Failure to return close to the center of the channel limited the vessel's ability to maneuver in the breaking surf and prevented potential water rescue of the crew.



16732
October 1, 2019

**COMMERCIAL FISHING VESSEL MARY B II (O.N. 274604)
SINKING AND LOSS OF THE VESSEL
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ON JANUARY 8, 2019**

INVESTIGATING OFFICER'S REPORT

1. Preliminary Statement

1.1. This marine casualty investigation was conducted and this report was submitted in accordance with 46 Code of Federal Regulations (CFR) § 4.09, and under the authority of 46 United States Code (USC) Chapter 63. Under 46 USC § 6308, no part of a report of a marine casualty investigation, including findings of fact, opinions, recommendations, deliberations, or conclusions shall be admissible as evidence or subject to discovery in any civil or administrative proceedings, other than an administrative proceeding initiated by the United States.

1.2. On January 14, 2019, the Thirteenth District (D13) Commander issued the enclosed convening order directing a District Formal Investigation to thoroughly investigate the January 8, 2019, sinking of the MARY B II and the loss of life of all three crewmembers.

1.3. The following personnel participated in the District Formal Investigation: Lead Investigating Officer (LIO) – CDR Karen Denny, Executive Officer of Marine Safety Unit (MSU) Portland, Oregon; Member – LT [REDACTED], Investigating Officer, MSU Portland, Oregon; Recorder – LT [REDACTED], D13 Inspections and Investigations branch; Legal Advisor – LT [REDACTED], D13 Legal; Technical Advisor – LCDR [REDACTED], D13 Response; Technical Advisor – Mr. [REDACTED], Coast Guard Investigations National Center of Expertise.

1.4. The LIO designated the vessel's owner, F/V MARY B II LLC and managing owner, Ms. [REDACTED] as a Party-In-Interest (PII) represented by the law office of Nicoll Black & Feig PLLC.

1.5. The investigation team held one public hearing session at the Newport City Hall in Newport, Oregon on May 13-17, 2019. Twenty-nine witnesses testified in the hearing over that five-day period. All witnesses appeared as requested, and PII representatives participated throughout the hearing. Witnesses and PII cooperated with all investigation requests.

1.6. The Coast Guard was the lead federal agency for initial evidence collection activities and led all efforts to recover additional evidence. The National Transportation Safety Board (NTSB) was contacted but did not participate in this investigation due to the impact of the 2019 lapse in government appropriations and the resultant inability to deploy investigators.

1.7. References to time in this report are listed as 12-hour and with an a.m. or p.m. to denote morning or afternoon times. All times reflect Pacific Standard Time (PST) which is Coordinated Universal Time (UTC), offset of minus 8 hours.

1.8. Throughout the investigation, helpful information was obtained from the public using the email addresses: marybii.uscg@gmail.com and accidentinfo@uscg.mil.

2. Vessel Involved in the Incident



Figure 1. Photograph of the MARY B II near the shoreward end of the jetties in Yaquina Bay, November 18, 2018. (Source – [REDACTED])

Vessel Name:	MARY B II (ex BESS CHET)
Official Number:	274604
Flag:	United States
Vessel Class/Type/Sub-Type:	Commercial Fishing Vessel, Displacement Hull, Near Coast Fishery
Build Year:	1957
Gross Tonnage:	23
Length:	41 ft 7 in / 41.6 ft
Beam/Width:	13.4 ft
Draft/Depth:	7.1 ft
Hull Construction:	Wood plank, fiberglass over wood topsides
Main/Primary Propulsion (Configuration/System Type, Ahead Horse Power):	Diesel Engine, Detroit Diesel, 4-71, 1974, approximately 160 HP
Owner/Managing Owner:	F/V MARY B II LLC, [REDACTED]
Operator:	Stephen J. Biernacki

3. Deceased, Missing, and/or Injured Persons

Name (First, MI, Last)	Sex	Relationship to Vessel	Age	Status
Stephen J. Biernacki	Male	Operator	50	Deceased
James E. Lacey	Male	Deckhand	57	Deceased
Joshua J. Porter	Male	Deckhand	50	Deceased

4. Findings of Fact

4.1. The Incident:

4.1.1. On or about January 8, 2019, between 4:00 a.m. and 6:00 a.m., Mr. Biernacki ordered bait and Mr. Lacey and Mr. Porter picked up bait from the Seawater Seafood South Beach location. Mr. Biernacki purchased 10 boxes of sardines to be loaded onto a vehicle and then transported them to the MARY B II.

4.1.2. While at the Seawater Seafood facility, Mr. Biernacki was observed by three facility employees who described his physical behavior as seemingly unusual. Witnesses observed Mr. Biernacki talking excessively quickly, cursing, and demonstrating an overall aggressive behavior. During the same interaction, facility employees asked the operator why he was going out when every other vessel was headed back to port due to forecasted inclement weather for that day and evening. Mr. Biernacki responded that he was “going to show these

guys how it's done.”⁴ Mr. Biernacki repeatedly asked to get his bait and seemed anxious to depart.

4.1.3. On or about January 8, 2019 at approximately 6:00 a.m., the fiancée of Mr. Lacey was on board the MARY B II prior to the vessel's departure to drop off bottled water and observed Mr. Biernacki in the engine room. Mr. Biernacki was reported to be repairing a leak into the interior of the hull of the vessel.⁵

4.1.4. Sunrise for January 8, 2019 was 7:52 a.m..

4.1.5. On or about January 8, 2019 at approximately 8:00 a.m., the National Weather Service Coastal Waters Forecast for the Oregon Coast warned of a low pressure system bringing strong easterly winds on Tuesday and into Wednesday (January 8-9). A Gale Warning was in effect starting at 4:00 p.m. Tuesday, January 8, 2019 until Wednesday evening. The coastal forecast included rain, with southeast winds from 25 to 30 knots and wind gusts up to 35 knots. The forecasted sea state was combined seas of 15 feet with a dominant period of 11 seconds, building to 23 feet with a dominant period of 18 seconds.

4.1.6. Between 7:17 a.m. and 8:00 a.m., the operator, Mr. Biernacki, got the MARY B II underway to fish for Dungeness crab off the Oregon Coast. He departed port with two crewmembers, Mr. Lacey and Mr. Porter.⁶

4.1.7. At 8:03 a.m., Mr. Porter called a local diver at Ben's Diving Service indicating that the MARY B II had a line ensnared in the propeller. Mr. Biernacki also contacted the diver, Mr. [REDACTED] via phone at approximately 1:58 p.m. to establish the cost of having the diver remove the line that was reported to be fouled in the propeller. Arrangements were made to have the diver meet the MARY B II upon their return to port to remove the suspected line from the propeller.

4.1.8. Throughout the day of January 8, 2019, the MARY B II engaged in fishing operations at several different locations off the coast of Yaquina Bay Bar.

⁴ Preliminary interview summaries provided by Mr. [REDACTED] and Mr. [REDACTED] personnel who work at the Seawater Seafood facility.

⁵ Ms. [REDACTED] preliminary interview summary.

⁶ The MARY B II's NOAA VMS data was transmitting data under the vessel's previous name, BESS CHET. This VMS system only gives a single location data point once roughly every 60-75 minutes.

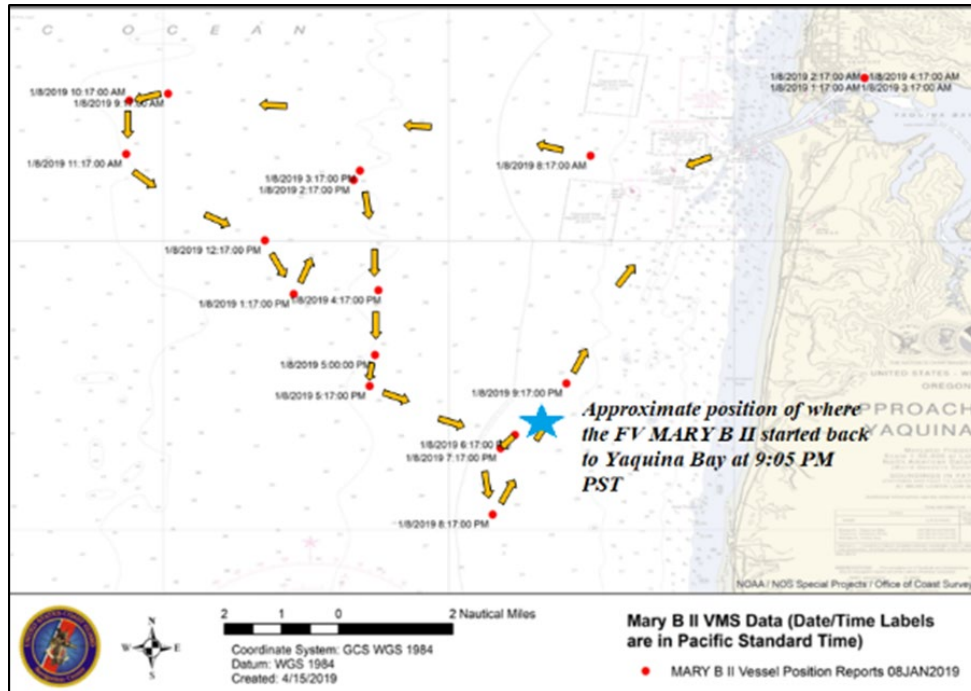


Figure 2. Chartlet showing the MARY B II's positions on January 8, 2019 based on Vessel Monitoring System (VMS) data. (Source – Created from VMS data provided by vessel owner)

4.1.9. At approximately 3:00 p.m., Coast Guard Station Yaquina Bay was monitoring the weather and number of fishing vessels waiting to cross the bar in order to return to port. Due to the inclement weather, personnel from the duty section were assessing fishing vessel traffic, evaluating the need for escorts, and standing by to assist vessels in crossing the bar. Specifically, personnel staffed three positions: a communications watchstander inside the Station's communication center; a tower watchstander located in the lookout tower; and, a mobile watchstander monitoring the bar from the hill on the north side of the jetty referred to as Mobile 1. In addition, Station Yaquina Bay had small boats on standby, including a 52 foot Special Purpose Craft – Heavy Weather (SPC-HWX) VICTORY and a 47 foot motor life boat (MLB 47266) which would participate in the bar escort and later, in the rescue attempts.

4.1.10. At approximately 4:45 p.m., the crew of Station Yaquina Bay conducted a last light bar observation and noted seas of 4 to 6 foot ebb chop at the jetty tips, 4 to 6 foot long ocean swells in the main channel, and winds were East at 10 to 15 knots. Based on these observed conditions, the Commanding Officer of Station Yaquina Bay restricted all recreational and uninspected passenger vessel traffic from crossing the bar. The Yaquina Bay Bar Report was disseminated over radio. Commercial fishing vessels like the MARY B II were not restricted from crossing the bar.

4.1.11. On January 8, 2019, sunset occurred at 4:54 p.m. and last light was at 5:26 p.m.. The moon phase for January 8, 2019 was a waxing crescent, following the new moon phase the previous night. Only about 6% of the moon was visible.

4.1.12. On January 8, 2019, both the VICTORY and the MLB 47266 were reported to be fully mission capable.

4.1.13. Over the next several hours, the F/Vs LISA MELINDA, MISS SARAH, and STAR SHADOW crossed the bar without escort and without incident. Per testimony, the operator of the LISA MELINDA reported that the last light bar report, which was being broadcasted, was inaccurate and the sea conditions were worse. As a result, Station Yaquina Bay sent the MLB 47266 to get an updated on scene assessment of the sea and weather conditions.

4.1.14. At approximately 7:19 p.m., Station Yaquina Bay Tower, Mobile 1, the VICTORY and the MLB 47266 were all in communication via radio with the F/V LAST STRAW which was still offshore. The operator of the LAST STRAW stated that they strongly desired to return to port. While the LAST STRAW did not explicitly request an escort from the Coast Guard, the operator did ask several questions regarding the sea state and wave series timing. As a result of this uncertainty, the Coast Guard made the decision to escort the LAST STRAW across the Yaquina Bay Bar and through the jetties.

4.1.15. While the Coast Guard was establishing communications with the LAST STRAW, they attempted to hail the vessel that was actively making its inbound approach to cross the bar. The vessel did not respond back, but the operator of the LAST STRAW indicated that it was the STAR SHADOW. At approximately 7:27 p.m., the STAR SHADOW successfully crossed the Yaquina Bay Bar and transited inside the jetties to Yaquina Bay Harbor.

4.1.16. The LAST STRAW waited for several minutes to assess the weather and sea conditions before attempting to cross the bar. At approximately 7:27 p.m., after discussion between the Coast Guard boats and the LAST STRAW, the LAST STRAW determined it would stay out until the Coast Guard “got a good read” on the bar conditions. Over the next several minutes, the VICTORY, the MLB 47266, Mobile 1 and the tower watchstander worked together to illuminate the bar with MK-127 illumination flares and time the series to identify the best time to facilitate the LAST STRAW’s crossing.

4.1.17. During this time, conditions were observed to be “14 foot breaks on the series, steep ebb chop throughout the main channel”... “not a lot of vis.” These conditions were conveyed to the LAST STRAW at approximately 7:31 p.m. and acknowledged by the operator of the LAST STRAW.

4.1.18. At approximately 7:32 p.m., LAST STRAW stated “I desperately want to get in...it’s building fast out there, that’s why I’m motivated to get in.”

4.1.19. At approximately 7:33 p.m., the VICTORY, located in the vicinity of South Jetty Light 4, began an outbound transit heading outside the jetty tips towards the LAST STRAW.

4.1.20. At approximately 7:39 to 7:41 p.m., the VICTORY and LAST STRAW engaged in a series of transmissions. The VICTORY stated that as the escort progressed and the LAST STRAW was in the vicinity of Lighted Entrance Buoy 3’s charted position, that Coast Guard boats would illuminate the area by activating the MK-127 illumination flares. VICTORY explained that the MLB 47266 would be located on the bar on the north side with the flashing blue light turned on. The VICTORY indicated that they would stay several hundreds

of yards off of the LAST STRAW's stern to "break up anything that's coming up behind" his vessel.

4.1.21. At approximately 7:45 p.m., MLB 47266 called out to LAST STRAW to convey bar conditions the crew was observing: "two different series, uh, the larger series coming through at about every eight minutes, and the middle of that will be a little smaller series. It's about 12 foot at the tips, its [sic] not breaking, just real, real steep."⁷ Then the VICTORY called out to LAST STRAW and indicated that they were in the start of the lull and it looked "like we got a good window." LAST STRAW acknowledged these transmissions.

4.1.22. At approximately 7:53 p.m., the LAST STRAW safely crossed the Yaquina Bay Bar and passed through the jetties to the protected waters inside the jetties.

4.1.23. By approximately 7:56 p.m., the LAST STRAW continued transiting into Yaquina Bay. The operator was still in communication with Coast Guard vessels. The operator of the LAST STRAW commented that it "got a little broachy there for me. I need about twice as big a rudder" and "It's kinda alarming. I got turned pretty good there didn't I?"⁸ During the LAST STRAW's crossing, the vessel's operator relied on his deckhand to assist with radio communications during the escort. The vessel continuously communicated with the Coast Guard during the escort.

4.1.24. During the entire escort evolution of the LAST STRAW, there were continuous active radio communications both internally between Coast Guard boats and externally between Coast Guard boats and the LAST STRAW. Prior to and during the escort of the LAST STRAW, Coast Guard crews used numerous MK-127 flares to illuminate the area and develop a sense of the bar conditions and sea state.

4.1.25. At approximately 7:53 p.m., the MLB 47266 experienced a reduction gear temperature alarm and reported it to the Station Communications watchstander and to the VICTORY on Channel 121. The MLB 47266's coxswain indicated that they would maneuver inside the jetties to provide the engineer with a less choppy environment to enter the engine space, check on the alarm and determine the engineering plant's status. Over the next six minutes, the MLB 47266 and the VICTORY exchanged several transmissions on the status of the MLB 47266's engineering plant. The MLB 47266 indicated both engines were still online and operational. By 7:56 p.m., the MLB 47266 indicated that "they were all good now" and that the issue was a maintenance reminder.⁹

4.1.26. Throughout the escort evolution for LAST STRAW, Coast Guard vessels and watchstanders were aware of reports that one other vessel was still underway and located south of the Yaquina Bay entrance. At approximately 7:26 p.m., Coast Guard boats asked the

⁷ CG Exhibit 008, Communications log provided as a transcript of radio communications. Any misspellings or typos are represented with a "[sic]" show that the word is quoted exactly as it stands in the original.

⁸ CG Exhibit 008.

⁹ The reduction gear alarm was for a missing temperature sensor and the MLB 47266 could not silence the alarm from the bridge of the MLB 47266. As a result, the boat engineer had to go below to verify proper operation of the equipment and silence the alarm. The boat engineer conducted a round of the space and at approximately 7:59 p.m., confirmed the round was satisfactory. It was reported that both CG boats were fully mission capable without waivers.

operator of the LAST STRAW if he knew which vessel was to the south. The operator of the LAST STRAW replied that he did not know which vessel it was. The tower watchstander attempted to call out to the vessel over marine radio with negative results. At approximately 7:33 p.m., the tower watchstander once again confirmed that he could only see one other vessel aside from the LAST STRAW operating to the south of the Bar and confirmed that he was unable to establish communications. At approximately 7:33 p.m., LAST STRAW confirmed that they, too, could see the unnamed vessel to the south/southwest because he could see the vessel's halogen lights appear and disappear. At approximately 7:38 p.m., 7:39 p.m., and 7:41 p.m., the Station communications watchstander made additional attempts to establish communications with the vessel operating approximately five miles southwest of Yaquina Bay on marine radio Channels 16, 22, and 73.

4.1.27. At approximately 7:56 p.m., the VICTORY communicated with the other Coast Guard entities regarding the unidentified fishing vessel still operating offshore. Mobile 1 reported that multiple attempts to contact the unidentified vessel had been made with negative results and that there was no Automatic Identification System (AIS) position for the vessel with amplifying information. The VICTORY directed watchstanders to contact Sector North Bend to see if they could assist in identifying the vessel.

4.1.28. At approximately 7:58 p.m., the VICTORY and MLB 47266 exchange radio transmission and discuss returning to station to moor the vessels and rest the crew. At this time, the MLB 47266 states that they have only two MK-127 flares remaining onboard and in the event additional escorts are necessary this evening, they will need to replenish. The VICTORY told the MLB 47266 to wait to return to station until further attempts to establish the identity of the final vessel offshore can be made.

4.1.29. At approximately 7:59 p.m., Mobile 1 began hailing the F/V BESS CHET over Channel 16. On working Channel 121, Mobile 1 told The VICTORY and the MLB 47266 that Sector North Bend indicated that they believed the vessel was the BESS CHET based on the vessel's last "AIS time stamp" from an hour prior.¹⁰

4.1.30. At approximately 8:00 p.m., the operator of the LAST STRAW called out to the Coast Guard and advised the tower watchstander to try and call the BESS CHET over Channel 73. The Coast Guard acknowledged LAST STRAW's transmission and continued to hail the BESS CHET over Channel 16 at approximately 8:01, 8:02, and 8:04 p.m. with no response.

4.1.31. Between 8:00 p.m. and 8:21 p.m., Coast Guard vessels communicated internally over Channel 121 regarding the vessel they believed was the BESS CHET. The tower watchstander indicated there were no records of the BESS CHET leaving or entering the Yaquina Bay Bar in their log after April 2018. The VICTORY directed Mobile 1 to call Station Coos Bay to find out if the BESS CHET was noted in their log in an effort to identify where this vessel came from and what their plan may be. There were discussions about

¹⁰ This information was found based on the MARY B II's NOAA VMS data which was transmitting data under the previous vessel's name, BESS CHET.

reaching out to the Port Docks in Newport to review their logs to see if they could confirm if BESS CHET operated out of Newport, OR.

4.1.32. At approximately 8:05 p.m., the operator of the LAST STRAW heard the Coast Guard's failed attempts to reach the operator of the BESS CHET and stated that the operator of the vessel is "an East Coast feller. Been around for a year. Bought a boat. He hasn't got much experience here. Hardly any" and confirmed that the vessel operated out of Newport, OR.

4.1.33. Approximately 20 minutes later, the MLB 47266 and the VICTORY moored at Station Yaquina Bay.

4.1.34. Over the course of the next 45 minutes, Mobile 1 unit and the Tower watchstander continued to monitor the offshore vessel and noted that, from the movement of the halogen lights, the vessel seemed to be picking up crab pots. The Station Yaquina Bay Officer of the Day (OOD), a Coast Guard Petty Officer, worked to determine the identity of the unidentified vessel operating in the vicinity of Seal Rock, south of the Yaquina Bay Bar. After contacting the BESS CHET's previous owner by telephone, the Petty Officer discovered that the BESS CHET had been sold to a different operator. The OOD obtained the contact information for the new operator, Mr. Biernacki, and reached him via cellular telephone to tell him that the Coast Guard had been trying to hail him on the radio to establish radio communications and determine his intentions.

4.1.35. At approximately 8:54 p.m., a watchstander at Station Yaquina Bay broadcast a "securité"¹¹ transmission over Channel 22 relaying the conditions at the Yaquina Bay Bar. The conditions were detailed to be 12-14 foot swells with occasional 18-foot swells and breaks at the main channel and at the jetty tips. Visibility was noted to be 6 miles with winds being ENE at 13 knots. The bar was restricted indicating that all recreational and uninspected passenger vessels could not cross the bar because of unsafe conditions. The transmission continued that a small craft advisory, for winds and hazardous seas, was in effect through Wednesday morning and a gale warning was in effect from Wednesday morning to Wednesday evening.

4.1.36. Coast Guard resources continued to hail the BESS CHET over Channel 16 at approximately 9:03 p.m., 9:04 p.m., and 9:05 p.m. with no response.

4.1.37. At approximately 9:06 p.m., the operator of the MARY B II contacted the Coast Guard on Channel 22 and stated that a Coast Guard Petty Officer had contacted him on the phone to ensure he established radio communications with Station Yaquina Bay in preparation to cross the bar. The operator added that he was about an "hour and 15 minutes away" from the bar. The Coast Guard watchstander acknowledged MARY B II's transmission.¹²

¹¹ A "securité" broadcast is a radio broadcast that contains important navigational safety information.

¹² The radio transmissions indicate that at this point that Station Yaquina Bay was still trying to determine the BESS CHET (aka MARY B II) was offshore because there is an additional call out at approximately 9:08 p.m. to the BESS CHET with no response.

4.1.38. At approximately 9:11 p.m., the tower watchstander hailed the MARY B II on Channel 22 to confirm the MARY B II's location in order to verify that the MARY B II was the vessel coming from the southwest and heading towards the Yaquina Bay Bar entrance. The operator, Mr. Biernacki, confirmed the vessel's position as being "5.4 miles from the inlet."

4.1.39. At approximately 9:12 p.m., the watchstander acknowledged Mr. Biernacki's previous transmission and asked to know about number of persons on board and the speed the vessel was making. Mr. Biernacki responded that the vessel was making about 6 to 6.5 knots and had three persons on board. The watchstander acknowledged this transmission and asked the MARY B II to monitor Channel 22.

4.1.40. Though the MARY B II's operator did not request an escort, given the surf conditions, the Commanding Officer of the CG Station and experienced duty personnel met and assessed the local familiarity of the operator of the MARY B II as well as the weather forecast. In accordance with Coast Guard policy, a risk assessment was conducted. This risk assessment included the viewpoints and concerns of all the personnel that would be engaged in the upcoming escort of the MARY B II. At approximately 9:21 p.m., the MLB 47266 got underway. The crew relayed an evolution risk assessment score of medium.

4.1.41. At approximately 9:23 p.m., Mobile 1 reported that the MARY B II appeared to be about 2 miles south of the bar. At approximately 9:26 p.m., Mobile 1 reached out to MARY B II on Channel 22 and relayed that Coast Guard motor lifeboats were heading out to assess the bar conditions for the MARY B II's bar crossing. The operator of the MARY B II acknowledged Mobile 1's radio transmission and stated the vessel was approximately "3.5 miles south of the inlet." The operator repeatedly called the entrance to Yaquina Bay Bar an "inlet". Mobile 1 asked the MARY B II regarding her maximum speed to which the operator responded 7 knots. Mobile 1 acknowledged the vessel's maximum speed and indicated the Coast Guard would stand by on Channel 22 and that several Coast Guard vessels would be out on the bar to provide some illumination. MARY B II's operator acknowledged the transmission stating, "Yeah, I got you good skipper" and "roger, roger."

4.1.42. At approximately 9:25 p.m., deckhand Joshua Porter texted his wife from the MARY B II expressing frustration with the fact that they were still underway so late, given that the operator had stated that they would be in before dark. He stated that he thought the operator was "not to [sic] bright." He expressed concerns about the weather stating that "now it's really big." Mr. Porter added that he thought the rest of the crew was angry with him after he pointed out that there was a reason nobody else was out there at the time, referencing the inclement weather which had been forecasted.

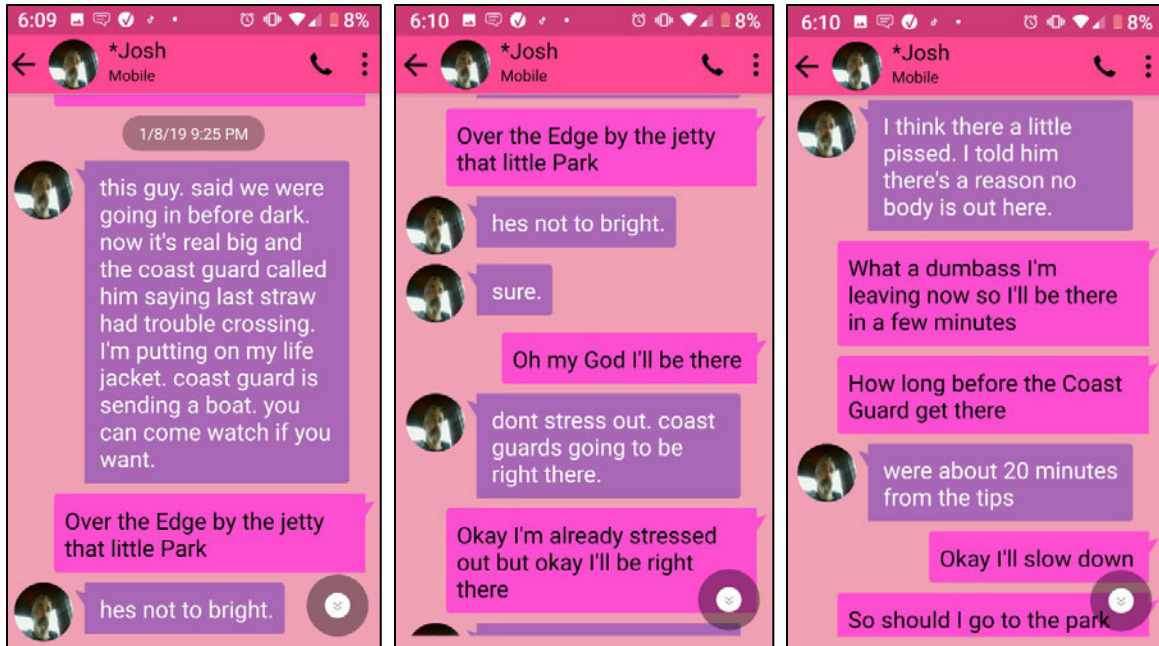


Figure 3. Screen shots of Mrs. [REDACTED] last text conversation with the crewmember, Mr. Porter on board the MARY B II, as the vessel was transiting back from the fishing grounds to the Yaquina Bay Bar on the evening of January 8, 2019. (Source – CG Exhibit 024)

4.1.43. The VICTORY got underway from Station Yaquina Bay for the purpose of escorting the MARY B II across the Yaquina Bay Bar. The MLB 47266 was in the center of the channel shoreward of Yaquina Bay South Jetty Light 4 relaying bar conditions, timing the series of waves, and marking the center of the navigation channel. The MLB 47266 relayed observed conditions as 10-12 feet but no breaks. Both vessels, Tower and Mobile 1 began working on timing the wave series. Coast Guard vessels observed an eight to nine minute lull. The MLB 47266 then began lighting MK-127 illumination flares to assist with observing conditions on the bar while the VICTORY pushed out past the jetty tips to better judge conditions the MARY B II would experience on the approach to Yaquina Bay.

4.1.44. At approximately 9:31 p.m., the Coast Guard called out to the MARY B II over Channel 22 to confirm the number of persons on board, to which the operator responded he had three persons. Mobile 1 acknowledged the number of persons on board and asked the operator about lifejacket availability and whether they had a bar crossing plan. The MARY B II's operator responded that they had lifejackets available and that all were "certified safety drill instructors."

4.1.45. There were no further communications to discuss the details of the MARY B II's plan to cross the bar.

4.1.46. At approximately 9:42 p.m., Mobile 1 notified MARY B II that the Coast Guard had a pair of vessels in the vicinity of the Yaquina Bay Bar, that they were timing the wave series, and that they were utilizing illumination flares to light up the area. The watchstander added that a Coast Guard unit would establish communications with MARY B II over Channel 22. Mr. Biernacki acknowledged this information and stated that he saw the flares being used to light up the bar.

4.1.47. At approximately 9:46 p.m., the VICTORY began providing information to MARY B II from its position in the vicinity of the charted location of the Yaquina Bay Entrance Lighted Buoy 3. The VICTORY notified the operator of the timing and location of waves breaking across the bar. The VICTORY added that they would stay off of MARY B II's stern during her transit across the bar, but would stay out of her way if the operator needed to abort, turn, or back up. The VICTORY reminded the operator of MARY B II that "safe navigation and operation of your vessel is your responsibility. And just because we're out here does not mean you need to cross." Mr. Biernacki acknowledged this radio transmission and stated that they would "check out a couple...of sets here before we cross." No other information was communicated to the Coast Guard about the condition of the vessel.

4.1.48. At approximately 9:47 p.m., the VICTORY advised the operator of the MARY B II that the center of the channel was the best way to go and the VICTORY highlighted the presence of the MLB 47266, who had the flashing blue lights energized and indicated that they were marking the center of the channel. The VICTORY added that both Coast Guard vessels would stay out of the MARY B II's way as the vessel transited in and crossed the bar. Mr. Biernacki acknowledged this radio transmission at approximately 9:48 p.m. with a response of "roger, roger Coast Guard. Got you good."

4.1.49. At approximately 9:50 p.m., the tower watchstander informed the VICTORY about the timing of the waves, coming as a smaller set with a larger set thereafter. At the time, the watchstander reported that the series appeared to be nine minutes in length with the lull period being four minutes long.

4.1.50. At approximately 9:51 p.m., Station Yaquina Bay watchstander asked the MLB 47266 for updated operations and position information. The MLB 47266 responded that they were in the vicinity of South Jetty Light 4 and standing by for MARY B II to make the inbound run.

4.1.51. At approximately 9:52 p.m., the VICTORY let the MARY B II know that they were going to stand by north of Entrance Lighted Gong Buoy 1. The VICTORY stated that once they saw the MARY B II start the inbound transit, the VICTORY would fall in behind her. The operator of the MARY B II acknowledged the radio transmission and stated that personnel on board the MARY B II would don their lifejackets.

4.1.52. The three persons on board the MARY B II donned automatically inflatable Type V lifejackets.

4.1.53. Between 9:52 and 9:57 p.m., there were internal Coast Guard communications between the MLB 47266, the VICTORY, and the tower watchstander discussing the timing of the series of waves. At approximately 9:57 p.m., the MLB 47266 relayed to the VICTORY that the bigger series of waves had passed and it would be a good time to begin an inbound run.

4.1.54. At approximately 9:57 p.m., the VICTORY indicated to MARY B II that it appeared that the MARY B II was beginning to make her approach to the Yaquina Bay channel and

reiterated that VICTORY would be “sticking off” her stern. Mr. Biernacki acknowledged this radio transmission, saying “Yeah. Roger, roger.”

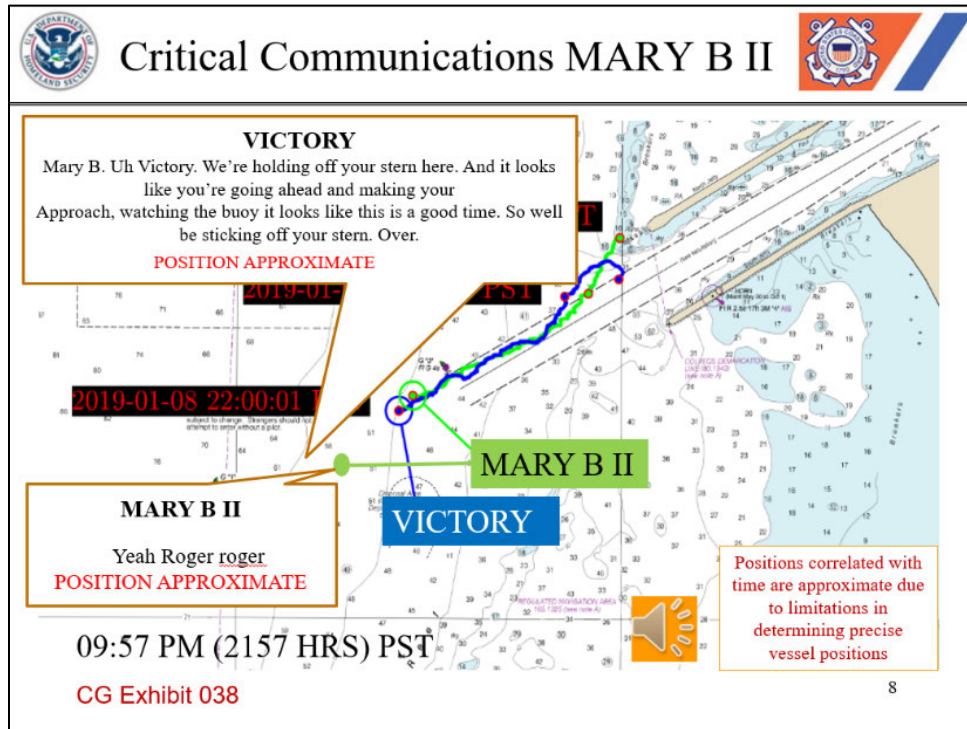


Figure 4. Time approximately 9:57 p.m., slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

(HYPERLINK # 1)

4.1.55. At approximately 9:58 p.m., the VICTORY had internal communications with the MLB 47266 and stated that they were transiting in behind the MARY B II. The VICTORY stated that the transit speed of the MARY B II was “slow though.” The MLB 47266 asked to be notified when the MARY B II and the escorting VICTORY were past the charted location of Entrance Lighted Buoy 3 in order to light up a flare to illuminate the bar.

4.1.56. At approximately 9:58 p.m., the VICTORY directed the MLB 47266 to start putting up more illumination flares. The VICTORY also stated that the MARY B II was “not riding good in the water,” appeared to be “not a very stable boat” and it had an outrigger partially out.¹³ In the same transmission, the VICTORY reported that the MK-127 illumination flare they attempted to fire was “a dud” and failed.

¹³ Eye witness accounts indicate that the port outrigger was partially deployed though it was unclear at what angle the outrigger was deployed or if there were any rigging lines trailing behind in the water near the stern of the MARY B II.



Figure 5. Screen capture from Oregon State Police closed circuit TV camera showing the illumination provided by a MK-127 parachute flare that was launched from the Coast Guard boats during the escort. (Source – Oregon State Police video, screen capture with labels from CG Exhibit 031)

4.1.57. At approximately 9:59 p.m., the MLB 47266 called out to the MARY B II on Channel 22. The MLB 47266 told the MARY B II’s operator that they were located in the center of the channel. The MLB 47266 indicated that once the MARY B II got inside the jetty tips, the MLB 47266 would move to the north side of the channel. The MLB 47266 also passed that the conditions inside the jetty tips were such that when the bigger series of waves broke, it was breaking on the south side at South Jetty Light 4. In other words, the breaking waves were coming well into the channel and reaching the south side of the jetty to a position near South Jetty Light 4. The MLB 47266 advised that once the MARY B II got inside the jetty tips the operator may want to steer his vessel a little north inside the channel in order to most quickly get to safer water.

4.1.58. At approximately 10:00 p.m., the operator of the MARY B II acknowledged the MLB 47266’s transmission by stating that he saw their blue light and added, “I’m working my way to the North side here now.”

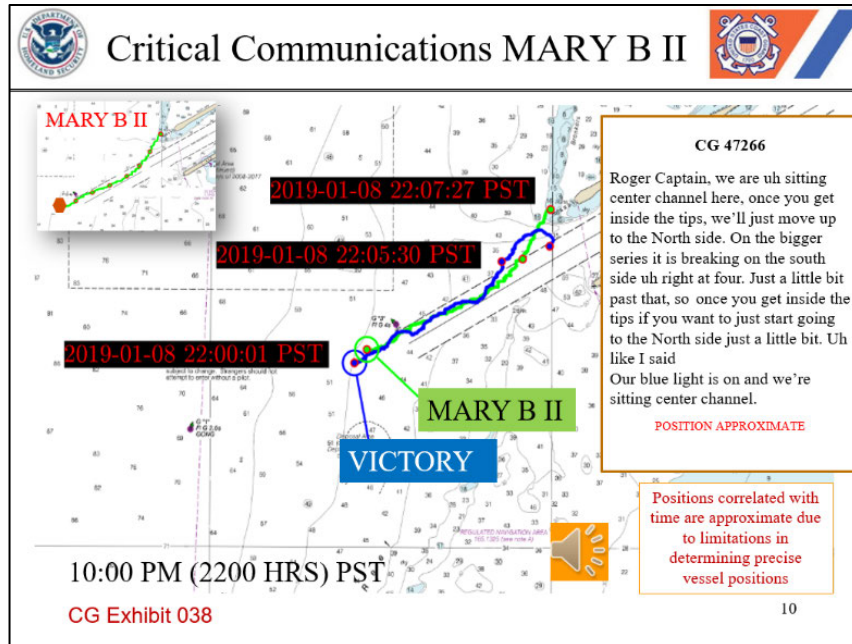


Figure 6. Time 10:00 p.m., slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

4.1.59. The MLB 47266 immediately responded and advised the MARY B II’s operator not to come north too soon. The MLB 47266 gave additional information on the observed conditions stating the waves were starting to break on the north side off the dumping grounds and that there was also a wraparound break on the north side of the channel.

4.1.60. The operator of the MARY B II acknowledged the MLB 47266’s message stating “Yeah I got you guys, alright. Lemme pay attention here, cause so many vessels here now I got AIS going off on my Plotter here. Clogging it up.”

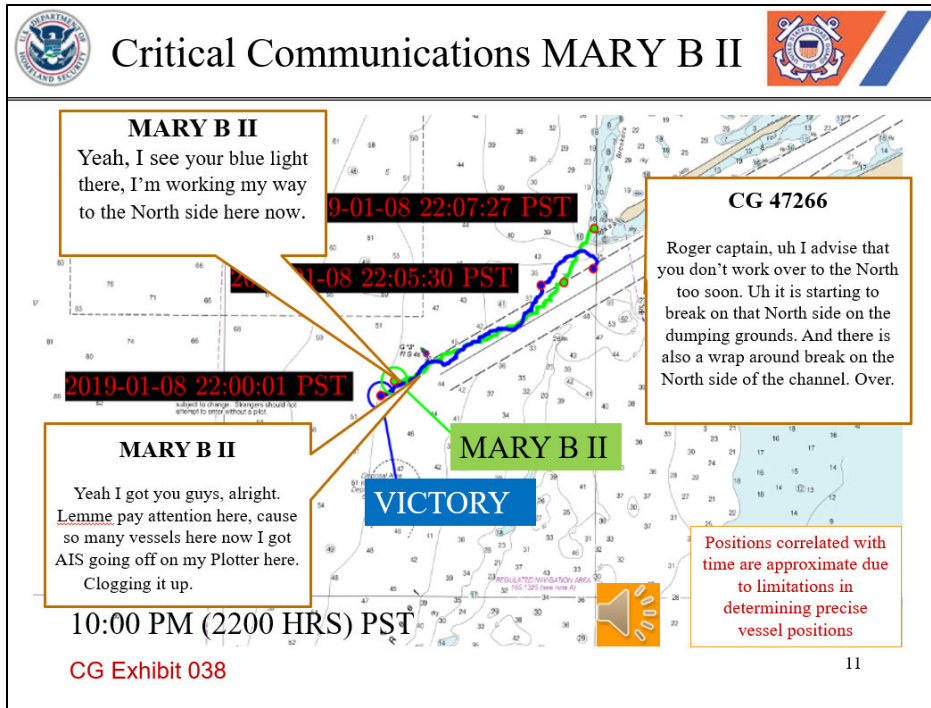


Figure 7. Subsequent 10:00 p.m. slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

4.1.61. At that time and in close proximity to the scene, the VICTORY, the MLB 47266, South Jetty Light 4, and Entrance Buoy “Y” were AIS equipped and transmitting.

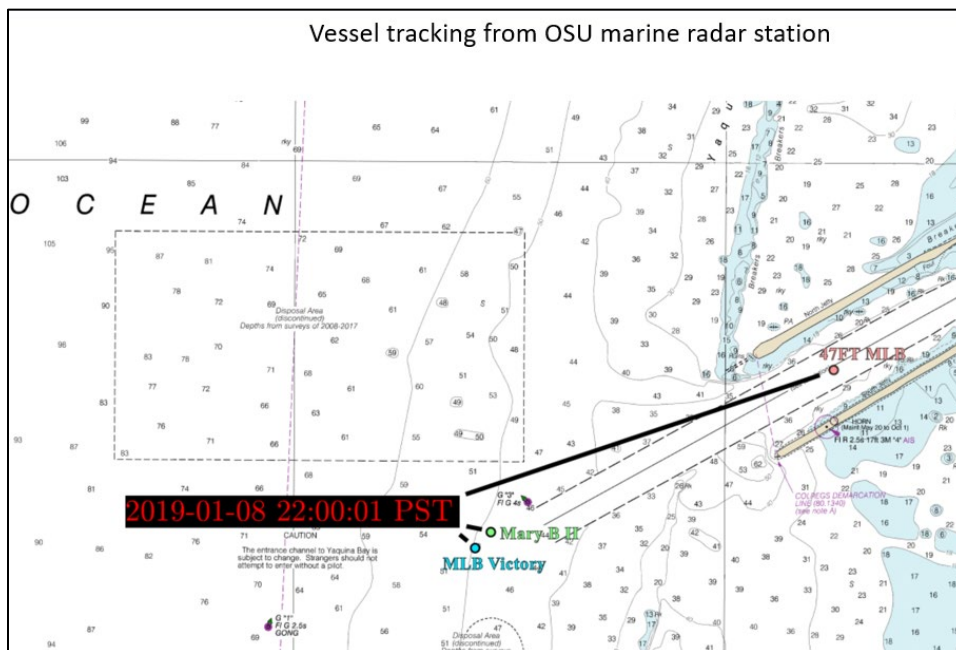


Figure 8. Positions of the vessels involved at 10:00 p.m. derived from the Oregon State University (OSU) marine radar located at Yaquina Bay. (Source – Coast Guard, CG Exhibit 071)

4.1.62. At approximately 10:01 p.m., Sector North Bend made a “securité” broadcast for Oregon Coast bar restrictions for approximately 30 seconds on Channel 22.

4.1.63. Between approximately 10:02 and 10:03 p.m., the MLB 47266 and the VICTORY engaged in a series of internal communications on Channel 121. At this time, the MLB 47266 tells the VICTORY that it appeared they were in the best part of the lull. The VICTORY reported that the MARY B II seemed to be going about as fast as it could, but that it was travelling “very slow” at about 2 knots. The VICTORY indicated the VICTORY and MARY B II’s approximate location as about “10 yards inside” Entrance Lighted Buoy 3 and that they were not making good speed.

4.1.64. The VICTORY had to back down at one point to maintain a safe distance off the stern of the MARY B II. The Coast Guard did not inquire as to the reason for the MARY B II’s slow speed. The operator of the MARY B II did not provide the Coast Guard with a reason for the slow speed.

