UNITED STATES COAST GUARD

REPORT OF THE INVESTIGATION

INTO THE

COMMERCIAL FISHING VESSEL CAROL ANN (O.N. 906483), PRESUMED LOSS OF LIFE AND TOTAL LOSS OF VESSEL NEAR BRUNSWICK, GA, ON OCTOBER 14, 2023.

MISLE ACTIVITY NUMBER: 7816410

U.S. Department of Homeland Security

United States Coast Guard

Commandant
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16732/IIA #7816410
12 January 2026

SINKING OF THE COMMERCIAL FISHING VESSEL CAROL ANN (O.N. 906483) AND PRESUMED LOSS OF THREE LIVES NEAR BRUNSWICK, GEORGIA ON OCTOBER 14, 2023

ACTION BY THE COMMANDANT

The record and the report of the investigation completed 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

Recommendation 1: It is recommended that the Commandant change the regulation regarding Emergency Position Indicating Radio Beacon (EPIRB) carriage on Commercial Fishing Vessels (CFVs). Currently CFVs less than 36 feet in length can meet the carriage requirements with a Category 2 EPIRB. This does not account for total structural failure of a vessel or collisions/allisions resulting in catastrophic damage to the vessel. Category 2 EPIRBs were allowed by the regulations in 1993 to reduce costs for vessel operators. When these regulations were published in 1993 the cost of a Category 1 EPIRB was $1,350. Today, a Category 1 EPIRB averages $800 while a Category 2 averages $500. The cost of an EPIRB overall has decreased, and the cost difference between a Category 1 and Category 2 EPIRB today is not significant enough to cause financial burden to mariners. All CFVs should be required to use Category 1 EPIRBs ensuring activation regardless of the nature of the distress.

Action: I concur with the intent of this recommendation. The investigation's analysis within sections 5.8 and 5.9 determined that the vessel was required to have an EPIRB as a result of the vessel type and fishing operating area. However, it does not appear that the vessel was equipped with a properly installed EPIRB on board at the time of the vessel sinking.

The Report of Investigation (ROI) indicates the lack of prudent decisions made by the vessel Master were likely the primary contributing factors to the marine casualty. During the CFV Dockside Examination conducted by Coast Guard Marine Safety Unit Savannah on August 16, 2023, it was noted that the vessel was non-compliant with EPIRB requirements, and as such, needed to mount an appropriate EPIRB on the vessel. There is no record of this deficiency ever being corrected.

The evidence presented in the ROI Findings of Facts does not specify how current EPIRB carriage requirements are inadequate. Additionally, the investigation does not stipulate a clear causal factor that supports a rule change to require all domestic CFVs vessels to carry and maintain a category 1 EPIRB.

However, an operational Category 1 EPIRB would have likely helped to expedite the search and rescue response in this instance. As such, the Coast Guard will update the *Commercial Fishing Industry Vessels Best Safety Practices Guide* to encourage EPIRB best practices and situational awareness (i.e., to maintain/install required EPIRB's in accordance with manufacturers guidelines, factoring accessibility/float free arrangements; understanding operational parameters; appropriate registration). Adding an EPIRB focus to the voluntary best-practices guide may reduce the likelihood of false EPIRB alerts and help save lives.

The *Commercial Fishing Industry Vessels Best Safety Practices Guide* can be accessed at: https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Commercial-Vessel-Compliance/Fishing-Vessel-Safety-Division/CVC-3-Home-Page/

Recommendation 2: It is recommended that the Commandant amend the current CFV life raft stowage requirements found in Title 46 Code of Federal Regulations (CFR) Section 28.125. Current regulations do not address the stowage of life rafts beyond requiring that they are stowed to be able to float free and automatically inflate if the vessel sinks. Most other commercial vessel life raft stowage requirements include the condition "The arrangement must ensure that the life raft or life rafts, when released and inflated, are not dragged under by the sinking vessel" as described in 46 CFR § 199.130(c)(7). This additional requirement would give Coast Guard CFV Examiners greater leverage to ensure proper stowage of life rafts.

Action: I concur with the intent of this recommendation. Alternatively, the corrective action will be accomplished via policy in lieu of a regulatory change. A policy letter allows for both interpretation and implementation of 46 CFR § 28.125 and provides Coast Guard personnel the authority to ensure proper life raft stowage.

Recommendation 3: It is recommended that the Commandant amend the current regulations to require that all CFVs be equipped with Automatic Information Systems (AIS) and that the AIS be powered on while vessels are operating. Currently, only CFVs 65 feet or more in length are required to have AIS. AIS is a maritime navigation safety communications system that is standardized by the International Telecommunication Union and adopted by the International Maritime Organization. It provides vessel information including the vessel's identity, type, position, course, speed, navigational status, and other safety-related information automatically. The information is transmitted to similarly equipped shore stations, other ships, and aircraft. Position information is typically broadcast every 2-10 seconds depending on the vessel's speed or every 3 minutes if at anchor. If the CFV CAROL ANN had been equipped with AIS, Coast Guard Search and Rescue would have been able to determine the last known location and base search patterns off known positions rather than speculation. There is no evidence that indicates that the CFV CAROL ANN collided with another vessel. However, CFVs often operate (and are

frequently anchored) in high traffic areas, AIS would allow deep draft vessels to monitor and avoid these smaller vessels.

> **Action**: I do not concur with this recommendation. The Coast Guard currently lacks the statutory authority under 46 United States Code (USC) § 70114 to mandate AIS on commercial, non-passenger vessels under sixty-five feet. The investigation did not clearly identify that current AIS requirements are insufficient and in need of an update. As a result, the Coast Guard will not pursue a statutory amendment via a Legislative Change Proposal at this time.

Recommendation 4: It is recommended that the Commandant add a regulation requiring that the monthly drills and instruction for CFVs be documented. 46 CFR § 28.270 requires the Master or individual in charge of each vessel to give instruction and conduct drills for safety measures at least once per month. There is no method for CFV Examiners to verify if monthly drills and instruction are being completed under the supervision of a person with a drill conductor card.

> **Action**: I concur with this recommendation. The Coast Guard is in the process of incorporating the requirement to maintain properly logged records of equipment maintenance and drills/instructions which is included in Final Rule Docket No. USCG-2012-0025/RIN 1625-AB85.
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> The Coast Guard's Unified Agenda for regulatory projects currently lists Docket No. USCG-2012-0025/RIN 1625-AB85 as a deliverable scheduled for May 2026. Docket No. USCG-2012-0025/RIN 1625-AB85 can be accessed at: https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202410&RIN=1625-AB85.

Recommendation 5: It is recommended that the Commandant amend current CFV regulations to require all CFVs to be equipped with a high-water alarm as listed in 46 CFR § 28.250. Currently, vessels less than 36 feet are exempt from this requirement. High water alarms in unmanned spaces give crew members additional time to react in case of flooding. This extra time allows a crew to enact damage control measures, and if those fail, allows time to prepare lifesaving equipment for abandoning ship.

> **Action**: I do not concur with this recommendation. The Coast Guard recognizes that in Navigation and Vessel Inspection Circular (NVIC) 5-86 (page 24), the installation of high-water alarms (i.e., bilge alarms) is recommended as an early warning of compromised watertight integrity on fishing vessels that are exempt from 46 CFR § 28.250. However, after reviewing the investigation report, I note that conclusive evidence does not exist linking the absence of a high-water alarm to the presumed sinking of the vessel in question. Accordingly, while the Coast Guard continues to promote the voluntary fitting of high-water alarms consistent with NVIC 5-86, the specific recommendation to extend the mandate for such alarms to CFVs not more than 36 feet in length is not supported by the facts of this case.

Recommendation 6: It is recommended that the Commandant obtain legislative authority to require that all operators of CFVs operating outside the boundary line obtain and hold a Coast Guard Merchant Mariner Credential (MMC). Currently, only operators on CFVs over 200 gross tons are required to hold an MMC. This would ensure operators have basic safety and emergency knowledge. Additionally, this would allow Coast Guard Boarding Officers to terminate unsafe voyages operated by uncredentialed mariners.

> **Action**: I do not concur with this recommendation. The ROI does not support the conclusion that operators of CFVs less than 200 gross tons should be required to possess an MMC. The actions of the Master in this case were not shown to be inconsistent with those of mariners operating in the same area, at the same time of year, and under similar conditions. In addition, the Master possessed seven years of experience operating CFVs. His experience included serving as Master of the CFV CAROL ANN for two months during which he completed seven fishing trips in and around the area where the accident occurred.

Recommendation 7: It is recommended that the Commandant amend regulations to require that all CFVs comply with the Stability Instruction requirements in 46 CFR § 28.530 and the Freeing Port requirements in 46 CFR § 28.555. Currently, these regulations only apply to CFVs 79 feet in length or greater without a load line. In December of 2022, the Fishing Vessel Safety Division of the Coast Guard Office of Commercial Vessel Compliance (CG-CVC) instructed local Commercial Fishing Vessel Examiners (CFVE) to identify and document specific unsafe conditions related to stability during exams. This instruction was created following an increase in fishing vessel sinkings and crew fatalities due to vessels operating in unsafe stability conditions. Common conditions include: operators not following relevant stability instruction information (when available), not maintaining watertight integrity, and lack of situational awareness when operating during hazardous conditions. CFVEs were instructed to visually inspect watertight doors/hatch covers to ensure watertight capabilities and operable securing mechanisms, inspect freeing ports to ensure water could flow outboard but not inboard, and initiate a discussion with the Master regarding the required stability information. The CFV CAROL ANN was not required to have stability instruction information or freeing ports. Stability instruction information could have mitigated the Master's decision to operate in quartering seas and larger freeing ports could have decreased the potential for free surface effect that likely led to the sinking of the vessel.

> **Action**: I do not concur with this recommendation. The Coast Guard recognizes that NVIC 5-86 (page 29) explains the recommended use and sizing of freeing ports to improve small vessel stability by reducing onboard water for fishing vessels exempt from 46 CFR § 28.555. Similarly, NVIC 5-86 (page 41) recommends the use of operating information, including stability instructions, to help operators quickly evaluate vessel stability for vessels exempt from 46 CFR § 28.530. However, after reviewing the investigation report, I note that the findings do not link the absence of stability instructions or appropriate freeing ports to be the presumed causal factors to the sinking of the vessel. Accordingly, while the Coast Guard continues to promote voluntary compliance with the recommendations in NVIC 5-86, the specific

recommendation to extend stability regulations to fishing vessels less than 79 feet in length is not supported by the facts of this case.

