



UNITED STATES COAST GUARD

**INVESTIGATION INTO THE CIRCUMSTANCES
SURROUNDING THE SINKING OF THE**

TALL SHIP BOUNTY

**123 MILES OFF THE COAST OF CAPE
HATTERAS, NORTH CAROLINA ON OCTOBER
29, 2012 WITH LOSS OF ONE LIFE AND
ANOTHER MISSING AND PRESUMED DEAD**



MISLE ACTIVITY NUMBER: 4474566



16732
2 May 2014

**SINKING OF THE TALL SHIP BOUNTY 123 MILES OFF THE COAST OF CAPE
HATTERAS, NORTH CAROLINA ON OCTOBER 29, 2012, WITH LOSS OF
ONE LIFE AND ONE MISSING PRESUMED DEAD**

ACTION BY THE COMMANDANT

The record and the report of the Formal Investigation convened to investigate 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.

COMMENTS ON THE REPORT

1. The Investigating Officer (IO) correctly identified many causal factors in his investigation. The most critical was the failure of the BOUNTY's management and master to exercise effective oversight and risk management in the overall operation of the BOUNTY, and specifically with undertaking its final voyage in the face of an impending hurricane. Every voyage or vessel operation carries with it a certain level of risk, which can vary greatly depending on a myriad of factors, but in particular the fitness of the vessel for the intended voyage, material condition of the vessel, and the experience and capability of its crew, especially to withstand heavy weather. Failure to adequately assess these conditions when making operational decisions, which are magnified in an operating environment that is significantly more hazardous than normal such as an inbound hurricane or major storm, can have disastrous results.
2. The report also identified issues with the BOUNTY's classification. It is clear from the IO's conclusions that, at the time of the sinking, the BOUNTY was treated as a recreational vessel for regulatory purposes, though it was a documented vessel with multiple endorsements, including Recreational, Fisheries, Coastwise, and Registry. These endorsements rendered BOUNTY eligible to pursue certification as a small passenger or sailing school vessel. The BOUNTY's management decided against taking the steps necessary to meet the minimum safety requirements that would have applied with such certification in favor of the less stringent recreational standards. While it may have made little difference to the ultimate outcome of the BOUNTY tragedy given the overriding issues of poor risk application, the Coast Guard should examine if legislative, regulatory, or policy changes are needed so that other vessels like the BOUNTY are maintained and operated in a safe manner.

ACTION ON RECOMMENDATIONS

Recommendation 1: It is recommended that the Commandant of the Coast Guard review the policy for attraction vessels and evaluate their regulatory status when traveling from port to port, and determine whether the classification of any of these vessels as recreational is appropriate. This policy should be updated accordingly.

Action: I concur with the intent of this recommendation. The Coast Guard cannot require a vessel to conform to standards higher than that specified by law or regulation. In the case of the BOUNTY, the HMS BOUNTY organization chose to only meet the minimum standards of a recreational vessel while at sea, rather than the more stringent requirements of a sail training vessel or small passenger vessel. Thus, the Coast Guard only inspected the BOUNTY as an attraction vessel while it was in port giving tours and did not inspect it for compliance with domestic and international standards such as load-line and stability applicable to vessels at sea.

While the ultimate responsibility for the BOUNTY casualty rests with the master and HMS BOUNTY organization, the Coast Guard, as part of its evaluation of the standards applicable to vessels such as the BOUNTY, should examine whether any legislative, regulatory, or policy changes are needed. Such an examination should address the adequacy of procedures for determining a vessel's primary service, including when a vessel is operating as an uninspected vessel in commercial service, a recreational vessel, or in some other status. This is especially true for vessels similar to the BOUNTY that are documented and have several endorsements (e.g. recreational, coastwise, registry, etc.). Further, for vessels such as the BOUNTY which operate as moored attraction vessels calling on different ports, the application of international vessel requirements and the necessity for credentialed mariners who stand navigational or engineering watches should also be examined. I have directed the Coast Guard's Office of Commercial Vessel Compliance and the Office of Auxiliary and Boating Safety to conduct this review.

Recommendation 2: It is recommended that the Commandant of the Coast Guard review the Officers Competency Certificates Convention, 1936, and the manning regulations in 46 CFR Part 15, Subpart G to determine if the term "uninspected vessel" is intended to exclude recreational vessels from the requirement for licensed mates and engineers for documented, self propelled sea going vessels over 200 gross tons.

Action: I concur with this recommendation. The Coast Guard will review the manning regulations in 46 CFR Part 15 to determine if the term "uninspected vessel" is intended to exclude recreational vessels and whether any changes to law or regulation may be necessary.

Recommendation 3: It is recommended that the Commandant of the Coast Guard establish policy or provide guidance to the Officer in Charge, Marine Inspections (OCMI) on the protocol, scope, limits and or responsibilities/liabilities of conducting inspection type activities (plan review/approvals, construction/repair oversight, system installation & testing, etc.) on uninspected or recreational vessels.

Action: I concur with this recommendation. It is a foremost responsibility of the master to ensure the vessel is of proper design and material condition for the intended voyage. My action directed in Recommendation 1 will determine if any policy and guidance is necessary for Coast Guard oversight of uninspected vessels and recreational vessels.

Recommendation 4: It is recommended that the Commandant of the Coast Guard review Navigation and Inspection Circular (NVIC) 2-00, Marine Events of National Significance (MENS), and revisit the determination to allow attraction vessels or other uninspected and recreational vessels to carry passengers for hire underway via a special permit under the cognizance of a MENS event.

Action: I do not concur with this recommendation. The report of investigation does not provide any evidence that the policy and guidance provided in Navigation and Vessel Inspection Circular (NVIC) 2-00, is inadequate or that it was a causal factor in this incident. Other recommendations in the report address the intent of this recommendation.

Recommendation 5: It is recommended that the Commandant of the Coast Guard revise Navigation and Inspection Circular (NVIC) 7-94, Guidance on the Passenger Vessel Safety Act of 1993, and address the use of volunteers on attraction and sail training vessels while underway.

Action: I concur with the intent of this recommendation. I agree that a review of Navigation and Vessel Inspection Circular (NVIC) 7-94 is appropriate; however, I do not believe its focus should simply be on the overall issue of the use of volunteers as crew on attraction and sail training vessels while underway. I see no safety issues if an attraction vessel or sail training vessel is crewed with volunteers who are all properly trained and experienced merchant mariners who meet established minimum manning requirements for the vessel. The real issue is the use of volunteers that lack sufficient training and experience, both specific to the operation of the particular vessel as well as regarding general marine operations and safety.

Recommendation 6: It is recommended that the HMS BOUNTY Organization establish organizational policy that defines how the organization manages risk, establishes effective communication throughout the organization establishes a process for identifying and correcting defects, sets clear safety and environmental standards, and implements a continual improvement process.

Action: I concur with the intent of this recommendation. Inadequate risk management was the primary cause of the casualty. Any company owning and/or operating a vessel should establish some level of safety management or quality assurance systems in their operations. This recommendation should be shared with all vessels conducting operations similar to that of the BOUNTY. As such, I will forward this recommendation, along with a copy of this report, to the Tall Ships America organization for distribution and consideration by its members. Tall Ships America has been proactively engaging with the Coast Guard since this casualty to promote safer operations within its membership.

Recommendation 7: It is recommended that the HMS BOUNTY Organization establish a policy that dictates vessel operational parameters based on weather, sea state or destination and requires consensus between qualified persons afloat and ashore. "Go/no go" decisions should be based on consideration of vital system functionality (such as bilge systems), crew strength and fatigue.

Action: I concur with the intent of this recommendation. As with recommendation 6, I believe this recommendation should be shared with all vessels conducting operations similar to that of the BOUNTY. The Tall Ships America organization will be asked to distribute this recommendation for consideration by its members.

Recommendation 8: It is recommended that the HMS BOUNTY Organization establish organizational policy and requirements for the hiring of a professional engineer, and provide him/her clear task direction on expected duties and performance.

Action: I concur with this recommendation if the HMS BOUNTY Organization secures another vessel.



J. C. BURTON
Captain, U.S. Coast Guard
Director of Inspections & Compliance

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford St.
Portsmouth, VA 23704-5004
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Phone: (757) 398-6691
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16732
SEP 24 2013

MEMORANDUM

From: [REDACTED]
S. H. Ratti, RADM
CGD FIVE (d)

Reply to dp
Attn of: CAPT L. P. Harrison, Jr.
(757)398-6691

To: COMDT (CG-INV)

Subj: TALL SHIP BOUNTY REPORT OF INVESTIGATION

Ref: (a) Title 46 United States Code, Chapter 63
(b) 46 Code of Federal Regulations, Part 4
(c) (c) COMDINST M16000.10 Volume V

1. In accordance with the above references, CDR Kevin Carroll was designated to conduct a one man formal investigation into the sinking and subsequent lost of one life and presumed death of another aboard the Tall Ship BOUNTY that occurred on October 29, 2012. The Report of Investigation (ROI) is attached. A public hearing was convened, witnesses were interviewed, and physical evidence was analyzed.
2. I have reviewed and concur with the findings of fact analysis and concur with the conclusions and recommendations.
3. No enforcement actions were recommended at this time.
4. The entire investigation team is commended for their thoroughness and resourcefulness demonstrated during this investigation. Please contact CAPT Lonnie P. Harrison, Jr., Fifth District Chief of Prevention, at 757-398-6691, if you have any questions or need further information.

#

Encl: (1) Report of Investigation

Copy: CG Sector North Carolina
CG LANTAREA-54

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16732
18 September 2013

MEMORANDUM

From: K. M. Carroll, CDR [REDACTED]
Lead Investigating Officer

Reply to: CGD Five (dpi)
Attn of: CDR Carroll

To: S. H. Ratti, RADM
Commander, Fifth Coast Guard District

Thru: CGD FIVE (dp) *EMA 9/23/13*
CGD FIVE (dcs) *PT 9/23/13*

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HATTERAS, NORTH CAROLINA ON OCTOBER 29, 2012 WITH LOSS OF ONE
LIFE AND ANOTHER MISSING AND PRESUMED DEAD

Ref: (a) Letter of Designation as Lead Investigating Officer dated November 1, 2012
(b) Title 46 United States Code, Chapter 63
(c) Title 46 Code of Federal Regulation, Part 4
(d) COMDINST M16000.1 Volume V

Preliminary Statement

In accordance with reference (a), you designated and directed me to conduct a formal investigation into the sinking and subsequent loss of one life and presumed death of another aboard the Tall Ship BOUNTY that occurred on October 29, 2012. LT [REDACTED] from Coast Guard Sector North Carolina was assigned as my assistant, and LCDR [REDACTED] from the Investigations National Center of Expertise was assigned as the recorder for the investigation. In accordance with reference (b), and with the investigative assistance of CDR Steve McGee, LT [REDACTED], Mr. [REDACTED], and with legal advice provided by LCDR [REDACTED] from the Fifth Coast Guard District, a public hearing was held, numerous interviews were conducted, and shipyard representatives were consulted. In accordance with reference (c), we were able to gather facts, conduct analysis, draw conclusions and make recommendations regarding this marine casualty. All evidence, correspondence and testimony gathered during the investigation and used to create this report are included in the Coast Guard's Marine Information System for Law Enforcement (MISLE) electronic database under Incident Investigation Activity Number 4474566.

Executive Summary

On Thursday October 25, 2012, the Tall Ship BOUNTY sailed from New London, CT, bound for St. Petersburg, FL with 16 crew on board. Hurricane Sandy was, at the same time, 125 miles

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east southeast of Nassau in the Bahamas, headed northbound off the Atlantic Coast, and was being monitored by the vessel's Master and officers. Prior to departure, at approximately 1700, the Master held a meeting with the entire crew to inform them of his plan to leave port. He described the impending storm, and briefly mentioned his plan to deal with it. The plan was to sail out to the east to monitor the track of the hurricane, and then to choose what course to take, as he believed that, during a storm, a ship was safer at sea than in port. At this meeting, the Master explained that he had experience with hurricanes and heavy weather in the past. He gave all of the crew the opportunity to leave the vessel if they did not feel up to making the trip. No one chose to leave, and BOUNTY departed the port at approximately 1800.

On Saturday, October 27, 2012, all forecasts were predicting Hurricane Sandy to turn to the west, and make landfall in New Jersey. Despite these forecasts, at approximately 0900 the Master chose to alter the course of the vessel from east-southeast to southwest, which placed the vessel in the direct path of the storm. BOUNTY was 188 NM from Atlantic City, NJ at the time of the turn. The weather began to deteriorate rapidly with seas from 15 to 20 feet, and winds gusting up to 70 knots. On Saturday morning the Engineer fell while on deck, and suffered a fractured hand. By Saturday evening many of the crew were becoming concerned with the amount of water in the bilges. According to witness testimony, it was typical for BOUNTY to make water in a heavy seaway. However, by Saturday evening, the amount of water was becoming atypical. The vessel's electric bilge pumps, run by the port or starboard generator, were running continuously. The Master ordered a portable hydraulic pump, run off of the starboard main engine, to be hooked up in the engine room.

On Sunday morning, October 28, 2012, the seas were 20 to 30 feet with winds in excess of 90 knots. The water temperature was 79 degrees Fahrenheit. The vessel was on a course of 233 degrees true at a speed made good of 4 knots, motoring under both main engines, and sailing under their fore course sail. At this point many of the ship's crew were feeling the effects of sea sickness and/or fatigue. On Sunday morning the Engineer fell in the engine room, he suffered a gash on his arm and injured his leg in that fall. The electric bilge pumps were still in continuous operation, but having difficulty maintaining prime. The portable hydraulic pump was also becoming clogged with debris in the bilges.

At approximately 1200 on Sunday, the vessel's port main engine and generator stopped running when the port day tank ran out of fuel. The vessel's electric bilge pumps could now only be run by the starboard generator. At approximately 1400, the vessel's fore course blew out and had to be furled. At approximately 1700, the starboard generator also began to fluctuate leading the crew to believe the fuel filters were clogged. The generator was brought offline several times during the evening to replace the fuel filters, which also shut down the electric bilge pumps. Each time this was done, the water level in the bilges grew higher. As conditions worsened both the Master and one Able-Seaman sustained injuries when they fell as the vessel rolled.

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Given the injuries to crew and problems with dewatering, the Master and Chief Mate called for assistance using a satellite phone and an HF e-mail system. They notified the owner via satellite phone, who directed the vessel's shore support to contact the Coast Guard. At approximately 2045, the Coast Guard was notified by the vessel's shore support that the vessel was taking on water and was last reported to be approximately 90 miles southeast of Hatteras, N.C. The Coast Guard subsequently received a distress signal from the vessel's EPIRB and a C-130 was launched to provide over-watch and establish direct communication with the vessel. At approximately 2130 on Sunday, the vessel's starboard generator ceased operating when water from the bilges splashed up and shorted it out. This left the vessel with no power. The starboard main engine and the portable hydraulic pump continued to work, but at this point the vessel was losing the dewatering battle, and taking on water at about 2 feet per hour. The Master directed that an emergency gasoline powered bilge pump be put into operation, but no one could make it work. The Second Mate was able to get the port generator working again at approximately 2230 on Sunday night, which allowed for continued communications with the Coast Guard.

On Monday morning, October 29, 2012 conditions continued to deteriorate, and the water in the bilges continued to rise. The Master directed the crew to prepare to abandon ship, and plans were communicated to the Coast Guard for the same. The plan was to abandon ship at first light in order to ensure Coast Guard assets were on scene and conditions were as favorable as possible. At approximately 0330, the water reached BOUNTY's tween deck level, and the crew was forced to retreat to the weather deck. They had donned immersion suits and prepared "ditch kits." At approximately 0426, the vessel rolled to starboard on its beam ends.¹ Although the vessel did not capsize fully, the heeling moment was sufficient enough that the crew was forced to abandon ship. Most were able to enter into two canopied life rafts. Around 0630, Two MH-60 Jayhawks from Elizabeth City arrived on scene and rescued 13 of the 16 crew from the life rafts, one from the open ocean and returned them to Air Station Elizabeth City, where two received medical attention from local hospitals for injuries, and the rest were debriefed and released to the Red Cross. At that time, two crew members remained missing.

The airborne search continued through the morning and into the afternoon of Monday, October 29, 2012. At 1630 on Monday, the missing deckhand was recovered unresponsive, and later pronounced dead at a local hospital. The search for the Master continued, and ultimately encompassed approximately 10,000 square miles of search patterns (22 patterns) using surface and air assets. That search lasted four days. The Coast Guard Fifth District Commander suspended the search at approximately 2000 on Thursday November 01, 2012. The Master was not located.

BOUNTY was lost at sea approximately 123 miles south east of Cape Hatteras, NC in approximately 14,000 feet of water.

¹ A vessel is said to be on her "beam ends" when she is heeled over so far that the deck beams are vertical, or nearly so.

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Vessel Data

BOUNTY	
Name:	BOUNTY
Flag:	United States
Official Number:	960956
Service:	Recreational/ Moored Attraction Vessel (Inspected)
Vessel Type:	Square Rigged, Three Mast Tall Ship
Builder:	Smith & Rhuland Shipyard
Place Built:	Lunenburg, Nova Scotia
Hull Material:	Wood
Gross Registered Tons:	266 (409 GT ITC)
Length:	108.4 ft
Breadth:	31.5 ft
Maximum Draft:	13 ft
Propulsion:	Auxiliary Sail, Twin Diesel
Horsepower:	750 combined
Maximum Speed	5-7 knots
Inspection Subchapter:	Marine Safety Manual Volume II
Year Built:	1960
Certification Date:	May 16, 2012 (moored attraction vessel)
Expiration Date:	September 30, 2012
Manning:	1 Master, 5 Deckhand (only while operating as dockside attraction vessel)
Passengers:	150 (dockside only)
Route:	Moored Attraction Vessel
Hailing Port:	Greenport, NY

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Owner:	HMS Bounty Organization, LLC.
Operator:	HMS Bounty Organization, LLC.

Personnel Data

Deceased Crew	Age	Position	Professional Sea Time	Time Aboard BOUNTY (season is six to seven months)	Merchant Mariner Credetial?
██████████ (Missing and presumed dead)	■	Master	25 years	17 seasons	1600 Ton Master Ocean Aux Sail, AB Unlimited, Lifeboatman, Wiper
Claudene M. Christian	■	Deckhand	4 months	4 months	No

Surviving Crew	Age	Position	Professional Sea Time	Time Aboard BOUNTY (season is six to seven months)	Merchant Mariner Credetial?
██████████	■	Chief Mate	15 years	3 seasons	1600 Ton Master Ocean Aux Sail, AB Unlimited, Lifeboatman, Wiper, First aid
██████████	■	Second Mate	12 years	1 season	200 Ton Mate Near Coastal, OS, Wiper, Tankerman-PIC Barge
██████████	■	Third Mate	5 years	5 seasons	100 Ton Master Near Coastal, AB Limited, Wiper, Lifeboatman
██████████	■	Bosun	3 years	3 seasons	100 Ton Master Near Coastal, AB Special, Wiper, Lifeboatman

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██████████	■	AB	3 years	1 season	No
██████████	■	AB	7 years	5 seasons	AB Sail, Lifeboatman, Wiper
██████████	■	AB	2 years	2 seasons	No
██████████	■	Deckhand	6 months	1 season	No
██████████	■	Deckhand	6 months	1 season	No
██████████	■	Deckhand	3 years	1 season	No
██████████	■	Deckhand	4 years	2 months	100 Ton Master Inland, 200 Ton Mate, AB Unlimited, Lifeboatman, Wiper
██████████	■	Deckhand	6 months	1 season	No
██████████ ██████████	■	Engineer	14 days	14 days	No
██████████	■	Cook	3 years	5 days	No

Parties in Interest	Role	Counsel
HMS BOUNTY Organization LLC.	Owner of the BOUNTY	Leonard W. Langer, Esq. Frank N. Ambrosino, Esq.
Claudene Christian (survived by ██████████)	Deckhand of the BOUNTY	Ralph J. Mellusi, Esq. Jacob Shisha, Esq.
██████████	Chief Mate of the BOUNTY	Unrepresented

Findings of Fact

Vessel History, Construction and Systems

1. BOUNTY (see Figure 1) was a documented vessel built in 1960 in Lunenburg, Nova Scotia and inspected as a moored attraction vessel. Although foreign built, BOUNTY was able to be documented in the United States pursuant to the Federal Maritime Commission Authorization Act of 1990.

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Figure 1 BOUNTY underway

2. The vessel was an enlarged replica of the 1787 Royal Navy sailing ship HMS BOUNTY, built to modified plans based on original drawings acquired from the British Admiralty. The vessel was constructed by Metro-Goldwyn-Mayer studios for the 1962 film “Mutiny on the Bounty.” BOUNTY was not intended simply to be a movie prop, but was designed to be an operational vessel capable of ocean voyages, much like its predecessor. After filming the movie, the vessel sailed on a worldwide promotional tour, and eventually was used as a tourist attraction in several locations, but primarily Fall River, MA and St. Petersburg, FL. It also appeared in several other motion pictures. The BOUNTY’s owners were compensated for those appearances. In February 2001, the BOUNTY was purchased by the current owner, HMS BOUNTY Organization LLC. Mr. [REDACTED] was the manager and controlling member of HMS BOUNTY Organization, LLC. [REDACTED] served as the Director of HMS BOUNTY Organization. Her role was to serve as shore side vessel support to include ordering of supplies and materials, administrative duties, payroll, and marketing. She also acted as principal liaison for all interaction with agencies involving insurance and regulatory compliance.

3. HMS BOUNTY Organization, LLC. operated no vessels other than the BOUNTY.

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4. BOUNTY was a square rigged tall ship with three masts; a forward, main and mizzen. The keel, deck beams, framing and hull were constructed of wood. The keel was 12 inches by 14 inches, and constructed of white oak. The frames were double futtocks constructed of white oak, 12 inches sided and 6 inches to 12 inches molded, 24 inches on center. A futtock frame is made up of curved parts or sections of transverse frames extending from the floor timbers to the top timbers. The hull planks on BOUNTY were a mixture of white oak and douglas fir. White oak made up the planking below the waterline, and douglas fir was used primarily above the waterline. BOUNTY also had an interior layer of planking affixed to the inboard side of the frames. This layer of interior planking is referred to as the “ceiling”. The ceiling was also comprised of white oak planks 3 to 5 inches molded.

5. The vessel was of traditional “Carvel” plank on frame construction (see Figure 2), characterized by flush plank edges run in fore and aft rows referred to as strakes. The first plank outboard of the keel is referred to as the garboard strake, and the top, or upper most plank, in the hull is referred to as the sheer strake. The planks were primarily 3 inches thick by eight inches wide, with the garboard plank and wale boards being 5 inches thick. The planks were affixed to the frames using fasteners made of galvanized spikes, or black locust wood. The fasteners made of locust wood are also referred to as “trunnels.”

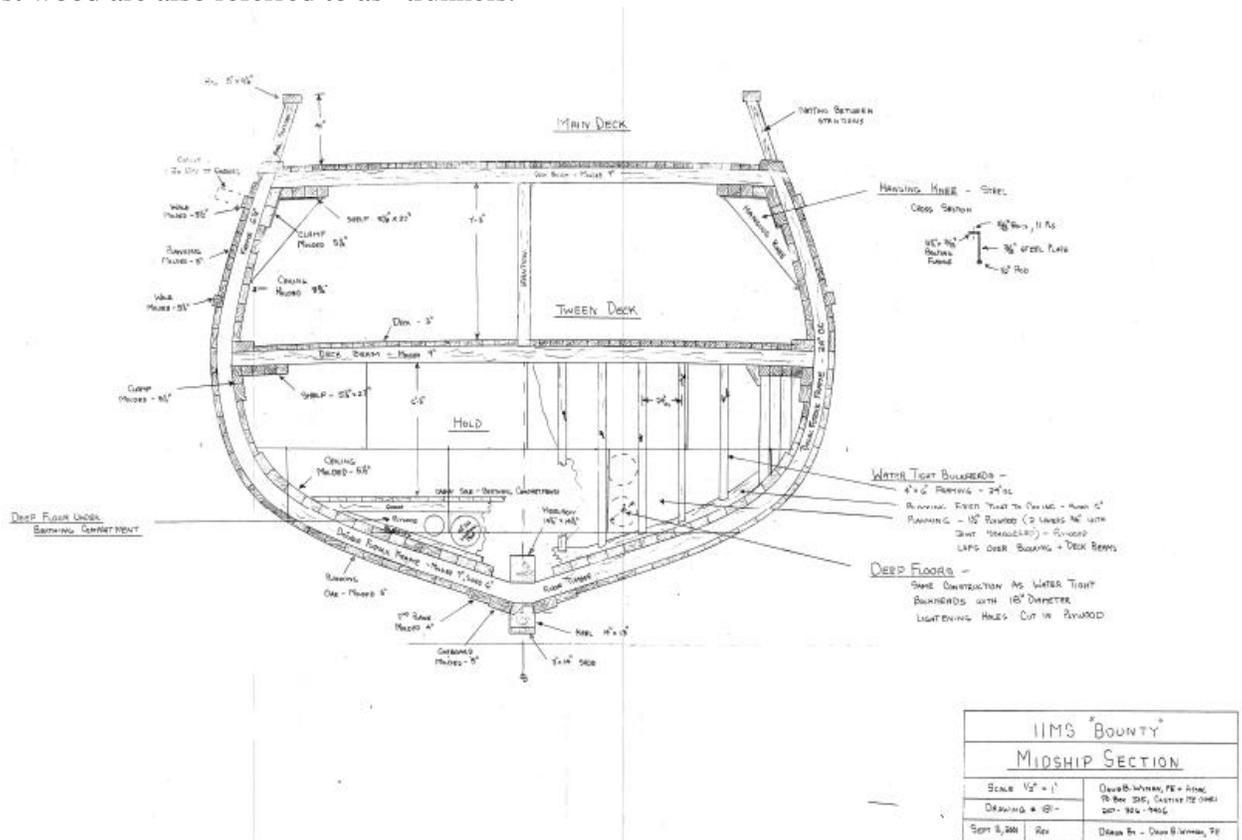


Figure 2 BOUNTY’s Midship section

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6. On October 29, 2012, the day of the sinking, the keel, keelson, deck beams, and many of the frames below the waterline were as originally laid in 1960. In 2006-07 a lead ballast shoe was added to the keel. The ballast shoe was set 9 inches deep and 20 inches wide into the keel in eight separate pieces, for a total weight of 54,000 lbs. This was done in accordance with the plans of [REDACTED], a naval architect working for the BOUNTY Organization. The addition of the lead ballast keel was intended to put more weight down low to improve stability. Some of the frames and all planking below the waterline were replaced in Boothbay Harbor Shipyard (then known as Samples Shipyard) in 2001. The framing and planking above the waterline had been replaced in Boothbay Harbor Shipyard in 2006-07.

7. The longitudinal edge joints between the individual rows of exterior hull planking are called “seams.” The transverse end joints are called “butts.” On a carvel planked vessel, the seams and butts must be caulked in order to be watertight. Caulking is a process in which cotton, oakum (tarred fibers) or other fiber are driven into planking seams in order to make a watertight barrier. Once the caulking is driven in, the caulking groove is primed, and then a sealing (or seam) compound is applied. BOUNTY was caulked with cotton and oakum. The seam compound primarily used on BOUNTY was a product called DAP 33, DAP Kitchen and Bath or a product called NP1 depending on the side of the vessel (described in detail later).

8. BOUNTY had three decks (see Figure 3). The main or weather deck was the upper most deck and open to the weather. BOUNTY’s helm was located on the weather deck at the stern. Beneath this was the tween deck, where the galley, crew mess, and public area were located. The tween deck was continuous from stem to stern, with no separating bulkheads between compartments. Most navigation and communications equipment was located on a landing deck between the weather deck and tween deck called the “Nav Shack.” Access from the weather deck was located forward of the helm, mizzen mast and capstan. The lowest most deck, above the deep floors, was referred to as the lower hold. The lower hold spaces included the lazarette, engine room, fuel/water tank compartment and crew berthing spaces. The lower hold was divided by transverse bulkheads at frames #5, 11, 17, 23, 30, 35, and 45. Deep floors at the transverse bulkheads had 18 inch lightening holes in them for the passage of pipes and wire conduits rendering them non-watertight.