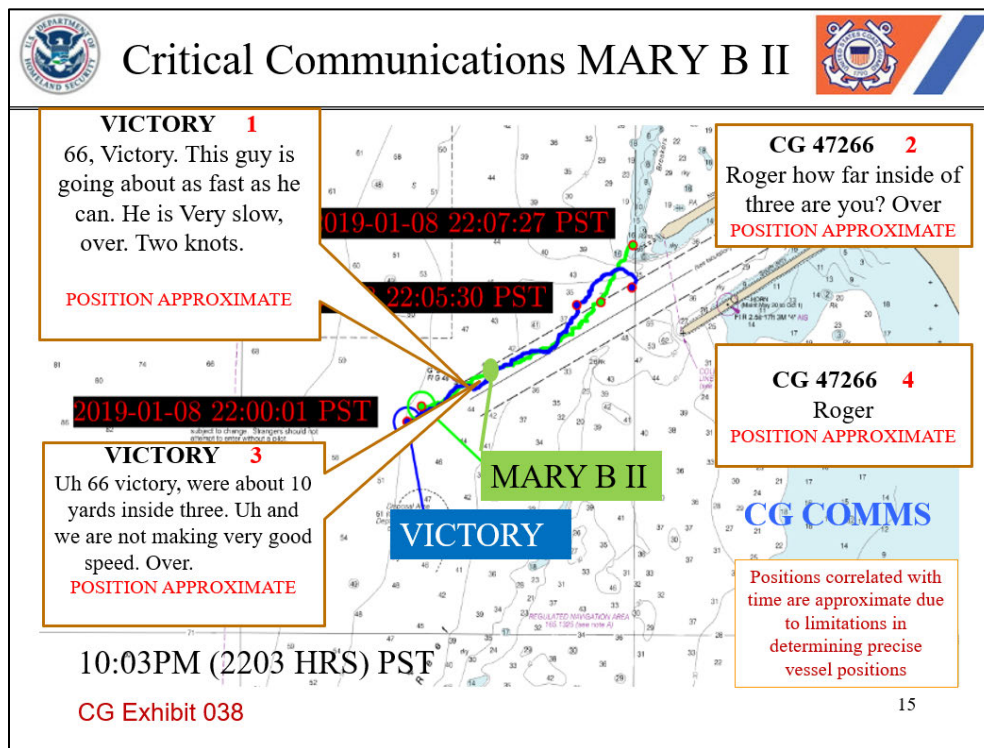


Figure 9. Time 10:03 p.m., slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

(HYPERLINKS # 2 and # 3)

4.1.65. At approximately 10:04 p.m., the VICTORY called the MARY B II on Channel 22 and passed “16 footer building up behind you captain.”¹⁴ Shortly after this transmission, the MLB 47266 communicated over Channel 121 that the MLB 47266 had only one illumination flare left. The VICTORY acknowledged this transmission and directed the MLB 47266 to

¹⁴ CG Exhibit 008.

retain this MK-127 illumination flare until the last minute when the vessels would be trying to cross the bar. The MLB 47266 acknowledged this instruction.

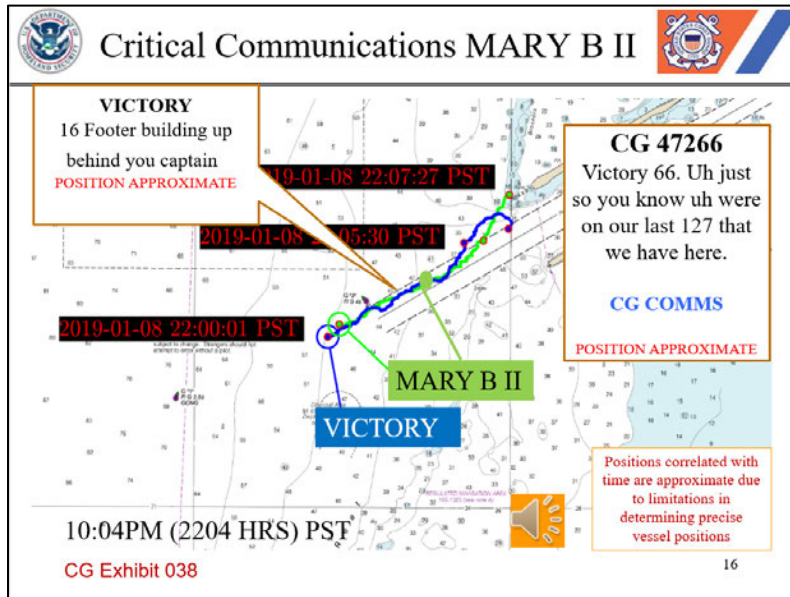


Figure 10. Time 10:04 p.m. slide, from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

4.1.66. At approximately 10:04:30 p.m., the MARY B II began to drift off the centerline of the Yaquina Bay Bar navigation channel and continued this movement towards the seaward end of the North Jetty tip.

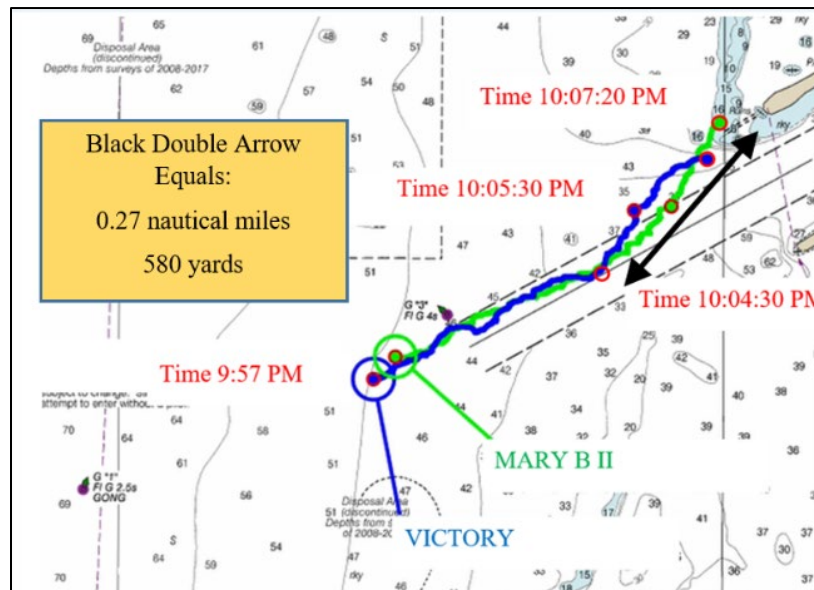


Figure 11. Slide displaying critical times along a radar track created from the OSU marine radar located in Yaquina Bay. An arrow has been placed to indicate distance from the 10:04:30 p.m. position of the MARY B II to the jetty end. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

(HYPERLINK # 4)

4.1.67. At approximately 10:05 p.m., the MLB 47266 hailed the VICTORY over Channel 121 and advised that it appeared to be the end of the lull period. The MLB 47266 added that the smaller series would be coming in, that would last three to five minutes, and that the bigger series would be right after that. The MLB 47266 suggested to the VICTORY that if the MARY B II wasn't going to speed up and make it to the jetty tips, they should consider going bow in to the seas.

4.1.68. At approximately 10:05 p.m., the VICTORY called out to the MARY B II on Channel 22 and advised, "Mary B, This is the set right here. This is the set. Over." The operator of the MARY B II acknowledged the VICTORY's transmission with the statement "Yeah roger, roger. I see it."

(HYPERLINK #5)

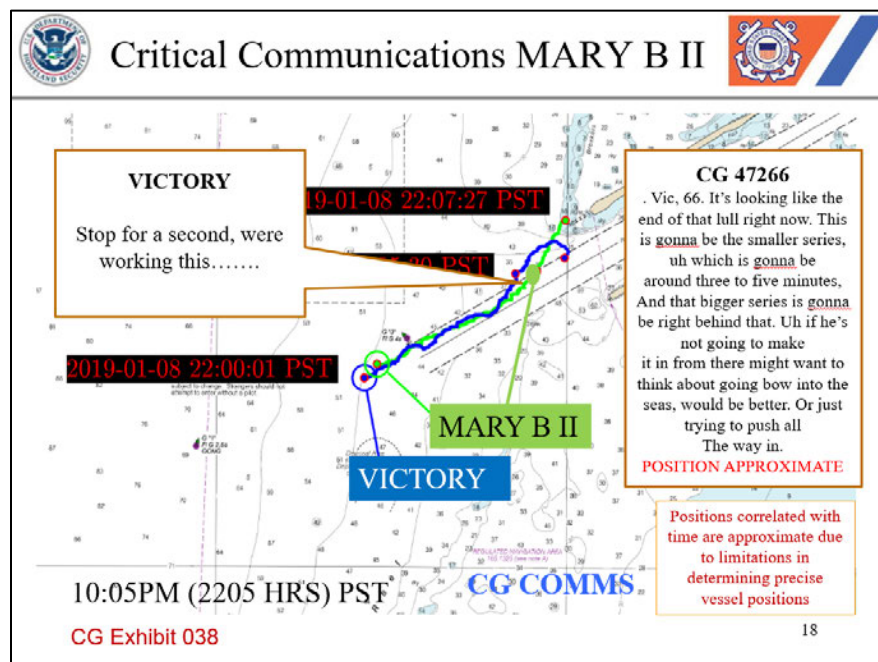


Figure 12. Time 10:05 p.m. slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

4.1.69. At approximately 10:06 p.m., the MLB 47266 followed up on Channel 22 that what they were experiencing the beginning of the smaller series of waves. It is unclear if the 47266's transmission was heard as VICTORY told MLB 47266 that there was "wind in the mic."

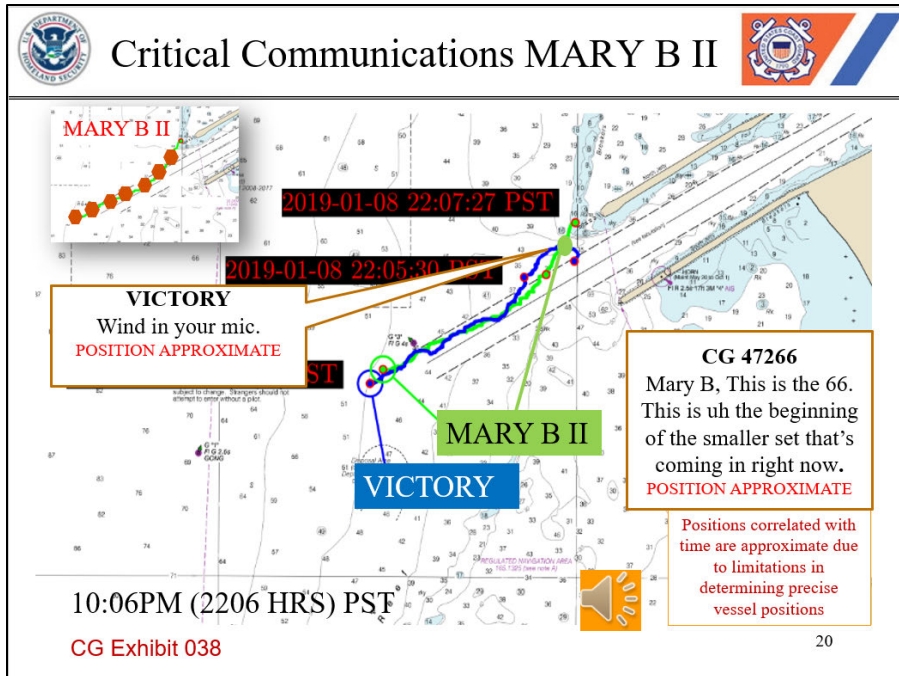


Figure 13. Time 10:06 p.m. slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

4.1.70. At approximately 10:06 p.m., the MLB 47266 called out to the MARY B II on Channel 22 and stated that they were “heading very, very far north right now. You might want to come south just a little bit” as the MARY B II continued to move towards the end of the North Jetty. MARY B II did not acknowledge the MLB 47266’s previous transmission. The MLB 47266 reached out again asking the MARY B II if they copied the last radio transmission and the MARY B II did not respond.

4.1.71. At approximately 10:06 p.m., the VICTORY called out to MARY B II on Channel 22 with a message of: “Hard, You are 3 boards North. Over. 3 boards north! Over. Come south! Come to Starboard! Come to Starboard! MARY B, come to Starboard!”

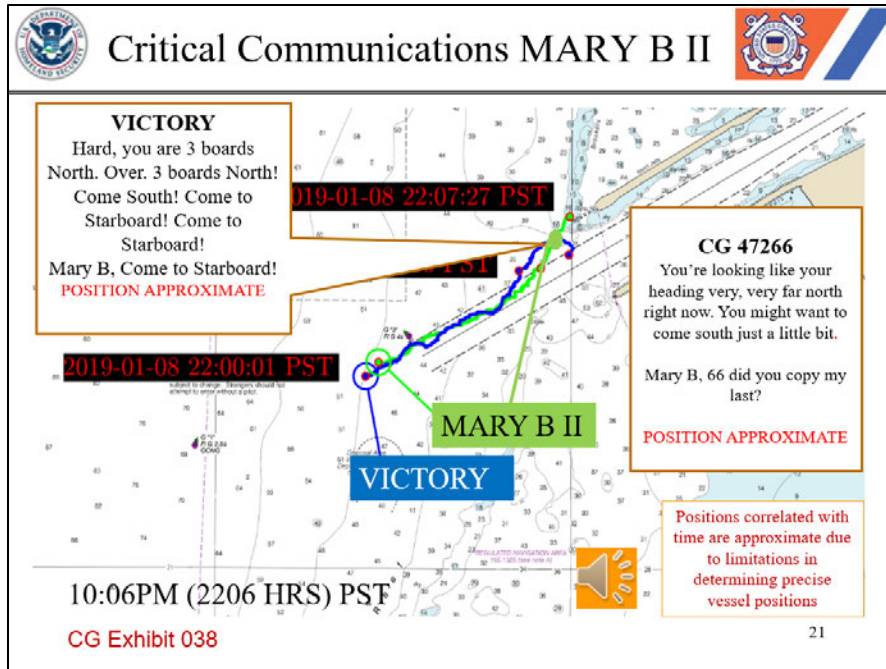


Figure 14. Time 10:06 p.m. slide from Critical Communications presentation used in the public hearing. (Source – Oregon State University/Coast Guard, CG Exhibit 038)

4.1.72. The MARY B II was observed making a turn slightly to port then to starboard, appearing to turn to south or to come to a position to have the bow face the oncoming waves.

4.1.73. At approximately 10:07 p.m., the MARY B II experienced a series of waves. The first set of waves impacted the MARY B II and went under the vessel. The MARY B II was observed by the Coast Guard boats on scene to turn about 90° and settled beam to (perpendicular to) the incoming waves. The second wave that impacted the vessel caused the MARY B II to turn its bow to (facing) the waves.

4.1.74. The largest wave of the series impacted the MARY B II, striking the vessel’s bow. Based on witness observations, the wave size was estimated to be 18 feet. That caused the vessel to pitch-pole and capsize into the waters north of the Yaquina Bay North Jetty tip.¹⁵

¹⁵ BOSN [REDACTED] hearing testimony.

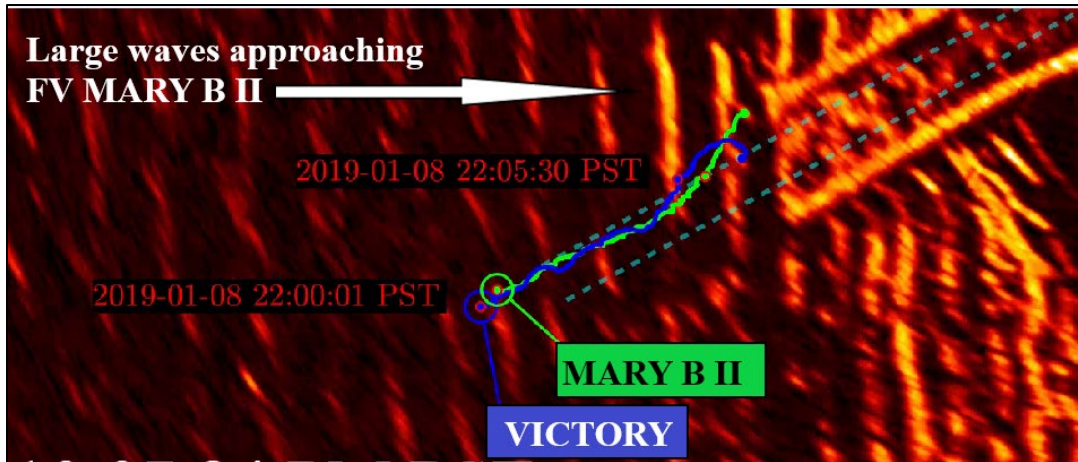


Figure 15. OSU marine radar product with notes showing the track of the MARY B II and the VICTORY moving from the start of the transit into Yaquina Bay Bar to the point of the loss of the MARY B II. Showing the series of large waves that impacted the MARY B II near the submerged end of the North Jetty Tip. (Source – Oregon State University/Coast Guard markup of still screen capture, CG Exhibit 034)

4.1.75. Crewmembers Lacey and Porter were ejected from the vessel and entered the water. The water temperature was 50.2° F and air temperature was 47.7° F.

4.1.76. At approximately 10:07:27 p.m., the MLB 47266 reported that the MARY B II had been overtaken by a wave and was on the north side of the jetty. The VICTORY called out to Sector North Bend and requested that Sector North Bend launch a helicopter to respond to possible people in the water off the Yaquina Bay Bar.

4.1.77. The evolution of Coast Guard boats escorting other vessels is classified in the "Alert" phase of Search and Rescue (SAR) operations facilitating the rapid mobilization of additional SAR resources such as the helicopter.

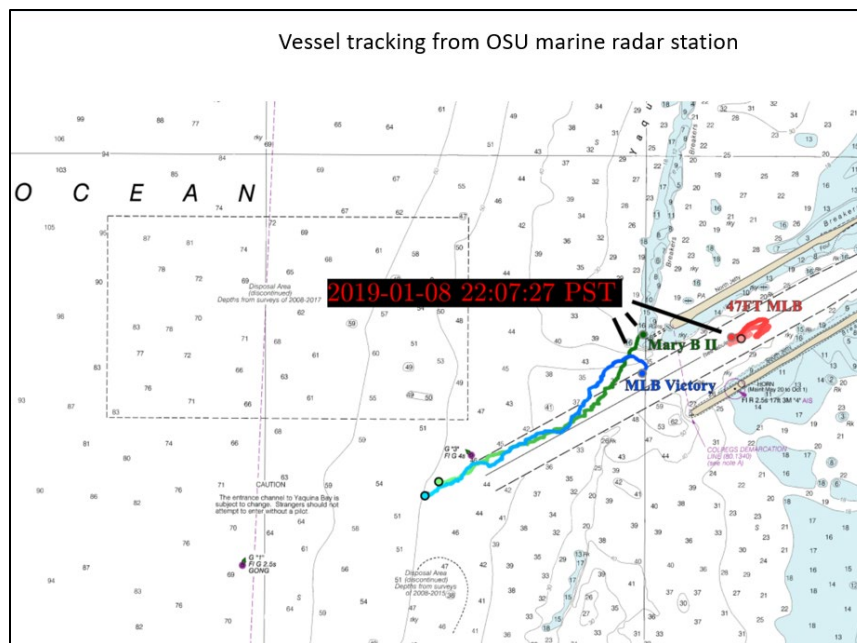


Figure 16. OSU marine radar tracking of the VICTORY, MARY B II, and the MLB 47266 with radar target trails shown in color. Displaying the locations of the vessels involved on the accident night and with small dots marking the locations of vessels at 10:07:27 p.m., the estimated time of the sinking of the MARY B II. (Source – Coast Guard, CG Exhibit 071)

(HYPERLINK # 6)

4.1.78. Sector North Bend radioed back and requested confirmation that the MARY B II capsized. The VICTORY confirmed the capsizing and stated they lost visual on the vessel in the vicinity of the tip of the North Jetty. Sector North Bend acknowledged, stating they would refrain on issuing a UMIB¹⁶ as Coast Guard response resources were already in the vicinity but would be launching a Coast Guard helicopter from the Newport air facility.

4.1.79. At approximately 10:08 p.m., the VICTORY reported that seas on scene were between 16 to 18 foot and directed Station to recall the Executive Petty Officer, the Engineering Petty Officer and the remainder of the crew to Station Yaquina Bay to conduct the search and rescue activities.

4.1.80. Mobile 1 started heading back to Station Yaquina Bay with the intention of gathering duty personnel to man a third boat crew and launching a third Coast Guard rescue vessel to assist in the search.

4.1.81. Between approximately 10:09 and 10:10 p.m., the MLB 47266 observed two lights on the north side of the north jetty, one of which appeared to be flashing. At first, the tower watchstander was unable to see the lights because the top of the jetty was impeding the watchstander's view. At approximately 10:10 p.m., the tower watchstander confirmed he could see one light.

¹⁶ UMIB, Urgent Marine Information Broadcast which would usually include a call for vessels in the area to participate in the response to the accident.

4.1.82. The VICTORY pushed out further offshore and to the north in an attempt to locate survivors. They sought to gain visibility of any flashing lights but were unable to see any.

4.1.83. By approximately 10:11 p.m., the VICTORY indicated that they were coming inbound as they could not search the area to the north of the North Jetty and sea conditions were continuing to build. The VICTORY stated that they were staying on the south side to see if the current would push any persons or the MARY B II into the channel. The VICTORY indicated that it was a flood tide so the vessel or persons in the water should be pushed to shore.

4.1.84. By approximately 10:14 p.m., the VICTORY and the MLB 47266 determined that beach crews should be sent to the beach north of the north jetty to aid in the search and rescue effort. The Station Yaquina Bay watchstander notified Newport Fire/Police Dispatch and reported that additional response assets would be responding to the scene.

4.1.85. Based on the wreckage location and prevailing weather conditions, rescue crews determined that the most likely location where potential survivors might drift was along the beach or inside the jetties.

4.1.86. Between approximately 9:56 p.m. and 10:15 p.m., Mrs. [REDACTED] arrived in the vicinity of the South Jetty to watch the MARY B II's inbound transit. She texted Mr. Porter to relay her observation of Coast Guard personnel activating illumination flares.

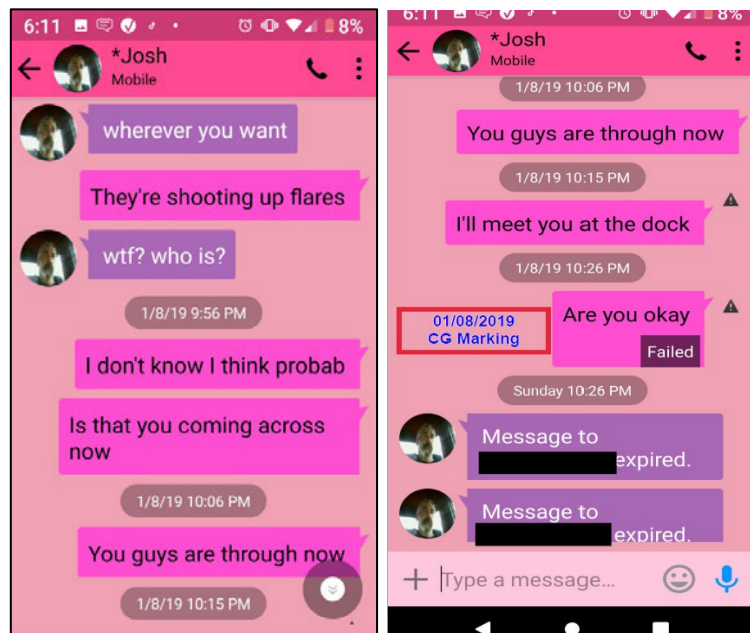


Figure 17. Screen shots of Mrs. [REDACTED]'s last text conversation with Mr. Porter, a crewmember on board the MARY B II. (Source – CG Exhibit 024)

4.1.87. At approximately 10:16 p.m., a crewmember called out to the VICTORY from the MLB 47268. It was determined that instead of launching a third vessel, they would divert the third boat crew as a beach crew to assist with the SAR response.

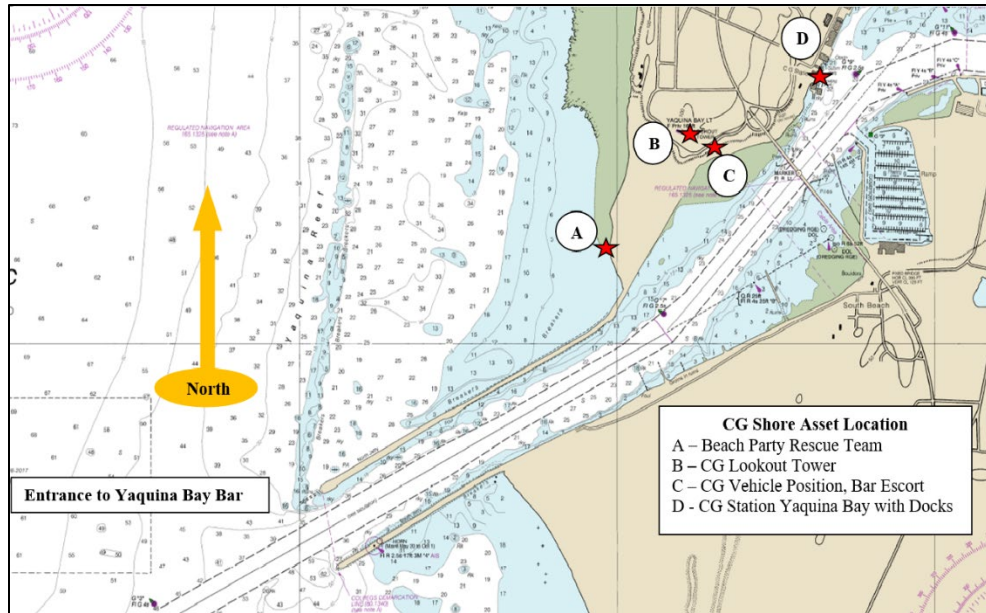


Figure 18. Approximate shore side Coast Guard asset locations. Post-accident, the MLB 47266 was patrolling the north side of the channel looking for debris or survivors. Eventually the VICTORY dropped the Commanding Officer off at the CG Station and he went to the beach to assist in the search for MARY B II’s crewmembers. The rescue helicopter, CG HELO 6527, was positioned at the Air Facility in Newport, OR and took off to the accident scene and conducted search and hoist operations (not shown). (Source – Coast Guard)

4.1.88. At approximately 10:20 p.m., Sector North Bend advised Coast Guard boats and responders of the activation of the vessel’s Emergency Position Indicating Radio Beacon (EPIRB).

4.1.89. The VICTORY and the MLB 47266 had a discussion about whether to have a boat head north in order to go around the reef area in proximity of the beach north of the North Jetty. The Commanding Officer decided against this due to the risks associated with sea conditions and because neither the MLB 47266 nor the VICTORY had sufficient illumination flares.

4.1.90. At approximately 10:24 p.m., the VICTORY began pushing back out to Entrance Lighted Gong Buoy 1 in an attempt to get a better picture of the beach and experienced a 20-foot break heading out. The VICTORY determined that they would need to turn around and cross the bar to the shelter of the harbor as the wave heights were observed to be near 20 feet.

4.1.91. At approximately 10:24 p.m., Coast Guard vessels, the Newport Fire Department, and Coast Guard Beach crew personnel were on the beach north of the jetty actively engaged in searching for any survivors or debris of the MARY B II.

4.1.92. At approximately 10:34 p.m., a Coast Guard helicopter (CG Helo 6527) from the Newport Air Facility was airborne and was enroute to the incident scene.

4.1.93. At approximately 10:44 p.m., the CG Helo 6527 got a visual sighting on a life raft with a strobing light.



Figure 19. Screen capture from the CG Helo 6527 camera system showing the MARY B II's cabin (circled in red) partially submerged while it was floating north of the North Jetty. (Source – Coast Guard)

4.1.94. At the same time, information was passed that the beach party identified a possible survivor in the water. Newport Fire Department personnel, Coast Guard beach crews, the MLB 47266, and CG Helo 6527 worked to guide the rescue helicopter to the location of the potential survivor in the water near the beach. A rescue swimmer from the CG Helo 6527 was lowered down and evaluated the situation. The rescue swimmer grasped the victim and, with the helicopter hovering, both swimmer and victim were moved horizontally to the responders on the beach.



Figure 20. Screen capture from the CG Helo 6527 hoist video showing rescue swimmer in the water with crewmember James Lacey. The actual helicopter is in the bottom of the image with the aircrew member stabilizing the hoist wire with his outstretched arm. (Source – Coast Guard).

4.1.95. The body of crewman James Lacey was moved to the location of the waiting responders. Mr. Lacey was wearing an inflated Personal Floatation Device (PFD).

Emergency responders attempted to render first aid and transported the crewmember to the hospital where he was pronounced deceased at approximately 10:55 p.m..

4.1.96. The body of crewman Joshua Porter was spotted further north on the beach approximately 100 yards from the Oregon State Park's parking lot entrance. Mr. Porter was wearing an inflated PFD. Beach crews, consisting of Newport Fire Department and Coast Guard personnel, rendered first aid and began transporting him to the hospital. After transfer to the ambulance and upon evaluation from EMS personnel, Mr. Porter was pronounced deceased.

4.1.97. The wheelhouse portion of the MARY B II was spotted off the beach as it slowly drifted with the waves and current drifting to the beach north of the North Jetty. The remainder of the wreckage, to include the hull, engine, rudder, and propeller, was not located or recovered and presumed sunk.

4.1.98. The wreckage of the MARY B II's wheelhouse and forward half of the main deck was set on the beach approximately 30 to 50 yards north of the North Jetty. The MARY B II's anchor had deployed which kept the remains of the vessel from drifting further onto the beach or further north. The anchoring, while unintended, helped reduce the damage from the large waves crashing on the beach.

4.1.99. The pilothouse was sunk in about 6 to 8 inches of sand. Two of the three pilothouse front windows and one of the rear windows were broken. The front port side of the pilothouse had sustained damaged which peeled off the fiberglass exposing the wood underneath. None of the side windows were broken.

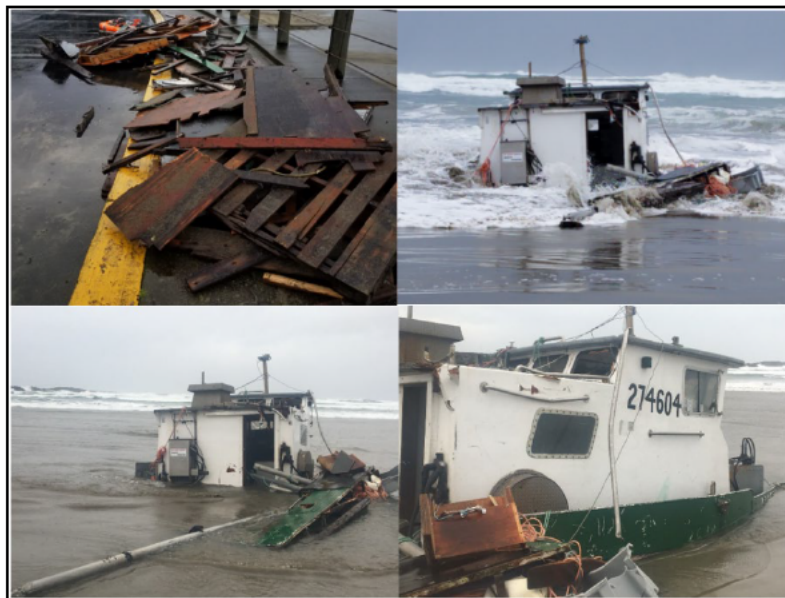


Figure 21. Composite of pictures of the wreckage of the MARY B II taken January 9, 2019. Bottom left image, on the extreme left of the image, you can see the rocks of the North Jetty at Yaquina Bay Bar in the distance. (Source – Oregon State Parks, Mr. [REDACTED] CG Exhibit 007)

4.1.100. A two person team comprised of Coast Guard personnel who had fast water rescue training approached the wreckage. At approximately 11:10 p.m., the responders observed the operator of the vessel trapped in the wheelhouse underneath the console. The operator was deceased and was wearing a PFD. Access to the operator was blocked by debris in the cabin including portions of the cabin's door and a broken ladder.

4.1.101. The sea state, beach surf crashing on and around the cabin, and deteriorating environmental conditions impeded responders from recovering the operator's remains from the wreckage of the MARY B II.

4.1.102. On January 9, 2019, at approximately 12:26 a.m., after accounting for all personnel from the MARY B II, Sector North Bend officially ended search efforts.

4.1.103. On January 9, 2019, sunrise occurred at 7:52 a.m.. At 7:53 a.m., Newport Fire Department and Coast Guard personnel commenced recovery operations at the site of the wreckage. Responders recovered Mr. Biernacki's body from the MARY B II's wheelhouse at approximately 8:30 a.m. on January 9, 2019.

4.2. Additional/Supporting Information:

4.2.1. On or about November 7, 2016, a Marine Surveyor from Associated Marine Surveying Company, Inc. conducted a Report of Survey on the BESS CHET (O.N. 274604), later known as the MARY B II, and found the vessel to be in apparent good order, in sound condition and suitable for the intended use as a fishing vessel.

4.2.1.1. The vessel was noted to be a 23 GT, 41.6 foot long vessel of wood hull construction built in Tacoma, WA in 1957. The vessel was classed for Near Coastal Fisheries.

4.2.1.2. The survey noted that the vessel was configured to have two electric bilge pumps, one float switch and a manual bilge pump. In addition, the vessel was outfitted with high water alarm in the engine room and had audible and visual alarms to indicate the presence of excessive bilge water.

4.2.1.3. The vessel was fitted with two 200 gallon fuel tanks.

4.2.1.4. The vessel had a 5 blade, 32 inch propeller.

4.2.2. Prior to the change in ownership, the BESS CHET was owned by Mr. [REDACTED] for approximately two years. On or about October 9, 2018, Ms. [REDACTED] managing member of F/V MARY B II LLC, entered into a purchase agreement with Mr. [REDACTED] of Seabat, Inc..

4.2.2.1. As managing member of F/V MARY B II LLC, Ms. [REDACTED] indicated during hearing testimony that she purchased the vessel because it was a good business opportunity. According to Ms. [REDACTED] her son, Mr. Stephen Biernacki, would operate the vessel, make local decisions, and forward recommendations to her from Newport, OR.

4.2.2.2. The purchase agreement included gear and equipment including 250 38-inch Trilogy crab pots, a bait chopper, and a Trilogy crab insert designed to hold 8,000 pounds of crab catch, while keeping the catch fresh with circulating sea water.

4.2.2.3. The purchase agreement also included an Oregon crab permit for 300 pots and an Oregon salmon troll permit.

4.2.2.4. The BESS CHET was renamed the MARY B II under the ownership of F/V MARY B II LLC and was managed by [REDACTED]

4.2.2.5. Prior to its purchase and subsequent renaming, the BESS CHET was registered with NOAA's Vessel Monitoring System (VMS).¹⁷ VMS is used to support law enforcement initiatives and to prevent violations of laws and regulations and is subject to strict confidentiality requirements. The Coast Guard has a data feed with NOAA VMS data and the information is used for law enforcement and SAR activities. VMS data is secured by the U.S. Coast Guard in accordance with U.S. Coast Guard regulations regarding the use and disclosure of law enforcement sensitive data. U.S. Coast Guard personnel are trained in the use of VMS and the handling and disclosure of data in accordance with U.S. Coast Guard regulations. After the vessel was purchased, this name or ownership was never updated to reflect the vessel's new title as MARY B II or the new ownership. VMS was still collecting and displaying information on the MARY B II's positions as the BESS CHET.¹⁸

4.2.3. Mr. Biernacki never held a Coast Guard issued merchant mariner's credential. There is no Coast Guard requirement for the operator of the MARY B II to hold a valid merchant mariner's credential.

4.2.3.1. Operators of CFVs under 200 GT are not required to hold a valid merchant mariner credentials. This requirement to hold a merchant mariner's credential, would require testing for competence, a medical review, background check for suitability and a drug testing program before the issuance of that credential.

4.2.4. On October 16, 2018, the managing owner of the MARY B II, member of the F/V MARY B II LLC, signed an application and engaged a third party broker to work with the Coast Guard to document the MARY B II. There were clerical errors which, combined with the lapse in government appropriations, delayed the documentation of the vessel. The third party broker sent an application with errors to the Coast Guard Documentation Center to rename the BESS CHET to the MARY B II. The documentation application CG-1258 (08/16) was eventually returned to the vessel title company for correction.

¹⁷ VMS is a satellite surveillance system primarily used to monitor the location and movement of CFVs in the U.S. Exclusive Economic Zone (EEZ) and treaty areas. The system uses satellite-based communications from on-board transceiver units, which certain vessels are required to carry. The transceiver units send position reports that include vessel identification, time, date, and location, and are mapped and displayed on the end user's computer screen. Each vessel typically sends position reports once an hour, but at increased intervals when the vessel is approaching an environmentally sensitive area.

¹⁸ The owner, F/V MARY B II LLC, gave the USCG permission to use the MARY B II VMS data and it was used to create CG Exhibit 042

4.2.5. Having a vessel insured is a practical business requirement as noted by the managing owner during testimony.

4.2.6. In October 2018, the new owner of the MARY B II attempted to obtain insurance coverage through Servco Pacific Insurance (currently Brown & Brown Insurance) and were offered a quote which the insurance company withdrew. The insurance company ultimately withdrew the offer of an insurance quote after a risk assessment was conducted. That company worked with the MARY B II to find another broker willing to insure the vessel.

4.2.6.1. Part of the insurance company’s decision to withdraw the quote was based on concerns voiced by multiple fishing vessel operators from the local area regarding the level of experience of the operator of the MARY B II. The insurance company took the following factors into consideration: history and experience of owner, history and experience of the operator (considering local waters), and the fishery type.

4.2.7. On or about November 16, 2018, a Coast Guard CFV Examination was conducted on the MARY B II at Dock 7 in Newport, OR. The fishing vessel examiner, noted seven items and deficiencies to rectify including, but not limited to: 1) updating the FCC Ship Station License for the marine radio to reflect new ownership; 2) proof of first aid and CPR training, and; 3) conducting drills prior to fishing. It was also noted that the EPIRB registration was pending. At the time of the accident, the EPIRB was properly registered.

4.2.8. The noted items were considered minor deficiencies, per the current applicable regulations, which permitted the issuance of the decal. Coast Guard CFV Examiners issued a CFV Safety Decal, decal # 268533, to the MARY B II. No additional visits were required or made to the MARY B II by any CFV Examiners.



Figure 22. A sample of a CFV Safety Decal which would be issued to a vessel after it has been inspected by qualified Coast Guard Fishing Vessel Examiners and found to be in compliance with the requirements of 46 CFR § 28. (Source – Coast Guard)

4.2.9. On December 22, 2018, the U.S. Government experienced a lapse in appropriations which impacted many federal agencies, including the Coast Guard. Thousands of government employees who were not in mission critical positions were furloughed. CFV Examinations and ATON functions were adversely impacted. SAR missions such as vessel escorts and SAR response to casualties were identified as critical missions and were not affected as a result of personnel furloughs.

4.2.10. As a vessel engaged in the commercial harvesting of fish, the MARY B II was subject to federal regulatory requirements of Title 46 CFR Subchapter C – Uninspected Vessels, Part 28.

4.2.10.1. CFV Examinations by the Coast Guard are limited in scope and do not assess the material condition of vessels such as MARY B II. Condition of critical components such as integrity of the hull or other structures, steering, propulsion, navigation equipment, and vessel stability are not evaluated or inspected.

4.2.11. On December 29, 2018, the Oregon Department of Fish and Wildlife (ODFW) announced the opening of ocean commercial Dungeness crab season north of Cape Arago (43° 17' 00" N Latitude) to the Oregon and Washington border. The “pre-soak”¹⁹ was due to start January 1, 2019 at 8:00a a.m. and the start date for pulling gear was scheduled for January 4, 2019 at 9:00 a.m..

4.2.12. The crew of the MARY B II was comprised of Mr. Biernacki as operator and Mr. Lacey and Mr. Porter as deckhands. Mr. Biernacki had little experience in West Coast bar crossings that are classified as hazardous by regulation.

4.2.13. Mr. Lacey was familiar with Mr. Biernacki and both had worked together, primarily on the East Coast.

4.2.14. Mr. Biernacki had a difficult time retaining a third crew member and had at least two other personnel employed for the position of the second deckhand but who did not stay on with the MARY B II.

4.2.15. Mr. Porter worked out of Newport, Oregon and the Yaquina Bay Bar and had extensive experience as operator and deckhand on various vessels.

4.2.16. On or about December 30, 2018, Mr. Biernacki approached Mr. Porter about employment on the MARY B II as a deckhand. Mr. Porter agreed to work on the MARY B II as a deckhand on a temporary basis as he had other employment lined up that would start later in January 2019.

4.2.17. On or about January 1, 2019, the MARY B II got underway to set crab pots. The vessel’s crew consisted of the operator, Stephen Biernacki, deckhand James Lacey, and deckhand Joshua Porter.

4.2.18. The operator of the MARY B II did not conduct drills with the crew prior to fishing as required by 46 CFR § 28.270 and the CFV Examination requirement from November 16, 2018.²⁰

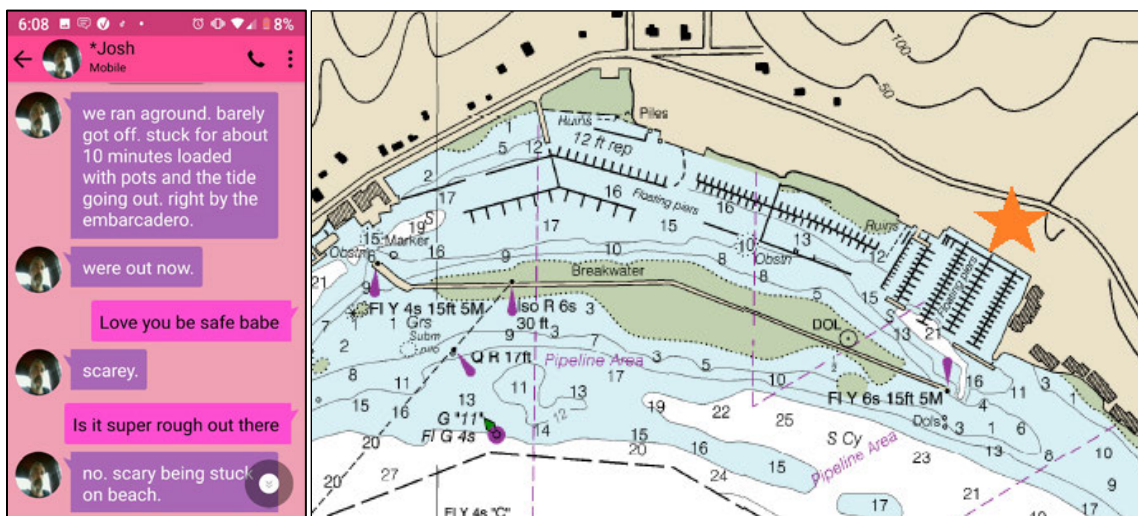
4.2.19. All three persons on board the MARY B II had attended and passed a two-day Marine Safety Instructor Training Course in Newport, OR held by the Alaska Marine Safety Education Association (AMSEA). This training fulfilled the requirements for an individual to

¹⁹ “Pre-soak” is the time when the crab pots can be put into the water in preparation for harvesting the catch.

²⁰ Mrs. [REDACTED] hearing testimony.

conduct instruction, drills, and safety orientations as a Fishing Vessel Drill Conductor. Mr. Biernacki completed the class on November 9, 2018. Mr. Lacey completed the class on December 12, 2018 and Mr. Porter completed this training on March 30, 2011.

4.2.20. On or about January 1, 2019, Mr. Porter reported to his wife that the MARY B II had grounded on the beach in front of the Embarcadero Hotel when the vessel was loaded with pots. Mr. Porter indicated that the MARY B II was "stuck for 10 minutes" before the vessel floated free.



Figures 23. (Left). Screen shot of Mrs. [REDACTED] text conversation with MARY B II crewmember, Mr. Porter, regarding the grounding of the MARY B II. (Source – Coast Guard, CG Exhibit 024. (Right) Chartlet has an orange star that marks the general location of the Embarcadero Marina, Newport Harbor, OR and the grounding occurred somewhere in the light blue shaded area of the waterway, the exact position and circumstances cannot be precisely determined (Source – Coast Guard, CG Exhibit 004 marked up with star for position)

4.2.20.1. The waterways’ bottom in the vicinity of the Embarcadero is mostly sand shoaling.

4.2.20.2. There was no written or verbal casualty notification report made to the Coast Guard after the MARY B II grounded and the amount of damage the vessel, if any was incurred, is unknown.

4.2.20.3. While Mr. Porter did not tell his wife that the grounding resulted in hull damage, he indicated there was “a major leak on the boat.”²¹

4.2.20.4. Depending on the circumstances, groundings are reported to the Coast Guard under 46 CFR § 4.05 where a Coast Guard Prevention Officer will review the circumstances of the case and make a determination on the level of impact to the waterway and the level of investigative effort required.