Recommendation 8: In addition to requiring that all CFVs comply with freeing port requirements in 46 CFR § 28.555, it is recommended that the Commandant amend regulations to require that all freeing ports on all CFVs have a cover or flap that are constructed and fitted to allow water to readily flow outboard but not inboard. Currently the freeing port requirements in 46 CFR § 28.555 permit freeing port covers that allow water to flow outboard, but do not require them. A March 2009 study by Transport Canada found that the benefit of larger freeing ports is greatly increased by having a device that hinders the in-flow of water but not the out-flow. Freeing port covers could have decreased the amount of water that was caught on the well deck of the CFV CAROL ANN, decreasing free surface effect and improving stability.

Action: I do not concur with this recommendation. The Coast Guard recognizes that NVIC 5-86 (page 30) explains how freeing port covers may be used, best practices when fitted, and notes they can reduce the outflow. After reviewing the investigation report, I note the findings do not link the absence of freeing port covers as a presumed causal factor to the sinking of the vessel nor does it justify their use. Accordingly, while the Coast Guard continues to promote voluntary compliance with the recommendations in NVIC 5-86, the specific recommendation to require freeing port covers within 46 CFR § 28.555 is not supported by the facts of this case.

Recommendation 9: It is recommended that the Commandant change Coast Guard policy to authorize Coast Guard Boarding Officers to terminate voyages of CFVs that are found to be operating without proof of a satisfactory Coast Guard CFV Exam (i.e., operating without a CFV Safety Decal) outside of the boundary line. If voyages outside the boundary line could be terminated for not possessing a CFV Safety Decal, operators would be more inclined to request and pass CFV Exams to ensure their voyages will not be terminated. This would likely increase CFV compliance with safety regulations as operators strive to avoid termination.

Action: I concur with the intent of this recommendation. In general, the absence of a successfully completed CFV safety examination, or an expired CFV safety decal is not sufficient grounds for terminating a commercial fishing vessel's voyage. In December of 2023, CG-CVC released CVC Policy Letter 23-02 which provides guidance to District Commanders, Sector Commanders, and Officers in Charge, Marine Inspection (OCMIs), when considering actions to be taken during at-sea boardings on commercial fishing industry vessels that are noncompliant with certain dockside examination requirements. Upon Coast Guard Captain of the Port (COTP) risk-based assessments on non-compliant vessels, COTPs may consider issuing a COTP order directing the non-compliant vessel owner/operator to contact the cognizant OCMI to conduct a CFV dockside safety examination in accordance with 33 CFR § 160.111.

Recommendation 10: It is recommended that the Commandant change Coast Guard policy to strategically partner with the National Oceanic and Atmospheric Association (NOAA) and other local government agencies to identify known offshore fishing grounds and increase targeted boardings of CFVs by Coast Guard Boarding Officers. More frequent boardings would likely

increase CFV compliance with regulations that can result in terminated voyages. Compliance with these regulations would increase the survivability of the crew in situations like this loss.

> **Action**: I concur with the intent of this recommendation. The Coast Guard strategic partnerships with NOAA Fisheries and fishing fleet locations are well-known. However, the Coast Guard is challenged to meet existing boarding targets due to asset availability and competing mission priorities. Increasing boardings and allocating resources is up to the discretion of the cognizant operational commander.

Recommendation 11: It is recommended that the Commandant address the U.S. Supreme Court Case Carpenter v. United States (2018). This ruling held that mobile cellular phone site record requests during criminal investigations qualified as a fourth amendment search requiring a warrant supported by probable cause. Cell phone service providers have interpreted this to include records for missing persons involved in investigations under 46 USC Chapter 63 (not criminal investigations). Although Coast Guard Casualty Investigators have the authority to issue subpoenas for evidence and testimonies, their investigations are not criminal in nature. Therefore, Investigators do not have the ability to obtain search warrants. Investigators served subpoenas for the phone records for all crew members onboard the CVF CAROL ANN, but due to cell phone service providers' interpretation of the above ruling, they would not provide investigators with the cell phone ping coordinates. This hindered Casualty Investigators from obtaining timely data critical to determine the cause of the casualty.

> **Action**: I concur with the intent of this recommendation. The Supreme Court has ruled in *Carpenter v. United States* that historical cell-site location information (CSLI) is a Constitutionally protected privacy interest subject to the Fourth Amendment. Absent a Constitutionally recognized exception, the obtaining of this information by the Federal Government requires a warrant supported by probable cause.
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> In criminal investigations, the Coast Guard can obtain warrants supported by probable cause through coordination with the Coast Guard Investigative Service and the Department of Justice. However, this is inappropriate for non-criminal, marine casualty investigations and a marine casualty investigator does not have a means to obtain a warrant. Cell phone providers, interpreting *Carpenter* conservatively, have declined to release CSLI to marine casualty investigators due to the lack of a warrant. Furthermore, a marine casualty investigation is not covered by the emergency exception to the Fourth Amendment, which is invoked in some Search and Rescue cases to obtain CSLI.
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> To remedy this authority gap, the Coast Guard could consider seeking legislation that authorizes a process for the Coast Guard to seek the issuance of 'administrative warrants' in the context of marine casualty investigations. Such suitably restricted administrative warrants, pursuant to the Supreme Court's decision in *Camara v. Municipal Court of City and County of San Francisco*, need to be supported by a showing of probable cause that a search is justified by reasonable governmental interests. In a marine casualty investigation, the valid governmental interest may be that the CSLI is necessary to determine the cause and improve future maritime safety.

Such an authority would require careful legal and policy review and be appropriately tailored to respect Constitutionally protected privacy rights while enabling effective investigative responses to marine casualties. Thus, the Coast Guard will consider seeking the authorization for administrative warrants and continue to monitor future marine casualty investigations where an administrative warrant would have been beneficial.

Recommendation 12: It is recommended that the Commandant work with the National Commercial Fishing Safety Advisory Committee to study the feasibility of fully or partially funding the purchase of lifesaving equipment for CFVs. Specifically funding for Category 1 EPIRBs for all CFVs. If all vessels carried Category 1 EPIRBs, the time and resources spent on multi-day, large scale search and rescue operations would decrease directly offsetting the funding of these lifesaving devices. Additionally, the survivability and rescue of CFV crews involved in marine casualties would significantly increase.

Action: I do not concur with this recommendation. The ROI indicates the lack of prudent decisions made by the vessel Master was the primary causal factor to the marine casualty. During a CFV dockside examination on the CFV CAROL ANN conducted by Coast Guard Marine Safety Unit Savannah on August 16, 2023, it was noted that the vessel was non-compliant with EPIRB requirements, and as such, the CG-5587 Dockside Exam form reflected that an appropriate EPIRB needed to be mounted on the vessel. There is no record of this deficiency ever being corrected. As stated in my response to Recommendation 1, the ROI's Findings of Fact do not specify how current EPIRB carriage requirements are inadequate. As such, committing National Commercial Fishing Safety Advisory Committee resources to study the funding for Category 1 EPIRBs for all CFVs is not justified at this time.

[redacted]

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16732
March 4, 2025

COMMERCIAL FISHING VESSEL CAROL ANN (O.N. 906483), PRESUMED LOSS OF LIFE AND TOTAL LOSS OF VESSEL NEAR BRUNSWICK, GA, ON OCTOBER 14, 2023

ENDORSEMENT BY THE COMMANDER, SEVENTH 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/ACTION ON RECOMMENDATIONS

Safety Recommendation 8.1.1 It is recommended that the Commandant change the regulation regarding EPIRB carriage on Commercial Fishing Vessels. Currently commercial fishing vessels less than 36 feet in length can meet the carriage requirements with a Category 2 EPIRB provided the vessel has certification from the builder that the vessel will remain afloat. This does not account for total structural failure of a vessel or collisions/allisions resulting in catastrophic damage to the vessel. Category 2 EPIRBs were allowed by the regulations in 1993 to reduce costs for vessel operators. When these regulations were published in 1993 the cost of a Category 1 EPIRB was $1,350. Today a Category 1 EPIRB averages $800 while a Category 2 averages $500. The cost of an EPIRB overall has decreased, and the cost difference between a Category 1 and Category 2 EPIRB today is not significant enough to cause financial burden to mariners. All Commercial Fishing Vessels should be required to use Category 1 EPIRBs ensuring activation regardless of the nature of the distress.

> **Endorsement:** Concur with this recommendation. Recognize the improved affordability and reliability of Category 1 EPIRBs compared to when the regulation was enacted in 1993. Enhancing the standard to ensure automatic activation of EPIRBs in all distress scenarios aligns with safety objectives. This change would enhance mariner safety, particularly in catastrophic situations where manual activation may not be feasible.

Safety Recommendation 8.1.2 It is recommended that the Commandant amend the current Commercial Fishing Vessel life raft stowage requirements found in 46 CFR 28.125. Current regulations do not address the stowage of life rafts beyond requiring that they are stowed to be able to float free and automatically inflate if the vessel sinks. Most other commercial vessel life raft stowage requirements include the condition “The arrangement must ensure that the life raft or life rafts, when released and inflated, are not dragged under by the sinking vessel” as described in 46 CFR 199.130(c)(7). This additional requirement would give Coast Guard Commercial Fishing Vessel Examiners greater leverage to ensure proper stowage of life rafts.

Endorsement: Concur with the intent of this recommendation. Recommend implementing a Coast Guard policy rather than pursuing a regulatory change to clarify life raft stowage requirements for Commercial Fishing Vessels. This policy would apply to all commercial vessels equipped with life rafts, ensuring they are accessible, functional, in a float free arrangement, and safe for use during emergencies. Additionally, it would grant Coast Guard personnel the authority to inspect and enforce compliance, effectively enhancing overall maritime safety.

