



UNITED STATES COAST GUARD

**REPORT OF THE INVESTIGATION
INTO THE
EVER FORWARD (O.N. 9850551) GROUNDING
IN THE VICINITY OF CRAIGHILL CHANNEL
ON MARCH 13, 2022**



MISLE ACTIVITY NUMBER: 7412263

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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16732/IIA# 7412263
1 December 2022

**THE GROUNDING OF THE FOREIGN CONTAINER VESSEL EVER FORWARD
(IMO 9850551) IN CRAIGHILL CHANNEL EAST OF BUOY 16 NEAR
BALTIMORE, MD ON MARCH 13, 2022**

ACTION BY THE COMMANDANT

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations, are approved subject to the following comments. This marine casualty investigation is closed.

ACTION ON RECOMMENDATIONS

Finding of Concern 1: It is recommended that vessel owners and marine operators develop and implement effective policies outlining when the use of cell phones and other portable electronic devices is appropriate or prohibited. Sector Maryland-National Capital Region drafted a Finding of Concern, which serves as an update to Marine Safety Advisory 01-10. While the original advisory cautions against the use of cellular devices and distracted operations, this new Finding of Concern reiterates the original warnings and emphasizes the additional dangers associated with fixation on electronic devices as well as over reliance on a singular piece of equipment while navigating or performing safety sensitive functions.

Action: I concur with this recommendation. The Coast Guard has published Finding of Concern 18-22 on the following website: <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Office-of-Investigations-Casualty-Analysis/Findings-of-Concern/>.

Finding of Concern 2: It is recommended that vessel owners and operators ensure and promote crew awareness of policies regarding the duties and obligations of officers on watch for the safety of the ship, even when a pilot is embarked. International Maritime Organization (IMO) Resolution A.960(23) highlights that efficient pilotage largely depends upon the effectiveness of communications and information exchange between the pilot, master, and bridge personnel regarding navigational procedures, local conditions, and ship's characteristics. The IMO advises that this information exchange should be a continuous process that is generally ongoing for the duration of the pilotage. The IMO further emphasizes that Masters and bridge officers have a duty to support the pilot and ensure that his or her actions are monitored at all times. It is essential that these procedures are not only reflected in the vessel's Safety Management System but also regularly used and practiced during transits with pilots on board.

1 December 2022

Action: I concur with this recommendation. The Coast Guard has published Finding of Concern 19-22 on the following website: <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Office-of-Investigations-Casualty-Analysis/Findings-of-Concern/>.

Administrative Recommendation 1: It is recommended that the Officer in Charge, Marine Inspection (OCMI) initiate enforcement action for negligent operation of a commercial vessel. 46 USC § 2302(a) provides that a person operating a vessel in a negligent manner or interfering with the safe operation of a vessel, so as to endanger the life, limb, or property of a person is liable to the U.S. Government for a civil penalty. In order to show a violation occurred under this cite, there must be evidence to show that the charged party in fact: 1) operated a vessel; 2) in a negligent manner; and, in doing so, 3) endangered the life, limb or property of a person. 46 CFR § 5.29 defines negligence as, "...the commission of an act which a reasonable and prudent person of the same station, under the same circumstances, would not commit, or the failure to perform an act which a reasonable and prudent person, of the same station, under the same circumstances, would not fail to perform." The evidence collected for this investigation supports pursuing civil penalty action against Pilot 1 for negligent operation of a commercial vessel.

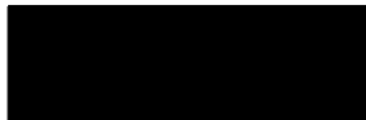
Action: This administrative recommendation will be addressed by Coast Guard Sector Maryland-NCR Officer In Charge, Marine Inspection (OCMI).

Administrative Recommendation 2: It is recommended this investigation be closed.

Action: This investigation is closed upon issuance of this Final Action Memo (FAM).

Administrative Recommendation 3: It is recommended the Report of the Investigation be released to the public and posted online for easy accessibility, while complying with the provisions of the Privacy Act, the Freedom of Information Act (FOIA), and associated federal regulations.

Action: This administrative recommendation will be addressed by the Office of Investigations and Casualty Analysis and publicly available on the following site: <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Office-of-Investigations-Casualty-Analysis/Marine-Casualty-Reports/>



A. M. BEACH
Captain, U.S. Coast Guard
Director of Inspections and Compliance



**EVER FORWARD (O.N. 9850551) GROUNDING IN THE VICINITY OF CRAIGHILL
CHANNEL ON MARCH 13, 2022**

ENDORSEMENT BY THE COMMANDER, FIFTH COAST GUARD DISTRICT

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved subject to the following comments. It is recommended that this marine casualty investigation be closed.

ENDORSEMENT ON RECOMMENDATIONS

Finding of Concern 1: It is recommended that vessel owners and marine operators develop and implement effective policies outlining when the use of cell phones and other portable electronic devices is appropriate or prohibited. Sector Maryland-National Capital Region drafted a Finding of Concern, which serves as an update to Marine Safety Advisory 01-10. While the original advisory cautions against the use of cellular devices and distracted operations, this new Finding of Concern reiterates the original warnings and emphasizes the additional dangers associated with fixation on electronic devices as well as over reliance on a singular piece of equipment while navigating or performing safety sensitive functions.

Endorsement: Concur – the Coast Guard Fifth District concurs with the need to publish a Finding of Concern to readdress distracted bridge operations as they relate to portable electronic devices and overreliance on a single piece of navigation equipment. This seems to have become an even more prevalent concern of late, and maritime safety will benefit from a National-level effort to reinvigorate warnings and emphasize the dangers of distracted operations. The published Finding of Concern should address that all maritime organizations with employees involved in the navigation of vessels, including Pilot associations, should develop and enforce organizational policy regarding the use of electronic devices while performing safety sensitive functions.

Finding of Concern 2: It is recommended that vessel owners and operators ensure and promote crew awareness of policies regarding the duties and obligations of officers on watch for the safety of the ship, even when a pilot is embarked. International Maritime Organization (IMO) Resolution A.960(23) highlights that efficient pilotage largely depends upon the effectiveness of

communications and information exchange between the pilot, master, and bridge personnel regarding navigational procedures, local conditions, and ship's characteristics. The IMO advises that this information exchange should be a continuous process that is generally ongoing for the duration of the pilotage. The IMO further emphasizes that Masters and bridge officers have a duty to support the pilot and ensure that his or her actions are monitored at all times. It is essential that these procedures are not only reflected in the vessel's Safety Management System, but also regularly used and practiced during transits with pilots on board.

Endorsement: Concur – the Coast Guard Fifth District concurs with the Finding of Concern. Every effort should be made to ensure widest dissemination of this advisory to domestic and foreign vessel owners, operators and agents, as this investigation pointed out that cultural differences can impact a navigation teams' propensity to question the actions of a Pilot.

Administrative Recommendation 2: It is recommended that this investigation be closed.