4.2.20.5. Per Navigation and Vessel Inspection Circular (NVIC) 01-15, the Coast Guard will not consider an unintended grounding to be a reportable marine casualty under 46 CFR § 4.05 if the grounding can be classified as a “bump and go.” “Bump and go”

²¹ Mrs. [REDACTED] hearing testimony.

groundings are occurrences where the involved vessel master or licensed mate on watch attests that the grounding (including grounded barges under the control of a towing vessel) was only momentary (e.g., reversing engines frees the grounded vessel on the first attempt, no assist vessel is needed to free the vessel, all towing connections remain intact) and that the grounding did not result in any other marine casualty criteria being met as defined in 46 CFR§ 4.05-1(a)(3) through (8). Initial notifications of “bump and go” groundings must still be made to the appropriate Coast Guard Command Center as a hazardous condition per 33 CFR § 160.216. A Coast Guard Prevention Officer shall review each reported “bump and go” grounding in order to confirm that it meets the criteria to be excluded from the grounding casualty reporting requirements under 46 CFR § 4.05. The Coast Guard response to a claim of a “bump and go” grounding is at the discretion of the cognizant Officer in Charge, Marine Inspections (OCMI) or Captain of the Port (COTP); however, a Coast Guard investigation and associated Marine Information for Safety and Law Enforcement (MISLE) activity for a reportable marine casualty should not be completed if the OCMI/COTP confirms the incident as a “bump and go.” A field unit that completes an optional investigation on a confirmed “bump and go” grounding should document the activity as a non-reportable casualty in MISLE with no associated CG-2692.



Figure 24. Image of the MARY B II leaving the dock in Newport, OR with crab pots and gear on the after deck prior to the accident voyage. Date is unknown. (Source – Lincoln City Homepage)

4.2.21. On the afternoon of January 3, 2019, a crab hold inspection was conducted by ODFW as required by State Law.²² This inspection was done on the MARY B II at the request of the operator. This inspection is limited in scope to the hold of the vessel.

4.2.21.1. No discrepancies were found during this inspection. The hold insert where catch is stored was not on board the MARY B II at the time the ODFW officer was on board.

²² OAR-635-005-0485 discusses Dungeness crab gear prohibitions and how fishing vessels cannot have cargo in the holds prior to the fishery opener.

4.2.21.2. ODFW issued a hold inspection declaration certifying that the MARY B II had fished for Dungeness crab in Pacific Ocean waters north of Sonoma County, CA since November 30, 2018 and that the vessel intended to fish in the area north of Arago in the first 30 days after the fishery is opened.

4.2.22. On January 4, 2019, Mr. Biernacki purchased a two part epoxy caulking called “Splash Zone” from Englund Marine which can be used to repair leaks in a wooden hulled vessel.

4.2.23. On January 7, 2019, the MARY B II went out to sea to fish for Dungeness crab.

4.2.23.1. The MARY B II was scheduled to get underway sometime between 4:00 a.m. and 5:00 a.m., but was delayed. Mr. Porter told his wife the delay was because the operator did not want to leave until he could purchase alcohol for the trip.²³

4.2.23.2. As part of its duties, the watchstander in the Yaquina Bay Station Tower documents vessels departing to sea for the purposes of ensuring the safety and accountability of vessels at sea in the event of an incident. The following information is normally recorded: type of operations, crew and estimated length of trip. MARY B II was not logged as having departed that day; however, the logs captured two vessels which did not respond to the tower watchstander’s radio calls.

4.2.23.3. Other CFVs communicated with the watch tower in accordance with the reporting provisions of 33 CFR §165.1325(c)(5)(ii) for sunset to sunrise transits and responded to hails over the marine radio by the tower watch.

4.2.23.4. On or about January 7, 2019 at approximately 2:30 p.m., an Oregon State Police (OSP) Senior Trooper was conducting dock walks at Seawater Seafood in the Port of Newport. While the MARY B II was offloading catch at Seawater Seafood, the Senior Trooper checked the crew of the MARY B II to ensure they all had fishing licenses. While interacting with the operator, Mr. Biernacki, she noted that his behavior was consistent with either fatigue or alcohol consumption.

4.2.24. The Coast Guard issued the regulations for U.S. documented or state numbered uninspected fishing, fish processing, and fish tender vessels to implement provisions of the Commercial Fishing Industry Vessel Safety Act of 1988, codified in 46 USC § 4501- 4508.²⁴ The intent of these regulations is to improve the overall safety of CFV industry vessels, and to reduce CFV fatalities and losses. These regulations provide requirements for the equipment, design, and operations of vessels, and include provisions for lifesaving, firefighting, navigation, communication, emergency instructions, and stability which includes righting energy criteria and freeing port clearing area.²⁵

4.2.25. When additional or clarifying information is necessary, the Coast Guard provides industry guidance in various forms to help assist and inform CFV operators and examiners.

²³ Mrs. [REDACTED] hearing testimony.

²⁴ The 46 CFR § 28 final rule became effective on September 15, 1991.

²⁵ These regulations are applicable to certain vessels based on size, type, and operations.

Guidance includes Coast Guard Navigation and Vessel Inspection Circulars (NVICs), Policy Letters, Voluntary Safety Initiative and Good Marine Practices, Safety Flyers, Safety Alerts and Regulatory Reference Guides.

4.2.26. Coast Guard guidance covers a broad range of topics, including rules of the road, safety equipment and stability. The Coast Guard posted these documents on various Coast Guard web pages, including www.homeport.uscg.mil, www.dco.uscg.mil, and www.fishsafewest.info.

4.2.27. As part of their duties, Coast Guard Commercial Fishing program managers and CFV Examiners distribute Coast Guard guidance information while attending industry association meetings, outreach events, and during dockside safety exams.

YAQUINA BAY BAR HAZARDS

BAR AND WEATHER CONDITIONS

Listen to the local broadcast on 1610 AM

CROSSING THE BAR
The bar is the area where the deep waters of the Pacific Ocean meet with the shallower waters near the mouth of the river.

Most accidents and deaths that occur on coastal bars are from capsizing.

Coastal bars may be closed to recreational boats when conditions on the bar are hazardous. Failure to comply with the closure may result in voyage termination, and civil and/or criminal penalties. The regulations are enforced by Coast Guard boarding teams.

Improper loading and/or overloading are major causes of capsizing. Improper/overloaded boats have less stability and less freeboard, which can allow seas to break into the vessel, causing the boat to become even less stable.

Boats are more likely to capsize when crossing the bar from the ocean because the seas are on the stern and the boater may have less control over the vessel.

Boaters must make sure the bar is safe prior to crossing. Check with other boaters or the Coast Guard to find out the condition of the bar.

If you are caught on a rough bar running in...

- **Make sure everybody aboard is wearing a personal flotation device.**
- **Keep the boat square before the seas.**
- **Keep the boat on the back of the swell. Ride the swell and stay clear of the following wave.**

Avoid sudden weight shifts from passengers or gear moving around in the boat. If possible, have passengers lie down as near the centerline of the boat as possible.

Do not allow the waves to catch your boat on the side (beam). This condition is called broaching, and can easily result in capsizing.

TIDES

Tides are the vertical rise and fall of the water and tidal current is the horizontal flow of the water. There are roughly four tides each day in the Pacific Northwest. Tidal movement toward the shore or upstream is the flood current. Movement away from the shore or downstream is the ebb current. The period between the two is known as slack water. Tidal currents may gain tremendous velocity, particularly when the ebb current is augmented by river runoff.

- **It is extremely dangerous to get caught on the bar during strong ebb current. Even on days that are relatively calm, fast moving**

ebb can create bar conditions that are too rough for small craft.

- **Always know the stage of the tide!**
- **Avoid getting caught on the bar during an ebb tide.**

It is normally best to cross the bar during slack water or on a flood tide, when the seas are normally calmest.

REGULATED NAVIGATION AREAS

The Coast Guard has established a Regulated Navigation Area if the yellow lights on this sign are flashing, indicating a restriction has been placed on recreational and uninspected passenger vessels crossing the bar. In accordance with 33 CFR 165.1325, the U.S. Coast Guard has the authority to restrict all recreational and uninspected passenger vessels from crossing the bar when hazardous conditions exist. Failing to comply with posted bar restrictions may result in a maximum civil penalty of \$25,000.00.

WARNING SIGN LOCATIONS

Warning signs are posted in two locations in the port. Two white diamond shape signs with orange borders indicating "Rough Bar" and amber flashing lights are located on a tower approximately half way between the Coast Guard moorings and the Yaquina Bay Bridge on the north bank of the river. One sign is visible to the South Beach Marine area and the second sign is facing up river toward the Port Docks and facilities. An additional warning sign is located at the South Beach boat ramp. This sign is blue in color and has amber flashing lights that read: **Warning When Flashing, Bar Restrictions in Effect, Tune to 1610 AM.** When the amber lights are flashing on any of the warning signs, hazardous conditions are present and a bar restriction is in place and mariners should tune in to listen to the restriction information.

BAR CONDITIONS AND OBSERVATION REPORTS

Observed weather and bar conditions are updated every four hours or more frequently if there is a significant change in the conditions. Marine Information Broadcasts on Channel 16 VHF FM are conducted by the Coast Guard when hazardous bar conditions and restrictions are put into place or are lifted. Mariners are strongly encouraged to monitor channel 16 VHF/FM for all notices and weather updates.

The AM radio broadcast is audible within a 4-mile radius from the Coast Guard Station in Newport. It provides a continual broadcast on radio station 1610 AM containing bar conditions, bar restrictions, and local weather.

You can also access current bar conditions and restriction on your smart phone or hand held device by going to, <http://www.wr.noaa.gov/pqj/marine/BarObs.php>.



EMERGENCIES

VHF-FM Radio: Channel 16

If in distress (threatened by grave and imminent danger):

1. Make sure radio is on
2. Select Channel 16
3. Press/ Hold the transmit button
4. Speak slowly, and clearly say: MAYDAY, MAYDAY, MAYDAY
5. Give the following information:
 - Vessel Name and/or Description
 - Nature of Emergency
 - Position and/or Location
 - Number of People Aboard
6. Release the Transmit Button
7. Wait for 10 seconds - If no response, repeat "Mayday" call. If not in immediate danger, switch to CH 22 and follow the same steps as above, except do not use the word "MAYDAY".

Make Sure Everyone is Wearing a Life Jacket!

Phone 911. Tell the operator that you have a marine emergency. Be ready to provide the same information required in item number 5 of the mayday call.

Coast Guard Stations:
Yaquina Bay
Newport, OR
(541) 265-5381

BOATING SAFETY TIPS

- Check Weather, Tide, and Bar Conditions - The latest Information Can Be Heard on 1610 AM
- File a Float Plan With Friends/Relatives
- Don't Overload Your Boat
- Wear Your Life Jacket
- Carry Flares and a VHF-FM Radio
- Stay Well Clear of Commercial Vessels
- Have Anchor With Adequate Line
- Boat Sober



Graden Davis
Survivor

CROSSING THE YAQUINA BAY BAR





More Boating Safety Information: www.uscgboating.org and www.boatorregon.com
Boating Class and Vessel Safety Check Information: www.uscgazur.org /-130/
www.usps.org or 1-800-336-BOAT (2628) (Class information only)



CG 003
Yaquina Bar Safety Handout
Page 1 of 2

Figure 25. Page 1 of the Yaquina Bay Bar Hazards handout provided to mariners. Information includes information on crossing the bar including "Boats are more likely to capsize when crossing the bar from the ocean because the seas are on the stern and the boater may have less control over the vessel" and "Do not allow the waves to catch your boat on the side (beam). This condition is called broaching, and can easily result in capsizing." (Source - Coast Guard, CG Exhibit 003)

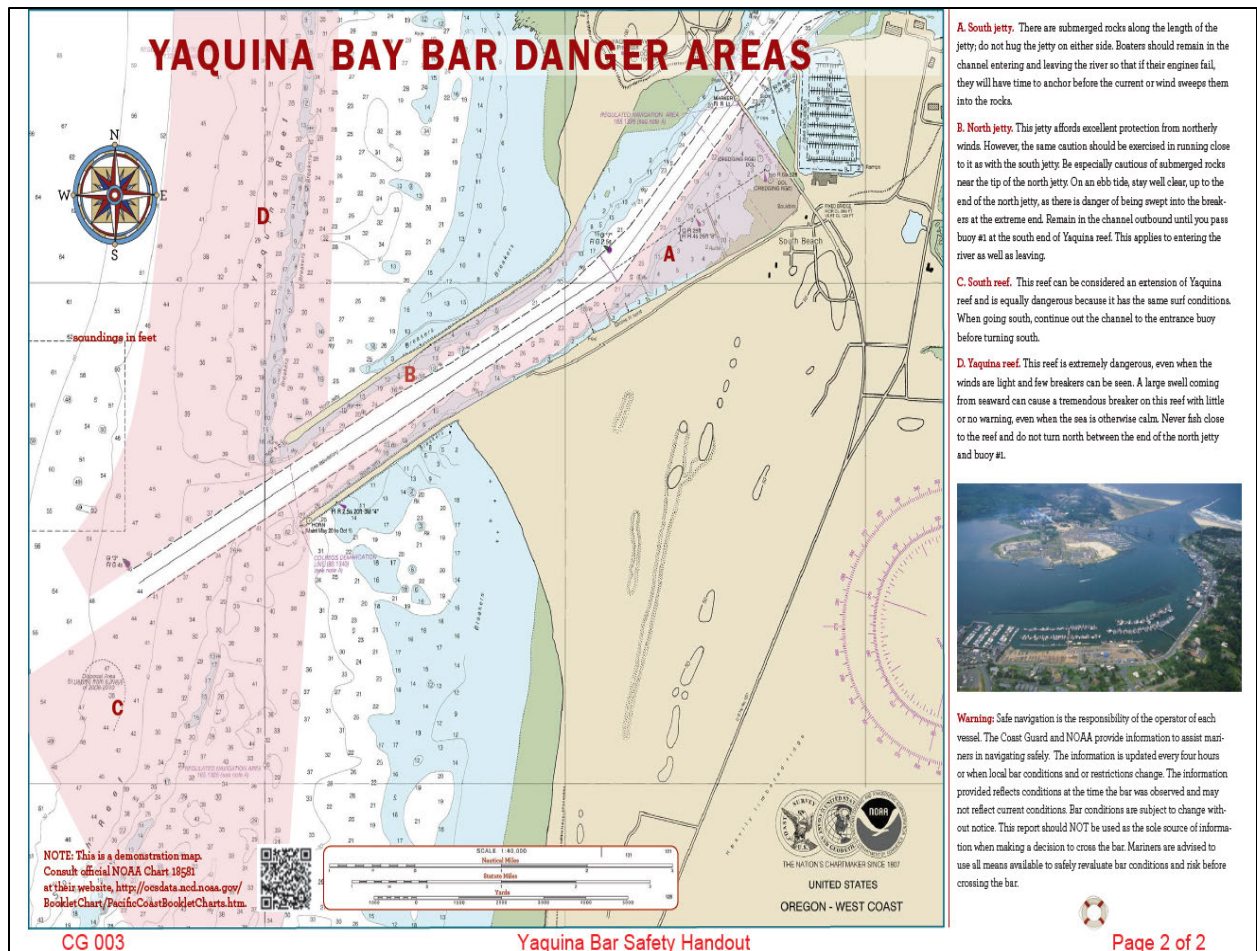


Figure 26. Page 2 of the Yaquina Bay Bar Hazards handout provided to mariners. Specific danger areas are noted. Area D, just north of the North Jetty is labeled “Yaquina Reef” and states this “bar is extremely dangerous, even when the winds are light and few breakers can be seen. A large swell coming from seaward can cause a tremendous breaker on this reef with little or no warning, even when the sea is otherwise calm. Never fish close to the reef and do not turn north between the end of the north jetty and buoy #1.” (Source – Coast Guard, CG Exhibit 003)

4.2.28. The Fishing Vessel Safety Program Manager of the Coast Guard’s Fishing Vessel Division of the Office of Commercial Vessel Compliance (COMDT CG-CVC-3) at Coast Guard Headquarters manages the Coast Guard’s Fishing Vessel Safety Program. COMDT CVC-3 provides program oversight and guidance, interacting with all Coast Guard District Fishing Vessel Safety Coordinators and, on occasion, with the field examiners including Auxiliary personnel who are qualified to conduct dockside safety exams.

4.2.29. According to testimony provided by the Coast Guard D13 Fishing Vessel Safety Program Manager, the mission and goal of the program is to enhance safety within the commercial fishing fleet and reduce casualties associated with that industry.

4.2.29.1. The program develops or initiates regulations to implement laws, as well as drafting and issuing guidance regarding current compliance standards for both Coast Guard and industry personnel. The program also promotes awareness and training for safety initiatives, including working with the Commercial Fishing Vessel Federal

Advisory Committee and other industry partners at conferences and industry association meetings.

4.2.29.2. The program works with NOAA and National Marine Fisheries Service (NMFS) regarding fisheries permitting and National Institute for Occupational Safety and Health (NIOSH) to share and analyze casualty data and implement safety initiatives or recommendations.

4.2.30. CFV Examiners are tasked with executing the CFV Safety Program including conducting CFV Examinations and issuing safety decals when a vessel meet the applicable regulatory standards. There are three primary CFV Examiners for the Sector Columbia River area of responsibility (AOR).²⁶ CFV Examiners in D13 are generally Civilian Coast Guard employees. The CFV Safety Program has incorporated the use of qualified Coast Guard Auxiliarist personnel to augment the CFV Examiner work force to facilitate responsiveness to the approximately 1,600 fishing vessel fleet.

4.2.31. CFV Examiners in the D13 area of AOR work to provide maximum availability to fishermen as they prepare to go into the upcoming fishery. For the Dungeness crab fishery, the CFV Examiners make themselves available at the docks several days before the season to facilitate dockside exams and compliance.

4.2.31.1. Over the span of the Government lapse in appropriations, all of the dockside examiners that support the Sector Columbia River AOR were furloughed so when the Dungeness crab fishery opened, there were no dedicated personnel available to conduct courtesy dockside exams.

4.2.31.2. In the absence of the primary CFV Examiners, other qualified Active Duty marine inspectors worked to meet the need for CFV Examinations, but as a result of the lapse in appropriations, a significant backlog developed:

A lot of people wanted--they were calling in to get dockside exams. They wanted to go fishing. They wanted to have their equipment checked and they weren't able to. And so we were gone for quite a while, at 3--I think it was 3 weeks, and that's 3 weeks' worth of work that didn't get done.²⁷

4.2.32. CFV Examinations are conducted and a standardized form, the CG-5587, is used. The most recent version of this form is 06/2008 and is outdated. Marine Safety Unit Portland's CFV Examiners developed a locally produced examination form (PORMS-5587 (version 10/17)) that includes current requirements and additional local items including a note to ensure Hazardous Bars are discussed with the operator of a vessel being examined.

²⁶ This includes Sector North Bend for Prevention missions.

²⁷ Mr. [REDACTED] hearing testimony.

ADDITIONAL REQUIREMENTS FOR DOCUMENTED VESSELS OPERATING BEYOND THE BOUNDARY LINE OR WITH MORE THAN 16 PEOPLE ON BOARD		
Vessel Name: <i>MARY B II</i>		I.D. Number:
46 CFR 28.265 33 CFR 165.1325(c)(5)	Emergency Instructions (Station Bill, MAYDAY, Donning PFD/Immersion Suits, MOB, Fire, Abandon Ship, Flooding/Rough/WX/Hazardous Bars) <input type="checkbox"/> Required Posted Instructions or <input type="checkbox"/> Accessible to the Crew (<4 POB) MOB Plan/Device: *Hazardous Bar Plan: *Sunset to sunrise, operator must report to CG the vessel name, location, # POB, & destination *On deck, PFDs must be worn; inside vessel, PFDs/immersion suits must be readily accessible	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
46 CFR 28.270	Instructions, Drills, & Safety Orientation <input type="checkbox"/> Drills Conducted monthly <input type="checkbox"/> Safety Orientation Provided <input type="checkbox"/> MOB <input type="checkbox"/> Fire <input type="checkbox"/> Flooding <input type="checkbox"/> Abandon Ship <input type="checkbox"/> Master and/or Crew able to demonstrate safety equipment operation <input type="checkbox"/> Qualified Drill Conductor Name: <u>STEPHEN BIERNAKE</u> Drill Course: <u>AMSGA</u> Date Issued: <u>11-9-18</u>	<i>NO CREW</i> <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A

Figure 27. An excerpt of the CFV Exam Form for the MARY B II with content addressing Hazardous Bar Plans. (Source – Coast Guard, CG Exhibit 019)

4.2.33. The scope of the CFV Examination is limited to mostly the safety equipment on the vessel as opposed to the material condition of the vessel. In addition, the scope of the exam precludes a CFV Examiner from assessing an operator’s knowledge of the area in which he or she operates including their knowledge of the ATON in the operating area.²⁸

4.2.34. The Dungeness crab fishery has been identified as the most hazardous fishery given there have been more fatalities in this particular fishery than any of the other fisheries in the Pacific Northwest.²⁹ In research conducted by NIOSH, in a period between 2010 and 2014, the Dungeness crab fishery has had a fatality rate of 55 deaths per 100,000 full time equivalents (FTE). This is “much greater than the rate for the average worker in the United States” though there is indication that this rate has dropped since previous reporting periods. NIOSH is able to collect and analyze data on fatalities due to a longstanding partnership between NIOSH and the Coast Guard that emphasizes data sharing between the two agencies.³⁰

4.2.35. An ODFW official stated that there is commercial pressure that impacts the Dungeness crab fishery and cited that different variables influence demand including the Holiday Season, stating “people want crab for New Year’s and Christmas.”³¹ However, factors such as the presence of a toxin called domoic acid, as well as the amount of meat in

²⁸ D13 CFV Program Manager, Mr. [REDACTED] hearing testimony.

²⁹ Mr. [REDACTED] hearing testimony.

³⁰ NIOSH representative, Dr. [REDACTED] hearing testimony.

³¹ Senior Trooper [REDACTED] hearing testimony.

the crab will cause delays in the fishery start date which increases pressure on fishermen to harvest the crab and get it to market quickly.

4.2.36. During the course of his employment on the MARY B II, Mr. Porter expressed concern about the safety of the vessel to his wife several times.

*We had discussions about it, and he--he said, "This guy is going to hurt somebody," and every time, like, we talked about it, it was, "Then why are you on there?" and he was like, "I got bills to pay. We need this first pick--this first and second pick and then I get on the next boat and everything will be--then we'll be okay. I just need to get through this next week and everything will be okay. We'll have--we'll have money to pay our bills." And that's the only reason he got back on that boat.*³²

4.2.37. On the morning of January 8, 2019 at approximately 3:00 a.m., Mr. Porter expressed concerns to his wife about getting underway with Mr. Biernacki. In testimony, Mrs. [REDACTED] recalled:

"I don't want to go." I'm like, "Why?" He goes, "Because this guy doesn't know what he's doing. He hasn't checked the weather. He doesn't believe me. This is not a good time to go. We can wait another day." And I was like, "Well, why are you going?" He was like, "Got bills to pay. This is a pick." You know, it was--it would have been their second pick. And--and we did. You know, we had bills to pay. We were a month behind on everything, and he had to go. He said, "I have to go."

4.2.38. On January 8, 2019, mid-afternoon, Mr. Porter had conversations over text and phone call with his wife where he expressed frustration. The operator had originally told the crew that the MARY B II would be in by 2:00 p.m. and no later than 4:00 p.m., but Mr. Porter indicated that they would not be coming in that afternoon as originally planned and he was concerned because the weather was getting worse. At 9:25 p.m., Mr. Porter sent his wife a text that said: "This guy said we were going to be in before dark. Now it's really big and the Coast Guard called him saying the LAST STRAW had problems crossing... I'm putting on my lifejacket. Coast Guard is sending a boat."³³

Waterway Information

4.2.39. Access to Newport Harbor from the Pacific Ocean requires crossing the Yaquina Bay Bar and navigating between the north and south jetties. The charted depth of water around the North Jetty tip can range from 40 feet to 6 feet within the span of a few yards.

4.2.40. On January 29, 2019, the Army Corps of Engineers conducted a survey of Yaquina Bay and the bar entrance. Survey results showed an entrance channel that is 40 foot deep and 400 feet wide across at the outer bar to station 0-10; then, with dimensions reducing gradually, a channel 30 feet deep by 300 feet wide beginning at mile 0.0 to a turning basin 30

³² Mrs. [REDACTED] testimony.

³³ Mrs. [REDACTED] testimony.

feet deep, 900 and 1200 feet wide and 1400 feet long at mile 2.0 at McLean Point; thence, a channel 18 feet deep and 200 feet wide beginning at mile 2.4 upstream to mile 4.4 at Yaquina.

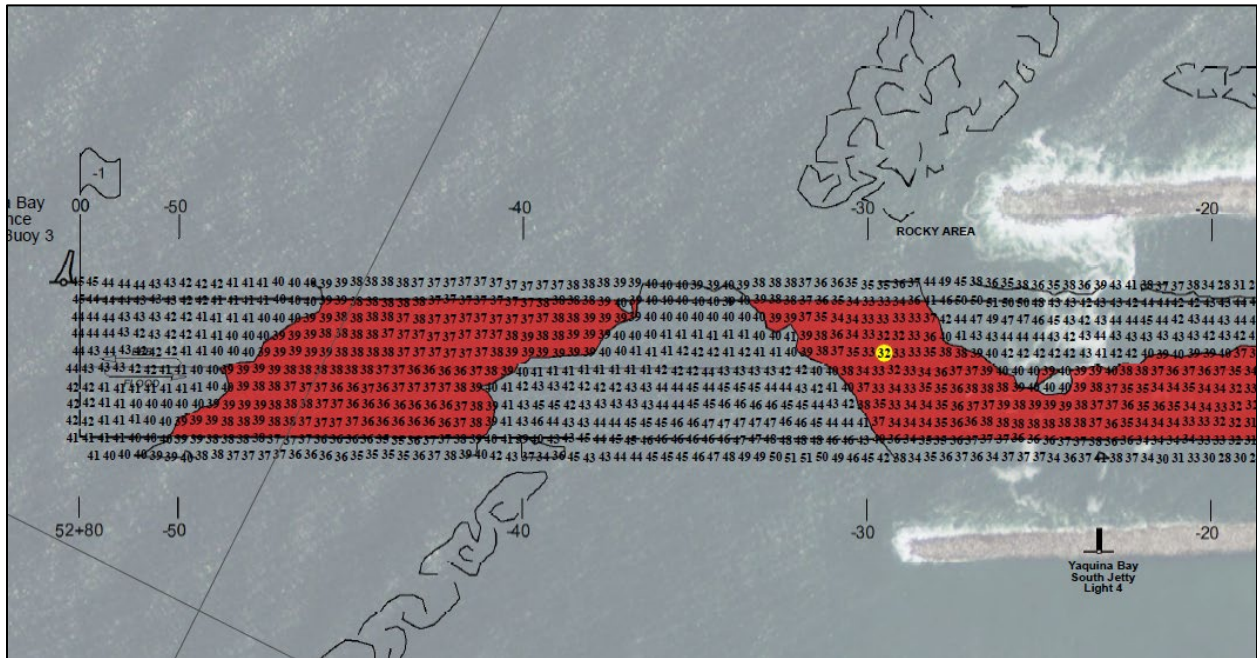


Figure 28. Section of a waterway bottom survey conducted by the U.S. Army Corps of Engineers (ACOE), post-accident. The ACOE does not survey areas outside the navigable channel but the image depicts submerged rocky areas just west of the North and South Jetties at Yaquina Bay Bar. (Source – ACOE, CG Exhibit 028)

4.2.41. D13 has established RNAs for hazardous bars as a result of a series of marine accidents that occurred in these unique geographic areas. The Yaquina Bay Bar is located within 33 CFR §165.1325(10). 33 CFR § 165.1325 contains all the provisions associated with the Hazardous Bar RNAs. There are requirements for bar crossing plans as well as communications with the Coast Guard for various vessel types.³⁴

4.2.41.1. RNAs for hazardous bars only restrict or close the bar to recreational and uninspected passenger vessels. Typically, the Coast Guard will make the restrictions based on vessel size. The COTP can close hazardous bars if the conditions exceed the safe operating requirements of Coast Guard rescue vessels, CFVs, and other Coast Guard inspected commercial vessels, can still transit and cross the bar if it has been restricted per the COTP.

4.2.41.2. The Final Rule indicated that the Coast Guard received a total of 168 comments, with 122 comments coming from the 91 documents submitted to the public

³⁴ In February 2009, the Coast Guard issued a Notice for Proposed Rulemaking to address the risks associated with the extreme hazards of the breaking bars. The RNA for Yaquina Bay and other Oregon and Washington bars was established in October of 2009. The RNA Final Rule was later updated as an Interim Rule to eliminate confusion in the language of the rule established in 2009 and was then published as a Final Rule on April 14, 2014.

docket and 46 comments coming from the public meetings. Nine comments requested additional time to comment and/or public meetings. In response to these comments the comment period was extended until June 30, 2009 and an additional public meeting was held in Coos Bay, Oregon. Comments contained in the Federal Register / Vol. 74, No. 220 / Tuesday, November 17, 2009 / Rules and Regulations contained minimal comments regarding aids to navigation for the RNAs.

4.2.42. The Coast Guard maintains a system of ATON to mark the waterway.

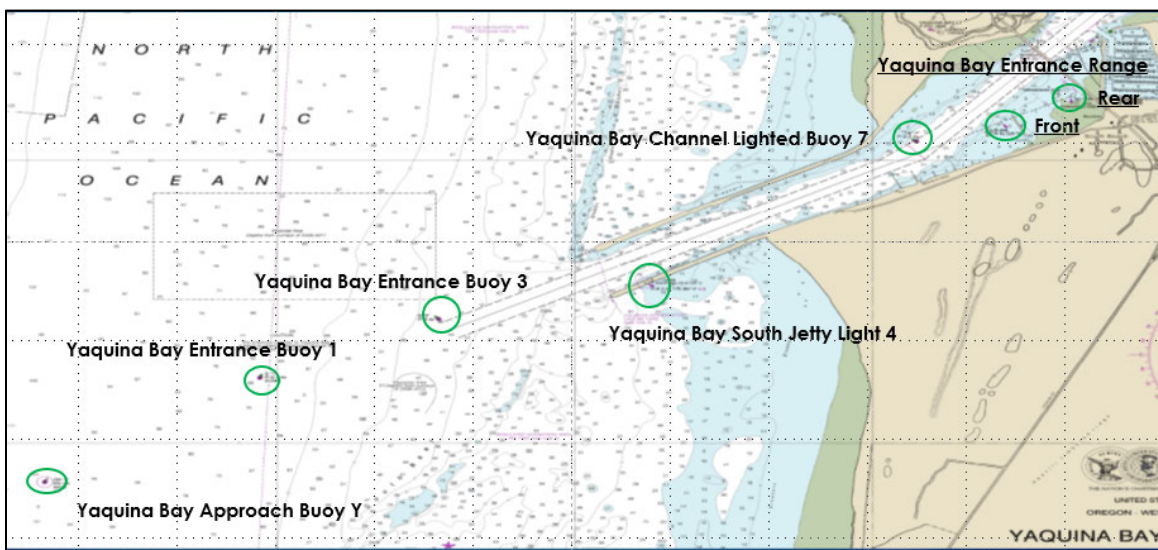


Figure 29. Image showing the location of critical aids to navigation at Yaquina Bay Bar. The USCG maintains these aids. (Source – Coast Guard, CG Exhibit 052)

4.2.42.1. Yaquina Bay Entrance Buoy 1, Yaquina Bay South Jetty Light 4, and the Yaquina Bay front and rear ranges were on station and watching properly on the night of the accident.

4.2.42.2. The Yaquina Bay Approach Buoy, or Buoy Y, was missing as was Yaquina Bay Entrance Buoy 3, which is a seasonal buoy. On the night of the accident, both buoys were sunk and were awaiting retrieval by a Coast Guard buoy tender when that vessel was available.

4.2.42.3. The Coast Guard boats referred to Entrance Lighted Buoy 3 repeatedly in reference to the charted location of that buoy. However, the buoy was seasonal and not on location, as it had actually sunk.

4.2.42.4. There were no readily available Coast Guard buoy tenders with heavy lift capabilities to maintain buoys on station in the offshore environment. The Coast Guard Cutter (CGC) ELM was the buoy tender scheduled to assume the responsibility for ATON in the D13 area but was in Baltimore, Maryland for a shipyard availability period. The extreme current and waves at the entrance to hazardous bars made it difficult to

maintain the current type of Coast Guard buoys on location or retrieve sunken ATON, as was the case of lighted buoys “Y” and “3”.

4.2.42.5. The Coast Guard has tools in place to periodically assess the waterway. This tool is called a Waterways Analysis Management System (WAMS). It is a survey that incorporates input from the waterway users and the public about the effectiveness of current ATON in the area and identifies areas of concern that may need further action. The designation of the waterway has some bearing on the periodicity requirement for these surveys. The last WAMS survey conducted for the Yaquina Bay area was in 1996. An abbreviated survey called a “mini-WAMS” was conducted in 2006 and focused on the Yaquina Head Lighthouse.

4.2.42.6. Despite the hazards associated with the Yaquina Bay Bar, the Coast Guard classified the waterway as “non-critical” until that designation was changed to “navigationally critical” in June 2003. There is no evidence available to indicate why Yaquina Bay’s waterway designation was changed in 2003.

4.2.42.7. The manual describes the classification of “navigationally critical” as “waterways where degradation of the aids to navigation system would result in an unacceptable level of risk of a marine accident, due to the physical characteristics of a waterway, difficult navigation conditions, aid establishment difficulties, or high aid discrepancy rates.” The classification of the waterway drives the attention and resources that are spent on the waterway including requiring a WAMS survey be conducted every five years as well as an increase in the prioritization of potential upgrades and maintenance of ATON in that waterway.

4.2.42.8. The North Jetty at the entrance to Yaquina Bay had a light and fog signal as an Aid to Navigation prior to 1979. In 1980, the Coast Guard disestablished that ATON and replaced it with Light 4 on the South Jetty tip. The North Jetty no longer has a light or fog signal.

4.2.43. The Coast Guard, NOAA, and the State of Oregon warn mariners of the risks associated with bar crossings by using signage and publishing information on websites and handouts. Websites show bar camera footage informing mariners of conditions at entrance bars, including the Yaquina Bay Bar.³⁵ Other means of disseminating information include marine and commercial AM radio band broadcasts, a live watchstander in a watch tower that makes radio calls to mariners, and broadcasting of deteriorating weather condition reports.

4.2.44. Mr. Biernacki had 30 years of experience working on and operating CFVs. He gained his experience fishing up and down the East Coast, Alaska, Hawaii, and parts of the West Coast. Mr. Biernacki moved to the Newport, OR area in the summer of 2018.

4.2.44.1. Mr. Biernacki lacked experience crossing the Yaquina Bay Bar. Aside from operating the MARY B II which was purchased in the fall of 2018, Mr. Biernacki’s experience with the bar was limited to one trip as a crewman onboard the F/V MS

³⁵ The footage is not generally real time but is usually still shots taken periodically.

NICANI and one trip as the operator of the F/V RANGER. Both trips occurred between July and August of 2018.

4.2.45. Mr. Biernacki had been fired from various fishing vessels after incidents of negligent operations and erratic behavior. This led to Coast Guard investigations which resulted in the issuance of two civil penalty violations. Due to the fact the Mr. Biernacki was not a credentialed mariner, the Coast Guard could not take enforcement action against a credential.

4.2.45.1. In February of 1997, while operating out of the East Coast, Mr. Biernacki ran the F/V LORI L aground on the beach in Loveladies, NJ, an area five miles south of the entrance to Barnegat Inlet, NJ. Mr. Biernacki was awakened when the vessel struck an offshore sandbar prior to grounding on the beach. As the operator of the vessel, he went to sleep and failed to set a proper watch and lookout. The causes of the grounding were found to include: the operator's chronic fatigue, the operator's lack of professional training, failure to maintain a proper watch, and failure to use the installed alarm system for the vessel's radar and fathometer.

4.2.45.2. Mr. Biernacki worked on board the F/V GO FOR IT. The owner of the GO FOR IT fired Biernacki after an altercation on the vessel resulted in activation of the EPIRB and Coast Guard SAR response on September 12, 2002. Mr. Biernacki admitted to the responding Coast Guard crews that he and the rest of the crew had been drinking while transiting to the fishing grounds. One crewman did not feel safe, attempted to use the radio to hail the Coast Guard with a desire to leave the vessel but Mr. Biernacki removed the radio and took it to his cabin; therefore, the crewman activated the EPIRB, which is a distress beacon and not meant to be used for any other form of communication.

4.2.45.3. Subsequent Coast Guard message traffic on the incident response and boarding of the GO FOR IT documented the boarding team's findings that "the consumption of large amounts of alcohol in less than 12 hours left the vessel unmanned and adrift in the commercial shipping lanes off Charleston." The message traffic also noted that this was the second time in the time span of one month that the vessel had returned to port to drop off a crewmember due to a crewmember's fear for their personal safety.

4.2.45.4. Mr. Biernacki moved to the Newport, OR area on or about the summer of 2018. In Newport, OR, he was employed as a crewman onboard the MS NICANI in August 2018, and as the operator of the RANGER for one trip. On or about August 2018, while operating the RANGER in the Pacific Ocean he consumed alcohol underway and failed to answer the radio or text messages from the vessel owners. Only after the owner texted Mr. Biernacki that the Coast Guard was actively looking for him did Mr. Biernacki respond back. Mr. Biernacki intentionally headed further out to sea and did not return to port until he sobered up. He departed the vessel without engaging the owner.

(HYPERLINK # 7)

4.2.45.5. During the public hearing and throughout the course of the investigation, four previous employers attested to Mr. Biernacki's ability to catch fish. These same

employers attested to his erratic behavior, arrogance, and his propensity to take unreasonable risks when it came to operating fishing vessels during heavy weather.

4.2.45.6. The operator's pattern of behavior based on previous experiences identified in this investigation continue to be shown aboard the MARY B II during the time immediately prior to the accident voyage. Specific examples of this are texts from Mr. Porter discussing the operator's unwillingness to take advice on use of the chartplotter, on the time to head into port due to impending weather, setting up crabbing gear for harvesting crab, and most importantly with respect to the extreme hazard of crossing the bar.

4.2.46. While not a previous employer, Mr. ██████████ engaged in multiple interactions with Mr. Biernacki with respect to purchasing the MARY B II (formerly the BESS CHET). Mr. ██████████ attested to Mr. Biernacki's lack of interest in any advice about operating the vessel at the Yaquina Bay Bar, and stated Mr. Biernacki was not receptive to any help or advice from mariners more experienced with the area.

4.2.47. Mr. Biernacki lacked significant experience crossing the Yaquina Bay Bar which is classed as a hazardous bar by regulation. The winter bar conditions are significantly more hazardous than at other times of the year.

4.2.48. The deckhand, Mr. James Lacey, had been fishing for over 30 years up and down the East Coast. He had previously fished with Mr. Biernacki and moved from New Jersey to Newport, OR to work on the MARY B II. He moved to Newport in December 2018 and did not have experience with the Yaquina Bay Bar. In testimony, the managing owner stated Mr. Porter was hired for his knowledge of the area.

4.2.49. Mr. Porter had over 30 years of fishing experience out of the Newport, OR area and had served as a deckhand before advancing to operating fishing vessels. Mr. Porter had been operating vessels for approximately 10 to 12 years and was known to have operated the JUDY and the NORMA M.

4.2.50. Based on testimony, Mr. Biernacki wore reading glasses, had an unknown amount of hearing loss, and wore dentures. The managing member of the F/V MARY B II LLC testified that Mr. Biernacki had trouble hearing in certain instances more than others because his eardrum had previously been "blown out" by "vibrations and loud noises that were on the boats."

4.2.51. There is no other evidence of any other medical history, conditions or use of prescriptions or over-the-counter medication for Mr. Biernacki.

4.2.52. The Lincoln County Medical Examiner (ME) examined the remains of all three crewmembers in conformance with their policy. The cause of death for all three crew persons was drowning, there were no other significant findings.

4.2.53. The Medical Examiner performed a gross examination of the bodies and took blood and urine samples for analysis in conformance with policy. There were clerical errors in the Medical Examiner's reports, in one case, date of birth.

4.2.53.1. Mr. Biernacki was found to have methamphetamine, amphetamine and alcohol in his system at the time of his death.

4.2.53.2. Mr. Lacey was found to have cannabinoids in his system at the time of his death.

4.2.53.3. The toxicology reports for Mr. Biernacki or Mr. Lacey found that neither individual had other common pharmaceuticals in their systems at the time of their deaths.

4.2.53.4. Mr. Porter was found to have no controlled substances or common pharmaceuticals in his system at the time of his death.

4.2.54. The MARY B II had all lifesaving equipment required to be onboard by the CFV regulations of 46 CFR Part 28.



Figure 30. Composite image of MARY B II's safety equipment. Showing an immersion suit, inflatable lifejacket, liferaft and an EPIRB distress device recovered after the accident. (Sources – Mr. [REDACTED] and Oregon State Parks)

4.2.55. In testimony, the managing owner of the F/V MARY B II LLC was aware of the operator's use of marijuana which is legal in Oregon. Toxicology results for marijuana in Mr. Biernacki's sample were negative. The managing owner failed to ensure that fishing vessel operations were conducted in a drug and alcohol free environment.

4.2.55.1. There were no written policies established by the F/V MARY B II LLC for conduct on board the vessel with respect to the use of alcohol or drugs or with respect to any expectations regarding the operation of the vessel.

4.2.55.2. In testimony, the managing owner indicated that if she was made aware of or found out about alcohol use on the vessel she would have directed termination of employment, including termination of employment for her son, the operator.

4.2.55.3. CFV operations included significant amount of preparatory work, some of which is not conducted with the vessel underway. In testimony, the managing owner stated that the operator had to drive a motor vehicle to conduct supporting operations for the MARY B II. The managing owner stated that Mr. Biernacki had a valid California driver's license. After the hearing, investigators validated the status of the operator's driver's license and he was found to have a permanently suspended license in the state of California.

4.2.56. A CG-2692, Report of Marine Casualty form, which is required by regulation, was not submitted for this incident.

4.2.57. 46 CFR § 28.270 requires the master or individual in charge of each fishing vessel to ensure that the crew conducts drills and receives safety instruction at least once each month. A certified Fishing Vessel Drill Conductor must perform the drills and instruction.

4.2.58. 46 CFR § 28.270 also states that no individual may conduct or provide instructions on drills onboard CFVs without attending a drill training course. There are, however, no requirements to recertify after taking the original training. All three crewmen on board the MARY B II attended and passed the AMSEA Marine Safety Instructor Training Course.

4.2.59. There are no records retained at F/V MARY B II LLC indicating the required safety drills were performed on the vessel.

4.2.60. United States Code (USC) and federal regulations implemented in 46 USC § 8304 and 46 CFR § 15 specifically exempt fishing vessels, other than fish processing vessels, from watch, working hour (work-rest) requirements and compliance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978. The MARY B II was not required to maintain a regulatory prescribed watch schedule, work-rest, or maintain crew competencies.

4.2.61. The owner did not have any written or verbal company policies relating to work hours to reduce the considerable safety risks associated with fatigue. The managing owner left the day-to-day operations of the vessel up to the captain.

4.2.62. The 47 foot Motor Lifeboat is designed to perform mission activities in adverse weather and sea conditions. Its primary mission is surf and heavy weather SAR, but it is designed to support multi-mission operations.



Figure 31. Image of a Coast Guard 47 foot Motor Life Boat 47266 operating in the surf. (Source – Coast Guard)

4.2.63. These vessels are self-bailing, self-righting, almost unsinkable, and have a long cruising radius for their size. The 47 foot MLB has specific operating capabilities:

CG 47266		
Length	47.91	Feet
Draft	4.5	Feet
Beam	14	Feet
HP	2 x 435	
Speed	25	Knots
Hull Type	Planing	
Accident Crew #	4	
Hull Construction	Aluminum	
Operating Restrictions		
Breaking Surf	20	Feet
Wind	50	Knots

Figure 32. Table showing operating characteristics of the 47 foot motor lifeboat. (Source – Coast Guard)

The 52 foot Special Purpose Craft-Heavy Weather (SPC-HWX) Motor Lifeboat is designed to perform mission activities in adverse weather and sea conditions. The 52 SPC-HWX exceeds the seakeeping and towing capabilities of the 47 foot MLB. The SPC-HWX design specifically, its 3 foot propeller and the hull type can maintain greater speed and maneuverability in any current due to the displacement hull and keel than the 47 foot MLB and its planing hull. This advantage minimizes exposure in the surf zone. Its primary mission is surf/heavy weather SAR and supplements the 47 foot MLB.



Figure 33. Image of a Coast Guard 52 foot Special Purpose Craft-Heavy Weather Boat VICTORY and a helicopter similar to the CG Helo 6527 conducting training in surf conditions. (Source – Coast Guard)

4.2.64. The 52 foot SPC-HWX has specific operating capabilities:

CG MLB VICTORY		
Length	52	Feet
Draft	6	Feet
Beam	14.5	Feet
HP	2 X 165	
Speed	11	Knots
Hull Type	Displacement	
Accident Crew #	5	
Hull Material	Steel	
Year Built	1956	
Operating Restrictions		
Breaking Surf	25	Feet
Wind	60	Knots
Seas	35	Feet

Figure 34. Table showing operating characteristics of the 52foot motor lifeboat. (Source – Coast Guard)

4.2.65. The Coast Guard’s HH-65 Dolphin is a twin-engine, single main rotor, medevac-capable SAR helicopter. The Dolphin is primarily a short range recovery aircraft and its primary missions are SAR, enforcement of laws and treaties, and marine environmental protection.