Safety Recommendation 8.1.3 It is recommended that the Commandant amend the current regulations to require that all Commercial Fishing Vessels be equipped with AIS and that the AIS be powered on while vessels are operating. Currently, only Commercial Fishing Vessels 65 feet or more in length are required to have AIS. AIS is a maritime navigation safety communications system that is standardized by the International Telecommunication Union and adopted by the International Maritime Organization. It provides vessel information including the vessel's identity, type, position, course, speed, navigational status, and other safety-related information automatically. The information is transmitted to similarly equipped shore stations, other ships, and aircraft. Position information is typically broadcasted every 2-10 seconds depending on the vessel's speed or every 3 minutes if at anchor. If the F/V CAROL ANN had been equipped with AIS, Coast Guard Search and Rescue would have been able to determine the last known location and base search patterns off known positions rather than speculation. There is no evidence that indicates that the F/V CAROL ANN collided with another vessel. However, Commercial Fishing Vessels often operate (and are frequently anchored) in high traffic areas, AIS would allow deep draft vessels to monitor and avoid these smaller vessels.

Endorsement: Do not concur with this recommendation. Acknowledge the value of AIS in SAR and collision avoidance; however, mandating its use on all commercial fishing vessels presents feasibility challenges. The cost burden for smaller operators, potential interference with certain operational practices, and enforcement difficulties are significant factors. The Coast Guard may instead recommend targeted incentives for voluntary AIS adoption or consider future phased implementation pending cost-benefit analysis and stakeholder input.

Safety Recommendation 8.1.4 It is recommended that the Commandant add a regulation requiring that the monthly drills and instruction for Commercial Fishing Vessels be documented. 46 CFR 28.270 requires the master or individual in charge of each vessel to give instruction and conduct drills for safety measures at least once per month. There is no method for CFV Examiners to verify if monthly drills and instruction are being completed under the supervision of a person with a drill conductor card.

Endorsement: Concur with this recommendation. Under the proposed rulemaking (2016-14399 RIN 1625-AB85), changes to 46 CFR Part 28.200 includes a new requirement to document emergency drills and to maintain records for three years. Additionally, recommend interim policy to clarify this regulatory requirement until the proposed rulemaking is finalized.

Safety Recommendation 8.1.5 It is recommended that the Commandant amend current Commercial Fishing Vessel regulations to require all Commercial Fishing Vessels to be equipped with a high-water alarm as listed in 46 CFR 28.250. Currently, vessels less than 36 feet are exempt from this requirement. High water alarms in unmanned spaces give crew members additional time to react in case of flooding. This extra time allows a crew to enact damage control measures, and if those fail, allows time to prepare lifesaving equipment for abandoning ship.

> **Endorsement:** Concur with this recommendation. Visual and audible high-water alarms deliver crucial early warnings of flooding, giving crews valuable time to respond. Expanding this requirement to all commercially operated vessels would close an existing safety gap, enhancing preparedness while minimizing cost impacts.

Safety Recommendation 8.1.6 It is recommended that the Commandant obtain legislative authority to require that all operators of Commercial Fishing Vessels operating outside the boundary line obtain and hold a Coast Guard MMC. Currently, only operators on Commercial Fishing Vessels over 200GT are required to hold an MMC. This would ensure operators have basic safety and emergency knowledge. Additionally, this would allow Coast Guard Boarding Officers to terminate unsafe voyages operated by uncredentialed mariners.

> **Endorsement:** Concur with the intent of this recommendation. While credentialing ensures operators possess fundamental safety knowledge, extending this requirement to all vessels operating beyond the boundary line could place an undue regulatory and financial burden on smaller operators. The National Maritime Center should assess the specific operations of mariners to identify cases where additional credentialing for commercial fishing vessel operators may be necessary. A phased-in approach should be implemented to balance safety improvements with operational feasibility.

Safety Recommendation 8.1.7 It is recommended that the Commandant amend regulations to require that all Commercial Fishing Vessels comply with the Stability Instructions requirements in 46 CFR 28.530 and the Freeing Port requirements in 46 CFR 28.555. Currently, these regulations only apply to Commercial Fishing Vessels 79 feet in length or greater without a load line. In December of 2022 the Fishing Vessel Safety Division of the Coast Guard Office of Commercial Vessel Compliance instructed local Commercial Fishing Vessel Examiners (CFVEs) to identify and document specific unsafe conditions related to stability during exams. This instruction was created following an increase in fishing vessel sinkings and crew fatalities due to vessels operating in unsafe stability conditions. Common conditions include: operators not following relevant stability instruction information (when available), not maintaining watertight integrity, and lack of situational awareness when operating during hazardous conditions. CFVEs were instructed to visually inspect watertight doors/hatch covers to ensure watertight capabilities and operable securing mechanisms, inspect freeing ports to ensure water could flow outboard but not inboard, and initiate a discussion with the master regarding the required stability information. The F/V CAROL ANN was not required to have stability instruction information or freeing ports. Stability instruction information could have mitigated the master's decision to operate in quartering seas and larger freeing ports could have decreased the potential for free surface effect that likely led to the sinking of the vessel.

Endorsement: Concur with this recommendation. Vessel stability and proper freeing port function are critical to preventing capsizing and flooding. Expanding these requirements addresses a known safety issue that has contributed to fatalities and vessel losses.

Safety Recommendation 8.1.8 In addition to requiring that all Commercial Fishing Vessels comply with Freeing Port requirements in 46 CFR 28.555, it is recommended that the Commandant amend regulations to require that all freeing ports on all Commercial Fishing Vessels have a cover or flap that are constructed and fitted to allow water to readily flow outboard but not inboard. Currently the Freeing Port requirements in 46 CFR 28.555 permit freeing port covers that allow water to flow outboard, but do not require them. A March 2009 study by Transport Canada found that the benefit of larger freeing ports is greatly increased by having a device that hinders the in-flow of water but not the out-flow. Freeing port covers could have decreased the amount of water that was caught on the well deck of the F/V CAROL ANN, decreasing free surface effect and improving stability.

Endorsement: Do not concur with this recommendation. A regulatory mandate would need to account for vessel-specific variations in design, size, and operating conditions to prevent overregulation and unintended consequences for the commercial fishing industry. A more effective approach would be targeted guidance or incentives, allowing vessel operators to make informed decisions based on individual risk assessments. While freeing port covers can enhance vessel stability by reducing free surface effect from trapped water, aligning with international safety practices and improving crew survivability, this objective is better achieved through industry-driven best practices rather than a one-size-fits-all regulation.

Safety Recommendation 8.1.9 It is recommended that the Commandant change Coast Guard policy to authorize Coast Guard Boarding Officers to terminate voyages of Commercial Fishing Vessels that are found to be operating without proof of a satisfactory Coast Guard Commercial Fishing Vessel Exam (i.e. operating without a Commercial Fishing Vessel Safety Decal) outside of the boundary line. If voyages outside the boundary line could be terminated for not possessing a Commercial Fishing Vessel Safety Decal, operators would be more inclined to request and pass Commercial Fishing Vessel Exams to ensure their voyages will not be terminated. This would likely increase Commercial Fishing Vessel compliance with safety regulations as operators strive to avoid termination.

Endorsement: Do not concur with this recommendation. Terminating the voyage of a commercial fishing vessel solely for lacking proof of a Commercial Fishing Vessel Safety Decal exceeds the authority granted to the Coast Guard under current law, as the safety exam and decal itself is not explicitly required by statute for vessel operation.

Safety Recommendation 8.1.10 It is recommended the Commandant change Coast Guard policy to strategically partner with the National Oceanic and Atmospheric Association and other local government agencies to identify known offshore fishing grounds and increase targeted boardings of Commercial Fishing Vessels by Coast Guard Boarding Officers. More frequent boardings would likely increase Commercial Fishing Vessel compliance with regulations that

can result in terminated voyages. Compliance with these regulations would increase the survivability of the crew in situations like this loss.

Endorsement: Do not concur with this recommendation. Frequent boardings of commercial fishing vessels could lead to unnecessary disruptions in their operations, potentially affecting the economic livelihood of fishermen. Overemphasis on increased boardings may divert Coast Guard resources from other critical safety and enforcement priorities. Additionally, while compliance with regulations is important, it is not always clear that more boardings would directly correlate to increased crew survivability in extreme conditions, as other factors like vessel design and weather conditions also play significant roles.

Safety Recommendation 8.1.11 It is recommended that the Commandant address the U.S. Supreme Court Case Carpenter v. United States (2018). This ruling held that mobile cellular phone site record requests during criminal investigations qualified as a fourth amendment search requiring a warrant supported by probable cause. Cell phone service providers have interpreted this to include records for missing persons involved in investigations under 46 U.S.C. Chapter 63 (not criminal investigations). Although Coast Guard Casualty Investigators have the authority to issue subpoenas for evidence and testimonies, their investigations are not criminal in nature. Therefore, Investigators do not have the ability to obtain search warrants. Investigators served subpoenas for the phone records for all crew members onboard the F/V CAROL ANN, but due to cell phone service providers' interpretation of the above ruling, they would not provide investigators with the cell phone ping coordinates. This hindered Casualty Investigators from obtaining timely data critical to determine the cause of the casualty.

Endorsement: Do not concur with this recommendation. The issue at hand involves constitutional protections under the Fourth Amendment, as clarified by Carpenter v. United States (2018). The Coast Guard lacks the authority to circumvent this ruling or require cell phone service providers to release location data without a warrant supported by probable cause, as marine casualty investigations are administrative and not criminal in nature. A Coast Guard Search and Rescue (SAR) mission and a Coast Guard investigation under 46 CFR Part 4 serve distinct purposes. A SAR mission is a life-saving operation aimed at responding to emergencies where there is an immediate threat to life at sea, such as a distress call or a vessel in danger. In contrast, a 46 CFR Part 4 investigation is a formal inquiry conducted after a marine casualty to determine the causes of the incident, assess regulatory compliance and potential violations, and recommend corrective actions to improve maritime safety and prevent future accidents.

Safety Recommendation 8.1.12 It is recommended that the Commandant work with the National Commercial Fishing Safety Advisory Committee to study the feasibility of fully or partially funding the purchase of lifesaving equipment for Commercial Fishing Vessels. Specifically funding for Category 1 EPIRBs for all Commercial Fishing Vessels. If all vessels carried Category 1 EPIRBs, the time and resources spent on multi-day, large scale search and rescue operations would decrease directly offsetting the funding of these lifesaving devices. Additionally, the survivability and rescue of Commercial Fishing Vessel crews involved in marine casualties would significantly increase.