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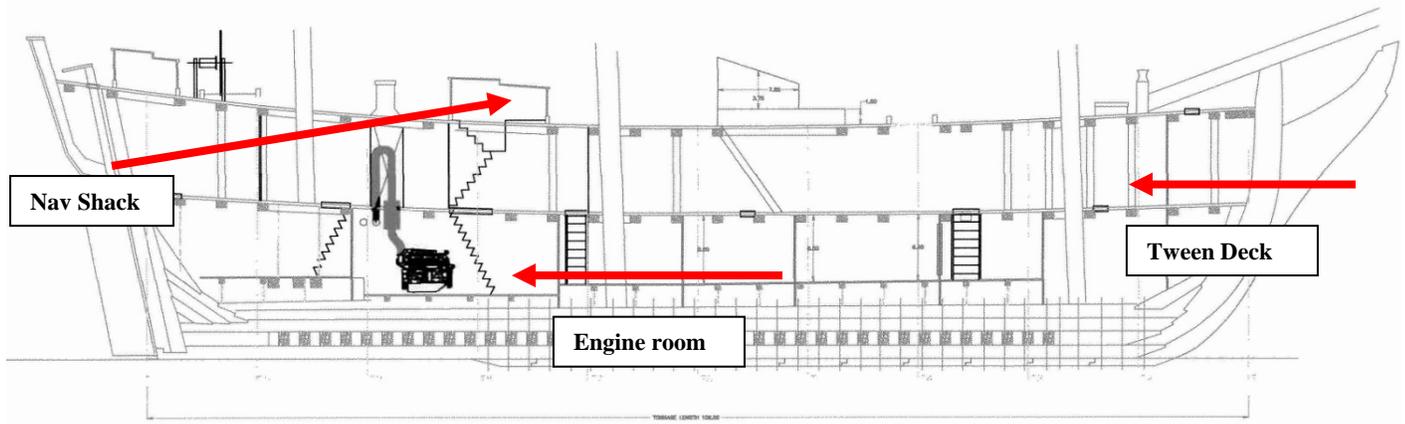


Figure 3 BOUNTY inboard profile

9. In the engine room, BOUNTY was equipped with two 375 hp John Deere main engines, which were new in 2003. There were also two 4 cylinder John Deere main diesel generators. One was a John Deere 4039D, 35 kw, 120/208, 3 phase, and the other was a John Deere 4045D, 40 kw, 120/240, 3 phase.

10. BOUNTY had three systems for de-watering the bilges; electrically driven pumps (see Figure 4), hydraulically driven pumps, and a gasoline powered portable pump. They were designed as follows:

- Electric Pumps – There were two electric bilge pumps located in the engine room. They were each 7.5 hp, 208 vac, 140 GPM and connected to the bilge manifold. The manifold piping was 2” copper nickel, and was run to each designated watertight compartment in the lower hold. Each compartment had a flexible hose extended off of the piping into the bilges with a strainer at the end. The strainers had openings that were estimated to be 1/8 inch to 1/2 inch wide. These pumps could be run off of either the port or starboard generator, and could be run simultaneously. Witness testimony reported that these pumps were the primary means of de-watering the bilges. All crew members had training on how to use this system, as it was a part of the new crew member indoctrination, and expected to be used during “boat checks” as defined in the BOUNTY Crew Manual.
- Hydraulic Pumps – There were two hydraulically driven pumps located in the engine room. They were both Stanley Hydraulic TP08013 Trash Pumps, 2,000 psi, four inch suction, four inch discharge, 800 GPM. Both pumps were run off of the starboard main engine. One pump was fixed, and connected to the bilge manifold. Only one of these pumps could be run at a time. The fixed pump four inch suction and discharge was restricted to 2 inches and plumbed into the bilge piping. The other hydraulically driven pump was not connected to the manifold system, and was stored underneath the port day

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tank. This pump was considered by the crew to be the “portable” hydraulic pump. The four inch suction was unobstructed, and the pump was equipped with a three inch hose that discharged on the starboard side just aft of the thru-hull for the two inch manifold discharge. Witness testimony reported that these pumps were rarely used, and only expected to be used for emergency. Only Capt. [REDACTED] was familiar with the operation of these pumps.

- Gasoline Powered Pump – BOUNTY had purchased a Wiltec manufactured gasoline powered trash water pump while in Europe in 2011. The pump was purchased in response to a requirement imposed by British Maritime and Coast Guard Agency (MCA) to have an emergency fire pump. It was capable of pumping up to 260 – 340 GPM. It was used once in 2011 to satisfy the inspectors, stored away in the storage area near lower crew berthing not to be used again until the day of the casualty. No one on board had any training on how to use it. It was reported that Capt. [REDACTED] did not want it used because of the potential hazard of using gasoline.

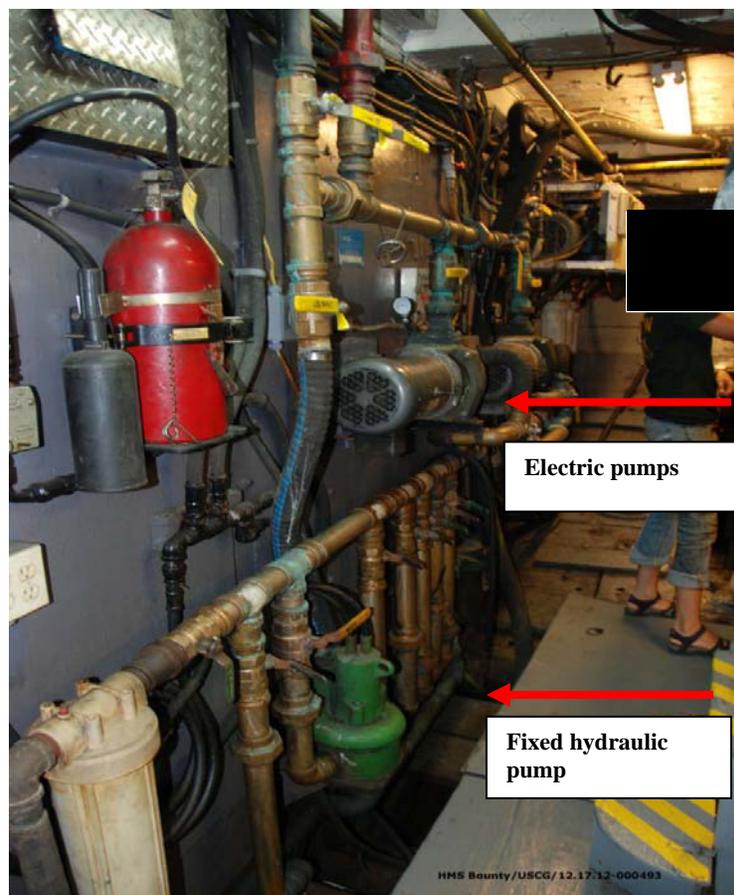


Figure 4 The BOUNTY's bilge system with two electric pumps mounted above the bilge manifold and the green fixed hydraulic is below.

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Vessel Operations and Regulatory History

11. Under the current ownership, BOUNTY was primarily operated as a temporarily moored attraction vessel. In this capacity, the vessel was typically moored at a pier or fixed structure, and passengers would embark for tours after paying a fee. For approximately twenty years prior to the casualty, BOUNTY was inspected by the Coast Guard primarily, if not solely, as a moored attraction vessel.

Moored attraction vessels may operate on an established itinerary, calling on several ports for a brief period of time, and are not allowed to be permanently moored. To operate as such, BOUNTY was required to have a Certificate of Inspection (COI) issued by the Coast Guard. Unlike other certificated vessels, whose inspection standards are detailed under specific subchapters of Title 46 of the Code of Federal Regulations (CFR), moored attraction vessels are inspected under policies, procedures and standards contained in the U.S.C.G. Marine Safety Manual, Volume II, Section B, Chapter 4. This policy recognizes the reduced safety risks associated with a vessel that is moored, and will not get underway with passengers. Such a certificate may be valid for up to a year, and is only valid while such a vessel is moored. Each time an attraction vessel arrives in port to conduct business it must receive an inspection from the local Coast Guard Sector, or subunit, prior to embarking passengers. The scope of the inspection is oriented towards identifying potential hazards to passengers on board that vessel while moored at the pier, and covers:

- Suitability of the gangway or brows;
- Lighting;
- Electrical wires or fixtures (safety from fire or electrical shock);
- Means of escape from below-deck spaces (accessible to passengers);
- Engine room and bilges (examined for potential fire hazards);
- Firefighting equipment;
- Lifesaving equipment (ring buoys);
- Means of retrieval of persons from the water;
- Hull condition (Suitable to be moored at the pier. Evidence of hull exam or internal structural exam must be available from within the past five years.);
- Mooring facilities;
- and Public address system.

While operating as a moored attraction vessel under its COI, BOUNTY was required to have one Master and 5 deckhands on board. BOUNTY's COI to operate as a moored attraction vessel expired on September 30, 2012. BOUNTY's master was planning to conduct dockside tours if BOUNTY had arrived in St. Petersburg, FL. An inspection was scheduled with Sector St. Petersburg.

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12. Outside of its regulatory oversight of BOUNTY's service as a moored attraction vessel, the Coast Guard appears to have treated BOUNTY as a recreational vessel. A review of the documentary and testimonial evidence indicates that the Coast Guard presumed that when BOUNTY traveled from port to port, she did so as a recreational vessel. As such, BOUNTY would have been subject to requirements of 33 CFR Parts 175 and 183. The operating assumption regarding BOUNTY's status as a recreational vessel is reflected, among other items, in the following evidence uncovered by this investigation:

a. In 1998, following a casualty, the Seventh Coast Guard District closed the marine casualty case after having determined that BOUNTY was not a commercial vessel.

b. In 2007, in preparation for a trip to Europe, HMS Bounty Organization, LLC requested a determination of the ship's status and authorized activities. According to testimony, the Coast Guard's response considered, among other regulations, the International Convention on Load Lines, and 46 CFR Subchapter E. The Coast Guard's determination was made by Office of Vessel Activities, Coast Guard Headquarters, and is reflected in a 7 November 2007 letter (the "2007 Letter"). The 2007 Letter includes the following sentence: "As a 'pleasure yacht not engaged in trade', the vessel can embark non-paying guests while the vessel is both moored and underway."

c. In testimony during the hearing of this matter, a Coast Guard representative (who was familiar with the BOUNTY's history) from the Office of Commercial Vessel Compliance, Coast Guard Headquarters testified as to his opinion that BOUNTY was a recreational vessel. That testimony included the following exchange in which the witness was asked about the basis for the 2007 Letter as well as operations BOUNTY was permitted to engage in: QUESTION: "...BOUNTY to your understanding was a[n] uninspected vessel that did not need a COI if she was acting as a recreational vessel?" Answer: "Yes sir, that was our assumption or understanding in 2007 when the letter was written. That she was not carrying passengers for hire, that the individuals embarked on board were guests like any other recreational vessel; a recreational vessel is not subject to inspection up to a certain point again at 300 gross registered tons and a recreational vessel does not require a load line."

13. Manning underway: As stated in Paragraph 11, above, BOUNTY's COI as a moored attraction vessel required one Master and 5 deckhands on board. At all times known to this investigation, BOUNTY complied with that requirement. However, as BOUNTY was underway at the time of this casualty, the manning requirements relevant to this investigation are those for a recreational (or, in the alternative, an uninspected) vessel traveling beyond the Boundary Line. According to 46 CFR Subchapter B, Part 15, Subpart G (Computations), based on its gross tonnage, BOUNTY was required to employ a master who possessed a Merchant Mariner Credential (MMC). Captain [REDACTED] was appropriately credentialed according to law. There do not appear to be any requirements, within this section of the regulations, for BOUNTY to have credentialed Mates or Chief Engineer while underway. There was never any indication, in the documentary record, or otherwise, that the Coast Guard ever evaluated how BOUNTY's was manned while underway.

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14. BOUNTY was not certificated, or permitted, to carry passengers for hire while underway as a Passenger Vessel, as defined in 46 U.S.C. § 2101 (22). However, ██████████ testified that BOUNTY did, on occasion, carry passengers when issued a Special Permit during Marine Events of National Significance in accordance with Navigation and Inspection Circular (NVIC) 2-00.

15. BOUNTY was not certificated, or permitted, to act as a Sailing School Vessel, as defined in 46 U.S.C. § 2101 (30).

16. BOUNTY was a member of Tall Ships America (TSA), which was formally known as the American Sail Training Association (ASTA). The mission of TSA is “to encourage character building through sail training, promote sail training to the North American public, and support education under sail.”

17. Based on the determination that BOUNTY operated as a recreational vessel, BOUNTY was not required to comply with subdivision and stability standards in 46 CFR Subchapter S and was therefore not required to have a stability letter.

18. The Coast Guard did not require BOUNTY to comply with international or domestic requirements to have an assigned Load Line or Load Line Certificate, as per the International Convention on Load Lines, or 46 CFR Subchapter E. As described to this investigation, including the testimony described above, this determination appears to have been based on the assumption that attraction vessels do not carry cargo or passengers in trade underway. 46 U.S.C. § 2101 (5) states “commercial service includes any type of trade or business involving the transportation of goods or individuals, except service performed by a combatant vessel.”

19. HMS BOUNTY Organization chose to have a stability test and receive a stability letter in 2009. The primary reason for getting the stability letter was that it was a necessary step in order to be assigned a Load Line, and receive a Load Line certificate from the American Bureau of Shipping (ABS). HMS BOUNTY Organization wanted the load line, because they were trying to become certificated as a sailing school vessel and had an Application for Inspection on file with U.S.C.G. Sector St. Petersburg. A load line is part of the sailing school vessel certification. The stability test was conducted by a naval architect, Mr. ██████████, of the International Historical Watercraft Society, and a stability letter was issued on August 7, 2009. BOUNTY removed their Application for Inspection after the stability test. The letter was reissued in 2011, because there were discrepancies detected with the 2009 submission. Mr. ██████████, also of the International Historic Watercraft Society, submitted the revised drawings and calculations that allowed for the stability letter to be reissued on June 15, 2011.

20. BOUNTY had a Load Line examination from ABS on November 11, 2010 in Boothbay Harbor Shipyard in Boothbay, ME. A Load Line certificate was never issued, because various

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deficiencies were noted by the ABS surveyor during the examination. The list of deficiencies was provided to HMS BOUNTY Organization, but most of them were never cleared.

21. Manning requirements for deck officers to have MMCs were imposed by the HMS BOUNTY Organization. This included the Chief Mate, Second Mate and Third Mate. No other deck department members (ABs, deckhands) were required to have MMCs or any particular kind of training.

22. HMS BOUNTY Organization had no professional or MMC requirements for the hiring of the engineer on board.

23. BOUNTY's officers and crew consisted of those who were paid, and those who were volunteers. Volunteer crew were required to stand watch, and work just like the paid crew. In return for their service they received room and board. On October 29, 2012 the only volunteer crew member was [REDACTED]. Claudene Christian had been added to the ranks of the paid crew on October 24, 2012. She had spent all time on BOUNTY up to that date as a volunteer.

24. While underway, the crew was divided into three watch sections consisting of a mate, an AB, and two deckhands. The watches lasted for four hours and each watch section stood two watches per day. The crew members who staffed the watches were as follows:

- "A Watch" (0800-1200, 2000-2400): [REDACTED] Mate, [REDACTED] - AB, [REDACTED] - Deckhand, Claudene Christian- Deckhand
- "B Watch" (1200-1600, 0000-0400): [REDACTED] - Mate, [REDACTED] - AB, [REDACTED] - Deckhand, [REDACTED] - Deckhand
- "C Watch" (1600-2000, 0400-0800): [REDACTED] Mate, [REDACTED] - AB, [REDACTED] - Deckhand, [REDACTED] - Deckhand

25. BOUNTY's standing orders, watch routine, general ship policies and expectations of the crew were laid out in the "HMS BOUNTY Crew Manual." The Crew Manual was written, maintained and updated by the Captain and personnel on board. There was no operational policy or doctrine that existed from ownership, HMS BOUNTY Organization, LLC. The Crew Manual specified:

- The Chain of Command – along with a description of each position, including Master, Chief Mate (CM), Second Mate (2M), Third Mate (3M), Bosun, ABs, and Deckhands. The crew manual listed the number of required ABs as 3 and Deckhands as 9. There was no description for the Engineer or Cook.
- Standing orders – including closest point of approach (CPA) to other vessels, and other situations when to alert the master,
- Sail management – Capt. [REDACTED] allowed for the flying of royal sails, even though the vessel's stability letter and sail plan did not. The officers testified the stability letter was

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not followed, because it was not required, and Capt. [REDACTED] believed the vessel could handle it,

- Alcohol and drug zero tolerance policy,
- Ship organization underway and at the pier,
- Basic introduction to the engine room – this included a one page description for starting and stopping the generators, pumping bilges (only for the electric pumps), and fire hose operation,
- Boat Checks (described below)
- Station bills and emergency response for man overboard, fire and abandon ship – “On board BOUNTY we do not use a station bill.” Emergency responsibilities were assigned to specific watch sections, rather than individuals. It was clearly stated that “the only person who may order an abandon ship is the Master or officer in command.” There were no duties described for the Engineer or Cook.
- Safety orientation check sheets for new members to the vessel and going aloft.
- History of the BOUNTY

26. During a typical watch crew members would cycle through manning the helm for an hour, serving as lookout for an hour, and conducting boat checks for an hour. Boat checks included checking the vessel for general safety, checking fuel and oil gauges as well as water levels in the bilges. The process for conducting a Boat Check was detailed in the Crew Manual. The watches were conducted under the direction of the mate on watch and information was relayed to the Captain as needed.

27. There were four steel 1,000 gallon fuel tanks in the tank room just forward of the engine room, with two 250 gallon day tanks located in the engine room. There was one day tank for the port side main engine and generator, and one for the starboard. There were also four 500 gallon plastic water tanks located in the tank room.

28. Based on the photographs and testimony, BOUNTY had the following fuel system filtering equipment coming from the day tanks (see Figure 5);

- 2 Racor 1000 series filters port side, port main engine (Racor filter RF-2020)
- 2 Racor 1000 series filters starboard side, starboard main engine (Racor filter RF-2020)
- 1 Racor 500 series filter port side, port generator (Racor filter RF-2010)
- 1 Racor 500 series filter starboard side starboard generator (Racor filter RF-2010)

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Figure 5 BOUNTY's port day tank and fuel filters.

29. According to crew testimony, on the BOUNTY, it was the job of the engineer to press up the day tanks in the engine room from the main fuel tanks via an electrical transfer pump, although this is not detailed in any written policy. Engineer [REDACTED] reported that he did so each morning. It was the job of the deckhands to check and record the fuel level in the day tanks every half hour while underway. Day tank fuel readings were taken via a sight glass on each tank. While underway, the BOUNTY used approximately 10 – 12 gallons of fuel per hour from each day tank under normal operating conditions.

30. Crew members logged gauge readings as well as records of bilge pumping during their boat checks. All logs were lost when the vessel sank.

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31. Testimony from the crew described that while underway the bilge pumps were normally used to dewater the bilges once every two to four hours. The time and frequency they were run increased in a heavy seaway. Testimony also provided that the bilges needed to be pumped twice daily while at the pier.

32. When not on watch during daylight hours, the crew would be assigned to work parties as designated by the Bosun, [REDACTED], who was not part of the watch rotation. Additional crew members not assigned to the watch rotation were Capt. [REDACTED], Engineer- [REDACTED] and Cook- [REDACTED]

33. BOUNTY was equipped with two inflatable life rafts; a 25 person raft manufactured in 2004 by Viking Life Saving Equipment and a 25 person raft manufactured in 1996 by Elliot. Each raft contained SOLAS Type "A" Emergency Equipment. Both life rafts were self inflating and re-inspected and certified on March 12, 2012 by Liferrafts Inc. of Puerto Rico an approved servicing facility. Each raft was outfitted with a hydrostatic release and a 36 meter painter. The rafts were mounted in a cradle along the transom rail aft of the sliding access hatch to the Great Cabin. BOUNTY also maintained immersion suits on board for all crew (various models but Sterns 1590 was one of them), and had three Emergency Position Radio Indicating Beacons (EPIRBs). All of this equipment was in excess of what was required for a recreational vessel.

2012 Yard Period in Boothbay Harbor, ME:

34. BOUNTY arrived in Boothbay Harbor, ME in the middle of September 2012, for a scheduled dry docking that was to last approximately one month. BOUNTY was hauled on September 17, 2012. Capt. [REDACTED], was in charge of the yard period, and supervised all work being performed. [REDACTED] was not on board the vessel for the yard period, until the vessel went back in the water at the end of the yard period.

35. Boothbay Harbor Shipyard's project manager for BOUNTY's shipyard period was employee [REDACTED]. [REDACTED] had retired as yard manager in 2009, but was brought back for this yard period to assist with the hauling and the launching of BOUNTY, and to advise Mr. [REDACTED]. Mr. [REDACTED] was familiar with BOUNTY. He was the project manager when BOUNTY's planking and some of the frames were replaced below the waterline in 2001-02, and when the planking and framing were replaced above the waterline in 2006-07.

36. The projects set to be completed during the yard period were: to replace and move fuel and water tanks one space aft (fuel tanks 12 feet and water tanks 24 feet), move the crew quarters one space forward, perform scheduled maintenance and repairs on the hull; create spare spars for the rigging, install a new companionway access to the tween deck from the weather deck; and move lead ballast aft within the ship to trim the vessel down by the stern.

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37. In September 2012 [REDACTED] contacted U.S.C.G Sector Northern New England to inform them that BOUNTY was in the shipyard being hauled. She e-mailed [REDACTED] of the Inspections Division and requested a hull exam, and inspection of the new fuel tanks. Mr. [REDACTED] informed Ms. [REDACTED] that the hull exam would not be performed, because it was not due until 2015 according to BOUNTY's Attraction Vessel COI. He did however agree to witness the testing of the newly constructed fuel tanks prior to installation, and then to witness the final installation.

The Fuel Tanks – Installation and Inspection

38. The fuel tank project consisted of replacing two old fuel tanks, with two newly constructed 1,000 gal tanks. They also installed four new plastic 500 gallon water tanks. All tanks were moved one space aft (fuel tanks 12 feet and water tanks 24 feet), swapping spaces with the aft crew quarters. All associated piping was re-plumbed as well. The movement of the tanks also required the removal of the transverse bulkhead at frame #29. When it was replaced the transverse bulkhead was moved to frame #30 to provide a larger berthing space. This was done to reduce the length of piping from the main storage tanks to the day tanks in the engine room, and eliminate any fuel piping from running through crew berthing. Engineer [REDACTED] and 2/M [REDACTED] performed most of the plumbing for the new piping.

39. Engineer [REDACTED] testified that the fuel in the old tanks was put into the new fuel tanks. He was unsure of how much was transferred. He informed Capt. [REDACTED] that he would have preferred to have larger micron fuel filters for the generator 500 series Racors, (the primary filters for the day tank), rather than the 2 micron filters that they had on board (the smaller the micron, the more contaminants will be filtered). BOUNTY had used 2 micron filter elements on board since at least April of 2012. [REDACTED] felt that because they were using the fuel from the old tanks contaminants would cause such a fine filter to clog faster. On October 17th, Capt. [REDACTED] sent a text to [REDACTED] asking her to have filters sent to them in Boothbay, “**30 micron two cases would be great.**” Capt. [REDACTED] provided no specifics on which filter series he required. The fuel filters did not arrive in time prior to the vessel's departure from the shipyard.

40. There is no Coast Guard regulation or policy that requires fuel tanks on attraction vessels to be inspected. The new fuel tanks were constructed according to plans designed by naval architect [REDACTED], which were approved by U.S.C.G MSC on February 11, 2002. The tanks were designed to meet the standards in 46 Code of Federal Regulations (CFR) Subchapter T, Small Passenger Vessels. BOUNTY was not inspected under this subchapter, as it applies to vessels less than 100 GT. The new tanks were constructed of stainless steel, rather than steel which was indicated in the approved plans. Stainless steel is not an approved fuel tank material under Subchapter T.

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41. Mr. ██████ testified that he agreed to observe the testing and installation of the new fuel tanks as a courtesy. He also testified that BOUNTY was always seeking to become an operational inspected vessel, and frequently called when they were in the yards.

42. On September 24, 2012, Mr. ██████ inspected the two new fuel tanks before they were placed in the vessel. Capt. ██████ was in attendance. The two tanks, in a warehouse on the shipyard facility, were pressed up with approximately 7 psi of air. The tanks had been constructed in New York in August of 2012, under ██████ supervision. Mr. ██████ informed Capt. ██████ for the fuel tanks to be considered for certification, that their construction would have to have been overseen by the Coast Guard. This was noted in Mr. ██████ report. The tanks tested satisfactory, and plans were made to revisit the vessel when the tanks were placed on the vessel. Mr. ██████ testified that he did see BOUNTY out of the water in the yard, but did not inspect the vessel, or see anything that drew his attention. At no point did BOUNTY's Captain, crew or the shipyard employees approach him and express any concerns with the hull.

43. On October 16th, Mr. ██████ returned to the vessel, which was still hauled out, to witness the installation of the two new fuel tanks. He indicated in his report that all appeared satisfactory. At no point did BOUNTY's Captain, crew or the shipyard employees approach him and express any concerns with the condition of the hull.

44. There were no discussions at any time between Mr. ██████ and Capt. ██████ regarding the possibility that the movement of the fuel and water tanks could have negated BOUNTY's stability letter.

The Hull – Maintenance and Repair

45. Bosun ██████ was assigned to supervise the routine maintenance and repairs on the hull during the shipyard period. To save money and to provide a training opportunity to the crew, the crew was set to perform much of the required maintenance. Scheduled maintenance included re-caulking some seams, resetting some existing caulking (also called bumping), and applying seam compound as needed. After consultation with Capt. ██████ anything the crew deemed beyond their capabilities was assigned to shipyard personnel. The scheduled work on the hull consisted of cleaning, scuffing and painting the bottom, examining the caulking below the waterline, and addressing any areas on the hull that required it.

46. After the bottom was cleaned, Bosun ██████ inspected the seams below the waterline, and marked any areas that she deemed questionable with a can of spray paint.

47. Bosun ██████ testified that the BOUNTY crew re-caulked approximately 5 to 10% of the seams below the waterline, and bumped 20 - 25%. There was limited caulking of any seams above the waterline. She stated that the re-caulking was primarily done by Deckhand ██████ and

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herself. Bosun [REDACTED] observed and evaluated Deckhand [REDACTED]'s ability to caulk, and believed her work was adequate. The bumping was performed by Deckhand [REDACTED], Deckhand Christian, Deckhand [REDACTED], and two crew members that were not on board on October 29th Deckhand [REDACTED] and Cook [REDACTED].

48. Bosun [REDACTED] and Deckhand [REDACTED] both testified that cotton and oakum were used for the re-caulking on the hull, and the type of seam compound used depended on which side of the hull to which it was applied. On the starboard side of the hull, a product called NP1 was used. On the port side, the crew applied a product called DAP 33 or DAP Kitchen and Bath. Both 3/M [REDACTED] and Bosun [REDACTED] testified that they used the different products on different sides as a test. During the next haul out, they had intended to see which product had held up the best.

49. Prior to arrival at the shipyard, there were five areas of concern that were designated for evaluation and repair by the shipyard. Three areas were above the waterline. The areas were:

- Starboard side – upper most plank under the mizzen channels, approximately 3 or 4 feet below the frame heads, at the forward end of the channels running toward the waist;
- Port side – upper most plank under the fore channels, approximately 3 or 4 feet below the frame heads, at mid-point of the channels running back to the waist;
- Port quarter – there was damage from when Capt. [REDACTED] had made a hard landing on a pier in Eastport, ME in August 2012.

The other two areas of concern were 1) a weeping seam at the forefoot of the vessel on the starboard side at the garboard strake, which is the first plank outboard of the keel, in way of a fairing plank for the ballast keel, and 2) a butt on the port side, 30 feet aft of the bow in way of the same fairing plank. These areas were described as a consistent problem that had existed from the year before. They were known to be areas where water was able to enter the hull. This was evidenced by the water from the bilges that leaked out in this area when the vessel was pulled from the water.

50. Capt. [REDACTED] assigned Deckhand [REDACTED] to work with the shipyard crew repairing the designated areas. [REDACTED] had shipyard employees [REDACTED] and [REDACTED] assigned to the project. Mr. [REDACTED] had experience with sailing on tall ships such as the LIBERTY CLIPPER, LIBERTY, LETTIE G. HOWARD, AMISTAD, the SLOOP CLEARWATER, and APPLIEDORE II. All of these were wood hull vessels other than LIBERTY and LIBERTY CLIPPER. He had been involved in maintenance periods and dry docks for these vessels. He had also attended a 2 year wooden boat building apprenticeship in wooden boat building in Rockland, ME. He had worked at Boothbay Harbor Shipyard from 2007 and had worked on the BOUNTY yard period during that time as a carpenter. He was later promoted to foreman, and then project manager.