Endorsement: Concur – the Coast Guard Fifth District agrees with the analysis and conclusions of the Investigating Officer and the endorsement of the Officer in Charge, Marine Inspection. No further action is required by the Coast Guard.

Administrative Recommendation 3: It is recommended the Report of the Investigation be released to the public and posted online for easy accessibility, while complying with the provisions of the Privacy Act, the Freedom of Information Act (FOIA), and associated federal regulations.

Endorsement: Concur – Coast Guard Fifth District agrees with the Administrative Recommendation for public release of this Report of Investigation.

A large black rectangular redaction box covers the signature of Michael C. Reed. A faint red signature is visible through the redaction.

MICHAEL C. REED
Captain, U.S. Coast Guard
Chief, Prevention Division
By direction



16732
October 28, 2022

**EVER FORWARD (O.N. 9850551) GROUNDING IN THE VICINITY OF
CRAIGHILL CHANNEL ON MARCH 13, 2022**

ENDORSEMENT BY THE OFFICER IN CHARGE, MARINE INSPECTION

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved. It is recommended that this marine casualty investigation be closed.

ENDORSEMENT ON RECOMMENDATIONS

Recommendations for Promoting Safety:

Finding of Concern (1): It is recommended that vessel owners and marine operators develop and implement effective policies outlining when the use of cell phones and other portable electronic devices is appropriate or prohibited. Sector Maryland-National Capital Region drafted a Finding of Concern, which serves as an update to Marine Safety Advisory 01-10. While the original advisory cautions against the use of cellular devices and distracted operations, this new Finding of Concern reiterates the original warnings and emphasizes the additional dangers associated with fixation on electronic devices as well as over reliance on a singular piece of equipment while navigating or performing safety sensitive functions.

Endorsement: Concur – Sector Maryland-National Capital Region drafted and will submit with this investigation a Finding of Concern that reemphasizes the original warnings in Marine Safety Advisory 01-10 regarding distraction by personal electronic devices that are now even more ubiquitous in our society than when the original safety alert was released. It also highlights the additional concern of relying on any one individual tool for the safe navigation of a vessel. It is requested that Coast Guard Office of Investigations and Analysis (CG-INV) ensure the widest dissemination and publication of this Finding of Concern to maximize awareness of the hazards posed by distracted operations and overreliance on a singular piece of equipment to safely navigate.

Finding of Concern (2): It is recommended that vessel owners and operators ensure and promote crew awareness of policies regarding the duties and obligations of officers on watch for the safety of the ship, even when a pilot is embarked. International Maritime Organization (IMO) Resolution A.960(23) highlights that efficient pilotage largely depends upon the effectiveness of communications and information exchange between the pilot, master, and

bridge personnel regarding navigational procedures, local conditions, and ship's characteristics. The IMO advises that this information exchange should be a continuous process that is generally ongoing for the duration of the pilotage. The IMO further emphasizes that Masters and bridge officers have a duty to support the pilot and ensure that his or her actions are monitored at all times. It is essential that these procedures are not only reflected in the vessel's Safety Management System but also regularly used and practiced during transits with pilots on board.

Endorsement: Concur – While local pilots are essential to the safe navigation of vessels unfamiliar with U.S. waters, all bridge team members have an obligation to intervene, if a pilot in the direction and control of their vessel is taking an unsafe action or not taking an action required to keep the vessel, crew, and waterways safe. Marine operators should take proactive measures to ensure bridge teams are effective in communicating with pilots onboard and that concerns will be conveyed without hesitation or ambiguity.

Administrative Recommendations:

Administrative Recommendation (1): It is recommended that the Sector Maryland-National Capital Region initiate enforcement action for negligent operation of a commercial vessel. 46 USC § 2302(a) provides that a person operating a vessel in a negligent manner or interfering with the safe operation of a vessel, so as to endanger the life, limb, or property of a person is liable to the U.S. Government for a civil penalty. In order to show a violation occurred under this cite, there must be evidence to show that the charged party in fact: 1) operated a vessel; 2) in a negligent manner; and, in doing so, 3) endangered the life, limb or property of a person. 46 CFR § 5.29 defines negligence as, "...the commission of an act which a reasonable and prudent person of the same station, under the same circumstances, would not commit, or the failure to perform an act which a reasonable and prudent person, of the same station, under the same circumstances, would not fail to perform." The evidence collected for this investigation supports pursuing civil penalty action against Pilot 1 for negligent operation of a commercial vessel.

Endorsement: Partially Concur – Based on evidence Sector Maryland-National Capital Region collected and provided to the State, the Maryland Board of Pilots found Pilot 1's actions be negligent and issued a Notice of Summary Suspension on October 21, 2022. This suspension prohibits Pilot 1 from providing, attempting to provide, or offering pilotage in Maryland. The Pilot's requested hearing on the summary suspension remains pending and is separate from any disciplinary action, including monetary civil penalties that Maryland Board of Pilots might also take. While I agree that Pilot 1 acted in a negligent manner that endangered life, property, and the environment, I will hold off on initiating any federal enforcement actions until the State completes all their actions against Pilot 1.

Administrative Recommendation (2): It is recommended that this investigation be closed.

Endorsement: Concur – I agree with the determination that the initiating event for this marine casualty was the grounding, which resulted due to a lack of attention and situational awareness by Pilot 1, as well as inadequate bridge resource management and communication between all bridge team members. No further action is required by the U.S. Coast Guard, and this case should be closed.

Administrative Recommendation (3): It is recommended the Report of the Investigation be released to the public and posted online for easy accessibility, while complying with the provisions of the Privacy Act, the Freedom of Information Act (FOIA), and associated federal regulations.

Endorsement: Concur – Due to high interest in this investigation, it is recommended that following closure, this report be redacted in accordance with the Privacy Act and FOIA requirements and posted on the U.S. Coast Guard’s FOIA Reading Room for easy, efficient access for the interested public.



DAVID E. O'CONNELL
Captain, U.S. Coast Guard
Officer in Charge, Marine Inspection



16732
October 28, 2022

EVER FORWARD GROUNDING (O.N. 9850551) IN THE VICINITY OF CRAIGHILL CHANNEL ON MARCH 13, 2022

EXECUTIVE SUMMARY

On March 13, 2022, at approximately 1812 Eastern Standard Time (EST), the Hong Kong flagged containership EVER FORWARD departed Seagirt Marine Terminal in Baltimore, Maryland en route to Norfolk, Virginia with a licensed Maryland State Pilot, hereinafter referred to as "Pilot 1," in direction and control of the vessel. The vessel's departure was slightly delayed due to a line handling issue at the facility.

Pilot 1 was on the bridge with the Master and the bridge team until approximately 1930, when the Master departed the bridge to get dinner. At approximately 1950, the bridge team completed a scheduled watch relief, and a new Third Officer and Deck Cadet reported to the bridge. At this time, the bridge team was comprised of Pilot 1, the Third Officer, Deck Cadet, and an Able Bodied Seaman who was at the helm. At approximately 2017, the vessel passed its charted waypoint, marking a turn to approximately 180 degrees True that needed to be executed in accordance with the voyage plan. No order was given to turn the vessel and the helmsman maintained the previously ordered course of 161 degrees True. At 2018, Pilot 1 recognized the vessel was past its turn and ordered 15 degrees rudder to starboard. The vessel grounded outside the Craighill Channel, east of Lighted Buoy 16.

