

U.S. Department of
Homeland Security

United States
Coast Guard



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Coast Guard Pacific Area

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5830

MAR 06 2014

ACTION OF THE CONVENING AUTHORITY

The report of the Major Incident Investigation Board, conducted under the provisions of the Coast Guard Administrative Investigations Manual, as amended by ALCOAST 352/13, that investigated the 11 November 2013 mishap onboard the Coast Guard Cutter WAESCHE (WMSL-751) near Amak Island, Alaska, complies with applicable regulatory guidance and on that basis is approved.

As a result of this tragic mishap, the Coast Guard has directed corrective safety actions for the entire WMSL fleet to help ensure the safety of our men and women at sea.

A handwritten signature in blue ink, appearing to read "P.F. Zukunft".

Vice Admiral Paul F. Zukunft
Commander, Coast Guard Pacific Area



5830
17 February 2014

MEMORANDUM

FEARS, DOUGLAS, USCGC HAMILTON (WMSL 753) PROSPECTIVE COMMANDING OFFICER
M.1044327526

From: D. M. Fears, CAPT
Board President

To: P. F. Zukunft, VADM
Commander, Pacific Area

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD REPORT REGARDING THE
CIRCUMSTANCES OF THE CASUALTY TO CGC WAESCHE'S SRP 24104 &
INJURIES TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

Ref: (a) Your Memo 5830 of 18 Nov 2013
(b) COMDT COGARD Washington DC 261533Z Aug 13/ALCOAST 352
(c) Administrative Investigations Manual, COMDTINST M5830.1A

1. Executive Summary:

On 10 November 2013, Coast Guard District 17 informed the Coast Guard Cutter WAESCHE (WAESCHE) that a fishing vessel (F/V) was disabled and adrift approximately 37 nautical miles (NM) northeast of Cold Bay, Alaska, and that a commercial tug was en route to assist the vessel. At 5:00 a.m. local time on the morning of 11 November 13, WAESCHE was transiting the Unimak Pass, approximately 160 NM from the F/V, on the way to a port call in Dutch Harbor, Alaska. At that time, District 17 provided an update to WAESCHE that the tug was forced to return to port, and the F/V was now approximately eight NM from Amak Island and drifting toward land. As a result, District 17 directed the cutter to proceed at best, safe speed to provide search and rescue (SAR) assistance to the disabled F/V, and, if possible, tow it to Dutch Harbor.



WAESCHE initially estimated reaching the F/V by 4:00 p.m. that day, and District 17 provided an update that the vessel was now anchored 8.5 NM from land. The weather improved throughout the day, allowing WAESCHE to increase speed and arrive on scene at 2:30 p.m. Sunset was 6:10 p.m. that day. Dependent on its assessment of on-scene conditions upon arrival, WAESCHE reported that it could conduct the tow and, as requested by District 17, would first remove non-essential personnel from the F/V using one of the cutter's small boats. The F/V Master determined which of his personnel were not essential to safely towing the F/V. Throughout the morning and early afternoon, the ship began preparations to conduct the small boat and towing evolutions for the SAR case.

WAESCHE arrived on scene with the anchored, disabled F/V and launched its small boat, Short Range Prosecutor (SRP) CG-24104 ("mishap SRP"), from its stern notch (see Figure 1) at approximately 2:20 p.m. The cutter planned to ferry fourteen non-essential persons from the F/V back to the WAESCHE in three trips using the mishap SRP. At the time of the launch of the

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD
REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

5830
17 Feb 2014

mishap SRP, the dominant swell as recorded in the ship's weather observation and operational summary sheet, was approximately ten to twelve feet out of the north, north-west. However, with multiple swells the seas were confused (coming from multiple directions). Wind speed was 20 knots (kts) out of the northwest. Upon reaching the F/V, the mishap SRP disembarked one WAESCHE crewmember to assist and eventually brought five civilian fishermen aboard for transfer back to WAESCHE. WAESCHE's boat launch and recovery course and speed were deliberately selected to ensure optimum conditions for the evolution.

At approximately 3:15 p.m., the mishap SRP returned to WAESCHE with eight persons on board. The mishap SRP crew included the Coxswain and the Boat Engineer, who were seated just behind the center console and the mishap Victim, who was seated just forward of the center console in order to assist with securing the capture line on the horn of the mishap SRP (see Figure 1). The mishap SRP also had five civilian fishermen embarked from the SAR F/V who were seated in the aft section of the boat. Upon return, the mishap SRP was positioned approximately 50 to 100 yards behind WAESCHE, and after receiving a hand signal authorizing entry, the Coxswain assessed the conditions and commenced his approach into the stern notch. Shortly after the mishap SRP entered, a large swell surged into the rear of the notch lifting the stern of the small boat causing the bow to go underneath the capture net. (See Figure 2.) As a result, the capture net came over the top of the bow of the boat and forcefully trapped the mishap Victim against the center console. The mishap Victim recovered but within a matter of seconds, another more powerful swell surged in, and the capture net slammed the mishap Victim back into the center console again, this time causing serious injury to the boat crewman and damage to the mishap SRP.

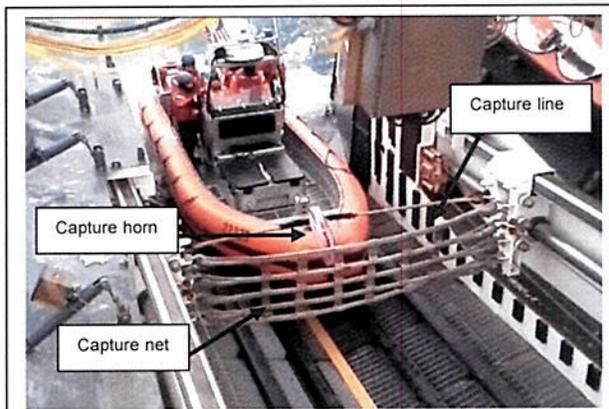


Figure 1: OTH Mark IV (CG-23225), 23 November 13 - Small boat recovery operation in stern notch of WAESCHE with stern doors open. Capture net is located forward of the bow, and the capture line is properly hooked on the capture horn. During the evolution pictured above, a crewmember needed to come forward to hook the capture line on the capture horn of the OTH. (Exhibit 37.)

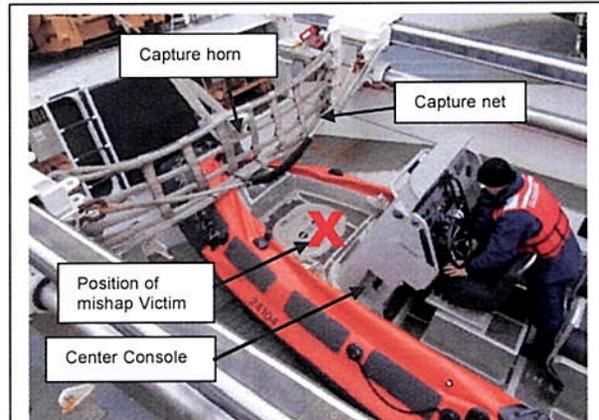


Figure 2: Mishap SRP (CG-24104) improperly secured in the notch. Specifically, the capture net is supposed to remain forward of the bow horn to arrest the forward movement of the small boat and to prevent the capture line from hitting the console or crew. Note the slack in the capture line. (Exhibit 37.) At the time of the incident, the mishap Victim was on the bow (marked with a red X above) kneeling down, facing forward with his back to the center console of the SRP

The mishap Victim was the single person significantly injured during the incident. WAESCHE's battle dress station (BDS) medical team responded immediately after the mishap and began treatment. WAESCHE's Commanding Officer requested an immediate medical evacuation (MEDEVAC) by Coast Guard aircraft positioned in Cold Bay, Alaska. An MH-65

helicopter arrived at WAESCHE sixty-five minutes after the mishap and transported the Victim to Cold Bay where he was further airlifted to Anchorage, Alaska for medical care.