Figure 35. Image of the Coast Guard HH-65 Dolphin. (Source – Coast Guard)

CG Helo R6527 (HH-65 Dolphin)		
Engines	2	Gas Turbine
Operating Environment	All weather, day/night	
Maximum Speed	165	Knots
Cruise Speed	120	Knots
Maximum Altitude	10000	Feet
Range	375	Nautical Miles
Accident Crew #	4	Persons
Hoist Capable	Yes	
Rescue Swimmer in Crew	Yes	
Operating Restrictions		
Aircraft was operating within operating limits on the accident night.		

Figure 36. Table showing operating characteristics of the HH 65 Helicopter. (Source – Coast Guard)

4.2.66. On the date of the accident, there was established guidance for Station Yaquina Bay’s personnel when executing vessel escorts. There are several policies which encompass Coast Guard actions as they relate to escorts at breaking bars in D13. 33 CFR § 165.1325 which establishes RNAs in Washington and Oregon, the D13 SAR plan, the D13 Standard Operating Procedures, and the CG National SAR Plan Addendum.

4.2.66.1. The D13 SAR Plan (CGD13INST M16130.1A) mandates stations to man the towers during periods of increased vessel traffic and during rough bar/surf conditions. Additionally, a watchstander must be stationed in the tower while Coast Guard vessels are conducting training in the surf. This requirement applies to the following Stations: Cape Disappointment, Chetco River, Coos Bay, Gray’s Harbor, Siuslaw River, Tillamook Bay, Umpqua River and Yaquina Bay. The District 13 SAR Plan specifically states that a live 24/7 watch is not necessary, but provides for the CO/Officer in Charge (OIC) to man the tower when deemed necessary in addition to the above requirements. The D13 SAR Plan also contains provisions for Non Emergent Situations such as Bar Escorts and actions for Disoriented Mariners which may include mariners crossing the bars.

4.2.66.2. 33 CFR § 165.1325, provides for two conditions, bar restrictions and bar closures. A bar restriction limits the size of vessels that are allowed to cross the bar. Bar restrictions apply only to recreational vessels and uninspected passenger vessels.

4.2.66.3. With respect to bar restrictions, there is a formula for equation which is used to estimate the appropriate size of vessel which can safely transit the bar in given conditions. This determination is seldom used as it is overly prescriptive. In addition to this formula, COs and OICs are able to apply bar restrictions based on their experience. The local Coast Guard Stations will more often use the classification for safety equipment requirements that exist in regulation as a threshold for restricting the bar. Those classifications are: less than 16 ft, vessels 16 to 26 ft, vessels 26 ft to 40 ft, and vessels 40-65 ft. Violations of the bar crossing restrictions can lead to citations and fines.

4.2.66.4. Bar closures are based on the operating limits of Coast Guard vessels. The 47 foot MLB can be safely operated in winds up to 50 knots and breaking surf of 20 feet, provided they have a surfman onboard. The 52 foot SPC-HWX (the VICTORY) can be safely operated in winds up to 60 knots and breaking surf up to 25 feet, again provided a surfman is onboard. When the winds or waves exceed these parameters, the CO/OIC will recommend closing the bar to the COTP; meaning Coast Guard vessels are not able to safely respond and will not. This measure is for the safety of the rescue crews as well as the maritime public. Coast Guard vessels are built to rigorous standards to withstand punishing seas which exceed the limitations of commercial vessels. Until the bar is closed, commercial vessels of any type, with the exception that uninspected passenger vessels (generally similar to recreational vessels), may cross the hazardous bars at will.

4.2.66.5. In practice, it can take several hours for the bar to be closed after the CO/OIC's recommendation due to many layers of communication within the CG approval process. Another consideration is that the bar closure may trap a vessel outside the bar reducing the available options for that vessel. The CG maintains the ability to grant waivers to these vessels on a case by case basis.

4.2.67. Per COMDTINST M16114.32D, specifically for rough bar and surf conditions, policy states that every time a vessel is launched for SAR, a second B-0 vessel is launched to stand by for the first vessel.³⁶ A CO/OIC will launch a vessel based on multiple factors. As an example, a CO may launch Coast Guard vessels based on the level of experience of the mariner or visibility.

4.2.68. Stations, including Station Yaquina Bay, will check the conditions on or around the bar every 3 hours and/or when weather conditions change to re-evaluate opening/restriction/closure of the bar.

4.2.69. Tower watchstanders call vessels when outbound and ask how many people are onboard, but the level of engagement varies between stations.

³⁶ B-0 is a reference to a Coast Guard asset readiness posture and means a vessel, helicopter, etc. must be capable of launching in 30 minutes or less.

4.2.70. Tower watchstanders actively observe the bar in an attempt to maintain a good operating picture and account for how many and which boats are going out.

4.2.71. One of the primary tools that the Coast Guard used in this escort was the MK-127 illumination flare. It is designed to illuminate the area for a period of approximately one-half minute. On the night of the accident, approximately 20 flares were used in the LAST STRAW and the MARY B II bar operations and in the ensuing rescue activities. They were also launched from the beach in the recovery efforts.

MK 127 Flare Characteristics		
Height	600-700	Feet
Burn Time	36	Seconds
Candlepower	125,000	Candlepower
Descent Rate	10-15	Feet Per Second

Figure 37. Table showing the illumination characteristics of the MK-127 illumination flare. (Source – Coast Guard)

(HYPERLINK # 8)

4.2.72. As all three crewmembers of the MARY B II were accounted for relatively quickly, Sector North Bend Command Center watchstanders did not need to use the Probability of Survival Decision Aid (PSDA) software within the SAROPS to calculate predicted survival times from the effects of hypothermia during cold-water immersion. However, using PSDA, the calculated best-case survival times for functional time was 9.72 hours and predicted survival time was 12.62 hours, assuming crewmembers were wearing a clothing ensemble of shirt, sweater, and PVC rain suit. However, the effects of sudden cold-water immersion below 68°F can result in a respiratory reflex resulting in a rapid loss of life. The survival times in the PSDA are based on entering the water slowly in a non-catastrophic boating accident. A fall overboard or ejection from a sudden accident would likely result in a rapid death by drowning.

4.2.73. Functional Time (core temperature above 34° C or 93.2° F) is the length of time (hours) during which an individual may participate in self-rescue or take actions that will enhance survival/protection from exposure. Cold Survival Time (hours) is the time it takes for the core temperature to drop to 28° C or 82.4° F. Below that threshold, the probability of death due to hypothermia significantly increases. Death was not ruled as caused by hypothermia. Proper wearing of an immersion suit would protect the wearer from sudden immersion shock and hypothermia.

4.2.74. There is a gap in coverage for the National Automated Identification System (NAIS) system in the Newport, Oregon area. This coverage gap creates a situation where CG Command Center watchstanders were unable to see AIS positions of vessels displayed off the coast of Yaquina Bay. According to the Coast Guard, the Nationwide Automatic Identification System (NAIS) achieved full operational capability on May 24, 2018. The CG describes the system:

The Coast Guard's Nationwide Automatic Identification System is a communications system that transmits navigational information to ships and monitors the movement of

maritime traffic to promote safety in U.S. waterways. NAIS is based on the Automatic Identification System, a technology sanctioned by the International Maritime Organization (IMO) as a global standard for ship-to-ship, ship-to-shore and shore to-ship communications. Under U.S. law, most ships greater than 65 feet in length and operating in U.S. waters are required to have AIS transponders installed. The transponder regularly transmits a voiceless radio signal providing the vessel's name, position, course and other vital information. NAIS is designed to give the Coast Guard a comprehensive view of AIS carrying maritime traffic in U.S. waterways.³⁷

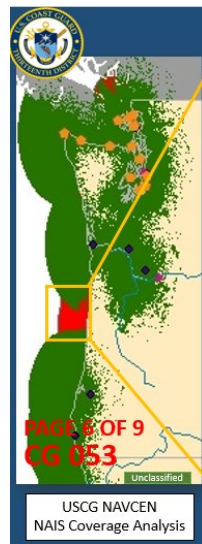


Figure 38. Map showing NAIS coverage for the coasts of Oregon and Washington. The area in red shows a NAIS coverage gap which exists in the Yaquina Bay, Oregon. (Source – Coast Guard, CG Exhibit 053)

5. Analysis and Opinions

5.1. Extreme Hazards Associated with Hazardous Bars on the Pacific Northwest

5.1.1. The bars formed at the mouth of rivers along the Pacific Northwest coast of the United States are known for the extreme hazards they create for any mariner. The rivers flowing to the sea and meeting the coastal underwater topography can create large breaking waves of extreme height and power as was present at Yaquina Bay Bar during the accident. The long distance that ocean waves travel in the Pacific Ocean and the prevailing weather patterns for the winds push the waves into the mouth of harbors where they interact with the changing tide and outflow from the Yaquina River which is present in this geographic area. Generally, the effects of the tide that is entering the harbor, called the flood tide, is of less significance than the tide coming out of the harbor, called the ebb tide. The ebb tide will push the river current and the tidal outflow to sea where it meets the incoming ocean swell causing the waves to gain size and steepness.

D13 has a Special Notice to Mariners which remains in force indefinitely and contains a passage that discusses the dangers of the bars:

³⁷ Coast Guard Navigation Safety Center website.

If you are inside the bar when rough conditions exist, remain inside! If you are trapped outside a rough bar on an ebb current, wait a few hours until the tide floods. In addition, waves build up at shallow areas such as sand spits and shoals. These areas are dangerous and should be avoided at all times. In a bar area, sea conditions can change rapidly and without warning. Always cross with caution!

NOAA produces a multi volume publication called the U.S. Coast Pilot and meant to supplement nautical charts of the waters of the United States. Coast Pilot 7 describes the following for Yaquina Bay:

*The entrance to Yaquina Bay is protected by jetties 330 yards apart. **The long north jetty, with the outer 100 yards submerged, extends out to Yaquina Reef.** A seasonal sound signal is near the seaward end of the south jetty and a light is about 200 yards inside the seaward end. A lighted whistle buoy is 1.5 miles southwest of the entrance. The channels are marked by lighted ranges, lights, and buoys. Between the jetties, numerous submerged rocks lie along the outside of the charted entrance channel limits. During the summer, when the swell is approximately parallel with the coast, the bar is comparatively smooth, being partially sheltered by Yaquina Head. In winter, however, the heavy west swell makes the bar very rough. A smooth bar and a favorable tide are necessary for large vessels leaving Yaquina Bay.*

The note (bolded for emphasis) in Coast Pilot 7 regarding the character of the seaward end of the North Jetty with the outer 100 yards of that jetty being submerged relates to the area where the MARY B II eventually capsized and sank. In testimony about the final moments of the MARY B II voyage and the sea action with respect to the North Jetty which is comprised of the careful placement of massive rocks:

A. So the series that hit the MARY B II was--is on the tip of the north jetty. I--I--when you get that close to the tip of a jetty in seas that big, you can hear the rocks moving.³⁸

During testimony, the marine surveyor who had over twenty years of vessel operating experience, including operating CFVs, made the following statement:

Bar conditions at the time, 12-to-14-foot with occasional 16-foot breaks. These are very questionable conditions to be crossing a bar. Personally--and I've had made hundreds of bar crossings--when you get over 10 feet, that's where you start paying attention, and 12-to-14-foot with occasional 16-foot breaks, these are the kind of conditions you want to approach only at high water during daylight hours. Now, said that, the question came up would you cross the bar under these conditions. Well, yes and no. If you're out in the ocean and you have these conditions and there are forecasts to deteriorate, as in maybe you've got 20-knot winds with big swells, maybe it's forecast that gale warnings are coming to 60-80-100-mile-an-hour winds. You're going to do your very best to cross that bar even though there's not optimum conditions.³⁹

³⁸ BOSN [REDACTED] hearing testimony.

³⁹ Mr [REDACTED] hearing testimony.



Figure 39. Image above demonstrates the danger posed by the breaking bars at the North Jetty of the Yaquina Bay Bar near the north tip. Note the large size and placement of the rocks used to form the protective jetty. The F/V CHEVELLE accident occurred in March 2012, the vessel was a total loss and all crew were recovered safely. (Photo - Mr. and Mrs. [REDACTED] ©)

And in further testimony, the marine surveyor stated:

You know, but like I said before, if you've got deteriorating weather conditions and you're--you know it's going to do nothing but get worse, then now is your best chance. But you want to do that on a flood tide as close to high water as you can, preferably during daylight hours.⁴⁰

The weather was forecasted to deteriorate further that night and into the next day though no evidence exists that suggests the weather conditions and hazards created were in the decision making process of the operator.

5.1.2. The accident occurred in January 2019 and the winter conditions on that accident day had both air and water temperatures in the low 50° F range. These temperatures magnified the risk of operating in this hazardous environment due to the risk of cold water exposure as discussed below. The U.S. Coast Guard Addendum to the United States National Search and Rescue Supplement, COMDTINST M16130.2F describes the effects of cold water shock:

Initial Immersion Cold Shock. Sudden immersion into cold water stimulates a large aspiratory gasp response (involving one to several breaths) that may be followed by hyperventilation plus substantial increase in blood pressure and heart rate. If entry into the water involves complete head-under submersion, the gasp reflex could result in immediate drowning. Subsequent hyperventilation will normally diminish within seconds to minutes but could be increased and exaggerated due to emotional stress and panic.

⁴⁰ Mr. [REDACTED] hearing testimony.

Uncontrolled hyperventilation can cause numbness, muscle weakness or even fainting, leading to drowning. Either of these respiratory responses can lead to aspiration of water into the lungs; panic, with subsequent drowning. Cold shock can occur in water colder than 20°C (68° F) with symptoms increasing as water temperature decrease to freezing. Healthy individuals may succumb to cold shock through uncontrolled respiratory responses, while those with underlying cardiac disease may experience sudden death due to cardiac arrest or ventricular fibrillation (uncoordinated heart beats).⁴¹

When the MARY B II was struck by a series of waves and capsized, the crew was suddenly exposed to the wintry waters of the Pacific Northwest. This scenario most likely involved complete head-under submersion resulting in the gasp reflex could result in immediate drowning. Two of the deceased victims were wearing inflated life jackets and the determination was made that the cause of death was drowning. The captain, who also wore an inflated life jacket, entrapped in the partially submerged wreckage of the cabin also perished by drowning.

5.1.3. Historical Marine Accidents at Hazardous Bars

There have been a number of documented fishing vessel and small passenger vessel accidents at the mouth of the harbors with hazardous bars along the coastlines of D13, which is partially comprised of Oregon and Washington. The table below is a representative sample of significant vessel accidents that have been extracted from the Coast Guard’s MISLE database starting in 1999, it does not reflect all the accidents that occurred during this period.

Date	Name OF Vessel	Location	Personnel Outcome	Vessel Outcome	Drug and Alcohol Testing	CG Interaction	Bar Restricted	RNA
08 Dec 1999	BLUE HEATHER CFV	Yaquina Bay	2 deceased 2 survivors	Total Loss	Master deceased, only alcohol test, Negative No record of drug testing or alcohol testing for crew	Escort	Yes	Yes
14 Jun 2003	TAKI TOO Small Inspected Passenger Vessel	Tillamook	11 deceased, 6 minor injuries	Total Loss	Negative test drug/alcohol	MLB at north Jetty monitoring	Yes	Yes
19 Sep 2005	SYDNEY MAE II UPV	Umpqua River	3 fatalities ¹	Total Loss	Negative test drug/alcohol	Reiterated that bar was closed, apparently no MLB onscene	Yes CLOSED	Yes
07 Feb 2006	CATHERINE M CFV	Tillamook	3 deceased	Total Loss	Cannabinoids Captain, Cannabinoids, Ethanol, Amphetamines, Methamphetamine	Flare Sighting post-accident	Yes	Yes
16 Dec 2006	ASH CFV	Chetco River ²	4 deceased	Total Loss	Unsure of disposition of deceased, drowned	No escort, CG may not have had assets available	Yes	Yes
25 Jan 2007	STRARRIGAVAN CFV	Tillamook	Four crew, one deceased	Total Loss	Operator Methamphetamine ³ Crew drugs ⁴	Last light bar report 1720 Hours, No Escort	Yes	Yes
28 Nov 2008	NETWORK CFV	Tillamook	Two deceased, one survivor	Total Loss	Negative results	MLB on the bar at first light at accident time	Yes	Yes
02 Oct 2010	DOUBLE EAGLE CFV	Tillamook	2 PIW, Rescued	Total Loss	Negative 1 of two crew ⁵	CG onscene, not escorting	Yes	Yes
10 Mar 2012	CHEVELLE CFV	Yaquina Bay	All safe	Total Loss	Negative test drug/alcohol ⁶	No Escort	Yes	Yes
19 Jan 2016	EAGLE III CFV	Coos Bay	3 deceased one survivor	Total Loss	Positive THC	No Escort	Yes	Yes
08 Jan 2019	MARY B II CFV	Yaquina Bay	3 deceased	Total Loss	Operator Meth/Ethanol 1 Crew THC	Escort	Yes	Yes

¹ Total POB was 5, fatalities were passengers
² Chetco River Bar at the time had a SARDET and other issues with CG interaction at the bar.
³ Second-degree manslaughter and negligent homicide.
⁴ Captain tested positive for amphetamines.
 Crew 1 tested positive for cannabinoids/THC.
 Crew 2 tested positive for cannabinoids/THC and opiates.
 Crew 3 tested negative for alcohol and drugs.
⁵ Deckhand could not be located to have tested
⁶ Operator only tested

Figure 40. Table displaying the known commercial vessel casualties at hazardous bars along the Oregon Coast, 1999 – present, along with the impact of loss of life and vessel loss. This table does not contain all of the accidents involving commercial vessel types, some of which were not reported to the USCG. (Source – Coast Guard)

⁴¹ Pages 3-89, section 3.7.2.1

There is no way of precisely determining the effectiveness of the bar restrictions for uninspected passenger vessels and recreational vessels in reducing deaths, injuries and vessels loses. Despite these proactive safety measures the hazardous bars still pose sudden and swift danger for mariners negotiating the bar entrances in heavy weather. The fact is the restrictions still allow the bar crossings by commercial vessels in heavy weather. Marine accidents still continue to occur with tragic results as the table in Figure 40 illustrates.

5.2. Gaps in Regulatory Framework and Policies

5.2.1. Regulated Navigation Areas

5.2.1.1 Up until the establishment of the RNAs for Hazardous Bars in 2009, the Coast Guard utilized the authority of the 33 CFR § 177 to restrict vessel transits at the hazardous bars. The hazardous bars were identified, as per 33 CFR § 177.01 and this authority extended to recreational and uninspected passenger vessels in general and relied on a Coast Guard Boarding Officer's authority to restrict vessel transit. The Coast Guard Captains of the Port still had the authority to close the bars as necessary based on the operational limitations of the Coast Guard rescue resources.

The RNA established in 2009 for the Yaquina Bay Bar was updated to eliminate confusion in the language and was published as a final rule in April of 2014. This rule also covered the fifteen other hazardous bars in the Coast Guard D13. The 16 RNAs were created for the specific geographic areas and addressed the risks in a number of ways, most notably, through restrictions on recreational vessels and small uninspected passenger vessels which restricted their movements across the bars in significant seas. The RNAs created restrictions for some vessels, but did not address restrictions for commercial vessels which are inspected or CFVs. Inspected vessels and CFVs are free to cross those bars at will even when the same waterway is restricted to recreational and uninspected passenger vessels. The provisions in the regulations include bar crossing plan requirements but did not mandate the specific actions of the Coast Guard during the crossing of hazardous bars. In particular, the regulations require:

The Coast Guard will notify the public of bar restrictions and bar closures via a Broadcast Notice to Mariners (BNM) on VHF-FM Channel 16 and 22A. Additionally, Coast Guard personnel may be on-scene to advise the public of any bar restrictions and/or closures

In particular, for CFVs:

- (5) Safety Requirements for Commercial Fishing Vessels (CFV).*
 - (i) The master or operator of any commercial fishing vessel operating in a regulated navigation area established in paragraph (a) of this section shall ensure that all persons located in any unenclosed areas of their vessel are wearing lifejackets or immersion suits and that lifejackets or immersion suits are readily accessible for/to all persons located in any enclosed spaces of their vessel.*
 - (A) When crossing the bar and a bar restriction exists for recreational vessels or uninspected passenger vessel of the same length or*

(B) Whenever their vessel is being towed or escorted across the bar by the Coast Guard.

(ii) The master or operator of any commercial fishing vessel operating in a regulated navigational area established in paragraph (a) of this section during the conditions described in paragraph (c)(5)(i)(A) of this section shall contact the Coast Guard on VHF-FM Channel 22A prior to crossing the bar between sunset and sunrise. The master or operator shall report the following:

- (A) Vessel name,
- (B) Vessel location or position,
- (C) Number of persons onboard the vessel, and
- (D) Vessel destination.

(6) All persons and vessels within the regulated navigation areas established in paragraph (a) of this section must comply with the orders of Coast Guard personnel. Coast Guard personnel include commissioned, warrant, and petty officers of the United States Coast Guard.

The morning of the accident, the Yaquina Bay Bar was restricted to recreational and uninspected passenger vessels as noted in the image below:

Restricted	1/8/2019 @ 807	Rec:16 / UPV:--	JETTY TIPS: 2-4 FOOT SWELLS. MAIN CHANNEL: 4 TO 6 FOOT SWELLS, WINDS: EAST-SOUTHEAST AT 5-10 KNOTS, VISIBILITY: 5 NAUTICAL MILES. THE BAR IS CURRENTLY RESTRICTED TO ALL RECREATIONAL VESSELS 16 FEET AND LESS IN LENGTH AT BUOY NUMBER 7.
Restricted	1/7/2019 @ 1631	Rec:40 / UPV:40	JETTY TIPS 4 TO 6 FOOT EBB CHOP. MAIN CHANNEL 4 TO 6 FOOT ROLLING SWELL, WINDS: EAST AT 10-15 KNOTS, VISIBILITY: CLEAR AND UNLIMITED, AND THE BAR IS CURRENTLY RESTRICTED TO ALL REC/UPV LESS THAN OR EQUAL TO 40 FEET IN LENGTH AT BUOY NUMBER 7.

Figure 41. Screen capture from CG Exhibit 018, Yaquina Bay bar restrictions from the night of January 7, 2019 through the morning of January 8, 2019. This screen shot notes restrictions and weather information for the bar as observed by the Coast Guard. (Source – Coast Guard, CG Exhibit 018)

The operator of the MARY B II did not communicate with the Coast Guard the particulars of vessel name, vessel location or position, number of people aboard or destination on the morning he was outbound at or before sunrise. On the morning of January 8, 2019, sunrise occurred at 7:52 a.m.. The Coast Guard stations a watchstander in a lookout tower overlooking the Yaquina Bay Bar at first light and makes bar condition observations to assist vessel traffic when the bar is restricted. Although the name of the MARY B II appears in the CG tower log, there is no way to determine how this entry came to be in this log and this was most likely entered as a correction to “no response” after the name of the MARY B II became known. There is only one entry in the tower log for January 8, 2019. The image below indicates the position of the MARY B II prior to sunrise on the morning of the accident day. The precise position of the MARY B II prior to sunrise cannot be determined.



Figure 42. Two positions of the MARY B II on the morning of January 8, 2019 based on NOAA VMS data. There is no way to determine at what time the MARY B II departed the dock but the 7:17 a.m. and 8:17 a.m. positions are precise and transmitted by the VMS at intervals that are close to one hour. (Source – NOAA data, Coast Guard)

5.2.1.2. The other measure less frequently used to mitigate risks from a hazardous bar is for the Coast Guard COTP to actually close the specific bar to all vessels. This had been done when necessary before the establishment of the RNAs. The decision to close a bar is done in consideration of the capabilities of the Coast Guard rescue vessels that must operate on that particular bar. Up to that specific closure by the COTP, CFVs and most commercial vessels can cross the bar to enter or leave port at will.

To further enhance safety, there are two means to address the safety of bar crossings. One is a seldom used formula to determine if crossing the bar is safe based on the size and dimensions of a vessel and the wave height at the bar. The other more commonly used measure is based on the judgment of the representatives of the COTP at the local ports. For example, the Commanding Officer Station at Yaquina Bay, OR sets size limitations for bar restrictions based on the environmental conditions, size of vessels, availability of Coast Guard vessels and other factors. This may impose size limits for the smaller vessels such as vessels under 26 feet are restricted at the bar or at navigation Buoy 7 or the bar is restricted to all recreational or uninspected passenger vessels. The waterway conditions are constantly assessed and modified as needed and the mariners are made aware of the bar restrictions via a variety of means. Typically, bar condition reports are prepared and disseminated by Station Yaquina Bay at first and last light referring to the period of time before sunrise and then at dusk prior to full darkness. Generally, there are no bar observations during full darkness unless a Coast Guard vessel is out on the bar. On the afternoon of the accident day, the Coast Guard was broadcasting reports of the deteriorating bar conditions based on the approach of gale force conditions and the worsening conditions at the bar.

5.3. The Operator's General Experience as a Fishing Vessel Crewperson and Captain

5.3.1. Mr. Biernacki, the operator of the MARY B II, had worked as a fisherman since the age of 16. Most of his 30-plus years of experience as a fisherman were in various fisheries operating out of the Mid-Atlantic states of the East Coast. He worked in a variety of positions including crew and captain/operator. Mr. Biernacki had operated vessels out of Barnegat Inlet, New Jersey and other ports as well as on some West Coast ports including out of Alaska. The inlet at Barnegat is known for its tricky entrance in varying weather conditions.

During testimony and in the examination of evidence Barnegat Inlet and other similar inlets on the East Coast do not have Regulated Navigation Areas for Hazardous Bars similar to the RNAs on the coast of the Pacific Northwest. There are no special rules, signage, or warnings for mariners using the Barnegat Inlet waterway with the exception of storm warning flags. The East Coast of the United States and the West Coast differ in the character of the conditions encountered entering coastal inlets. Generally, on the East Coast, the mariner will experience far less extreme breaking surf when entering harbors due to the gradual shelving of the bottom and the prevailing winds blowing offshore. On the West Coast, there is a narrow continental shelf which steeply rises to the shore line. This, coupled with the prevailing winds and the long ocean distances, cause the much larger waves to build and have a more powerful force. Where rivers meet the sea, as is the case at the Yaquina Bay Bar, the tide and outflow of the river magnify the potential power and force of the breaking waves.

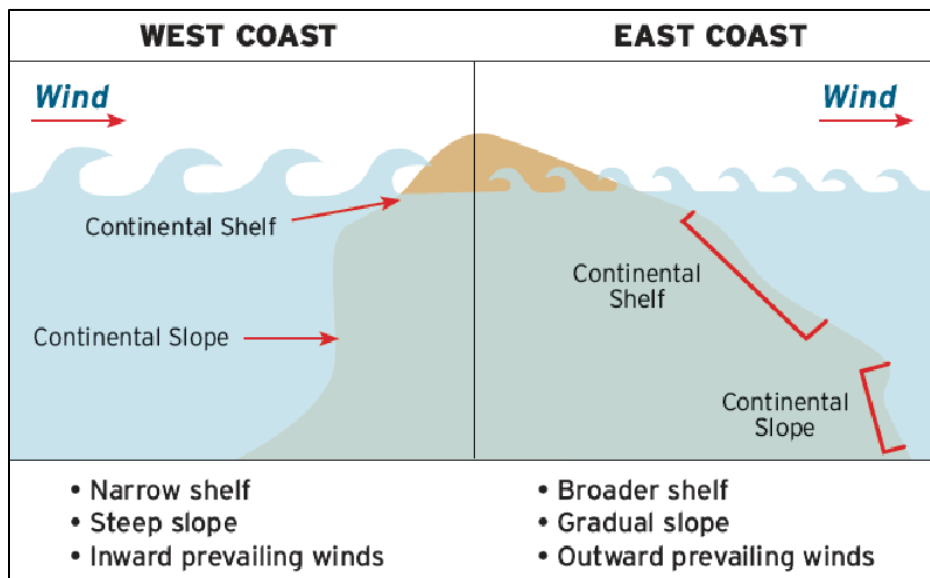


Figure 43. This figure graphically compares the interaction of the sea, wind and slope of the sea beds that make up the shoreline of the West and East Coast of the United States and how that relates to the character of the waves and swell that result. Note the larger waves caused by the prevailing winds, long ocean distance and the steep slope of the West Coast Shoreline. (Source – Used with permission, BoatU.S. Magazine)

Comparison of significant wave heights* on East and West coasts		
Buoy Location	% of time waves <3 feet	% of time waves >12 feet
~150 miles E of Cape Hatteras	7%	10%
~600 miles SW of Portland	0%	23%

*Average of biggest one-third of all waves recorded during time interval

Figure 44. This figure represents a comparison of wave heights on the East and West Coast of the United State taken from NOAA offshore weather buoys located in areas that represent significant waves along each coast. (Source – Used with permission, BoatU.S. Magazine)

During testimony, a fisherman who operated out of Barnegat Inlet made the following statement:

Q. And how frequently would you or Mr. Biernacki, to your knowledge, deal with breaking surf, 10-foot, 12-foot or----

A. I don't think--you know, a 10-or-12-foot breaking surf would be a big one in our inlet. We do get them, but we--in the wintertime, mostly. I mean, not--we do deal with that.

Q. So it's not common to get 16-to-18-foot breaking surf----

A. We never have that big here unless it's a hurricane. I'd say 10-to-12-foot would be extremely big for here.⁴²

To illustrate the comparison between the accident location and the location that the Operator of the MARY B II usually fished out of the image below is provided. Typically mariners transiting into Barnegat Inlet in adverse weather enter by following the blue line on the figure below.

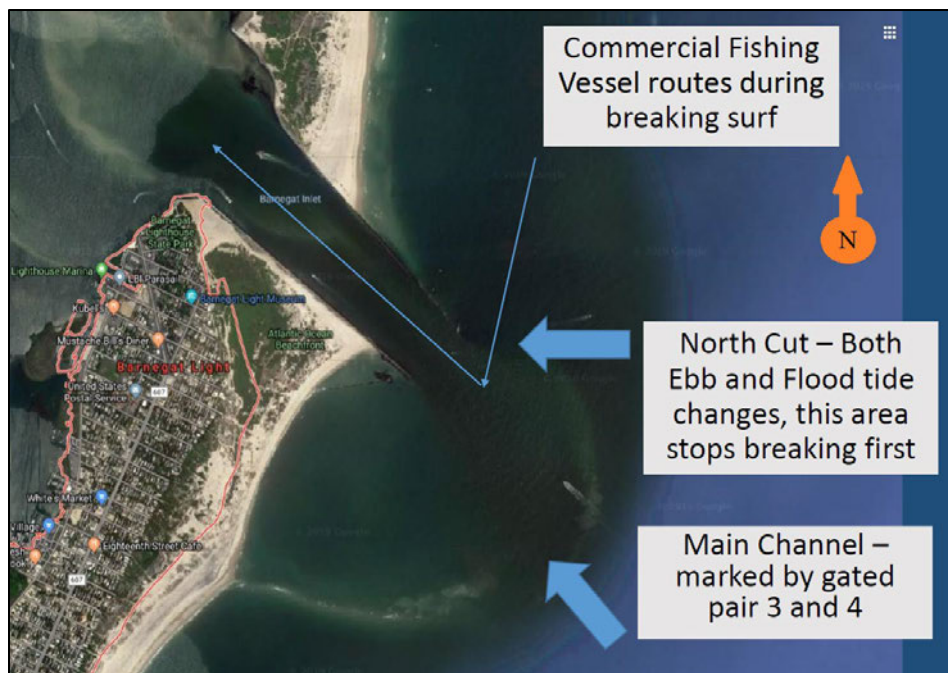


Figure 45. An aerial view of Barnegat Inlet, NJ with notes on entering the waterway and showing the route (in blue) for mariners entering the waterway where the surf is breaking. (Source – Coast Guard prepared)

⁴² Mr. [REDACTED] hearing testimony.

The Commanding Officer of CG Station Barnegat Inlet provided the following testimony:

Q. The accident leading to the loss of the fishing vessel MARY B II in January of 2019 occurred in hazardous surf conditions and at night off the coast of Oregon. Station Yaquina Bay observed 12-to-14-foot seas with occasional 16-foot breaks. The forecasted weather was southeast winds, 20 to 25 knots, with gusts to 35 knots, rising to 25 to 30 knots with gusts of 40 after midnight. Combined seas were 12 feet with a dominant period of 11 seconds, building to 20 feet and a dominant period of 18 seconds. I know--I know I just threw a lot of numbers at you, but with your experience, can you give us a layman's opinion of what that would look like or what--what a mariner might experience in those kind of conditions.

A. You--am I comparing that, what they would expect at Barnegat Inlet or in Newport?

Q. Sure. With comparison to your experience on the East Coast and in particular out of Barnegat, are those--are those operating parameters in excess of what's normally at Barnegat, on par with those at Barnegat or below what's on Barnegat?

A. I would say the forecast--what was forecasted in the scenario you gave me, I can't even imagine those numbers happening here. Twenty feet at--did you say 16 seconds?

Q. Twenty feet and a dominant period of 18 seconds, BOSN.

A. Yes, I can't--I can't even imagine that size of wave on the East Coast anywhere. That's something that we would see from a-- from a hurricane, probably in the category of a cat-2 or cat-3 storm.⁴³

The experience and critical decision making of the operator of the MARY B II reveals a host of serious issues with his role and responsibilities as a vessel captain. In February 1997, Mr. Biernacki was employed as the captain of the LORI L. While acting as operator of the vessel, he was involved in a marine casualty where it was put on autopilot and the entire crew went to sleep. As a result of lack of lookout and vigilance, the vessel grounded on the coast of New Jersey having missed the entrance of Barnegat Inlet, NJ. The captain, Mr. Biernacki, was awakened when the vessel hit the offshore sandbar and the vessel then ended up sideways on the beach. The catch had to be unloaded and multiple vessels used to tow the vessel back into safe water.

⁴³ BOSN [REDACTED] hearing testimony.



Figure 46. Green circle with X indicates the approximate unintended beaching position of the LORI L in February 1997 several miles south of Barnegat Inlet, per Coast Guard MISLE Incident Activity number 90591 (Source - USCG Navigation Safety Center)

In 2003, Mr. Biernacki was the operator of the GO FOR IT operating out of Charleston, SC. The Coast Guard received a signal from an emergency position radio indicating beacon (EPIRB) which is a distress signal from the vessel. The Coast Guard dispatched a helicopter to the scene and lowered a rescue swimmer to the cabin top of the GO FOR IT. The rescue swimmer found the crew sleeping and the vessel drifting in the Atlantic Ocean 40 NM east of the Charleston Harbor Entrance Buoy. Subsequent investigation would reveal that a crew person had activated the EPIRB to summon help and that the captain had removed the marine radio to prevent the crew from using it to summon help as one crew person felt unsafe and wanted to go ashore. The captain admitted to the boarding officer that the crew had drunk a case of beer and a bottle of rum and had argued. A Coast Guard Cutter escorted the vessel to safe harbor. The Commanding Officer of the Cutter stated (note USCG message abbreviations used throughout quoted section below):

Strongly recommend GRU of MSO CHARLESTON take follow up action w/ F/V GO FOR IT'S MSTR. This is the second time in less than a month that the vessel returned to port to drop off a crewman due to crewman fear for personal safety. The consumption of large amounts of alcohol in less than 12 hours left the vsl unmanned and adrift in the commercial shipping lanes off Charleston.⁴⁴

After arriving on the coast of the Pacific Northwest in 2016, Mr. Biernacki worked on fishing vessels in various capacities. In August 2018, he secured a position as captain of the RANGER operating out of Newport, OR. In late August he asked a female to crew for him on the vessel and departed offshore with two people on the vessel. In that crew's interview

⁴⁴ CG Exhibit 073, page 6.

summary,⁴⁵ she stated that Biernacki drank alcohol while underway and at one point the crew person wanted to return to shore. She communicated this to the F/V KAY via the radio and Biernacki then started getting text messages from the vessel owner about the situation. Based on the information from this crew person, the operator kept the vessel offshore before returning to Newport, OR. The operator then walked off the vessel after mooring at Newport.

In an attempt to understand the operator's awareness of the danger and understanding of the hazards of the Yaquina Bay Bar in the winter, investigators asked the MARY B II's managing owner the following during the hearing:

Q. Well, let's try to--we're trying to figure out if--we're trying to ascertain Mr. Biernacki's experience level, specifically on if he worked in rough weather or worked out of areas where there was a dangerous waterway like the Yaquina Bay bar. Can you talk to us about those specific experiences?

A. Again, through the years it was--I cannot give you anything totally specific except for he did fish through seven hurricanes, including the "Perfect Storm".⁴⁶

The 2019 edition of the American Practical Navigator, Bowditch an official and widely respected navigation publication of the U.S. Government's National Geospatial – Intelligence Agency makes the following statement about hurricane avoidance. This publication has been in print and continuously updated since 1802. In the text below there is a reference to ships, smaller craft would be far more at risk in a hurricane.

The safest procedure with respect to tropical cyclones is to avoid them. If action is taken sufficiently early, this is simply a matter of setting a course that will take the vessel well to one side of the probable track of the storm, and then continuing to plot the positions of the storm center as given in the weather bulletins, revising the course as needed. However, this is not always possible. If the ship is found to be within the storm area, the proper action to take depends in part upon its position relative to the storm center and its direction of travel.

and:

Because of their fury, and because they are predominantly oceanic, they merit special attention by mariners. The rapidity with which the weather can deteriorate with approach of the storm, and the violence of the fully developed tropical cyclone are difficult to imagine if they have not been experienced.

The vessel incidents that occurred on the LORI L and the GO FOR IT subjected the vessel captain to civil penalties issued by the Coast Guard for the grounding and hazardous operation of the vessels. In the case of the RANGER, the Coast Guard did not investigate that action as the incident was referred to local law enforcement. If any or all of these incidents occurred and captain Biernacki was a Coast Guard licensed or credentialed mariner, the Coast Guard would have been required to examine the possibility of taking an enforcement

⁴⁵ CG Exhibit 076

⁴⁶ Ms. [REDACTED] hearing testimony

action against the mariner. Penalties could include suspension or revocation of the credential and other sanctions.

5.4. Adverse Effect of the Operator's Lack of Experience on Hazardous Bars

The operator had limited experience in handling the critical vessel maneuvering challenges posed by the Yaquina Bay Bar. It is not possible to put an exact number of crossings or the bar conditions at the time of the crossings of this and other bars while Mr. Biernacki was operating as captain of a vessel. The MARY B II was purchased by the F/V MARY B II LLC for the express purpose for Mr. Biernacki to operate. Mr. Biernacki was acting on behalf of the F/V MARY B II LLC during the purchase process and had interactions with the previous owner. During these interactions, the previous owner attempted to share some information with Mr. Biernacki about the bar and the operation of the vessel. In testimony, the previous owner was asked:

Q. Thank you, sir. Mr. [REDACTED] shifting focus now on the time frame of the sale specifically, being a fishing vessel owner and operator in this community, during your interactions with the new vessel operator, Mr. Biernacki, during that time frame of the sale, was there anything that, to you, seemed unusual about his behavior or that stood out to you?

A. Noticed some erratic behavior at times, definitely, and I sensed a lack of experience and respect for local West Coast conditions in my talking with him during selling the boat to him.

Q. Can you elaborate on that, what you noted as not respect, like you mentioned.

A. While we were going through the boat, I could sense he didn't understand the local bars and the crossings, and so it concerned me at the time. So I tried--attempted to talk to him and give him some local experience and knowledge, but he seemed unresponsive to accepting the information.⁴⁷

On the days leading up the accident, Mr. Biernacki's crew comprised of himself and a fellow East Coast fisherman as well as a local Newport fisherman with extensive experience on the bar and the fishing grounds. This local fisherman served as crew on the MARY B II and in his previous experience had captained and crewed numerous vessels. His experience and competence in the local area was highly regarded.

5.5. Unsuitability of the MARY B II for the Extremes of the Hazardous Bar Crossings Encountered on the Accident Day

5.5.1. Size and propulsion of the MARY B II

5.5.1.1. The MARY B II was slightly less than 42 feet in length, with a beam of 13.4 feet and a design draft of 7.1 feet. The vessel has a 160 HP engine and a 32 inch five bladed propeller. The propulsion system was described as adequate by various witnesses.⁴⁸

⁴⁷ Mr. [REDACTED] hearing testimony.

⁴⁸ Hearing testimonies of previous owner, Mr. [REDACTED] and Managing Owner, Ms. [REDACTED]



Figure 47. Photo of the BESS CHET (later known as MARY B II)'s propeller, provided by the marine surveyor. (Source – Mr. [REDACTED])

On the evening of the accident, the last vessel to cross the bar inbound before the accident occurred was the LAST STRAW, which is a 75 foot single screw steel vessel. The LAST STRAW encountered problems crossing the bar but was able to correct and safely navigate the bar without resultant incident. In conversation with the Coast Guard escort boats at 7:55 p.m., the operator of the LAST STRAW made the following statement:

*That's the first time I've uh really broached like that. It's kinda alarming. I got turned pretty go there didn't I?*⁴⁹

On the evening of January 8, 2019, sunset occurred at 4:54 p.m. and four CFVs, including the LAST STRAW, who routinely worked out of the Port of Newport crossed the bar in the early evening, heading into Newport Harbor to avoid the worsening weather conditions and conditions of full darkness.



FV LAST STRAW on the left (75 feet in length) in comparison to the FV MARY B II (42 feet in length). Note the high bow and lack of outriggers on the FV LAST STRAW. Images are scaled to show the approximate size comparison and the FV MARY B II image is approximate in size.

Figure 48. Comparison of the size and characteristics of the LAST STRAW and the MARY B II. (Source: LAST STRAW – Mr. [REDACTED] Marine Traffic com with permission, MARY B II – Mr. [REDACTED])

⁴⁹ CG Exhibit 008

Over the course of the evening, the sea conditions would increase up to 14 -16 foot breaking waves at times. At 10:04 p.m., a moment before the sinking when the VICTORY told the MARY B II:

16 Footer building up behind you captain⁵⁰



Figure 49. Illustration showing the size of the MARY B II in comparison with the static height of 14-16 foot wave. In the background are the jetty and landmass behind the jetty rocks, November 18, 2018. (Source – Mr. [REDACTED])

5.5.2. Potential Effects of Grounding in Newport Harbor on or about December 31, 2018
In late 2018, the MARY B II grounded in Newport Harbor vicinity of the Embarcadero. A crewman reported this event to shore via text messaging. At the time, the MARY B II was loaded with crab pots with an outgoing tide.

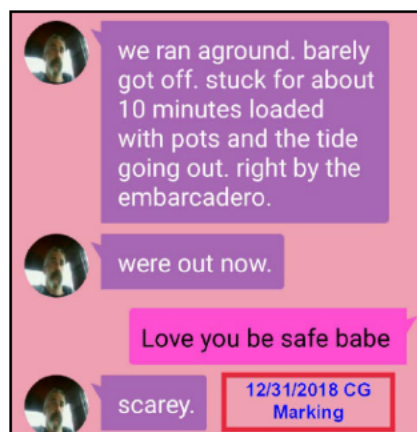


Figure 50. Screen capture of crewmember, Mr. Porter's communication ashore via text messaging from December 31, 2018 regarding the grounding of the MARY B II (Source- Coast Guard, CG Exhibit 024)

⁵⁰ CG Exhibit 008

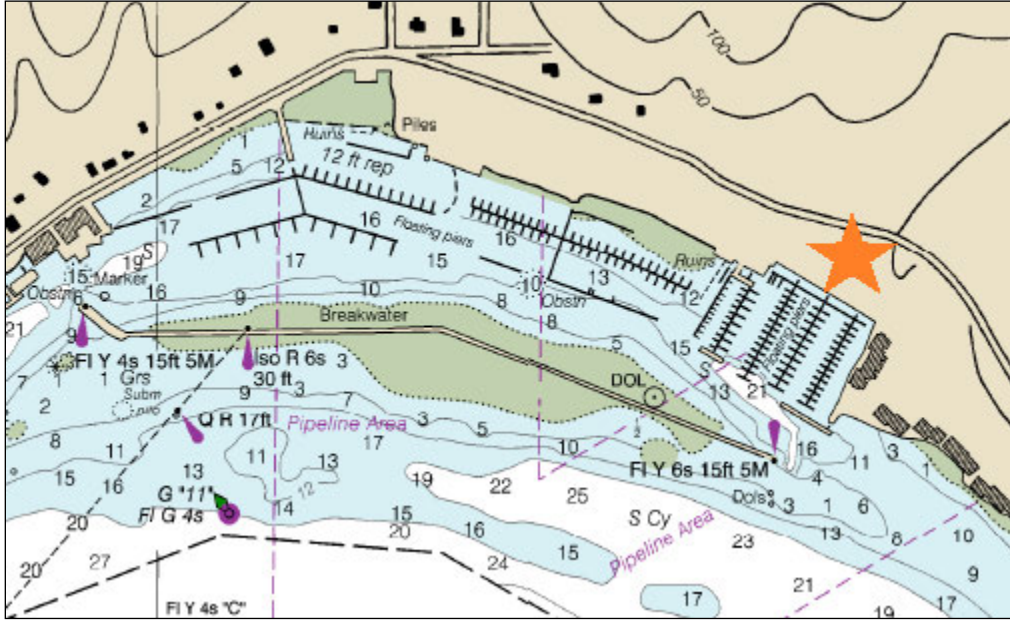


Figure 51. Orange star marks the general location of the Embarcadero Marina, Newport Harbor, OR. The grounding occurred somewhere in front of this area in the blue shaded area, the exact position and circumstances cannot be precisely determined. (Source – Coast Guard, CG Exhibit 004 marked up with star for position)

On January 4, 2019, Mr. Biernacki purchased a two-part epoxy from Englund Marine and Industrial Supply called Splash-Zone®. In testimony at the hearing, the managing owner made this exchange when questioned about the incident.