Pilot 1 immediately attempted to use astern propulsion to free the vessel. Soon after, the Master returned to the bridge and performed a series of safety checks in accordance with the vessel's Safety Management System (SMS), prior to continuing efforts to free the vessel. After all safety checks were completed, the EVER FORWARD bridge team and Pilot 1 continued to attempt to free the vessel using astern propulsion and bow thrusters. At approximately 2031, the Master notified the vessel's shoreside representative that the EVER FORWARD required assistance. At approximately 2101, Pilot 1 notified U.S. Coast Guard Sector Maryland-National Capital Region of the grounding. At approximately 2250 and after being relieved by another licensed Maryland State Pilot, Pilot 1 departed the grounded vessel.

During the outbound transit, Pilot 1 was solely relying on his Portable Pilot Unit (PPU) to navigate the EVER FORWARD. Just prior to the grounding, Pilot 1 exited the active navigation of his PPU to view a previous transit. Pilot 1 also made a series of five phone calls amounting to over 60 minutes of time during the course of his outbound transit. He also sent two text messages and began drafting an email immediately before the grounding occurred regarding issues he experienced with facility line handlers.

As a result of its investigation, the U.S. Coast Guard determined that the initiating event for this casualty was the grounding. No mechanical issues or equipment failures contributed to this marine casualty. The causal factors that contributed to this casualty include: (1) failure to maintain situational awareness and attention while navigating, and (2) inadequate bridge resource management.



16732
October 28, 2022

**EVER FORWARD (O.N. 9850551) GROUNDING IN THE VICINITY OF
CRAIGHILL CHANNEL ON MARCH 13, 2022**

INVESTIGATING OFFICER'S REPORT

1. Preliminary Statement:

1.1. This marine casualty investigation was conducted and this report was submitted in accordance with Title 46, Code of Federal Regulations (CFR), Subpart 4.07 and under the authority of Title 46, United States Code (USC), Chapter 63.

1.2. Four persons or organizations were designated as a party-in-interest in accordance with 46 CFR § 4.03-10 and include the following:

1.2.1. Evergreen Marine Corporation

1.2.2. Maryland Department of Labor

1.2.3. Association of Maryland Pilots

1.2.4. Licensed Maryland State Pilot (Pilot 1)

1.3. The Coast Guard was the lead agency for all evidence collection activities involving this investigation. The Maryland Department of Labor, Division of Occupational and Professional Licensing conducted an independent investigation, with access to evidence collected by the Coast Guard.

1.4. All times listed in this report are in Eastern Standard Time (EST) using a 24-hour format, and some are approximate utilizing witness statements and evidence collected. In addition, any measurements are listed in the imperial system and all headings are listed in degrees True.

2. Vessel Involved in the Incident:



Figure 1. View from the port quarter of EVER FORWARD, aground east of the Craighill Channel.
 Photograph taken April 14, 2022 by USCG.

Vessel Details	
Official Name:	<i>EVER FORWARD</i>
IMO Number / MMSI Number:	9850551 / 477624800
Call Sign:	VRTM7
Flag State:	Hong Kong
Recognized Organization (Classification Society):	Lloyd's Register of Shipping
Vessel Class / Type / Sub-Type:	General Dry Cargo Ship / Container Ship / General Cargo/Container
Delivery Date:	September 28, 2020
Keel Laid Date:	May 8, 2020
Gross Tonnage (GT):	117,340 GT (International Tonnage Convention)
Length:	1,095.7 feet
Beam / Width:	158.8 feet
Draft / Depth:	42.5 feet
Main/Primary Propulsion:	51,655.3 Horse Power
Owner:	Evergreen Marine (Hong Kong) Ltd. 22-23 Floor, Harcourt House, 39 Gloucester Road Wan Chai HONG KONG
Operator:	Evergreen Marine Corp. (Taiwan) Ltd. 163 Hsin-Nan, Sec 1, Luchu Taoyuan Hsien ROC Taiwan

3. Record of Deceased, Missing, and Injured:

3.1. There were no injuries, missing persons, or deaths related to this marine casualty.

4. Findings of Fact:

4.1. *Incident Factual Information:*

4.1.1. On March 13, 2022, at approximately 1812 hours, the Hong Kong flagged containership EVER FORWARD departed Seagirt Marine Terminal in Baltimore, Maryland en route to Norfolk, Virginia. The departure time was slightly delayed due to challenges at berth securing the proper line handlers.

4.1.2. A Licensed Maryland State Pilot, hereinafter referred to as “Pilot 1,” was in direction and control of the EVER FORWARD from the point of getting underway until after the grounding.

4.1.3. Pilot 1’s Portable Pilot Unit (PPU) was receiving information from the ship's pilot plug. Pilot 1’s PPU had no history of navigational discrepancies or issues.



Figure 2. The red square shows the location of EVER FORWARD’s Pilot Plug. This photograph was provided by Association of Maryland Pilots and taken in Baltimore, Maryland.

4.1.4. Pilot 1 navigated EVER FORWARD using his PPU as the primary means of navigation. He was in the practice of intentionally not using any other navigation equipment while underway, citing a distrust of vessel equipment that was not his own and instances of equipment breaking while a pilot was using it.

4.1.5. Pilot 1 was not aware that there were paper charts available and in use by the bridge team at the time of the transit.

4.1.6. All vessel charts (paper and electronic) were up-to-date.



Figure 3. Paper chart that was in use and on the bridge of the EVER FORWARD at the time of the grounding. The outlined inset shows a close-up of the plotted voyage plan track line and waypoints as well as the vessel location after grounding. Photograph by USCG Investigator.

4.1.7. At 1818 and in the vicinity of Seagirt Marine Terminal, Pilot 1 answered an inbound phone call that lasted approximately 28 seconds.

4.1.8. At 1903 and just prior to passing Sparrow's Point, Pilot 1 placed a personal call that lasted approximately 55 minutes and 10 seconds.

4.1.9. At 1930, the Master departed the vessel's bridge to have dinner at the galley.

4.1.10. At 1950, the Third Officer and Deck Cadet arrived at the bridge to complete a scheduled watch relief and assumed the watch by 1957.

4.1.11. At 1958, Pilot 1 ended the 55 minute and 10 second phone call placed at 1903.

4.1.12. Pilot 1 was positioned forward of the navigation console, port (left) of ship's centerline (C.L. in Figure 4), by the vessel's pilot plug. The Third Officer (3/O in Figure 4) was positioned behind the navigation console, approximately at the centerline of the bridge. The Able Bodied Seaman (AB in Figure 4) was positioned at the helm, and the Deck Cadet (D/C in Figure 4) was behind the navigation console on the starboard (right) side. Bridge team members were generally in these locations but not restricted from movement for the duration of the voyage.