I found by clear and convincing evidence that the cause of the mishap was two-pronged. First, the mishap Victim was positioned forward of the center console on the mishap SRP during the incident. Second, the bow of the mishap SRP went under the capture net allowing the capture net to forcefully pin the mishap Victim against the center console. I also found by a preponderance of the evidence that the following factors substantially contributed to the mishap: First, the capture line (known also as the hogging line) did not function as designed. The capture line is designed to capture the small boat capture horn without human assistance. WAESCHE's capture line does not capture the small boat capture horn on most evolutions, so WAESCHE overcame the functional deficiency of the capture line by placing a boat crewman forward of the boat's center console during the notching evolution. Second, given the prevailing weather in the District 17 area of responsibility (AOR), all key WAESCHE boat operations personnel became accustomed to operating the small boats in this dynamic weather environment. After approximately three months of operating in the District 17 AOR, and 130 safe boat launch and recovery evolutions from the stern notch, the mishap evolution planning that led to the event revealed the risks associated with the evolution complexity and the weather/environment, but did not strike any of the key WAESCHE personnel as extreme to the point of being unsafe, despite what were ultimately on-scene conditions in excess of published, safe operating limits of the mishap SRP. The risks were appropriately noted and discussed in the small boat evolution GAR (a "Green Amber Red" risk assessment); all small boat, boat deck and bridge personnel were acutely aware of and paid close attention to their environmental surroundings. WAESCHE personnel continued to actively monitor and assess conditions, and made periodic adjustments to the ship's course and speed. Despite the planning, risk assessment, active monitoring of on scene conditions and adjustments to ship course and speed to optimize a safe recovery, the mishap occurred.

2. Preliminary Statement:

a. **Authority and Purpose:** In reference (a), VADM Paul F. Zukunft convened this MII into the circumstances surrounding the casualty to WAESCHE's SRP 24104 and resulting injuries to the small boat crewmember on 11 November 13. (Exhibit 1.) I was designated Board President.

b. Board Composition:

- | | |
|------------------------------------|------------------------|
| (1) CAPT Douglas M. Fears, USCG | Board President |
| (2) LCDR Robert E. Stiles, USCG | Legal Advisor |
| (3) LCDR Todd E. Raybon, USCG | Subject Matter Expert |
| (4) BMC Justin S. Evangelist, USCG | Subject Matter Expert |
| (5) LTJG Roger C. Nayden, USCG | Recorder/Admin Support |

c. **Conduct of the Board:** The MII Board was convened on 18 November 13. Arrangements were made for the MII members to embark WAESCHE on 23 November 13 in Dutch Harbor, Alaska and sail with the cutter to homeport in Alameda, California. (Exhibit 1.)

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD
REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

5830
17 Feb 2014

d. Coordination: The Mishap Analysis Board (MAB) members departed prior to the arrival of the MII Board members. However, the MAB members debriefed WAESCHE's Commanding Officer before leaving, and they provided substantial non-privileged documentation and other evidence for the use of the MII Board. WAESCHE's Commanding Officer and crew provided unlimited access to personnel, equipment, facilities, and information to this team to enable the investigation.

e. Terminology: Due to the nature of the subject matter of this investigation, there is frequent use of uncommon military, nautical, and technical terminology. Therefore I have included a Table of Abbreviations, Acronyms, and Uncommon Terms as Enclosure (7) to this report.

f. Report History: This report was initially submitted to the Convening Authority on 01 February 2014. In accordance with reference (b), the Convening Authority returned the report with a request for further findings. This report was duly amended to respond to the additional questions posed by the Convening Authority.

3. Findings of Fact:

a. Accident Summary:

Pursuant to tasking from District 17, at 2:20 p.m. on 11 November 13, WAESCHE arrived on scene with a disabled F/V anchored approximately 8.5 miles from shore near Amak Island, Alaska. In preparations to tow the vessel back to Dutch Harbor, Alaska, WAESCHE launched the mishap SRP from its stern notch. The cutter planned to ferry fourteen individuals from the F/V back to the WAESCHE in three trips using the small boat. The sea state was confused with a dominant swell of approximately ten to twelve feet out of the north, north-west; the addition of wind-driven seas contributed to the maximum sea state; winds were 20+ kts out of the northwest.

At approximately 3:15 p.m., the mishap SRP returned to WAESCHE with eight people embarked, including the Coxswain, the Boat Engineer, the mishap Victim (seated forward of the center console) and five civilians from the SAR F/V. The mishap SRP lined up astern of WAESCHE and began its recovery approach. Just as the mishap SRP entered the notch, a large swell surged into the rear of the vessel, lifting the stern of the boat and causing the bow of the mishap SRP to go underneath the capture net. (See Figure 2 above.) As a result, the capture net came over the top of the bow and pinned the mishap Victim against the center console. The mishap Victim quickly recovered and gave a "thumbs up" to signal that he was okay, but a few seconds later, a larger swell surged in, and the capture net and line slammed the mishap Victim back into the center console again, this time causing him a serious head injury and loss of consciousness.

b. Background:

(1) Coast Guard Pacific Area

Located in Alameda, California, Coast Guard Pacific Area (PACAREA) is the regional command element and force provider for maritime safety, security, and stewardship in the Pacific. PACAREA's Area of Responsibility encompasses six of the seven continents, 71 countries, and more than 74 million square miles of ocean -- from the



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REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

5830
17 Feb 2014

U.S. Western States to Asia, and from the Arctic to Antarctica. (Exhibit 2.)

The men and women of PACAREA conduct a vast array of daily operations in support of the Coast Guard's statutory missions. PACAREA units can be found conducting search and rescue on the high seas, patrolling the Eastern Pacific to combat illicit smuggling, enforcing fisheries regulations in the U.S. Exclusive Economic Zones, and protecting our nation's critical infrastructure. (Exhibit 2.)

(2) Coast Guard District 17

Located in Juneau, Alaska, Coast Guard District 17's primary mission is to serve and safeguard the public, protect the environment and its resources, and defend the nation's interests in the Alaska maritime region. PACAREA is the parent command of District 17. (Exhibit 3.)



(3) Coast Guard Cutter WAESCHE

Home ported in Alameda, California, Coast Guard Cutter WAESCHE is a 418 foot National Security Cutter. WAESCHE was commissioned in May 2010. (Exhibit 4.) Her primary missions include Law Enforcement (Counter Narcotics and Living Marine Resources), Search and Rescue, Defense Operations and Homeland Security. PACAREA is the parent command of WAESCHE. PACAREA was also in Operational Control (OPCON) and Administrative Control (ADCON) of WAESCHE. In this case, District 17 was in Tactical Control (TACON) of WAESCHE. (Exhibit 4.)



c. Sequence of Events

(1) Mission

On 10 November 13, WAESCHE was notified by District 17 about a disabled F/V with 22 persons on board. (Exhibits 5-7.) The F/V had lost propulsion and a commercial towing vessel was dispatched to assist. (Exhibits 5-7.) At that time, the information from District 17 was advisory in nature, and WAESCHE was told to continue with its plan to disembark its helicopter the following day and proceed to Dutch Harbor for a planned port call. (Exhibits 5-7.)