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51. When the designated planks were removed from the port and starboard side they were found to have rot, or decay, on the inboard side. Both of the rotted planks were 25-30 feet long, 8 inches wide, three inches thick, and were douglas fir. Rot was noticed on the white oak frames underneath those planks as well. Deckhand [REDACTED] testified that when planking was removed, approximately 10-12 frames would be exposed to visual inspection. According to [REDACTED], out of those approximately half showed signs of rot. Most of the affected frames had approximately 5% of the frame rotted, but some had as much as 10-20%. It was not possible to visually inspect these areas from the interior of the vessel, because of the ceiling planking. Mr. [REDACTED] described that the areas had "aggressive decay," based on the fact that the planking and framing was only put on in 2006-07. He also stated that the areas were not moist, but dry and flaky, and it "looked like the life had been baked out of some of the frames and planking."

52. 3/M [REDACTED], Bosun [REDACTED], Deckhand [REDACTED] Mr. [REDACTED], and Mr. [REDACTED] all testified that when the rotted planking and frames were brought to Capt. [REDACTED] attention he was concerned and surprised that they were in this condition so soon after being replaced on the vessel. Mr. [REDACTED] and Mr. [REDACTED] also testified that they were surprised about the condition of the planks and frames in these locations. Mr. [REDACTED] testified that he had recommended further removal of planks from adjacent areas to determine how extensive the problem was. According to [REDACTED] i, he had made this suggestion to Capt. [REDACTED], but was told that "was not in the budget, and they did not have the time." Based on Capt. [REDACTED] direction, no additional planks were removed. Without the removal of adjacent planks, the only visible area of the frames was within the 8 inch area where each rotted plank had been and a couple of inches above and below.

53. The rotted douglas fir planks were replaced with white oak planks. Rot was removed from the frames by using a chisel and mallet or by scrapping it out to what was believed to be good wood. The frames with extensive rot (10-20% of the frame) had the rotted wood scrapped out, and a filler wood piece (dutchman) screwed into place. The frames were then painted with an oil based white primer to treat the area. Both Deckhand [REDACTED] and Mr. [REDACTED] testified that treating the area with oil based primer was the decision of Capt. [REDACTED]. Mr. [REDACTED] also stated that he was not consulted on how best to treat the area. [REDACTED] testified that the proper way to ensure that the rot was destroyed was to treat the affected areas chemically (with turpentine, pine tar, or ethylene glycol).

54. 3/M [REDACTED] and Bosun [REDACTED] testified that after the new planks were fastened to the vessel they performed the caulking.

55. When the damaged planks on the port quarter were examined the same rot was found once again in the planks and on the frames (see Figure 6). Mr. [REDACTED] and Deckhand [REDACTED] testified that Capt. [REDACTED] was shown the area of concern, and his decision was to treat the area in the same way as the others. The short sections (1-2 feet) of rotted planks were removed,

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and visible rot was removed from the exposed frames. The oil based primer was once again applied, and the area was closed up.

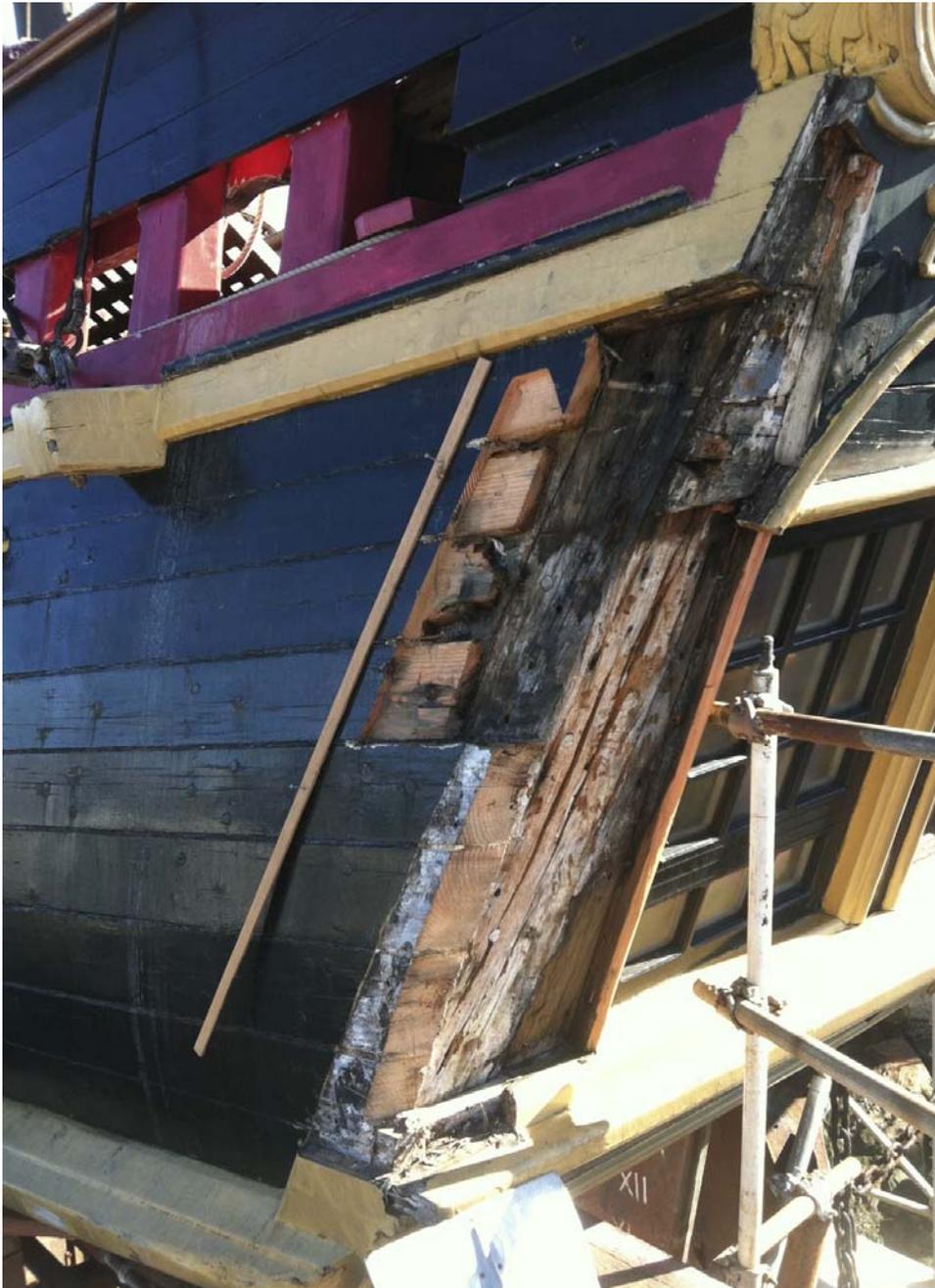


Figure 6 BOUNTY's Port quarter

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56. Deckhand [REDACTED] testified that there was one additional area that showed the same outward signs of rot and decay, which was above the waterline on the starboard side, below the mizzen channels. He stated that Capt. [REDACTED] was aware of this area, but had decided to address that plank at the planned 2013 drydock.

57. Both 3/M [REDACTED] and Bosun [REDACTED] testified that Capt. [REDACTED] had expressed that the condition of the three areas indicated they needed to be diligent about locating and eliminating any areas in the deck where fresh water could enter the hull.

58. Mr. [REDACTED] testified that he sounded the hull planking using a hammer, and strongly believed that "a significant amount of the planking was going to be in the same order of the planking we were taking off." He expressed his concerns to Capt. [REDACTED] who, according to Mr. [REDACTED], was also very concerned. Mr. [REDACTED] stated that Capt. [REDACTED] told him he had reported the condition of the hull to [REDACTED], and that they had discussed the possibility of a lawsuit against the shipyard.

59. Mr. [REDACTED] also testified to working on the weeping seam at the forefoot of the vessel on the starboard side where the garboard strake meets the ballast keel fairing plank, and the butt on the port side, 30 feet aft of the bow in way of the same fairing plank. He described the first section of seam at the forefoot as being 7 to 8 feet long, and was seen by the crew as a difficult place to caulk. Bosun [REDACTED] testified that this area had been a source of water intrusion into the hull since 2011, and they had tried to address it with a lead patch while in St. Thomas. The caulking was reefed out, and one strand of cotton and two stands of oakum were caulked in. Even then the seam was not fully repaired until Mr. [REDACTED] located a small hole within the seam bed, and plugged it with a dowel. The butt was caulked with 4 strands of oakum, because it was so wide. Bosun [REDACTED] also testified that an additional 6 to 7 lead patches 2-3 feet long were placed on various locations on the garboard seam, because of the problem of water intrusion.

Movement of Ballast

60. Approximately 5,720 pounds of lead ballast were moved from the old tank room back to the lazarette and the engine room in equal amounts. The ballast moved consisted of 200 separate lead pigs that were 1 inch X 6 inch x 11.5 inches weighing 28 lbs. 9.6 oz. each. This was done at the direction of Capt. [REDACTED], who wanted to achieve an additional 6 inches of immersion at the stern to improve stability and steering.

Stability Review

61. On September 25th 2012, Mr. [REDACTED] noticed on BOUNTY's Facebook page that the crew was in the process of moving the fuel and water tanks. He notified [REDACTED] that the vessel's stability may need to be revisited due to the movement. Ms. [REDACTED] e-mailed

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██████████ and inquired if the movement of the fuel and water tanks would require a review of the vessel's stability. Mr. ██████████ informed her that the vessel's longitudinal center of gravity (LCG) changed considerably with the shift of the fuel tanks, and that in order for BOUNTY to retain her stability letter, plans and calculations must be submitted to the Coast Guard for approval. Mr. ██████████ made this determination based on a conversation that his colleague, Mr. ██████████, had had with the Coast Guard MSC. Mr. ██████████ provided ██████████ a quote for the services required to make the drawings and perform the calculations. She countered via e-mail that both ██████████ and Capt. ██████████ were questioning why the recalculations were necessary. There is no evidence showing that Mr. ██████████ or Mr. ██████████ services were ever retained.

62. Neither Mr. ██████████ nor Mr. ██████████ was aware of the movement of lead ballast until October 23rd 2012. Capt. ██████████ conversed with Mr. ██████████ via text message regarding the weight of the lead ingots, and where they were moved. On October 23rd, Capt ██████████ sent ██████████ and email stating "The stern is down about 4 – 5 inches. 11' – 10" draft stern, 10' – 6" in the bow. I have finally got the boat trimmed where I want it."

63. ██████████, ██████████ and Capt. ██████████ were all aware that the weight changes in the shipyard invalidated the vessel's stability letter, and changed the vessel's LCG. No analysis detailing whether the changes were positive or negative was performed prior to the casualty.

Insurance Survey

64. On October 4, 2012, ██████████ was notified, via email, by ██████████ of Allen Insurance and Financial that Acadia Insurance, the underwriter, had asked for an updated Condition and Valuation (C&V) survey. Ms. ██████████ also advised that it was preferred by Acadia Insurance that the survey be done by ██████████, because he had done the last one in 2007.

65. On October 17, 2012 ██████████ contacted ██████████ via e-mail to perform the survey.

66. BOUNTY was put back into the water on October 17, 2012.

67. On October 19, 2012, ██████████ conducted his survey on BOUNTY while it was in the water. His survey consisted of a 4 hour walk through of the vessel, in which he did not witness any equipment run or systems tested. During the walk through he was accompanied by CM ██████████ who had returned to the vessel the day prior. His survey notes indicated that the Captain reported the bottom was in "good condition." He also made two recommendations; 1) repair the tiller which has some corrosion, and 2) better ventilation for all hold spaces to be provided.

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68. ██████████ testified that no one from BOUNTY or the shipyard informed him of the rot that was found in the planking and the framing. At no time did he discuss the possible effects that the movement of the fuel and water tanks or lead ballast would have on the stability of the vessel.

69. ██████████ was a personal friend of ██████████, had sailed on BOUNTY as a volunteer, and had performed numerous functions as naval architect and surveyor for BOUNTY since 2001. He designed the hydraulic bilge pump system, the plans for the lead ballast keel, and was integral in the decision to select douglas fir as the hull planking above the water line in 2006-07.

70. The vessel departed Boothbay Harbor Shipyard on October 21, 2012. The next Port of Call was New London, CT.

71. On October 22, 2012 ██████████ e-mailed ██████████;
“Hi ██████████ – I completed my survey on Friday and am writing up my report. I will plan to E-mail you my report in a few days.”

At the hearing in February 2013, when asked why his survey was so brief, and why no systems were tested, ██████████ testified that he in fact did not finish his survey, and was planning on completing it at a later date. The e-mail he sent to BOUNTY Organization contradicts his testimony. Additionally, statements he made during a December 2012 interview with the Coast Guard and National Transportation Safety Board in December of 2012 contradict his sworn testimony as well. During that interview, ██████████ also stated that he had been a guest onboard BOUNTY for a day and a half in September of 2012, when the vessel had hosted members from Maine Maritime Academy in Castine, ME, although he claimed he was not onboard in any official capacity and only as a guest.

72. On October 22, 2012, at 1100, the National Hurricane Center issued Tropical Depression Eighteen, Advisory Number 1. At 1700 they issue Advisory number 2. Tropical Depression Eighteen was then named Tropical Storm Sandy.

New London, CT:

73. BOUNTY arrived in New London, CT on Tuesday, October 23, 2012. They were at a berth at the City Pier. ██████████ met the vessel in New London, and brought new galley stoves and supplies for the vessel. She was on board for the day sail with the Navy.

74. The transit from Boothbay to New London was uneventful. Several projects from the shipyard, including the construction of the new crew quarters and electrical work for the new galley stoves, were being completed while in transit. All the crew made statements that

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BOUNTY's bilges, which historically had always had some amount of water in them, were very dry. AB [REDACTED] and AB [REDACTED] both felt that the electric bilge de-watering system was not functioning correctly. They believed that the pumps were having trouble maintain their prime. AB [REDACTED] and AB [REDACTED] testified that they had passed their concerns to Capt. [REDACTED]. Some of the crew offered that the pumps may have had difficulties, because the bilges were drier than normal. However, AB Faunt testified that he knew specific compartments had water, and he knew the electric bilge pumps were not performing as he had seen them in his past five seasons on BOUNTY. He stated that the pumps were taking longer to get primed, and that they were taking much longer to de-water the compartments once they did.

75. Engineer [REDACTED] reported that he was replacing the series 500 Racor filter; 2 micron filter elements every day and a half to two days, because he was concerned that they would clog. However, when he did change them he did not see an abundance of contaminants. He also testified that he believed that changing the filters so frequently was probably "overkill on his part." Neither generator was having a problem during the trip from Boothbay to New London.

76. On the way to New London, a man overboard drill was conducted. According to crew members this was the first drill of any kind held since August of 2012. No abandon ship or fire drill was conducted.

77. After arrival in New London, several crew members believed that the electric bilge de-watering system was not operating as well as it had in the past. Both AB [REDACTED] and Deckhand [REDACTED] stated that the system was not maintaining prime or operating at a pressure they were used to. [REDACTED] testified that he notified Capt. [REDACTED], CM [REDACTED] and 2/M [REDACTED]. He also testified that Capt. [REDACTED] had been able to get the pumps to prime, but he did not say what was wrong or how he had fixed it. AB [REDACTED] also described the problems they were having with the system to Capt. [REDACTED] in the engine room, and testified that the Capt. believed it could be a problem with the pump's impellers. AB [REDACTED] explained that he believed that was unlikely, because both pumps were experiencing the same problem, and that the problem was likely in the manifold itself.

78. BOUNTY had a delivery of fuel in New London, and Engineer [REDACTED] reported that they pressed up their tanks.

79. The fuel filters ordered in Boothbay were delivered in New London. However, those filter elements were part number 2020PM 30 micron filter elements for the Racor 1000 Series main engine filter system, not the 500 series for the generators. The two letter designation after the part number indicates the micron size. PM is 30 micron, TM is 10 micron and SM is 2 micron. Engineer [REDACTED] testified that because he did not get the filters he wanted he continued to change out filter elements with greater frequency as a precaution. He did not change out the main engine filter elements with the same frequency, because they were a larger micron.

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80. On Wednesday, October 24th at 1100, the National Hurricane Center released Hurricane Sandy Advisory Number 9. Sandy was located approximately 65 miles south of Kingston, Jamaica. This was the first time the Storm Sandy was designated as a hurricane.

81. On October 25, 2012, the BOUNTY hosted forty-four crew members of the USS MISSISSIPPI for a day sail. The day sail occurred without incident. The Navy personnel did not pay for the trip on BOUNTY. Statements from the Navy personnel who attended the trip reported that the vessel appeared to be in good order, and the crew seemed well trained.

82. Upon return that afternoon, several of the BOUNTY crew members went for a tour of the USS MISSISSIPPI, in Groton, CT.

83. ██████████ remained on board BOUNTY to provide a tour to a prospective buyer, as the vessel was for sale.

84. BOUNTY's next intended port of call was St. Petersburg, FL. The crew also discussed the possibility of stopping over in Key West, FL. They were due to arrive in St. Petersburg on November 10th, and were expected to conduct dockside tours at "The Pier," which was BOUNTY's home port for several years.

85. The crew had planned, after departing St. Petersburg, FL to sail to Galveston, TX as their next port. Galveston was to be BOUNTY's berth for the winter at the conclusion of the season. Most of the crew intended to go home from Galveston. 3/M ██████████ and Bosun ██████████ intended to stay on board as winter maintenance personnel.

86. BOUNTY intended, upon reaching St. Petersburg, to host a group from the Ashley Deramus Foundation, a foundation dedicated to those with Down's Syndrome and special needs. The plan was to have three or four special needs persons, plus chaperones, accompany BOUNTY on their voyage to Galveston. The foundation members were to be guests of the BOUNTY and not passengers for hire.

87. After arriving back at BOUNTY, following the submarine tour, at approximately 1700 on October 25th, Capt. ██████████ informed the crew he intended to depart for St. Petersburg that evening.

88. At 1700 the National Hurricane Center released Hurricane Sandy Advisory Number 14, listing Hurricane Sandy's current latitude and longitude, placing the storm's center at about 125 miles east southeast of Nassau, Bahamas. The advisory reported Sandy as a category two hurricane on the Saffir-Simpson hurricane wind scale. It was reported that hurricane winds extended outward to 35 miles, and tropical storm force winds extended outward up to 205 miles. The forecast also stated that Sandy was expected to grow larger in size in the following days.

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89. Capt. [REDACTED] and the BOUNTY officers had full knowledge of the forecasts for Hurricane Sandy through Weather Fax, forecasts from the National Hurricane Center, and television broadcasts. 2/M [REDACTED] had prepared the voyage plan which accounted for Hurricane Sandy's forecasts, and charted a course east of the Bahamas, intending to use the Bahama current to bring the vessel back toward South Florida. His plan was ultimately altered by Capt. [REDACTED].

90. Bosun [REDACTED] testified that she had a conversation with CM [REDACTED], Mate [REDACTED], and Mate [REDACTED] in which they discussed their unease with the expected trip and they discussed other options, which included staying in New London.

91. Based on this meeting, CM [REDACTED] spoke with Capt. [REDACTED] on the New London pier. CM [REDACTED] expressed to Capt. [REDACTED] that the crew and officers had concerns about the trip, and that some of the crew had received concerned calls and texts from family members regarding their safety. CM [REDACTED] testified that he presented to Capt. [REDACTED] other alternatives to making the trip south, which included staying in New London or sailing up river. When Capt. [REDACTED] told him that he was going to go forward with his intended plan, CM [REDACTED] requested that Capt. [REDACTED] address the crew.

92. Prior to departure, Capt. [REDACTED] held a meeting with the entire crew to inform them of his plan to leave port. The meeting was held on the weather deck at the capstan forward of the mizzen mast. At that meeting, Capt. [REDACTED] described the impending storm, and briefly mentioned his plan to deal with it. He did not provide the crew with any forecasts, projections, or description of the storm's projected size, strength, or scope. According to the testimony of the surviving crew, Capt. [REDACTED] indicated that his plan was to sail out to the east to monitor the track of the hurricane, and then to choose what course to take. Capt. [REDACTED] stated he believed that, during a storm, a ship was safer at sea than in port. Capt. [REDACTED] wanted to leave New London making the best speed possible and get as far south east as possible. If the storm did not follow its forecasted track to make landfall in Central New Jersey (e.g.; keep heading north, head into shore further south, or swing out to the east), then the vessel could keep heading out to the east to get away from the storm. Capt. [REDACTED] explained that if the storm did follow its forecasted track and if they had made enough ground to the south east, a possible option would be to alter course to the south west, and cut between the storm and shore. Not all of the crew could recall this possibility being discussed. According to Capt. [REDACTED], this would allow BOUNTY to take advantage of what was considered the favorable winds in the "navigable" quadrant of the hurricane. At the meeting, Capt. [REDACTED] explained that he had experience with hurricanes and heavy weather in the past. He gave all of the crew the opportunity to leave the vessel if they did not feel up to making the trip. No one chose to leave.

Many of the crew testified that this meeting was the first time they had heard that there was a storm called Hurricane Sandy.

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The crew had less than one hour to make their decision to stay or go. If they chose to leave, they would have had to pay for their transportation home out of their own pockets. This was standard policy whenever a crew member left the vessel. All crew members interviewed stated that Capt. [REDACTED] tenure on BOUNTY and his claimed prior history with storms gave them confidence.

93. Both [REDACTED] and [REDACTED] from the BOUNTY Organization had knowledge that BOUNTY's intended track would bring the vessel into close proximity with Hurricane Sandy.

94. The BOUNTY departed New London, CT at approximately 1800.

95. Capt. [REDACTED] related to Mr. [REDACTED] via text message at 1813 on October 25th, **"So we are underway. Sandy looks like she will be bad. Plan is to get south and east of it."** [REDACTED] replied, **"Current track puts it a little off shore. If you run closer to shore you should catch a good southern breeze. What's your back up if it gets snotty?"** [REDACTED] replied, **"Yes, we would get a good ride if it didn't push us up on the rocks. We need to get east of it. I would not dare be anywhere close to land."**

96. According to crew testimony, the BOUNTY's normal crew complement during the season was 20 -25 persons. For the upcoming voyage to St. Petersburg, through Hurricane Sandy, their total crew was 16 persons. 10 out of the 16 had less than 1 season experience on BOUNTY, and for most of those it was not a full season. As per the BOUNTY Crew Manual, the vessel was short 3 deckhands. Bosun [REDACTED] stated that due to the reduced crew the watches did not have any standby personnel. AB [REDACTED] testified that he brought up to Capt. [REDACTED] the fact that they were shorthanded, and that the Captain replied that he knew and the had made the same trip with six before. Shortly after departure, Deckhand Christian sent a text message to friend [REDACTED] [REDACTED] stating **"Right now shorthanded and with only three people on each watch, we are all doing two jobs at once."**

Underway from New London, CT:

October 25th and 26th

97. After the vessel got underway from New London, they proceeded out to sea, and once they were clear of the southern tip of Long Island, they proceeded on a general course of south by southeast, 164 degrees true, as Capt. [REDACTED] had planned. All course information for BOUNTY analyzed for this investigation was obtained from BOUNTY's Automatic Identification System (AIS) with data received by the U.S.C.G. Navigation Center, Alexandria VA and e-mails from Capt. [REDACTED].

98. The crew went into their watch routine, and began to sea stow and make preparations for heavy weather.

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99. No emergency drills of any kind were conducted prior to departure or during the voyage.

100. AB [REDACTED] testified that BOUNTY's long range communications systems, including the INMARSAT C and HF Single Side Band, were not checked prior to departure.

101. The BOUNTY was running on both engines and sails once they got out to sea. Capt. [REDACTED] intention was to get as far to the south and east as quickly as possible to get "sea room" in which to monitor the storm and to maneuver according to what the storm did.

102. CM [REDACTED] 3M [REDACTED], and AB [REDACTED] testified that the main engines were running at higher RPMs than normal. Normal speed for BOUNTY at sea was 5 to 7 knots, but due to the increased RPMs they were making 9 to 10 knots.

103. Capt. [REDACTED] and the BOUNTY officers were monitoring the storm via Weather Fax and GRIBS e-mail files. They were also receiving updated storm track information from the National Hurricane Center through [REDACTED]. She sent the vessel these updates via the HF E-mail system. Ms. [REDACTED] sent these updates to the vessel at the request of Capt. [REDACTED].

104. At 0854, on October 26th Capt. Walbridge sent the following e-mail to [REDACTED] [REDACTED] and [REDACTED] of the BOUNTY Organization;

"39-45N X 071-18 W

Good Morning Miss [REDACTED]
You missed an awesome sub tour.

We are headed S X E waiting to see what the storm wants to do. I am guessing it wants to come ashore NJ / NYC

We are running trying to stay on the east side of it. Bad side of it until we get some sea room, if we guess wrong we can run towards Newfoundland. If it turns and wants to tangle with us that means it is pretty far off shore and we can turn and go down the west side of it. I need to be sure it is well off shore before we can take advantage of the good weather for us. Right now I do not want to get between a hurricane and hard spot. If you can send us updated track info (where it is projected to) that would be great. We know where it is, I have to guess (along with the weather man) where it is going.

Keep you updated

[REDACTED]"

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105. At the same time Capt. [REDACTED] sent the following e-mail to a friend;

“Looks like I might be able to tell you how far one can drift in a hurricane. Sandy looks like a mean one. Right now we are on a converging course. I am actually headed to the dangerous side of it. Hoping like a deer if I am at it it won't be there when I get there. There is no room to run down the west side of it but if it comes out to play then that will mean there is room on the west side.

At times like this I think about the sailors 200 years ago. There are not signs in the sky, barometer is steady, winds are light. I always watch (knowing there is a storm) for the first tell tale signs. Right now there are none except the electronic weather fax

Got an awesome tour of SSN Mississippi, US newest nuclear submarine. Quite a boat

When we heave too I will keep you posted [REDACTED]”

106. Capt. [REDACTED] and the BOUNTY officers were plotting Hurricane Sandy's track relative to the track of the vessel and posting this near the galley and in the Nav Shack forward of the helm.

107. Work parties were focused on preparing for heavy weather including stowing gear for heavy seas anticipated as they got closer to Hurricane Sandy.

108. Crew members rigged jack lines (safety lines run from the bow to the stern over the decks for an extra place to hold) on the weather deck and the tween deck as part of their preparations for heavy weather. The crew also rigged safety nets along the outside of the bulwarks to help keep people from falling overboard in heavy weather.

109. The royal yard arm was also brought down from the main mast on Friday October 26th, with the intention of reducing top hamper (weight aloft). This was directed by Capt. [REDACTED], and performed by a work party supervised by the Bosun, [REDACTED] [REDACTED].

110. The weather and sailing conditions experienced by BOUNTY on the night of October 25th and all day on October 26th were described as favorable. Crew members testified that there was water in the bilges, but no more than they were used to seeing in the past.

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October 27th

111. On Saturday October 27th, at 0601, [REDACTED] [REDACTED] sent an e-mail to Capt. [REDACTED] with the 0500 National Hurricane Center Tropical Storm Sandy Advisory 20, listing Sandy's current latitude and longitude, placing the storm's center 155 mile north of Great Abaco Island. This was the first time since October 24th at 1100, that Sandy was not classified as a hurricane on the Saffir-Simpson hurricane wind scale. The advisory stated that "Sandy weakens but is expected to remain a large storm with widespread impacts into early next week." Maximum sustained winds decreased to 70 mph. The advisory also stated that the storm could strengthen on Sunday night, and that tropical storm force winds extended outward to 450 miles.

112. At approximately 0900 Capt. [REDACTED] decided to alter BOUNTY's course from south by southeast to a southwest heading. He indicated this to [REDACTED] via e-mail:

"Hi [REDACTED]

Thanks for the update, because of it I feel okay about trying to sneak to the west of Sandy. New course 225 T.

It looks like it will stay off shore enough to us to squeak by.

Thx."

Capt. [REDACTED] explained to CM [REDACTED] that he believed that Sandy was not going to come ashore south of New Jersey. Therefore, the Captain believed they could now move towards what he perceived to be the navigable quadrant of the storm, and take advantage of the favorable winds there. 3/M [REDACTED] testified that Capt. [REDACTED] believed that they had made enough of a southerly course that they could head towards the northwest quadrant of the storm to put the winds on BOUNTY's port quarter.

BOUNTY was approximately 583 NM away from the eye of Sandy at this time.

113. At 0800 the National Hurricane Center released Hurricane Sandy Intermediate Advisory Number 20A, listing Sandy's then-current latitude and longitude, placing the storm's center 165 miles north of Great Abaco Island. At that time, Sandy was again classified as a hurricane. It was reported that Sandy had maximum sustained winds near 75 mph, and they extended out up to 100 miles from the center, primarily southwest of the center. The advisory also listed that tropical storm force winds extended outward up to 450 miles away. Sandy would remain a hurricane until after landfall on the evening of October 29th. The storm track was expected to move parallel to the southeast coast of the United States through the weekend, and make a northwest turn toward the East Coast, making landfall in New Jersey.