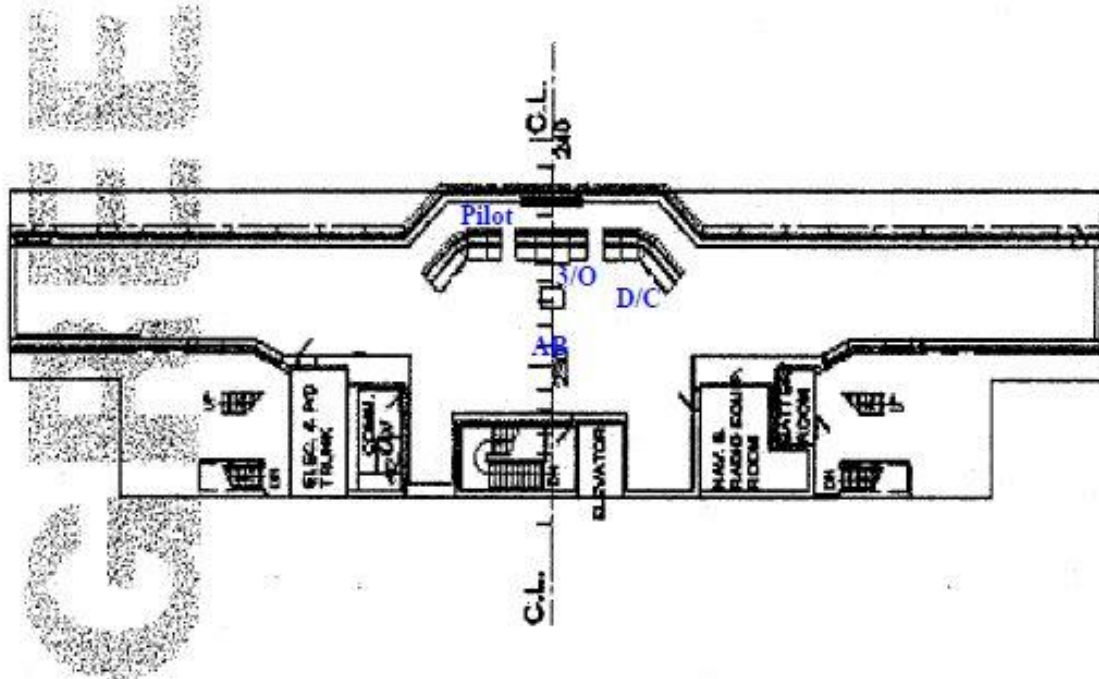


Figure 4. EVER FORWARD navigation bridge deck plan and approximate crew positions at time of grounding. Image obtained by USCG Investigator.

4.1.13. At 2000, Pilot 1 ordered full ahead, and the bridge team complied.

4.1.14. At 2000, Pilot 1 placed a phone call that lasted approximately four minutes.

4.1.15. At 2007, Pilot 1 sent a text message image to another member of the Association of Maryland Pilots related to line handler issues on a previous voyage.

4.1.16. At 2008, Pilot 1 placed another call that went unanswered.

4.1.17. At 2010, the EVER FORWARD entered the Craighill Angle, and Pilot 1 ordered a heading of 161 degrees. The bridge team complied with the pilot's order.

4.1.18. At 2012, a crew member stated that the ship's heading was 161 degrees.

4.1.19. At 2014, Pilot 1 viewed another screen on the PPU with the intent to screenshot data from another voyage. This action stopped the recording of the active transit, and the PPU did not begin recording the active transit again until 2019, after the vessel grounded and the pilot returned to the active screen.



Figure 5. PPU screenshot just before the end of the first recording of EVER FORWARD's transit at 2014 on March 13, 2022, just prior to the grounding. Image provided by Pilot 1.

4.1.20. At 2015, Pilot 1 sent a text message image of a previous voyage to another member of the Association of Maryland Pilots.

4.1.21. At approximately 2016, Pilot 1 began drafting an email regarding issues he had encountered with facility line handlers.

4.1.22. At 2017, the EVER FORWARD crossed the predetermined waypoint position to initiate a turn to approximately 180 degrees. No order to turn was given by Pilot 1, and the Voyage Data Recorder (VDR) showed the vessel maintained a heading of approximately 161 degrees.

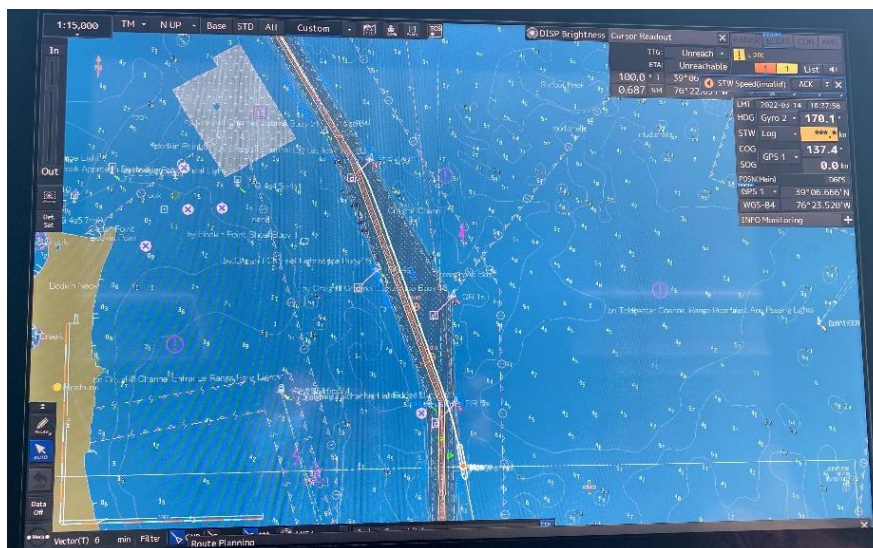


Figure 6. ECDIS display of EVER FORWARD's intended voyage compared to actual track, showing the missed turn south to 180 degrees. Image obtained by USCG Investigator.

4.1.23. At approximately 2017, the Third Officer announced on the bridge that the vessel's heading was 161 degrees and speed was approximately 13 knots. Pilot 1 verbally acknowledged the Third Officer and took no action. The Third Officer stated that the Pilot was still looking at his phone at this time.

4.1.24. At approximately 2017, Pilot 1 observed that the bridge team seemed to be chattering more and moving about the bridge console.

4.1.25. At approximately 2017, the Third Officer notified Pilot 1 that the PPU did not match the ship's Electronic Chart Display and Information System (ECDIS). Pilot 1 put away his phone and began to use the ship's ECDIS.

4.1.26. At 2018, Pilot 1 ordered 15 degrees starboard rudder, then ordered hard to starboard approximately 20 seconds later. The bridge team complied with both commands.