Q. Ma'am, maybe we can address this a different way. Did Captain Biernacki ever indicate to you when that leak--to your recollection, about what month was that?

A. I'm not sure if it was late December or the first day or two in January, but it was in that approximate area.

Q. So Mr.--so did Captain Biernacki tell you that he was going to make the purchase of that caulk or sealant?

A. Absolutely. He asked me if he could--no, he didn't ask me. I gave him permission to--to do whatever you need to do to repair it, and he purchased the epoxy from England Marine. And that's what--the invoice we were looking at.

Q. Did he indicate to you what needed to be repaired?

A. Yes, he said he was satisfied with the repair.

Q. No, ma'am, the question was did he tell you what needed to be repaired? What was the damage he'd indicated to you?

A. I recollect there were some slats in the wood hull that had some leaks.

The product that was purchased is a two part epoxy which the manufacturer describes in this manner:

Splash Zone is an extremely hard, abrasion and impact resistant, two-part epoxy patching compound. It applies like putty to seal, fill, patch, or re-build aluminum, wood, concrete, fiberglass, and steel. It can be applied in or out of water to repair boat hulls,

buoys, seawalls, docks, bridge abutments, and more. Splash Zone provides excellent protection against corrosion of metals and erosion and deterioration of concrete or wood. Splash Zone's rock-hard surface can be drilled, tapped, or machined. Recommended for patching and repairing damaged underwater surfaces. Not for use in potable water.

There is no way to determine if this grounding and resultant leak were a contributing factor to the accident. There is also no way to determine if the repairs to the leaking hull planks with the two part epoxy controlled any leakage of seawater into the hull. Any seawater that accumulated in the hull could have resulted in the sloshing of water, called free surface effect which decreases stability. It could also change the vessel's stability based on the weight of the water inside the hull.

At approximately 9:58 p.m., the Coast Guard escort VICTORY stated:

Uh go ahead and start putting up a lot of them, this guy is not riding good in the water. Like he's not a very stable boat, hes [sic] got on outrigger halfway out, and we uh had a dud 127. Over.⁵¹

5.5.3. Outriggers

On the accident voyage the MARY B II was equipped with outriggers which were approximately 45 feet in length. The outriggers are used for various purposes. In testimony, the previous owner stated:

The outriggers that are on the vessel in the picture are not used for crab fishing. They are used in the salmon fisheries and the albacore tuna fisheries. We would not--personally, we never had them on the vessel during crab season. We would take them off to increase the stability of the vessel and create more weight up higher.

And in a follow up exchange:

Q. Okay. And so to be clear, as a vessel is preparing to enter the bar with one outrigger out or deployed, that would be typical.

A. Not on my vessels. I--I have seen it before, but personally, we've never operated that way.

Q. Can I ask why?

A. Like I said, I usually remove the outriggers for Dungeness crab fishing.

Q. In your experience, what is the normal best practice on outrigger position during transit into the bar and if that's just not to have them at all?

A. Best is not to have them at all or to have them out. You decrease stability when they are up in the rigging. It raises the center of gravity.⁵²

⁵¹ CG Exhibit 008.

⁵² Mr. [REDACTED] hearing testimony.

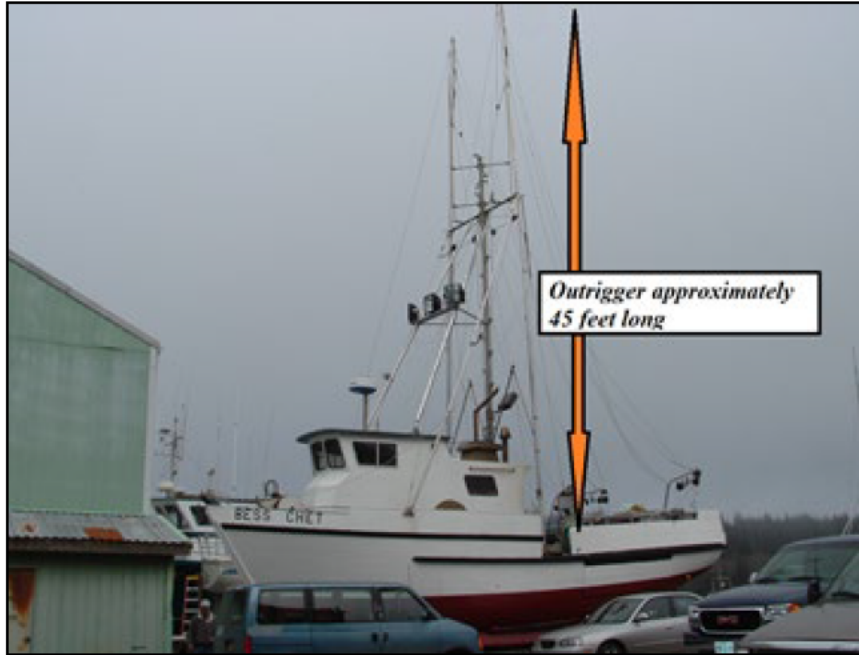


Figure 52. Source photo for the BESS CHET (later known as the MARY B II) Marine Survey report showing the outriggers onboard the vessel. (Source - Marine Surveyor, Mr. [REDACTED])

The following image of a Newport fishing vessel showing the vessel with and without the outriggers attached:



Figure 53. F/V TANA C at the Yaquina Bay Bar. Left with outriggers attached and on the right, the outriggers removed from the vessel. Dates of the photos unknown. (Source - Mr. and Mrs. [REDACTED] ©)



Figure 54. F/V NORSKEN FISHER and another unnamed fishing vessel in the foreground crossing the Yaquina Bay Bar on unknown date, both boats without outriggers. (Source - Mr. and Mrs. [REDACTED] ©)

On the night of the accident at approximately 9:58 p.m. while in the course of the escort into Yaquina Bay Bar, the VICTORY made a radio transmission about the fact that the port outrigger was not in the stowed position in the upper rigging of the vessel and the outrigger was halfway out. In analyzing the role of the outriggers on the MARY B II and the effects on stability, it is considered a good practice to remove the outriggers as they are not used for Dungeness crab fishing and the removal of topside weight such as the outriggers improves the seakeeping abilities and stability of a smaller fishing vessel like the MARY B II. It is not possible to come to a definitive conclusion about whether the partially deployed outrigger was a causative factor or distraction at a critical moment in the voyage. The VICTORY's observation of the port outrigger adrift was communicated to the MLB 47266 was communicated over a Coast Guard working Channel and the information would not have been heard by the MARY B II. Had this observation been discussed over a VHF Channel MARY B II was in theory monitoring, they may have taken the statement as a prompt to provide additional information that may have caused a reassessment of the operation's risk. At no point did either Coast Guard vessel ask the MARY B II if they had any material conditions or issues on board the vessel nor did they specifically ask about the one outrigger being deployed.

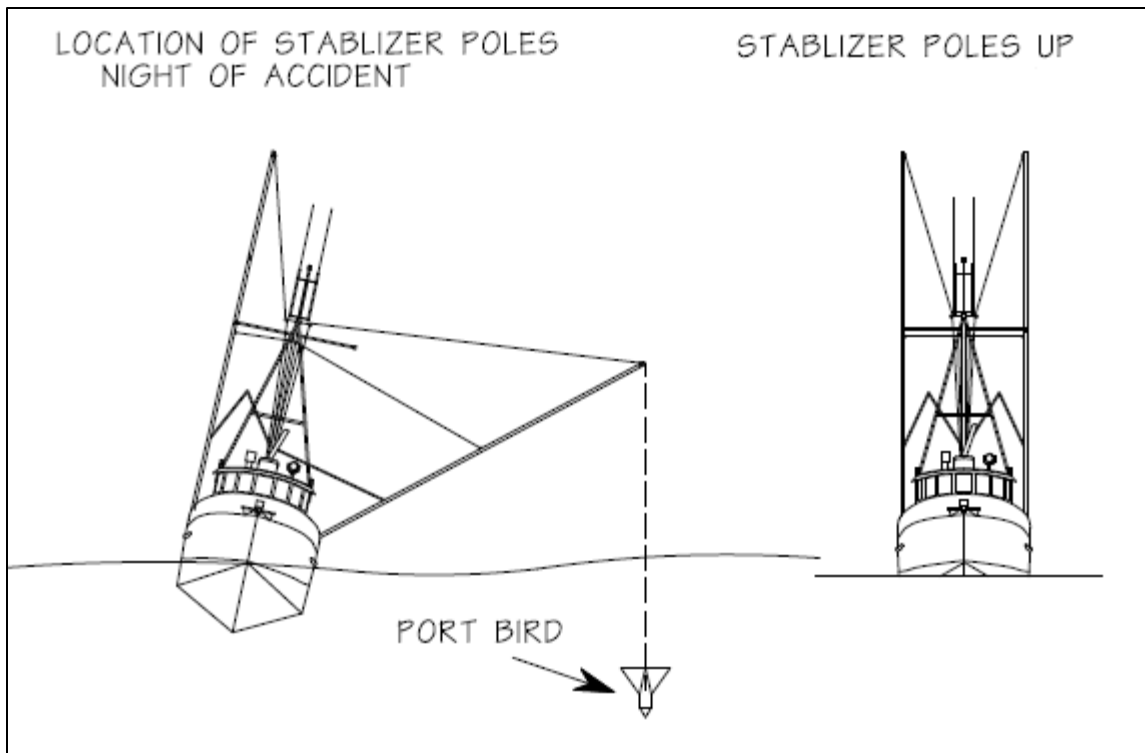


Figure 55. Line drawing of a fishing vessel with the port outrigger out while looking at the bow of the vessel. Left, during the final moments of the MARY B II inbound transit the VICTORY crew noticed the port outrigger partially out with no evidence of a stabilizer or “bird” in the water. It is unknown what the angle of the outrigger was. Dashed line is a visualization of the setup if a port “bird” or stabilizer was in the water. Right, is the stowed position of the outriggers in the upper rigging of the vessel (Source – [REDACTED] ©)

As evidenced in the image showing the outriggers in the marine survey report when the vessel was the BESS CHET, there is considerable rigging associated with the outriggers and this could have led to potential line entanglement when the outrigger was noted to be partially deployed during the vessel’s inbound transit. No evidence was available (observations) of where the lines were trailing. The port outrigger likely had a negative effect of the vessel’s stability or maneuverability in those weather and sea conditions, therefore, the fact that it was deployed may have contributed to the casualty.

5.5.4. Line entanglement in Rudder, Propeller, or Shaft

On the accident day, while offshore on the MARY B II, one crew person and the Operator called a local Newport diver with regards to a crab line or rope entangling some part of the MARY B II’s underwater equipment such as the propeller, propeller shaft, or the rudder. During witness testimony, the local diver testified that it was a line in the “wheel” (propeller). Fishermen recounted that it is not uncommon to have a line foul the propeller or rudder which usually does not result in damage. In some cases, the line can cause a vibration in the vessel and in extreme cases the line can cause damage to the propeller shaft bearing or result in an inability to maneuver.

In testimony, the diver who was called to examine and remove the line on the MARY B II spoke about the implications of such a condition on vessel maneuverability. He described different ways in which lines may be wrapped around propellers and stated the condition can

cause excessive shaking, leading the operator to slow down. He added that a vessel may still be able to make "good speed" but it depended on "how much he had wrapped up."⁵³

And in follow up questioning, the diver stated:

A. Well, the--on--especially on the boat in question, the MARY B, a lot of line could make things shake really bad or, you know, cause them to slow down, but in my experience, unless they get a crab pot all the way up to the hull, it generally doesn't-- generally boats don't break from it. You know, they can--it can bend their propellers or make it to where their steering--their rudder doesn't turn well and things like that. It can bend what they call the rudder shoe if they get a pot all the way up, but most of the time it's just line that just needs to be cut out so they can keep working.

Arrangements were made via phone messages to have a diver visit the MARY B II when the vessel returned to port the night of January 8, 2019. During the escort briefing with the Coast Guard escort vessels, the Operator did not tell the Coast Guard about the line in the vessel's running gear.

The MARY B II initially reported a making a speed of 6 to 6.5 knots and a maximum speed of 7 knots. At approximately 10:03 p.m., as the MARY B II proceeded into the approach to cross the Yaquina Bay Bar, the speed of the MARY B II was observed to dramatically slow to what was described as two knots without explanation. The VICTORY had to back down and the MARY B II did not communicate the intention to reduce speed. Until this point, the MARY B II had been making between 6 and 7 knots coming up to the rendezvous for the escort across the bar. Based on available evidence, it cannot be determined if this was caused by an issue with maneuverability or propulsion which distracted the crew at a critical time and caused a loss of situational awareness regarding the drift off the centerline towards the danger of the jetty end.



Figure 56. (Left) Image of crab pots and lines associated with the use of these pots, showing the general type of line that may have fouled the propeller, rudder or propeller shaft of the MARY B II to an unknown degree. (Source – Coast Guard). (Right) Underwater aft section of the

⁵³ Mr. [REDACTED] hearing testimony.

MARY B II when it was the BESS CHET during an earlier survey. The image shows potential areas where a line may have fouled. (Source - Marine Surveyor, Mr. [REDACTED])

Based on the fact that the underwater wreckage of the MARY B II was not located and examined and that testimony and evidence available are not conclusive on this point, there is no way to ascertain if a line in the propeller, rudder, or associated components of the MARY B II caused a reduction of maneuverability or speed as it attempted to enter Yaquina Bay Bar.

5.5.5. Personnel on the CG boats observed the MARY B II slow down. Observations from the Coxswain on the VICTORY suggest the vessel was making between 1.3 and 2.0 knots. The analysis of the vessel's transit using the OSU marine X-Band radar tool indicates the vessel's average speed during her approach at the time the vessel deviated from the centerline of the channel was 3.8 knots. Regardless of the MARY B II's actual speed, the vessel was not transiting fast enough to successfully cross the bar during the lull period.

5.6. Examination of Aids to Navigation at Yaquina Bay Bar

5.6.1. The Coast Guard is responsible for the establishment and maintenance for aids to navigation (ATON) on the waterway. The waterway was configured as indicated in the image below.

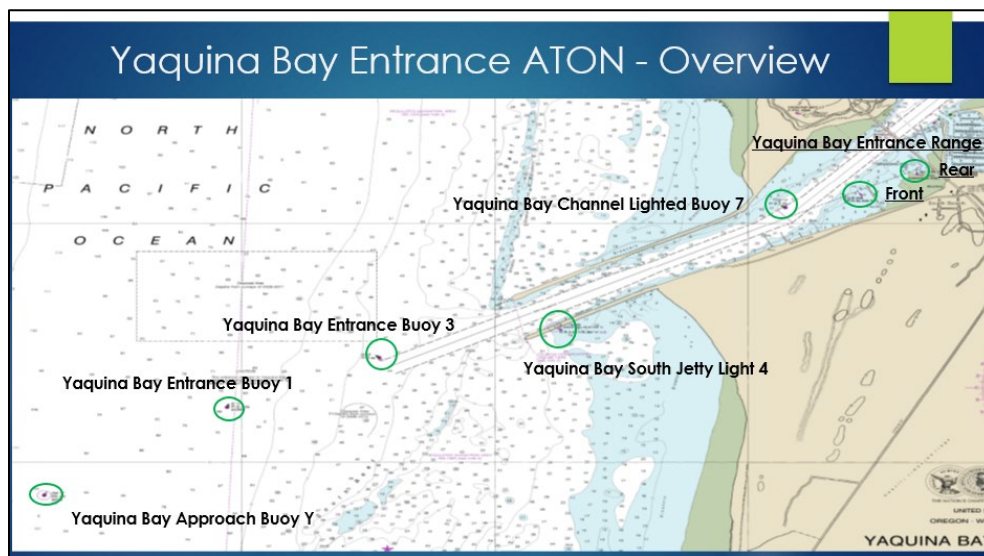


Figure 57. Aids to navigation associated with the MARY B II accident. This image depicts the total and charted aids to navigation on the Yaquina Bay Bar and channel. (Source – Coast Guard, CG Exhibit 052)

On the accident night, this was the configuration of the aids to navigation for the entrance to the waterway. As required by Coast Guard policy, a post-accident assessment of the ATON was conducted to document the aids' functional status and to ensure that the aids were working properly. All aids were examined and the image below indicates that status of the buoys, lights and ranges.

Due to the extreme sea conditions at this deep-water bar, there is difficulty in maintaining the aids on station, the ATON are susceptible to frequent damage. The International Association

of Marine Aids to Navigation and Lighthouse Authorities (IALA) mandates the various schemes that are used globally to mark waterways. In the case of Yaquina Bay Bar, the IALA convention requires top marks on certain ATON and on lights. IALA describes a top mark as, “one or more relatively small objects of characteristic shape or colour (or both), placed on top of a navigation mark (or buoy) to identify it.” In the case of the floating aids to navigation offshore of Yaquina Bay there are no top marks on the top of the buoys.

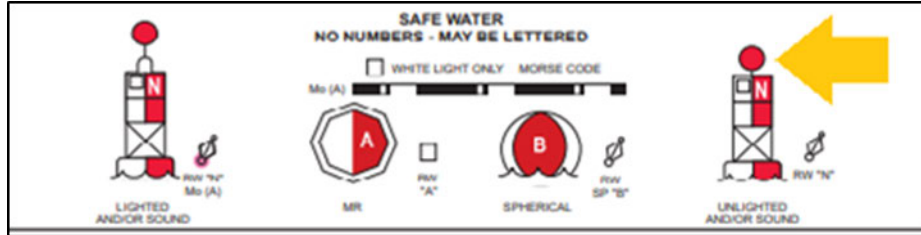


Figure 58. Image from a screen capture from the Coast Guard Light List showing a top mark (yellow arrow) which is a component of a buoy. Under normal conditions the furthest offshore buoy, “Y” buoy and others large buoys at Yaquina Bay would be equipped with a top mark. (Source – Coast Guard)

In the case of Yaquina Bay, the top marks on two of the offshore aids and the dayboards on South Jetty Light 4 were not installed and this was noted in the Coast Guard Light List, Volume VI, Pacific Coast and Pacific Islands. The Light List is updated anytime there are changes to the ATON such as discrepancies and changes to the ATON on the waterways. The image below indicates the notations about the principal ATON for Yaquina Bay Bar.

Yaquina Bay						
9575	- Approach Lighted Whistle	44-35-51.761N	Mo (A) W	5	Red and white stripes.	AIS: MMSI 993692047 (21). No topmark will be shown on this aid as required by IALA standards due to weather.
645	- Buoy Y	124-06-46.811W				
9580	- ENTRANCE RANGE FRONT LIGHT	44-37-08.018N 124-03-34.052W	Q R	25	KRB on multi-pile structure. On same structure as Yaquina Bay Channel Light 8.	Visible 1.5° each side of rangeline.
9585	- ENTRANCE RANGE REAR LIGHT 386 yards, 061° from front light.	44-37-13.566N 124-03-20.038W	Iso R 6s	52	KRB on skeleton tower on multi-pile structure.	Visible 1.5° each side of rangeline.
9590	- Entrance Lighted Gong Buoy 1	44-36-13.871N 124-06-03.359W	Fl G 2.5s	4	Green.	
9600	- Entrance Lighted Buoy 3	44-36-26.310N 124-05-27.408W	Fl G 4s	4	Green.	Maintained from May 1 to Oct. 1.
9605	- SOUTH JETTY LIGHT 4	44-36-33.906N 124-04-45.834W	Fl R 2.5s	17	4	Triangular skeleton tower on jetty. AIS: MMSI 993692048 (21). Due to heavy weather conditions, the dayboards have been permanently removed from this aid.

Figure 59. Extract of Coast Guard Light List VI for Yaquina Bay Bar showing the characteristic of the ATON for the waterway and various notations about the top mark and day board removal. (Source – Coast Guard)

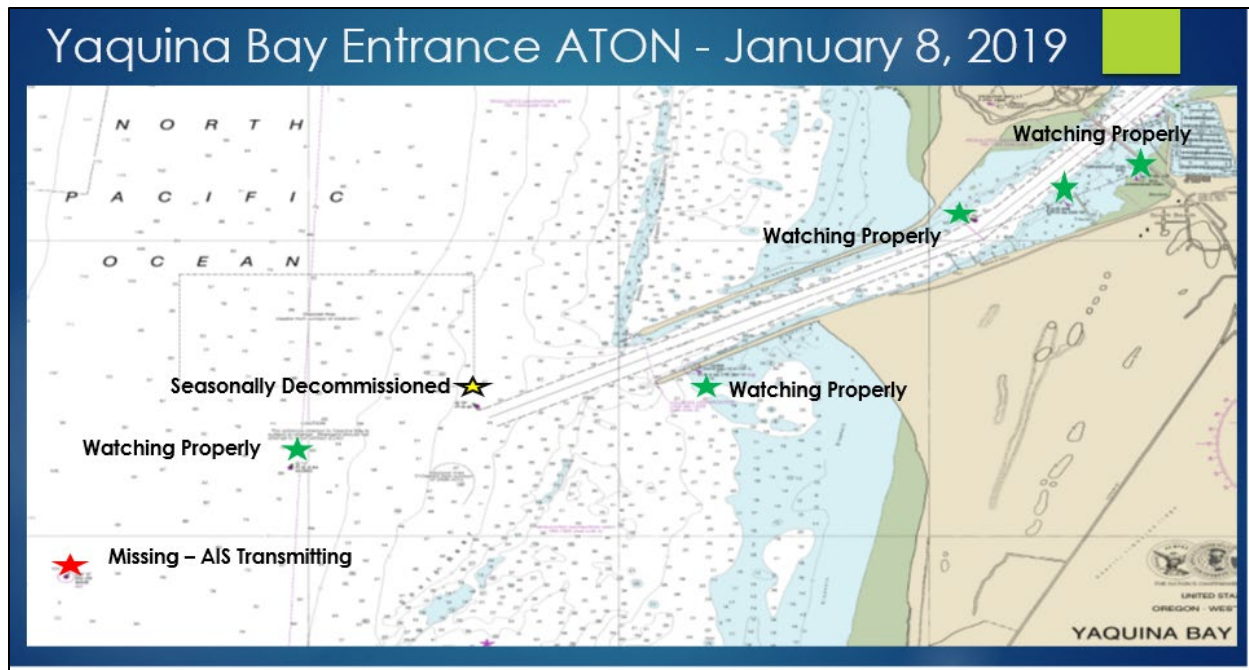


Figure 60. The status of ATON on the accident night. Note, lighted channel buoy 3 although listed as “seasonally decommissioned” the buoy had sunk and was reported missing in August 2018 and could not be recovered as of the accident date. Buoy “Y” was also sunk. (Source – Coast Guard, CG Exhibit 052)

Examining hearing testimony and the Coast Guard records maintained for these ATON, there is considerable difficulty in maintaining the floating aids on station. Multiple ATON have sunk. In the case of Approach Lighted Whistle Buoy “Y,” the physical aid was sunk at the time of the accident although there was an electronic aid to navigation called virtual AIS for the approach buoy.^{54,55} Entrance Lighted Buoy 3 is designated as a seasonal buoy and based on schedule would have been maintained from May 1 until October 1 of any given year.⁵⁶ Entrance Lighted Buoy 3 sank in August 2018. After it sank, the Buoy was not reestablished because of the lack of Buoy Tender resources with the appropriate heavy lift capabilities.

5.6.2. Both Buoys “Y” and “3” were documented as missing, located on the bottom, but were not hazards to navigation. There is one Coast Guard heavy lift buoy tender in the D13

⁵⁴ Aids to Navigation (ATON) may be enhanced by the use of an automatic identification system (AIS). AIS is a protocol for the broadcast or exchange of navigation information between vessels, aircraft, and shore stations. AIS ATON can autonomously, and at fixed intervals, broadcast the name, position, dimensions, type, characteristics, and status from or concerning an aid to navigation. AIS ATON are either physical (AIS-ATON messages are broadcast from a transmitter located on the buoy or beacon), synthetic (AIS-ATON messages are remotely broadcast, typically from shore, to the assigned position that corresponds with an existing buoy or beacon), or virtual (AIS-ATON messages are remotely broadcast, typically from shore, to an assigned position that has no corresponding physical buoy, or beacon).

⁵⁵ On February 5, 2019, “Station Yaquina Bay reported buoy sinking on December 10, 2018” was entered by District 13. A different entry December 2, 2016 by District 13 that stated “Installed AIS transmitter for electronic synthetic signal for Yaquina Bay Approach Lighted Whistle Buoy “Y”.”

⁵⁶ In examining the Aid’s historical documentation, Buoy “3” was established in June 19, 2018 by the CGC FIR. An entry was noted to state, the buoy was reported missing August 20, 2018. A NOAA vessel scanned for this ATON and found it located on station but on the ocean’s bottom.

area of operation. That vessel, the Coast Guard Cutter FIR, was undergoing extensive maintenance on the East Coast and there was no vessel available to locate, grapple, and hoist the sunken buoys for refurbishment. Re-establishment of the Approach Lighted Buoy “Y” and the recovery of Entrance Lighted Buoy “3” were projects that had to wait until a heavy lift buoy tender from another District and replacement hulls for the buoys were available or the Cutter replacing the Cutter FIR arrived. During the periods where these ATON were discrepant, mariners were made aware of these discrepancies through BNM and local notice to mariners (LNM) that would be updated when the ATON discrepancies were corrected or the conditions changed.

There is an extensive list of discrepancies for the floating ATON in the Yaquina Bay and other coastal bar offshore environments caused by that extreme weather and sea conditions and the operation of vessels in that area. Testimony indicated that there are no buoy types in the Coast Guard inventory that are specifically designed to withstand the large seas and breaking surf found at the bars along the coast and available for this purpose.

Yaquina Bay is not unique regarding the difficulty in maintaining ATON in these extreme environments. To illustrate this, one of two critical navigation buoys marking the approach to Depoe Bay, OR (Lighted Whistle Buoy 2) sank on January 4, 2019. In addition to a flashing red light, the buoy is equipped with a bell to assist mariners in periods of reduced visibility. There is a set of ranges marking the approach to the harbor but this buoy marks the edge of a rock shoal. Depoe Bay is also a RNA due to a hazardous bar and a narrow rock bounded entrance. This buoy is not a seasonal buoy and was reported missing and at the time of the May 2019 MARY B II Public Hearing it was still missing as there was no heavy lift buoy tender to raise and replace this buoy back on station.

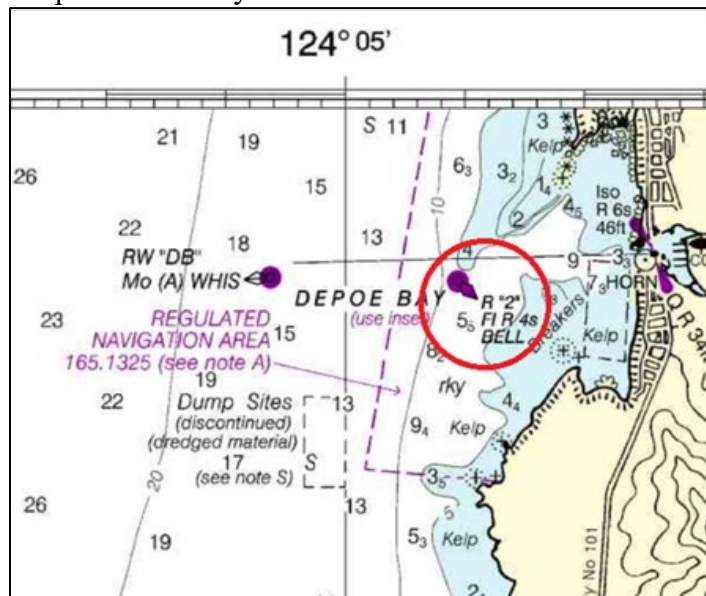


Figure 61. Depoe Bay approach buoys, the lighted buoy circled in red sank on January 4, 2019. Note the navigation ranges as magenta tear drop shapes in the right side of the image in the light yellow landmass. (Source – NOAA Chart 18561)

In the communications between the two escort vessels and in communications between the Coast Guard and the MARY B II, Entrance Lighted Buoy 3 is repeatedly referenced as a position or a marked reference point despite Buoy “3” not physically being present, as it was

seasonal, and in actuality it was sunk. Throughout the course of the escort communications, any reference to Buoy “3” was based on the knowledge of where the buoy was supposed to be located or by looking at a chart. That buoy, if present, was described as useful for determining distance to the jetty ends.

Entrance Lighted Buoy 3 was identified as a seasonal aid due to the fact that it had been so difficult to maintain on station. The buoy had been sunk repeatedly over the years either due to environmental action or vessel collisions. From 1964 until 1973, it was a continuous year-round buoy but there was a considerable discrepancy history with the buoy. In those 9 years, there were 19 discrepancies of various types. Buoys of this type are expected to be serviced annually. In 2006, there was another attempt to make it permanent after upgrading the lighting. In testimony, a variety of experienced local witnesses were asked about the importance of this ATON.

Q. In your opinion, does not having buoy 3 on station affect the safe navigation as a vessel prepares to enter the bar?

A. Yes, it is very advantageous to have it on location. It helps you pinpoint your position relative to the bar as you get closer.⁵⁷

One witness indicated that, in winter conditions, crab fishermen may have problems with Entrance Lighted Buoy 3 being on station due to it potentially being in the way during transits. The Commanding Officer at Station Yaquina Bay, an experienced Coast Guard vessel operator who has been in the area for 10 years, stated that it is very advantageous to have a physical Buoy 3 on station. In his opinion, it provides a visual reference and helps mariners pinpoint their position as they approach the bar.

The lack of the physical buoy at the charted location, in combination with numerous references from Coast Guard personnel and with the operator’s lack of experience with the Yaquina Bay Bar may have impacted the operator’s understanding of the MARY B II’s proximity to the hazards of the jetty tip.

5.6.3. South Jetty Light 4 located on the South Jetty is also vulnerable to the pounding of the breaking surf at Yaquina Bay.⁵⁸ At one time, there was a light on the North Jetty, designated as North Jetty Light 5. This light was removed in later 1980 due to the deteriorating condition of the rocks providing the foundation for the light structure, so the Jetty Light was relocated and established as South Jetty Light 4.⁵⁹ On the night of the accident, there was no light marking the North Jetty, providing visual reference to that hazard similar to the light on a tower located on the South Jetty which is also equipped with an AIS transmitter. To contrast the waterways between Yaquina Bay Bar and Barnegat Inlet, NJ, the frequent waterway used by the Operator of the MARY B II, both the rock jetties in Barnegat

⁵⁷ Mr. ████████ hearing testimony.

⁵⁸ Since 2016, this Aid was destroyed by inclement weather and sea state three times. The permanent aid has been reestablished on multiple occasions.

⁵⁹ Yaquina Bay North Jetty Light disestablishment records, CDR Harris hearing testimony.

Inlet were equipped with Coast Guard maintained lights, referred to as a gated pair of ATON on the jetties.

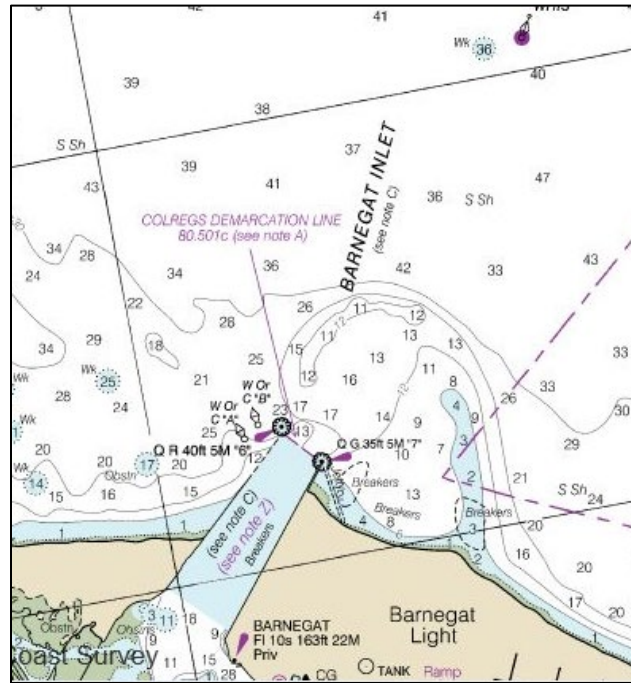


Figure 62. Screen capture of NOAA Nautical Chart 12323, Barnegat Light entrance, showing the pair of ATON lights with the magenta teardrop symbol that marks the jetties. (Source – NOAA Chart 12324)

However, the ATON structure of Barnegat Inlet differs significantly from Yaquina Bay. The extreme conditions of the Pacific Northwest, particularly the strong surf, prohibit the establishment and sustainability of ATON at the tips of the jetties. Whereas, on the East Coast, Barnegat Inlet is able to maintain lighted ATON on the jetty. In describing the lighting of the jetties in the Pacific Northwest, the Coast Guard Waterways Management witness stated:

Yeah, so we have 13 jetties up and down the Pacific Northwest in Washington and Oregon. Of those 13, nine have--are lit jetties, and all nine only have one jetty lit.⁶⁰

Due to the operator’s past experience, the absence of a light to mark the North Jetty may have contributed to confusion about how close he was to the unlit jetty. Instead, Yaquina Bay relies on a navigation range to mark the middle of the channel.

5.6.4. Lighted Navigation Ranges

During the escort and transit of the MARY B II into Yaquina Bay Bar, there was no discussion of using the ranges during darkness and reduced visibility. The lighted beacons that are specifically designed to mark the center of the channel. The ranges incorporate visual

⁶⁰ CDR Harris hearing testimony.

panels as seen below to let the mariner know if they are on the centerline of the channel or if they are right or left of centerline.

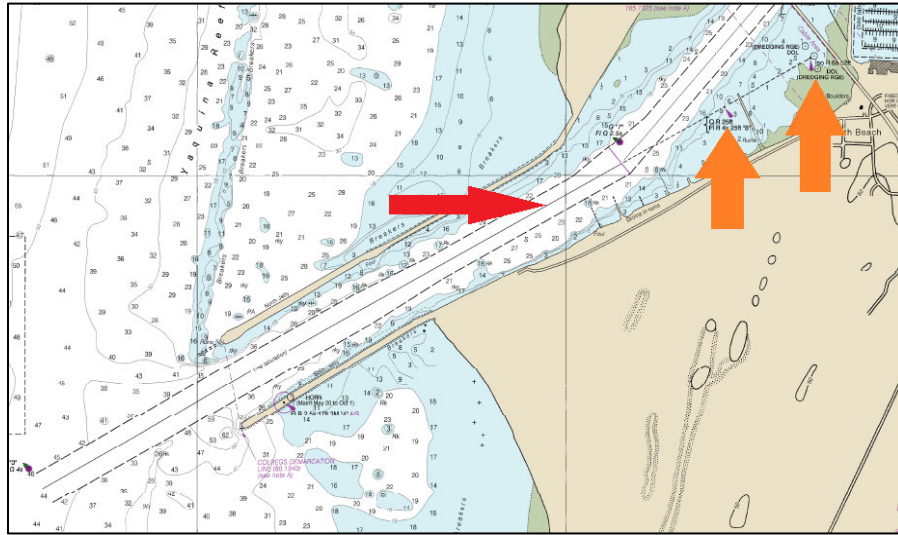


Figure 63. Screen capture of Chart 18581 showing the ranges lights (orange arrows) and the centerline of the navigation channel (red darker arrow) determined. (Source – Coast Guard, CG Exhibit 004 marked up with arrows for emphasis)

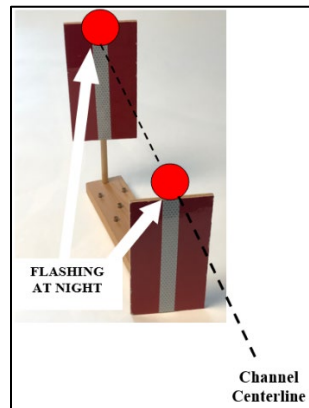


Figure 64. Coast Guard exhibit, range marker training aid. Showing the use of colored boards with vertical strips mounted on towers inside the harbor. If these two shapes were lined up as shown one on top of the other, the mariner would be on the centerline of the navigation channel. In this image if aligned with this page, the mariner would be to the left of the channel centerline and would need to steer to the right to realign the boards. (Source – Coast Guard, CG Exhibit 054, modified)

At night the mariner would rely on the range lights which flash a red light. In the case of the front range, it would show a quick flashing⁶¹ red and the rear range ISO⁶² 6 second red light. Testimony indicated that the color of range lights is determined by the need to differentiate the ranges if there is a conflict with background lighting.

⁶¹ Quick flashing means 50 flashes per minute +/- 10 flashes. Goal is 60 flashes per minute.

⁶² Isophase means a rhythmic light in which all durations of light and darkness are equal. In other words, the light is on as much as it is off.

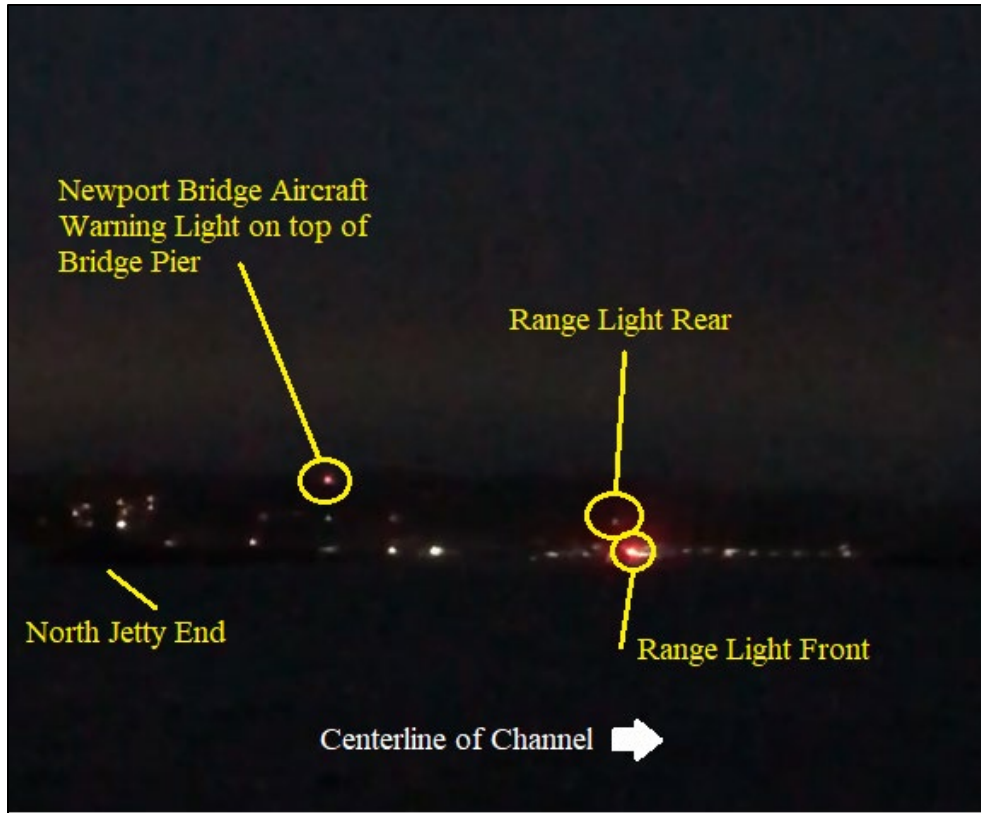


Figure 65. Cell phone image, post-accident at dawn prior to sunrise showing the entrance to Yaquina Bay Bar from near the North Jetty end and looking into the harbor approach. (Source – Coast Guard)

There is the possibility that the operator of the MARY B II experienced perceptual confusion on the red centerline navigation ranges marking the center of the channel and the center of the point between the two jetties. In the image above, the centerline of the channel is to the right of the white arrow in Figure 65. In the distance, the front range light is flashing red and slightly above that light and circled is the rear range light. To the left of the range lights, the Newport Bridge Aircraft Warning Light is also a flashing red light. When viewed from seaward, the front range and the red aircraft warning light on the top of the Newport Bridge pier form a range. The established rear range light for the range is much lower and of less intensity. The rear range light is visible but to those with limited local night transit experience this may cause conflicting information at a critical time. The location of the seaward end of the North Jetty in the photograph is indicated in the image.

(HYPERLINK # 9)

5.6.5. Waterway Assessment in Light of Particular Hazards Associated with the Bars

The Coast Guard conducts various surveys to periodically assess waterways in terms of the adequacy of ATON. This analysis, officially known as a Waterways Analysis and Management System (WAMS) study. WAMS studies often lead to adding or removing aids or alterations of technical aspects of the aids in order to meet changing needs of the waterway users. Critical waterways must be surveyed every 5 years; other waterways must have a

survey on file and be updated as needed.⁶³ A WAMS study was conducted in late 1995 for Yaquina Bay. A “mini” WAMS study was conducted in 2006 to examine the decommissioning of an aid to navigation in the area near Yaquina Bay, Yaquina Head Lighthouse. As the Coast Guard moved to enact the rulemaking for the RNAs they conducted meetings with waterway users and solicited public comment on the establishment of those RNAs. These outreach activities coupled with the solicitation for comments were more focused on management of the waterway user and did not seek to address all the comprehensive issues related to the regulated portion of the waterway at Yaquina Bay or the other RNAs. The ATON for the waterway were not examined to determine if those aids were adequate for the unique risks associated with the hazards of bar crossings.

The Coast Guard uses another tool to evaluate the risks associated with waterways. This is called a Port and Waterways Safety Assessment (PAWSA) and it is a risk assessment process to identify major waterway safety hazards, estimate risk levels, evaluate potential mitigation measures, and set the stage for implementation of selected measures to reduce risk. The process involves convening a select group of waterway users and stakeholders and conducting a two-day structured workshop to meet these objectives. A sponsor (for example, a Captain of the Port) is required to initiate and manage the workshop, however, the process must be a joint effort involving waterway users, stakeholders, and the agencies/entities responsible for implementing selected risk mitigation measures.

In the 1996⁶⁴ WAMS, the waterway was categorized as “non-critical.” This classification was changed in 2003 to “navigationally critical” though, while not required, no WAMS study was conducted to assess the conditions of the waterway in relation to Aids to Navigation and other considerations at the time of re-designation. When the RNA for hazardous bars was established, it was because these waterways required additional regulation to ensure safety of life. In 2009, the Coast Guard recognized the risks of that area and took action to mitigate the risks to waterway users by establishing RNAs for hazardous bars. Identification of this risk at this point did not prompt the Coast Guard to conduct a WAMS survey to reassess the adequacy of the existing ATON configuration. The waterway classified as “navigationally critical” would prompt the Coast Guard to examine the effectiveness of the Aids to Navigation in the waterway and it would slightly increase the priority to respond to Aids to Navigation outages and other related issues that affect navigation.

There is no interim assessment tool that has been used to determine if the Coast Guard is comprehensively managing the waterway to reduce the risks associated with the hazards of the bars. There is no harbor safety committee for the port of Newport, Oregon.

5.7. Effects of the Commercial Pressure on Fishing Operations and in Particular the Dungeness Crab Fishery

Commercial pressure in fishing, in general, is divided into two distinct areas of adverse effects. The first is the existing commercial environment related to season lengths, start dates, vessel

⁶³ Coast Guard Commandant Instruction M16001.1.

⁶⁴ The WAMS was conducted in late 1995. Testimony indicated that the survey was labeled as the Yaquina Bay WAMS Study 1996.

overhead costs, regulations, price for the catch and other factors. The other area is the effect of commercial pressure on vessel operations. A vessel operator must fish efficiently to make money. In the case of the Dungeness crab fishery, the operator of a vessel must know how to rig traps, position and haul traps and understand the challenges of the bar crossings and the hazardous winter Pacific Northwest weather. Both of these areas of commercial pressure were to have an effect on the MARY B II, competing against the safety needs of the operation.