[REDACTED] did not send the 0800 National Hurricane Center Advisory to BOUNTY.

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114. BOUNTY first started to feel the effects of Hurricane Sandy on Saturday morning, October 27, 2012 with eight to twelve foot seas and 25 knot winds from the northeast. According to the testimony of the crew, these conditions were not abnormal for BOUNTY.

115. By late Saturday morning, the heavy seas were making it difficult to walk about the vessel, and lifelines were rigged on the tween decks in order to assist crew members.

116. Engineer [REDACTED] testified that he was feeling the effects of seasickness. He also testified that, on Saturday morning, he fell on the deck and injured (later determined to be a fracture) his right hand.

117. At 1020, BOUNTY's AIS track changed from 164 degrees true to 233 degrees true. This is the first indication on AIS of the south west course change. The new southwest course had BOUNTY crossing directly in the path of Sandy.

118. At 1134, [REDACTED] [REDACTED] sent an e-mail to Capt. [REDACTED] with the 1100 National Hurricane Center Hurricane Sandy Advisory 21, listing Sandy's current latitude and longitude, placing the storm's center 190 miles north of Great Abaco Island. The advisory stated that "tropical storm force winds are already near the coast of North Carolina." The advisory indicated that hurricane force winds extended outward up to 105 miles, and tropical storm force winds extended outward to 450 miles. The storm track was expected to move parallel to the southeast coast of the United States through the weekend. At this time BOUNTY was approximately 573 NM from the center of Hurricane Sandy.

119. During the day on October 27, weather conditions began to deteriorate as BOUNTY came closer to Hurricane Sandy. Mate [REDACTED] testified that the barometer was showing a steady drop.

120. According to crew testimony, by the late afternoon of October 27, crew members conducting boat checks noted that both port and starboard electrical bilge pumps were running almost constantly. At that time, seas were greater than 15 feet, and winds were 30 to 40 mph.

121. Engineer [REDACTED] testified that, on the afternoon of October 27, the port generator was vibrating and shifting due to the heavy seas, and that he needed to secure the mounts.

122. Sometime in the evening, Bosun [REDACTED] went to assist Capt. [REDACTED] in the engine room pumping the bilges. She indicated that the Captain's presence in the engine room indicated that there was a lack of manpower, and that the water level in the bilges was now becoming a concern, and required that the bilge manifold be manned. She remained in the engine room pumping bilges with the electric pumps for a couple of hours. She noticed that the pumps were not holding a prime very well, because the vessel was rolling, causing the water to move away

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from the strainers. She testified that she had been on BOUNTY in at least 25 foot seas in the past, but had not seen the pumps have this much difficulty. She reported that the level of water in the engine room was not enough to come over the sole boards. It was difficult for her to tell the exact water level because the water was rolling up the ceiling planking on one side of the vessel to the other in the heavy seas. She estimated that the level was 2 to 3 feet at that time.

123. At 1800 BOUNTY was 488 NM from the center of Hurricane Sandy (see Figure 7).

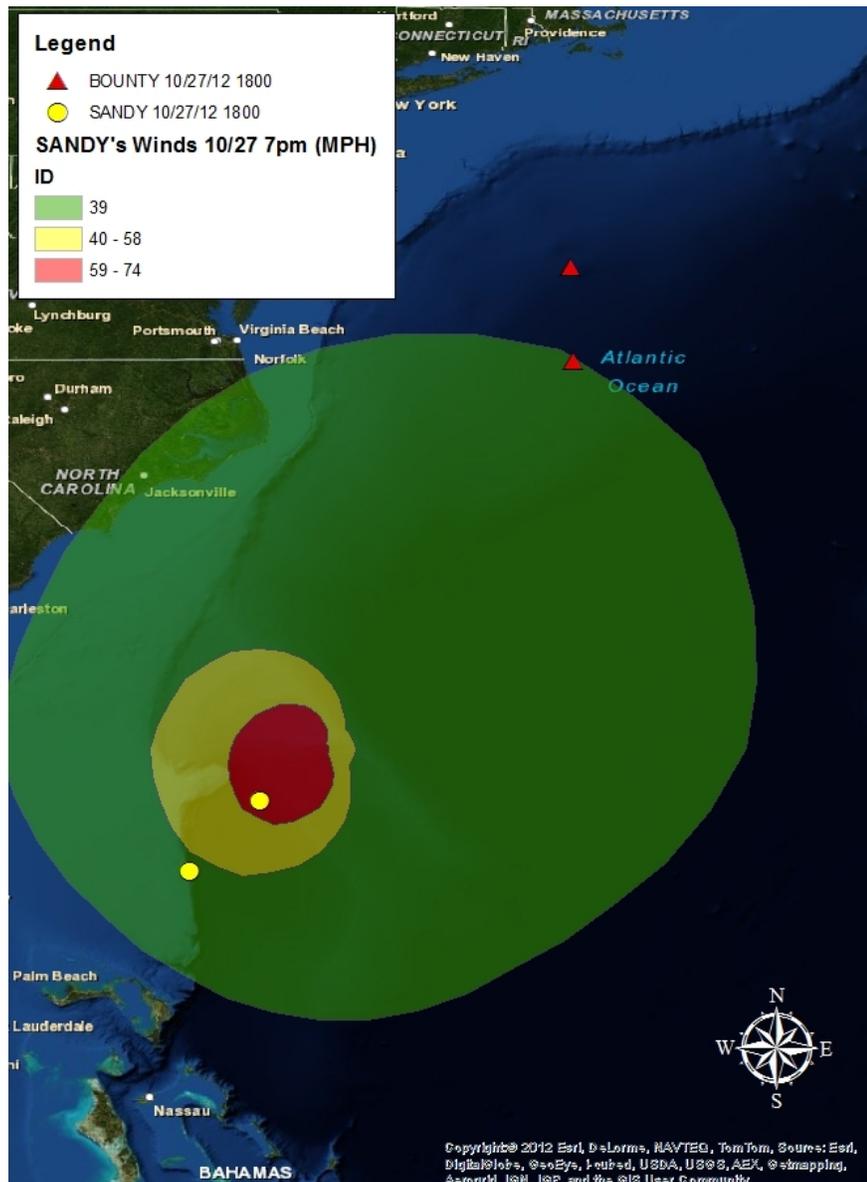


Figure 7 BOUNTY 488 NM from center of Hurricane Sandy

Subj: SINKING OF THE TALL SHIP BOUNTY 123 MILES OFF THE COAST OF CAPE HATTERAS, NORTH CAROLINA ON OCTOBER 29, 2012 WITH LOSS OF ONE LIFE AND ANOTHER MISSING AND PRESUMED DEAD

124. Sometime in the evening, Capt. ██████ attempted to engage the fixed hydraulic bilge pump to assist with the dewatering effort, but it would not work. He then set up the portable hydraulic pump with the assistance of deckhand ██████. Deckhand ██████ testified that the quick disconnect fittings to set up the pump were corroded and needed to be cleaned before it could be hooked up. The water levels in the bilges were remaining constant and not receding. The vessel had begun flooding.

125. Crew statements indicated that water was entering the hull from the engine room exhaust trunk on the weather deck, various gaps on the weather deck and between the seams above the waterline, located;

- Port side – at the main mast in the vicinity of the hull where the tween deck met the tank room;
- Port side – at the mizzen mast in the vicinity of the hull where the tween deck met the engine room;
- Starboard side – near the heads and the mop closet on the tween deck.

The water coming in was seen running down the interior of the hull (for example, in the engine room), but due to the ceiling planking it was difficult to see all of the locations of water intrusion. Mate ██████ described hearing a “hissing” when a wave would hit a particular area, or the vessel would roll to that particular side. With the exception of the water seen by Engineer ██████ coming from the deck into the engine room exhaust trunk, it was reported that no water was entering the hull via companion way hatches on the weather deck. However, crew did testify that the weather deck did leak at the connection to the sheer strake (turn of the deck), and rain water would find a way into the area between the outer hull planking and ceiling planking. Bosun ██████ and AB ██████ stated that the weather deck always leaked. AB ██████ occupied a cabin on the tween deck just aft of amidships on the port side. He testified that the persistent leaking caused him to put up a piece of plastic sheeting on his bulkhead when they left Puerto Rico at the beginning of the season, and still had water leak down onto his bedding in normal rain storms. When the vessel encountered Hurricane Sandy he stated that his bedding was “soaking wet.” He also stated that most of the tween deck cabins had this issue, including Capt. ██████

126. Many of the crew reported that they had difficulty sleeping on Saturday night, because of the heavy seas, and because their sleeping quarters were wet. AB ██████ stated that he felt fatigued when he began his 0800 watch the next morning, because of the lack of sleep.

October 28th

127. In the early morning of October 28th after the 0000 watch relief, Deckhand ██████ stated she was told by 2/M ██████ that, at that time, the bilge pumps needed constant attention and needed to be manned. She testified that she went to the engine room, and that she could not get the starboard bilge pump to maintain a prime. She could get it to start, but only for a few

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seconds. She reported this to Mate Sanders who then came to the engine room and was able to get them going.

128. At 0800 during the Mates' meeting, Capt. ██████ told the officers, engineer, and bosun that the normal work parties scheduled for the day had been secured due to the heavy seas. The vessel continued on a southwest course and the weather conditions were deteriorating further. Weather conditions in the area were reported by the crew to be 90 knot winds and 30 foot seas.

129. At 0900, BOUNTY was approximately 226 NM from the center of Hurricane Sandy (see Figure 8).

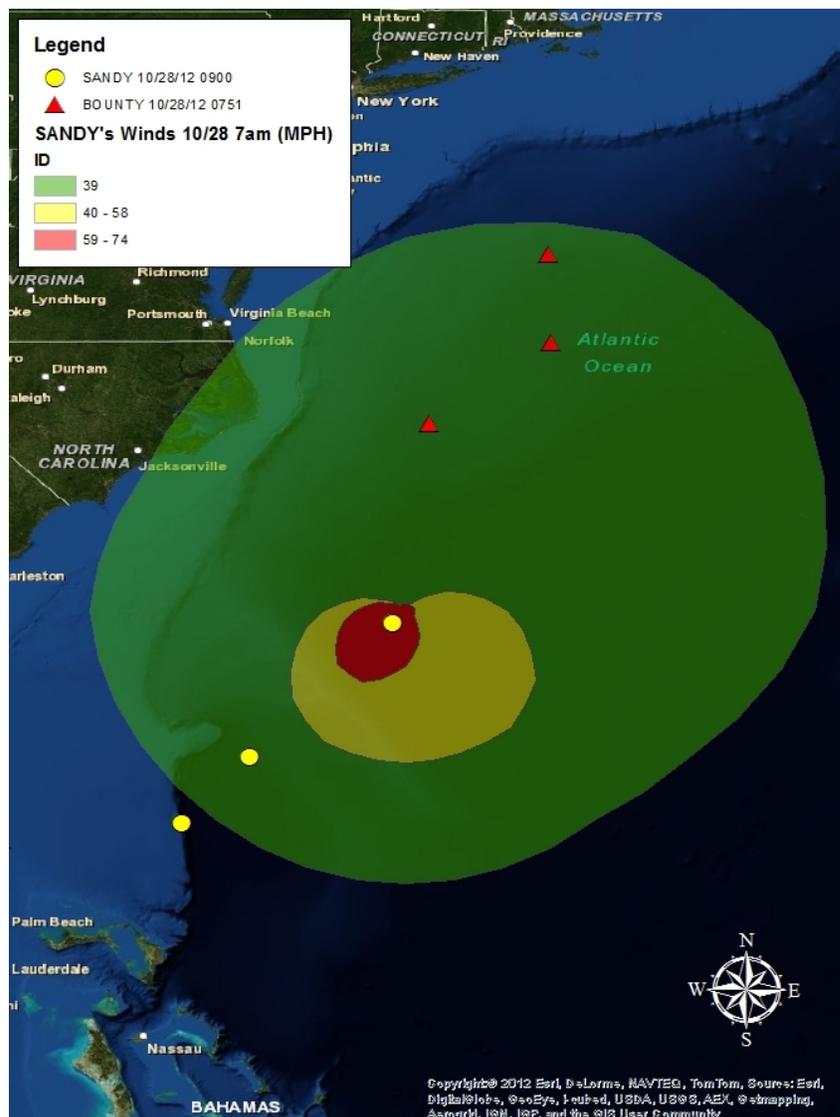


Figure 8 BOUNTY approximately 226 NM from center of Hurricane Sandy

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130. The vessel was operating on the port and starboard main engine and sailing under the fore course sail. According to Engineer [REDACTED], both electric bilge pumps were running continuously off of the port generator.

131. Many of the crew were experiencing the effects of sea sickness and/or fatigue. Crew members testified that their berthing was wet due to water in the bilges running up the ceiling planking and soaking their bedding. They also said that the vessel was making a tremendous amount of noise from working in the seaway, which made it difficult to sleep. It was described that the vessel sounded like it was “grinding” together.

132. Engineer [REDACTED] was unable to spend more than 15 to 20 minutes in the engine room at a time, because of his sea sickness, dehydration and the temperature in the space.

133. The A watch was on duty during the morning from approximately 0800-1200 and those crew members not on duty were instructed by Capt. [REDACTED] to rest. Not all of the off duty crew members rested. Some continued to help with the bilge pumps and others could not rest because they were seasick or their quarters had water in them. Many of the crew had to secure items that had come loose in the heavy seas.

134. AB [REDACTED] reported that he spent almost the entire duration of his 0800 – 1200 watch in the engine room working with the electrical bilge pumps. He continued to discuss the problems with the electrical bilge system with Capt. [REDACTED]. He stated that Capt. [REDACTED] reported that “there might be something stuck in the system.”

135. The helm now required two people to hold the vessel’s course. Bosun [REDACTED] and deckhand [REDACTED] stood by the helm for almost the entire 0800 -1200 watch. AB [REDACTED] was in the engine room pumping bilges and Deckhand Christian was performing boat checks for the entire watch.

136. Engineer [REDACTED] testified that at approximately 0830, he fell in the engine room. He suffered a large gash in his left arm and injured (deep bruise) his left leg. Engineer [REDACTED] stated he believed he was transferring fuel to the day tanks at the time, but was not sure exactly if he did, in fact, press up the tanks, and he was not sure when he had done so prior to that morning.

137. When AB [REDACTED] left the engine room at the end of the 1200 watch he testified that the water in the bilges was to the top of the keelson, approximately two and a half feet. This was twice the amount of water that he considered normal. He was asked to disconnect the high water alarm in the engine room, because the continuous alarming “no longer made sense.” He testified that he had never heard that alarm before other than testing. The alarm was installed in 2011. He believed both main engines and generator seemed to be working correctly.

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138. At 1200, BOUNTY was approximately 148 NM from the center of Hurricane Sandy.

139. At 1200, the B watch took the watch. 2/M [REDACTED] relieved CM [REDACTED]. CM [REDACTED] reported that when he was relieved, both main engines were operating, and the bilge pumps were running continuously. This conflicts with what 2/M [REDACTED] testified, as he believed that he was told that they were running on one main engine at the time of the relief.

140. After the 1200 watch relief, CM [REDACTED] went to take a nap in the lazarette.

141. Shortly after the 0800 -1200 watch ended, Deckhand Christian approached AB [REDACTED] and expressed that she was seeing things that were making her uncomfortable, that she expressed her concerns to others, and felt she was being ignored. He tried to reassure her that the Captain and officers were aware of the problems.

142. Cook [REDACTED] testified that at approximately 1200 (before lunch), leaks coming into the galley had caused various electrical problems. She noticed smoke coming out of the back and front of the oven. She testified that Capt. [REDACTED] went to the fuse box, and cut power to the oven. She stated that water was dripping from a box fan that was above the oven, and it had penetrated the oven's light switch at the top. He advised her that the deck often leaked, and told her to cover the ovens with garbage bags.

143. Engineer [REDACTED] testified that, at approximately 1200, he went to the engine room and shut down the port generator in order to switch out the fuel filter, and started the starboard generator. Then he went up to the great cabin while the port generator cooled down. When he came back down, minutes later, the port main engine was not running. He then noticed the sight glass on the port day tank was broken. He secured the sight glass valves at the top and bottom. During the hearing Engineer [REDACTED] stated that he felt "relatively comfortable that he reported this to the Captain and the Mate on watch," but he was not sure if he did. He testified that he believed that the fuel in the port day tank leaked out onto the deck of the engine room, and into the bilges, which could have been up to 150-200 gallons. When asked why personnel in the engine room weren't overcome with fumes he stated that "there was so much water down there that it diluted really quick." After this time, Engineer [REDACTED] claimed that both the port main engine and port generator were down. (**This testimony is further discussed in the Analysis section of the report**).

144. Engineer [REDACTED] then transferred an unknown amount of fuel over to the day tank after the port main engine shut down. With the sight glass broken, he was unable to tell how much was transferred. He testified that he ran the fuel transfer pump for about 15 to 20 minutes.

145. [REDACTED] testified that during her 1200 boat check, the fuel level in the port day tank was low. She logged her findings, and noted that Deckhand Christian had logged low fuel

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readings on the previous boat checks. She testified that she did not know if the port engine was running at the time, and she could not tell if there was diesel spilled on the deck, because of her poor sense of smell. She reported her findings first to 2/M [REDACTED], who told her to inform the engineer. She reported her finding to Engineer [REDACTED], and he told her that he already knew, and “someone must have broken it and not told him,” referring to the sight glass. She also testified that, on her 1300 boat check, she did note that the sight glass for the port day tank was “broken up towards the top,” and there was some fuel in the unbroken portion above the bottom valve, which would give the appearance that some fuel remained.

146. At approximately 1330 - 1400, the fore course sail blew out and all hands assisted to secure the sail. AB [REDACTED] and Deckhand [REDACTED] were on the helm at the time and saw it rip. Several crew members (Mate [REDACTED], Bosun [REDACTED], Deckhand [REDACTED], and Deckhand [REDACTED]) went aloft in the rigging to furl the sail. Conditions reported at this time were 25 – 30 foot seas and winds up to 90 mph. AB [REDACTED] Deckhand [REDACTED] and Deckhand Christian and other crew members stood by on deck ready to assist if someone fell overboard.

147. Mate [REDACTED] testified that, after the fore course was furled, they set the fore staysail, so they would still have sail area.

148. At approximately 1430 Capt. [REDACTED] was injured when he fell across the tween deck and hit his back against the table. This was witnessed by Engineer [REDACTED], Deckhand [REDACTED] and Cook [REDACTED]. According to crew testimony, he appeared to be in a lot of pain, but was still able to walk, though with difficulty.

149. At 1545, Bosun [REDACTED] went to her berthing in the lazarette to rest. Shortly after 1600 a wave from behind hit the underside of the stern making a loud noise. She stated that she could hear water coming in. She went up on deck to inform 3/M [REDACTED] and was told that the wave caused some water to come in the great cabin windows.

150. When 3/M [REDACTED] relieved 2/M [REDACTED] at 1600, Capt. [REDACTED] related to him that “we are losing the de-watering battle.”

151. At 1600, Capt. [REDACTED] ordered 2/M [REDACTED] to have BOUNTY hove to on a port tack to put the vessel’s bow into the seas, and heel the vessel to starboard in order to improve the bilge pumps pickups. Mate [REDACTED] reported that Capt. [REDACTED] explained that with the vessel rolling heavily and the water moving from side to side, heeling the vessel to starboard would assist keeping the water in place and alleviate the problem with the electric pumps losing their prime. The helm was put hard over and lashed at this point. The fore staysail was also furled.

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152. At 1600, BOUNTY was approximately 132.5 NM from Hurricane Sandy. This was the closest point of approach. (see Figure 9)

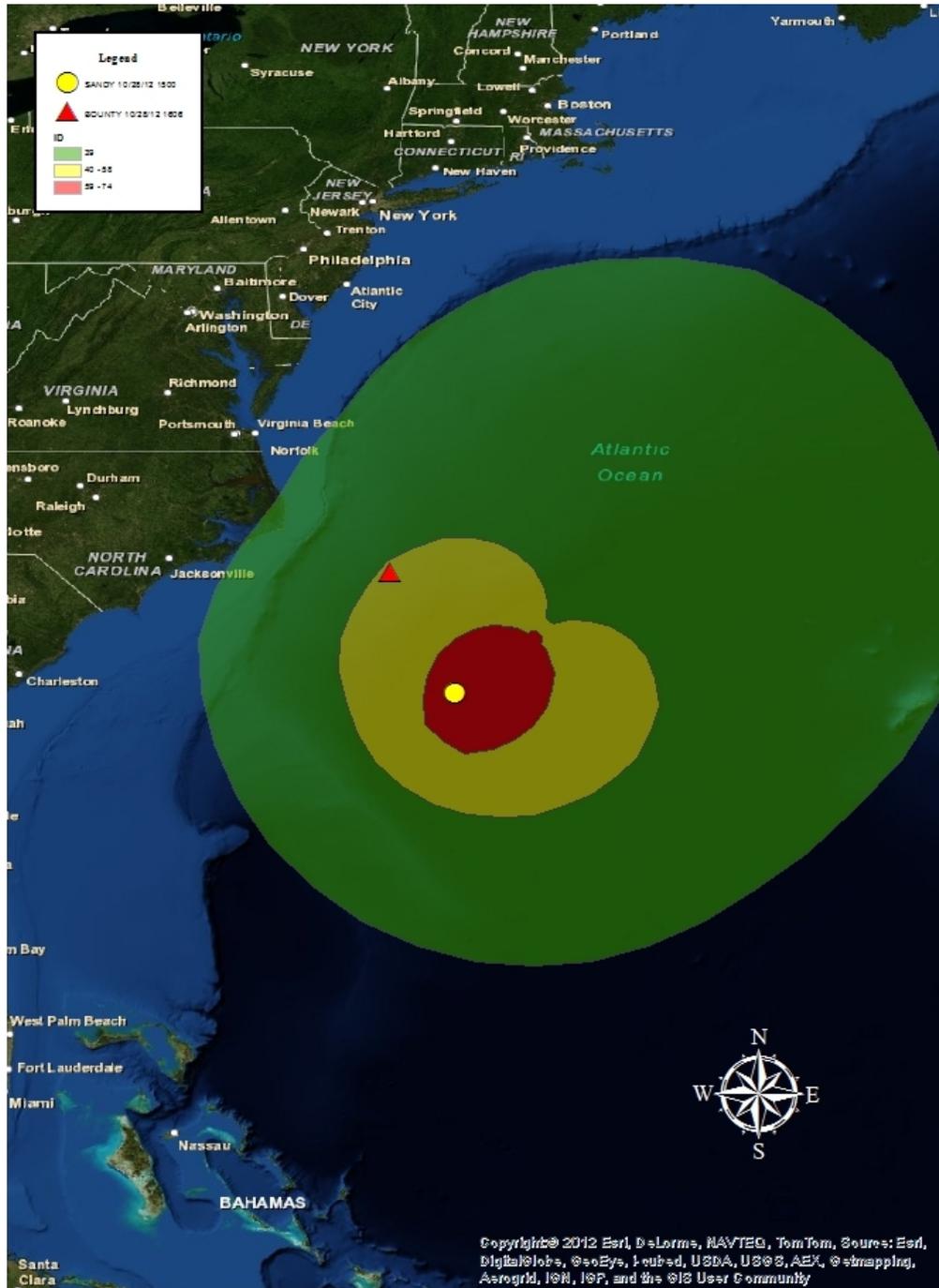


Figure 9 BOUNTY is approximately 132.5 NM from the center of Hurricane Sandy.

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153. Cook [REDACTED] testified that, at approximately 1600, she was cooking peas in the microwave and sparks started to come out when she was closing the door. Shortly after this she observed smoke, sparks and “an arc of light” coming from the box fan above the ovens and an extension cord above the microwave. Deckhand [REDACTED] secured power to these items. She stated that AB [REDACTED] told her that there was “a lot of water coming in.” She also testified that she observed several, what appeared to be, household extension cords, hanging via duct tape above the stoves.

154. According to the testimony, shortly after the 1600 watch relief, 2/M [REDACTED] went to the engine room to assist with the inoperative port main engine and assist the dewatering efforts. Capt. [REDACTED] and Deckhand [REDACTED] were down there working on the bilge manifold. [REDACTED] recalled that when he entered the engine room, the water level was below the sole boards, a level of about 3 feet total, but it was difficult to tell because the water was moving from one side to the other due to the motion of the vessel in the heavy seas.

155. 2/M [REDACTED] testified that, at the time, the electric bilge pumps were not working well, because they were having trouble maintaining their prime. In his opinion, this was due to the fact that the heavy seas were causing water in the bilges to move away from the strainers, and causing them to suck air. This required someone continuously stand by the bilge manifold to open the saltwater intake to re-prime the pumps. AB [REDACTED] estimated that the pumps failure to maintain prime reduce their effectiveness to 4 out of every 15 minutes they were run.

156. 2/M [REDACTED] testified that, at 1630, the portable hydraulic pump running off the starboard main engine was not taking suction. He reported that he had to turn off the pump and lift the pump suction out of the engine room bilge. He discovered debris (wood, line, etc...) in the suction and had to clear it out. Once it was clear, he placed the pump suction back into the bilges, reengaged the pump. The pump then worked. The entire process only took a couple of minutes.

157. At 1700, the hydraulic pump once again became clogged, and 2/M [REDACTED] once again needed to bring it off line to clear it. After this, 2/M [REDACTED] then checked the pump every 15 minutes, using the same process, to prevent reoccurrence.

158. 2/M [REDACTED], 3/M [REDACTED] and Engineer [REDACTED] testified that, shortly after 1700, the starboard generator began to fluctuate and the lights began to flicker. Engineer [REDACTED] testified that it seemed the generator “was starved for fuel.” After conferring with Capt. [REDACTED] it was decided to change the filter on the Racor fuel filter on the day tank. Engineer [REDACTED] shut down the generator, which caused the electrical bilge pumps to shut down, but the hydraulic pump kept working. He changed out the fuel filter for the generator and was able to get it running again in approximately 10 – 15 minutes. Once this was done, the generator seemed to be working well.

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159. Also at 1700, the fore course came out of its furl, and AB [REDACTED], AB [REDACTED], and Deckhand [REDACTED] went aloft to furl it. They were unsuccessful, and the fore course remained partially unfurled. Also at this time, Bosun [REDACTED] noticed that the spanker gaff on the mizzen mast was broken. She informed Capt. [REDACTED] and 3/M [REDACTED]. She then went to wake up CM [REDACTED] who was resting in the lazarette. She informed him about what had transpired while he was sleeping.

160. After being informed of the loss of the port main engine, the difficulty with the bilge pumps, the flooding, and the injury to the Captain, CM [REDACTED] approached Capt. [REDACTED] and suggested that they should call the Coast Guard. CM [REDACTED] testified that Capt. [REDACTED] told him the best thing for them to do was work on the generator and the pumps and get the vessel dewatered. The Captain chose not to take the Chief Mate's recommendation to hail the Coast Guard at this time.

161. At approximately 1800, those of the crew not working in the engine room took to securing the broken spanker gaff. Bosun [REDACTED] testified that, at that time, the crew was unable to stand on deck and needed to crawl. 3/M [REDACTED] went into the rigging by himself to get a line around the broken spar. Capt. [REDACTED] was not out on deck at this time.

162. At approximately 1830, Bosun [REDACTED] and Deckhand [REDACTED] shored up the great cabin windows to prevent any more water from coming through.

163. At that time, many of the crew members were actively working in the bilges throughout the vessel to clear the strainers in other compartments. AB [REDACTED] testified that, at that time, he was using a colander from the galley to clear debris from the bilges in the engine room.

164. At approximately 1830, Engineer [REDACTED] with the assistance of several crew members, retrieved the portable gasoline powered trash pump to help with the de-watering efforts. The pump had been stored in a container in storage area near lower forward crew berthing. It was staged on the tween deck right at the entrance to the engine room. A 15 foot suction hose was placed into the engine room bilge with a 9 foot rise. The discharge hose was run out of the Great Cabin aft windows with a 30 foot length of hose with a 5 foot rise. The crew was unable to get the pump running for more than a few seconds. They tried several positions and configurations of the pump and hoses, but they could not get the pump to pull any water from the bilges. Running the pump in the tween decks was also causing the crew difficulties because of the fumes.

165. Also at approximately 1830, AB [REDACTED] fell transiting the tween decks while going to get another colander from the galley to scoop debris from the bilges (he had given his to AB [REDACTED]). He severely injured his back, neck and shoulders. He was later diagnosed with compression damage to his spine, 3 broken ribs, a separated shoulder and head trauma. A

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mattress was brought for him to lie on in the great cabin and he was attended by various crew members. He was unable to function at this point.