4.1.27. At 2018, the EVER FORWARD grounded outside of the Craighill Channel.

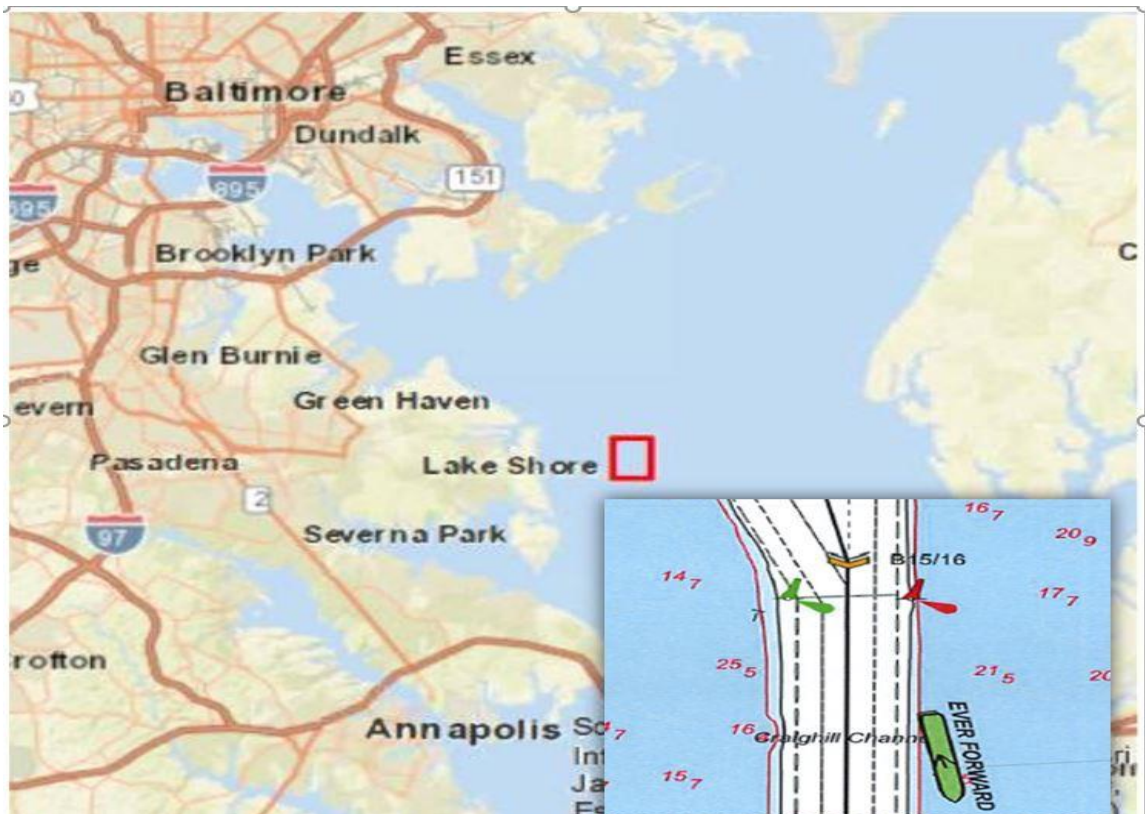


Figure 7. Red square indicates general location of grounding, south of buoy 16 outside the Craighill Channel. The inlayed image was obtained from USCG Navigation Center and obtained by USCG Investigator.

4.1.28. At 2019, Pilot 1's PPU resumed recording when Pilot 1 returned the PPU screen to the current transit. The trip was saved into two separate files on the PPU, no recordings exist from 2014 to 2019.

4.1.29. At approximately 2019, the Third Officer summoned the Master to the bridge.

4.1.30. At 2020, Pilot 1 ordered stop engine followed by full astern. The bridge team complied.

4.1.31. At 2021, Pilot 1 inquired the vessel's speed and was notified by the bridge team that the speed was 0.4 knots. Pilot 1 indicated to the bridge team that he did not believe the vessel was aground and ordered the bridge team to prepare the bow thrusters.

4.1.32. At 2023, the Master returned to the bridge. The Third Officer called the Second Officer up to the bridge to download the VDR information. The Second Officer successfully saved and archived the voyage data for the entirety of the outbound transit.

4.1.33. At 2024, Pilot 1 gave the command to engage the bow thruster full to port and the bridge team complied. He gave an additional command, which was inaudible on the VDR. The bridge team acknowledged the command, which was also inaudible on the VDR.

4.1.34. At 2025, the Master gave orders to stop engine and conduct safety checks in accordance with the vessel's Safety Management System (SMS). The crew verified no pollution or water ingress, observed vessel surroundings and environment, conducted tank soundings, checked the engine room, and began to verify the type of seabed the vessel was grounded on.

4.1.35. At 2031, the Master began to make notifications of the grounding. The Master contacted Evergreen Marine Corporation headquarters in Taipei, Taiwan and the local EVER FORWARD representative to notify that the vessel had grounded and was in need of assistance.

4.1.36. At approximately 2031, Pilot 1 ordered full astern. The bridge team acknowledged the command, but did not comply as they were still executing post grounding SMS safety checks. Pilot 1 explained to the Master that it was his opinion that the crew should attempt astern propulsion again.

4.1.37. At 2040, Pilot 1's PPU stopped recording. No further recordings of this voyage were made on Pilot 1's PPU.

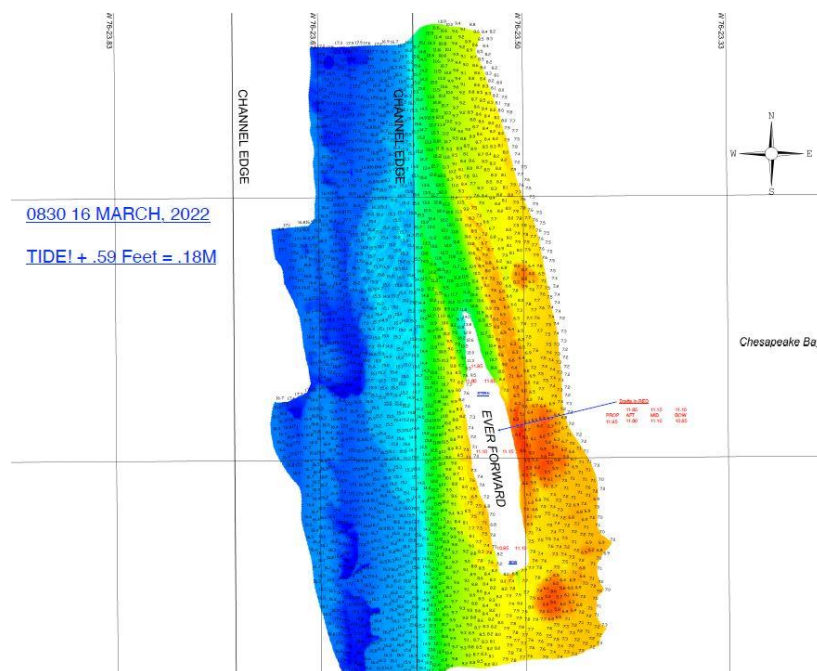


Figure 8. Multi-beam survey of EVER FORWARD grounded outside the Craighill Channel. Survey was conducted and image was produced by Donjon-SMIT LLC.

4.1.38. At 2050, the Master verified with the Chief Mate that the seabed was mud and shells, completing the SMS safety checks for groundings.