Dungeness crab fishing is a highly competitive business. NOAA defines “derby” fishing as a fishery of brief duration during which fishermen race to take as much catch as they can before the fishery closes.⁶⁵ The Washington, Oregon, and California Dungeness crab fisheries do not neatly fit into this definition as it is a fishery that is often open for nine months of the year, however, parts of the fishery take on “derby” like qualities. Since 1995, the fishery in Oregon has operated under a limited entry permit system which capped the number of vessels allowed to participate. In 2006, pot limits were implemented as another control measure for the fishery, which designated the amount of gear each permitted vessel could use. Both policies were designed and implemented to reduce overcapitalization in the fishery. However, the fishermen compete for the catch and the best possible market price.⁶⁶ At the start of the crabbing season, Dungeness crabbing operations are highly competitive due to the demand for the product. Nearly all crabbing vessels head to sea in the early part of the season to compete for crab and maximize profits through long hours of gear preparation, tending traps, and harvesting catch. The season start is regulated and the season usually starts before the winter holidays and New Year to allow fishermen to for Holiday demand and higher crab prices for the first boats unloading at the docks. Crabbing remains competitive through the remainder of the season. The equally dangerous Bearing Sea crabbing operation has reduced the competitive aspect of this operation by instituting “quota” crabbing. In some types of fisheries, such as some of the crab rationalization for harvesting crab in Alaska,⁶⁷ commercial pressure is somewhat alleviated by assigning each entity a quota. This is not the case in the Oregon Dungeness crab industry. The opening of the season and the harvesting of crabs can be influenced by a toxin in the crabs. Biologists monitor the crabs for this toxin. Once the toxin level is safe for the public then the State will identify the start of the season and crabbers are authorized to set their crab gear 72 hours before the start of the season. The season started late in 2018-2019.

The fish holds of the vessels are examined to ensure there is no catch aboard the vessels prior to the approved fishery opening. A hold inspection surge operation was conducted for the industry in Newport starting at noon on January 3, 2019, and the MARY B II was one of the vessels whose hold was examined. When questioned about commercial pressure in the industry, an Oregon official explained about the fair start provisions in guidance from the State of Oregon for the crab fisheries:

Q. Based on your experience, do those delays impact commercial pressure on vessel operators to get out there?

A. Yes.

Q. Can you expand on that?

⁶⁵ *Olympic Fishing, Race-to-Fish*

⁶⁶ Oregon Department of Fish and Wildlife, <https://www.dfw.state.or.us/MRP/shellfish/commercial/crab/index.asp>

⁶⁷ USCG F/V DESTINATION Report of Investigation

A. The fishermen are crabbing to make money. So the later in the season, they're losing money. There's also some concern with the holiday seasons. People want crab for New Year's and Christmas. So if the fleet can't get out and fish, you know, for crab during that time, that could affect the price of the crab and the demand for crab. So that was a concern this year for the fleet, for sure, because they were missing out on the Christmas market.



Figure 66. Crew (Mr. Porter on deck with arms extended) of the MARY B II unloading crab catch at a commercial fish processing dock. Taken January 2019. (Source – Newport News Times)

The MARY B II could fish 300 pots and there is no evidence that any pots were aboard the vessel at the time of the accident, though the precise number is unknown. Prior to the MARY B II's transit from the fishing grounds to the Yaquina Bay Bar on January 8, 2019, the vessel was going from pot to pot, and the crew would have been harvesting crabs and rebaiting traps. They would then transit to shore to sell their catch, get bait and refuel as necessary to continue fishing the traps that were located on the crabbing grounds.

Examining the potential impact of commercial pressure onboard the MARY B II, testimony⁶⁸ indicated that the captain was new to this particular crabbing industry and had rigged the buoy lines to the crab buoys backwards. The witness asked the MARY B II local crewman who was aboard when the pots were put overboard, why this situation was not resolved. During testimony, she said the crewman stated that there was not enough time to correct the gear for each pot. Failing to fish efficiently and rig gear properly would lead to a longer time on the fishing grounds than the experienced local boats that had retreated to the safety of the harbor as the gale conditions built offshore.

5.8. Weather Forecasting and Actual Conditions Encountered at the Yaquina Bay Bar

On the night of the accident, there was only about 6% of the moon visible. The minimal illumination provided by the moon that night, in its waxing crescent phase, combined with overcast skies to create an environment of poor visibility.

⁶⁸ Ms. [REDACTED] Hearing testimony.

The weather was deteriorating as the accident day progressed towards the time when the inbound voyage of the MARY B II commenced. The forecasted weather was aligned with the weather that was observed and the required warnings to mariner were issued by marine radio, weather radio broadcasts, bar condition reports. A gale warning was in effect for the outer waters offshore with increased winds 25-35 knots with 45 knot gusts and building seas. As the conditions changed, the Coast Guard began broadcasting radio reports warning of the deteriorating bar conditions. There was an exception to the accuracy of observations at the bar near the last period of daylight on the accident day. In hearing testimony, the Commanding Officer of Station Yaquina Bay stated:

*The first vessel across was the LISA MELINDA. And as they were crossing, they called us and told us that our bar report was not accurate. So we got underway immediately to get an accurate bar report.*⁶⁹

The bar report which was reported as not being accurate by the LISA MELINDA is below and the Coast Guard send boats to observe the bar and update the observed bar conditions.

*JETTY TIPS: 4-6 FOOT EBB CHOP. MAIN CHANNEL: 4-6 FOOT LONG OCEAN SWELLS, WINDS: EAST AT 10-15 KNOTS, VISIBILITY: CLEAR AND UNLIMITED. THE BAR IS CURRENTLY RESTRICTED TO ALL RECREATIONAL AND UNINSPECTED COMMERCIAL PASSENGER VESSELS AT BUOY #7.*⁷⁰

The weather for that area was forecasted and communicated to mariners in a variety of ways. Furthermore, the weather was observed as deteriorating by other mariners who made decisions to come in earlier with more favorable sea state and wind conditions. Commercial pressure at the start of the Dungeness crab season was applied equally to all the fishermen in the area yet they recognized the dangers associated with this hazardous bar in combination with the forecasted weather conditions. Based on the available evidence, the operator of the MARY B II either had difficulty with the crabbing equipment, in effect taking longer to harvest his catch or he failed to fully take advantage of the forecasted warnings for the deteriorating weather. The MARY B II was the only vessel remaining offshore after the local operated vessel LAST STRAW crossed the bar shortly after dark.

5.9. Oversight and Regulation of the Commercial Fishing Industry

5.9.1. Credentialing and Licensing

The commercial fishing industry operates thousands of vessels on the waterways of the United States as well as the offshore waters. These vessels operate on the nation's critical waterways alongside tankers carrying hazardous cargoes, high capacity cruise ships, towing vessels and in close proximity to critical infrastructure such as bridges, locks and other infrastructure. The table below shows the requirement for some level of credential or

⁶⁹ BOSN [REDACTED] hearing testimony.

⁷⁰ CG Exhibit 018.

certification to operate a vessel. The state requirement for Oregon is also included for recreational vessels as the accident occurred in Oregon.

Requirements for Vessel Types as of January 2019

	Recreational Vessel	Uninspected Passenger Vessel	Small Inspected Passenger Vessel	Towing Vessel	Commercial Fishing Vessel Less Than 200 GRT	Commercial Fishing Vessel Greater Than 200 GRT
USCG Credential or License for Competency ¹	No	✓	✓	✓		✓
Operator's License from State of OREGON	Yes, Oregon (see footnote 2)	N/A	N/A	N/A	N/A	N/A
Medical Examination for Medical Fitness	No	✓	✓	✓		✓
Drug and Alcohol Testing	No	✓	✓	✓	²	✓
Suitability Background Check	No	✓	✓	✓		✓
Minimum Age	³	18	18	19,21 ⁴	None	21

¹ written examination and First Aid/CPR training is required (with possible exceptions)

² If any crew has USCG credential or license

³ OREGON LEGISLATION 830.088 Operation of motorboat by person 12 to 15 years of age. A person 12 to 15 years of age with a boating safety certificate may operate a motorboat with an engine of 10 horsepower or less. In addition, a person 12 to 15 years of age with a boating safety certificate may operate a motorboat with an engine greater than 10 horsepower if accompanied by and under the direct supervision of a parent, guardian or responsible person 16 years of age or older who possesses a boating safety certificate. [1999 c.716 §5]

Note: See note under 830.082 830.090 Operation of motorboat by person 16 years of age or older. A person may operate a motorboat with an engine greater than 10 horsepower if the person:

(1)(a) is at least 16 years of age; and

(b) Obtains a boating safety certificate pursuant to ORS 830.086; or

(2) Is accompanied by and under the direct supervision of a person 16 years of age or older who has obtained a boating safety certificate pursuant to ORS 830.086. [1999 c.716 §6]

⁴ For mate of towing vessels it is 19, and for mate or master of fishing industry vessels, master of towing vessels, and master 100 GRT, it is 21. See 46 CFR 11.201(e).

Figure 67. Table showing the requirements for mariner to operate various vessel types. (Source – Coast Guard)

The maneuverability, navigation, seamanship, and safety concerns associated with CFVs are the same as those for other vessels listed in the above table. Depending on the type of fishery, these concerns are actually heightened for CFVs compared to passenger vessels, for example. Yet, there is no requirement for licensing of personnel operating or forming part of the crew on CFVs.

Other vessels in commercial service such as small passenger vessels, tugs, tankers, container ships all require certain types of mariners with Coast Guard issued credentials. A requirement to hold a Coast Guard issued merchant mariner credential (MMC) involves medical certifications and minimum age requirements. The credentialing process also requires a person to undergo a suitability assessment to determine if the individual has any issues that under federal law and regulations would prevent the issuing of a credential, for example driving under the influence, drug convictions, or certain criminal activities. The goal of this program is to ensure that commercial mariners do not pose a threat to the nation's waterway

and shore side infrastructure in the operation of a vessel. There is no similar requirement for CFVs under 200 GT.

There are no requirements for a minimum age in the operation of a CFV. During the public hearing, witnesses attested to having started their careers at a young age, as early as eight and 16 years old. Having operators and crewmembers who are that young on vessels involved in such high risk and hazardous fisheries is a monumental safety risk. The negative effects of this lack of age restrictions have not been measured because occupational safety experts are not allowed, by law, to include minors in their studies. Hearing testimony from a NIOSH representative highlighted the seriousness of this issue.⁷¹

5.9.2. Training Requirements for CFV Operators

The Coast Guard Authorization Act of 2010 (Public Law 111-281) added a subsection in 46 USC § 4502 that requires an individual in charge of a CFV that operates three nautical miles beyond the territorial sea baseline to pass a training program and hold a certificate issued under that program. The training program must address certain topical areas and it must be based on professional knowledge, skills, and competencies that includes, but are not limited to: training in seamanship, stability, collision prevention, navigation, firefighting and prevention, damage control, personal survival, emergency medical care, emergency drills, and weather; require an individual to demonstrate ability to communicate in an emergency situation and understand information found in navigation publications. The proposed training program also must recognize and give credit to the individual seeking this certification for recent past experience in fishing vessel operation.

Enacting the provisions in 46 USC§ 4502 and seeking fishing industry input on that effort would create a process to document the competency of the people that operate the smaller commercial fishing vessel on our busy and congested waterways. It would also create a pathway to professionalize the marine operations of the commercial fishing industry. Establishing a training certificate that would be valid for 5 years after which some form of refresher training will be required to keep the certificate of competency current.

As an example, the existing safety equipment requirements call for Coast Guard Light Lists and the Coast Pilots. Both documents contain important and updated information for mariners. At this point, there is no requirement to determine if a commercial fishing vessel operator knows how to use and extract information from those tools. The establishment of operator competency outlined in the Authorization Act may have closed the gaps that contributed to this casualty such as seamanship, familiarity with the waterways, understanding navigational information in publications, and the significance of maritime weather's impact on the risks to vessel operations.

The regulations, policies, and procedures to put this training requirement and resultant certification in place have not been established.

⁷¹ Dr. [REDACTED] hearing testimony.

5.9.3. Dockside Safety Examination Program

The Coast Guard conducts dockside safety exams which examine safety and lifesaving equipment and other critical systems. The Coast Guard supports and requires that certain crew have safety and survival training and the crews conduct safety drills.

The MARY B II was constructed of wood and built in 1957. There is no requirement at present for the inspection of the material condition of CFVs, like the MARY B II. These vessels may have commercial marine surveys periodically but these surveys do not typically examine the material condition of the vessel's hull, engine and other critical equipment unless an observation is made in the course of the survey and the surveyor brings that condition to the attention of the owner in the survey report. There are no regulations for a vessel such as the MARY B II for modifications in design, construction materials, and stability. Another area where the CFV Examinations lack rigor is the absence of a requirement to verify whether drills were conducted with the crew, in other words, there's no requirement to log the drills so nothing the examiner can review to ensure the requirement is met.

Additionally, there is no adequate or practical requirement for lookout and standing a proper watch. During hearing testimony, the CFV Examiner highlighted this issue stating that fishing vessels need a proper lookout, but can be underway for days without restriction and the operator can be the sole person onboard. When asked how a vessel can maintain a proper lookout when the vessel is underway for three days straight with only one operator onboard, the witness agreed that it could not be done.⁷²

At Yaquina Bay, uninspected passenger vessels and recreational vessels are subject to restrictions based on the conditions at the bar. It is important to note that the majority of these vessels are given hull identification numbers. In the case of recreational vessels, those vessels are subject to federal regulations in a host of design considerations such as transom height, weight restrictions, flame arrestors, etc.

Taken as a whole, the lack of regulation and oversight of the commercial fishing industry results as a latent unsafe condition (LUC) to the crews of these fishing vessels and in countless Coast Guard and other agency interactions to search for, tow, rescue and respond to fishing vessel accidents. These accidents endanger the rescue crews and result in the tragedy of missing, dead and injured fishermen.

5.10. Loss of Situational Awareness Aboard the MARY B II

5.10.1. At approximately 9:57 p.m., the MARY B II began the approach to the Yaquina Bay Bar with the VICTORY following astern and the CG 47266 inside the jetty tips marking the approximate center of the channel. Based on the OSU marine X-Band radar plot, the MARY B II was slightly to the left of the center of the channel. At approximately 10:04:30 p.m., the MARY B II began a slow movement towards the North Jetty tips and the submerged jetty tip. The cumulative effects of the wind, seas and the north setting coastal current would influence

⁷² Mr. ■ hearing testimony.

the movement of the vessel. OSU prepared a chart⁷³ showing the effects of the current and the general set of the current is to the north or north-northwest at approximately 0.5 knots. From 10:04:30 p.m. until the time that the MARY B II was observed to capsize shortly after 10:07 p.m., the vessel moved slowly off the centerline of the channel to the northeast and the end of the North Jetty.

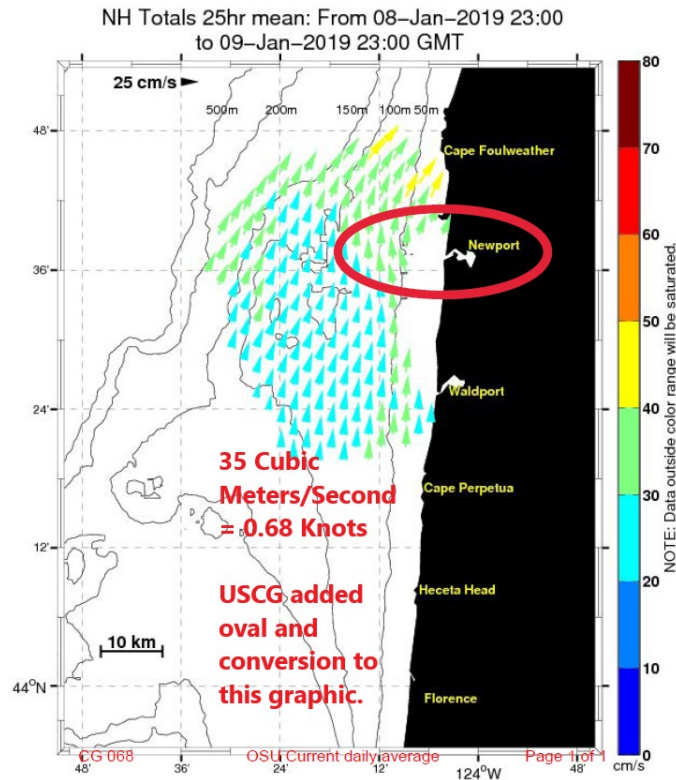


Figure 68. Image showing the current velocity and generally northward direction off the Oregon Coast on the night of the accident. Red circle highlights the Yaquina Bay Bar. (Source – Coast Guard, CG Exhibit 068 with CG labels)

Critical events along the transit track for the MARY B II were:

Both VICTORY and MARY B II are slightly left of the centerline of the YAQUINA BAY BAR channel.

- 09:57 PM MARY B II begins inbound run to Yaquina Bay Bar
- 09:58 PM VICTORY tells CG 47266 “.....this guy is not riding good in the water. Like he’s not a very stable boat, hes [sic] got on outrigger halfway out,...”
- 10:00 PM MARY B II “Yeah, I see your blue light there, I’m working my way to the North side here now.”
- CG 47266 “Roger captain, uh I advise that you don’t work over to the North too soon. Uh it is starting to break on that North side on the dumping grounds. And there is also a wrap around break on the North side of the channel. Over.”

⁷³ CG 068 OSU Current Daily Averages 08 Jan 2019.

MARY B II “Yeah I got you guys, alright. Lemme pay attention here, cause so many vessels here now I got AIS going off on my Plotter here. Clogging it up.”

10:03 PM VICTORY identifies speed as “two knots”

10:04 PM VICTORY warns MARY B II that there is a 16-footer building “behind you”

MARY B II having moved to the center of the channel starts moving off the center of the channel and towards the submerged portion of the North Jetty

10:05 PM CG 47266 communicates sea state to VICTORY and suggests that MARY B II might want to go bow in and stem the seas or push all the way in.

VICTORY calls out that “This is the set right here” twice and the MARY B II acknowledges “Yeah roger, roger, I see it”

10:06 PM CG 47266 “You’re looking like your heading very, very far north right now. You might want to come south just a little bit.” VICTORY calls out danger and tells the MARY B II to come to starboard twice.

As the MARY B II started the inbound run in the Yaquina Bay Bar channel, the seas were breaking at heights up to 14-16 feet and in a manner that was dangerous. During the preliminary radio communications with the CG escort boats the only communications to the CG was that first there were lifejackets available and then as the inbound transit began the Operator said the crew was putting on lifejackets. There was no communication to the CG escorts about how the MARY B II would make the transit, station a lookout, speeds for the transit or any indications about problems that might restrict the speed of the vessel like the potential for line entanglement in the propeller or rudder.

5.10.2. Lookout Onboard the MARY B II Observing Following Seas

It is a good marine practice that while crossing a bar, operators of CFVs will station a crew person at a rear facing position to watch the breaking waves and relay information about the timing, character and speed, or force, to the person steering the vessel. There is no evidence available to confirm whether a lookout was posted on board the MARY B II on the night of the accident. VICTORY was several hundred yards astern of the MARY B II and was essentially acting as a lookout and giving information on incoming sets over the radio during inclement weather.

The physical location of the crewmen of the MARY B II leading up to and at the time of the capsizing is uncertain. CG witness observations indicated that no persons could be seen on the MARY B II’s deck during the escort evolution. There was also testimony the CG personnel could not see inside the MARY B II’s wheelhouse. It is probable, given the weather conditions, both of the crew were inside the wheelhouse with the operator. The operator of the MARY B II might have reasoned that there was no need for a lookout given that the CG was present and providing sea condition observations and an escort. It is also possible that one or both of the crew were located near the only door to the wheelhouse, acting as a lookout.

5.10.3. Crewmembers Entered the Water

Alternate possibilities exist for the reason the two crew entered the water and this investigation was unable to determine how this occurred with the available evidence. The door may have been slightly open as a crewmember was standing inside the cabin while calling out wave information. Their proximity to the door could be a reason the two crew were washed out of the cabin and into ocean. There is a possibility that the crew could have attempted to jump from the vessel as the MARY B II was in extremis and the impending series of large waves was about to impact the vessel. The crewmen could have been washed out of the MARY B II if the door to the wheelhouse was closed at the time of the capsizing but the forces acting on the wheelhouse as it rolled in the water caused the door to wrench open and the crewmembers were swept out of the wheel house and into the water.

5.10.4. Port Outrigger Partially Deployed

At 9:58 p.m., the VICTORY noted that one of the MARY B II's 45-foot long outriggers was partially out and testimony indicated that the Coast Guard crews did not observe a stabilizer vane or "bird" in or near the water. There is no way to determine if the crew saw the outrigger partially out and this caused a distraction or a reduction to maneuverability during the critical portion of the inbound transit.

5.10.5. AIS Targets Clogging the MARY B II Chartplotter

Following an examination of the available evidence, the investigation has concluded that the MARY B II had an electronic chartplotter that was capable of displaying AIS vessel targets on an electronic chart screen in the vessel's wheelhouse. The MARY B II was not capable of transmitting an AIS signals. The captain had ordered an ICOM® marine radio that was also capable of receiving AIS transponder information and along with that equipment he ordered a VHF/AIS antenna and a Garmin® NMEA 2000 interface cable which would connect the ICOM® marine radio with the AIS capability to the 10 inch color chartplotter. As the MARY B II was approaching the bar, the display unit most likely would have displayed several AIS targets on the electronic chart. Depending on the display settings and chart scale for the navigation chart being utilized on the screen, the VICTORY, CG 47266 and South Jetty Light 4, which was equipped with virtual AIS ATON would be displayed. Entrance Lighted Buoy Y's position would have displayed on the chartplotter depending on the scale settings because a virtual AIS signal was being transmitted to electronically mark the location of the entrance buoy.

The marine radio that was equipped with an AIS receiver was purchased on December 4, 2018. It is not known when the equipment was installed on the vessel and connected to the existing chartplotter. As a result of the installation of this new equipment the operator would have to familiarize himself with the details of the operation of that new equipment.

5.10.6. Coast Guard Vessels' Impact on the MARY B II Through Use of MK-127 Illumination Parachute Flares

The VICTORY communicator who is the Commanding Officer of CG Station Yaquina Bay made the following statement during questioning at the hearing:

And then once an escort begins, it's best to keep the communication to a minimum other than us reporting the series, talking about lighting off flares. And the reason we do that is because you could easily distract someone as they're trying to cross the bar.⁷⁴

During the inbound transit of the vessels both Coast Guard vessels fired night illumination into the night sky. There was virtually no ambient light to illuminate the hazards along the transit on this accident night. Prior to the transit starting at 9:47 p.m., the VICTORY told the MARY B II crew that they would be putting up the flares. The flares are launched near vertically and provide bright, intense white light that lasts approximately 36 seconds as the flare descends under a small parachute. Although the launching of the flares might be viewed as distracting the flares were an essential tool to provide illumination on an overcast night with little moonlight.



Figure 69. Screen capture from Oregon State Police closed circuit TV camera located in the vicinity of the South Jetty showing the illumination provided by the descending flares. To the right you can see the visible portion of the North Jetty (Source – Coast Guard, CG Exhibit 032 screen capture)

At approximately 10:00 p.m., the captain of the MARY B II made the following statement below and as a result the Coast Guard vessels sought to reduce communications to prevent distracting the operation of the vessel during the critical phase of the inbound transit.

“Yeah I got you guys, alright. Lemme pay attention here, cause so many vessels here now I got AIS going off on my Plotter here. Clogging it up.”

5.10.7. Incapacitation of the Crew

At approximately 10:05 p.m., the VICTORY called out to the MARY B II on the radio “this is the set right here” twice and the MARY B II answered, “Yeah roger, roger, I see it.”⁷⁵ The managing owner identified the speaker in these radio calls to be captain Biernacki. There

⁷⁴ BOSN [REDACTED] hearing testimony.

⁷⁵ CG Exhibit 008.

were no other communications from the vessel made by other personnel. In the post mortem medical examination of the captain, the attending physician noted a laceration on the scalp and in the hearing testimony noted:

*The scalp laceration showed no swelling. It didn't show any opening or underlying spread of tissue. It was bleeding minimally, and scalp lacerations typically bleed more in people that are actively pumping. It was my opinion that was a postmortem scalp laceration.*⁷⁶

There were not significant findings that would be associated with an incapacitating injury for the captain of the MARY B II.

During the escort, Coast Guard personnel did not see anyone on the deck of the vessel and could not see into the vessel's wheelhouse. There is no way to determine if there was any action that caused incapacitation of one or more of the crew.

5.11. Impairment of the MARY B II [REDACTED]

5.11.1. The commercial marine industry as a whole subjects the persons who operate those vessels on America's busy and congested critical waterways to drug and alcohol programs intended to insure that drugs and alcohol are not used while operating those vessels. This is not the case for CFVs. Mariners on other commercial platforms are generally subjected to pre-employment, random, post-casualty and reasonable cause testing for drugs and, in the case of alcohol, post-casualty and reasonable cause. There are serious enforcement penalties for the use of drugs and alcohol onboard commercial vessels. In the 2014 case of the F/V NO LIMITS, the captain of the NO LIMITS was charged with Seaman's Manslaughter and pleaded guilty to drinking alcohol, smoking marijuana and then taking Oxycontin® which he purchased from street dealers. Had this drug been legally prescribed the patient information warning for this drug would have stated:

OXYCONTIN® may impair the mental or physical abilities needed to perform potentially hazardous activities such as driving a car or operating machinery. Warn patients not to drive or operate dangerous machinery unless they are tolerant to the effects of OXYCONTIN® and know how they will react to the medication.”

The accident resulted in the death of the two crewmembers on that fishing vessel in New England waters in November 2014.

In typical commercial marine operations, Coast Guard policy⁷⁷ for mariners discusses the use of prescription drugs or misuse of these prescriptions and the adverse effects on performance of common over-the-counter medications. An example of these over-the-counter medications would be sleep-inducing aids. The Coast Guard's posture on all forms of medications is:

⁷⁶ Dr. [REDACTED] hearing testimony.

⁷⁷ USCG Navigation and Inspections Circular 04-08, Enclosure (4) Medications.

The nature of shipboard life and shipboard operations is such that mariners may be subject to unexpected or emergency response duties associated with vessel, crew, or passenger safety, prevention of pollution and maritime security at any time while aboard a vessel.

The CFV industry is not broadly subjected to drug and alcohol testing as a preventative safety measure. There is nothing that would prevent a fishing vessel owner from using drug and alcohol testing as a means to reduce the risks of accidents caused by the use of drugs and/or alcohol onboard their vessels. CFVs over 200 GT require Coast Guard credentialed mariners in certain positions such as masters, mates, and chief engineers and those vessels are required to have a drug and alcohol testing program in place. Required drug testing would include pre-employment, random testing of the crew, post casualty and reasonable cause. That safeguard is in place to mitigate the risks of drugs and alcohol onboard a vessel. This is not required on vessels less than 200 GT so this was not the case onboard the MARY B II.

5.11.2. After a marine casualty such as a sinking or grounding marine employers of commercial vessels are required to conduct drug and alcohol testing. Had the crew of the MARY B II survived, post-accident testing would have been required.

During the hearing, the Medical Review Officer (MRO) and impairment expert was asked:

Q. Based on your experience, are the navigation, seamanship and operational control duties or functions for a commercial vessel-- fishing vessel any different than they are for let's say a tugboat or a ferryboat or large passenger vessel?

A. No, they should be the same.

The safe operation of any vessel is dependent upon an alert operator who is able to make timely and critical decisions. Whether that vessel is a CFV or a passenger ferry, the standards for operating safely should be uniformly applied, as the negative consequences of an operator's impairment may be devastating.

To ensure the safety of personnel and vessels in this dangerous industry some owners require the crew to sign a crew contract and crew contracts which have provisions or clauses that require that crew persons not use drugs or alcohol while aboard the vessel.

In the case of the MARY B II, the medical examiner conducted a gross examination the bodies of the deceased and drew toxicology samples in accordance with the protocols and procedures in place at the time. The chain of custody for the samples was maintained and the samples went to the accredited Department of State Police Forensic Laboratory for analysis.

Post mortem toxicology results for the three deceased crew are indicated in the graphic below:

Crew Toxicology Post Mortem Results

Captain Stephen Biernacki
Alcohol - Ethanol 0:033 g/dL (+/- 0.002 g/dL) , Acetone – Not Detected

Amphetamine 0.17 mg/L (± 0.02 mg/L)
Methamphetamine 0.50 mg/L (+/- 0.05 mg/L)

Crew James Lacey
Alcohol — Ethanol - Not Detected, Acetone – Not Detected
Cannabinoids

Crew Joshua Porter
Alcohol - Ethanol - Not Detected, Acetone – Not Detected
Toxicological examination fails to confirm the presence of controlled substances or
common pharmaceuticals.

Figure 70. Extract of Public Hearing introductory presentation, CG Exhibit 001, page 5 showing the toxicology results for the crew. (Source – Coast Guard, CG Exhibit 001)

Scientific literature⁷⁸ indicates that there is a potential for raising of the levels of post mortem methamphetamine and the associated amphetamine levels based redistribution of those substances post mortem and the location and type of specimen draw. This scientific literature does not dispute the finding that the operator of the MARY B II tested positive for methamphetamine, an illegal and dangerous drug. Methamphetamine is classified by the U.S. Drug Enforcement Administration as a Schedule II drug, which makes it available only through a non-refillable prescription. This drug can be medically indicated for the treatment of attention deficit hyperactivity disorder (ADHD) for which prescriptions are rarely written. The street version of this illegal drug is usually acquired through illicit street sales which are illegal. This would subject the seller and the buyer, and in the case of the MARY B II's operator, to arrest and punitive sanction, if convicted.

The effects of methamphetamine on the critical decisions of the operator are profound. The issue of impairment was further explored during the public hearing. A MRO was asked what actions would be taken if this substance was detected in a credentialed mariner on a commercial vessel and stated:

Q. So looking at these results⁷⁹, let's say that they come from someone who is on a 68-foot commercial small passenger vessel that operates under a merchant's mariner credential let's say out of Newport, Oregon. What would happen to that mariner based on these results?

A. As a medical review officer, reviewing these documents, a mariner in that situation, I would term this mariner not fit for duty and certainly not what I would call seaworthy.

Q. Would the mariner be allowed to continue to operate having had the results you see on pages--14?

A. Absolutely not.

⁷⁸ CG Exhibit 069 Antemortem and Postmortem Methamphetamine Blood Concentrations: Three Case Reports Iain M. McIntyre, Craig L. Nelson, Bethann Schaber and Catherine E. Hamm.

⁷⁹ Figure 70 – Slide from CG Exhibit 001.

Q. Sir, why is that?

A. A mariner with the presence of methamphetamine specifically--potentially also included amphetamine is--in my opinion, would be considered impaired.

Q. Based on these testing results, then, sir, what would you do?

A. I would issue effectively a stand-down order. My first call would be to the designated employee representative, which is who I'm instructed to call as a medical review officer. I would tell them that they have a mariner on board, identify the mariner, who must immediately be taken off duty. If they happen to be offshore, I would have someone inform the boat that he has to be taken off duty and return to shore at the soonest time possible.

The operation of a vessel while underway on a waterway under any conditions is an operation similar in nature and difficulty to the operation of a motor vehicle. Dr. [REDACTED], a forensic toxicologist is a researcher examining the effects of methamphetamine on human performance and he produced a scientific paper entitled "Methamphetamine and Driving Impairment," published in the Journal of Forensic Sciences, JFSCA, Vol. 41, No.3, May 1996, pp. 457-464. The abstract for this paper makes the following statement about operating a motor vehicle under the effects of methamphetamine.

ABSTRACT: Following a review of the effects of methamphetamine on human performance, actual driving and behavior were evaluated in 28 cases in which drivers arrested or killed in traffic accidents had tested positive for methamphetamine. The circumstances surrounding the arrest or accident were examined, together with any observations by the arresting officer regarding behavioral irregularities. The investigators also made a determination of culpability. Most of the arrests resulted from accidents in which the driver was determined to be culpable. Typical driving behaviors included drifting out of the lane of travel, erratic driving, weaving, speeding, drifting off the road, and high speed collisions. Behavioral manifestations of methamphetamine use in arrestees included rapid or confused speech, rapid pulse, agitation, paranoia, dilated pupils, violent or aggressive attitude. Combined alcohol and methamphetamine use was uncommon, however use of marijuana was evident in about one third of the cases. In addition to impairing judgment and increasing risk taking, the effects of withdrawal from methamphetamine use including fatigue, hypersomnolence⁸⁰, and depression are likely contributors to many of these accidents. A consideration of the literature and the cases discussed here, leads to the conclusion that methamphetamine at any concentration is likely to produce symptoms that are inconsistent with safe driving.

The effects of the combination of alcohol that was detected in the post mortem sampling and methamphetamine cannot be determined. The image below graphically depicts the effects of methamphetamine at low and high dose based on blood concentrations of the drug. Initially, the stimulant effect provides improved focus and reaction time.

⁸⁰ Condition where a person experiences significant periods of sleepiness.

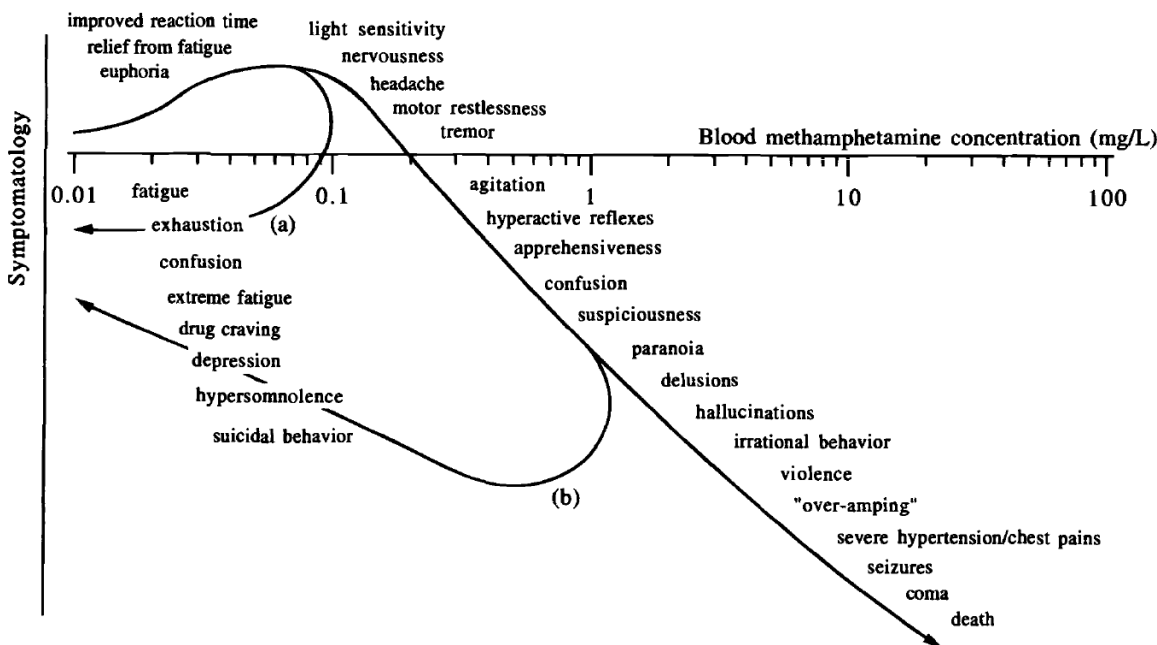


Figure 71. Hysteresis plot showing effects of methamphetamine that impact driving performance with respect to blood methamphetamine concentration (mg/L). The figure shows examples of withdrawal effects from (a) low dose and (b) high dose drug use. (Source – [REDACTED] "Methamphetamine and Driving Impairment," Journal of Forensic Sciences, JFSCA, Vol. 41, No.3, May 1996, pp. 457-464)

One of the crew of the MARY B II post mortem tested positive for cannabinoids the most notable being THC, the primary psychoactive compound in marijuana. This testing result was from the initial drug screen and further testing was not conducted based on the protocols and testing regimen specified by the Medical Examiner. Despite the fact that the State of Oregon legalized marijuana for medicinal and recreational use, use of this impairing drug is not permitted by persons operating watercraft of any type. Additionally, persons operating vessels on states or U.S. navigable waters are not allowed to use drugs or alcohol while operating a vessel if it leads to impairment as defined by specific blood alcohol levels (BAC) or similar test results for drugs. The threshold levels for impairment vary and are defined by State or Federal statutes. In testimony the MRO stated that if he was notified that a mariner was using methamphetamine or marijuana that person would be immediately taken off duty. A reasonable cause test for the use of alcohol would result in testing for the use of alcohol and removal from duty if that substance was detected.

The captain of the vessel did not test positive for cannabinoids, however, the managing owner of the vessel knew he used marijuana which can also have an impairing effect on the operation of a vessel.

5.11.3. Speaking to the accidents that occur in the CFV community at large, the tables below indicates the overall casualty statistics for the U.S. fleet.

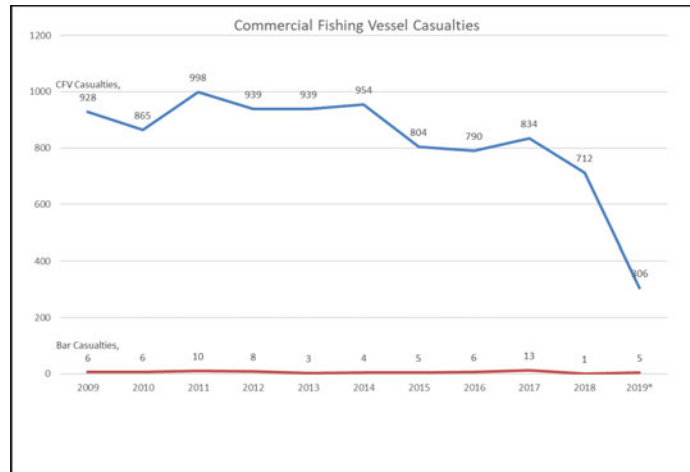


Figure 72. The statistics contained in this table are derived from the USCG MISLE database that reflects the overall operational and non-operational commercial fishing vessel accidents for the displayed period. At the bottom of the page, in red is the plot indicating the reported accidents that occur in areas described as “bars.” (Source – Coast Guard)

The second table represents a breakdown of the various types of personnel casualties. Personnel cases are cases that the Coast Guard is aware of that include death, injury, missing, and casualties that lead to the classification of Serious Marine Incidents that require post casualty testing for drugs and alcohol within a required timeframe.

The final table in this section show the relationship between drug and alcohol testing and positive test results identified as a result of required testing. These tables reflect data from the year 1999 up to July 2019. There is anecdotal evidence that suggests that accidents involving accidents for CFVs are underreported and to what precise extent is not known.

Calendar Year	All Commercial Fishing Vessels*					
	Casualties	CFV Lost	Deaths	Missing **	Injured	SMI ***
2009	928	87	44	11	100	120
2010	865	83	30	7	85	107
2011	998	93	49	4	101	124
2012	939	83	36	8	107	122
2013	939	67	38	8	112	125
2014	954	58	37	4	94	102
2015	804	74	29	1	68	103
2016	790	67	30		82	107
2017	834	64	35	12	105	147
2018	712	53	29	3	107	141
2019*	306	17	10		32	46
Subtotals	9,069	746	367	58	993	1,244

Figure 73. The statistics contained in this table are derived from the USCG MISLE database that reflects the personnel casualty associated with commercial fishing vessel accidents. The notes indicate additional information about the sources and contents of the table. The footnotes for this table are located at the bottom of the page.⁸¹ (Source – Coast Guard)

⁸¹ * These statistics are based on extractions of data from MISLE via the CGBI cube system on July 22, 2019. The above statistics are based on investigations with Involvement criteria of Marine Casualty: Reportable or Not Reportable or Discharge of Oil. A data pull from MISLE Vessel Events, Substances Spilled Vessels and Personnel.

All Commercial Fishing Vessels Post Casualty Drug and Alcohol Tests						
Calendar Year	Drug Positive Test Results	Total Drug Tests	Alcohol Detected (BAC Provided)	Alcohol Detected (BAC Not Provided)	Total Alcohol Tests	Activities with Any Positive Tests
2009	30	138	5		57	21
2010	12	104	6		61	14
2011	31	141	11		128	27
2012	23	104	2		85	21
2013	16	142	10		90	22
2014	10	121	2		84	11
2015	21	83	3		77	14
2016	15	70	1		64	8
2017	16	89	2	3	91	13
2018	17	115	2		69	14
2019*	6	24		1	17	4
Subtotals	197	1,131	44	4	823	169

Figure 74. The statistics contained in this table are derived from the USCG MISLE database that reflects the personnel cases where drug and alcohol testing was required. The highlighted columns indicate positive test results. The footnote indicate additional information about the sources and contents of the table. The footnotes for this table are located at the bottom of the page.⁸² (Source – Coast Guard)

5.12. Human Factors Associated with Operation of the MARY B II

5.12.1. Fatigue

A law enforcement officer who observed the operator of the MARY B II the day before the accident voyage testified that he was either very tired or impaired. The impairment, according to the witness, may have been due to chemicals or fatigue.

And later in testimony, the same witness was asked to expound on her observations to tease out whether she believed the operator’s behavior was due to fatigue or chemical impairment:

A. You know, I didn't know. I see fishermen at all stages. Prior to the season everybody is pretty---pretty awake and perky, but as the season goes on, you can see folks get tired, a lot of different things. So I wasn't--I wasn't able to say why-- what impairment he could have had at that time.⁸³

Casualties where the records involved Commercial Fishing Vessels. These records were then joined to Incident Investigation Activities for one record per investigation involving a fishing vessel.

Vessel losses include operational as well as non-operational casualties. Personnel Casualties include all dead, missing and injury records based on vessel operation, loss, or occupational safety, as well as those not relating to or prevented by marine safety regulations, policy or guidance. This includes those records associated with misconduct, are self-inflicted, sickness, medical conditions or existing diseases, diving for harvesting a regulated species or food poisoning. All of these situations may require post casualty testing.

** In most cases the classification of missing indicates that the victim is deceased.

*** SMI is a classification of a marine accident as “Serious Marine Incident,” which requires drug and alcohol testing within a required timeframe.

⁸² Drug and Alcohol tests are based on data extractions from the CGBI cubes MISLE Investigation Drug and MISLE Investigation Alcohol. The statistics are summarized by Activity Id and joined to Incident Investigation Activities. These statistics include Post Mortem determinations, as found in a review of TimeLine entries on Autopsy findings.

*** Total Drug Tests is a combination of Post Casualty Drug Tests Taken and Postmortem positive drug findings by a Medical Examiner.

⁸³ Senior Trooper [REDACTED] hearing testimony.

The managing owner of the vessel was questioned about the responsibility to provide a safe working environment and reduce the risks associated with fatigue:

Q. What steps did you take to make sure that the crew was well rested and that fatigue did not impact the safety of operations?

A. I was not there personally. I can't answer that.

Q. So you had no hand in ensuring that fatigue was not a problem or that was just left to the operator; is that correct?

A. Everybody has, you know, requirements for their own being, like I can get along with 5 hours' sleep sometimes or 8 hours' sleep, sometimes no sleep. I--I can't really answer that.⁸⁴

At present, there are no work/rest regulations applicable to CFVs less than 200 GTs. As noted the operation of the MARY B II and other commercial marine vessels is similar in nature in terms of maneuvering, navigation and basic seamanship. Similarly, fatigue impacts mariners on any platform the same way.

The International Maritime Organization (IMO), which governs international maritime shipping, makes the following statement describing fatigue:

A state of physical and/or mental impairment resulting from factors such as inadequate sleep, extended wakefulness, work/rest requirements out of sync with circadian rhythms and physical, mental or emotional exertion that can impair alertness and the ability to safely operate a ship or perform safety-related duties.⁸⁵

Furthermore, the IMO states:

Fatigue is a hazard because it may affect a seafarer's ability to do their job effectively and safely. Importantly, fatigue affects everyone regardless of skill, knowledge and training. The effects of fatigue can be particularly dangerous in the transportation sector, including the shipping industry. All stakeholders should be alert to the factors which may contribute to fatigue, and make efforts to mitigate and manage the risks posed by fatigue.

The managing owner of the MARY B II failed to carry out the owner's responsibilities of reducing and managing the effects of fatigue in the vessel crew.

The effects of the use of methamphetamine, alcohol and combined with the observations of fatigue cannot be precisely determined but taken together would have resulted in an impairment of the critical decision making during the especially hazardous bar crossing and is a contributing factor to the marine casualty.

⁸⁴ Managing Owner hearing testimony.

⁸⁵ IMO Circular MSC.1/Circ. 1598 Guidelines on Fatigue.