Endorsement: Concur with the intent of this recommendation. Recognize the enhanced search and rescue benefit provided by the automatic activation of Category 1 EPIRBs in enhancing safety. Equipping all commercial fishing vessels with these devices would improve search and rescue efforts, crew survivability, and align with the Coast Guard's broader mission of safeguarding lives at sea. However, the Commandant does not have the authority to compel the National Commercial Fishing Safety Advisory Committee (NCFSAC) or any other independent entity to fully or partially fund the purchase of EPIRBs. The NCFSAC is an advisory body, and its role is to provide recommendations rather than act as a funding or decision-making authority. Instead, recommend regulatory change per recommendation 8.1.1 and endorsement.

Administrative Recommendation 8.2.1 It is recommended that this investigation be closed.

Endorsement: Concur with this recommendation. Coast Guard Seventh 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.

[redacted]

Nicolette A. Vaughan
Captain, U.S. Coast Guard
Chief, Prevention Division
By direction

U.S. Department of Homeland Security
United States Coast Guard

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01 Aug 2024

COMMERCIAL FISHING VESSEL CAROL ANN (O.N. 906483), PRESUMED LOSS OF LIFE AND TOTAL LOSS OF VESSEL NEAR BRUNSWICK, GA, ON OCTOBER 14, 2023.

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

1. I concur with the Investigating Officer's safety recommendations made to the Commandant.

2. In the last 10 years there have been 170 total losses of commercial fishing vessels along the East Coast resulting in 29 deaths. In each ROI thoughtful recommendations have been made to improve safety and prevent losses of life in arguably one of the most dangerous mariner professions. The safety recommendations made in this case echo many of those made by past investigators.

3. While the F/V CAROL ANN ROI recommendations promote regulatory change, I understand this process can be long and contentious. So, my investigator recommends an alternative solution. Utilize the Services savvy convening authority within the interagency to champion innovative bridging solutions (i.e., in lieu of regulatory change) while promoting unity-of-effort to move the "safety culture needle" within the commercial fishing industry.

4. Thank you for your consideration. At a minimum, the interagency should be striving to take the "Search" out of "Search and Rescue," especially at a time when demand for Coast Guard services is at an all-time high.

Nathaniel L. Robinson
Commander, U.S. Coast Guard
Commanding Officer
Officer in Charge, Marine Inspection
Marine Safety Unit Savannah

Enclosures: (1) Executive Summary
(2) Investigating Officer's Report

U.S. Department of Homeland Security
United States Coast Guard

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July 29, 2024

COMMERCIAL FISHING VESSEL CAROL ANN (O.N. 906483), PRESUMED LOSS OF LIFE AND TOTAL LOSS OF VESSEL NEAR BRUNSWICK, GA, ON OCTOBER 14, 2023

EXECUTIVE SUMMARY

On Saturday, October 14, 2023, at approximately 1500, the Commercial Fishing Vessel CAROL ANN departed Brunswick, GA, via the Brunswick ship channel with three crew members (a master and two deck hands) onboard. They were headed for the Triple Ledges, a well-known local fishing ground, to fish for beeliners (vermillion snapper). The last contact with the vessel was a call from the master to the owner of the vessel made at approximately 1545 while the vessel was passing the entrance buoys for the channel (gated pair #1 and #2). On Thursday, October 19, 2023, the owner approached Coast Guard Station Brunswick, asking if they could locate the vessel on a tracking system, but the F/V CAROL ANN was not equipped with Automatic Identification System (AIS). He did not believe the vessel was in distress; he inquired because the vessel missed its catch drop-off time earlier that day and he had not heard from them since the first day of the trip, but stated they may have stayed out to fish an extra day. Station Brunswick alerted the Sector Charleston Command Center. On Friday October 20, 2023, the owner called Coast Guard Sector Charleston Command Center asking if they had heard from the F/V CAROL ANN. The Sector Charleston Command Center had not heard from the vessel and activated Search and Rescue. On Thursday, October 26, 2023, Search and Rescue efforts were suspended. The F/V CAROL ANN was presumed a total loss with the master and deck hands missing and presumed dead. On November 19, 2023, the fish box from the F/V CAROL ANN was located approximately 17 miles offshore of St. Augustine, FL, and retrieved by good samaritans. The fish box and its lids were the only physical evidence found to date.

Through its investigation, the Coast Guard determined the initiating event to be the F/V CAROL ANN losing stability which led to the sinking of the vessel followed by the death of the master and both deck hands. Causal factors contributing to this casualty were: 1) lack of stability requirements for vessel, 2) lack of freeing port area requirements for vessel, 3) inadequate clear aggregate area of freeing ports, 4) master's lack of prudent seamanship, 5) master's decision to proceed with voyage environmental conditions, 6) lack of established communication between vessel crew and owner, 7) lack of requirement for high water alarm, 8) no reasonable means to prevent vessel sinking following loss of stability, 9) master's decision to operate vessel while not in compliance with regulations, 10) failure to have a Category 1 Emergency Position Indicating Radio Beacon (EPIRB), 11) failure to properly install EPIRB, 12) imprudent stowage of life raft, 13) no lights on lifejackets, 14) failure to conduct monthly training and drills under the supervision of a person with a drill conductor card, and 15) lack of satellite phone or HF radio.

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July 25, 2024

COMMERCIAL FISHING VESSEL CAROL ANN (O.N. 906483), PRESUMED LOSS OF LIFE AND TOTAL LOSS OF VESSEL NEAR BRUNSWICK, GA, ON OCTOBER 14, 2023

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 The Coast Guard was the lead agency for all evidence collection activities involving this investigation. Due to this incident involving presumed loss of life, the Coast Guard Investigative Service (CGIS) was notified and agreed to provide technical assistance as required.

1.3 All times listed in this report are in Eastern Standard Time using a 24-hour format and are approximate.

2. Vessel Involved in the Incident

Figure 1: Photograph of F/V CAROL ANN taken August 16, 2023. Source: USCG

Official Name:	CAROL ANN
Identification Number:	O.N. 906483
Flag:	United States
Vessel Class/Type/Sub-Type	Fishing Vessel/Fish Catching Vessel Bandit Rigged
Build Year:	1986
Gross Tonnage:	14
Length:	34 feet
Beam/Width:	12 feet
Draft/Depth:	3 feet
Main/Primary Propulsion: (Configuration/System Type, Ahead Horse Power)	High Speed Diesel (RPM>900)/Diesel Reduction, 375HP
Owner:	675 CHARTERS LLC Brunswick, GA USA
Operator:	675 CHARTERS LLC Brunswick, GA USA

3. Deceased, Missing, and/or Injured Persons

Relationship to Vessel	Sex	Age	Status
Master	Male	24	Missing (Presumed Dead)
Deckhand 1 (DH1)	Male	24	Missing (Presumed Dead)
Deckhand 2 (DH2)	Male	27	Missing (Presumed Dead)

4. Findings of Fact

4.1 The Incident

4.1.1 On Saturday October 14, 2023, at 0644 the master of the F/V CAPT LYNN texted the F/V CAROL ANN master and stated "30 40 591 79 37 862 where we are steady picking up bees 240ft its ruff [sic] as shit should finish up bees in the morning God willing". He also told the F/V CAROL ANN master that the wind was blowing 30 knots "Fucking 30 knotts [sic] fml".

4.1.2 At approximately 1015 the master and both deckhands were loading the F/V CAROL ANN at the Hidden Harbor Yacht Club in Brunswick, GA. Once the vessel was loaded the master got the vessel underway to City Market in Brunswick, GA to load ice.

4.1.3 The deckhands drove DH1's car to City Market to meet the master and board the F/V CAROL ANN. They took on approximately 2,000 pounds of ice. The last fuel receipt for the vessel shows the F/V CAROL ANN taking on approximately 300 gallons of fuel on October 12, 2023.

4.1.4 At 1153 the master of the F/V CAPT LYNN texted the F/V CAROL ANN master and stated, "Getting big fast we r [sic] steaming in".

4.1.5 At 1220 the master of the F/V CAPT LYNN texted the master of the F/V CAROL ANN and stated, "I'd wait a day if I was u it went from solid 4to solid 6/7 at 5sec going str8 [sic] into it".

4.1.6 At 1222 the master of the F/V CAROL ANN responded to the master of the F/V CAPT LYNN stating "Time is money I'm putting it on my ass I'll be there when it lays down…".

4.1.7 At approximately 1300 the F/V CAROL ANN departed City Market in Brunswick, GA, enroute to the Triple Ledges to fish for vermillion snapper and grouper.

4.1.8 At 1504 the master of the F/V CAROL ANN texted the master of the F/V CAPT LYNN. He stated, "Man U [sic] chose the worst time to steam in its coming hard out the west today" and at 1505 he stated "Glad y'all boys made some money in this ridiculousness I'm probably dumb for leaving today but shit happens".

4.1.9 At 1543:06 the master of the F/V CAROL ANN called the owner of the F/V CAROL ANN. The call lasted three seconds before dropping.

4.1.10 At 1543:16 the owner of the F/V CAROL ANN called the master of the F/V CAROL ANN. The call lasted 231 seconds. The master discussed the plan for the fishing trip. The master stated he was headed to the Triple Ledges to fish for about five days, his goal was to catch 1000 pounds of fish. The master stated he was currently passing the Brunswick River entrance buoys (31° 03" 55.48' N/081° 16" 28.794' W and 31° 04" 02.094' N/081° 16" 23.705' W) when the call dropped. This was the last contact between the owner and master of the F/V CAROL ANN.

4.1.11 At 1827 the master of the F/V CAPT LYNN texted the master of the F/V CAROL ANN, but cell phone records show the text was not received by the F/V CAROL ANN master. This was the last attempted contact between the master of the F/V CAPT LYNN and the F/V CAROL ANN.

4.1.12 On Thursday, October 19, 2023, the owner of the F/V CAROL ANN approached Coast Guard Station Brunswick, GA, and asked if the Station could help find the F/V CAROL ANN on a tracking system. He stated he was just inquiring because the vessel had missed its catch drop-off time earlier that day and had not contacted him since the first day of the trip. This was unusual, as the master usually contacted him twice a day during fishing trips, but he also stated they may have stayed out to fish an extra day and left the communication device shoreside. Station Brunswick alerted the Sector Charleston Command Center.

4.1.13 On Friday, October 20, 2023, at 1040 the owner of the F/V CAROL ANN had not heard anything from the vessel and called the Coast Guard Sector Charleston Command Center to ask if they had heard anything from the F/V CAROL ANN.