Early on 11 November 13, District 17 contacted WAESCHE to inform the ship that the commercial towing vessel had experienced a casualty and would be unable to assist the disabled F/V. (Exhibits 5-8.) The new report now had the F/V approximately 8.5 NM from land and drifting towards shore at a speed of 1.5 knots. (Exhibit 8.) District 17 then directed WAESCHE to make best, safe speed to the F/V which was approximately 160 miles away from the cutter's position and conduct the SAR response. (Exhibits 5-8.) At the reported drift rate, WAESCHE would not reach the F/V before it would run aground. (Exhibit 7.) However, the drift rate of the vessel was continually updated that morning, and the F/V was eventually able to anchor successfully while drifting. (Exhibits 5-8.) While the F/V was anchored, it was not clear if or for how long the anchor would continue to hold if weather worsened over time, so WAESCHE continued to prepare for the worst case scenario. (Exhibits 5-8.) The sea conditions at the time were rough, and based on the weather predictions the seas were expected to abate throughout the day and while transiting east. (Exhibits 5-9.)

After sunrise on 11 November 13, improving weather allowed WAESCHE to increase speed and advance the arrival time from 4:00 p.m. to about 2:30 p.m. (Exhibits 5-8.) WAESCHE's Commanding Officer wanted to arrive as early as possible in order to maximize daylight throughout the operation; sunset was forecast for 6:10 p.m. that day. (Exhibits 5-8, & 23.) Meanwhile, WAESCHE began preparations for the SAR operation: a brief was held with First Lieutenant, Chief Boatswain's Mate, department heads, Executive Officer, and Commanding Officer to develop detailed questions for the F/V master prior to conducting a passenger transfer or tow. (Exhibits 5-8 & 10-19.) The answers would help WAESCHE determine the best method to conduct the SAR response. (Exhibits 5 & 6.)

After arrival on scene, WAESCHE planned to conduct a situational assessment. (Exhibits 5-7.) If conditions allowed, the plan was to transfer all non-essential crew members from the disabled F/V via WAESCHE's mishap SRP, which would require three trips. (Exhibit 5.) District 17 requested the removal of non-essential personnel from the F/V to mitigate future risk in the event the F/V broke free from its anchored position and ran aground or began taking on water once it was being towed. (Exhibits 5-8.) On the first trip, the mishap SRP would disembark a WAESCHE crewmember aboard the F/V with several sets of personal protective equipment (PPE), including Anti-Exposure Coveralls for the F/V crew members. (Exhibits 5-7, 10, 15, & 16.) A WAESCHE crew member would remain on board in order to assist the F/V crew with donning the PPE, to brief the F/V personnel on the planned transfer, and to assist with setting up the towing bridle. (Exhibits 5-7, 10, 15, & 16.) The mishap SRP would then embark the F/V non-essential personnel and deliver them back to WAESCHE. (Exhibits 5-7, 10, 15, & 16.) The ship planned to conduct three personnel transfers that afternoon using the mishap SRP: five civilian personnel on the first trip, five on the second, and four on the final trip. (Exhibit 7.) WAESCHE also planned to use the small boat to transfer the tow line messenger to the F/V. (Exhibit 7 & 18.) However, if necessary, WAESCHE was also prepared to use a line throwing gun to facilitate the transfer of the messenger to the F/V. (Exhibit 7.) Once a tow was successfully initiated, WAESCHE planned to take the F/V in tow back to Dutch Harbor. (Exhibit 5-8.)

The F/V was a 167 foot vessel and displaced 916 gross tons. (Exhibit 40.) WAESCHE has a towing capacity of 4,000 long tons; the F/V was well within WAESCHE's capability to tow. (Exhibit 30.) Based on a self-reported condition, the F/V was considered seaworthy despite its loss of propulsion. (Exhibit 5.) After attempting to anchor while drifting for several hours, the F/V reported being anchored with six shots (540 feet) of anchor chain in approximately 130 feet of water with a rocky bottom. (Exhibits 5 & 6.) While the F/V was anchored, the scope (the ratio of the length of anchor chain to the depth of water) of chain normally considered for reliable anchoring is five-to-seven times the depth of water. In this case, the F/V used four times the depth of water for their anchor chain scope. While the anchor held the F/V in position at the time, it was unknown how long the anchor would hold. (Exhibit 5.)

(2) Planning & Preparation

WAESCHE conducted a weather brief, tow brief, and boat brief in succession starting at 1:00 p.m. on the mess deck of the cutter. (Exhibits 5-8 & 10-19.) The weather brief was provided by the embarked naval weather specialist, who predicted the following conditions: mostly cloudy with patchy mist and light rain; visibility ranging from unrestricted to 3 to 5 NM; air temperatures 35 to 45 degrees Fahrenheit; and winds 18 to 23 kts, decreasing to 8 to 13 kts. (Exhibit 9.) The tow brief was conducted by the First Lieutenant, and the small boat Coxswain conducted the small boat brief. (Exhibits 5-9 & 10-19.) Earlier in the day, Operations Officer and Commanding Officer selected WAESCHE's most experienced and skilled Coxswain for the evolution. (Exhibits 5-7.) The briefs were widely attended by participants in the planned

operations that day aboard WASECHE, including Commanding Officer, Executive Officer, Operations Officer, Officer-of-the-Deck, and Conning Officer in addition to appropriate members involved in the planned evolutions. (Exhibits 5-9 & 10-19.)

The GAR risk assessment score for the tow brief was 32 out of 70 based on seven distinct criteria, with highs in environment (six on a scale of ten) and evolution complexity (eight of ten). (Exhibits 7, 10, 15, 16 & 20.) A score of 32 out of 70 is considered a "low" Amber risk assessment.¹ The following concerns were voiced and discussed during the risk assessment: towing was not a commonly conducted evolution on WAESCHE; the F/V would not have concurrent set and drift with WAESCHE because it was at anchor; and environmental conditions were not ideal. (Exhibits 7, 16, 18, & 19.) The possibility of using a helicopter to perform the personnel transfer was also raised, and it was noted that District 17 had two helicopters located in Cold Bay. (Exhibits 5-6.) However, based on the risk assessment, the Commanding Officer supported the plan to remove the non-essential personnel by boat. (Exhibit 5.)

The boat brief GAR score was 22 out of 60 based on six distinct criteria, with high scores in environment (seven of ten) and event complexity (five of ten). (Exhibits 7 & 21.) A score of 22 is considered a "high" Green risk assessment. (Exhibits 19 & 21.) The launch and recovery of the mishap SRP from WAESCHE were not considered significant risks by crewmembers attending the brief. (Exhibits 5, 10, 15, 18, 19, & 21.) WAESCHE had operated in the District 17 AOR for nearly three months by the time of this operation. They had executed 130 safe boat launch and recovery evolutions from the stern notch of the ship, including four operations within the previous five weeks which involved a sea state exceeding the parameters of the mishap SRP, according to WAESCHE's logs. (Exhibits 5, 6, 11, & 22; Enclosure (4).) For WAESCHE's crew, utilizing the stern notch for small boat operations in these circumstances was not unusual. (Exhibits 5, 10, 15, 18, 19, & 21.)

The primary risk addressed during the GAR discussion was the personnel transfer of civilians off of the F/V and onto the mishap SRP. (Exhibits 5, 10, 15, 19, & 21.) WAESCHE planned to transfer non-essential personnel from the F/V in three groups (two groups of five, one group of four). (Exhibit 7.) There were two civilians identified with slight injuries, one with a hurt leg and one with a hurt finger. (Exhibits 5, 6, 7, 10, & 11.) However, both were ambulatory and would be transferred as part of the first group. (Exhibit 7.)