166. 2/M [REDACTED] and Engineer [REDACTED] testified that at approximately 1900 the lights began to flicker again and the starboard generator was again fluctuating. Once again, Engineer [REDACTED] shut down the starboard generator to change the Racor fuel filter. The electrical bilge pumps were down again for approximately 10 – 15 minutes. After he was finished, he started the generator back up.

167. 2/M [REDACTED] testified that the bilges needed constant attention at this time. The pumps would routinely lose prime and not take suction. He stood by the manifold to open the sea suction to prime the pumps, and switch what compartment he was taking suction from.

168. CM [REDACTED] testified that, at approximately 1900, he once again asked Capt. [REDACTED] to call the Coast Guard, and once again, the Captain said “no.”

169. At approximately 2000, the starboard generator shut down. The electrical bilge pumps stopped working but the portable hydraulic pump continued pumping. 2/M [REDACTED] testified that, at the time, the water level in the engine room was now at the sole boards (a total level of 4 feet). Engineer [REDACTED] was not in the engine room. 2/M [REDACTED]s and AB [REDACTED] now began changing out the fuel filter on the starboard generator itself. Neither had ever done so before. CM [REDACTED] brought them a filter, and they were able to switch it out. It was reported that the process took from 25 – 40 minutes. During that time the electric bilge pumps were off line.

170. Also at approximately 2000, Capt. [REDACTED] agreed to call the Coast Guard. Attempts were made to use the single side band radio and INMARSAT C phone in the Nav Shack, but those were not functional. CM [REDACTED] went up on the weather deck to use the handheld INMARSAT C phone. He testified that he called [REDACTED], [REDACTED], and tried calling CDR Mike Turdo, Executive Officer of CGC EAGLE, whom he had known through the Tall Ship community. He testified that he was having trouble using the phone, and could not tell if he was speaking to a person or voice mail. When he felt that someone had picked up he simply began to relay the vessel’s position and that they were in distress. CM [REDACTED] testified that he felt that he had the most success with the call to [REDACTED]. In fact, CM [REDACTED] had not gotten through to CDR Turdo, but, rather, had left a voicemail. That voicemail was received and reviewed as part of this investigation. CM [REDACTED] cannot be heard on it; it contains nothing audible.

171. At approximately 2045, U.S. Coast Guard Sector North Carolina’s Command Center (SEC.NC CC) received their first notification of distress on the BOUNTY. That call came from [REDACTED]. [REDACTED] had received the call from BOUNTY, and directed her to take action. She reported BOUNTY’s last known position, that they had 15 to 16 persons on board,

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and that she was communicating with BOUNTY via the HF e-mail system. Sector North Carolina began coordinating Search and Rescue (SAR) efforts. [REDACTED] was contacted by the COMCEN, and stated that if the vessel was calling, they needed help and [REDACTED] [REDACTED] was the best point of contact for the vessel. He also related to the COMCEN that he believed that BOUNTY had 20 – 22 persons on board. SEC.NC CC requested that [REDACTED] [REDACTED] contact BOUNTY via e-mail to advise them to actuate their EPIRB.

172. At 2056, SEC.NC CC broadcasted an Urgent Marine Information Broadcast (UMIB) on HF, detailing vessel BOUNTY in distress.

173. At 2100, BOUNTY was approximately 147.5 NM away from the center of Hurricane Sandy. (see Figure 10)

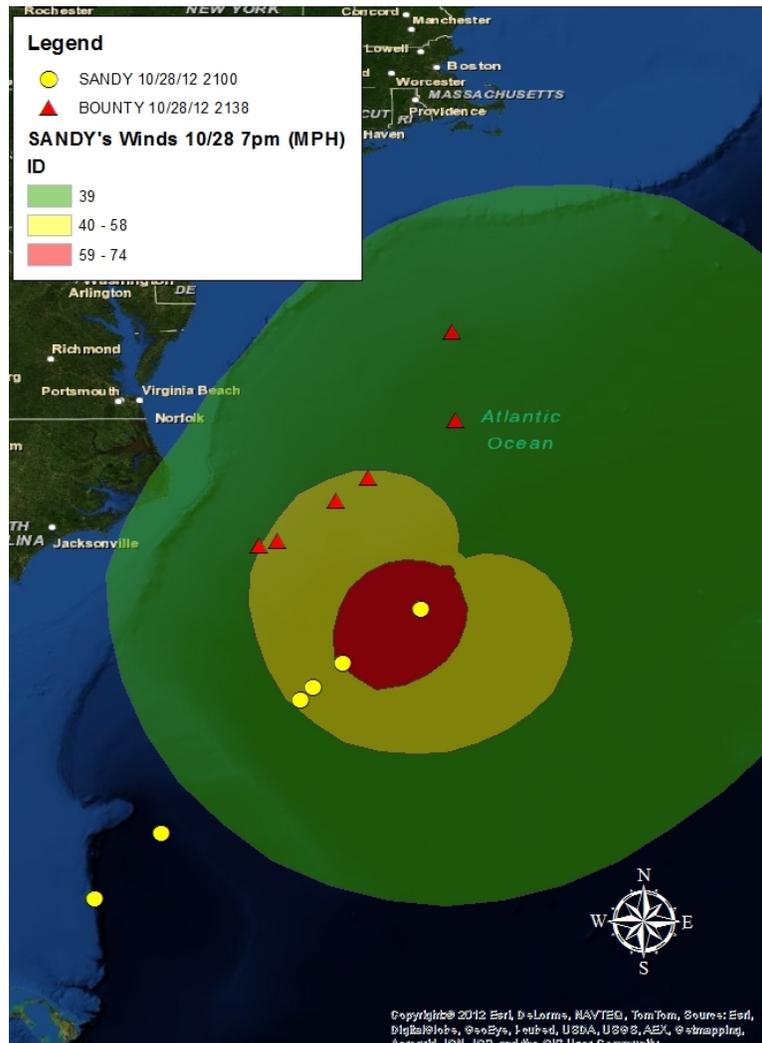


Figure 10 BOUNTY is 147.5 NM from the center of Hurricane Sandy.

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174. At 2115, SEC.NC CC requested CG 2004, a CG-130, launch from Raleigh, NC, where they were positioned due to Hurricane Sandy.

175. At 2121, SEC.NC CC attempted to identify vessels in the area that could possibly assist. They identified the vessel TORM ROSETTA 35 NM away and made callouts on VHF and HF with negative results. There were no Naval or Coast Guard vessels in the area.

176. At 2129, [REDACTED] e-mailed SEC.NC CC the BOUNTY's three separate EPIRB registrations.

177. At approximately 2130, water from the bilges splashed onto the starboard generator, shorting it out. BOUNTY was without electrical power, and, consequently, without the electric bilge pumps. However, the starboard main engine and hydraulic bilge pump continued to run. According to 2/M [REDACTED] there was 1' – 2' of water above the sole boards in the engine room at this time. 2/M [REDACTED] and AB [REDACTED] then began to attempt bringing the port generator back on line.

178. At 2138, [REDACTED] e-mailed BOUNTY's crew list to SEC.NC CC.

179. At 2141, SEC.NC CC notified [REDACTED] [REDACTED] that CG-2004 was en route to BOUNTY's last known EPIRB position to establish communications.

180. At 2215, Capt. [REDACTED] sent the following e-mail to [REDACTED] and [REDACTED]:
"34-09 N 074-11 W

[REDACTED] we are taking on water. Will probably need assistance in the morning. SAT phone is not working very good. We have activated the EPIRB we are not in danger tonight but if conditions don't improve on the boat we will be tomorrow.

Generator we can only run for a short time. I just found out the filters you got were the wrong filters.

Let me know when you have contacted the USCG so we can shut the EPIRB off.

The boat is doing great – we can't dewater."

181. At 2230, [REDACTED] contacted SEC.NC CC via telephone and relayed Capt. [REDACTED] e-mail to them. He reported that "vessel appears to be in seaworthy condition at this time."

182. At approximately 2230, the port generator was brought online by 2/M [REDACTED] and AB [REDACTED]. 2/M [REDACTED] bled out the injectors and, put on new fuel filters. The generator would

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not start until he removed the shutdown kill switch from the control panel at Capt. [REDACTED] suggestion. Once he did this, the generator started. He then transferred an unknown amount of fuel to the fuel tank. The electric bilge pumps were then running again, however it was no longer safe to remain in the engine room to man the manifold. 2/M [REDACTED] testified that at the time the water level in the engine room had gone over waist deep at about 4 to 5 feet above the sole boards, which were now floating in the engine room and crashing into things. The water maker electrical box was arcing and sparking, and then exploded. The engine room was evacuated. Shortly after the engine room was abandoned, the water's free surface inertia and debris floating in the engine room knocked down the engine room stair case.

183. At 2246, Ms. [REDACTED] relayed e-mail information to the BOUNTY for contacting SEC.NC CC via e-mail. She explained that the HF e-mail system would not allow e-mails to go through until the vessel e-mails first.

184. At 2255 Capt. [REDACTED] sends the following e-mail to SEC.NC CC;

“Hi

This is the email my office gave to me.

We are 34-07 N X 074-08 course 130 speed 2.6 knots 17 people on board.

I do not know how long I will be able to receive e-mail.

My first guess was that we had until morning before we have to abandon seeing the water rise I am not sure we have that long.

We have two inflatable life rafts.

We have activated our EPIRB.

[REDACTED]
HMS BOUNTY.”

185. At 2348, SEC.NC CC updated the UMIB to indicate BOUNTY is taking on water with 17 persons on board based on Capt. [REDACTED] e-mail.

186. Shortly before midnight, Bosun [REDACTED] Deckhand [REDACTED], Deckhand [REDACTED] and Deckhand Christian removed gear from the Bosun stores. At that time, the sole boards in Bosun Stores were floating, and it was getting dangerous to be down there. After this was done, they closed the watertight door to the Bosun stores. Bosun [REDACTED] then reported to CM [REDACTED] and 3/M [REDACTED] that the area was no longer safe.

187. At that time, CM [REDACTED] ordered Bosun [REDACTED] to hand out seasickness medication to the crew. Engineer [REDACTED] threw up his pill shortly after he took it. Capt. [REDACTED] e did not

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take any. Bosun [REDACTED] testified that the Captain appeared to be in pain had difficulty walking, and that his glasses were crooked and bent.

188. At approximately midnight, 0000, Bosun [REDACTED] led a work party to gather all necessary lifesaving gear, water and supplies into “ditch kits” in preparation for abandoning ship.

189. At approximately midnight, 0000, the port generator and starboard main engine failed. BOUNTY was drifting.

190. At midnight, BOUNTY was approximately 170.6 NM away from the center of Hurricane Sandy. (See Figure 11)

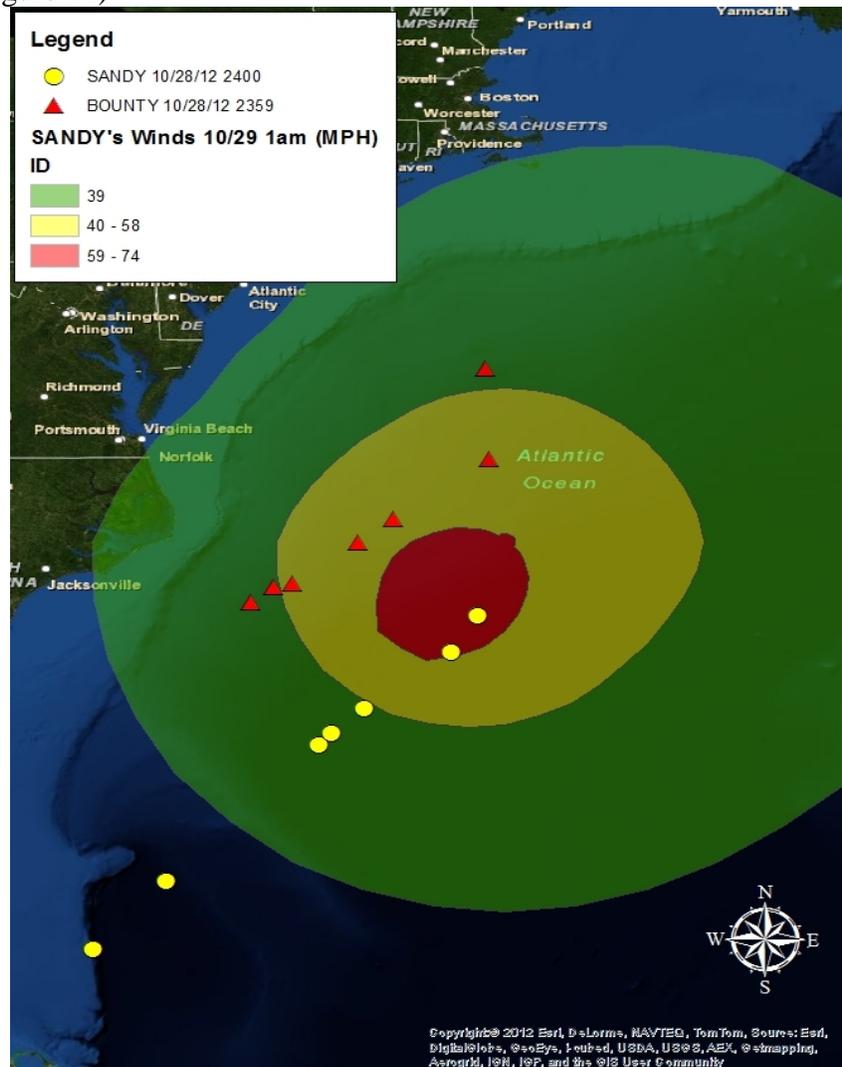


Figure 11 Hurricane Sandy is approximately 170.6 NM from the Center of Hurricane Sandy.

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October 29th

191. At 0005, CG-2004 established communications with BOUNTY, via VHF. BOUNTY relayed to CG-2004 that they have 6 feet in the lower hold. Discussions were had to determine if dropping pumps to BOUNTY to aid in dewatering would be feasible given the on-scene weather, lack of surface assets and BOUNTY's limited maneuverability.

192. At 0015, CG-2004 reported to Sector North Carolina Command Center that on scene weather is north west winds at 40 knots and 18 foot seas.

193. At 0022, BOUNTY relayed to CG-2004 that they had lost both generators, and were on battery power only.

194. At 0058, SEC.NC CC relayed to BOUNTY via e-mail that nearest surface assets were 8 – 10 hours away. Discussion began for a planned evacuation at sunrise. BOUNTY was directed to activate their second EPIRB if their situation worsens or if they start evacuation. At the time on-scene weather was outside the operating capabilities of CG helicopters (H-60's).

195. At 0223, BOUNTY reported to CG-2004 that they were heeling and had 10 feet of water in their lower hold, and that they were taking on 2 ft/hr through the wood hull of the vessel.

196. At 0300, Capt. ██████ had the crew muster near the Nav Shack to discuss the possibility of abandoning ship. Bosun ██████ testified that Capt. ██████ asked "what went wrong, and at what point did we lose control?"

197. At approximately 0330, the water had reached the tween deck. Capt. ██████ ordered all crew members to evacuate the tween deck to the weather deck. He directed the crew to don their immersion suits. Some of the crew testified that Capt. ██████ also directed them to wear life jackets and their rigging belts. AB ██████ AB ██████ k, Deckhand ██████ and Deckhand ██████ did put on their climbing harnesses.

198. At 0341, BOUNTY was on a course of 125 degrees true and making 3 knots. Captain ██████ sent an e-mail to Sector North Carolina Command Center stating:

"We have lost all dewatering abilities. Estimate 6 – 10 hours left. When lose all power we will lose email. There should be an EPRB going off. Water is taking on fast. We are in distress. Ship is fine we can't dewater. Need pumps.
██████."

199. At 0334, CG-2004 passed to SEC.NC CC that Master of the BOUNTY said they are abandoning ship at 0800.

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200. At 0344, SEC.NC CC passed to BOUNTY via CG-2004, that CG H-60s unable to launch due to weather.

201. At 0357, SEC.NC CC passed to BOUNTY via CG-2004, that BOUNTY's plan for a mass rescue at 0800 is the best option. Air asset delivery of pumps would be unsafe, and surface assets would arrive on scene in time. It was also passed that another C-130 and two CG H-60s are ready to launch when weather permits.

202. 3/M [REDACTED] and Bosun [REDACTED] went out on the weather deck from the Nav Shack and assisted all hands back aft towards the liferafts. They each testified that they were having the crew count off as they exited. Capt. [REDACTED] and CM [REDACTED] stayed at the Nav Shack. CM [REDACTED] continued to communicate with CG-2004 on the VHF. He testified he was not all the way in his immersion suit, because he needed his hands to communicate on the radio, and did not have the dexterity to do so while in the suit. 3/M [REDACTED] testified that he also was not all the way in the immersion suit, because he needed his hands to tie knots.

203. Preparations were being made to abandon ship. The plan was to rig the two 25 person life rafts off of the stern, and have the crew enter from there. 3/M [REDACTED] testified that Capt. [REDACTED] instructed him to get a line and tie a bowline, to use as a safety line for personnel entering the raft from BOUNTY.

204. CM [REDACTED] testified that Capt. [REDACTED] plan was to remain on BOUNTY until it was no longer safe for them to remain on board. At that point they would abandon ship into the liferafts.

205. At 0400, BOUNTY was approximately 181.3 NM away from the center of Hurricane Sandy (see Figure 12)

206. At 0407, CG-2004 reported to SEC.NC CC that BOUNTY's waterline was then at their tween deck, and all 16 persons on board were on the weather deck in immersion suits.

207. CM [REDACTED] testified that at approximately 0415 – 0420, he twice recommended to Capt. [REDACTED] that they needed to abandon ship, and was twice told "not yet."

208. At 0426 on Monday October 29, 2012, BOUNTY heeled over to her starboard side and buried the bow. CM [REDACTED] informed Capt. [REDACTED] that the fore deck was underwater. 3/M [REDACTED] testified that he heard the exchange, and heard Capt. [REDACTED] reply, "we need to go." However, before the crew could abandon ship, the BOUNTY rolled to starboard on its beam ends, with her rigging going from vertical to horizontal at the water. All hands were now forced to enter the water, and they attempted to make their way aft away from the vessel. Before leaving the vessel, CM [REDACTED] informed CG 2004 that they were abandoning ship.

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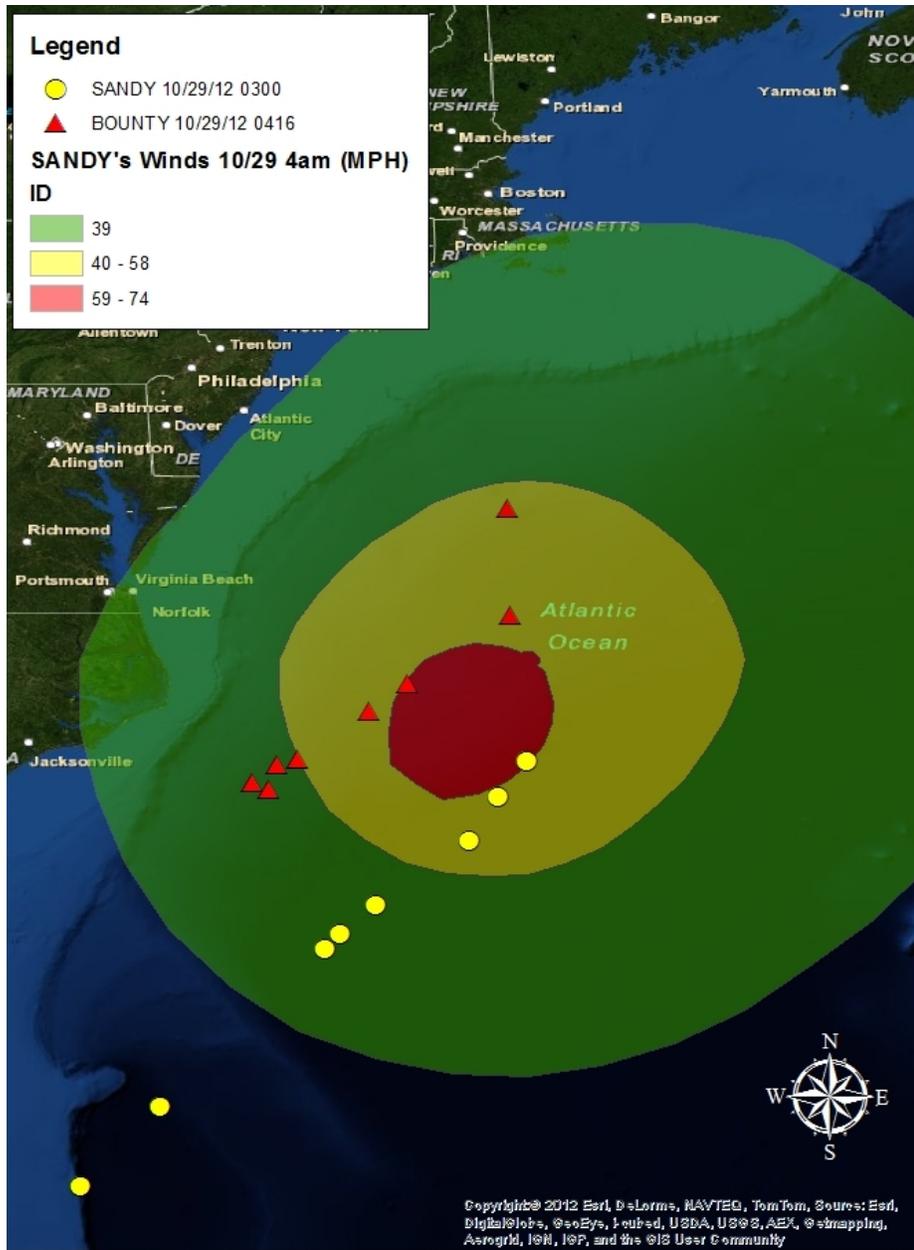


Figure 12 BOUNTY is approximately 181.3 NM away from Hurricane Sandy

209. At 0434, the order was given for all planned Coast Guard air assets to launch. The on-scene weather was still outside the operating capabilities of the H-60s.

210. What followed was described by the entire crew as chaos. BOUNTY did not stay on its beam ends, and attempted to right herself. The masts and rigging slammed up and down

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violently coming down on the crew. There was no time for the crew to grab the ditch kits that they had prepared. It was still dark and on-scene weather was 40 - 50 knot winds with 18 - 20 foot seas.

211. CM [REDACTED] testified that he quickly put his free arm into his immersion suit, but was pushed into the Nav Shack by the flooding water. He was able to free himself, and get out on deck, but was caught up in the rigging. He was pulled into the air by the vessel attempting to right itself, and then slammed down into the water. He was able to free himself and get away from the vessel, but not able to locate a life raft. He injured his hand, had a slightly dislocated shoulder and twisted his knee. He was later picked up by a CG H-60, and was the first crewmember retrieved.

212. AB [REDACTED] and Deckhand [REDACTED] had clipped in together using their climbing harnesses. Each of them testified that their harness had hung up and caused them to be pulled underwater. They were only able to rise to the surface after AB [REDACTED] slipped free of his belt.

213. 2/M [REDACTED] testified that his foot was caught between the spare spars that were on the deck. The three spars had just been created and put on the vessel in Boothbay, ME, and were on the port side. Each spar was 50 feet in length & approximately 12-16 inches in diameter. 2/M [REDACTED] testified that Deckhand Christian asked him "what do I do?" He told her that she had to go, and he saw her working her way aft. This was the last time anyone saw her alive.

214. 2/M [REDACTED] freed himself from the spars and made his way aft, and into the water. He came across a liferaft canister and tried unsuccessfully to inflate it. He then became entangled in some rigging and decided that it was safest to swim away from the boat. He swam away, and eventually came across an inflated liferaft. He was unable to get inside, so he hung onto the lines on the side of the liferaft. Soon after, Cook [REDACTED] and AB [REDACTED] arrived. They were still unable to get in to the liferaft, and they hung onto the outside of it together. Eventually they heard noises from the other side of the liferaft, and could tell that people were getting in. They came across Deckhand [REDACTED], Deckhand [REDACTED], Deckhand [REDACTED] and Deckhand [REDACTED] who had entered the raft from the opposite side. The larger group assisted [REDACTED], [REDACTED] and [REDACTED] in, and this group waited for rescue.

215. AB [REDACTED] testified that he separated his shoulder while holding onto the raft.

216. 3/M [REDACTED] reported that he broke a couple of ribs after he entered the water. He moved away from the vessel and was able to find a floating grate, which had been used to protect the tiller rope on deck. He came across Bosun [REDACTED] Engineer [REDACTED], AB [REDACTED], AB [REDACTED] and Deckhand [REDACTED]. They all attempted to get away from the vessel. They saw a liferaft that was inflated, but it was moving away from them and they could not keep up with it. They then saw an uninflated liferaft canister, and were able to retrieve it. They inflated the

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liferaft using the sea painter, and were able to enter the raft, but with quite a bit of difficulty. It was reported that the gloved hands on the immersion suit made it difficult to hold onto the line used to inflate the raft, and also the lines festooned in bights on the side of the raft. All crew members reported that it took close to an hour to get into the rafts, and they were only able to do so by boosting AB [REDACTED] in, and then have him pull people in while others pushed. Bosun [REDACTED] had one of the vessel's EPIRBs. They spread out in the raft, tried to bail out water, but could not find a bailer so a water bottle was used instead. This group waited for rescue.

217. At 0640, CG-2003 reported on scene weather as 15 – 20 foot seas and winds at 57 mph.

218. At 0641, Coast Guard helicopter, CG-6012 was the first to arrive on scene, and began hoisting operations. CG-6031 arrives on scene shortly thereafter.

219. CG-6031 first hoisted AB [REDACTED] due to his injury, and Deckhand [REDACTED] was next. After this the liferaft flipped over. The remaining crew members swam out of the raft, and were rescued.

220. CG-6043 arrived on scene and hovered right next to BOUNTY and searched the rigging visually utilizing the aircraft's electro-optical/infrared sensor system (ESS), getting as close as 40 yards away from BOUNTY. There was no heat signature to indicate anyone was caught in the rigging. However, there were empty immersion suits on deck and in the rigging. An air crew member took photographs of BOUNTY foundering. (see Figures 13 and 14)

221. At 1638, CG-6043 recovered Deckhand Christian 8.2 NM south east of the vessel in the water with no vitals. She was wearing a survival suit and a climbing harness. CPR was performed while en route to Albemarle Hospital.

222. At 1843, CG-6043 arrived at Albemarle Hospital with Deckhand Christian.

223. At 1900, Deckhand Claudene Christian was declared deceased.

224. At 1920, CGC ELM observed BOUNTY's laid over. Masts were seen protruding out of the water at 33-49.6 N, 073-44.3 W. This was the last time BOUNTY was seen. This was 123 miles south east of Cape Hatteras, NC. The water depth at this location is approximately 14,000 feet. BOUNTY sank and was lost at sea.

225. Capt. [REDACTED] was the only crew member unaccounted for at this time.

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Figure 13 photo of BOUNTY taken by CG 6043 air crew member



Figure 14 photo of BOUNTY taken by CG 6043 air crew member

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November 1st

226. At approximately 2000 The Coast Guard Fifth District Commander suspended the search for Capt. [REDACTED]. The search lasted approximately four days and ultimately encompassed approximately 10,000 square miles of search patterns (22 patterns) using surface and air assets. Capt. [REDACTED] is missing and presumed dead.

Weather:

227. At the time BOUNTY got underway from New London, CT on Thursday, October 25th, Hurricane Sandy had just made landfall in Cuba, weakening from a Category 2 to a tropical storm. After passing through the Bahamas, it regained strength to a Category 1 before turning north toward the United States. Hurricane Sandy came ashore in northern New Jersey on Monday, October 29th. Before it was over, Hurricane Sandy impacted the entire eastern seaboard from Florida to Maine, and west across the Appalachian Mountains to Michigan and Wisconsin. It would result in 285 fatalities and at an estimated \$71 billion in property damage. Hurricane Sandy would go down in history as the second costliest hurricane to strike the United States. (see Figure 15)

Post Casualty Testing:

Drug and Alcohol

228. On Monday, October 29th, U.S. Coast Guard Sector North Carolina investigating officer, LT [REDACTED], was sent to Air Station Elizabeth City to interview BOUNTY crew members. He called MST2 [REDACTED], an investigator having just arrived on scene, and instructed him to ask the company if they planned to conduct drug testing of any of the crew. MST2 [REDACTED], a short time later, called LT [REDACTED] back and informed him that none of the crew was sure about drug testing and no one from the company could be reached. On Tuesday, October 30th, LCDR [REDACTED] e-mailed [REDACTED] of HMS BOUNTY Organization LLC asking her to contact LT [REDACTED] as soon as possible in reference to recent BOUNTY marine casualty and drug testing. Neither LCDR [REDACTED] nor LT [REDACTED] ever received a response from Ms. [REDACTED] or the company. LT [REDACTED] also made several phone calls/voice messages over the next week to Ms. [REDACTED] again receiving no response. Ms. [REDACTED] later reported that due to Hurricane SANDY she had no service to her e-mail or cell phone for several days.