4.1.39. At 2052, Pilot 1 ordered full astern with starboard bow thruster and the bridge team complied. Pilot 1 then followed up with a command for port bow thruster, the bridge team complied.

4.1.40. At 2054, the Master ordered stop engine and stop bow thrusters.

4.1.41. At 2101, Pilot 1 notified Sector Maryland-National Capital Region that the EVER FORWARD was grounded via cell phone.

4.1.42. At 2102, when speaking with the Sector Maryland-National Capital Region investigator, Pilot 1 stated that the vessel's turn south to the lower Craighill Channel was executed late and that he could not say more until his statement had been reviewed by an attorney. Pilot 1 also indicated, on this call, that there were no equipment malfunctions, navigational issues, and there was no pollution or injuries.

4.1.43. At 2108, Pilot 1 gave a command to lower the anchor and the bridge team complied.

4.1.44. At 2143, the EVER FORWARD engineers confirmed that the grounding had not resulted in any pollution.

4.1.45. At 2240, another Maryland State Pilot arrived to relieve Pilot 1. Pilot 1 departed the vessel at approximately 2250 to return to the Association of Maryland Pilots to complete drug and alcohol testing.

4.1.46. Drug and alcohol testing results for EVER FORWARD bridge team, Master, and Pilot 1 were all negative. There was no suspicion of drug or alcohol use in relation to this incident.

4.2. Additional and Supporting Factual Information:

4.2.1. The Master of the EVER FORWARD had nine years of experience as a master, ten months of which were aboard the EVER FORWARD.

4.2.2. The Third Officer of the EVER FORWARD had over two years of experience as a third officer, six and a half months of which were aboard the EVER FORWARD.

4.2.3. Pilot 1 began working with the Association of Maryland Pilots as an apprentice in 2007 and had a total of 15 years of pilotage experience on the Chesapeake Bay. Approximately 10 years of this experience was as a senior pilot with the Association of Maryland Pilots.

4.2.4. On March 12, 2022 (the day before the grounding), the EVER FORWARD proceeded inbound to Baltimore with a licensed Maryland State Pilot, hereinafter referred to as "Pilot 2". Pilot 2 had approximately 15 years of experience as a licensed Maryland State Pilot. At the time of this inbound transit, Pilot 2 stated that there were no observed

discrepancies or concerns with the crew, vessel, or any of its navigational systems or equipment.

4.2.5. On March 13, 2022, and in accordance with 33 CFR §164.25, the EVER FORWARD crew satisfactorily conducted all required pre-departure tests before getting underway with no discrepancies noted.

4.2.6. The EVER FORWARD bridge team and Pilot 1 were within seafarer's hours of work and rest standards for International Maritime Organization Standards of Training, Certification, and Watchkeeping (STCW).

4.2.7. Over the course of the transit, Pilot 1 was in an agitated state over the line handler issues experienced at the pier. This was not the first time Pilot 1 encountered problems with line handlers at a facility.

4.2.8. Upon boarding EVER FORWARD, Pilot 1 received a "Pilot Card" from the crew, which included ship's particulars and information about the vessel's steering and maneuverability.

4.2.9. The SMS for EVER FORWARD required that if at any time there is difficulty maintaining course or any other doubts arise, the officer on bridge watch shall immediately call the Master.

4.2.10. The SMS for EVER FORWARD also asserted that despite the duties and obligations of a pilot, pilot presence does not relieve the officer on watch from the duties and obligation for the safety of the ship.

5.5 Navigation with pilot embarked

Despite the duties and obligations of a pilot, pilot presence on board does not relieve the officer on watch from his duties and obligations for the safety of the ship. The officer should cooperate with the pilot and maintain an accurate check on the position and movements of the vessel. If any confusion or doubts arise concerning the pilot's actions or intentions, the officer shall clarify with the pilot, and if the doubts are still not dismissed, immediately notify the Master and take necessary actions before the Master reach to bridge. The "Pilot card" (CK-0701-4) shall be handed to the pilot as soon as he is on bridge.

Figure 9. Excerpt from EVER FORWARD SMS on Watchkeeping and officer on watch actions when a pilot is embarked, obtained by USCG Investigator

4.2.11. The observed weather on the evening of the incident was approximately 10 miles of visibility with overcast clouds at 8,500 feet, winds from the south at three knots, and a temperature of 41 degrees Fahrenheit.

4.2.12. On March 14, 2022, Aids to Navigation Team Baltimore conducted an aid verification and found the Craighill Channel Lighted Buoys 16 (LLNR 8085) and 14 (LLNR 8078) were on location in the correct position and functioning properly. Both ranges were also found functioning properly.

4.2.13. The ECDIS alarms on the EVER FORWARD were silenced. It is not an uncommon practice for mariners to do this due to the sensitivity of the alarms, which can cause them to sound constantly.

4.2.14. Pilot 1's PPU was manufactured by Trelleborg and issued to him by the Association of Maryland Pilots. The PPU automatically records all vessel movements and saves them as separate files for replay. If a replay is accessed in the middle of an active transit, the recording of the vessel movements' will stop and no data of the active trip would be saved while replaying. When the active transit is resumed on the PPU, a new recording would be created, so that the operation consisted of two separate recordings.

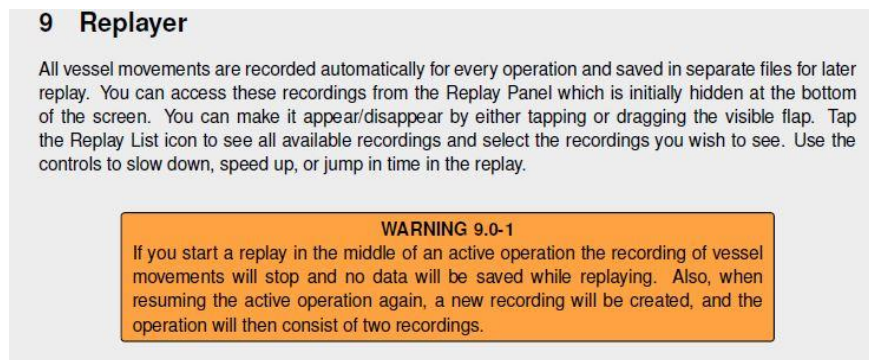


Figure 10. Excerpt from Pilot 1 PPU user manual obtained by USCG Investigator.

4.2.15. Pilot 1's PPU was approximately two years old and had no reported malfunctions or errors. The PPU was configured to Pilot 1's preferences.

4.2.16. On November 8, 2021, the EVER FORWARD's VDR survey checklist was completed by Lloyd's Register and no discrepancies were identified. The VDR's Certificate of Compliance was issued by Japan Radio Company.

4.2.17. On November 8, 2021, the EVER FORWARD's Automatic Identification Systems (AIS) test report from class found the AIS and pilot plug to be in satisfactory condition. The survey verified the pilot plug arrangement, power provided, and wiring. The survey also addressed AIS static information, dynamic information (transmission of ship's position, accuracy/integrity, speed over ground, etc.), voyage related information, a performance test, and verified there was no electromagnetic interference.