4.1.14 At 1045 Sector Charleston Command Center had not heard from the vessel. They activated Search and Rescue posture for the F/V CAROL ANN and began to search the known fishing grounds approximately 80 nautical miles offshore Brunswick, GA.

4.1.15 At 1048 the Sector Charleston Command Center contacted Garmin with an emergency law enforcement information request to locate the DeLorme inReach SE 2-Way Satellite Communicator that the owner have to the master to use during these fishing trips. He was not sure if the communicator was on the F/V CAROL ANN during this trip as he had not heard from the master by way of the device.

4.1.16 At 1107 Garmin indicated that the last signal received from the device was on October 12, 2023, at 0329.

4.1.17 At 1708 the Sector Charleston Command Center notified Coast Guard Marine Safety Unit (MSU) Savannah of the overdue vessel.

4.1.18 At 1728 the Sector Charleston Command Center sent Verizon and T-Mobile exigent circumstance requests for the location of the pings from the phone numbers belonging to the master, DH1, and DH2 on the F/V CAROL ANN.

4.1.19 At 2016 Verizon informed the Sector Charleston Command Center that the master's cell phone last pinged 0.29 miles from the tower at 3911 Frederica Road, St. Simons Island, GA, at 1711 on October 14, 2023. They also informed the Sector Charleston Command Center that DH1's cell phone last pinged 11.45 miles south/southeast from the tower at 1176 North Beach View Dr., Jekyll Island, GA, at 1632 on October 14, 2023. There were no cell phone pings from DH2.

4.1.20 At 2118 the Sector Charleston Command Center received a report that the F/V CAROL ANN had been spotted on Wednesday, October 18, 2023, around 1600 at the Triple Ledges 75 nautical miles offshore Brunswick.

4.1.21 On October 22, 2023, at 2119 the Sector Charleston Command Center confirmed that this spotting had been of a different vessel that was similar in color and model to the F/V CAROL ANN.

4.1.22 On Thursday, October 26, 2023, at 2355 Coast Guard Sector Charleston suspended Search and Rescue efforts. The F/V CAROL ANN was presumed a total loss with the master and two deckhands missing.

4.1.23 On Saturday, November 19, 2023, a fish box was spotted by good samaritans fishing offshore. They tried to retrieve the fish box and put it in their vessel, but it was too heavy. Later in the day, another group of good samaritan fishermen located the box approximately 17 miles off the coast of St. Augustine, FL. They pulled it out of the water and put it in their vessel to bring it back to shore. Neither group of fishermen spotted any other debris around the fish box.

4.2 Additional/Supporting Information

4.2.1 Vessel Information

4.2.1.1 The F/V CAROL ANN was a 14 gross ton, 34-foot Kevlar/fiberglass epoxy fishing vessel. At the time of the incident, it was used to conduct commercial fishing operations off the coast of Brunswick, GA. It was an uninspected Commercial Fishing Vessel subject to the regulations found in 46 CFR Part 28. Additionally, because the vessel operated beyond three nautical miles from the boundary line, the Coast Guard Authorization Act of 2010 required the vessel undergo and pass Commercial Fishing Vessel Safety Exams to verify compliance with 46 CFR Part 28.

4.2.1.2 The F/V CAROL ANN was designed and built in accordance with 46 CFR Subchapter T – Small Passenger Vessel regulations in effect in 1986. In December of 1986 USCG Marine Safety Office Miami conducted plan review for the vessel and witnessed a simplified stability test. A final inspection was completed on April 14, 1987, and the vessel was issued a Certificate of Inspection by the Coast Guard certifying the vessel to carry up to 11 passengers. The vessel was used for dive excursions until September of 1990 when the Certificate of Inspection was deactivated.

4.2.1.3 When the F/V CAROL ANN was first certified, the Coast Guard used Marine Safety Information System (MSIS) which only digitally stored basic vessel information and all vessel files were stored at local Coast Guard offices. All attempts to locate the physical vessel files, including the results of the original stability test, were unsuccessful. No history of the vessel from 1990 until approximately 2017 was discovered. Currently all plans, documents, and files for Coast Guard inspected vessels are uploaded digitally into the USCG's Marine Information for Safety and Law Enforcement (MISLE) database.

4.2.1.4 In 2017, the F/V CAROL ANN was used as a recreational and charter fishing vessel offshore Florida. Previous owners and operators of the vessel reported that it occasionally operated in moderate seas (8-foot swells) and handled the seas well. They also stated the vessel did not like following seas, saying it was difficult to keep the vessel in a straight path.

4.2.1.5 A review of MISLE indicated that the vessel had not been previously involved in any reportable marine casualties. However, on December 6, 2021, the F/V CAROL ANN was boarded by the Coast Guard Cutter SKIPJACK. The previous owner was fishing for King Mackerel offshore Cape Canaveral, FL. The boarding team found the vessel in compliance with all applicable laws and regulations. The vessel was not subject to 46 CFR Part 28 at the time as it was not used for commercial service.

4.2.2 Personnel Information

4.2.2.1 Vessel Crew

4.2.2.1.1 The master did not hold a Merchant Mariner Credential nor was he required to. He had worked as the master of the F/V CAROL ANN for two months and had conducted seven fishing trips including this one. The master told the owner he had been a captain of Commercial Fishing Vessels since he was 17 years old (7 years). The master had not attended a drill conductor course and did not have a drill conductor card.

4.2.2.1.1.1 The master had a prior working relationship with the master of the F/V CAPT LYNN. They had fished together on other Commercial Fishing Vessels out of the Brunswick, GA, area.

4.2.2.1.2 DH1 did not hold a Merchant Mariner Credential nor was he required to. He had been a deckhand on the F/V CAROL ANN on four or five of the vessel's previous trips with this master.

4.2.2.1.3 DH2 did not hold a Merchant Mariner Credential nor was he required to. He had no Commercial Fishing Vessel experience, and this was his first trip. He was hoping to earn some extra money as he was expecting a baby.

4.2.2.2 Vessel Owner

4.2.2.2.1 The owner of the F/V CAROL ANN was looking to finance a Commercial Fishing Vessel out of Brunswick, GA where he lived. He had no experience in the commercial fishing industry, but extensive experience as a charter fishing boat captain and owner.

4.2.2.2.2 He met the father of the master's girlfriend at a local marina. The father shared the master's contact information with the owner and recommended the owner contact the master as a potential captain for the business. The owner and the master hit it off over the phone and the master began looking for potential vessels for the owner to purchase to start the operation.

4.2.2.2.3 The owner purchased the F/V CAROL ANN in July of 2023 out of Cape Canaveral, FL, at the recommendation of the master. The master was responsible for all maintenance and upkeep of the vessel. The master requested supplies he deemed necessary for the vessel from the owner who would then purchase it. The owner left all decisions regarding fishing operations (when and where) and choosing of deckhands to the master.

4.2.2.2.4 The owner had never been on a commercial fishing trip on the vessel and was hoping to get underway on fishing trips with the vessel in the winter.

4.2.2.2.5 There were no company policies/procedures for hiring, training, safety, emergencies, or fishing operations nor were any required to be.

4.2.3 Vessel Stability

4.2.3.1 The F/V CAROL ANN was designed and built in accordance with 46 CFR Subchapter T – Small Passenger Vessels Regulations in effect in 1986. To be certificated as a Small Passenger Vessel, the F/V CAROL ANN complied with the stability regulations in effect for all Small Passenger Vessels contracted for hire on or after January 3, 1984.

4.2.3.2 The builder of the vessel was contacted to locate vessel plans and/or certificates and to answer questions about built-in floatation. He did not have plans for the exact make of the F/V CAROL ANN but did confirm that he had not added additional floatation around the fuel tanks as that would have violated the Small Passenger Vessel regulations at the time.

4.2.3.3 46 CFR Part 28 Subpart E – *Stability* only applied to Commercial Fishing Vessels 79 feet or more in length. As the F/V CAROL ANN was 34 feet, it was not required to meet any regulatory stability requirements.

4.2.3.4 Vessel Modifications

4.2.3.4.1 As the F/V CAROL ANN changed owners and services, multiple structural changes were made to the vessel. Sometime after 1990, before the current owner purchased the vessel in 2023, the flying bridge was removed, and a large fish box was placed on the aft deck. This would have caused a significant re-distribution of weight, lowered the center of gravity, and changed the stability of the vessel. See Figure 2.

Figure 2: Vessel in operation circa 1986. Source: Crusader.

4.2.3.4.2 The current owner mounted a Revere SMLR-A-6 life raft over the starboard side of the wheelhouse. The life raft weighed approximately 160 pounds. A picture taken on August 16, 2023, (Figure 3) showed the vessel had a slight starboard list. The master purchased approximately 1,200 pounds of ice for the vessel two days prior (August 14, 2023). The exact amount of fuel and water onboard the vessel at the time of the picture were unknown.

Figure 3: F/V CAROL ANN showing a slight starboard list August 16, 2023. Source: USCG.

4.2.3.4.3 On August 24, 2023, the current owner installed an additional ice chest with a volume of approximately 11.11 cubic feet. The ice chest was located on the port side amidships inside the cabin. See Figure 4.

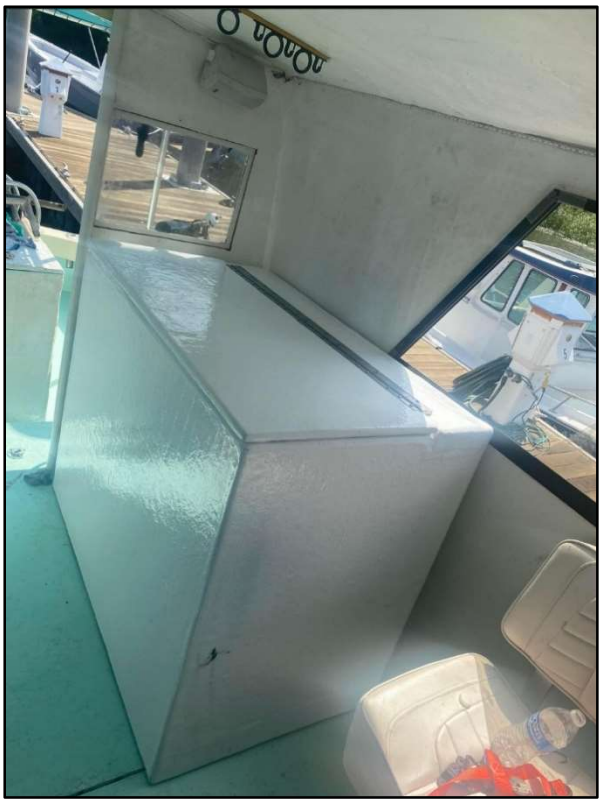

Figure 4: Ice chest installed by current owner. Source F/V CAROL ANN master's Facebook.