Post-casualty drug testing was not completed by HMS BOUNTY Organization, LLC.

Medical Examiner

229. Deckhand Claudene Christian was brought to Albemarle Hospital in North Carolina. She was examined by Dr. [REDACTED], from the North Carolina Dept. of Health and Human

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Services, Office of the Chief Medical Examiner. The Medical Examiner's report revealed that Ms. Christian had bruises and abrasions on her head. The probable cause of death listed on the Medical Examiner's report was drowning.

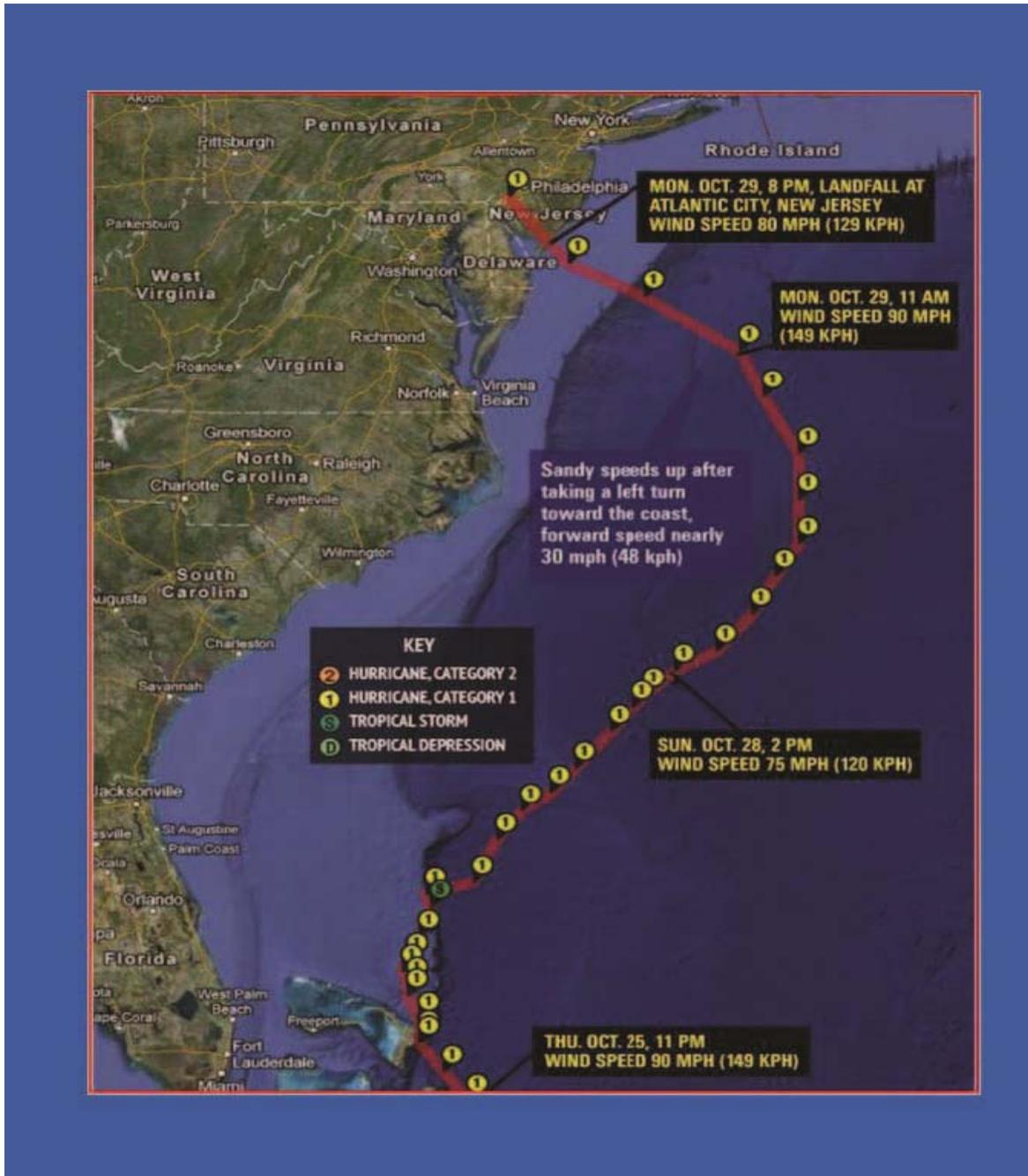


Figure 15 Hurricane sandy track via <http://i.livescience.com/images/i/000/032/949/i02/sandy-hurricane-track-121101e-02.jpg?1351800918>

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Analysis

1. BOUNTY was a rare and complex vessel because of its construction, crew and primary operation as an attraction vessel. Additionally, BOUNTY's operation may have created some ambiguity regarding its regulatory status for the Coast Guard. It is clear that, prior to the casualty, BOUNTY was treated as a recreational vessel, not subject to inspection by the Coast Guard, except as a moored attraction vessel. As a moored attraction vessel, BOUNTY was subjected to the lowest level of regulatory oversight and supervision prescribed by law.

The determination that BOUNTY was a recreational vessel appears to have been based on the assumption that attraction vessels do not carry cargo or passengers in trade underway. 46 U.S.C. § 2101 (5) states "commercial service includes any type of trade or business involving the transportation of goods or individuals, except service performed by a combatant vessel." This investigation uncovered no evidence that, when transiting from port to port, BOUNTY carried either passengers or cargo. Therefore, a determination that BOUNTY was not engaged in "commercial service" seems appropriate. However, to describe BOUNTY as a recreational vessel seems incomplete if not inaccurate. BOUNTY operated as a commercial entity in so far as HMS BOUNTY Organization collected fees for dockside tours, movies appearances, tall ship events, and the sale of memorabilia (T-shirts, books, etc.). 46 U.S.C. § 2101 (25) states "recreational vessel means a vessel (a) being manufactured or operated primarily for pleasure; or (b) leased, rented or chartered to another for the latter's pleasure." Given this definition it is difficult to classify BOUNTY as being operated for recreational purposes. It is arguable, in the case of an attraction vessel, that the vessel itself is the cargo.

Any analysis of whether the application of more stringent inspection requirements (e.g. requirement for a load line, stability, etc.) would have prevented this casualty is speculative. Given the weather conditions existent at the time of the casualty, and the questionable course of action chosen by BOUNTY's master, it cannot be conclusively said that more regulatory oversight prior to the casualty would have had an impact on the eventual outcome. Nevertheless, it is worth noting that numerous specific recommendations made by ABS as a result of BOUNTY's Load Line Exam dealt with matters of watertight integrity. While it cannot be said how BOUNTY would have fared had the recommended improvements been made, it can be surmised that the outcome would not have been made worse.

2. There is also apparent ambiguity with the Coast Guard's manning regulations as they pertain to uninspected and recreational vessels. Specifically, the ambiguity concerns: the Officers Competency Certificates Convention, 1936 (as implemented by 46 USC 8304, the "OCC"), 46 CFR 15.701, Subpart F, and 46 CFR Subchapter B, Part 15, Subpart G (Computations). The plain meaning of the OCC appears to require that all vessels (except public vessels, wooden vessels of primitive build, barges, and vessel's less than 200 gross tons) have appropriately licensed masters, mates and engineers. Based solely on the OCC, BOUNTY would have been required to have licensed mates and an engineer. As described earlier, the Computations section

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of the manning regulations clearly indicates, regardless of service, that BOUNTY was required to have an appropriately licensed master based on the vessel's documentation, gross tonnage, where the vessel was operated, and that the vessel was self propelled. However, in regards to licensed mates and engineers, the Computations section of the manning regulations indicates that the vessel also be an "uninspected vessel." According to 46 USC 2101 (43), "uninspected vessel" means a vessel not subject to inspection under section 3301 of this title that is not a recreational vessel." In view of the definition contained in 46 USC 2101 (43), coupled with Coast Guard's historical classification of BOUNTY as a recreational vessel, it appears that the vessel was manned with the appropriate number of licensed merchant mariners at the time of the casualty. However, this treatment is inconsistent with the plain meaning of the OCC, which arguably applies to all vessels (including yachts or recreational vessels). What is not clear is whether the exclusion of recreational vessels from the requirement of employing licensed mates and engineers was an intentional deviation from the wording of the OCC by use of the term "uninspected."

Any analysis of whether a licensed engineer would have served BOUNTY well enough to have prevented or mitigated this casualty is speculative. It appears that Mr. [REDACTED] effectiveness as an engineer during this casualty was limited by his lack of familiarity with BOUNTY's engineering systems. His effectiveness was further limited by his seasickness. A licensed chief engineer would have been required to have familiarized himself with the operation of BOUNTY's engines and mechanical systems prior to sailing. Additionally, regarding seasickness, it can be surmised that a fully licensed chief engineer would have had considerably more than Mr. [REDACTED] limited experience underway. Nevertheless, given the weather conditions BOUNTY's master voluntarily subjected her to, it appears most likely that even a fully qualified and licensed chief engineer would have been hard-pressed to improve BOUNTY's circumstances during the casualty.

3. Excluding BOUNTY, Tall Ships America U.S. Flag membership² includes 84 total vessels. Of those vessels:

- 69% are certificated as small passenger vessels under 46 CFR Subchapter T (58/84);
- 18% are certificated as sailing school vessels under 46 CFR Subchapter R (15/84);
- 6% are dual certificated under 46 CFR Subchapter R and T (5/84);
- 5% are regulated but uninspected under 46 CFR Subchapter C (4/84); and finally
- 8% are moored (some permanently) attraction vessels inspected under policy dockside (7/84).

Overall there are over 300 sail vessels in the U.S. certificated fleet. Based on the above, TSA members account for about 30% nationwide. Sail vessels collectively make up less than 5% of the U.S. inspected fleet

² "Sail Tall Ships – 19th Edition" 2011

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As a wooden hull vessel over 100 gross tons, BOUNTY was even more unique:

- There are 11 vessels with active COIs in the inspected fleet;
- 6 of those are small passenger vessels, passenger vessels or sailing school vessels, and;
- 5 are certificated as attraction vessels only.

For the attraction vessel fleet nationwide:

- There are 68 active attraction vessels;
- 27 are over 100 gross ton with 11 steel, 15 wood, and 1 FRP hulled.

Additionally, BOUNTY was a square rigged, wooden hull sail vessel built in 1960 that made international voyages. These traits made BOUNTY an outlier in the recreational community as well as in the commercial vessel industry. Coast Guard focus on the inspected wood boat fleet nationwide after the sinking of the EL TORO II in December of 1993 indicates that a service life before major rebuild can be 25 to 30 years depending on quality of construction, materials used, service and most importantly maintenance. However, it is not unreasonable for a vessel of heavier construction to last incrementally longer without major rebuild, under the right conditions. At the time of the sinking, BOUNTY was 52 years old, and had an established history of leaking while underway despite continuing attention to the hull structure that started in earnest over 10 years before this casualty. Operation of a vessel of the BOUNTY's age, hull material and complexity required not only an extraordinary level of financial commitment, but a similar and continuous management commitment via expert shore side support that reasonably should include:

- Policies and procedures clearly expressing the company's expectations for the safe operation and maintenance of the vessel, and managed organizational risk;
- Specific operating guidelines considering/respecting the vessel's age and condition including parameters governing how the vessel was to be used;
- Prerequisites and competency standards/experience to properly crew the vessel.

4. Mr. [REDACTED] purchased BOUNTY in February 2001, and was the controlling member of HMS BOUNTY Organization, LLC. Mr. [REDACTED] had no professional maritime background afloat or ashore, but had experience as a recreational sailor. He was the founder of *Islandaire*, which is a specialty air conditioning and heating manufacturer based out of Long Island, NY. During the hearing held in February of 2013 Mr. [REDACTED] chose to assert his Fifth Amendment right not to testify. Prior to this, he did conduct interviews with the Coast Guard in St. Petersburg, FL on November 8, 2012, and at his office in East Setauket, NY on December 6, 2012. To assist him with the operation of BOUNTY, he appointed *Islandaire* employee, [REDACTED] as the director of HMS BOUNTY Organization. Her role was to serve as shore side vessel support to include ordering of supplies and materials, administrative duties, payroll, and marketing. She also acted as principal liaison for all interaction with agencies involving

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insurance and regulatory compliance. Like Mr. [REDACTED], Ms. [REDACTED] had no professional maritime experience, afloat or ashore. Ms. [REDACTED] had one part time assistant named, [REDACTED], who also had no maritime background.

This lack of maritime expertise or background with vessel regulations led the organization to manage and operate the vessel in a way that was markedly different from most professional maritime companies. For example;

- In 2006 – 07 the company opted to create a new access to the tween deck from the weather deck, which they did without consulting the USCG, ABS or a naval architect. This well intentioned modification actually invalidated a mid-line tonnage opening for the vessel, and increased the tonnage of the vessel from 266 gross registered tons (GRT) to 409 gross tons under the International Tonnage Convention (GT ITC). The increased tonnage required the BOUNTY to meet numerous international and domestic safety and environmental protection regulations. This change in tonnage was not detected until the vessel was boarded by British MCA authorities and USCG personnel from Activities Europe in 2011. At that time, a requirement to meet the new standards was issued. Rather than meet the standards, the BOUNTY Organization chose to appeal the requirement to the Coast Guard, and requested to return to their original configuration and tonnage. In correspondence [REDACTED] repeatedly referred to BOUNTY as a “wooden sailing ship of primitive build.” When asked to define the term, Ms. [REDACTED] could not, and simply stated that someone had told her to write that. The term is defined under international conventions as a vessel “traditionally built and not primarily propelled by mechanical means.” It did not apply to BOUNTY, which had two main engines, two generators, and hotel services. The term was utilized simply to seek the most expedient means to avoid complying with the regulatory standards to which they had subjected themselves. Ultimately, the vessel was allowed to return to their original configuration, and they were issued a new tonnage certificate in July of 2012 by ABS. The requirement was cleared by the Coast Guard in 2012 by Mr. [REDACTED] in Boothbay, ME when he was presented the new tonnage certificate.
- During the 2012 haul out in Boothbay ME, the organization undertook several projects that changed the longitudinal center of gravity of the vessel, and invalidated their stability letter. The impacts of these changes are explained further below. At no point prior to commencing the projects did anyone from the organization consult the naval architect that presided over the stability test, or the Coast Guard, who issued the letter. Bounty Organization only became aware that they had negated their stability letter when their naval architect saw the project on Facebook. Even after this they still never committed to having the changes they made professionally evaluated to determine how they affected the vessel. When questioned during the hearing, in February 2013, [REDACTED] testified she knew nothing regarding any discussions of the vessel’s stability, yet a review of text messages and e-mails shows differently. When the vessel sailed from New

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London, CT on October 25, 2012, Bounty Organization knew the stability of the vessel had been altered, but did not know of the impact of those changes.

- The company had no requirement for the engineer on BOUNTY to have a MMC or shipboard engineering experience. In fact, crew testimony indicated that sometimes the vessel did not have an engineer onboard, and whoever had the most experience on board was given the additional duties. [REDACTED] was signed on as engineer of BOUNTY in mid-September after receiving a call from the Chief Mate, [REDACTED]. The two had worked together with the Nature Conservancy on Palmyra Atoll in the Pacific. [REDACTED] had no MMC or any other type of professional engineering credential. He had no commercial maritime experience underway. Mr. [REDACTED] claimed to have over 30 years' experience working with and maintaining motors, tractors, backhoes and other machinery. For the Nature Conservancy he maintained the organization's skiffs a 24' dive boat and was primarily shore side engineering support.
- The organization was notified of the need for an insurance survey on October 4, 2012, while the vessel was hauled out, and repairs to the hull were being made. Instead of having [REDACTED] survey the vessel at that time, they chose not to notify him of the need for the survey until October 17th when the vessel was back in the water. The survey was done on the 19th. Correspondence indicates that the insurance company agreed to an in-water survey. Nevertheless, any value to be derived by Mr. [REDACTED] survey was diminished by his inability to inspect the hull below the waterline.
- Financial considerations appear to have driven a number of decisions made by the company, sometimes to the detriment of safety. They chose to assign critical jobs like hull caulking and engine maintenance to the crew in an effort to save money. Bosun [REDACTED] was assigned oversight for the majority of the re-caulking and re-setting of seams below the waterline during the 2012 yard period. The BOUNTY was the first wood hull vessel that she had worked on, and she had limited caulking experience during the BOUNTY's previous haul outs in 2010 and 2011. She was taught how to caulk by 3/M [REDACTED] who was the prior Bosun. Deckhand [REDACTED] only had some brief experience with caulking, but Bosun [REDACTED] observed her work, and determined that it was acceptable. The rest of the crew, assigned to re-setting seams only, had no experience. Mr. [REDACTED] stated that, in his opinion, the crew members were not setting the caulking hard enough. He expressed this opinion to them at the time. [REDACTED], another Boothbay Harbor employee, expressed the same opinion during an interview in December 2012. However, both men stated that he believed the job the BOUNTY crew did on the hull was adequate. The materials Capt. [REDACTED] chose to use for seam compound were also less than ideal for use in a marine environment (see, below).
- The organization also advertised for the carriage of passengers for hire, despite not being certificated or in compliance to do so. Records show that they advertised on their

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company website in 2008 and 2011 to carry passengers on international voyages. On the day the vessel sank the company's website had rate specific information for the carriage of passengers for hire. Despite the advertisements, all company and crew testified that they did not carry passengers for hire. No records were provided in response to subpoena that indicate BOUNTY did, in fact, carry passengers for hire.

5. The organization had no written operating guidelines or safety management that set a positive safety culture for the operation of BOUNTY. The BOUNTY "Crew Manual," referred to earlier, was generated and maintained by vessel personnel only, and had no input from management. There was no company policy that dictated maintenance intervals on the hull, the rigging or vessel machinery. When asked for records of maintenance of the vessel's machinery Mr. [REDACTED] and Ms. [REDACTED] both replied that the majority of the records were maintained on the vessel. When supplies were needed, such as engine fuel filters, Capt. [REDACTED] would request them from [REDACTED], via e-mail or text message. The ultimate decisions regarding expenditures for equipment or services appear to have been made by [REDACTED] with the advice of Capt. [REDACTED].

6. When it came to how and when BOUNTY was operated, [REDACTED] appears to have relied completely on Capt. [REDACTED]. [REDACTED] developed the vessel's schedule and itinerary, and informed Capt. [REDACTED] where the vessel needed to be. However, when it came to the movement of the vessel, HMS BOUNTY Organization had no operating restrictions based on the age or condition of the vessel whatsoever. Both [REDACTED] and [REDACTED] stated that they never questioned Capt. [REDACTED] decision making in regards to the operation of the vessel, and that they trusted him implicitly. To contrast this practice, a review of the organizational risk management of two other tall ships and the U.S. Coast Guard is provided;

- The GAZAELA PRIMEIRO is a U.S. flag 132 foot wooden tall ship attraction vessel built in 1883. The vessel's construction and operation is similar to BOUNTY. Capt. [REDACTED] testified that the GAZAELA's management and shore side support consists of a Board of Directors made up of various maritime and business professionals. This group evaluates all vessel movements with the Captain of the vessel, and sets operating limitations based on weather and sea conditions.
- The PICTON CASTLE is a Cook Island flagged 148 foot steel sail training tall ship built in 1928. Capt. [REDACTED] testified that the voyage planning process for the vessel is a collaborative one that includes both vessel and shoreside personnel, all of whom are experienced sailors. It was this process that led the PICTON CASTLE to stay in Nova Scotia and postpone their intended south bound voyage in October of 2012 in response to reports of Hurricane Sandy.
- The Coast Guard established mission risk assessment training in both Team Coordination Training and Crew Resource Management courses. The process of assessing risk is

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known as Operational Risk Management (ORM). The provisions of ORM are codified as policy within a U.S. Coast Guard Commandant's Instruction. The National Transportation Safety Board recommended this training as a result of four major marine casualties from 1991 to 1993. ORM's intent is to reduce human error that can lead to potentially deadly mishaps. The number of maritime mishaps decreased following the implementation of ORM.

With ORM, Coast Guardsmen can better assess and manage the diverse risks of their missions. The decision process of ORM includes defining the mission, identifying hazards, assessing risks, identifying options, evaluating, executing decision and monitoring situation. The identifying hazards phase of ORM employs the "PEACE" model (planning, event, asset, communication and environment) to objectively quantify hazards. An important benefit of the ORM process is an open dialogue between crew members, supervisors, units and mission coordinators. Arguably the most important aspect of the process is that it requires a continuous monitoring of the situation and reevaluation and adaptation to changing conditions. The ORM process was utilized during the Coast Guard's initial preparations for Hurricane Sandy and during the BOUNTY search and rescue case.

When identifying what asset to use in a given mission, the Coast Guard, like many other maritime organizations and professionals, realizes and understands the limitations of its assets in the face of adverse conditions. As a result, all Coast Guard afloat and aviation assets have operating parameters including, but not limited to maximum sea and wind conditions, distance from shore, towing capacity and number of persons onboard. Operating parameters are developed with the manufacturers' engineers who test the assets before delivery to the Coast Guard. A unit may request a waiver to use or launch an asset in a situation outside of the asset's operating parameters. Approval requires concurrences from multiple levels above the unit. In preparing for Hurricane Sandy, Coast Guard units within the potential impact area moved assets to safer havens. This included mooring cutters at different harbors, pulling small boats out of the water and trailering them or pre-positioning at inland airports. The Coast Guard realized that this could impact potential response time and response capabilities. However, if assets were left in the path of Sandy, the damage done to assets could prevent responding to emergencies both during and after Sandy. The week preceding Sandy's arrival, all Coast Guard assets ensured equipment was working properly and supplies needed for missions from food to fuel were onboard. Coast Guardsmen are part of the Asset Selection evolution. Topics, such as if personnel are properly trained to handle missions, if they are fatigued or impacted by physical or mental stresses, are assessed. Personnel being properly trained require a qualification process and continuing education. Even before a Coast Guardsman becomes qualified at his/her assigned job, the member is expected to learn and perform damage control at his/her unit. The qualification process within the Coast Guard does not just train and develop a member on understanding the asset and job

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that the member will perform, but also places emphasis on understanding ORM and appropriate decision-making skills to anticipate hazards and increase operational effectiveness.

When assessing the risk of a particular mission, Coast Guard units traditionally use the General Assessment of Risk (GAR), also called Green, Amber, Red. GAR assigns number values to six categories under Assess Risks. They are supervision, planning/preparation, crew selection, crew fitness, environment and mission complexity. Each category is assigned a number on a scale of 1-10. The total of the categories determines the risk of the mission. If the total risk value falls in the green zone (1-23), the risk is rated low. A value in the amber zone (24-44) indicates moderate risk; consider adopting procedures to minimize it. If the total value falls in the red zone (45-60), implement measures to reduce the risk before starting the event or evolution. If any of the six categories assigns a high number even if in the mission is in the 'green zone', that subcategory is reevaluated.

A Safety Management System (SMS) can be used to identify hazards and control risks. Under the International Convention for the Safety of Life at Sea (SOLAS), an SMS is mandated for certain classes of vessels. As a recreational vessel, BOUNTY was not required to have an SMS. However, many vessels operated by organizations and businesses not required to have an SMS voluntarily implement one to ensure they are analyzing the risks faced by the organization in a defined, organized and measurable way.

Operating any vessel has inherent risk. The goal of an SMS is to reduce that risk to the lowest level achievable. Once established in the organization's culture, complying with it becomes standard, and dictates the way people perform their jobs, even when no one is looking. An SMS helps an organization demonstrate that every effort has been made by the head of the organization to provide a workplace that is made as safe as possible for everyone.

The HMS BOUNTY organization was not too small to benefit from an SMS. An SMS is scalable to fit both large and small organizations. Adoption of an SMS indicates a businesslike approach to safety. An SMS could have been implemented by the HMS BOUNTY organization with little or no cost. A Safety Management System Manual is provided free of charge by the United States Coast Guard and available for internet download.

Captain [REDACTED]

7. [REDACTED] had been the Captain on BOUNTY since 1995, and he held a 1,600 ton Masters MMC with an auxiliary sail endorsement at the time of the casualty. Both [REDACTED] and [REDACTED] stated that they had no other Captain for BOUNTY. Capt. [REDACTED] had an extensive maritime background which included time aboard the U.S. BRIG NIAGARA,

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BILL OF RIGHTS, HERITAGE OF MIAMI, CORNWITH CRAMER, HMS ROSE (now HMS SURPRISE) and U.S.S. CONSTITUTION.

A review of his Coast Guard enforcement record revealed two items:

- In 1998 he received a Letter of Warning for carrying passengers for hire on BOUNTY without a Certificate of Inspection and having a crew member not enrolled in a random drug testing program, and
- In 2003 he was given a Letter of Warning for negligently operating BOUNTY causing the vessel to allide with the Lake Shore Drive Bridge in Chicago, IL.

All surviving crew spoke very highly of Capt. [REDACTED] saying he was an expert sailor, a competent teacher, and always put the crew's safety as his top priority. Shipyard personnel from Boothbay Harbor Shipyard stated he was very hands on and adept at working with wood or machinery. TSA representatives and other Tall Ship captains interviewed spoke very highly of his abilities as leader and a captain as well. This combined testimony is difficult to reconcile with his decision to sail into Hurricane Sandy on board the BOUNTY.

The following conditions were known by Capt. [REDACTED] when he made the decision to depart New London and head toward Hurricane Sandy:

- BOUNTY had a history of "making" water through the hull and deck under normal operation, and much more so in a heavy seaway. He was well aware of the vessel's age and history. There are two other separate flooding incidents where Capt. [REDACTED] was in command that are known to the Coast Guard
 - In October 1998, BOUNTY was transiting from Massachusetts to St. Petersburg, FL when the vessel encountered a storm. The vessel began to take on water when the bilge pumps failed. The vessel was only able to make it in to Charleston, SC with the assistance of the U.S. Coast Guard, a U.S. Navy damage control team, and several other assisting vessels, and;
 - In December 2010, BOUNTY was transiting from Boothbay Harbor, ME to winter berth in Puerto Rico when the vessel encountered a storm. The vessel began to take on water when the bilge pumps had difficulties. There was damage to the vessel's masts and rigging, but the vessel was able to make it to Bermuda for an emergency stop. This incident was never reported to the Coast Guard.
- He was aware of the open deficiencies from the ABS 2010 Load Line examination, most of which involved watertight integrity and watertight subdivision;
- He knew there was decay in the frames and planking of the hull, but did not know how extensive the problem was. It was never explored in the shipyard. Boothbay Harbor

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Shipyards employee [REDACTED] testified that he had warned Capt. [REDACTED] to “pick and choose how he used the boat,” and to avoid heavy weather;

- He knew that the weight movements on BOUNTY during the shipyard period had changed the LCG and invalidated the vessel’s stability letter. He did not know how the change in trim and distribution of weight was going to affect the vessel;
- He knew the crew had concerns that the electric bilge dewatering system was not functioning properly. The hydraulic pumps on board were rarely used, and no one other than he had experience using them. The hydraulic pumps were not tested prior departure. The gasoline powered trash pump was not tested and no one on board was familiar with its operation;
- He knew that several of the crew were inexperienced. Engineer [REDACTED] had less than two weeks underway, and was not familiar with the engine room. Cook [REDACTED] had been on board for one day. 10 out of the 16 crew had less than one season experience on BOUNTY;
- He knew the crew had not completed an abandon ship or fire drill since before the yard period (August of 2012);
- He knew there was a hurricane. Company and crew testimony, e-mails and text messages all showed conclusively that he had utter and total clarity on the size, scope and forecast of Hurricane Sandy. He charted the position of the storm, and knew exactly where it was.

Heading out to sea under normal conditions requires that the hull be sound, vessel systems be tested and functional, and crew proficiency and readiness be at the highest level possible. When headed into a storm of Hurricane Sandy’s size and scope logic dictates that the importance of vessel seaworthiness, vital system functionality, and crew readiness would increase exponentially. That being said, Capt. [REDACTED] clearly chose to chart a course directly in the path and vicinity of Hurricane Sandy knowing all of the defects listed above. Testimony of surviving crew members indicates that the following may have factored into Capt. [REDACTED] decision to sail:

- **Belief that a Ship is safer at sea, rather than in port during a storm** - Crew testified that Capt. [REDACTED] presented this concept as a reason why they were departing New London. This statement was also posted on the vessel’s Facebook page by [REDACTED], father of AB [REDACTED], who was co-administrator of the page (along with [REDACTED]). When asked their opinion, CM [REDACTED], 2/M [REDACTED] and 3/M [REDACTED] all responded that it would depend on the circumstances, but no one would say

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they agreed with the decision. TSA representative, [REDACTED], testified that not one of TSA's East Coast fleet (approximately 50 vessels) put to sea when Hurricane Sandy was in the Atlantic. They all sought a safe berth. Three captains with Tall Ship experience testified that the concept was unsound, especially for a heavy rigged sail vessel that would be unable to out maneuver or out run a storm. If protecting the ship were a concern, and Capt. [REDACTED] believed the vessel was not safe in New London, it is difficult to comprehend why he believed the vessel would be safer at sea near the hurricane. The captains that testified stated they believed that there were safer options available, including staying in New London, moving up river, or going to New Bedford, MA behind the hurricane barrier located there.