5.12.2. Medical Conditions

Commercial mariners, other than those operating on fishing vessels less than 200 GT are required to have a detailed physical to enable them to hold a credential or license. The physical entails a medical examination, medical history and listing of all prescribed medications as well as over-the-counter medications and supplements. There can also be a testing of physical ability to perform the duties of the rating or license. The frequency of these determinations is prior to issuance and subsequently at the most a frequency of every five years on renewal of the credential. Medical conditions that pose a risk to operations such as cardiac conditions, epilepsy and other serious conditions are closely scrutinized and a determination is made if that mariner can safely work on a vessel and waivers and special conditions may be imposed. As an example, in the case of a mariner with poor eyesight and prescribed eyeglasses, the waiver may require carrying a second pair of those glasses when onboard a vessel. Prescribed medications that impair functioning are carefully scrutinized. The Coast Guard will then issue the appropriate medical certificate to the mariner.⁸⁶

The only known medical conditions for the captain of the vessel were that he wore reading glasses, had some hearing issues and wore dentures. The managing owner stated that she had no knowledge of the operator being prescribed any medications, nor was she familiar with his medical history. She added that the operator was “not a doctor-goer.”

The managing owner was not aware of any medical conditions for the remainder of the crew of the vessel.

Without a determination of medical fitness for service there is no way of determining if an unknown medical condition, use of over-the-counter medications or supplements may have contributed to the accident.

5.12.3. Operator's Interactions with Crewmembers and Other Fishing Industry Persons.

The operator's contentious attitude toward other personnel within the fishing industry and crewmembers hindered the development of a safety culture onboard and prevented him from learning from other industry professionals. He was unwilling to learn, ask for, or receive advice about the Yaquina Bay Bar from mariners who had extensive experience operating CFVs in the area. Even the operator who owned the MARY B II prior to Mr. Biernacki stated that he wanted to offer advice on the waterway, the bay, and the treacherous bar crossing but Mr. Biernacki was not receptive.

There is evidence of multiple instances where Mr. Biernacki took unreasonable risks while operating CFVs and made former crewmembers feel unsafe. This highlights a foundational impediment in establishing a safety culture onboard. Reports of the operator preventing crewmembers from calling the Coast Guard and crews having to activate EPIRBs in order to call for help have been discussed in detail. Documented cases involving the operator and witness testimony suggest that Mr. Biernacki behaved toward others in a manner that created discord and inhibited effective communication between crewmembers and the operator.

⁸⁶ 46 CFR § 10.301.

Communication is critical to safety in the hazardous conditions attributed to the fishing vessel industry. Although crewmember James Lacey had worked with Mr. Biernacki in the past, there is evidence to support that Mr. Biernacki was difficult to work with and was unable to keep crewmembers working for him.

In addition, Servco Pacific Insurance (currently Brown & Brown Insurance) withdrew a quote to provide insurance to the MARY B II after they conducted a risk assessment and after local fishing vessel operators voiced concerns about Mr. Biernacki's experience. Multiple witnesses attested to Mr. Biernacki's dismissive attitude toward inclement weather forecasts and unwillingness to accept advice, as he claimed he would teach everyone how to fish as he did in the East Coast.

The contentious personality traits would likely add an additional level of stress and distraction into an already stressful and arduous operation on commercial fishing vessels. This would likely prevent the establishment of a safety mindset. The lack of safety mindset was likely present on the MARY B II the night of the accident and may have contributed to actions, inactions, or distractions that resulted in the casualty.

5.13. Coast Guard Bar Escort Procedures at Yaquina Bay Bar

5.13.1. During the hearing, the Coast Guard was asked about procedures or policies used to conduct bar monitoring and escorts at Station Yaquina Bay. Following the Public Hearing and after further investigation, it was determined that a unit instruction was under development to address and document the specific bar escort procedures at Yaquina Bay. While the training program is robust, there was no signed procedure in the form of a formal unit instruction in place for bar operations on the night of the accident.

During the course of the investigation, only the operations of Yaquina Bay were examined and this investigation narrowly focused on the MARY B II accident. The other 15 RNAs were not examined to determine how the Coast Guard reports bar conditions, monitors vessel movements, restricts the bars, disseminates safety information for the hazardous bars or conducts bar escorts.

After the last bar observation at 4:45 p.m., three vessels crossed the bar without escort. One of the three vessels reported that the bar observations were no longer accurate. Due to the time of the year, it was nearly sunset, and the watchstander would not be able to accurately gauge the bar conditions from land. As such, the MLB 47266 got underway to reevaluate the bar conditions. In keeping with the standards common across the surf community, the MLB 47266 took station inside of the jetty tips and energized their law enforcement blue lights to mark the center of the channel and enhance visibility using the MK-127 illumination flares. At approximately 7:34 p.m., the VICTORY pushed out past the jetty tips to conduct the escort as the VICTORY is the better asset to handle breaking/plunging waves from any angle.

At 7:33 p.m., the 75-foot, steel hull LAST STRAW tells the Coast Guard on VHF radio Channel 22:

*I desperately want to get in, but um, 30 minutes here see what happens, there's also, its building fast out there, Thats [sic] why I'm motivated to get in, okay?*⁸⁷

When the LAST STRAW explained his desire to get across the bar as soon as possible, the two Coast Guard vessels were already discussing timing and lulls with the operator in preparation for the vessel's crossing.

During the LAST STRAW's crossing, there were extensive radio communications with the LAST STRAW covering timing and character of the waves as well as how the LAST STRAW was going to cross the bar and enter the channel. Other than the MARY B II, the LAST STRAW was the last vessel to return to port. The LAST STRAW and the other CFVs considered it prudent to return to port in light of the weather forecast and building seas.

As noted in testimony, some mariners are more comfortable with the Coast Guard and discussing bar crossing plans over the radio, whereas others will acknowledge the Coast Guard hailing them on the radio and then transit without much conversation.

During hearing testimony, BOSN █████ said he passes only pertinent safety information such as the timing of the series, but then allows the captains to focus on the complex task at hand. He indicates during the bar crossing brief that CG vessels will stay out their way and the safe navigation of their vessels is ultimately their decision and responsibility. Additionally, as is detailed in the regulatory language of the RNA, Coast Guard crews tell the fishing vessel operators that the "safe navigation is the responsibility of the captain" and they should feel no pressure to enter just because the Coast Guard is standing by.

Shortly after 7:53 p.m., the LAST STRAW safely crossed the bar the following exchange took place on the radio:⁸⁸

LAST STRAW - Thanks for your help

VICTORY - LAST STRAW, VICTORY. Say again captain.

LAST STRAW - I said we're slowing down. And uh just appreciate the escort. Thanks for all your help.

VICTORY - Absolutely captain. Any time.

LAST STRAW - Uh it got a little broachy there for me. I need about twice a [sic] big a rudder.

LAST STRAW - That's the first time I've uh really broached like that. It's kinda alarming. I got turned pretty go there didn't I?

VICTORY - You did great captain. Glad you're inside safe.

LAST STRAW - Yeah, you ever see guys turn that much?

VICTORY - Oh absolutely captain, we've uh, uh we've seen them turn a couple circles, but glad you're inside.

Broaching is described as the following condition, a broach is "to slew around on a wave front." Another source says it is "extremely dangerous" and likens it to turning broadside and

⁸⁷ CG Exhibit 008 and the following entries are taken from this exhibit.

⁸⁸ Some CG to CG boat radio communications are omitted for clarity.

losing control in following seas, so as to present the ship's side to oncoming large waves. In that event, the ship may "trip" on its keel or bow (pitch-pole), roll, capsize. In the altered image below red arrows has been added to show the potential for the fishing vessel to broach to port, cause a loss of control, and expose the vessel to possible capsize.



Figure 75. Labeled image of the F/V NORSKEN FISHER entering Yaquina Bay Bar in surf on an unknown date. The red arrows, which have been placed on the image, indicates the dangerous potential for movement of the vessel. Than can lead to broaching if there is a loss of control or an overpowering by the following wave without sufficient power and control to swiftly counteract this momentum. This broaching would result in the vessel laying sideways in the trough of the wave, which most likely lead to a capsizing of the vessel. (Source - Mr. and Mrs. [REDACTED] ©)

During this time, the Coast Guard was having difficulty identifying and communicating with what was the last vessel offshore, the MARY B II. The identification was compounded by the vessel not responding to repeated hailings of VHF made by the Coast Guard. Eventually, the Coast Guard Command Center at Sector North Bend was able to identify the vessel utilizing NOAA VMS tracking by the vessel's former name, BESS CHET. The new owner did not register the VMS system with the vessel's new name. Shortly after 9 p.m., the Coast Guard reached the vessel's operator by cell phone and then established radio communication with the captain of the MARY B II. At this time, the operator of the vessel states on the radio that his speed is between 6 and 7 knots. The Coast Guard would later rely on the declared max speed in advising the operator of the MARY B II during her attempted bar crossing.

5.13.2. Dynamic Surf Conditions at the Bar

5.13.2.1. Throughout the late afternoon and into the night the sea, tidal and weather conditions combined to create an ever worsening breaking bar. As the weather worsened, the Coast Guard observed and re-evaluated the conditions using all means available, including the considerable experience of the CG crews. Based on experience and the forecast, the expectation was that the bar conditions were going to get worse. Coast Guard Station Yaquina Bay crewmembers continually checked forecast models and weather instruments, such as offshore buoys, to maintain awareness of the worsening

conditions. When Coast Guard boats are on scene for an escort they report observations on the location of the breaking waves, height, period, and lulls. The day of the accident, these conditions were carefully observed and passed to the operators on the vessels. In the case of the MARY B II, the VICTORY called out the size of the waves coming astern of the MARY B II, at one point noting they were 16 feet.

While Coast Guard crews can monitor and report on wave sets and lulls, they cannot predict the size or power of individual waves. OSU captures the reflected energy of ocean waves using marine band radar. The height and steepness of an ocean wave are characterized in colors and in the figure below you see the large ocean swells heading to the entrance of Yaquina Bay Bar. In general, you see they are red in color and move in a parallel series of waves towards the jetty ends. A bright yellow radar reflection would indicate waves that are significantly steeper and taller in height than the waves that are less bright. Near the time of the capsizing of the MARY B II, this convergence of waves began to occur and build in size.

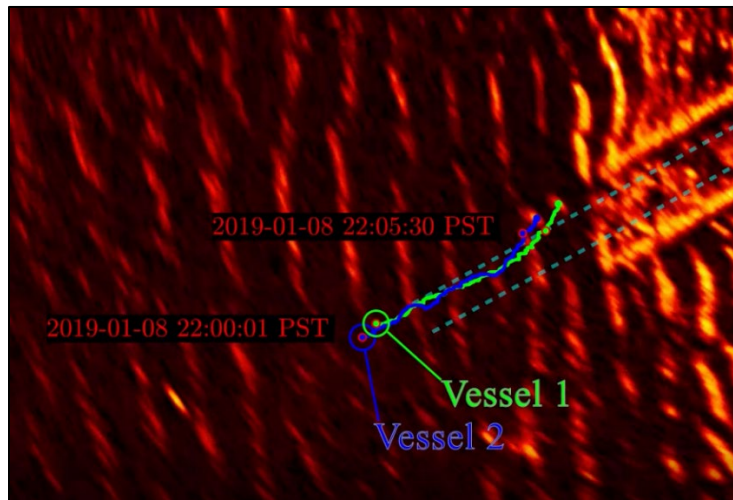


Figure 76. Screen shot of OSU radar video showing the MARY B II (VESSEL 1) and VICTORY (VESSEL 2) nearing the North Jetty End. (Source – Oregon State University, CG Exhibit 034)

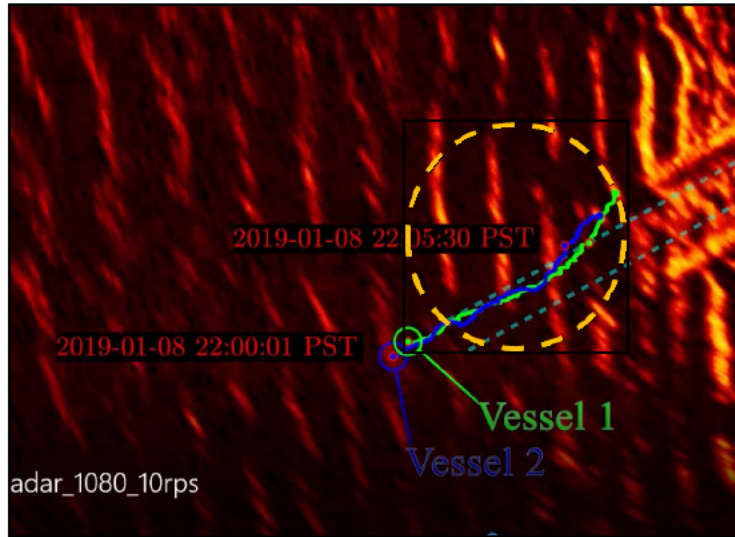


Figure 77. Screen shot of OSU radar video showing the MARY B II (VESSEL 1) and VICTORY (VESSEL 2) nearing the North Jetty End and larger waves are forming to the seaward of the vessels, these larger waves are circled for identification (Source – Oregon State University, CG Exhibit 034)

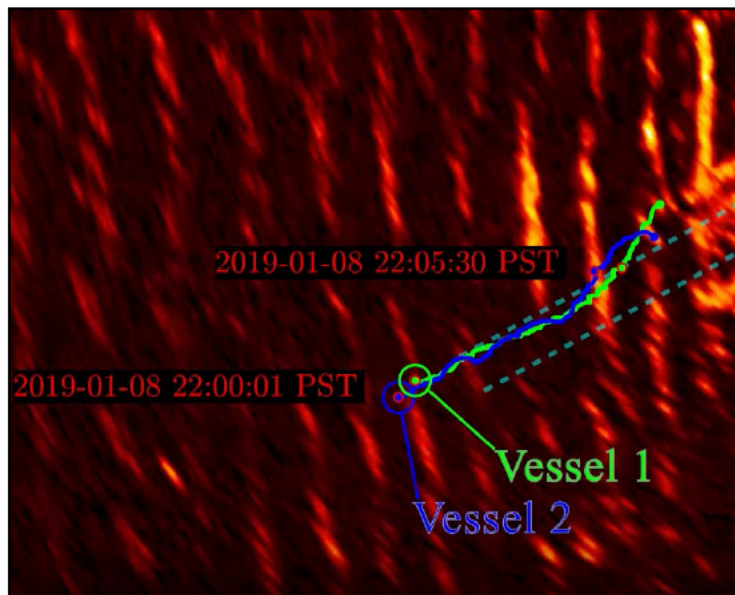


Figure 78. Screen shot of OSU radar video showing the MARY B II (VESSEL 1) and VICTORY (VESSEL 2) nearing the North Jetty End and larger waves are forming to the seaward of the vessels, these larger waves are growing in vertical height and steepness reflecting more radar energy (Source – Oregon State University, CG Exhibit 034)

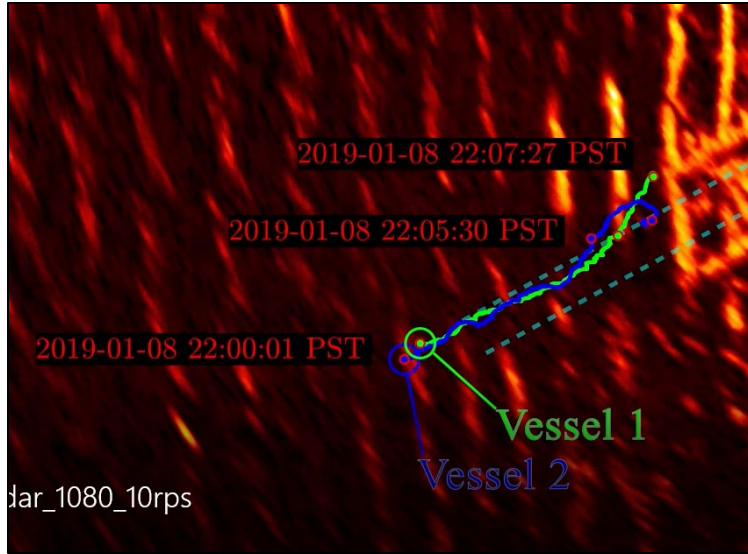


Figure 79. MARY B II indicated by the small green circle at 10:27:27 p.m., the approximate time where the vessel struggled after getting hit by a wave and then capsizing by reverse pitch poling and sinking. (Source – Oregon State University, CG Exhibit 034)

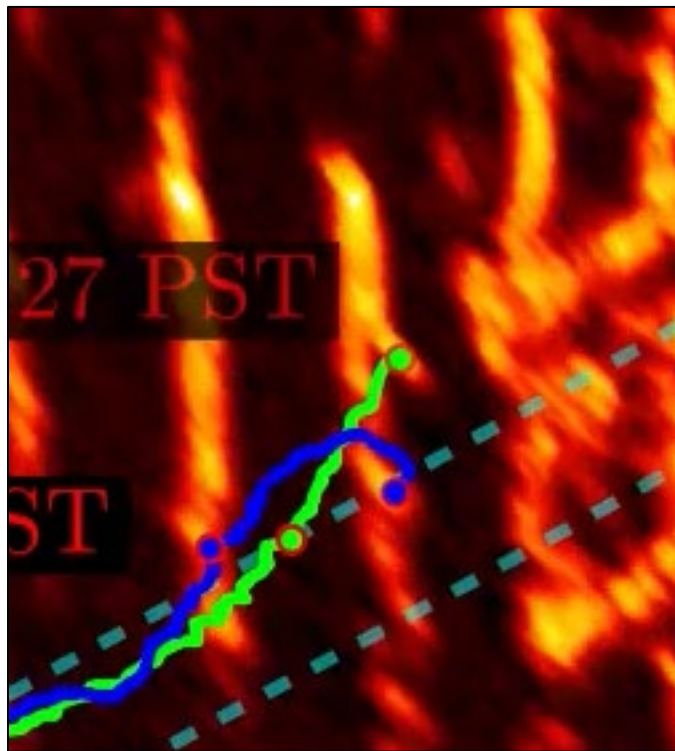


Figure 80. Screen shot of OSU radar video showing the MARY B II (VESSEL 1) and VICTORY (VESSEL 2) nearing the submerged rock portion of the North Jetty, the first large wave, reported to be 16 feet passed the MARY B II and engulfs the jetty tip. The second is about to strike the MARY B II. In this image you can make out the radar reflected energy of the vessel just ahead of the wave front. The VICTORY is turning away from the danger of the underwater portion of the jetty and the jetty tip. (Source – Oregon State University, CG Exhibit 034)

On the day of the accident, Coast Guard crews properly anticipated a generally deteriorating and hazardous bar and took measures to reduce the risks at the bar.

5.13.2.2. In examining the likelihood of survivability, the position of the MARY B II's capsizing appears to be a critical factor. When contrasted with the March 2012 wreck of the F/V CHEVELLE, the critical difference is the location of the accident. The CHEVELLE grounded roughly 50 yards inside the North Jetty after being set by sea state and surf conditions. While both accidents happened in the dark of night, the CHEVELLE was able to cross the bar and get passed the jetty tips. This position provided the crew an opportunity to don immersion suits and put out a distress message to the Coast Guard, ultimately allowing the all three crew members to be saved.



Figure 81. The F/V CHEVELLE accident occurred in March 2012 where the vessel was set onto the south side of the North Jetty. While the vessel was a total loss, all crew were recovered safely by the Coast Guard. (Source - Chart, NTSB Marine Accident Report MAIB DCA12-ML-011, CHEVELLE Photo - Mr. and Mrs. [REDACTED] ©)

Had the MARY B II remained in or near the center of the channel during the capsizing, it might have been possible for Coast Guard vessels to effect a rescue. However, because the MARY B II capsized outside the channel near the dangerous area known as the dumping grounds, it was impossible for the MLB 47266 and the VICTORY to safely engage in any rescue attempt.

5.13.3. Use of Navigational Ranges Marking the Centerline of the Channel

Of all the aids to navigation in Yaquina Bay, one of the most important is the range boards. The range helps approaching vessels identify the center of the channel, and is one of the most reliable aids as the high height helps prevent it from being obstructed. The VICTORY communicator, the Commanding Officer of CG STA Yaquina Bay was asked:

Q. Thank you. Could there have been other vessels or obstructions blocking the clear view of the entrance range lights, do you think?

A. No. I was using those to navigate.⁸⁹

At no time during the escort were the use of the lighted ranges discussed until the vessel was in extremis. In the case of the LAST STRAW, at 7:42 p.m. the following discussion took place earlier in the evening:

⁸⁹ BOSN [REDACTED] hearing testimony.

LAST STRAW - Stay south of center, is that correct?

CG 47266 - LAST STRAW, coast guard 66, yeah im [sic] the inside boat here captain.

Yeah were seeing uh every probably third or fourth wave on the series, um will tip uh just south of center channel. Uh 2 or 3 hundred yards out breaking towards the tips.

LAST STRAW - Okay then you recommend stay on the range then right?

VICTORY - That's affirmative, stay on the range.

VICTORY - That's affirmative captain, stay on the range. Also how many POB do you have?⁹⁰

5.13.4. Communications During the Escort

Crossing a hazardous and breaking bar during darkness is an extremely dynamic and challenging experience imparting stress and anxiety even the most experienced mariners. The following elements of the escort were examined, in some cases with the benefit of hindsight which was not available at the time of the accident.

The crew at Station Yaquina Bay is made up of professional mariners who receive extensive training on evaluating and understanding the causes and effects of the local bar. They specifically receive training on how to speak about and communicate the nuanced aspects of the sea state. To mariners and persons unfamiliar with bar conditions on the West Coast, this parlance may be confusing and opaque. During the escort, the individual aids were referenced but there was no discussion about these aids with respect to navigation with the operator of the MARY B II prior to the start of the transit. It was understood that the operator was not a local fisherman. While no instruction concerning Bar Escorts was officially promulgated the night of the accident, the Station Commanding Officer and Executive Petty Officer both testified that a draft instruction encapsulated Station policy at the time. This draft instruction required an escort to verify the operator crossing the bar “understands the local ATON.” Had the escort verified this information, the operator might have understood the availability and purpose of the navigation aids designed to guide the mariner into this challenging harbor. Below are examples of the language used to describe conditions of the Yaquina Bay bar:

9:46 p.m. Mary B, Victory - Roger captain, uh yeah we just passed over the series, right around where buoy 3 should be it was uh 16 foot, inside of us it broke across the channel. Uh now were starting to time the series. So in between the series it's a good run,

9:47 p.m. Victory Mary B, - Uh victory. Roger we'll inform you the timing sop the hill has got a timing, we'll be calling the sets to them on 22 alpha. Well [sic] be putting up more illumination flares, just as we cross the bar. Uh, it was breaking pretty heavily into the channel from the south pinnacle, so the south side of the channel sop earlier when we were coming back in right and up the middle of the channel seems to be the best bet.

At 10:00 p.m., the CG 47266 hails the MARY B II on Channel 16 and says

⁹⁰ CG Exhibit 008 (errors are in keeping with the document as provided to the investigation team).

Roger captain, uh I advise that you don't work over to the North too soon. Uh it is starting to break on that north side on the dumping grounds. And there is also a wrap around break on the North side of the channel. Over.

Mary B II - Yeah I got you guys

The captain of the MARY B II had limited West Coast bar crossing experience and little or no experience being escorted and communicating with CG escort vessels in hazardous bar conditions. While rough weather does occur on the East Coast, specifically in Barnegat Inlet, where the captain was previously engaged in fishing, the characteristics of the waves, specifically timing between swells as well as the raw power of East versus West Coast surf may have led the operator to underestimate the importance of crossing the bar earlier in the day or why the Coast Guard was feeding him certain information. The captain's reticence to accept advice from the previous owner on bar crossings and unique bar conditions did not allow him to comprehend the unique considerations at the dynamic and hazardous bar. There is no evidence that he understood some of the critical information that was being conveyed to him such as the characteristics of the sea conditions and the particular hazards associated with them.

Communications via marine radio are vital to the success of bar escorts. Preliminary communications include the plan for the crossing. The minimum legal requirement for a small passenger vessels is to have an approved bar crossing plan (also referred to as a "Go/No Go plan"). The purpose of the bar crossing plan is to guide a vessel's operations on and in the vicinity of the bar. An approved bar plan creates an awareness by the captain and the crew of the unique hazardous conditions associated with regulated bars. Fishing vessels are not required to have a bar crossing plan.

In the case of the MARY B II, that operator communicated that the crew had life jackets available and that the crew were drill conductors. He also communicated the speed his vessel could make on the trip up to the entrance of the bar and the number of people aboard the vessel. At 9:47 p.m., the operator said that they would hang outside and watch a couple of sets. At 9:52 p.m., the MARY B II reported that they were putting their life jackets on. The operator of the MARY B II did not communicate any concerns with making the previously stated speed of 6 to 7 knots nor did he inform the Coast Guard of any reduction in speed. The operator of the MARY B II failed to let the Coast Guard vessels know that he had started the MARY B II on the inbound transit to cross the bar. The CG crews observed the MARY B II start into the transit and the VICTORY followed astern.

The regulations for RNAs require a bar crossing plan for small passenger vessels but not for CFVs. The bar restrictions for uninspected passenger vessels and recreational vessels significantly reduces risks to those vessel types. Had the regulations for a well thought out bar crossing plan when the bar is restricted been applied to all commercial vessels, the operator's planning for bar crossings would manage the risks of the crossings. Elements of the bar crossing plan may include the posting of an aft facing lookout calling out the waves, briefing to the fishing vessel crew about what to do if things go wrong, contacting the Coast Guard to provide updated bar condition reports or requesting an escort into port under the appropriate conditions such as when a vessel has compromised maneuverability or under extreme bar conditions.

At approximately 10:00 p.m., the MLB 47266 passed information to the operator describing how the seas were breaking at and recommended that he shift slightly to the north once he got inside the jetty tips, the MARY B II acknowledged hearing the transmission and notified the escorts that:

*Yeah, I see your blue light there, I'm working my way to the North side here now.*⁹¹

CG 47266 immediately responded:

Roger captain, uh I advise that you don't work over to the North too soon. Uh it is starting to break on that North side on the dumping grounds. And there is also a wrap around break on the North side of the channel. Over.

The MARY B II responded:

Yeah I got you guys, alright. Lemme pay attention here, cause so many vessels here now I got AIS going off on my Plotter here. Clogging it up.

Following the request of the operator, the Coast Guard minimized communications so as not to distract the operation of the MARY B II; the CG vessels continued to monitor the transit and make warnings when necessary. The CG escorts observed the vessel had slowed to approximately two knots with no explanation from the MARY B II about the reduction in speed or any future maneuvering, however, neither did the Coast Guard ask the MARY B II or prompt the operator for more information.

A former commercial fisherman with extensive bar crossing experience made this statement about crossing the bar:

*A. No, no, if--if the ocean conditions are good, you--you're metal--pedal to the metal to get the hell out of there because that's one of--it's where you don't want to be. Sooner--least amount of time you can spend there, the better.*⁹²

A highly experienced CG Surfman with extensive Yaquina Bay Bar experience made the following statement during hearing testimony about crossing the bar:

A. Well, I would say from my experience, a typical speed of a commercial boat is between 6 to 10 knots depending on what they typically do. And throughout--in the early stages of the bar escort, we're going to ask them, you know, "Sir, what's your normal cruising speed?" or, "What--how fast can you make--like make?" you know. "You pour the coals to her, what's your top--what's the best speed we're going to get?" They're going to provide that information. They know their vessel better than what we do. But if I--if I hear a speed of less than 5 knots, it makes me a little wary just because I know that you're not going to be able to outrun the sets of waves that are coming through or time them. At some point you will get caught by the next series or the next set of waves. So I would say

⁹¹ CG Exhibit 008.

⁹² Mr. [REDACTED] hearing testimony.

*that 5-knot threshold for myself would be something that I would pay--I'd be hypervigilant to somebody telling me that.*⁹³

At 10:04 p.m., the VICTORY called the MARY B II to make them aware of a wave building from astern,

16 Footer building up behind you captain.

A minute later,

Victory- Mary B, This is the set right here. This is the set. Over

Mary B II - Yeah roger roger, I see it.

47266- Mary B, This is the 66. This is uh the beginning of the smaller set that's coming in right now.

*Victory -Wind in your mic.*⁹⁴

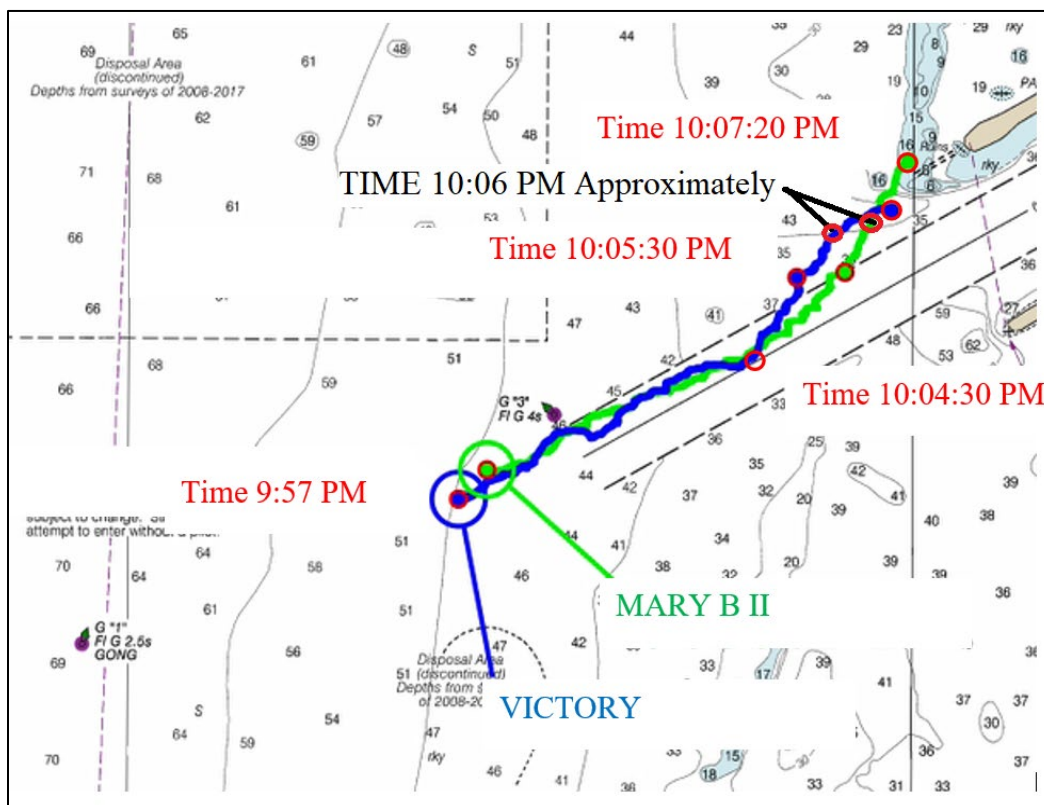


Figure 82. Positions of vessels throughout the escort. The approximate position of the final calls to the MARY B II are indicated for the time of 10:06 p.m. (Source – Oregon State University, CG Exhibit 071)

⁹³ CG STA Yaquina Bay Executive Petty Officer hearing testimony.

⁹⁴ Wind in your mic – indicating a transmission of the radio distorted by the ambient wind being captured by the transmitter’s microphone.

And then a moment later:

47266 -You're looking like your heading very, very far north right now. You might want to come south just a little bit.

47266 - Mary B, 66 did you copy my last?

*Victory - Hard, you are 3 boards North. Over. 3 boards North! Come South! Come to Starboard! Come to Starboard! Mary B, Come to Starboard!*⁹⁵

The admonition “You’re looking like your heading very, very far north right now. You might want to come south just a little bit.” and “Hard, you are 3 boards North. Over. 3 boards North! Come South! Come to Starboard! Come to Starboard!” contained the elements of a warning. The captain of the MARY B II may not have understood the warnings about “Three boards North” and this may have created a distraction at a critical time because the operator may have had to process the unfamiliar terminology that was voiced powerfully. However, the warning of “come to starboard” could be clearly understood even without navigation tools such as a steering compass. These warnings were given approximately a minute before the loss of the MARY B II. With the benefit of hindsight, the last communications from the Coast Guard vessels to the MARY B II could have been more assertive. There is nothing to have prevented the Coast Guard vessels from making a statement such as “MARY B II you are standing into danger” once the deviation from the channel centerline towards the North Jetty tip had been understood and confirmed. The admonition to come south clearly demonstrated the Coast Guard crews were fully engaged in monitoring the evolution and were aware that it was devolving. The transmission to come south “just a little bit” was not assertive enough given the situation. The callout regarding the reference to three boards north might not have any significance to the mariner operating the MARY B II whose main experience was on the East Coast and on the usual waterway of Barnegat Inlet which lacks a navigation range and the associated range boards. While Coast Guard policy prohibits the passing of compass directions to vessels, this prohibition is waived in emergent situations. In such cases, the Coast Guard is permitted to provide simple directions to mariners in extremis or imminent danger.

Shortly after the last communication, the MARY B II was seen capsizing and the lights of the vessel were extinguished.

The fact that a bar escort is considered a SAR “alert” phase enables a rapid response if there is any difficulty encountered in an escort. In the case of this escort, as soon as the MARY B II was observed to capsize, the SAR phase shifted to “distress” and the full search and rescue resources of the Coast Guard were brought into the emergency. That included the Coast Guard resources that actually worked on the emergency response as well as additional Coast Guard resources that were available on standby such as supporting personnel and a helicopter.

On scene, the VICTORY with Station Yaquina Bay’s Commanding Officer aboard, immediately assessed the situation and called for a CG helicopter to be dispatched from the

⁹⁵ CG Exhibit 008.

CG air facility at the local Newport, OR airport. Station Yaquina Bay immediately recalled all remaining personnel to assist in the distress phase.

Analysis of Elements of the Accident that were not a Direct Cause of the Accident

5.14. Adequacy of the MARY B II Lifesaving Equipment

The outfitting of the MARY B II with safety and lifesaving equipment met or exceeded requirements. The owner followed the recommendations of captain Biernacki and spent significant funds to purchase safety equipment after the acquisition of the vessel.⁹⁶ A new EPIRB was purchased and properly registered. As previously discussed, the water and air temperatures were near 50 degrees which can induce cold water shock. The vessel did have immersion suits onboard to insulate the wearer and protect the wearer from loss of body core temperature, called hypothermia. The crew had attended safety training. The operator and one crew member had attended the course within the previous two months and were certified to conduct drills. The other crew person had previously attended training.

There was no way to determine if safety drills had been conducted onboard the MARY B II under the supervision of a qualified person.

While cold water survivability calculations executed and noted in a SAR case study those times are predicated on a non-catastrophic event such as a gradual immersion into the cold water, not an event similar to the capsizing where personnel are ejected into the water suddenly. While cold water immersion is not a causal factor directly attributable to the initial event, the sudden immersion shock would have contributed to the drowning of the two crewmembers who were ejected or able to escape the wheelhouse of the MARY B II but still perished despite being found well within the time frame in the Coast Guard tool used to determine survivability in the water.

5.15. Responsibility of the Managing Owner of the MARY B II

F/V MARY B II LLC was a limited liability corporation that owned one vessel, the MARY B II. The managing owner of that LLC was not a commercial fishing industry professional, rather she was the mother of captain Biernacki. After the vessel was purchased, significant money was spent to upgrade the vessel's safety and lifesaving equipment as well as the routine equipment associated with the coming crabbing operations. In testimony, the managing owner explained that she relied on the recommendations of the captain of the vessel, Mr. Biernacki, as to suggestions for the maintenance and outfitting of the vessel. During the public hearing, the marine surveyor who conducted the most recent survey of the vessel stated his impressions of the vessel:

Q. And, sir, what was your overall opinion of the vessel's condition?

A. I hadn't been involved with this vessel before. I had seen it from a distance, never been aboard it. The--the vessel--I was actually impressed with--with the vessel. I mean, it was in much better shape than I had--what do I want to say--viewing the vessel from a distance and I've seen it over a number of years, it wasn't really a cosmetically pleasing vessel. So you

⁹⁶ CG Exhibit 040.

*would think that, you know, it's a backyard-built type of builder or something like that, but once I got aboard it, I was actually impressed. I did not go through the whole vessel. It was mostly limited to the engine spaces, but I did notice the cabin and the interior and they were quite nice. I mean, the vessel was nicely maintained, although like I said, I did not do a survey on it and I did not do a complete vessel inspection.*⁹⁷

Examining the owner's responsibility for the safety equipment that was located in the workplace, in other words on the vessel, the owner purchased significant safety equipment such as immersion suits, an EPIRB, life jackets and had the liferaft serviced among other things.

As to ensuring that the vessel was not operated with personnel under the influence of drugs and alcohol, the managing owner stated that she had expectations that there would be no use of drugs and alcohol on the MARY B II. When asked if her expectations were outlined or incorporated into policy in some way, for example in crew contracts for the crew, she stated that there were contracts in place for Mr. Biernacki and Mr. Lacey, but not Mr. Porter due to the short duration of his employment, approximately one week. She stated that the crew contracts were lost when the vessel sank. There is no evidence that the crew contracts stipulated that the use of alcohol or drugs were prohibited during operation of the vessel. Further, there is no evidence that the contracts specifically addressed the use of marijuana,⁹⁸ a drug that was regularly consumed by captain Biernacki, as detailed by the owner. As the managing owner, she knew that alcohol test kits had been purchased for the vessel but did not know the purpose or their intended use and the requirement for post casualty drug and alcohol testing.

In testimony, the managing owner could not identify if any health conditions existed for the crew, other than readily observed conditions for the captain. These conditions were that the operator wore reading glasses, had hearing issues and wore dentures. As to the crew of the MARY B II she made the following statement in response to a related question:

Q. Turning to the physical condition of the crew, how were you assured as to any latent medical conditions for the crew that might suddenly impact the safety of the crew at a critical time, for example, epilepsy, heart conditions or a host of adverse crew medical conditions?

A. I was aware of no conditions to preclude work.

Q. And that's both for Mr. Biernacki and the rest of the crew?

*A. I don't know anything about the crew.*⁹⁹

When asked if the managing owner instituted any guidelines for the management of fatigue, she stated that she was not physically present at the vessel location and could not answer that question.

As to the operation of the vessel or policies or instructions for the crew:

Q. I understand, but my question was did you create or distribute any instructions or policies or procedures?

⁹⁷ Mr. [REDACTED] hearing testimony.

⁹⁸ Marijuana is legal in the state of Oregon despite being listed as a Schedule IV Drug by the Federal Government.

⁹⁹ Managing Owner hearing testimony.

A. No.

Q. Did you write down any expectations that you had for the operation of the MARY B II?

A. No.

Q. Does that include your expectation for drug and alcohol--for your drug and alcohol policy?

A. I didn't write anything down for expectations. This just was unfolding.¹⁰⁰

The managing owner had been in the Newport area visiting with the operator for several weeks in December and was available to observe the shore side operations in preparation for the fishery opener. The managing owner did state that she left shortly before the Dungeness crab fishery opened.

Following the accident, the managing owner did not submit a CG-2692 (OMB 1625-0001), Report of Marine Casualty, Commercial Diving Casualty or OCS Related Casualty within five days as required by federal law. The accident was a marine casualty as described in 46 CFR § 4.05-10(a).

5.16. Coast Guard Search and Rescue Response

As the escort of the MARY B II commenced, the mission was in the “alert” phase, in conformance with policy. Once the vessel capsized, the classification shifted immediately to the “distress” phase. Two CG vessels were on the scene and the MLB 47266 was directed to search the area on the south side of the North Jetty in an attempt to locate any potential persons in the water. Personnel were recalled to the Station as the VICTORY remained off the bar and conducted search efforts. Visible wreckage of the MARY B II was seen on the north side of the North Jetty in water which was too dangerous for CG boats to enter and search. The MLB 47266 searched inside the jetties to see if the ocean current had carried any potential survivors into that safer water. A CG helicopter was immediately dispatched from the Newport airport where these helicopters are staged for rapid response to effect search and rescue. At 10:20 p.m., Coast Guard Sector North Bend notified the on scene units that the MARY B II’s EPIRB had been activated in the capsizing. EPIRBs are designed to automatically begin transmitting once dislodging from their bracket or after submersion in water; in this case, after the capsizing. That beacon would have provided the Coast Guard with vessel specific details but most importantly an accurate position of the distressed vessel. In this case, the location of the accident had been identified. At 10:23 p.m., the first personnel began to arrive at the beach and begin a shoreline search. This would grow to include rescue personnel from the local area as well as CG teams. At 10:34 p.m., the CG Helo 6527 took off from Newport air facility headed to the scene. This helicopter had a powerful searchlight, hoisting capabilities and a rescue swimmer to add to the search teams and equipment at the accident scene. Beach parties were launching MK-127 illumination flares to attempt to locate survivors. There were difficulties initially in the radio communications between the shore teams, boats and the helicopter during this phase of the rescue as multiple radio frequencies were being used and local fire rescue assets were also participating. At 10:51 p.m., all rescue communications were shifted to radio Channel 21A and those communications issues were resolved.

¹⁰⁰ Managing Owner hearing testimony.

The rescue helicopter arrived and located some wreckage at 10:40 p.m. and began to determine the possibility of locating any survivors. Shortly after that the VICTORY headed in to the dock to assist in the shore search for survivors. The CG Helo 6527 located a victim and lowered a rescue swimmer into hazardous conditions and moved the victim to the beach so EMS could attempt resuscitation. Another victim was located in the MARY B II wreckage of the cabin which had drifted ashore to the north side of the North Jetty. It was too hazardous to remove that victim until first light the following morning. The third victim was located in the water near the shoreline on the beach north of the North Jetty.

5.17. Survivability Factors

5.17.1. Crew's inability and limited time to deploy lifesaving equipment

After the vessel was turned to the seas by the second wave, the vessel was unable to recover and capsized as the third wave rolled in over it. The crew had very little time, if any, to react. Due to the small size of the MARY B II and the location of the liferaft the crew could not make the liferaft ready for deployment. The liferaft inflated and floated free as designed and washed up, inflated on the beach.

It would be a challenge for any operator, crewmember, or fisherman to don a survival/immersion suit and deploy the liferaft in the limited time available. The Coast Guard boats operating nearby had the MARY B II under direct observation for the entire time up until the vessel's capsize.

During SAR and recovery operations, the Coast Guard located all three crewmembers wearing inflated Type V lifejackets. Later, Oregon State Parks personnel found four immersion suits and the liferaft.

5.17.2. Crew's limited survival time without immediate rescue

Coast Guard vessels were on scene at the time of the accident but were limited in their ability to respond because of the location of the MARY B II's capsize, north of the North Jetty. In order to respond, the MLB 47266 and the VICTORY would have had to transit nearly a mile to the north to "jump off joe" point to avoid charted reef areas to approach the search area in deteriorating conditions and high beach surf. Interview summaries, witness testimony, and communications transcripts support that neither Coast Guard vessel had sufficient MK-127 illumination flares to safely conduct this transit and subsequent search and rescue effort and would have put further lives and boats in danger. The Commanding Officer conducted an operational risk assessment and determined that the risk was too high to put Coast Guard vessels in the waters north of the north jetty.

The investigation determined the Coast Guard's inability to enter the search area north of the North Jetty after the capsizing was not a contributing factor in the loss of life to the MARY B II's crew. Due to the instantaneous and catastrophic nature of the vessel's sinking, the vessel's crew did not have enough time to abandon the vessel in immersion suits or enter a liferaft which would have increased the crew's chances of rescue or survival.

6. Conclusions

6.1. Cause of the Casualty

6.1.1. The initiating event for this casualty occurred when the MARY B II deviated from the centerline of the entrance channel for Yaquina Bay Bar at approximately 10:04:30 p.m. and began a general movement towards the submerged end of the North Jetty in breaking surf and near gale conditions.