As with most of the other small boat operations during WAESCHE's District 17 patrol, the plan was to launch the small boat from the stern notch of the cutter. (Exhibit 7.) WAESCHE's command and crew generally accept the use of the stern notch as the safer mode of launch and recovery compared with the alternative, starboard side, single point davit. (Exhibits 5-7, 10, 11, & 22.) The ship's single-point davit had an unreliable constant-tension function (making heavy weather operation comparatively riskier), requires more people to operate, and requires use of the Jacob's ladder to transfer excess passengers. (Exhibits 5-6 & 10-11; Enclosure (7).) The use of a Jacob's ladder is also considered more difficult and less safe on a WMSL class ship due to the tumblehome hull profile. (Exhibits 5-6 & 7; Enclosure (7).) During the small boat brief, Commanding Officer stated that if the evolution was deemed to be unsafe, they would postpone the passenger transfer until the morning, or the tow could also be

¹ Under the GAR risk assessment model, participants grade aspects of operation based on specified categories, i.e., supervision, planning, team selection, fitness, environment, event complexity, and (in some instances) equipment. Each category is rated from 1 to 10, a 10 being most hazardous, and the scores are then added. If the total risk falls in the green zone, risk is graded as low. If the risk falls in the amber zone, risk is moderate and procedures should be adopted to minimize risk. If the total risk reaches the red zone, measures should be initiated to reduce the risk prior to starting the event or evolution. (Enclosure (1).)

accomplished with a line throwing gun if the cutter was unable to launch the small boat. (Exhibit 5 & 7.)

After the briefings were completed, WAESCHE arrived on-scene with the F/V. (Exhibits 7 & 23.) At that time, the Operations Officer briefed the conditions and cutter status to D17 and received concurrence to proceed. (Exhibit 7.)

Boat deck positions were not assigned prior to setting the boat detail; qualified members knew what roles they generally took and all were filled at the time of the evolution via a volunteer process overseen by Chief Boatswain's Mate. (Exhibits 10-14.) Members of the boat detail were taken from the towing crew since it takes only two members to launch the small boat, in addition to the safety officers. (Exhibits 10-14.) Both the Chief Boatswain's Mate and First Lieutenant served as safety officers for the towing and small boat launch and recovery operations. (Exhibits 10, 11, & 18.) A First Class Boatswain's Mate served as Deck-In-Charge, providing all boat deck launch and recovery directions. (Exhibits 12-13.)

The Conning Officer and other bridge positions were predetermined in advance of the operations. (Exhibit 18.) Communications between the bridge and the fantail occurred via the ship's handheld "HYDRA" VHF Radios and involve talking with the Deck Safety Officer, usually First Lieutenant. (Exhibit 10, 12, 18, & 24.) The bridge Officer-of-the-Deck talks with the Deck-In-Charge, and the Deck-In-Charge reports when the small boat deck is manned and ready. (Exhibit 11 & 18.) The deck indicates readiness to open the stern doors before the crew is in the boat, ready to launch, permission to launch, and away. (Exhibit 18.) The communications are not scripted, but typically there is conversation between the bridge and the boat deck about whether the ship's course is good for launching the small boat. (Exhibit 18.) Communications with the small boat are maintained by personnel in the ship's combat information center (CIC) (Exhibit 18.), and the bridge monitors those communications as well. The bridge communicates with the small boat through CIC. (Exhibit 18.)

The Cutter Boat Operations Bill states in part that the Commanding Officer may need to make a launch/no launch comprehensive assessment based on, "urgency of mission, wave shape and period, seas, wind, visibility, temperature, experience and proficiency of boat crew and launch/recovery detail, fatigue, duration of mission/transit distance, improving vs. deteriorating conditions, etc" that should be considered when operating boats beyond the limits defined in policy. (Enclosure (3).) Based on WAESCHE's logs, the mishap SRP was operating beyond its sea/swell height parameters; however the additional indicators were part of the Commanding Officer's comprehensive assessment to launch the mishap SRP in the final moments before directing the boat launch. (Exhibits 5-8, 10-12, 17-19, & 24.)

(3) Accident

After the boat brief, the mishap Coxswain began his preparations and donned his dry suit. He did not feel rushed and took his time getting ready for the mission. (Exhibit 15.) However, Deck-In-Charge received multiple communications from the bridge requesting the readiness status of the mishap SRP crew. (Exhibit 12.) The Deck-In-Charge perceived that the bridge was anxious to get the operation started in order to maximize daylight. (Exhibit 12.) The ship piped the Coxswain to report to the fantail, and he arrived at the stern notch where his crew was standing by ready in the small boat. (Exhibit 15.) All members of the mishap SRP crew were prepared and wearing appropriate PPE, including Special Operations Headset Adaptable Helmets (SOHAH). (Exhibits 15, 21, & 42; Enclosure (7) & (8).) The fantail relayed recommendations

for a boat launch course to the bridge, and the Coxswain got the mishap SRP underway using normal launching procedures. (Exhibit 10 & 19.)

After the mishap SRP launched, WAESCHE altered its course in order to station-keep and observe the small boat and F/V operations. (Exhibits 10, 18, & 19.) The station-keeping course allowed swells to surge into the stern notch, and the fantail requested to close the ship's stern doors. (Exhibits 11, 12, 17, & 24.) The Officer-of-the-Deck and Deck-In-Charge discussed expediting the evolutions in order to preserve as much daylight as possible, and the decision was made by the Commanding Officer to keep the stern doors open during the operation. (Exhibits 10, 11, 19, & 24.) The stern doors on WAESCHE normally take approximately two to three minutes to close or open. (Exhibit 17.) The bridge personnel also observed the swells and the Officer-of-the-Deck ordered boat deck personnel inside the skin of the ship while the mishap SRP was away. (Exhibit 19.)

The Coxswain brought the mishap SRP alongside the disabled F/V. (Exhibit 15-16.) He observed significant sea swells but also noticed the swells had a long-period between them, which made them easier than short-period swells to negotiate. (Exhibit 15.) The Coxswain developed a plan for the personnel transfer from the port side of the F/V and received permission from WAESCHE to proceed with the plan. (Exhibit 15.) After embarking a crewmember onto the F/V, the Coxswain recalled it took about 25 minutes to start the transfer of passengers from the F/V to the mishap SRP. (Exhibit 15.) While waiting, the Coxswain observed an increase in wind speed, and he called back to the cutter stating that he wanted to reassess weather conditions upon return to WAESCHE. (Exhibits 5, 7, 15, & 19.) Once the five civilian passengers were embarked in the mishap SRP, the Coxswain navigated back to WAESCHE. (Exhibits 15 & 16.)

While the mishap SRP was alongside of the F/V, the Conning Officer began maneuvering the ship to the south of the F/V's position in order to provide the mishap SRP crew with a shorter distance, down swell ride upon return. (Exhibit 18.) The Conning Officer reported that he did not see any appreciable difference in the seas or weather throughout the operation, and the primary and secondary swells were the predominant factors in the chosen recovery course. (Exhibit 18.) The Conning Officer maneuvered WAESCHE back to the same heading used during the launch of the mishap SRP, and the ship was making five to six knots of speed, which was deemed to be the optimal course and speed for boat launch and recovery operations by the WAESCHE's leadership. (Exhibit 18.) Once the Conning Officer maneuvered to the recovery course, the First Lieutenant confirmed that the course was acceptable with Deck-In-Charge and Deck Safety. (Exhibits 7, 10, & 11.) The First Lieutenant generally gives a recommended course correction if the ship's course does not appear to be appropriate for a given small boat operation. (Exhibit 18.)