4.2.18. On March 14, 2022, Lloyd's Register Class Society surveyor attended the vessel and issued a report stating the vessel internal structural examination did not reveal any damage to the structural members, and it appeared that the vessel did not sustain any damage from the grounding. Additionally, the class surveyor reported the main engine, steering gear, electrical power generating system, and all navigational equipment were fully operational. The ECDIS charts were found updated to week 10/2022, and the paper nautical chart 2850 (Baltimore Approach) was also found up-to-date.

4.2.19. A Mackay Marine surveyor attended the vessel while aground and found all navigation equipment to be in good working order with no noted discrepancies.

4.2.20. The Association of Maryland Pilots did not have a cell phone policy at the time of the incident. Pilots are required to take refresher training on professionalism approximately every five years. Additional courses that all pilots were required to take at

five year intervals included Bridge Resource Management, Electronic Chart Display and Information System (ECDIS-eNav), PPU, “Pilot in Training Program”, and Azipod Familiarization. Pilot 1 was current in all required training.

4.2.21. On April 27, 2021, Pilot 1 was involved in the grounding of the motor vessel TIRRANNA, a 760-foot long, Roll-on Roll-off cargo ship in the vicinity of York Spit Channel in the Chesapeake Bay. The Coast Guard Incident Investigation Activity (IIA #: 7184634), completed by Sector Virginia, determined the initiating event was the failure of the steering control relay. This was followed by the eventual loss of steering and vessel grounding.

4.2.22. On April 17, 2022 at approximately 0700, the EVER FORWARD was successfully pulled back into the channel and refloated, after dredging 206,280 cubic yards of material and the removal of 505 containers.



Figure 11. Crane operations on the port side of the EVER FORWARD during attempts to refloat the vessel. This photograph was provided by USCG District 5 Public Affairs.



Figure 12. Aerial photo of the EVER FORWARD aft port quarter during refloat operations in an attempt to free the vessel. This photograph was provided by USCG District 5 Public Affairs.

5. Analysis:

5.1. *Failure to maintain situational awareness and attention while navigating.*

5.1.1. Pilot 1 stated that he solely relied on his PPU to navigate and did not use any ship's equipment or charts. On March 13, 2022 at 2015 and while approaching a critical turn, Pilot 1 was taking a screenshot on his PPU of a previous trip to text another member of the Maryland Pilots Association in regard to an ongoing issue with line handlers. Pilot 1 then began to draft an email on his cell phone in order to follow-up with a text message. The PPU operator manual states that the PPU automatically records all active vessel movements unless a replay of a previous trip is begun in the middle of an active trip. The PPU will then stop recording the active trip and save the active vessel movement up until the point the PPU user navigated away from the active trip to view a previous one. It will then save that active trip into a file and start a new, separate file once the user returns to the active trip screen. This means that there will be a data gap in the active trip for the duration of time that a user views a previously recorded trip. In this incident, Pilot 1's PPU had two saved files with a gap in recording from 2015 to 2019, approximately the time that Pilot 1 stated he was viewing a previous recording to retrieve information to identify the line handler issue. Since Pilot 1 stated that he used no navigational equipment aside from his personal PPU, and the PPU recording was gapped from 2015 to 2019, the evidence shows that for this duration of time, Pilot 1 was not actively engaged in navigating the vessel immediately prior to the grounding.

5.1.2. Additionally, during the EVER FORWARD's outbound transit, Pilot 1 placed or received five phone calls from his personal cell phone. AT&T records indicated that the calls totaled approximately 61 minutes of the 126-minute voyage up to the grounding. The longest personal call placed was over 55 minutes, starting at 1903 and ending at 1958. Pilot 1 also placed a work call regarding the line handler issues that had been previously encountered, something not urgent and unrelated to the current safe navigation of EVER FORWARD. Further, he sent two text messages at 2007 and 2015, a critical time period leading up to when the turn south into the lower Craighill Channel should have been executed. The Third Officer observed Pilot 1 looking at his phone at 2017, approximately one minute before the vessel ran aground. Although Pilot 1 did not disclose the purpose of all of the calls, he stated that due to the duration of time pilots are onboard vessels, it is not unusual to complete various personal tasks while underway. However, when Pilot 2 was interviewed, he stated that he was not in the practice of making personal calls while in transit and would only feel comfortable doing so in an emergency situation.

5.1.3. According to U.S. Coast Guard Marine Safety Advisory 01-10, when navigating, the use of cellular or other devices unrelated to the operation at hand could impede the exchange of vital operational information, delay reaction time, or cause attention lapses of those involved, which could result in unwanted circumstances. Pilot 1 potentially missed cues from the bridge team when they repeated the vessel's heading as the turn was approaching, and again after the turn had been missed. Since Pilot 1 stated he was not utilizing any other navigation equipment besides his PPU, he was unable to accurately determine the vessel's location in real time. Had Pilot 1 refrained from drafting email correspondence, and placing and receiving personal or non-urgent

professional calls, it is possible he would have maintained better situational awareness and properly executed the turn in a timely manner, avoiding the vessel grounding.

5.2. Inadequate Bridge Resource Management.

5.2.1. Foreign vessels and crews arrive at the Port of Baltimore hailing from nations all over the world and rely on pilots for safety and expert knowledge of the local waters. As noted in U.S. Coast Guard Marine Safety Alert 09-13, a key aspect to effective bridge resource management includes using all available resources, both human and electronic. As previously mentioned, the only equipment Pilot 1 used to navigate the vessel was his PPU. Pilot 1 stated that he was not aware that there were paper charts on the bridge and that he was intentionally in the practice of not using the ship's installed navigation equipment, including the ship's ECDIS. This was due to his stated distrust of equipment besides his PPU. He also stated he found the navigational buoys to be unhelpful. Since it was a clear night and his view was unobstructed, Pilot 1 should have been able to easily view the available navigational aids that marked the channel's turn south, a lighted gated pair of lateral buoys. Pilot 1's lack of awareness and decision not to use ship's charts, navigation aids, and other available bridge navigation systems demonstrates an overreliance on the singular PPU system. This overreliance on a single navigational tool limited the pilot's ability to accurately and quickly make a full appraisal of the situation and safely navigate the vessel. Had Pilot 1 used all available means to determine the ship's location, the grounding likely would not have occurred.