- **Finances** – BOUNTY had commercial obligations in St. Petersburg. [REDACTED] testified that the vessel could have delayed or cancelled the events without detriment. However, review of correspondence and crew testimony indicated that BOUNTY was not doing well financially, and this was their last opportunity to make money for the season. They were also trying to explore new sponsorship opportunities with the Ashley DeRamus Foundation, and had the children and families meeting the vessel for the Texas voyage. Judging by the fact that BOUNTY was due in St. Petersburg, FL (a voyage of approximately 1,447 NM) on November 10th they could have theoretically delayed departure to monitor the storm and had time to meet their obligations. Leaving on October 25th at 1800 if they made good 5 knots (typical speed for BOUNTY ocean passages), they would have arrived in St. Petersburg on November 6th at 1700. At 7 knots, they would have arrived on November 3rd at 0800. E-mails from Capt. [REDACTED] and testimony from the crew also indicated that the vessel was tentatively planning on stopping in Key West, FL but this was purportedly only for fuel and morale.
- **Superstition** – AB [REDACTED] testified that Capt. [REDACTED] honored the maritime superstition of not beginning a voyage on a Friday, because Jesus Christ was crucified on that day, and the belief that voyages would be doomed to fail.
- **Personal** – Many of the crew testified that Capt. [REDACTED] wanted to meet all planned commercial obligations and have the vessel secured at their intended winter berth in Galveston, TX so everyone could be home by Thanksgiving.
- **The challenge** – In August 2012 Capt. [REDACTED] provided an interview on Belfast, ME Community Television where he openly made comments to a reporter stating “there is no such thing as bad weather, just different kinds of weather,” and that BOUNTY “chased hurricanes.” 3/M [REDACTED] stated that he did not believe that Capt. [REDACTED] sought out hurricanes for the challenge, and was merely expressing in the interview a way of navigating in the vicinity of a hurricane if forced. Some speculated that he was perhaps joking. All of the crew testified that they did not believe that Capt. [REDACTED] was chasing Hurricane Sandy, and the crew did not trade stories that BOUNTY loved

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hurricanes. However, the interview and comments by Capt. [REDACTED] cannot be ignored given the circumstances that he deliberately placed the vessel in after departure on October 25th. His actions rather corroborate the bold statements he made to the reporter, other than “you don’t want to get in front of a hurricane,” which in fact he did. On October 25th after Capt [REDACTED] meeting with the crew at the capstan in New London, Deckhand Christian (one of the most junior and inexperienced crew members) sent text messages to her parents before leaving trying to assuage their fears over the coming voyage. She texted; **“Our Capt has 30 years experience and our ship is strong. They say BOUNTY loves hurricanes!” “Really we’re not too worried about the hurricane. The Capt. loves hurricanes and we’re going to make sure to go outside on the East side. Although they said we might be pushed ½ way to Europe, lol.”** No doubt Deckhand Christian believed this statement when she made it to her parents. She appears to have heard these claims from the Captain and other members of the crew. Both CM [REDACTED] and 3/M [REDACTED] stated that they had seen BOUNTY in weather conditions comparable to what was experienced in October of 2012 in Hurricane Sandy. Being able to weather these past storms without loss of life or without total loss of the vessel seemed to fuel the belief that the vessel was capable of handling extreme conditions beyond her capabilities. Capt. [REDACTED] confidence in BOUNTY appears even to have been adopted by BOUNTY’s ownership. For example, on the HMS BOUNTY Organization website there was a biography for Capt. [REDACTED]. The first lines are “According to Captain [REDACTED], BOUNTY has no boundaries. As her captain, he is well known for his ability and desire to take BOUNTY to places that no ship has gone before.” During his interview with the Coast Guard in December 2012, [REDACTED] described with pride that BOUNTY “went places no other Tall Ship would go.” Text messages and e-mails between Capt. [REDACTED] and [REDACTED] and [REDACTED] show very clearly that management was aware of and supported, [REDACTED] voyage plan.

The choice to sail BOUNTY on the course that she followed on October 25 -29, 2012 by Capt. [REDACTED] was not based on just one of these reasons, but likely all of them to a certain degree. However, there has been no evidence or acceptable maritime principle presented that justified the choice made by Capt. [REDACTED] to expose the BOUNTY’s crew to such extreme risks and court danger as he did.

SAILING TRACK

8. An analysis of the BOUNTY’s voyage track was prepared by the Coast Guard Investigations National Center of Expertise. The analysis is based on maritime practice and the documented actions taken by Capt. [REDACTED]. This analysis utilized the vessel’s track data and environmental conditions experienced during the voyage. The analysis is valid for this voyage only and uses scientific and meteorological principles for the sea area of the BOUNTY’s voyage track. (See Figure 16)

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BOUNTY sailed on a southeasterly track in the direction of approaching Hurricane Sandy to a point where the vessel encountered the outer bands of wind, rain and increasing sea state. Capt. [REDACTED] received reports of the hurricane's position and forecast and was reported to be tracking the low-pressure center as it proceeded north up the East Coast. As the storm proceeded northward, the hurricane tracked east of the forecasted track, which caused Capt. [REDACTED] to continually alter his course east to avoid contact with the center of the storm.

When trying to avoid a tropical cyclone's low-pressure center, vessels typically have two options when in the path of the storm. If you are in open ocean and complete avoidance is no longer an option, the only choice is to attempt to avoid the center of the storm, particularly the right front quadrant or dangerous semicircle if possible. The dangerous semicircle is the right front side of the storm as it moves forward. The less dangerous semicircle or navigable semicircle is the left side of the storm as it moves forward.

The techniques of Buys Ballot's Law is the method mariners use to identify the position of a low-pressure center and navigate clear of it. These techniques have been used by mariners for well over 100 years and require no equipment. A barometer will aid the mariner in making more precise evaluations of the storm's position in relation to the vessel, but BOUNTY had detailed information on the position of the storm from several different sources.

On the morning of October 27th, Capt. [REDACTED] was faced with the decision of which side of the approaching hurricane he would navigate his vessel. In the vessel's position that morning, he was facing large waves on the bow with high winds and rainsqualls. [REDACTED] states³ that the safest procedure with respect to hurricanes is to avoid them, but if forced, as a general rule, safety lies in placing the wind on the starboard bow in the dangerous semicircle and on the starboard quarter in the navigable semicircle. Based on the southwest course change taken by Capt. [REDACTED], it appears that he chose to attempt navigation of the navigable side of the storm, which is typically the preferred technique. Capt. [REDACTED] decision was unfortunately made too late and placed the vessel in a dangerous set of circumstances, which inevitably placed the BOUNTY directly in the path Hurricane Sandy's center.

³ U.S. National Imagery and Mapping Agency, Pub. No. 9, The American Practical Navigator, An Epitome of Navigation, Originally Published by Nathaniel Bowditch, LL.D., 2002 Edition, Prepared and Published by the National Imagery and Mapping Agency, Bethesda, Maryland

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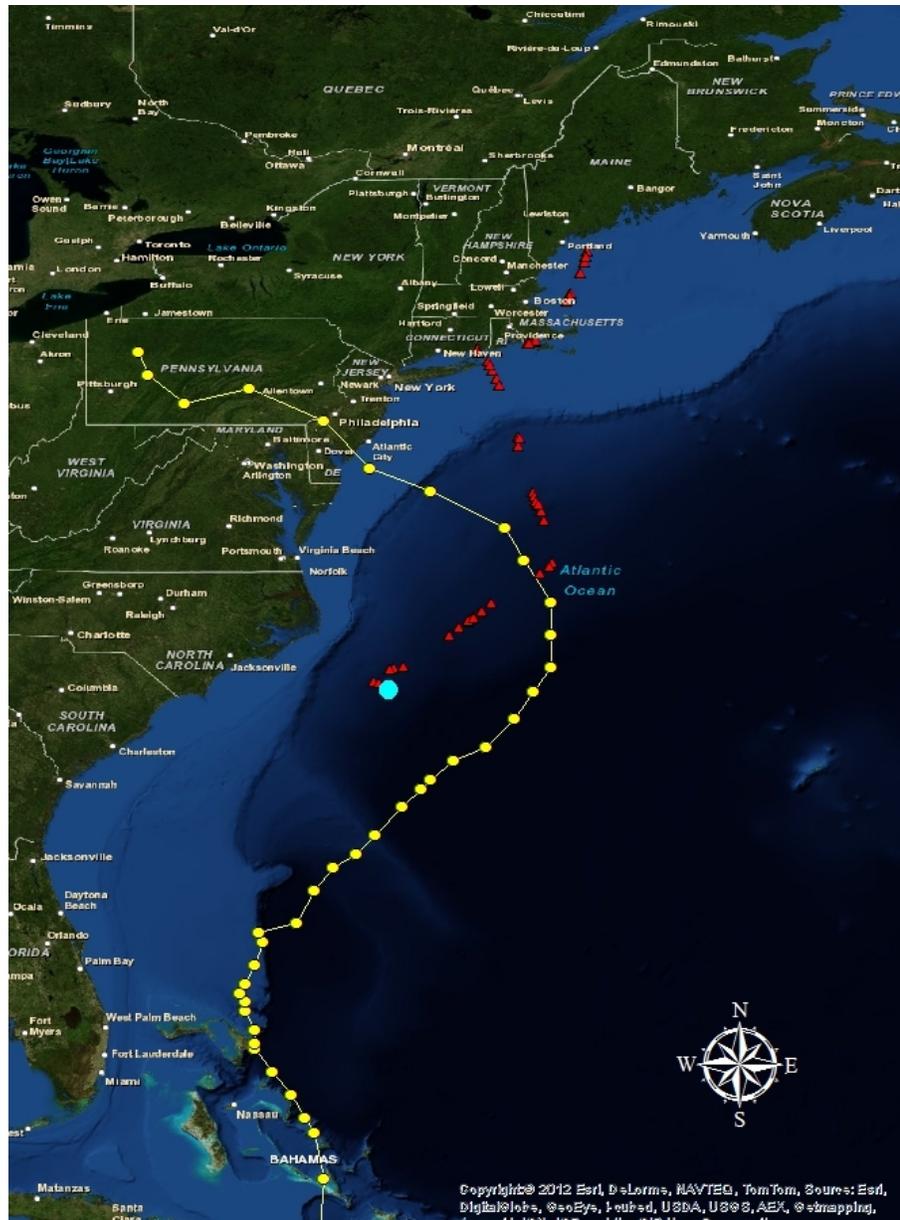


Figure 16 complete track for BOUNTY and Hurricane Sandy.

Upon changing course southwest, BOUNTY faced an opposing Gulf Stream current averaging four miles per hour, which caused a reduction in the vessel's speed over the ground. Hurricane Sandy continued northeast at 14 miles per hour. This was only exacerbated when BOUNTY lost her port main engine due to lack of fuel. As the BOUNTY proceeded southwestward with winds from the east northeast and northeast over the stern and port quarter, high steep waves and confused seas with shorter wave periods would be experienced due to the opposing Gulf Stream current. Breaking waves over the stern increased as the wind speed increased while BOUNTY

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navigated closer to the hurricane center. The opposing currents and water temperatures creates a well documented phenomenon termed the North Wall Effect, and this is ultimately the consequences experienced by the BOUNTY and her crew.

An important rule for mariners to apply in order to avoid hurricanes is the Mariner's 1-2-3 rule, also referred to as the Danger Rule. It refers to the rounded long-term National Hurricane Center (NHC) forecast errors of 100-200-300 nautical miles at 24-48-72 hours, respectively. According to the Mariner's Guide for Hurricane Awareness in the North Atlantic Basin⁴ "The 3-day forecast track of each active tropical cyclone is depicted along with a shaded "danger" region, or area of avoidance (see Figure 16). The danger area is determined by adding 100, 200, and 300 nautical miles to the tropical storm force radii (34 knots) at the 24-, 48-, and 72-hour forecast positions, respectively (hence the Mariner's 1-2-3 rule). Users operating in the vicinity of these systems are advised to continually monitor the latest forecasts and advisories issued by the National Hurricane Center." During the hearing, C/M ██████████, 2/M ██████████ and 3/M ██████████ were questioned on whether or not Capt. ██████████ had used the Mariner's 1-2-3 Rule or 34 knot Rule during voyage planning. Each stated they had either not heard of it or did not know if Capt. ██████████ applied it in an attempt to avoid Hurricane Sandy.

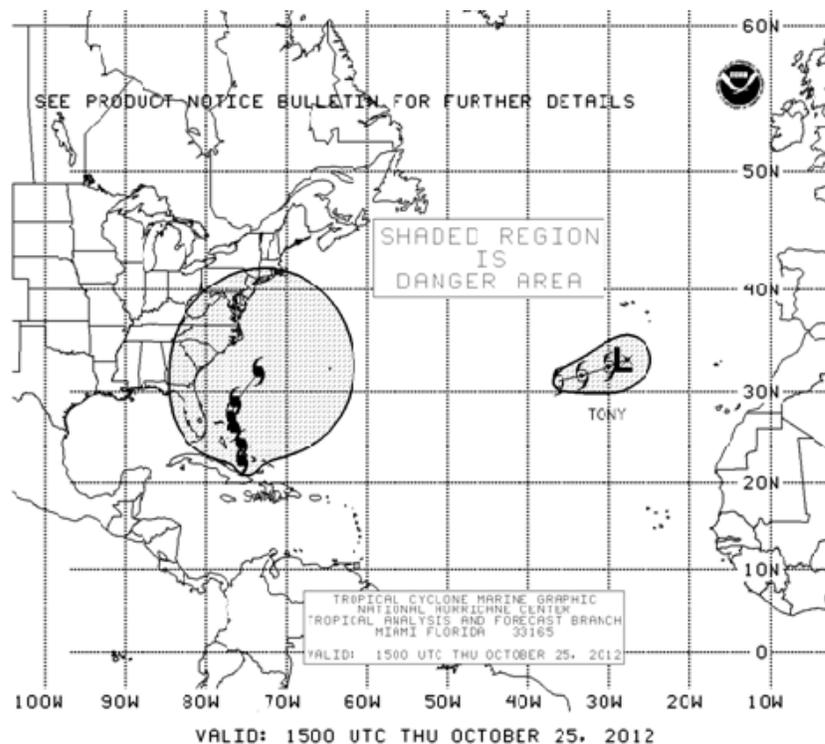


Figure 16. Hurricane Sandy graphic for October 25th 1300 EST.

⁴ See <http://www.nhc.noaa.gov/marinersguide.pdf>

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Notification

9. When Capt. ██████ finally authorized CM ██████ to call for assistance on the night of October 28th, there had already been 3 crew injured (including himself), loss of the port main engine and port generator, problems with the starboard generator, blown out sails and damaged rigging, and flooding that had several feet of water in the bilges. With the clarity of post casualty analysis, looking at the timeline of continued difficulties aboard BOUNTY starting on Saturday October 27th and the continued proximity of the approaching storm center, the best time to have made the first call for assistance (pumps at least) would have been on Saturday when Capt. ██████ attempted to engage the hydraulic bilge pumps, which were seen as emergency pumps. That said, based on testimony, his realization that the hydraulic pump did not work sometime the evening of October 27th, may simply have been too late, even if he had given the order right then to make the distress (MAYDAY) call. CM ██████ approached Capt. ██████ twice on the afternoon of October 28th in an attempt to have notifications to the Coast Guard made. It is likely that earlier notification of the vessel's and crew's condition to ownership and the Coast Guard would have given more time to establish communications and ascertain the vessel's situation, and possibly arrange for assistance. However, as stated before, the on-scene weather conditions precluded air assets from assisting, and there were few if any vessels in the vicinity.

10. Considered as a recreational vessel, BOUNTY was required to follow casualty and accident reporting requirements under 33 CFR Part 173.51 - .59. The only situations that require immediate notification is death or disappearance of a person. Written notification is required when:

- A person dies;
- A person is injured and requires medical treatment beyond first aid;
- Damage to vessels and other property totals \$2,000 or more or there is a complete loss of any vessel;
- A person disappears from the vessel under circumstances that indicate death or injury.

HMS BOUNTY Organization was notified of the requirement to file a written report after the casualty by Sector North Carolina, and during the November meeting in St, Petersburg, FL but as of this date have yet to file a report with the Coast Guard or any State agency.

11. The requirement for commercial vessels to report marine casualties is under 46 CFR Part 4. These more stringent requirements for immediate notification would have only been required when the vessel was operating as an attraction vessel. Notification of a marine casualty is required immediately after addressing resultant safety concerns for:

- An unintended grounding, or an unintended strike of a bridge;

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- An intended grounding or strike of a bridge that creates a hazard to navigation or effects the safety of the vessel;
- A **loss of main propulsion**, primary steering, or system that reduces the maneuverability of the vessel;
- An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, **flooding**, or failure of or damage to fixed fire-extinguishing systems, lifesaving equipment, **auxiliary power-generating equipment, or bilge-pumping systems**;
- A loss of life;
- An **injury that requires professional medical treatment** (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, that renders the individual unfit to perform his or her routine duties; or
- An occurrence causing property-damage in excess of \$25,000, this damage including the cost of labor and material to restore the property to its condition before the occurrence, but not including the cost of salvage, cleaning, gas-freeing, drydocking, or demurrage.
- An occurrence involving significant harm to the environment as defined in §4.03-65.

The Hull and Structure

12. Testimony and evidence support that HMS BOUNTY Organization had made several improvements to the condition of BOUNTY's hull since purchase in 2001, which are discussed briefly within the Findings of Fact portion of this report. However, the hull and associated structural members still showed evidence of service stress. Mr. [REDACTED], of Boothbay Harbor Shipyard, testified that when BOUNTY first came to Samples (Boothbay Harbor) Shipyard in 2001 the hull was so worm damaged that the vessel leaked approximately 30,000 gals of water an hour when she was hauled from the water. During this first restoration period all of the bottom planking, the stern post, and some of the aft frames (approximately six) were replaced with white oak. The keel, keelson, and deadwood remained as originally laid in 1960. One aspect that was noticed regarding the keel in 2001 was that it had a "hog" to it. A hog is when the vessel's keel is bowed, or deflected, causing the bow and stern to be lower than the middle section. The opposite condition of this would be a "sag," where the bow and stern to be higher than the middle section. Mr. [REDACTED] stated that the keel had an 8 inch hog at the time of the 2001 haul out, which indicated that the keel was "tired," or showing signs of stress.

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When the vessel was hauled again in 2006-07, and an external lead ballast keel applied, Capt. [REDACTED] first took steps to try to remove the hog from the keel utilizing sand boxes, which temporarily worked, until the next haul out in 2010 when the keel had the hog back. When Mr. [REDACTED] was questioned during the hearing regarding the hog in the keel, he testified that he was aware of it, but did not find it excessive so he did not include it in his reports. Mr. [REDACTED] referred to the keel as “tired.”

13. The planking above the waterline was replaced in 2006-2007 along with many of the frames and, as stated earlier, the replaced planking was douglas fir and the framing was white oak. It was in these areas that rot, or decay was found during the Boothbay Harbor Shipyard haul out in October of 2012. Testimony from Mr. [REDACTED] and analysis of the hull samples and photographs provided by Mr. [REDACTED] indicated the fir planking was construction grade, young growth and wide ring material. The “wide ring” refers to the annular rings present within the lumber denoting the age. Western Wood Products Association Lumber Grading Rules 98, grade dimensional lumber in the following categories from highest to lowest;

- Select structural;
- No. 1
- No. 2
- Construction
- No. 3
- Stud
- Standard, and
- Utility

The grading depends on various factors, and growth ring distance is one of them. The closer the rings, the more decay resistance the lumber has. The planks were also recently cut, or “green,” which is not uncommon today given the lack of availability of large air dried timbers. In the case of the hull planking material placed on BOUNTY in 2006-07 it was not the best, but it was far from inferior or uncommon. When the planking was examined in September and October of 2012, all parties appear to have been surprised by how the planking had fared. Both Mr. [REDACTED] and Mr. [REDACTED] testified that they were surprised at the level of decay that had developed over such a short period of time in the planks and the frames above the waterline. Decay occurs within wood when conditions (humidity, temperature, oxygen) allow for fungi to thrive. The conditions on BOUNTY that contributed to the growth of the decay were:

- The vessel wintered in Puerto Rico, with warmer water and the sun shining on the dark hull;
- BOUNTY’s double futtock framing and ceiling planking created areas of poor ventilation. The areas where the decay was detected, especially under the channels, were areas of extremely poor ventilation,

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- Testimony indicated that the BOUNTY was continually having problems with fresh water leakage from the deck. In 2006 – 07 a new layer of douglas fir planking and layer of Ice and Water Shield was placed over the original deck in order to fix the problem. However, crew testimony showed that deck leaks were still a problem.

The temperature, lack of ventilation, and fresh water created an ideal environment for fungus to thrive. This combined with the planks poor decay resistance due to wide annular rings very likely led to the rapid deterioration (see Figure 17). The dry flaky material that is often observed with wood decay frequently leads to this condition to be mistakenly referred to as “dry rot.” The rule of thumb is that when you see the results of the fungus (decay), it has moved on and is present in adjacent wood that may appear sound. This is referred to as “incipient decay.” Decay was also found within the white oak frames and locust trunnels, and it is expected that the decay transferred over from the fir. U.S.C.G. Navigation and Inspection Circular 7-95, “Guidance on Inspection, Repair and Maintenance of Wooden Hulls”, prescribes basic treatments for decay when found which involves complete removal of the effected member (or up to 2 feet to good wood), or temporary arrestment of the fungi through chemical treatment (such as pentachlorophenol solution). The treatments authorized by Capt. [REDACTED] for the areas on decay for BOUNTY can be seen as temporary fixes only. The problem was not addressed adequately, especially given that the true extent of the problem was never explored fully. In order to determine how extensive the problem was, more planks needed to be removed. According to Mr. [REDACTED] testimony this was not an option that Capt. [REDACTED] authorized due to cost.

Testimony from Mr. [REDACTED] differed from Mr. [REDACTED], in that Mr. [REDACTED] believed the decay problem was more serious. However, both provided testimony that they believed the vessel was capable of making it to the next haul out, tentatively scheduled for the following year, when the vessel left Boothbay Harbor Shipyard.

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Figure 17 Photo of frame decay taken by [REDACTED].

14. [REDACTED] and other shipyard personnel, testified that the caulking done by the crew appeared to be adequate. However, there were concerns regarding the crew's selection of seam compound. As stated in earlier findings of fact, the majority of caulking done by the crew was below the waterline, and only about 35% of the seams were re-caulked or re-set. On the starboard side of the hull a product called NP1 was used, and on the port side a product called DAP 33 or DAP Kitchen and Bath.

- NP1 – Is a polyurethane sealant product of BASF, and is also referred to as Sonolastic NP1. It had been used in a limited capacity on BOUNTY in the previous year's above the waterline. They used, it for the first time below the waterline in 2012. The product data sheet for NP1 lists is as suitable for use on concrete, masonry, aluminum, wood and roof tiles. It can be used in a variety of household locations, but also can be used in wet areas, and is suitable for water immersion. However, NP1's product data sheet indicates that if it is going to immersed, "Primer 733" must be used. There is no evidence on yard invoices or testimony that Primer 733 was used for priming BOUNTY's seams. NP1's product date sheet also indicates that any surfaces must be clean, structurally sound and dry prior to application of the product. Testimony from crew and yard personnel indicated that many of BOUNTY's seams below the waterline continued to leak water throughout the dry dock, because of water in the bilges. NP1's product data sheet also indicates that NP1 should not come into contact with oil based caulking or fillers

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impregnated with oil, asphalt, or tar. The oakum that was being used for caulking on BOUNTY had tarred fibers. NP1's curing time for immersion service is listed as 21 days. BOUNTY was out of the water in Boothbay Harbor Shipyard from September 17th to October 17th 2012. The hull was cleaned and lightly scuffed the first days of the haul out, and if NP1 was used to seal the seams after September 26th (on wet seams), it would not have had time to cure properly.

- DAP33 –As per the company's technical bulletin, DAP 33 is a blend of soya, polymerized linseed and mineral oils and its suggested use is for wood and metal window frames. The bulletin specifically states not to use the product on any window pane over 48 inches in length in any direction. Like NP1, surfaces that DAP33 is going to be applied to should be clean and dry, and the bulletin lists "do not apply during damp or rainy weather or if rain is forecasted within 24 hours of applications. Curing time for full set is also listed as 3 weeks. There is no indication of any kind stating that this product is suitable for use in immersion service.
- DAP Kitchen and Bath – is a 100% silicone sealant whose technical bulletin lists as ideal for use in kitchen and bath areas. This product once again must be applied to a clean dry surface and it is specifically stated as "not recommended for continuous underwater use, below grade use, use on wet surfaces."

None of these products are intended by the manufacturers to be used below the waterline to fill seams on a wooden hull vessel, especially a heavy timbered full rigged vessel like BOUNTY was. Out of the three, NP1 could have perhaps done the best if applied to a clean dry surface, and given proper time to cure. The DAP products, as specified by the manufacturer, were never intended to be immersed in water. There are products specifically designed and intended to be used for this application such as Pettit Seam Cement (below waterline), Pettit Seam Compound White (above waterline), Boatlife Life-Calk, West Marine Multi-Caulk, 3M 5200, and many others. However, these products are three times as expensive as the DAP products. These products also rely on preparing the seam, and allowing the product to cure for 7 – 21 days. When asked why the DAP products and NP1 were used for the hull seams, Bosun [REDACTED] testified that the price is what drove the purchase. The products were purchased by Capt. [REDACTED].

15. In the latter stages of the casualty, Capt. [REDACTED] sent e-mails with the phrases "The boat is doing great – we can't dewater," and "the boat is fine – we can't dewater." This combined with review of the photographs taken by the U.S. Coast Guard air crew supports that the vessel did not have a catastrophic hull failure (such as a thrown or "popped" plank), but rather was suffering from numerous areas of water intrusion from leaks in the deck and between hull seams where caulking was washed out. Based on crew testimony and review of past casualties this was common for BOUNTY. From late Saturday October 27th until the time of the near capsizing on October 29th, BOUNTY was subjected to immense racking stresses on the hull due to the heavy

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seas and winds. The age of the vessel's main structural members, presence of rot, and inadequate materials all likely contributed to the vessel "making" water from multiple locations, in an aggregate quantity to overwhelm the ineffective bilge system leading to the progressive flooding.

Stability and Loadline

16. Based on the determination that BOUNTY's operated as a recreational or moored attraction vessel, it was not required to comply with subdivision and stability standards in 46 CFR Subchapter S and was therefore not required to have a stability letter. They were also not required to comply with international or domestic requirements to have an assigned Load Line or Load Line Certificate, as per the International Convention on Load Lines, or 46 CFR Subchapter E.

17. HMS BOUNTY Organization chose to have a stability test and receive a stability letter in 2009. The primary reason for getting the stability letter was that it was a necessary step in order to be assigned a Load Line, and receive a Load Line certificate from the American Bureau of Shipping (ABS). HMS BOUNTY Organization wanted the load line, because they were trying to become certificated either as a sailing school vessel and/or to carry passengers for hire, and they needed a load line to do both of these things.

18. The 2009 stability test was performed in St. Petersburg, FL and conducted in accordance with the "American Society for Testing and Materials (ASTM) F1321 Standard Guide for Conducting a Stability Test (Light Ship Survey and Inclining Experiment) to determine the Light Ship Displacement and Centers of Gravity of a Vessel." The test was conducted by a naval architect, Mr. [REDACTED], of the International Historical Watercraft Society, and witnessed by personnel from U.S.C.G. Sector St. Petersburg. The results of the test and stability calculations were sent to the U.S.C.G. Marine Safety Center (MSC) for review, and a stability letter was issued on August 7, 2009. An approved Sail Plan was attached to the stability letter. A Sail Plan is a drawing that depicts the maximum sail configuration that could be flown in accordance with the issued stability letter.