During the transit back to WAESCHE, the mishap Coxswain noted additional confused seas while crossing the wake on the starboard side of the cutter. (Exhibit 15.) The Coxswain initially lined up the mishap SRP about 50 to 100 yards aft of WAESCHE. (Exhibits 12, 15, & 16.) While positioned behind the cutter, he observed a large swell surge into the stern of the ship. (Exhibit 15.) About 30 seconds later he received permission to enter the notch and began his approach. (Exhibit 15.) During the recovery phase, the mishap Victim was positioned on the bow of the mishap SRP, kneeling down just forward of the center console. (See Figure 2 above; Exhibits 5-7 & 10-16.) The mishap Victim was positioned there in order to assist with securing the capture line over the bow capture horn on the mishap SRP (see Figure 4 below). (Exhibits 10, 12, & 15.) WAESCHE informally developed the practice of placing a crewman up front on small boats during notch recovery due to frequent problems with slippage of the cutter's capture line system (discussed in depth in section 3.e.(2) below). (Exhibits 5, 12-13, & 15.) During the recovery phase, no one on the fantail requested or proposed a course change to the bridge that

would produce better conditions. (Exhibit 18.) It is important to note that the fantail is not required by Coast Guard policy to make course change proposals; however, it is common practice for the fantail to make recommendations to the bridge if they think a course or speed change by the ship would improve boat launch or recovery conditions. By all accounts, WAESCHE's course and speed were considered optimal in the prevailing conditions. (Exhibit 18.)

As the Coxswain maneuvered the mishap SRP into the notch, the boat surged as it was pushed forward by a swell. (Exhibits 10-16.) The Coxswain felt the stern rise up and he "dropped the bucket" or placed the mishap SRP jet propulsion in reverse. (Exhibits 15-16.) However, the swell caused the stern to rise and the bow to drop down. (Exhibits 10-16.) As a result, the capture net and line slid over the bow horn. The net and line then struck the mishap Victim frontally but he was able to recover. (Exhibits 15-16.) Within a matter of seconds another larger swell surged into the notch pushing the mishap SRP forward again but this time with much greater force. (Exhibits 15-16.) As the mishap SRP surged forward, the net and capture line slammed into the upper body, face and head of the mishap Victim, pinning him against the center console. (Exhibits 12, 15, & 16.) This time the mishap Victim's body went limp and he collapsed to the deck. The Coxswain immediately switched focus, left the controls, and began moving the injured crewmember to safety away from the bow. (Exhibit 15 & 10-12.)

Immediately after the mishap, the Conning Officer observed that a tertiary swell appeared to be coming out of the northeast. (Exhibit 18.) The fantail radioed to the bridge that ship needed to change course and come up in speed. (Exhibits 5, 6, & 18.) The Conning Officer immediately ordered the course change and came about approximately 30 or more degrees to starboard and increased speed to further limit the seas coming into the notch. (Exhibit 18.)

The stern door operator was unable to immediately close the doors because the mishap SRP had not fully entered the notch. (Exhibits 13 & 17.) Several more swells surged into the notch in quick succession. (Exhibits 11, 12, & 17.) When the carriage winch was three quarters of the way up, the controls stalled, and the carriage needed to be stopped and started again. (Exhibit 13.) The Fantail Carriage Operator had performed this function eight to ten times previously, and he noted that this was the first time that he had needed to reset the carriage assembly. (Exhibit 13.) Once the carriage pulled the mishap SRP forward of the notch threshold, the stern doors were energized and began closing. (Exhibit 13.)

(4) Response Actions

Within moments after the mishap, members of the WAESCHE battle dress station (BDS) medical detail responded to provide the mishap Victim with medical support. (Exhibit 25.) The BDS team included, among others, three trained emergency medical technicians (EMT). (Exhibit 25.) One of the BDS members, a First Class Maritime Enforcement Specialist (ME1), was present on the fantail during portions of the operations that day and was nearby when he heard yelling from the fantail. (Exhibit 25.) The ME1 immediately donned a personal flotation device (PFD) realizing he would need to get to the boat deck to assist. (Exhibit 25.) At that point, the stern doors were still open and he stood close by until the seas were favorable enough for him to move down. (Exhibit 25.) When the boat was steady enough, the ME1 moved down to the small boat to assess the mishap Victim. (Exhibit 25.) He observed significant injuries and began to provide medical support. (Exhibit 25.) Another EMT trained BDS member also arrived and began to assist the ME1 with medical care. (Exhibit 25.) A stretcher was provided to the BDS members and the mishap Victim was transferred from the boat deck to the BDS station located

on WAESCHE's mess deck. (Exhibit 25.) The BDS team observed no other significant injuries to the individuals on board the mishap SRP. (Exhibits 5 & 25.)

The cutter contacted District 17 to request a MEDEVAC helicopter. (Exhibits 5-7, 10, 18, & 19.) District 17 had two helicopters based at Cold Bay and launched an MH-65 helicopter to airlift WAESCHE's injured crewmember. (Exhibits 5-7.) Once the helicopter was close, BDS started the transport of the mishap Victim to the flight deck. (Exhibit 25.) Once BDS reached the hangar, they performed another set of vitals. (Exhibit 25.) The helicopter arrived at the cutter at approximately 4:25 p.m., approximately sixty-five minutes after the mishap. (Exhibits 23 & 25.)

Once on scene, the MH-65 helicopter conducted a basket hoist of the injured crewmember from the flight deck. (Exhibits 5 & 23.) The helicopter then returned to Cold Bay where the patient was transferred to a MEDEVAC flight and flown to Anchorage. (Exhibits 7 & 26.) Despite the tragic outcome, the mishap Victim's treating doctors noted that the excellent initial care the Victim received from the BDS team played a significant role in keeping the patient stable and offered him the very best possible chance of surviving his serious head trauma. (Exhibit 7.)

The following morning, an MH-60 Coast Guard helicopter removed the remaining non-essential personnel from the F/V, then picked up the five F/V crewmembers from WAESCHE, and flew them all to Cold Bay. (Exhibit 5.) The WAESCHE then took the F/V in tow and had an uneventful transit back to Dutch Harbor. (Exhibit 5.)

The mishap Victim remained in intensive care for several weeks after the incident. (Exhibit 43.) Although he was wearing a helmet at the time of the incident, the trauma to his head was of such severity that he succumbed to his injuries on 18 December 2013. (Exhibit 43.)

d. Maintenance:

WAESCHE's stern boat handling and stowage, boat capture, winch, and gantry system underwent a System Inspection and Operational Test on 14 May 2013 as set forth in Maintenance Procedure Cards (MPCs) D-A-Z3H2 and D-S-Z09N. (Exhibit 27.) No discrepancies or corrective maintenance actions were documented for the capture line or net. (Exhibit 27.) However, a physical inspection or measurement of the capture net and capture line is not required in the MPC. (Exhibit 27.) Additionally, the operational test of the boat recovery system does not include evaluating an actual boat recovery; it just demonstrates the operation of the carriage assembly controllers and winches. (Exhibit 27.) Thus, proper functionality of the capture line to automatically capture the boat is not evaluated as part of the MPCs. (Exhibit 27.)