4.2.3.4.4 Any modifications made to the vessel after December of 1986 invalidated the stability test results from December of 1986.

4.2.3.5 Freeing Ports

4.2.3.5.1 One aspect of keeping vessel stability was the ability to allow the rapid clearing of water due to adverse weather including wave action. This can be accomplished by having a watertight deck and freeing ports in any installed bulwarks above the watertight deck that can clear water in all probable conditions of list and trim.

4.2.3.5.1.1 Watertight means designed and constructed to withstand a static head of water without any leakage (46 CFR 28.50).

4.2.3.5.1.2 Well deck means a weather deck fitted with solid bulwarks that impede the drainage of water over the sides or an exposed recess in the weather deck extending one-half or more of the length of the vessel measure over the weather deck (46 CFR 171.010).

4.2.3.5.1.3 Bulwark means the side of a ship above the upper deck (29 CFR 1926.606).

4.2.3.5.1.4 A through hull fitting is a penetration of the hull of a vessel that is below the waterline.

4.2.3.5.2 The *Numerical Freeing Port Study on Small Fishing Vessels Final Report* sponsored by Transport Canada conducted in 2009 found that "Although larger freeing ports allow more water on deck if the ingress and egress of water flowing through the freeing ports is unhindered in both directions, for freeing ports fitted with some device (such as 'flaps') that hinders the in-flow but not the out-flow then having larger freeing ports is shown to be beneficial. The benefits here are more to do with stability than general deck wetness."

4.2.3.5.3 The master cut into the hull of the F/V CAROL ANN to expand already existing freeing ports and add freeing ports. At the time of the incident the vessel had six (one on each side and four on the stern) freeing ports approximately four inches in diameter each. The construction of the freeing ports allowed water to readily flow outboard and inboard. See Figure 5.

4.2.3.5.4 No documentation from Coast Guard inspections of the vessel in the 1980s was able to be located. Therefore, it is not known what the clear aggregate area of the freeing ports was during the time the vessel was certificated by the Coast Guard.

Figure 5: F/V CAROL ANN freeing ports. Source: F/V CAROL ANN owner's Facebook.

4.2.3.5 Best Practices Ship handling and Stability

4.2.3.5.1 According to *A Best Practices Guide to Vessel Stability Second Edition* published by the United States Coast Guard, quartering seas (waves on the vessel's quarters) are the most dangerous sea conditions for a fishing vessel. This condition combines the dangers of following seas and beam seas. This increases chances of swamping by boarding waves which can result in changes of vessel center of buoyancy and cause gear shifts that lead to large capsizing moments.

4.2.4 Commercial Fishing Vessel Requirements and Exam

4.2.4.1 Fishing vessels, fish processing vessels, and fish tender vessels, as defined in 46 U.S.C. 2101(11)(a), (b), and (c), respectively, may be exempt from vessel inspection requirements. Basically, size, propulsion, and service or use of a vessel determines whether it is subject to inspection.

4.2.4.1.1 The F/V CAROL ANN was an uninspected Commercial Fishing Vessel less than 200 gross tons and was not certificated (i.e. issued a Certificate of Inspection) by the Coast Guard.

4.2.4.2 Although not inspected and certified by the Coast Guard, uninspected Commercial Fishing Vessels were required to meet applicable sections of 46 CFR Part 28 – *Requirements for Commercial Fishing Industry Vessels*. This requirement was verified by the Coast Guard through Dockside Safety Exams conducted by Coast Guard Commercial Fishing Vessel Examiners (CFVE). When vessels were determined to have met 46 CFR Part 28 requirements and passed, they were issued a Commercial Fishing Vessel Safety Decal by a Coast Guard CFVE. When vessels were determined to not meet the requirements in 46 CFR Part 28, they were issued deficiencies and directed to contact the CFVE to schedule a re-examination.

4.2.4.3 The F/V CAROL ANN was last examined by the MSU Savannah Coast Guard CFVE on August 16, 2023, with the owner and master in attendance. The CFVE identified 16 deficiencies meaning that the vessel was not in compliance with 46 CFR Part 28 and a decal was not issued.

4.2.4.4 On August 17, 2023, the CFVE followed up with the owner and master of the F/V CAROL ANN via e-mail.

4.2.4.4.1 In the e-mail, the CFVE explained that during the exam he was not sure of the length of the vessel but after returning to the office and referencing MISLE he learned the vessel was less than 36 feet long. Therefore, two of the deficiencies he had issued (high-water alarm and Inland Navigation Rules) were not applicable and could be disregarded. This left 14 applicable deficiencies that required correction.

4.2.4.4.2 Additionally, he stated, “In regards to the EPIRB, you can have a category 2, 406 MHz EPIRB mounted near the operating station provided you have a Builders Certification that the vessel was constructed with “sufficiently Buoyant Material.”” and “You will need to track down the Builders Certification that says the boat was constructed of “sufficiently Buoyant Material”. You will also need to register the EPIRB with NOAA. I have attached a link to the NOAA website where you can register the EPIRB”.

4.2.4.5 Deficiencies of note

4.2.4.5.1 The vessel was in possession of a Category 2 Emergency Position Indicating Radio Beacon (EPIRB) purchased by the owner on July 28, 2023. It

was in the original packaging and not mounted or registered with the National Oceanic and Atmospheric Association (NOAA) as required.

4.2.4.5.2 None of the lifejackets were equipped with lights as required.

4.2.4.5.3 The vessel was not equipped with a radar reflector, means of making an efficient sound signal, proper navigation lights (all around red over white lights for fishing), or required communication equipment as required.

4.2.4.5.4 46 CFR Part 28 required that the crew conduct drills and instruction monthly under the supervision of a person with a drill conductor card. No one on the vessel was in possession of a drill conductor card. Additionally, the owner had not hired a certified person to supervise training and/or drills.

4.2.4.5.4.1 To obtain a drill conductor card mariners must attend an approved drill conductor course. The course includes training on abandoning the vessel, fighting a fire in different locations on board the vessel, recovering an individual from the water, minimizing the effects of unintentional flooding, launching survival craft and recovering lifeboats and rescue boats, donning immersion suits and other wearable personal floatation devices, donning a fireman's outfit and a self-contained breathing apparatus, making a voice radio distress call and using visual distress signals, activating the general alarm, and reporting inoperative alarm systems and fire detection systems.

4.2.4.5.4.2 Additionally, there was no requirement to keep documentation of these drills and instruction, therefore, it is not possible for the CFVE to verify completion of this required training and instruction.

4.2.4.6 During the exam the vessel was equipped with a USCG approved Revere SMLR-A-6, Safety of Life at Sea (SOLAS) A-Pack, 6-man life raft. The life raft was properly rigged and fitted in an authorized float free arrangement as required by 46 CFR Part 28. The life raft was located on the top of the wheelhouse underneath the a-frame radar mount. It was last serviced in August 2023. See Figures 5 and 6.

Figure 6: Properly rigged Coast Guard approved life raft on the F/V CAROL ANN. Source: USCG.

4.2.4.7 During the exam the vessel was equipped with a bilge pump in the engine compartment. Per 46 CFR 28 the vessel was required to have a bilge pump. The operational status was unknown, and it was not, nor was it required to be, tested during the Commercial Fishing Vessel Exam.

4.2.5 Emergency Position Indicating Radio Beacon (EPIRB)

4.2.5.1 An EPIRB is a waterproof 406 MHz distress beacon that is used by Search and Rescue agencies to locate vessels or persons in distress. When activated the EPIRB broadcasts a 406 MHz distress signal to polar orbiting and geostationary satellites. After the satellites received the beacon, the message is transmitted to a local user terminal (LUT). The LUT calculates the position using Doppler shift caused by the movement of the satellites relative to the EPIRBs beacon. Once the

location is calculated, the LUT transmits a distress alert to a national Mission Control Center (MCC). The MCC generates an alert and sends this to the most appropriate Search and Rescue agency.

4.2.5.2 From the activation of the EPIRB, it can take up to one hour for the 406 MHz signal to the reach the satellites, transmit to the LUT and then to the MCC. The process can take as little as three minutes for EPIRBs equipped with GPS (the latitude and longitude are given in the initial 406 MHz signal).

4.2.5.3 When activated, the EPIRB broadcasts a separate 121.5MHz signal used by Search and Rescue agencies to home in on the initial location transmitted by the 406 MHz signal.

4.2.5.4 EPIRBs are mounted in brackets preferably near the bridge of the vessel to be used in case of emergency. There are currently two types of EPIRB brackets, Category 1 and Category 2. A Category 1 bracket uses a hydrostatic release to automatically deploy the EPIRB from the bracket if submerged in five to thirteen feet of water.

4.2.5.5 A Category 2 bracket does not have a hydrostatic release and requires vessel personnel to manually remove the EPIRB from the bracket to be activated by water. The EPIRB can be manually activated while in its bracket however, whether Category 1 or 2, the water activation sensors only operate when the EPIRB is no longer in its bracket.

4.2.5.6 On April 19, 1990, the Coast Guard published a notice of proposed rulemaking titled “Emergency Position Indicating Radio Beacons for Uninspected Vessels.” The Coast Guard received 125 letters from the public commenting on the proposal. One comment asked for a variance to allow carriage of a Category 2 EPIRB for boats with the level floatation requirements of 33 CFR 183. The Coast Guard responded by stating the requirements in 33 CFR 183 applied to recreational vessels under 20 feet in length. However, the Coast Guard agreed and revised the rule to allow certain fishing vessels to use a Category 2 EPIRB. Adding the vessel must be certified by the manufacturer that the construction of the vessel included inherently buoyant material to prevent the boat from sinking.