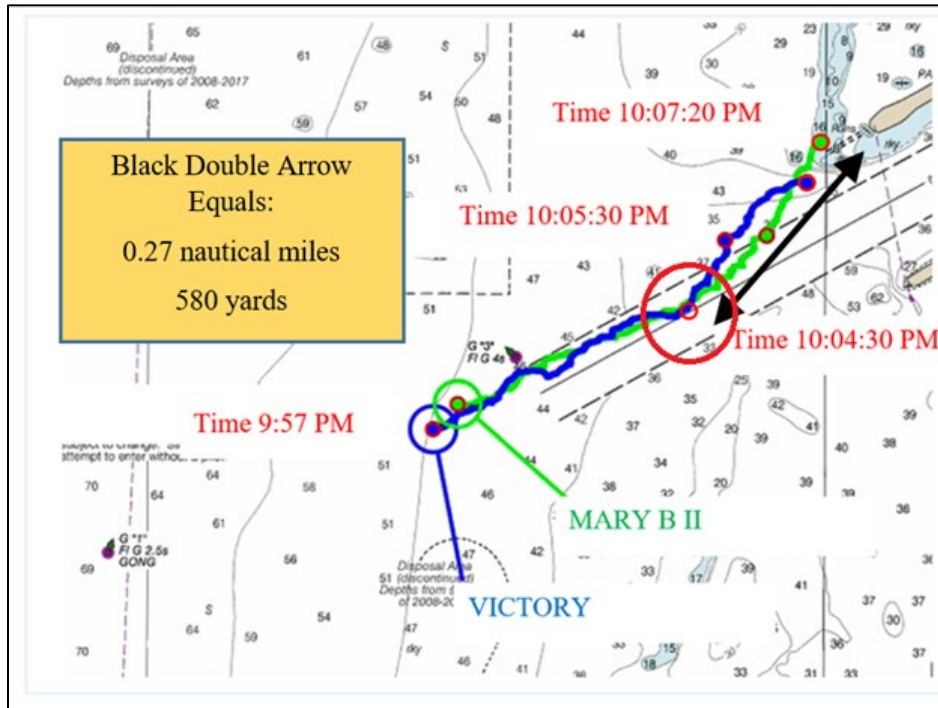


Figure 83. Large red circle indicates the start of the initiating event, the deviation from the centerline of the Yaquina Bay Bar channel. Time 10:04:30 p.m., January 8, 2019. (Source – Coast Guard)

All of the actions and conditions that caused the MARY B II to leave the center of the channel cannot be precisely determined as the crew are deceased. Based on the available evidence, the causal factors were:

6.1.1.1. All available evidence indicates the captain of the vessel did not have experience on the Yaquina Bay Bar in extreme winter conditions with significant breaking surf. Additionally, the captain did not appear to accept earlier advice from local fishermen who attempted to share their knowledge of the danger associated with rough bar conditions, including the crewman he hired to for his local knowledge of the area.

6.1.1.2. Unlike other more prudent mariners, the captain of the MARY B II did not attempt to return to the safety of Yaquina Bay until later in the evening after the

breaking seas increased in severity with a gale warning in effect. Every other fisherman brought their vessels in earlier because of the forecasted weather conditions. Weather forecasting was accurate and available through a wide variety of sources. Based on this forecast, the local and experienced crew person had expectations the MARY B II would be in port by mid-afternoon.

6.1.1.3. Scientific evidence indicates that the impairing effects of methamphetamine, alcohol, and fatigue impact critical split-second decision-making and higher level cognitive functions. The captain of the MARY B II had methamphetamine in his system while operating the vessel. Considering the dynamic environment of the Yaquina Bay Bar on January 8, 2019, impairment, of any type, carried inherent and unjustifiable risk on the vessel operations and the bar crossing.

6.1.1.4. The observed reduction of the MARY B II's speed to, at times, two knots or less caused the MARY B II to move off the center of the channel and towards the North Jetty tip. It is unclear whether the shift in heading was caused by the operator, the combined weather elements, or an amalgam of both.

6.1.1.5. As observed by the OSU marine radar plot of the surface current, the force of a coastal current on the date of the accident contributed to the MARY B II setting too far north of center channel and into the vicinity of the jetty tip.

6.1.1.6. There is a possibility that a line had become entangled in the propeller and may have reduced maneuverability of the MARY B II at a crucial time. In addition, if the MARY B II's maneuverability was limited, the captain's failure to inform the Coast Guard escorts of this critical information may have resulted in the assumption that the MARY B II was fully capable of maneuvering. The port outrigger which was partially deployed may have had rigging that, if trailed aft, may have fouled the propeller or rudder.

6.1.1.7. It cannot be determined if a medical issue, injury, or incapacitation of any of the crew played a part in this deviation towards the danger posed by the North Jetty tip.

6.1.1.8. The existing ATON configuration at the entrance of the Yaquina Bay Bar did not optimally facilitate the navigation of the MARY B II on the accident night. The lack of a physical Entrance Lighted Buoy 3, potential confusion between the range lights and the bridge tower light, and the lack of light on the North Jetty tip may have been contributing factors to the operator deviating from the main channel.

6.1.1.9. The Coast Guard did not undertake a reassessment of the Yaquina Bay waterway after the implementation of the RNAs for Hazardous Bars in 2009. The 1996 Yaquina Bay WAMS classified the waterway as "non-critical" though the waterway was re-designated as "navigationally critical" in 2003. Although the waterway did not change, the risks associated with the waterway had been identified with the designation as an RNA with hazardous bars. The reassessment of this particular risk would encompass an

examination to determine if the Aids to Navigation were effective to mitigate or reduce those risks. The overarching policy for the conduct of WAMS assessment is contained in the Aids to Navigation Manual, COMDTINST 16500.7A. At the time of the accident, there were issues with the missing Lighted Approach Buoy "Y", the inability of Lighted Buoy 3 to be maintained year round, the inability to put a light on the North Jetty and the potential confusion with the rear range and the aircraft warning light on the Yaquina Bay Bridge. Another significant issue is the lack of availability of heavy lift capable buoy tenders to maintain certain critical aids.

6.1.2. A subsequent event after the deviation from the center of the channel was that the MARY B II continued to move to the northeast and toward the extreme hazard of the North Jetty tip. The operator directed or allowed his vessel to continue moving northeast despite the efforts of the Coast Guard escort vessels to illuminate the bar and surrounding area and communicate warnings. These warnings included observations about incoming series of breaking waves that potentially posed a danger to the vessel and about not moving to the north until the vessel had safely crossed inside the jetty tips. Causal factors contributing to the continued northeastern movement were:

6.1.2.1. The captain of the vessel failed to fully appreciate the risks of bar crossing or lost situational awareness of the vessel's position in proximity to hazards such as the North Jetty tips and the north reef.

6.1.2.2. The captain of the MARY B II's preoccupation with AIS targets that were "clogging up" his vessel's chartplotter. There is no way to determine what he was viewing with precision, however, he may have been distracted by the presence of the VICTORY, MLB 47266 and South Jetty Light 4 and the virtual AIS ATON equipped signal from Entrance Lighted Buoy "Y." Based on the captain's request, the Coast Guard significantly reduced their communications with him as to not provide a distraction during a critical moment in the transit.

6.1.2.3. The captain of the MARY B II appeared to not utilize all available navigation aids to discern his position on the bar nor did he heed the advice from Coast Guard vessels. This was either due to lack of knowledge of those navigation aids or inability to visually identify and/or interpret or understand those navigation aids. Neither the captain nor the Coast Guard discussed the use of the navigation ranges marking the center of the channel nor South Jetty Light 4 as a reference. The Coast Guard marked the approximate position of the center of the channel with the MLB 47266 stationed near the centerline with a flashing blue light.

6.1.2.4. Notwithstanding the points raised in 6.1.1.6, there is no indication that the captain of the MARY B II used the maximum speed capabilities of the vessel (6.5-7 knots), when warranted, to transit the bar in the lull between significant wave sets and to minimize exposure of the vessel to the breaking 14-16 foot waves. The captain of the vessel did not notify the Coast Guard escorts that he was going to reduce speed.

6.1.2.5. Had the MARY B II stayed on course or shifted course back towards the center of the channel sooner and still capsized the two Coast Guard rescue vessels could have immediately attempted to affect the rescue of the crew of the MARY B II. A capsizing occurring closer to the center of the channel would have allowed for more maneuvering room for the Coast Guard crews to perform a water rescue and increased the probability of survival for the crew.

6.1.3. Subsequently, the MARY B II was struck by a series of large, 16 to 18 foot waves, as it approached the submerged rock ends of the North Jetty tip. The first series of large waves cause the MARY B II to broach and take another wave on the starboard bow area resulting the capsizing. More effective communication by the operator of the MARY B II and the Coast Guard may have prevented subsequent events. Had it been clear that the MARY B II was unable to make 6 to 7 knots and that the vessel would miss the lull period, both the Coast Guard and the vessel operator could have discussed alternative plans to not continue with the transit, and make a second attempt at crossing the bar at a later time. Causal factors leading to the impact of the waves include:

6.1.3.1. The reduction in speed by the MARY B II caused them to miss the critical period of a lull which would have minimized exposure of the vessel to the breaking 14-16 foot waves.

6.1.3.2. The operator allowed his vessel to continue moving towards the extreme hazard of the North Jetty tip despite the efforts of the Coast Guard escorting vessel to illuminate the bar and surrounding area and communicate warnings.

6.1.3.3. Prior to the series of larger waves approaching the MARY B II's position, Coast Guard escort vessels did not assertively communicate final warnings that were effective or in time to influence the operator in directing the movement of his vessel to avert disaster.

6.1.3.4. There are no Federal restrictions in place to prevent CFVs from crossing the hazardous Yaquina Bay Bar during the inclement weather conditions that night. The restrictions placed on recreational and uninspected passenger vessels, restricting those from crossing the bar that night, were not applicable to the MARY B II. This allowed the vessel to cross the bar that night under sea conditions that exceeded the vessel's capabilities, which contributed to the casualty.

6.1.4. After being struck by a series of large waves, the MARY B II capsized as it approached the submerged rock ends of the North Jetty tip. Causal factors associated with the capsizing were:

6.1.4.1. The loss of situational awareness by the operator of the MARY B II resulted in the vessel being positioned in close proximity to the North Jetty tips, leading to the waves pushing the vessel onto the rocks which contributed to the capsizing.

6.1.4.2. External wave action further reduced the vessel's righting energy. Proximity to the reflected wave energy of the rock face of the North Jetty tip meeting the incoming large breaking waves caused confused seas with the dominant power of the breaking waves continuing to come in from the Pacific Ocean.

6.1.4.3. The size and design characteristics of the MARY B II were such that the vessel itself could not cope with the extreme breaking seas. The 42 foot wood vessel with relatively high freeboard and cabin was vulnerable to the breaking seas. The force of the wave caused the vessel to pitch pole and capsize.

6.1.4.4. The decreasing distance to the submerged portion of the North Jetty tip and the breaking face of the powerful surf wave created a situation where an attempt to maneuver out of the danger would require the MARY B II to turn rapidly to face the waves perpendicularly to lessen the destructive force of the breaking sea or to maneuver back towards the center of the channel away from the hazard of the jetty tip which would cause the vessel to run more parallel to the breaking sea which would broach the vessel resulting in another form of capsizing.

6.1.4.5. The vessel's stability was potentially decreased by the outriggers affixed to the vessel, particularly the port outrigger that was halfway out, may have affected the vessel's motion and control in the large breaking seas.

6.1.4.6. There is no evidence that the captain of the MARY B II directed a crew person to stand at the rear-facing door to the cabin to call out the wave series and recommended actions. This is a practice of a prudent mariner in the Yaquina Bay Bar area.

6.1.4.7. The late December grounding may have caused damage, not known to be properly repaired, that allowed for seawater leakage into the vessel's bilges further decreasing stability at a critical moment in the inbound voyage.

6.1.5. Following the capsizing of the vessel, the three person crew perished by drowning and the vessel was lost by sinking. It cannot be determined which of these events occurred before the other or if they occurred simultaneously. The causal factors contributing to these subsequent events were:

6.1.5.1. The violent capsizing of the vessel resulted in two crew persons being ejected from the vessel at some point and the captain becoming entrapped in the cabin wreckage. It cannot be determined if the sole door to the wheelhouse was open and the two crew persons used that in an attempt to abandon the vessel or if they had washed out of the vessel wreckage.

6.1.5.2. The operator was trapped inside the cabin and the inability to egress led to his drowning. The operator was not wearing an immersion suit; however, this gear would not have been effective if he was not able to escape from inside the cabin.

6.1.5.3. The operator failed to conduct safety drills with the crew. Participation in realistic drills could have helped the crew to be better prepared in reacting to an emergency situation, enabling to take earlier steps to don immersion suits, or plan other contingencies such as abandoning ship.

6.1.5.4. With two Coast Guard rescue vessels on the scene, and the MARY B II in a hazardous location, there was still limited time and ability to take emergency action including donning immersion/survival suits and/or deploying and entering the liferaft.

6.1.5.5. Immersion suits were located in the wreckage and floating free in the surrounding waters, no victim was wearing an immersion suit designed to protect the wearer from hypothermia. In this case, there is no evidence that hypothermia played a role in the crew's deaths. The immersion suits would have protected the victims from the sudden immersion shock leading to drowning.

6.1.5.6. The approximate water temperature was 51.6° F and air temperature was 54° F. This water temperature can lead to cold water shock. Cold water is described as water less than 68° F. Two of the crewmen who were found free of the vessel wreckage drowned despite wearing a fully inflated Type V lifejacket. Sudden gasp reflex associated with cold water shock most likely contributed to the death. The captain's entrapment in the partially submerged wreckage led to death by drowning.

6.1.5.7. All three crew were wearing inflatable personal flotation devices which were found to have automatically inflated. While providing comfort and mobility while working, the life jackets worn by the three crew did not provide maximum buoyancy, right the victim to face up in minimum time and protect from sudden immersion shock and sudden gasp reflex in the frigid waters and breaking surf.

6.1.5.8. One crew person was recovered in the water by a Coast Guard rescue swimmer and hoisted to the beach where EMS responders were unsuccessful with resuscitation efforts. One crew person washed ashore and was recovered. The captain was trapped in the cabin wreckage on the beach north of the North Jetty.

6.1.5.9. The vessel broke apart after striking the North Jetty or the submerged portion of that jetty. The cabin and a significant portion of the deck washed ashore on the beach north of the North Jetty after being battered by surf. Wreckage of some portion of the MARY B II washed up on the beach for a period of time following the accident and this included the liferaft and EPIRB along with immersion suits.

6.1.5.10. The remainder of the vessel including the hull, engine, rudder, propeller and other components were not located.

6.2. Violations of Law by Credentialed Mariners: There were no credentialed or licensed mariners working on the MARY B II at the time of the accident, thus, there were no acts of

misconduct, incompetence, negligence, unskillfulness, or willful violation of law by a credentialed mariner that contributed to the casualty.

Had a requirement been in place for the operator to be credentialed and had the operator survived, there would have been evidence of negligence and misconduct. The operator of the MARY B II was not fit for duty due to impairment by drug and alcohol use.

6.3. Violations by Members of the Coast Guard or other federal, state or local agencies: There were no acts of misconduct, incompetence, negligence, unskillfulness, or willful violation of law by members of the Coast Guard or other federal, state or local agencies that contributed to the casualty.

6.4. Violations Subjecting Parties to a Civil Penalty:

6.4.1. There is evidence that the MARY B II's operator was in violation of 46 USC § 2302(c)(1) by operating a vessel while being under the influence of an intoxicant or dangerous drug.

6.4.2. There is evidence that Mr. Biernacki's conduct constitutes a violation of 46 USC 2302(a), in that he operated the MARY B II in a negligent manner when he failed to account for: the forecasted weather warnings; the inherent dangers of the Yaquina Bay Bar; and, the limiting size and construction of the MARY B II. As the operator of a vessel, Mr. Biernacki had a duty to plan and execute a safe bar passage; his failure to take into account critical factors constitutes a breach of that duty; there was a resultant loss of life and property; and, that Mr. Biernacki's actions were the proximate cause of that damage.

6.4.3. There is evidence that the MARY B II's managing owner was in violation of 46 CFR § 4.05-10, by failing to timely submit a marine casualty report, Form CG-2692.

6.4.4. There is evidence that the MARY B II's managing owner was in violation of 46 USC § 2302(a) by acting in a negligent manner when she failed to ensure the safety of operations on the fishing vessel which she owned. She lacked knowledge of Coast Guard requirements regarding both owner and operator responsibilities per 46 CFR § 4 and 46 CFR § 28. Furthermore, she hired an operator who she knew not to be familiar with the notoriously hazardous waterway and entrance bar on which the vessel would be operated. The managing owner of a CFV, or any other vessel, is ultimately responsible for its safe operation.

6.5. Violations of Criminal Law: This investigation did identify violations of criminal law.

There is evidence that the MARY B II's operator was in violation of 46 USC § 2302(c)(2) by operating a vessel while being under the influence of an intoxicant or dangerous drug.

There is evidence that the MARY B II's operator was in violation of 18 USC § 1115, by negligently operating a vessel and contributing to the death of his two crewmembers.

The actions of the operator of the MARY B II, by operating the vessel impaired by drugs and alcohol and in a negligent manner, endangered the vessel, the lives of everyone onboard, the environment and the safety of the Coast Guard and other first responders. Had the operator of the MARY B II survived, this investigation would have made this referral to the Department of Justice.

6.6. Need for New or Amended Laws/Regulations:

This marine casualty confirms the need to create the following:

6.6.1. The Coast Guard should accelerate shaping and implementing the policies, procedures and guidance outlined in the Coast Guard Authorization Act of 2010 (Public Law 111-281), which added a subsection in 46 USC § 4502 that requires the individual in charge of a CFV, that operates three nautical miles beyond the territorial sea baseline, to pass a training program and hold a certificate issued under that program. The program must address certain topical areas and it must be based on professional knowledge, skills, and competencies that includes, but is not limited to: training in seamanship, stability, collision prevention, navigation, firefighting and prevention, damage control, personal survival, emergency medical care, emergency drills, and weather; require an individual to demonstrate ability to communicate in an emergency situation and understand information found in navigation publications. The program also must recognize and give credit to the individual for recent past experience in fishing vessel operation. The training certificate will be valid for 5 years after which refresher training will be required to keep the certificate current.

6.6.2. The incidents of drug and alcohol use during the operation of CFVs threatens the safety and security of the vessel crews, vessels, environment and the nation's waterways. The Coast Guard should enact regulations that, at a minimum, require the persons operating state and federally documented vessels in navigable waters and on the high seas to be part of a drug and alcohol testing program that is found in all other sectors of the commercial marine industry. That includes pre-employment, random, and reasonable cause testing while maintaining existing the post casualty testing requirements.

6.6.3. The Coast Guard has not established merchant mariner credentialing requirements for personnel working on CFVs to bring those vessel requirements into alignment with other segments of the commercial marine industry. This effort would have ensured a standardized competency level, medical fitness certification, and mandatory enrollment in drug testing program with pre-employment, random, periodic and reasonable suspicion testing for the marine industry. There are no requirements related to medical fitness, eliminating the potential for workplace impairment by drugs and alcohol, and an in-depth examination of mariner competency for someone to work on a commercial fishing vessel of less than 200 GT. At this point in time, post-casualty drug and alcohol testing is an investigation tool and it is not a deterrent that creates a drug and alcohol free workplace.

While effective, voluntary stability requirements, safety classes and safety requirements have provided an improvement in the only certain areas of the safety of vessel operations.

Despite the vessel owners and operators commitment to safe vessel operations and sending safe vessels to sea, there are no mandated material inspection or construction standards for the fishing fleet of smaller fishing vessels which are not inspected by a regulatory authority. A vessel may be constructed with any material and be inadvertently designed with operational limitations such as high sail area, limited propulsion power and ballast capability and a host of other limitations. With older vessels, a detailed examination of the material condition of the hull and internal components is even more critical. At this point, there is no requirement for either safety initiative, credentialing of operators or inspection of the vessels they operate.

6.6.4. The current examination standards on CFVs do not adequately address the hazards associated with fishing operations. The Coast Guard should require CFVs to undergo mandatory inspections with expanded standards beyond the limited requirements of 46 CFR § 28. These comprehensive requirements should include the following: enrollment in drug testing program, watertight integrity and subdivision requirements, requirements to not only conduct drills but to maintain a record of safety drills, requirements for equipment maintenance and dry dock exams to ensure the integrity of the hull and other watertight components.

6.6.5. The current regulatory requirements for a bar crossing plan also known as a Go/No-Go Plan only apply to small passenger vessels, not CFVs or other commercial vessels with the exception of uninspected vessels. If the bar crossing plans have been reviewed and approved by the Coast Guard OCMI then these vessels are exempt from certain provisions outlined in the RNA's regulations for hazardous bars. The Coast Guard should amend current regulations to require CFVs and other commercial vessel to have a bar crossing plan. Working with fishing industry stakeholders to provide guidance to Coast Guard personnel who review and approve those plans as to what are the elements should be included in the contents of the bar crossing or go/no-go plans.

6.7. Unsafe Actions and Conditions which, although not directly Causal Factors, Cannot Be Eliminated as Potential Contributing Factors:

6.7.1. The managing owner of the MARY B II failed to ensure that her employees, the crewmembers, abstained from drugs and alcohol when operating the vessel. Evidence supports both drugs (methamphetamine, amphetamines, and cannabinoids (marijuana)) and alcohol were present in the systems of two of three of the crew while operating the vessel.

6.7.2. The managing owner of the MARY B II failed to address the serious issue of workplace fatigue or mitigate the attendant consequences on the crewmember's critical decision-making.

6.7.3. The Coast Guard boat crews communicated information describing bar conditions related to wave characteristics such as period, set, breaks, geographic location, and distance from the ranges. Some of these communications used terms which mariners not familiar with the Yaquina Bay Bar would not have recognized or fully understood. Furthermore, communications from the Coast Guard to the MARY B II regarding vessel speed and

warnings about avoiding the North Jetty tip were not stated with enough urgency or sufficiently early in the escort to avoid the vessel going into extremis.

6.7.4. On the night of the accident, and for about four months before, the Coast Guard effectively had no available buoy tenders with heavy lift capabilities in the accident area of operations.¹⁰¹ A buoy tender with heavy lift capabilities is one that has the capability to lift, moor, and reposition critical aids to navigation at deep-water bars. The CGC FIR left the AOR in June 2018 to go into an extended dry dock period. The CGC ELM was identified as the replacement vessel for the CGC FIR which was not scheduled to arrive in the AOR until August 2019.¹⁰² D13 assumed an approximate 16-month gap in heavy lift buoy tending capabilities.

6.7.5. The consideration to make and sustain critical floating aids to navigation year round aids is not possible without enhanced buoy types, moorings and the vessels to service them when needed. Sustaining the other floating aids to navigation in these hazardous bar areas is also adversely impacted by a lack of other heavy lift buoy tenders.

6.7.6. After the MARY B II capsized the Coast Guard and other agencies began conducting SAR. Initially, there were communication challenges between all of the vessels, shore parties, and the CG helicopter. The CG boats, beach crews, the CG helicopter and local Fire Department and Law Enforcement resources were communicating on different channels. Once Sector North Bend Command Center informed all personnel to switch to Channel 21 Alpha, the communication issues were resolved. These were ultimately resolved before the suspension of the search activities resulting in the location of all of the victims.

6.7.7. The bar safety handouts, which are a two-sided color handout containing critical safety information for marine interests for each particular hazardous bar, do not contain warnings about the seasonal nature of some aids and the potential for lack of reliability of the aids to navigation in these hazardous areas.

6.7.8. There is a gap in NAIS coverage in the Newport, Oregon area of operation that affected the ability of the Coast Guard to monitor and identify vessel positions using AIS transponders on vessels that are equipped with these units. Coast Guard Command Centers, using the tracking capability of AIS, identify vessels and can dispatch SAR boats, Cutters and aircraft accurately and without delay with this capability.

7. Actions Taken Since the Accident

7.1 Coast Guard Search and Rescue including Bar Escorts

¹⁰¹ There is another Coast Guard buoy tender within the D13 operations area, the CGC HENRY BLAKE, homeported in the Puget Sound area. This buoy tender could have handled some of the ATON in the vicinity of Yaquina Bay but the HENRY BLAKE is limited by sea conditions as well as buoy size characteristics. At the time the discrepancies with Lighted Whistle Buoy Y and Entrance Lighted Buoy 3 were observed, the HENRY BLAKE would not have been able to transit to Newport, OR to correct the discrepancies.

¹⁰² The gaps in buoy tender availability was/is being assumed across the country with the entire buoy tender fleet.

7.1.1. As a result of this incident, and consistent with COMDTINST M16130.2F, Commander Thirteenth Coast Guard District directed a SAR Case Study to examine the SAR aspects of the emergency phase of the MARY B II case. This included the alert and distress phases of the accident. The recommendations of this report will be made available to Coast Guard senior leadership as a means to enhance and improve Coast Guard operations.

7.1.2. A work group was established via charter with taskers directly taken from the Thirteenth District Commander's Final Action Memo. Taskers include a look at bar illumination, Advanced Helicopter Rescue School (AHRS) training review, communication to commercial fishing vessel fleets, and a WAMS at Yaquina Bay.

7.1.3. Station Yaquina Bay has created a unit instruction outlining the procedures to be used for bar escorts and restrictions which includes a decision making flow chart.

7.2. Coast Guard D13 Prevention

7.2.1. In accordance with policy, a timely examination of the existing ATON in the accident area was conducted to determine if the aids to navigation were on station and watching properly as prescribed.

7.2.2. The Coast Guard established virtual AIS aids to navigation on a number of buoys and established a virtual AIS ATON on the North Jetty. These are now charted and available for use with vessels equipped with AIS to enhance navigation on this waterway. The Coast Guard has also begun installation of virtual AIS ATON at other hazardous bars in D13.

7.2.3. D13 Waterways Management initiated a WAMS study. The WAMS is being conducted for Yaquina Bay with an estimated completion date of November 1, 2019. A WAMS study was conducted for Tillamook Bay and there is a plan to update the ATON for that waterway.

7.2.4. D13 Waterways Management coordinated having the Coast Guard Cutter ASPEN, with sufficient heavy lift capabilities, transit up from San Francisco, CA in August 2019 to clear some of the backlog of ATON discrepancies.

7.2.5. D13 Inspections and Investigations developed a Marine Safety Information Bulletin (MSIB). This MSIB is under development highlighting immediate notification to the maritime community regarding bar operations.

7.2.6. Much the MARY B II's remains were found on the beach and collected by Oregon State Parks. However, the submerged portion of the wreckage of the MARY B II was not searched for or located because of the dangerous location in which the accident occurred.

7.2.7. After the lapse in appropriations was over, the Coast Guard reassessed its classification of personnel previously designated as non-essential. In D13, several personnel were reclassified as essential personnel including a civilian Coast Guard investigator and several CFV Examiners. In the event of future lapses in appropriations, these personnel will be available to conduct Coast Guard operations in the areas of CFV Examinations and marine casualty investigations.

7.3. Alleged RANGER incident. During the public hearing, two witnesses testified about a previous assault involving Mr. Biernacki and another crewmember on board the RANGER on or about August 2018. This allegation was outside the scope of this investigation and any information received during and after the board has been referred to the Commander of Sector North Bend for disposition.

8. Recommendations

8.1. Safety Recommendations

8.1.1. Recommend that the Commandant of the Coast Guard partner with the Commercial Fishing Safety Advisory Committee (CFSAC) to establish a working group to draft and accept a Task Statement addressing safety of Commercial Fishing Vessels of less than 200 GT. The Task Statement should specifically address the issues raised by this marine casualty, the total loss with fatalities of the MARY B II, to include addressing the following items:

8.1.1.1. Review multi-year statistics (provided by the Coast Guard) regarding commercial fishing vessels' less than 200 GRT accidents or losses that resulted in fatalities, injuries, or property damage. Major marine casualties such as the losses of F/V "DESTINATION," "NO LIMITS" and other fishing vessels with multiple fatalities could be reviewed as examples.

8.1.1.2. Propose initiatives and actions to be taken onboard commercial fishing vessels less than 200 GT to eliminate all drug and alcohol usage when operating.

8.1.1.3. Ensuring that CFVs are maintained with rigid standards for material condition, construction, and design of the vessels that maintains seaworthiness under all operating conditions.

8.1.1.4. A process to review and implement commercial fishing vessel mariner fitness-for-duty for service onboard CFVs of less than 200 GT. Fitness for duty and service should include an assessment of overall health and physical fitness and contain provisions for the elimination drug and alcohol usage and management of fatigue.

8.1.1.5. A process to assess, document and maintain mariner competency to operate CFVs of less than 200 GRT, including local knowledge and recency.

8.1.1.6. Development of a joint Industry and Coast Guard effort to complete the implementation of 2010 and 2012 legislation for commercial fishing vessels as specified in those Coast Guard Authorization Acts. These efforts should address at a minimum, enacting the provisions in the CG Authorization Act of 2010 regarding certifying CFV operators' competency.

8.1.1.7. Feasibility of a multi-year phase-in implementation that all CFV mariners on CFVs of less than 200 GT and operating three miles beyond the baseline in a near-coastal zone obtain and maintain a Merchant Mariner Credential (without TWIC requirement).

8.1.1.8. Feasibility of a multi-year phase-in implementation that all CFV mariners serving as a Master/Operator of a CFVs of less than 200 GT and operating three miles beyond the baseline in a near-coastal zone obtain and maintain an Operator of Uninspected Passenger Vessels (OUPV) Merchant Mariner Credential (without TWIC requirement).

8.1.1.9. Identify steps and make recommendations to promote marine safety of CFVs less than 200 GT with all commercial entities, companies, owners, and managing operators to develop and implement a Safety Management System (SMS) for their vessels and personnel, in accordance with and as defined in 33 CFR § 96.120.

8.1.1.10. Develop guidance and make recommendations on fatigue limiting strategies as well as work/rest hour logging requirements.

8.1.2. Recommend that the Commandant of the Coast Guard should obtain the legislative authority to require CFVs to undergo mandatory inspections with expanded standards beyond the limited requirements within 46 CFR § 28. The current regulatory standards for CFVs do not adequately address the seaworthiness of vessels in light of the hazards associated with fishing operations.

8.1.3. Recommend that the Commandant of the Coast Guard request a review of the Fishing Vessel Casualty Task Force report, March 1999, with the aim of implementing all of the recommendations. In 2011, the NTSB released five safety recommendations for CFV operations which were presented to the Coast Guard. These included addressing stability, subdivision and watertight integrity on CFVs under 79 feet. Additionally, NTSB recommended all owners and masters receive training and be able to demonstrate competency in stability and watertight integrity. Despite the overwhelming recognition of the hazards of commercial fishing, and the statistical data showing high rates of fatalities and vessel losses, a long list of recommended regulations and laws have not been enacted. Voluntary programs, education and dissemination of best marine practices do not stop CFV casualties and fatalities when negligent owners and operators fail to adhere to well-intentioned suggestions. Comprehensive requirements should include the following: enrollment in drug testing program, watertight integrity and subdivision requirements, requirements to not only conduct but have and keep a log of safety drills, requirements for equipment maintenance and dry dock exams to ensure the integrity of the hull and other watertight components.

8.1.4. Recommend that the Commandant of the Coast Guard obtain legislative authority to require CFV operators of less than 200 GT hold a valid Coast Guard issued Merchant Mariner's Credential (MMC). In addition, legislative authority should be obtained to require crewmembers on CFVs hold crew competency certificates or Merchant Mariner's Document. This would help ensure standardized levels of competency, ensure the medical fitness of CFV operators and crew, and it would enhance crew's safety mindset. Along with medical certificates, the licensing requirements means these mariners are subject to enrollment in a mandatory drug testing program. The program includes requirements for all types of testing: pre-employment, random, periodic, reasonable suspicion testing and post-casualty. This is a much needed tool for owners and operator to ensure a drug-free working environment on their CFVs, something which affects the safety of life and property on the waterway.

8.1.5. Recommend that Commander Thirteenth Coast Guard District should work with District Eleven to conduct education and outreach to promote awareness, compliance, and training opportunities with hazardous bars, bar crossing plans, and prudent practices such as stationing an aft lookout. Education and outreach can include developing safety alerts, attending industry workshops or hosting industry days with local CFV owners, operators, and crew.

8.1.6. Recommend that the Commandant of the Coast Guard in concert with District CFV Safety Program Managers collaborate with entities like the North Pacific Fishing Vessel Owner's Association (NPFVOA) and AMSEA to amend their curriculums and develop a concentrated outreach campaign as appropriate for operating areas with bars to increase visibility of the risks and dangers of bar crossings and discussion of potential courses of action including not crossing the bar under certain conditions. Working in concert with Coast Guard Districts, Commercial Fishing Vessel Programs and Small Boat Station Stations should encourage CFV owners and captains to attend trainings and workshops that go well beyond drill conductor training that may include stability, navigation, Occupational Safety and Health, fatigue reduction measures, and accentuating the importance of maintaining a drug and alcohol free workplace on CFVs. In addition, in partnership with public industry, the Coast Guard should conduct additional and continuing public outreach programs concerning commercial fishing vessel safety as a result of this tragic accident. The goal is to expand and elaborate on communicating the risks of bar crossings and Coast Guard escort availability and procedures.

8.1.7. Recommend that the Commandant of the Coast Guard amend 46 CFR Part 28 to require CFV owners and captains implement shipboard policies to address crew rest, work hours and fatigue. The shipboard policies should reflect the basic principles of the Coast Guard's Crew Endurance Management System (CEMS) used to identify and control crew endurance risk factors. Requiring owners and captains to implement crew rest policy would give crewmembers the opportunity to reduce their risk of fatigue-related accidents and help prevent casualties.

8.2. Administrative Recommendations:

8.2.1. Recommend that Sector Columbia River who holds the Officer in Charge, Marine Inspection authority for Civil Penalty proceedings initiate civil penalty action against the MARY B II's owner for alleged violations of 46 CFR § 4.05-10 and 46 USC § 2302 via Marine Safety Unit Portland.

8.2.2. Recommend that Commander Thirteenth Coast Guard District commission a Coast Guard Bar Observation, Escort and Critical Bar Condition Information Dissemination study of the 16 waterways with hazardous bars as defined in 33 CFR § 165.1325. Even though these waterways may have similarities and differences, they are classified as hazardous bars. This study should include the perspective of mariners who may not be familiar with a particular waterway. To ensure that Coast Guard bar operations related to these areas take into effect the best practices contained in the Station Yaquina Bay Instruction (STAYBINST 3100.B) dated February 13, 2019¹⁰³, guidance from the Coast Guard National Motor Lifeboat School, and the Office of Boat Forces (CG-731). For consistency of operations for the waterways users in these hazardous waterways, Coast Guard D13 and D11 should collaborate on areas of common concerns and practices for waterway users at the hazardous bars in their areas of responsibility. In addition, the District Commander should review and promulgate Commander's Intent clarifying expectations for the application of bar closures under 33 CFR § 165.1325. The detailed examination of the other RNAs within D13 were outside the scope of this investigation.

8.2.3. Recommend that Commander Thirteenth Coast Guard District specifically address the issues raised by this marine casualty, to include addressing the following:

8.2.3.1. Direct a review of all D13 waterways and reclassify hazardous waterways as navigationally critical. This classification relates to the hazard of the waterway as well as the difficulty in maintaining ATON in these unique areas. This recommendation should be shared with the Waterways Division at D11 for consideration based on the classifications outlined in the CG Aids to Navigation Manual.

8.2.3.2. Designate Entrance Lighted Channel Buoy 3 a year round ATON if supported by the recently commissioned Yaquina Bay Bar WAMS and including the opinions and suggestions of the Coxswains and Surfmens at CG Station Yaquina Bay

8.2.3.3. Develop and promulgate warnings about the reliability of aids to navigation be included as a warning to mariners in the Bar Safety Handouts disseminated to marine interests. Recommend this be communicated to the Commander Eleventh Coast Guard District for consideration for inclusion in any similar products that they may produce for marine interests.

8.2.4. Recommend that Commander Thirteenth Coast Guard District initiate a workgroup to review and implement Coast Guard response communications plans, procedures, and

¹⁰³ CG Exhibit 067.

compatible equipment to ensure that communications are as effective as possible in emergent search and rescue situations.

8.2.5. Recommend that Commandant of the Coast Guard accelerate the acquisition for a replacement for the 52 foot special purpose craft (SPC). Built in the mid-1950s, the four highly capable heavy displacement vessels cannot operate indefinitely and have a speed of 11 knots.

8.2.6. Recommend that Commandant of the Coast Guard close the gap as outlined in COMDTINST M16500.7 (series) between WAMS reports and the more complex Port and Waterway Safety Assessment (PAWSA) and determine the appropriate and mandated interval for the risks associated with “critical waterways.” The WAMS are specifically centered on ATON for the waterways and marginally explore actual waterway conditions and specific hazards. The 16 waterways that are identified as RNAs for hazardous bars are navigationally critical as defined in COMDTINST M16500.7 and require special attention and an expanded WAMS study. In addition, D13 Prevention should examine reduction in size of the Regulated Navigation Areas contained in 33CFR § 165.1325 so that the RNAs actually represent the areas of risk to mariners rather than a broad geographic area. There is a gap for waterways with unique hazards such as the RNAs for hazardous bars as outlined in 33 CFR §165.1325 along the Pacific Northwest Coast. These ports do not qualify for a Port and Waterway Safety Assessment (PAWSA) due to the complexity of these studies.

8.2.7. Recommend that the Commandant of the Coast Guard commission a workgroup to study the need for replacement of the navigation buoys placed at the entrance of hazardous bars and similar waterways that are subjected to extreme sea conditions. Recommend the findings of this work group drive the design, construction and implementation of a buoy type that can withstand extreme sea, current and mooring challenges.

8.2.8. Recommend that the Commandant of the Coast Guard direct the Coast Guard SAR community to incorporate into guidance and standard operating procedures that the survival time determinations in the Probability of Survival Decision Aid, PSDA program include the likelihood of sudden immersion shock in waters below 68° F in catastrophic and sudden vessel accidents. Cold water immersion can adversely affect the estimated functional survival time for an average person who would be wearing PVC rain gear as opposed to an immersion or survival suit. These same considerations also affected the cold water survival time of 12.62 hours for the same individual exposed to the air and water temperature on the accident night wearing only clothing and possible rain gear.

8.2.9. Recommend that the Commandant of the Coast Guard coordinate with appropriate Districts that have identified high-risk fisheries and establish an outreach and compliance program for the witnessing and increased participation in onboard drills on fishing vessels prior to the start of fishing seasons. These high-risk fisheries include the Dungeness crab fisheries and include others that have been identified through data from NIOSH studies for fisheries with high incidents of deaths and vessel losses.

8.2.10. Recommend that the Commandant of the Coast Guard and the NWS explore and consider incorporation of OSU's coastal marine radar data as a tool to build a better weather and sea state picture for concerned mariners as well as for Coast Guardsmen preparing to conduct operations while they conduct risk assessment for bar escorts in adverse weather conditions. It was determined that the NWS does not utilize specially configured shore based marine radar designed to show the coastal wave spectrum to the level of granularity that is produced by OSU research facilities. Incorporation of this type of precision technology into Coast Guard risk assessment procedures and NWS products would aid mariners and Coast Guard responders in developing a better operating picture on which critical bar crossing, bar restriction, and bar closure decisions can be made.

8.2.11. Recommend that the Commandant of the Coast Guard have the Coast Guard Navigation Center (NAVCEN) examine and close the NAIS coverage gap that exists in the Yaquina Bay Bar, Oregon area to ensure the effectiveness of Coast Guard operations as well as national security requirements.

8.2.12. Recommend that the Commandant of the Coast Guard provide a copy of this report to the next-of-kin of the MARY B II's crew, the NTSB, and PII counsel.

8.2.13. Recommend that the Commandant of the Coast Guard provide widest dissemination of this report throughout the CFV industry community including Coast Guard District Fishing Vessel Coordinators, NPFVOA, AMSEA, NIOSH, major fishing vessel associations in the Pacific Northwest, and the Fisherman's Wives Association.

8.2.14. It is recommended that this investigation be closed.



KAREN DENNY
Commander, U.S. Coast Guard
Lead Investigating Officer

Enclosures: (1) Formal Marine Casualty Investigation Convening Order
(2) MARY B II Public Hearing Witness List
(3) Hyperlink List

Witness List F/V MARY B II Formal Hearing 13-17 May 2019, Newport, OR

Witness #	Testimony Date	Name	Position or Association
1	13 May 2019	Mr. ██████████	Previous vessel owner
2	13 May 2019	Mr. ██████████	Marine Surveyor
3	13 May 2019	Senior Trooper ██████████ ██████████	Oregon State Patrol
4	13 May 2019	Mr. ██████████	NOAA Meteorologist
5	13 May 2019	CDR Brendan Harris USCG	D13 Waterways Management Branch Chief
6	14 May 2019	Dr. ██████████	Oregon State University Crab Fishing expert
7	14 May 2019	BMC ██████████ USCG	Executive Petty Officer Station Yaquina Bay
8	14 May 2019	BM2 ██████████ USCG	USCG Station Yaquina Bay
9	14 May 2019	Mr. ██████████	Commercial Diver
10	14 May 2019	Mr. ██████████	Previous employer of Mr. Biernacki
11	15 May 2019	Mr. ██████████	Previous employer of Mr. Biernacki
12	15 May 2019	Mr. ██████████	Previous employer of Mr. Biernacki
13	15 May 2019	BOSN ██████████ USCG	Commanding Officer Station Barnegat Light
14	15 May 2019	Mr. ██████████	Former colleague of Mr. Porter
15	15 May 2019	Mrs. ██████████	Spouse of Mr. Porter, Crew
16	15 May 2019	Dr. ██████████ Medical Examiner & Mr. ██████████ & Mr. ██████████	Medical Examiner and Oregon State Forensics Lab Technicians
17	15 May 2019	Dr. ██████████ (*)	Toxicology Expert West Jefferson Industrial Medicine
18	15 May 2019	Mr. ██████████	Previous employer of Mr. Biernacki
19	15 May 2019	Mrs. ██████████	Spouse of Mr. Porter, testimony continues
20	16 May 2019	Dr. ██████████	Oregon State University, Coastal Wave Study
21	16 May 2019	Mr. ██████████ USCG	CG D13 Fishing Vessel Coordinator
22	16 May 2019	BMC ██████████ USCG	Executive Petty Officer Station Yaquina Bay, testimony continues
23	16 May 2019	Mr. ██████████ USCG	Fishing Vessel Examiner CG Marine Safety Unit Portland
24	16 May 2019	BM2 ██████████ USCG	USCG Station Yaquina Bay, testimony continues
25	16 May 2019	BOSN ██████████ USCG	Commanding Officer Station Yaquina Bay
26	17 May 2019	Mr. ██████████ USCG	CG D13 Command Center
27	17 May 2019	LCDR ██████████ USCG	CG D13 Regulated Navigation Area Spokesperson
28	17 May 2019	BOSN ██████████ USCG	Commanding Officer Station Yaquina Bay, testimony continues
29	17 May 2019	Ms. ██████████	Managing Member of MARY B II LLC/ Vessel Owner, CFV MARY B II
30	17 May 2019	Ms. ██████████ & Dr. ██████████	National Institute for Occupational Safety and Health (NIOSH)

(*) = Appeared at testimony remotely via SKYPE

(The Hyperlinks will open in another window and there will be a standard anti-virus message, you can click "OK")

#	Description	Short URL
1	This hyperlink will take the online reader to a composite movie with sound, CG Exhibit 38 entitled Critical Communications contains slides showing the positions of CG vessels and the MARY B II on a nautical chart with recordings of critical radio communications and the times of these activities. NOTE: This is a large file and takes a considerable amount of time to load.	CG 038 Critical Comms.mp4
2	This hyperlink will take the online reader to CG Exhibit 011, which is an audio recording of radio communications between the Coast Guard and the MARY B II in the later stages of the inbound transit and during the rescue activities.	CG 011 Audio CG Communications Audio Recording Part 2 of 2.wav
3	This hyperlink will take the online reader to CG Exhibit 008, which is the transcript of radio communications between the vessels operating offshore of Yaquina Bay Oregon as well as Coast Guard shore side personnel from the time leading up to the accident and up to and including rescue operations.	CG 008 CG Station YB Comms Transcript Redacted.pdf
4	This hyperlink will take the online reader to CG Exhibit 035, which is a short movie of the Oregon State University radar track of the VICTORY and MARY B II overlaid on a nautical chart showing the movement of these two vessels in reference to the accident site. Vessel 1 is the MARY B II and Vessel 2 is the USCG MLB Victory.	CG 035 OSU Product snap_event navChart 1080 10rps.mp4
5	This hyperlink will take the online reader to CG Exhibit 034, which is a short movie of the Oregon State University radar track of the VICTORY and MARY B II showing the wave patterns captured on the Oregon State University marine band radar with the bright yellow colored waves being steeper and larger than the other waves, which are maroon in color. Vessel 1 is the MARY B II and Vessel 2 is the USCG MLB Victory.	CG 034 OSU Product snap_event radar 1080 10rps.mp4
6	This hyperlink will take the online reader to a document showing the track of the MARY B II and CG escorts derived from the Oregon State University marine radar and plotted on a navigation chart. The document shows the position and tracks of the MARY B II, VICTORY and the CG 47266 at representative times. Derived from CG Exhibit 071.	CG 071 OSU Radar Track CG 47266 VICTORY MARY B II.pdf
7	This hyperlink will take the online reader to CG Exhibit 073 and CG Exhibit 076 (Combined), which are exhibits with details relating to the MARY B II's captain while operating vessels on the East Coast on the United States which resulted in an interaction with the Coast Guard.	Combined Exhibit 073 and 076.pdf
8	This hyperlink will take the online reader to a short video extracted from the Oregon State Police CCTV on the accident night showing the illumination provided by a MK 127 night illumination flare.	Flare.mp4
9	This hyperlink will take the online reader to a short video showing the range lights and the Yaquina Bay Bridge bridge aircraft warning lights at night when entering Yaquina Bay. The USCG took this video following the accident prior to dawn to illustrate these aids to navigation shot this video.	YBB Ranges.mp4

If you have any difficulties with any of these hyperlinks please contact: INCOE@uscg.mil