19. In 2011, the stability letter came under question. A boarding by British MCA and U.S.C.G. Activities Europe personnel revealed incorrect displacement tonnage on the stability letter based on a review of vessel records. Further review by U.S.C.G. MSC revealed that there were errors in the 2009 stability submission. They found an error in the vessel's hydrostatics and unaccounted for down flooding points that invalidated the previously issued stability letter. As a result [REDACTED], also of the International Historical Watercraft Society, submitted revised drawings and calculations for review using physical data gathered during the 2009 stability test. This review allowed for corrections to be made to the vessel's hydrostatics, lightship values, intact stability calculations and resulted in a new stability letter.

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20. The new stability letter was issued on June 15, 2011. The letter stated that BOUNTY, as was then currently outfitted and equipped, was satisfactory for operation on exposed waters, given they follow the operating restrictions listed in the letter. The vessel's Displacement, Vertical Center of Gravity (VCG), and Longitudinal Center of Gravity (LCG) were listed, with the following statement:

"Any alteration resulting in a change in these parameters will invalidate the stability letter. No fixed ballast or other such weights shall be added, removed, altered and/or relocated without the authorization and supervision of the cognizant OCMI. Other than 54,000 pounds of lead ballast fixed to the vessel's keel, the vessel is not fitted with any removable ballast."

The inclusion of down flooding points that were omitted in the 2009 submittal proved to be the most significant impact to the vessel's compliance with federal intact stability standards. The owners were given the option to either physically modify windows on the stern to no longer render them down flooding points or carry fewer sails. Since modifications were not made, a new stability letter was issued with an approved Sail Plan that significantly reduced sail area. The new letter restricted the carriage and flying of royal sails on all three masts as well as the mizzen topgallant sail. This change was reflected in a new sail plan that was dated June 10, 2011.

21. Detailed review by MSC after the casualty incorporated as many weight and moment changes as were available based on testimony and evidence collected after the casualty. Naval Architects from MSC refined the computer model using details of the sail area, including masts, that were not considered previously, because the information was not made available by the BOUNTY Organization. MSC determined that previous models underestimated the sail area of the vessel; as a result the sail plan previously approved in 2011 would not have been, considering the anomalies found as a result of the updated analysis. In the end, although BOUNTY did not meet the regulatory intact stability criteria, it was not a causal factor in the casualty.

22. The MSC analysis suggests that the vessel's stability characteristics were not significantly impacted, one way or the other, due to the numerous weight and moment changes made after the 2009 incline test. The analysis suggests that the stability characteristics of the vessel, even in heavy seas, were not severely degraded until the tween deck was awash. This level of flooding was the final event that led the vessel to roll to starboard on its beam ends. According to MSC's model, there is a dramatic change in the modeled stability characteristics once the tween deck is awash.

23. HMS BOUNTY Organization requested a load line examination from ABS, and it was conducted on November 11, 2010 in Boothbay Harbor Shipyard in Boothbay, ME. The examination consisted of a review of vessel plans, submitted by [REDACTED], and a physical exam of the vessel in dry dock. A load line was never assigned, nor was a load line certificate issued, because of nineteen deficiencies issued to the vessel by ABS during this examination.

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24. On December 6, 2012 investigators conducted a meeting with [REDACTED] of HMS BOUNTY Organization, in which the load line examination deficiencies were discussed. Mr. [REDACTED] indicated that many of the deficiencies issued during the ABS survey in 2010 were still outstanding on October 29, 2012 when the BOUNTY sank. Among the open deficiencies were:

- Numerous open technical comments on the vessel's plan review that had not been resolved;
- Watertight transverse bulkheads at frames 11, 17, 23, 29 (moved to 30 in 2012), 35 and 45 between the bottom shell and tween deck found with unpacked and open penetrations;
- Weather deck and tween deck doors and sliding hatches did not have sill heights of adequate heights;
- Main engine exhaust trunk vent plenum and engine casing stairwell to engine room located tween deck level found non-tight (not weathertight) in way of deck connections;
- Engine room ventilator sill height was found non-compliant and missing a means of closure;
- Fuel tank vent was four inches off of the weather deck, and not fitted with means of automatic closing or flame screen;
- Numerous port lights were made of plastic, lexan type material, and did not have deadlights;
- Bulwark freeing ports found with clear opening, with no bars or rails provided at a maximum of 9 inches above the deck, and;
- The tween deck (Figure 18), which had been designated as the freeboard deck by the owner, was observed as having a large area of free surface and only one 6 inch scupper on the port and starboard side.

When asked why the open deficiencies had not been cleared in 2010, Mr. [REDACTED] said that the reasons were financial.

25. In September and October of 2012 the BOUNTY Organization, once again pursued a load line. E-mails collected during the investigation between [REDACTED], [REDACTED], [REDACTED] and [REDACTED] indicate that the BOUNTY Organization was looking towards fixing the open deficiencies issued in 2010 to receive a load line. ABS was contacted and they indicated that due to the time that had elapsed from the initial exam, a re-survey was required. In

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addition, ABS required that all drawings be reviewed and approved prior to a re-survey. Once again, the load line was not fully pursued due to financial considerations.



Figure 18 Tween Deck

Engine room

26. Engineer [REDACTED] reported that when he took over his engineering duties in September of 2012 that he could not find any records indicating when fluids had been changed or preventative maintenance performed. He was unsure of how many hours were on the main engine. He also stated that he wanted to spend a week just “cleaning the engine room.” There were reports that Capt. [REDACTED] rebuilt the starboard generator earlier in the 2012 season, but no records could be provided proving this. He was given no written guidance or policy on how the engine room was supposed to be run, or that described how and when his duties were to be carried out. He was given a quick introduction to the engine room. He was given instruction by Capt. [REDACTED] to use the starboard generator, and keep the port generator as a backup.

27. Engineer [REDACTED] testified that he believed that the port main engine stopped running at approximately 1200 when the port day tank ran out of fuel. He also stated that the day tank ran

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out of fuel, because the sight glass broke and the fuel leaked out. If he had transferred fuel to the day tank that morning (he was not sure if he did) there would have been an estimated 150 gals of diesel leaked onto the deck in the engine room and into the bilges through the broken sight glass. It seems extremely unlikely that this occurred. The engine room was an enclosed area with extremely poor ventilation. All crew members in, or in the vicinity of, the engine room would have smelled that much fuel, and it would not have been diluted as he believed. AB [REDACTED] reported that he was in the engine room for the majority of the time between 0800-1200, and he did not notice the fuel leaking or smell it. It is far more likely that he did not transfer fuel over to that day tank, and it either 1) ran out of fuel, or 2) a very small amount leaked out of the broken sight glass.

28. Engineer [REDACTED] also testified that the port generator was shut down to change the fuel filter before the port main shut down due to the fuel running out. If this were, in fact, true, the generator would not have been air bound, and they would not have lost it for the better part of October 28th. They would have been able start it back up after Engineer [REDACTED] transferred fuel back into the day tank.

29. Multiple sources testified that the starboard generator was fluctuating and having problems starting on the afternoon of October 28th. No one on board was able to determine the cause of the problems. Engineer [REDACTED] stated that it “seemed starved for fuel,” but when he changed the 2 micron filters there was no evidence of sediment or contaminants that would have indicated a clogged filter. The starboard main engine was also not reported to be showing any signs of contaminated fuel. The surging the generator could also have been related to electrical load sharing issues. The fact remains that Engineer [REDACTED] had limited time to get familiar with the engine room on BOUNTY, did not inherit well maintained equipment, and did not have any underway experience to speak of. The only other BOUNTY crew member who was apparently familiar with the engine room was Capt. [REDACTED] and his effectiveness was no doubt limited by the injury he sustained.

Bilge Pumps

30. Capt. [REDACTED] reported during the casualty that the vessel was flooding at a rate of approximately two feet an hour. Per MSC’s analysis, this would have equated to approximately 470 to 670 gallons per minute, depending on level of water at the time. MSC’s analysis indicates that if both electric driven pumps and the portable hydraulic pump were operating optimally and in conjunction with a piping system adequately sized and plumbed for the various pumps, the maximum dewatering capability of the vessel could have been up to a theoretical 625 gallons per minute. However, the testimony from the crew raised serious doubt that any of the pumps were operating optimally. Had the portable gasoline powered trash pump’s prime mover been able to maintain operation for any length of time, it would have been of little value since exhaust fumes would have been an issue for the crew operating the pump while inside the vessel and the distance from either the main deck or ‘tween deck likely exceeded the pump’s capacity to draw

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suction from the lower spaces. The trash pump was of no value to the crew in any flooding scenario. Furthermore, crew members consistently reported that the pumps were turned off periodically to either change filters, regain prime, or clear debris. It is concluded that the rate of flooding exceeded the actual dewatering capability of the vessel and all dewatering efforts merely delayed the final outcome.

Fatigue

31. At the time of the casualty Capt. [REDACTED] and the crew of BOUNTY were fatigued due to the lack of sleep, the physical strain of being in such extreme weather conditions and/or the effects of sea sickness.

Input From the Crew

32. At the hearing in February 2013, several of the crew provided testimony of difficulties they encountered after they were forced to abandon ship and the challenges they had getting into the life raft. 3/M [REDACTED] prepared a list of items he felt were important lessons learned and items to consider. They are summarized as follows:

- The immersion suit hands offered little to no gripping power making it very difficult to use the line from the inflatable life raft to get inside;
- The glow sticks provided were attached to a lanyard that was too long (over 72 inches) making it difficult to reach;
- The pocket on the shoulder of the immersion suit was small and very hard to get into with the hands in the immersion suit;
- The line from the liferaft should be longer and float so that while in the water it can be grabbed easily;
- The lanyards for the EPIRBs which attach to the liferaft are too long; they should be shorter so that they don't get caught on something and the EPIRB get separated from the liferaft;
- Gear inside the liferaft was difficult to access while inside immersion suits, because of loss of dexterity in immersion suit gloves;
- The flap or cover designed to keep the weather out of the liferaft was difficult to secure due to Velcro and straps instead of a zipper;
- Once the liferaft was inflated, it was very difficult for persons in the water to catch it. It seemed that the sea anchor was not adequate size for the conditions;

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- The ladder attached to the ramp to enter the liferaft was too short; once the immersion suits filled with water it was very difficult to raise the legs high enough to get the feet in the rungs;
- Too much water entered the immersion suits making it extremely difficult for crew members to pull themselves up into the liferafts.

The difficulties experienced by the crew during after the capsizing were only exacerbated by the on scene weather and the fact that they were exhausted. However, their experience and observations are valuable information for other crews to use during training.

33. The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and U.S. Coast Guard require that seafarers on certain commercial vessels be provided with Basic Safety Training (BST). BST is normally a 5 day, 40 hour course that meets these standards. The course has blocks of instruction on Basic Fire Fighting, Personal Survival Techniques, First Aid & CPR, and Personal Safety and Social Responsibilities. Although it was not required by the BOUNTY Organization, 10 out of 16 of the BOUNTY crew had attended BST. All of those that attended said what they learned had helped them during the casualty.

34. The merits and drawbacks of wearing the climbing harnesses (see Figure 19) or riggers belt with the immersion suit was also discussed. Wearing of the belts almost caused Deckhand [REDACTED] and AB [REDACTED] to be dragged underwater, but some crew said it was easier to pull crew members into the raft because of it. The Stearns model 1590 immersion suits were an older model of immersion suit. Many of the newer model immersion suits come with clips that are built into the suit, and are flush to the chest so they will not get caught up. No one on the BOUNTY crew stated that they ever trained to use their climbing harness over their immersion suit. No one on the crew who had been on other vessels or attended BST ever had this practice taught or recommended. No BST training facility or manufacturer of immersion suits recommends placing any item, including other PFDs, on top of an immersion suit.

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Figure 19 Climbing harness

Conclusions

1. In accordance with reference (d) the Initiating Event (or first unwanted outcome) for this casualty was flooding. BOUNTY began to flood uncontrollably the moment the rate of water ingress exceeded the rate the bilge pumps could dewater. It has been concluded that this occurred on October 27th, when Capt. ██████ went to engage the hydraulic bilge pumps, which were seen as “emergency pumps.”
2. The causal factors that led to this casualty are as follows:
 - a) Environment: There were four primary environmental causal factors.
 - 1) The weather was clearly a factor from the beginning of the voyage. Although the conditions related to Hurricane Sandy didn’t directly affect the vessel until Saturday, October 27th, the crew was stowing gear and preparing the vessel for heavy weather from the time they departed New London, CT. Once the conditions began to worsen, increasing seas accelerated the rate that BOUNTY was making water. The increasing winds blew out multiple sails and caused the spanker gaff to break.
 - 2) The impact of the environmental conditions was also detrimental to the crew. The increasing sea state caused many of the crew members to become seasick. The conditions also made it difficult to get adequate sleep, not only because of the rough

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- seas, but because the crew sleeping quarters became saturated with water that leaked through the deck. As the voyage progressed and conditions worsened, moving about the vessel became increasingly difficult and 3 crew members were injured as a result of falls, including Capt. [REDACTED].
- 3) As the vessel foundered and the decision was made to abandon ship, the environmental conditions impacted the crew's ability to communicate with the US Coast Guard, any other nearby vessels, as well as each other on deck. Environmental conditions also made preparations to abandon ship, including donning survival suits as well as lifejackets and climbing harnesses, extremely difficult.
 - 4) Once the crew had abandoned ship, the heavy weather conditions made it exceedingly difficult to get into the inflatable life rafts. Crew members testified that entering the life raft took at least one hour once they reached the raft. Wind and seas caused one of the life rafts to flip during the rescue.

b) Personnel: There are eight primary causal factors that involve human error on the part of the company owner and vessel master.

- 1) The inability and failure of HMS BOUNTY Organization to provide effective oversight and operating restrictions for their vessel and personnel. Both [REDACTED] and [REDACTED] were responsible for and made critical decisions regarding the maintenance and operation of BOUNTY. They were ill equipped to make such decisions due to their lack of experience with vessel operations, especially with respect to an aged wooden vessel. They each had full knowledge that Capt. [REDACTED] intended to take BOUNTY into close proximity to Hurricane Sandy, and took no action to stop or question his decision making. This constitutes negligence.
- 2) The failure of HMS BOUNTY Organization and Capt. [REDACTED] to effectively evaluate and determine if prevailing and forecasted weather conditions were favorable for sailing. This constitutes negligence.
- 3) The failure of HMS BOUNTY Organization and Capt. [REDACTED] to appropriately evaluate the vessels material condition and suitability for sailing in the forecasted weather conditions (given what they both knew about the condition of the vessel's structure and the lack of testing to ensure all bilge systems were fully functional and up to the task of performing to designed parameters). This constitutes negligence.
- 4) Capt. [REDACTED] was a mariner that had the respect of his crew, industry peers, shipyard personnel and company management. From all reports he had tremendous skill as the BOUNTY's Master, and knew her better than anyone. That he chose to embark on this voyage knowing of the vessel's defects, the magnitude of the storm, and the experience level of his short handed crew is unconscionable. It seemed that he had supreme confidence in himself and BOUNTY. It can only be surmised that this confidence kept him from recognizing the very real dangers his decisions imposed on the ship and crew. CM [REDACTED] approached him in New London to discuss other options, but he did not want to take counsel. He was compelled largely

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by the Chief Mate to hold a meeting with the crew to address their concerns, and convince them he and the vessel were capable of the trip, and that leaving was a way to protect the vessel. The crew chose to stay because they trusted his experience, or they felt he would have gone anyway, and that would have left the ship even more shorthanded. Every tall ship captain interviewed for this investigation indicated disbelief over the actions of Capt. [REDACTED], and stated they never would have left port, or they would have sought a safe berth in sufficient time. Practically every vessel in the Atlantic chose to either tie up, or run from Hurricane Sandy. Capt. [REDACTED] chose to steer towards Hurricane Sandy at a near constant bearing and decreasing range with no compelling reason to do so. His actions conflicted with all known maritime methodologies for storm avoidance. It can only be concluded that he was not trying to avoid it at all. He purposefully placed his crew and his vessel into extremely dangerous conditions. This constitutes negligence.

- 5) Capt. [REDACTED] decided to notify the Coast Guard and HMS BOUNTY Organization regarding their distress much too late. When asked by CM S [REDACTED] to call the Coast Guard, he refused stating that they would be better off working on the pumps. His decision smacked of pride, and was illogical given the danger they were in. He should have made calls for assistance on Saturday, October 27th at the first indication that the electric bilge pumps were not keeping up with the water ingress. This would have given them some opportunity to come up with an alternate plan or better their chances to receive assistance. This constitutes negligence.
- 6) [REDACTED] [REDACTED] was hired as the engineer for BOUNTY, even though an engineer is not required due to its operation as a recreational vessel. That being said, he did not have sufficient experience with vessel systems to adequately perform his duties. He also was not given appropriate time or orientation to the vessel. Additionally, any effectiveness he would have provided was diminished by his injuries and extreme sea sickness, which began to be apparent on or about October 27th.
- 7) BOUNTY sailed from New London with less than a full complement of crew. Surviving crew members testified that, from the point of departure, each crewmember was doing several jobs at once. They had their normal duties, but were also busy preparing the vessel for rough seas. When the seas started to get rough they were forced to have two people on the helm, and have someone constantly stand by the bilge pumps. As the voyage progressed the number of effective crew became less and less due to injury, sea sickness and fatigue.
- 8) The crew that sailed with BOUNTY from New London had limited sailing experience, and were not properly trained in several vital areas. The crew had not done a fire or abandon ship drill in over two months, and Cook [REDACTED] and Engineer [REDACTED] had never been involved in one. No one had training on how to use the hydraulic bilge pumps or the gasoline powered trash pump. This is despite the fact that they knew that they were sailing into a hurricane, and BOUNTY had a history of taking on water, more so in a heavy seaway.

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c) Equipment: There are seven primary causal factors that involve equipment.

- 1) The port generator and port main diesel engine shut down due to lack of fuel during the rough weather. This reduced the vessel's speed, maneuverability, and ability to dewater the vessel.
- 2) There was no way to accurately gauge the port day tank level due to a broken sight glass. Failure to notice the broken sight glass by the crew during boat checks likely contributed to the port day tank running out of fuel, and therefore the loss of the port main engine and port generator. The crew also apparently failed to notice the trend when they logged the fuel level in the engine log book as per their Boat Checks.
- 3) The effectiveness of the electric bilge pumps was in question from the time the vessel left Boothbay, ME. Crew reported that they did not think the system was pumping water with the same efficiency and they were having trouble keeping the pumps primed. They were never able to determine why the pumps were not working correctly. The pumps were likely clogged with debris.
- 4) The portable hydraulic pump was initially inoperable due to insufficient maintenance. Once it was finally engaged, its effectiveness was limited because it was continually clogged with debris in the bilges.
- 5) The fixed hydraulic bilge pump was inoperable. No crew could provide any information on when it was last operated or tested. The fixed pump was also not optimally piped and configured to maximize the pumping capacity.
- 6) The portable gasoline powered trash pump was inoperable, but would have been of little value due to the insufficient capabilities of the pump, as well as the emission of dangerous fumes when operated inside the vessel.
- 7) The BOUNTY's single side band radio and INMARSAT C phone were not operational when the decision was made to request assistance. As they were not tested prior to departure from Boothbay or New London it is not known how long they were not functional.

d) Safety Standards: There are four primary causal factors that involve safety standards.

- 1) The BOUNTY's only written safety doctrine was the "HMS Bounty Crew Manual". There was no direction or input by the HMS BOUNTY Organization, which meant that the creation, implementation and execution of safety management onboard the vessel were left solely to Captain [REDACTED] and his crew. With no oversight from the owner or independent outside source, Captain [REDACTED] instituted a safety culture on the vessel with insufficient standards especially in the area of voyage planning and emergency operations.
- 2) During this voyage, the BOUNTY was operating as a recreational vessel and thus was not subject to the 1) more stringent manning requirements for commercial vessels; 2) load line requirements, and; 3) immediate marine casualty reporting requirements of

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- 46 CFR Part 4, which serves to make the Coast Guard aware of distress situations with vessels and provide assets to assist them.
- 3) The crew members adopted safety practices with the use of their lifesaving equipment that compromised the effectiveness of the gear. The addition of personal flotation jackets and climbing harnesses on top of survival suits did not increase the survival suits' effectiveness. Instead the additional equipment became a hazard for catching in the rigging causing several crew members to be pulled under water and nearly drowned.
 - 4) The vessel did not comply with the MSC issued stability letter. This had no bearing on the casualty as intact stability compliance was not a contributing factor. The weight and moment changes that were performed after the 2009 incline test invalidated the MSC issued stability letters of 2009 and 2011. However, the vessel was not subject to the requirements of these letters per the Code of Federal Regulations. Overall, the alterations to the vessel, such as moving ballast to change trim, moving the tank and berthing spaces, removal of the top of the mizzen mast, did not likely change the vessel's stability characteristics appreciably. These changes did not significantly contribute to the casualty.
- e) The Hull: There are two primary causal factors that involve the hull.
- 1) The age of the vessel's main structural members, presence of rot, and use of materials not generally used or designed for the marine environment all likely contributed to the vessel taking on water in multiple locations leading to the progressive flooding, but the age of the vessel is the main contributor. Under normal operating conditions, both underway and at the pier, BOUNTY relied on her bilge pumps to maintain buoyancy due to the continuous ingress of water through the hull planking. In a heavy seaway the frequency and duration of bilge pump "run time" increased, because the proportional increase in water ingress as a result of the hull working. All crew testified to this fact, and BOUNTY had a history of near misses related to flooding. BOUNTY taking on water was apparently an occurrence that was accepted as the norm for wooden vessels. While it is not unusual for wooden hull vessels to make more water in a seaway, a vessel relying primarily on bilge pumps to stay afloat is a sign of more serious defects within the hull structure.
 - 2) Had the vessel been sufficiently watertight by design or retrofit, it may have survived. The historically accurate yet obsolete arrangement of a 'tween deck with transverse bulkheads that are not watertight to the weather deck impacted the vessel's inherent survivability, especially once flooding was uncontrolled. Had the vessel met the watertight integrity standards detailed by ABS Load Line Surveys, the ingress of water may have been at a rate where the installed dewatering systems may have been adequate for the weather and sea conditions leading up to the casualty.

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3. The causal factors that existed or occurred during the rescue efforts and abandoning ship are as follows:

- a) Abandoning Ship: The leading cause that contributed to the loss of Capt. [REDACTED] at sea and the death of Deckhand Christian was Capt. [REDACTED] decision to order the crew to abandon ship much too late. However, under the unique circumstances of the approaching storm center, even if the order had been given earlier, there is no guarantee that assistance would have arrived or either of them would have survived. It was fortunate that Capt. [REDACTED] recognized that the water reaching the tween deck was a critical moment, and he ordered the crew to evacuate to the weatherdeck. However, testimony from CM [REDACTED] indicates that Capt. [REDACTED] believed that the vessel was going to simply fill up and settle down into the water, and that the Capt. believed the vessel was incapable of sinking. CM [REDACTED] tried to impress upon Capt. [REDACTED] moments before the capsizing that they needed to abandon ship, but Capt. [REDACTED] refused until it was much too late. He failed to recognize the vessel's rolling in the heavy seas was producing a powerful free surface effect on the tween decks that, when combined with the vessel's low freeboard, expedited the vessel heeling over. When the vessel laid over, the crew was forced into the water in a disorganized fashion, rather than abandoning ship as part of a planned and coordinated evolution. The violent rolling continued and caused the masts and rigging to slam up and down injuring several of the crew. Any chance of an organized departure was lost, and it was every person for themselves. There was no opportunity to make sure that injured crew members were assisted, and the fatigued state of the crew hampered their ability to enter the life rafts.

It is recognized that abandoning ship into the liferafts presents a challenge even in the best of sea conditions, much less in the existing weather conditions, which proved to be extremely difficult. The fact that the crew had not drilled in months (some never) no doubt complicated matters greatly.

Captain [REDACTED] actions/and or inactions in this regard constitutes negligence.

4. There is substantial evidence that HMS BOUNTY Organization LLC. and Capt. [REDACTED], Master of the BOUNTY, and the holder of an MMC, through their actions or inactions, committed acts of negligence that contributed to the cause of this casualty and the death of one person, as well as Capt. [REDACTED] own presumed death.
5. There is no evidence that the use of dangerous drugs or alcohol contributed to this casualty, because drug testing was not conducted.
6. With the above exceptions, the investigation did not identify any inconsistencies with regards to the vessel's compliance with the regulations for recreational vessels contained in 33 CFR Parts 175 and 183.

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7. There is substantial evidence that work/rest related issues contributed to this casualty. The crew was suffering from fatigue which was born out of lack of sleep, being sea sick, and from the physical exertion of fighting to save the vessel while in extreme weather conditions for over 24 hours.

8. There is no evidence that any act of misconduct, incompetence, negligence, lack of professionalism, and/or willful violation of law committed by any officer, employee, or member of the Coast Guard contributed to this casualty.

Recommendations

Safety:

If HMS BOUNTY Organization representatives or Capt. [REDACTED] had exercised the proper responsibility, judgment and prudence expected of a professional maritime company or a merchant mariner this casualty would have been prevented. HMS BOUNTY Organization only operated one vessel, and it is not known if they plan ever to operate a vessel again. It can be argued that the simple lessons to be learned from this investigation is that Masters in command of a vessel and crew must have a profound respect for the sea and the forces of nature, and the value of a vessel pales in comparison to that of a human life. However, this casualty did provide insight to policy gaps and areas where safety recommendations would be useful as lessons learned. Recommendations to HMS BOUNTY Organization are done so in the hopes that the Tall Ships America fleet or similar entities will heed them.

1. It is recommended that the Commandant of the Coast Guard review the policy for attraction vessels and evaluate their regulatory status when traveling from port to port, and determine whether the classification of any of these vessels as recreational is appropriate. This policy should be updated accordingly.

2. It is recommended that the Commandant of the Coast Guard review the Officers Competency Certificates Convention, 1936 and the manning regulations in 46 CFR Part 15, Subpart G to determine if the term “uninspected vessel” is intended to exclude recreational vessels from the requirement for licensed mates and engineers for documented, self propelled sea going vessels over 200 gross tons.

3. It is recommended that the Commandant of the Coast Guard establish policy or provide guidance to the Officer in Charge, Marine Inspections (OCMI) on the protocol, scope, limits and or responsibilities/liabilities of conducting inspection type activities (plan review/approvals, construction/repair oversight, system installation & testing, etc.) on uninspected or recreational vessels.

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4. It is recommended that the Commandant of the Coast Guard review Navigation and Inspection Circular (NVIC) 2-00, Marine Events of National Significance (MENS), and revisit the determination to allow attraction vessels or other uninspected and recreational vessels to carry passengers for hire underway via a special permit under the cognizance of a MENS event.
5. It is recommended that the Commandant of the Coast Guard revise Navigation and Inspection Circular (NVIC) 7-94, Guidance on the Passenger Vessel Safety Act of 1993, and address the use of volunteers on attraction and sail training vessels while underway.
6. It is recommended that HMS BOUNTY Organization establish organizational policy that defines how the organization manages risk, establishes effective communication throughout the organization, establishes a process for identifying and correcting defects, sets clear safety and environmental standards, and implements a continual improvement process.
7. It is recommended that HMS BOUNTY Organization establish a policy that dictates vessel operational parameters based on weather, sea state or destination and it requires consensus between qualified persons afloat and ashore. "Go/no go" decisions should be based on consideration of vital system functionality (such as bilge systems), crew strength and fatigue.
8. It is recommended that HMS BOUNTY Organization establish organizational policy and requirements for the hiring of a professional engineer, and provide him/her clear task direction on expected duties and performance.
9. It is recommended that the Commandant of the Coast Guard provide a copy of this report to the following entities:
 - a. Area, District, and Sector Commanders;
 - b. Estates of the deceased;
 - c. Parties in interest;
 - d. Tall Ships America;
 - e. The National Transportation Safety Board;
 - f. All Federal and State Maritime Academies;
 - g. Institutes where approved Basic Safety Training is offered.

Enforcement:

1. There is no recommended enforcement action at this time.

Other:

1. The men and women from U.S. Coast Guard Sector North Carolina, Air Station Elizabeth City, USCGC ELM, and the Fifth District should be commended for their efforts during the

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BOUNTY Search and Rescue efforts from October 29 – November 1, 2012. Their actions went above and beyond the call of duty.

2. The Investigations National Center of Expertise (INCOE) was established in 2009 as a result of the Commandant of the Coast Guard's Marine Safety Performance Plan. The INCOE's mission is to support the execution of the Coast Guard's Investigation Program. Their support was integral into the success of this investigation.

3. [REDACTED] is commended for coming forward regarding the condition of BOUNTY's hull. Multiple interviews were conducted with the BOUNTY Organization, the crew and ship yard personnel, and no one acknowledged the decay until he did.

4. This casualty investigation should be closed.

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