4.2.5.7 On March 10, 1993, Coast Guard published a final rule regarding the “EPIRBs On Uninspected Vessels Requirements Act,”

> 4.2.5.7.1 4.2.5.7.1 After March 10, 1994, the owner of a manned uninspected commercial vessel less than 11 meters (36 feet) in length or over 36 feet which has a builder’s certification that the vessel is constructed with sufficient inherently buoyant material to keep the flooded vessel afloat, shall ensure that the vessel does not operate on the high seas or beyond three miles from the coastline of the Great Lakes, unless it has installed in a readily accessible location at or near the principal steering station— (1) A manually

activated Category 2 406 MHz EPIRB; or (2) a float-free, automatically activated Category 1 MHz EPIRB; or (3) Until February 1, 1998 a 121.5/243.0 MHz EPIRB meeting 46 CFR 25.26—30(a) (1993).

4.2.5.8 The relevant regulations in effect at the time of the incident were:

4.2.5.8.1 46 CFR 25.26—5(b) (2023): The owner of a fishing vessel, fish processing vessel, or a fish tender vessel less than 11 meters (36 feet) in length, or 11 meters or more in length which has a builder's certification that the vessel is constructed with sufficient inherently buoyant material to keep the flooded vessel afloat, shall ensure that the vessel does not operate on the high seas or beyond three miles from the coastline of the Great Lakes, unless it has installed in a readily accessible location at or near the principal steering station—(1) A manually activated Category 2 406 MHz EPIRB; or (2) A float-free, automatically activated Category 1 406 MHz EPIRB (3) Until February 1, 1998, a 121.5/243.0 MHz EPIRB meeting § 25.26-30.

4.2.5.9 On July 28, 2023, the vessel owner purchased a GlobalFix V4 EPIRB Category 2 manufactured by ARC Electronics, Incorporated at River Services, Incorporated in Thunderbolt, GA. This EPIRB also contained a built in Global Position System (GPS) that could transmit the latitude and longitude in the 406 Hz signal to rescue satellites. When activated the GlobalFix V4 is designed to transmit a 406 MHz signal every 50 seconds for 48 hours.

4.2.5.10 On August 16, 2023, the CFVE observed an EPIRB on the F/V CAROL ANN uninstalled, in its box, laying on the helm.

4.2.5.10.1 The CFVE issued a deficiency and followed-up with an e-mail advising the master and owner that the EPIRB needed to be mounted properly and registered with NOAA.

4.2.5.11 On September 16, 2023, the owner uploaded a video of the F/V CAROL ANN to Facebook showing the EPIRB box lying on the helm. See Figure 7.

Figure 7: EPIRB box on laying on helm September 16, 2023. Source: F/V CAROL ANN owner's Facebook.

4.2.5.12 On September 21, 2023, and October 6, 2023, the master uploaded videos of the F/V CAROL ANN to Facebook showing the EPIRB box in the same place laying on the helm. See Figures 8 and 9.

Figure 8: EPIRB box laying on helm on September 21, 2023. Source: F/V CAROL ANN master's Facebook.

Figure 9: EPIRB box laying on helm on October 6, 2023. Source: F/V CAROL ANN master's Facebook.

4.2.6 Communications Equipment

4.2.6.1 Per 46 CFR 28 Commercial Fishing Vessels that operated more than 20 miles from the coastline were required to have a VHF radio and either an HF radio or a satellite phone.

4.2.6.2 On August 16, 2023, during the Commercial Fishing Vessel Exam the CFVE observed that the F/V CAROL ANN was not equipped with an HF radio or a satellite phone. The CFVE also observed that the F/V CAROL ANN had an operational VHF radio, but it did not have a Federal Communications Commission (FCC) station license.

4.2.6.3 There was no record of an HF radio or satellite phone being purchased by the owner after the Commercial Fishing Vessel Exam.

4.2.6.4 The owner of the F/V CAROL ANN gave a DeLorme inReach SE 2-Way Satellite Communicator to the master of the F/V CAROL ANN. He owned the satellite communicator prior to purchasing the F/V CAROL ANN but gave it to the master so they could communicate during the fishing trips.

4.2.6.5 The DeLorme inReach SE 2-Way Satellite Communicator could track the location of the F/V CAROL ANN and share it with the owner onshore. It also allowed the owner to ping the device to see its current location. The master could communicate with the owner via two-way messaging while offshore outside of the range for cell phone service.

4.2.6.6 The master of the F/V CAROL ANN used the satellite communicator on previous fishing trips to message the owner. The owner asked the master to use the satellite communicator to message him twice a day with updates on the trip. The satellite communicator data showed that the master messaged the owner sporadically during the previous trips.

4.2.6.7 When powered on, the satellite communicator transmitted its position to a Garmin data base approximately every six hours.

4.2.6.8 There was no billing data available from the satellite communicator after 1129 on October 11, 2023, indicating the device was not powered on and the device was never located following the incident.

4.2.6.9 On December 22, 2023, subpoenas were served for the cell phone records of all three crew members for October 14, 2023, from 1000 to 2200 EST. The subpoenas requested all subscriber data, call activity (time of call, duration of call, and phone number) for both incoming and outgoing calls, content of text messages, data activity, and cellular pings to towers including time, distance, and direction.

4.2.6.10 Cell phone providers responded to the subpoena and stated, "Under the Supreme Court case commonly known as United States v. Carpenter (2018), we can only release cell site location or other location information when presented with a valid warrant based on probable cause." They did provide investigators with some cell phone data but not location information as stated.

4.2.7 Weather

4.2.7.1 On October 14, 2023, at 0220, NOAA forecasted that the weather from Altamaha Sound, GA to Fernandina Beach, FL, 20 to 60 nautical miles offshore for the day would be west winds 15-20 knots, seas 4-5 feet with a dominant period 8 seconds. The forecast for the evening was identical save a 7 second dominant period.

4.2.7.2 On October 14, 2023, at 1500, the water temperature at the nearest NOAA inshore buoy (Grays Reef – 40 nautical miles Southeast of Savannah, GA) was approximately 75 degrees Fahrenheit.

4.2.7.3 On October 14, 2023, between 0644 and 0648, the master of the CAPT LYNN texted the master of the F/V CAROL ANN and stated that it was "ruff [sic] as shit" and the winds were "fucking 30 knotts [sic] fml". The master of the F/V CAROL ANN acknowledged these messages.

4.2.7.4 On October 14, 2023, at 1220 the master of the F/V CAPT LYNN texted the master of the F/V CAROL ANN and said "it [the seas] went from "4to solid 6/7 at 5sec". The master of the F/V CAROL ANN acknowledged this message.

4.2.7.5 On October 14, 2023, at 1504 the master of the F/V CAROL ANN texted the master of the F/V CAPT LYNN and stated, “Man U chose the worst time to steam in its coming hard out the west today”. A minute later at 1505 the master of the F/V CAROL ANN stated “Glad y’all boys made some money in this ridiculousness I’m probably dumb for leaving today but shit happens”.

4.2.7.6 This sea state put the seas off the port quarter of the F/V CAROL ANN based on its intended northwesterly route to the Triple Ledges.

4.2.7.7 On October 14, 2023, at 1827, the master of the CAPT LYNN texted the master of the F/V CAROL ANN and said that he was “56miles out and it is shitty af still 5sec average 6ft”. The master of the F/V CAROL ANN did not respond to this message.

4.2.8 Vessels in the Surrounding Area

4.2.8.1 Automatic Identification System (AIS) regulations are found in 33 CFR 164.46. AIS is required for certain vessels, specifically those over 65 feet in length in commercial service, certain towing vessels, and vessel over 300 gross tons on an international voyage. Although not required, many vessels are equipped with an AIS for safety purposes. Regulations define AIS as a maritime navigation safety system that transmits the vessels type, position, course, speed, navigational status, and other safety-related information automatically to shore stations, other vessels, and aircraft.

4.2.8.2 A pull of AIS data from the Coast Guard Navigation Center (NAVCEN) showed 92 vessels within thirty miles of the Brunswick, GA coast during October 14-16, 2023. Many of the commercial deep draft vessels were traveling in the north/south direction in the Atlantic shipping lanes, and few were traveling in the east/west direction to enter/exit the Port of Brunswick.

4.2.8.3 None of these vessels reported seeing the F/V CAROL ANN or hearing/seeing any signs of distress from any surrounding vessels.

4.2.8.4 A separate narrow pull of AIS data from 1600-2359 on October 14, 2023, showed 20 AIS equipped vessels transmitting within thirty miles of Brunswick, GA. Twelve of the vessels were inshore transiting the Intercoastal Waterway and eight were offshore Brunswick, GA. Of the eight, three were Roll-On Roll-Off (RO/RO) deep draft vessels. One of these vessels was inbound Brunswick, GA and two were outbound Brunswick, GA.

4.2.9 Debris Collection

4.2.9.1 Fish Box

4.2.9.1.1 On November 19, 2023, the fish box from the F/V CAROL ANN was recovered approximately 17 miles off the coast of St. Augustine, FL, approximately 130 miles SW of the initial search area. See Figures 5 and 10.

Figure 10: F/V CAROL ANN fish box. Source: Good samaritan who located fish box.

4.2.9.1.2 On November 20, 2023, MSU Savannah investigators requested that St. John's County Sheriff's Office Marine Unit of St. John's County, FL, conduct a side scan sonar search of the location where the fish box was found.

4.2.9.1.3 On November 24, 2023, the St. John's County Sheriff's Office Marine Unit completed the side scan sonar search with negative results.

4.2.9.1.4 On November 28, 2023, MSU Savannah contacted ROFFS requesting assistance to explain the location where the fish box was recovered. ROFFS was a consulting company that specialized in fisheries oceanography, environment science, and satellite remote sensing that was based out of West Melbourne, FL, and Miami, FL.

4.2.9.1.5 ROFFS conducted a reverse drift analysis using the location and date that the fish box was recovered. The results indicated that the fish box likely entered the water east of 81° 00' W (12-15 miles east of St. Simons Island and west of the Gulf Stream) to be pulled southwards by the current. Had the fish box entered the water east of 81° 00' W the currents likely would have pushed the debris northeast along the Gulf Stream.

4.2.9.1.6 On December 7, 2023, MSU Savannah contacted Coast Guard Maritime Intelligence Fusion Center, Atlantic (MIFC-LANT) and requested satellite imagery from the last presumed location of the F/V CAROL ANN on October 14, 2023, out to approximately 30 miles offshore in the direction of

their fishing grounds. Due to significant cloud cover, results were inconclusive.