The mishap SRP was partly mission capable due to a RADAR dome casualty at the time of the mishap evolution. The RADAR dome casualty did not contribute the mishap. (Exhibit 28.)

e. Vessel Systems:

(1) Short Range Prosecutor (SRP) (CG-24104)

The H770 DJ SRP, manufactured by Zodiac of North America, is a 24ft (7m) rigid-hull inflatable designed to be launched from cutters, at speed, from a stern launching ramp. (Exhibit 29.) The SRP is powered by water-jets, for intercepting and boarding suspect vessels. It mounts a RADAR and special shock-proof seats, and can travel up to 30 kts. (Exhibit 29.)

A detailed description of the configuration and operation of the SRP is contained in the Owner's Manual provided as USCG WMSL TP-6201. (Exhibit 29.) Post-mishap damage to the mishap SRP is illustrated in Figures (3-A) through (3-C). The sponsons were deflated (see Figure 3-A) under pressure from the capture net as the net slid over the bow and the center console was sheared off its foundation when the capture line and net contacted the console.



Figure 3-A: Mishap SRP seated in stern notch. Deflated sponsons, damage to the deck, and center console are visible. (Exhibit 37.)



Figure 3-B: Base of center console of Mishap SRP torn approximately 6 inches from the deck. (Exhibit 37.)



Figure 3-C: Mishap SRP. Additional imagery of deck damage. (Exhibit 37.)

In accordance with WAESCHE's Boat Navigational Standards published as Enclosure (9) to WAESINST 3530.2E, the "Maximum Sea State for CB-OTH and SRP while transiting is eight feet." (Enclosure (2).) Similarly, WAESCHE's Cutter Boat Operations Bill (CBOB) published in the Cutter Organizational Manual (COM), WAESINST M5400.16A, states that the maximum wave height for safe operation of the SRP is eight feet. (Enclosure (3).)

The CBOB further states as follows:

Situations will be encountered where a mission requirement exists in sea conditions exceeding the guidance given above. In these situations, a comprehensive launch/no launch risk assessment by Commanding Officer must occur. This assessment should include considerations of factors such as; urgency of mission, wave shape and period, seas, wind, visibility, temperature, experience and proficiency of boat crew and launch/recovery detail, fatigue, duration of mission/transit distance, improving vs. deteriorating conditions, etc. While darkness may be considered in these decisions, it is expected that a cutter can safely launch, recover and operate boats at night.

In accordance with WAESCHE's Small Boat Administration Operating Procedures (SBAOP), WAESINST 16114.3 (Enclosure (4)), guidance on the maximum safe operating conditions for cutter small boats are as follows:

- MK III OTH: 8 foot seas and 30 knot winds.
- MK IV OTH: fully capable in sea state 5, 11 ft seas, "survivable" in sea state 6 on the Beaufort Scale², 13 ft seas. (See Enclosure (7))

² Although the Beaufort Scale is referenced in both the Cutter Information Book, Vol. IV (Exhibit 30) and the SBAOP (Enclosure (4)), Coast Guard ships are not required to log sea state in Beaufort terms, and it is not common practice for Coast Guard sailors to conduct mission planning by referencing the Beaufort Scale. It is also worth noting that while mention is made of the Beaufort Scale in most references, precise mathematical representation of a wave spectrum for the purposes of ship design and modeling are in terms of the Bretschneider Spectrum.

In accordance with COMDTINST M3120.6 (series), Shipboard Launch and Recovery Procedures Manual (Enclosure (5)) "pitch and roll limits shall only be exceeded during urgent Search and Rescue or other missions that in the judgment of Commanding Officer or Officer in Charge are significant enough to warrant the increased risk associated with the launch and recovery evolution." Table 1-2 from the manual lists the WMSL class cutters' pitch and roll limitations for launch and recovery of small boats as a pitch of five degrees and a roll of six degrees.

(2) Maritime Security Cutter Large (WMSL) - Stern Boat Recovery System

A detailed description of the configuration and operation of the stern boat recovery system is contained in the following references:

- TP-7525 (Cutter Information Book, Volume IV – Auxiliary Machinery, Chapter 21 SWBS 583 - Boats, Boat Handling and Stowage) (Exhibit 30),
- TP-7348A (Small Boat Retrieval System Equipment Manual) (Exhibit 31), &
- Drawing USCG-750-WMSL-583-004 (Stern Launch & Recovery Arrangement & Details) (Exhibit 32)



According to Chapter 21 of TP-7525, the stern ramp system is designed to allow for launch and retrieval of the cutter small boats in up to mid sea state 5 on the Beaufort Scale by use of a centerline stern ramp. (Exhibit 30.) The ramp includes a capture mechanism that automates the capture process and removes manual steps that would impose safety hazards to personnel. (Exhibit 30.)

No damage to the boat recovery system occurred during the mishap. However, the capture system was not Fully Mission Capable (FMC) at the time of mishap.

(a) The capture line on WAESCHE, which is shown in Figures (1), (2), and (3-A) as well as on sheet 22 of USCG-750-WMSL-583-004, does not function as designed. (Exhibit 32.) Excessive slack in the capture line prevents automatic capture of the boat upon entering the notch. (Exhibit 10, 11, 12, 15, & 16.) In order to successfully recover the boat, WAESCHE has accommodated the malfunction by positioning a member of the boat crew in the bow of the boat during approach into the stern notch. (Exhibit 10, 11, 12, 15, & 16; Figure 4.) The crew member then manually lifts the capture line over the capture horn after the small boat contacts the capture net. (Figure 4.)

(b) The capture net is designed to arrest the forward momentum of the small boat for the safety of the boat and crew while positioning the small boat for automatic engagement of the capture line. (Exhibit 31-32.)

(c) Figures 5-A through 5-C below are a demonstrative sequence intended to simulate the approximate angle of approach of the mishap SRP relative to the capture system at the time of the incident. WAESCHE's stern gantry crane was used to lift the stern of the SRP for the simulation. Figure 5-C in particular demonstrates how the capture horn slips under the capture line and net when the SRP's stern angle increases relative to the ramp. Figure 6 shows a measurement of the 43 inch gap between the capture net and the stern ramp.



Figure 5-A: Use of WAESCHE gantry crane to lift the stern of the SRP simulating the mishap angle of entry. (Exhibit 37.)



Figure 5-B: Capture horn of mishap SRP slides under capture net and line with increased stern angle. (Exhibit 37.)



Figure 5-C: Mishap SRP capture horn sliding under capture net and line. (Exhibit 37.)



Figure 6: Distance between the bottom of the capture net and the stern ramp was measured as 43 inches. (Exhibit 37.)

(d) The configuration of the capture net is shown in Figure 1 and on sheet 22 of WMSL-583-004. (Exhibit 32.) The capture net does not fully extend to the bottom contour of the stern notch resulting in a gap greater than 43 inches (see Figures 5 thru 6 above), large enough to allow the bow of the small boat to slide under the capture net. When waves enter the stern notch during boat recovery, the stern of the small boat rises relative to the bow creating an angle of approach that allows the bow to push under the net. According to multiple WAESCHE crewmembers, the bow of the SRP has partially slid under the capture net as many as ten times over the past two years during stern recovery operations. (Exhibits 10, 11, & 15.) During the mishap, large swells entered the stern notch in succession, lifted the stern of the mishap SRP, and forced the bow of the mishap SRP to slide completely under the capture net allowing swells to push the small boat further up the stern notch until the center console of the mishap SRP was pressed against the capture line and capture net. (Exhibits 10-16.)

(e) Other National Security Cutters have reported issues with capture line failure. BERTHOLF experienced a capture success rate of 90%, STRATTON experienced a capture rate of 80 to 90%. WAESCHE's capture rate was 40%. (Exhibit 41.) These capture rates are approximate and reflect boat capture without human intervention. BERTHOLF and STRATTON indicated to this Board that they have not utilized the practice of placing a crewmember on the bow of their small boats during notching in order to overcome any functional deficiencies in their capture line system.