5.2.2. Leading up to the grounding, the EVER FORWARD bridge team observed that Pilot 1 was frequently on his cell phone and appeared agitated. Immediately prior to the grounding, the Third Officer, a Chinese national, believed that the vessel had missed the waypoint to turn. However, instead of directly telling Pilot 1 that the turn had been missed, he repeated the heading multiple times in an attempt to cue Pilot 1 of the vessel's situation. The EVER FORWARD's SMS dictates that if the vessel experiences difficulty maintaining course or any doubts arise in regard to the vessel's situation, the officer on watch shall call the Master. After the Third Officer's attempts to cue Pilot 1, he did not immediately notify the Master. Had the Third Officer immediately notified the Master, the likelihood of an alternate outcome is low due to the short amount of time between the point when the turn south was missed and the grounding. Without substantive input from the bridge team, Pilot 1 continued to underutilize the available resources for navigation and continued to look at his cell phone. The Third Officer acknowledged that as the expert on local waters, he was hesitant to question Pilot 1's expertise and familiarity of the channel. This may have in part been due to the Third Officer fearing he may offend Pilot 1 or cultural differences regarding seniority. When interviewed, Pilot 1, the Master, and the Third Officer all agreed that Pilot 1 was in direction and control of the vessel until he had completed the transit. Nevertheless, as noted in the ship's SMS, the presence of a pilot does not relieve a bridge team of its shared responsibilities for safe navigation. Despite cultural differences or seniority, the Third Officer and others on the bridge should have been more assertive to let the pilot know the waypoint had been passed and turn missed. Had the bridge team been more assertive and notified Pilot 1 of the missed turn, there may have been enough time to avoid or minimize the significance of the grounding.

6. Conclusions:

6.1. *Determination of Cause:*

6.1.1. The initiating event for this casualty occurred when the EVER FORWARD grounded. Causal Factors leading to this event were:

6.1.1.1. Failure to maintain situational awareness and attention while navigating.

6.1.1.2. Inadequate bridge resource management.

6.2. *Evidence of Act(s) or Violation(s) of Law by Any Coast Guard Credentialed Mariner Subject to Action Under 46 USC Chapter 77:*

6.2.1. 46 USC § 7703(1) authorizes Suspension and Revocation (S&R) action against a merchant mariner's credential if, while acting under the authority, the mariner commits an act of negligence. 46 USC Chapter 85 outlines the fundamental construct for the jurisdiction over pilots, Federal and State. The United States Court of Appeals for the Ninth Circuit decided that a State pilot, not required to hold a license under federal law, is not acting under the authority of the pilot's federal license, although it is required by the State before it will issue the State license [See Soriano v. U.S., 494 F. 2d 681 (9th Cir. 1974)]. Additionally, the U.S. District Court for the Eastern District of Louisiana decided that former 46 USC § 214 does not, by itself, authorize enforcement proceedings against federal licenses held by pilots acting under authority of State licenses [See Dietze v. Siler, 414 F. Supp. 1105, (E.D. LA., 1976)]. It is U.S. Coast Guard policy (USCG Marine Safety Manual, Volume V: Investigation and Enforcement, Part B, Chapter 9, Subpart E.6) to follow the Soriano and Dietze decisions in cases involving pilots acting under the authority of State commissions.

6.2.2. Due to the EVER FORWARD being foreign flagged and not engaged in coastwise trade, Pilot 1 was operating under his Maryland State Pilot License and not under the authority of his Federal Pilot License. Therefore, no S&R action against the pilot's U.S. Coast Guard issued merchant mariner credential (federal) is recommended.

6.3. *Evidence of Act(s) or Violation(s) of Law by U.S. Coast Guard Personnel, or any other person:* None.

6.4. *Evidence of Act(s) Subject to Civil Penalty:* A grounding raises a presumption of negligence, as defined in U.S. Coast Guard Commandant's S&R Appeal Decision No. 2173. While not operating under the authority of his U.S. Coast Guard issued merchant mariner credential, Pilot 1 may be subject to civil penalty enforcement action for negligently performing duties related to commercial vessel navigation under 46 USC § 2302(a).

6.5. *Evidence of Criminal Act(s):* None.

6.6. *Need for New or Amended U.S. Law or Regulation:* None.

6.7. *Unsafe Actions or Conditions that Were Not Causal Factors:* None.

7. Actions Taken Since the Incident:

7.1. Following the incident, the Association of Maryland Pilots placed Pilot 1 on administrative leave.

7.2. On October 21, 2022, the Maryland Board of Pilots suspended Pilot 1's license because they "found that the public health, safety, and welfare imperatively required this emergency action." Pilot 1 is prohibited from providing, attempting to provide, or offering to provide pilotage in the State of Maryland. Pilot 1 is also prohibited from representing to the public, by use of a title, including "pilot," "bay pilot," "licensed pilot," "State licensed pilot" or "Maryland pilot," by description of services, methods or procedures, or otherwise. Pilot 1 has requested the opportunity for a hearing on this matter.

8. Recommendations:

8.1 Recommendations for promoting safety:

8.1.1 Finding of Concern (1): It is recommended that vessel owners and marine operators develop and implement effective policies outlining when the use of cell phones and other portable electronic devices is appropriate or prohibited. Sector Maryland-National Capital Region drafted a Finding of Concern, which serves as an update to Marine Safety Advisory 01-10. While the original advisory cautions against the use of cellular devices and distracted operations, this new Finding of Concern reiterates the original warnings and emphasizes the additional dangers associated with fixation on electronic devices as well as over reliance on a singular piece of equipment while navigating or performing safety sensitive functions.

8.1.2 Finding of Concern (2): It is recommended that vessel owners and operators ensure and promote crew awareness of policies regarding the duties and obligations of officers on watch for the safety of the ship, even when a pilot is embarked. International Maritime Organization (IMO) Resolution A.960(23) highlights that efficient pilotage largely depends upon the effectiveness of communications and information exchange between the pilot, master, and bridge personnel regarding navigational procedures, local conditions, and ship's characteristics. The IMO advises that this information exchange should be a continuous process that is generally ongoing for the duration of the pilotage. The IMO further emphasizes that Masters and bridge officers have a duty to support the pilot and ensure that his or her actions are monitored at all times. It is essential that these procedures are not only reflected in the vessel's Safety Management System but also regularly used and practiced during transits with pilots on board.

8.2 Administrative Recommendations:

8.2.1 Administrative Recommendation (1): It is recommended that the Officer in Charge, Marine Inspection (OCMI) initiate enforcement action for negligent operation of a commercial vessel. 46 USC § 2302(a) provides that a person operating a vessel in a negligent manner or interfering with the safe operation of a vessel, so as to endanger the life, limb, or property of a person is liable to the U.S. Government for a civil penalty. In order to show a violation occurred under this cite, there must be evidence to show that the charged party in fact: 1) operated a vessel; 2) in a negligent manner; and, in doing so, 3)

endangered the life, limb or property of a person. 46 CFR § 5.29 defines negligence as, “...the commission of an act which a reasonable and prudent person of the same station, under the same circumstances, would not commit, or the failure to perform an act which a reasonable and prudent person, of the same station, under the same circumstances, would not fail to perform.” The evidence collected for this investigation supports pursuing civil penalty action against Pilot 1 for negligent operation of a commercial vessel.

8.2.2 Administrative Recommendation (2): It is recommended this investigation be closed.

8.2.3 Administrative Recommendation (3): It is recommended the Report of the Investigation be released to the public and posted online for easy accessibility, while complying with the provisions of the Privacy Act, the Freedom of Information Act (FOIA), and associated federal regulations.



Lieutenant, U.S. Coast Guard
Investigating Officer