(f) Based on a report for Boat Launch & Recovery Trials (BLRT) conducted aboard USCGC BERTHOLF (WMSL-750) in 2009, changes were made to BERTHOLF's stern capture system. (Exhibit 41.) The recommendations from the BLRT have not been formalized through the

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD
REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

5830
17 Feb 2014

Coast Guard's Engineering Change process; thus, the configuration of the stern capture net and capture line is not standardized across all National Security Cutters. BERTHOLF reports better capture success rates than STRATTON or WAESCHE. (Exhibit 41.) If fully implemented, the success rate of WAESCHE's boat capture system might have been improved. A report comparing the stern capture system configuration of all National Security Cutters was compiled by SFLC, which identifies the key differences and action items being addressed to standardize configuration. (Exhibit 41.)

f. *Weather:* At 2:00 p.m. on the day of the incident, the WAESCHE logged the following on-scene weather conditions. (Exhibits 9 & 23.)

Weather Conditions:

Skies: Overcast
Barometer: 30.42
Dry Bulb: 38
Wet Bulb: 25
Winds: 338 degrees; 18 knots
Sea Water Temperature: 45 degrees Fahrenheit
Sea Waves: 330 degrees; 6 feet
Swell Waves: 330 degrees; 12 feet

WAESCHE's pitch and roll at the time of the incident were not recorded, and are not required by Coast Guard policy to be recorded. By most accounts of the crew, the environmental conditions were not the worst the cutter had encountered during the patrol, but it was rough, the waves were confused and the period varied. (Exhibits 5, 10, 15, 18, & 19.) WAESCHE did not log the sea and weather conditions with reference to the Beaufort Scale; to do so was not required by policy and would have been uncommon practice. (See footnote 2.)

g. *Crew Qualifications:* The relevant qualifications of the mishap SRP crew are as follows.

(1) Mishap SRP Coxswain, Boatswain's Mate Second Class (BM2) (Exhibit 33)

Date of Qualification: 15 Sep 11
Total Underway Hours Last Currency Period: 59.03
Total Underway Hours This Currency Period: 76.29
Previous Coxswain Qualifications: Station Fort Lauderdale

(2) Mishap SRP Boat Engineer, Machinery Technician Third Class (MK3) (Exhibit 34)

Date of Qualification: 17 Jul 12
Total Underway Hours Last Currency Period: 19.33
Total Underway Hours This Currency Period: 76.72
Previous Engineer Qualifications:
Small Boat Engineer – USCGC CHANDELUER

(3) Mishap SRP Boat Crewman, Boatswain's Mate Third Class (BM3.) (Exhibit 35)

(a) Date of Qualification: 04 Sep 13
(b) Total Underway Hours Last Currency Period: 68.4

- (c) Total Underway Hours This Currency Period: N/A
- (d) Previous Crewman Qualifications: Station Boston

h. Medical: The WAESCHE crew was well rested in advance of the operations on the afternoon of 11 November 13. (Exhibits 5, 14, 15, & 16.) The crew was on holiday routine in the previous days as well as the morning of the incident due to the Veterans Day Holiday. (Exhibits 5, 14, 15, & 16.) There were no medical or lifestyle factors relevant to the mishap. (Exhibit 36.)

i. Operations and Supervision:

(1) WAESCHE was on day 91 of a 109 day District 17 patrol. (Exhibit 23.) The day before the accident, the cutter exercised holiday routine in observance of Veterans Day, allowing the crewmembers to maximize rest as no regular work was scheduled. (Exhibit 6, 13, & 15.) Upon notification of the SAR case, and during the 160 NM transit to the disabled vessel, the crew remained on a holiday routine schedule in anticipation of the extended boat operations and towing evolution. Due to the nature of the weather conditions and the anchored disabled F/V, the command selected the mishap Coxswain because he was widely considered the most capable Coxswain aboard WAESCHE. (Exhibit 5, 7, & 10.)

(2) Throughout the small boat operations that day, the Commanding Officer, a Captain/O-6 officer, was located on the bridge, overseeing the entire evolution. (Exhibits 5, 6, & 18.) Executive Officer, a Commander/O-5, was assigned as the Conning Officer's coach. The bridge interaction between the Commanding Officer, Executive Officer, Officer-of-the-Deck, Conning Officer and fantail supervisors ensured the best possible course and speed selection to ensure the best possible ship positioning with respect to the prevailing seas and swells for the conduct of boat operations. (Exhibits 6 & 18.) Both First Lieutenant and the Chief Boatswain's Mate served as Safety Officers on the fantail. (Exhibits 10-12.)

j. Human Factors Analysis:

There are two human factors that made indirect contributions to this mishap. The first is channelized attention. WAESCHE's command and crew participated in the GAR risk assessment, and testimony of the participants revealed that when discussing the environmental complexity and risk of the mission, there was a focus on discussing the challenges of the boat transfer of F/V personnel from the F/V to the mishap SRP. (Exhibits 5-7 & 10-19.) While there was certainly risk associated with at-sea transfers of personnel, testimony revealed the absence of substantive discussion regarding the risk associated with the boat returning to WAESCHE and entering the notch. (Exhibits 5-7 & 10-19.) It is my opinion that since WAESCHE had conducted 130 small boat launch and recovery operations in the previous 90 days of this patrol, they were familiar with the evolution, which facilitated this channelized attention on the F/V personnel transfers during their GAR risk discussions. (Exhibits 22.)

The second human factor resulted from an apparent overvaluing of platform capabilities. There are two platform limitations for conducting boat operations from the notch that are relevant in this case. First is the ship's pitch limitation of five degrees and roll limitation of six degrees. (Enclosure (5).) Neither testimony nor ship's logs explicitly reveal whether the pitch and roll limitations were exceeded since that data is not recorded; however the general sense of the testimony suggest that neither the bridge nor fantail personnel believed the ship was operating outside of pitch or roll parameters. (See Exhibits 5-8, 10-12, & 18-19.) Given the prevailing weather at the time, it is reasonable to conclude they were operating near those limits.

(Exhibits 6, 9, 10, 18, & 23.) The second is the SRP boat limitation of eight foot seas. (Enclosure (4).) Testimony did not reveal that the sea state at the time of launch was discussed between bridge or fantail personnel, however the Commanding Officer made it clear that during the small boat brief that if he deemed the evolution to be unsafe, he would postpone the personnel transfer until the morning. (Exhibit 5 & 7.) The Commanding Officer's judgment in this case would take not only the sea state into consideration, but also a variety of other environmental factors to include the swell period and the ability to position WAESCHE relative to the environmental conditions in order to mitigate them. Despite this application of the Commanding Officer's understanding of WAESCHE's performance and sea sense, there appear to be less-well-understood performance dynamics in National Security Cutter hull design with respect to the practical operation of the stern notch and associated wave mechanics in sea states and wave periods at, near or beyond the limits of safe operation. In long period swells, which are common in this operating area, the size of the seas and swells can many times be managed with the optimal course and speed of the ship and well-timed execution of boat launch and recovery. (See Exhibit 5, 6, 10, 11, & 15.) Similar to the channelized attention dynamic, the overvaluing of platform capabilities is facilitated by months of operating in the same geographic area and indirectly played a contributing role in this mishap.

k. Additional Areas of Concerns:

(1) Stern Doors Open Throughout Small Boat Operations:

Testimony indicates that WAESCHE many times embarks and disembarks personnel from small boats via the notch with the stern doors open. (Exhibits 5, 6, 7, 10.) Due to concerns for personnel safety, upon observing deteriorating sea conditions with waves occasionally flooding the notch and overtopping the stern cradle deck, the Boat Deck Supervisor and Safety Supervisor requested permission from the Officer-of-the-Deck to close the stern doors prior to recovering the small boat. (Exhibits 10, 12, 17, 19, & 24.) The bridge denied this request in favor of expediting the evolution. (Exhibits 10, 12, 17, 19, & 24.) The bridge favored leaving the doors open in order to complete the transfers more quickly. (Exhibits 10, 19, & 24.) The Standard Operating Procedures (SOP) for WMSL Boat Launch and Recovery published in August 2013 (promulgated after WAESCHE had departed for D17 patrol), state that the stern doors shall be closed while embarking and disembarking personnel to and from the small boat in the notch. (Enclosure (5).) While the stern doors remained open, they were closed as soon as the mishap SRP was far enough forward in the notch to close them; therefore, it was not an option to close the doors sooner than they were. (Exhibits 13 & 17.) As such, leaving the doors open during passenger transfer did not contribute to the mishap outcome. However, it provides relevant context regarding the sense of urgency that the impending sunset had on the operations. (Exhibit 23.)

4. Opinions:

a. Cause: I found by clear and convincing evidence that the cause of the mishap was two-pronged:

(1) First, the mishap Victim was positioned forward of the center console on the mishap SRP during the incident; and

(2) Second, a swell caused the bow of the mishap SRP to slide under the capture net allowing the capture net to forcefully pin the mishap Victim against the center console.

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD
REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

5830
17 Feb 2014

b. Substantially Contributing Factors: I also found by a preponderance of the evidence that the following factors substantially contributed to the mishap:

(1) First, the capture line did not function as designed. The capture line is designed to capture the small boat capture horn without human assistance. After multiple attempts to adjust the capture line to improve performance, WAESCHE's capture line does not capture the small boat capture horn on most evolutions, so WAESCHE overcame the functional deficiency of the capture line by placing a boat crewman forward of the boat's center console during the notching evolution.

(2) Second, over confidence with respect to platform capabilities and channelized attention contributed to the mishap. Given the prevailing weather in the District 17 area of operations (AOR), all key WAESCHE boat operations personnel became accustomed to operating the small boats in this dynamic weather environment. After approximately three months of operating in the District 17 AOR and 130 safe boat launch and recovery evolutions from the stern notch, the mishap evolution planning that led to the event revealed the risks associated with the evolution complexity and the weather/environment, but did not strike any of the key WAESCHE personnel as extreme to the point of being unsafe. However, all of WAESCHE's key personnel were aware of the elevated risk and took mitigating action through cutter course and speed adjustments, continual communication and coordination between the fantail and bridge, in what were ultimately on-scene conditions in excess of the SRP limits (Exhibits 9, 23, & 29; Enclosures (3) & (4).) The risks were appropriately noted and discussed in the small boat evolution GAR (risk assessment), and all small boat, boat deck and bridge personnel were well aware of and paid close attention to their environmental surroundings.

5. **Attestation:** The Findings of Fact and Opinions are those of the Board President and do not constitute an official determination by the U.S. Coast Guard concerning this mishap.

FEARS,
DOUGLAS.
M.1044327526

Digitally signed by FEARS, DOUGLAS,
DN: cn=Douglas, o=USCG, ou=USCG, email=Douglas.M.1044327526@USCG.mil, c=US

Date 17 February 2014

DOUGLAS M. FEARS
CAPTAIN, U.S. COAST GUARD
MII BOARD PRESIDENT

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD
REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

5830
17 Feb 2014

- Enclosures:
- (1) Coast Guard Operational Risk Management Manual, COMDTINST M3500.3
 - (2) Enclosure (9) to WAESINST 3530.2E
 - (3) WAESCHE Cutter Boat Operations Bill, Cutter Organizational Manual, WAESINST M5400.16A
 - (4) Small Boat Administration Operating Procedures, WAESINST 16114.3
 - (5) Shipboard Launch and Recovery Procedures Manual, COMDTINST M3120.6 (series) (relevant excerpts)
 - (6) Approved MII Deadline Extension Req Memo, dtd 10 Jan 14
 - (7) Table of Abbreviations, Acronyms, and Uncommon Terms
 - (8) GENTEX SOHAH Pub, TP0226, dtd Jan 2010
- Exhibits:
- (1) VADM Zukunft memo, dtd 18 November 14 (MII Convening Order)
 - (2) PACAREA Overview: www.uscg.mil/pacarea, dtd 13 Jan 14
 - (3) District 17 Mission: www.uscg.mil/d17, dtd 13 Jan 14
 - (4) CGC WAESCHE: www.uscg.mil/pacarea/cgcwaesche, dtd 13 Jan 14
 - (5) Statement of Commanding Officer
 - (6) Statement of Executive Officer
 - (7) Statement of Operations Officer
 - (8) Email of D17(drm) to WAESCHE, dtd 11 November 13
 - (9) Weather briefing, dtd 11 November 13
 - (10) Statement of First Lieutenant
 - (11) Statement of Chief Boatswain's Mate
 - (12) Statement of Deck-in-Charge
 - (13) Statement of Fantail Carriage Operator
 - (14) Statement of Port Life Buoy Watch
 - (15) Statement of Mishap Vessel Coxswain
 - (16) Statement of Mishap Small Boat Engineer
 - (17) Statement of Engineer Officer
 - (18) Statement of Conning Officer
 - (19) Statement of Officer-of-the-Deck
 - (20) WAESCHE Tow Brief, dtd 11 November 13
 - (21) SRP Boat Mission Report & Brief, dtd 11 November 13
 - (22) Boat Launch Logs, dtd 14 Aug to 11 November 13
 - (23) WAESCHE Deck Logs, dtd 08-12 November 13
 - (24) Email correspondence Officer-of-the-Deck, dtd 16 Dec 13
 - (25) Statement of BDS Member (ME1)
 - (26) 72 Hours Mishap Update, dtd 14 November 13
 - (27) Maintenance Procedure Card (MPC) D-A-Z3H2 & D-S-Z09N
 - (28) Pertinent Mishap SRP Casualty Reports (CASREPs)
 - (29) Zodiac Owner's Technical Manual, TP-6201(CD ROM)
 - (30) Cutter Information Book, Vol. IV, TP-7525 (CD ROM)
 - (31) Small Boat Retrieval System Equipment Manual, TP-7348A
 - (32) Stern Launch & Recovery Detail, 750-WMSL-583-004
 - (33) CG Training Management Tool (TMT) Record: Mishap Coxswain
 - (34) CG Training Management Tool (TMT) Record: Mishap SBE
 - (35) CG Training Management Tool (TMT) Record: Mishap Crewmember
 - (36) Email of WAESCHE HSC, dtd 14 Jan 14
 - (37) Pertinent Photos

Subj: MAJOR INCIDENT INVESTIGATION (MII) BOARD
REPORT REGARDING THE CIRCUMSTANCES OF THE
CASUALTY TO CGC WAESCHE'S SRP 24104 & INJURIES
TO A SMALLBOAT CREWMEMBER ON 11 NOV 13

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17 Feb 2014

- (38) WAESCHE Stern Gate CASREP
- (39) CIC Logs
- (40) F/V ALASKA MIST certificate of documentation
- (41) 418' WMSL Capture Configuration Presentation
- (42) Email correspondence, dtd 17-18Dec13 re: SOHAH Helmet
- (43) Mishap Victim Forensic Report