4.2.9.1.7 On December 16, 2023, one piece of the lid to the fish box washed up on the beach in Volusia County, FL.

4.2.9.1.8 On December 20, 2023, the center piece of the lid to the fish box washed up on the shore in Flagler County, FL.

Figure 11: Simulation of fish box lid floating in Savannah River, GA, to show little to no sail area. Source: USCG.

4.2.9.1.9 The fish box had a large sail area above the water as seen in Figure 10 while the two lids of the fish box had very low profiles as seen in Figure 11. This means that the lids had significantly less sail area than the fish box, therefore, their drift would have been mainly determined by the current, while wind would have had a larger impact on the drift of the fish box. The location where the lids were discovered were in line with the reverse drift analysis in 4.2.9.1.5, indicating the lids entered the water prior to the Gulf Stream closer to shore.

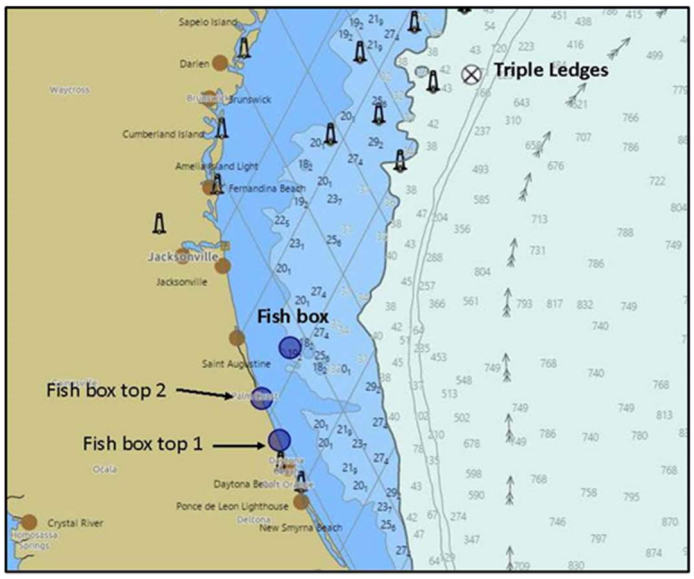

Figure 12: Location of fish box, lids, and likely fishing grounds. Source: USCG.

4.2.9.2 No other debris collected could be positively identified as belonging to the F/V CAROL ANN.

4.2.10 Previous Incidents

4.2.10.1 F/V LADY DIANE (September 28, 2023): While returning from the vessel's fishing grounds approximately 50 miles offshore Brunswick, GA, with the seas off its quarters (quartering seas), the F/V LADY DIANE took on water from the stern bulwarks and rapidly sank. The master and mate were able to escape the sinking vessel and enter the vessel's life raft. A properly installed Category 1 EPIRB activated, and the crew was rescued by the Coast Guard within two hours of the sinking. The investigation determined the cause of the sinking to be: 1) Lack of regulatory oversight, fishing vessel of this gross tonnage did not have to meet any formal stability criteria or undergo inclining experiments. 2) Lack of stability, the vessel was uninspected and not required nor built to meet any formal stability standards. The vessel had a solid bulwark of approximately 4 feet high and 10 feet long. Its freeing ports were approximately 100 square inches making them insufficient for the size of the well deck. Additionally, modifications were completed on the vessel after its original build to include a heavy fiberglass canopy up high over the stern well deck raising its center of gravity. 3. Lack of training, the operator of the vessel was returning to port taking seas on the starboard quarter (quartering seas).

4.2.10.2 F/V JESSICA BROOKE (December 19, 2023): While fishing approximately 30 nautical miles offshore Charleston, SC, the F/V JESSICA BROOKE was traveling in following seas and took water over the stern causing the vessel to lose stability and begin to sink. The master was able to initiate a MAYDAY call to the Coast Guard but was not able to give a position. The vessel's unsecured fish box was pitched forward knocking the master down

causing him to briefly lose consciousness. Although the vessel was equipped with an EPIRB, it was not mounted and never activated. Both crewmembers were able to don lifejackets and enter the installed life raft. The Coast Guard was able to develop a search area based off coordinates ascertained from Lines of Bearing from the Remote Fixed Facilities that transmitted the master's MAYDAY call. Both crewmembers were rescued by the Coast Guard within two hours of the MAYDAY call. The investigation determined the cause of the sinking to be: 1) inadequate deck drainage (freeing port) and 2) insufficient bilge pumps.

4.2.10.3 Total Loss of Commercial Fishing Vessels (2014-2023):

4.2.10.3.1 Excluding the two incidents detailed in 4.2.10.1 and .2, in the last ten years, there were 170 total losses of Commercial Fishing Vessels off the East Coast of the United States.

4.2.10.3.2 Of these incidents 155 were not attributed to losses of stability and 15 were attributed to losses of stability.

4.2.10.3.3 Of the 155 incidents not attributed to losses of stability 18 (10%) resulted in the loss of one or more lives.

4.2.10.3.4 Of the 155 incidents not attributed to losses of stability four (2.5%) of these incidents resulted in the loss of multiple lives.

4.2.10.3.5 Of the 15 incidents attributed to losses of stability five (33%) resulted in the loss of one or more lives.

4.2.10.3.6 Of these 15 incidents attributed to losses of stability four (27%) of these incidents resulted in the loss of multiple lives.

4.2.10.3.7 In addition to the losses of life, these 15 casualties that were attributed to losses of stability resulted in five injuries and over $4,500,000 in property damage.

5. Analysis

5.1 **No stability requirements for vessel.** The stability requirements in 46 CFR 28 Subpart E apply to vessels 79 feet in length and greater. The F/V CAROL ANN, due to its length, was not required to (and did not) meet these requirements. Although a simplified stability test was conducted on the vessel in 1986, major modifications throughout the life of the vessel invalidated the results of that test. Had the F/V CAROL ANN been required to comply with regulatory stability standards it would have increased the chances of the vessel maintaining stability in the encountered environmental conditions.

5.1.1 **No freeing port area requirements for vessel.** The F/V CAROL ANN was not required to have a specified aggregate clear area of freeing ports based on its construction dimensions. While the F/V CAROL ANN had freeing ports totaling approximately 80 square inches of aggregate clear area, this was not large enough to

keep up with the significant volume of water the F/V CAROL ANN likely took on during the incident. Had the vessel been required to comply with freeing port requirements in 46 CFR 28.555 it would have had 194 square inches of freeing port area. Additionally, as the F/V CAROL ANN had minimal aft sheer, 46 CFR 28.555(g) required the freeing port area to be increased by 50% (291 square inches). This larger aggregate clear area of freeing ports would have allowed the vessel to drain water more rapidly potentially preventing free surface effect and the loss of stability.

5.2 **Inadequate clear aggregate area of freeing ports.** The freeing ports of the F/V CAROL ANN were not large enough keep pace with the water ingress onto the well deck of the vessel. The master had also modified the vessel, expanding, and adding freeing ports on the stern and sides to total six freeing ports with a diameter of approximately four inches each (approximately 80 square inches of aggregate clear area). The small area of freeing ports likely led to the well deck filling with water which caused free surface effect compromising the stability of the vessel. Had the F/V CAROL ANN had a larger area of freeing ports it would have been able to drain water more rapidly potentially preventing free surface effect and the loss of stability.

5.3 **Master's lack of prudent seamanship (quartering seas).** The seas at the time the F/V CAROL ANN departed on October 14, 2023, were six to seven feet at five seconds coming out of the west. The F/V CAROL ANN was likely on a northeasterly route towards the Triple Ledges putting the seas off its port quarter, creating the most dangerous sea condition (quartering seas) for fishing vessels. In accordance with the *Best Practices Guide to Vessel Stability*, when vessels are in quartering seas the master should reduce speed, change heading, and steam into the seas creating a more stable condition for the vessel.

5.4 **Master's decision to proceed with voyage in potentially adverse environmental conditions.** The seas at the time the F/V CAROL ANN departed on October 14, 2023, were six to seven feet at five seconds coming out of the west. The F/V CAROL ANN was likely on a northwesterly route towards the Triple Ledges putting the seas off its port quarter, creating the most dangerous sea condition (quartering seas) for fishing vessels. In his texts with the master of the F/V CAPT LYNN, the master of the F/V CAROL ANN admitted that he was "probably dumb for leaving today…" but he decided to proceed despite this and the implied warning from the master of the F/V CAPT LYNN.

5.5 **Lack of established communication between vessel crew and owner.** The master and owner communicated sporadically throughout the previous three trips using the DeLorme inReach SE 2-Way Satellite Communicator. However, there was never an established schedule. Oftentimes the master's responses were inconsistent as indicated by the DeLorme inReach SE 2-Way Satellite Communicator records. The owner requested the master communicate with him twice a day on the trips, but this was never a formal policy and was not enforced by the owner on the previous three trips. On the fifth day of the trip, the owner approached the Coast Guard to report the vessel and crew members missed their catch drop off time. Had the crew and owner established a communication schedule the owner may have had reason to believe the vessel had run into trouble sooner and he likely would have notified the Coast Guard earlier.

5.6 **No reasonable means to prevent vessel sinking following loss of stability.** The vessel was not required to and did not comply with any stability regulations. Therefore, it also was not required to and did not comply with damage stability standards or water on deck stability standards. Once the vessel began to lose stability due to environmental conditions, flooding, or a combination of both there was no reasonable means for the vessel to recover and prevent sinking.

5.7 **Master's decision to operate vessel while not in compliance with regulations.** The F/V CAROL ANN was not in compliance with Commercial Fishing Vessel regulations during a Coast Guard Commercial Fishing Vessel Exam on August 16, 2023. The vessel did not receive a Coast Guard Commercial Fishing Vessel decal and was issued 14 deficiencies with the master and owner present. When the vessel departed Brunswick, GA, on October 14, 2023, none of the deficiencies from the exam had been verified as corrected by the Coast Guard CFVE and the vessel had not received a Coast Guard Commercial Fishing Vessel decal. Commercial Fishing Vessels that do not have a Coast Guard Commercial Fishing Vessel decal are not allowed to operate beyond 3 nautical miles from the boundary line. The master was aware of the deficiencies issued and chose to get the vessel underway. Had the master ensured that the F/V CAROL ANN was in compliance with the applicable regulations crew survivability would have greatly increased.

5.8 **Failure to have a Category 1 EPIRB.** The owner purchased a Category 2 EPIRB for the vessel. This EPIRB was on the vessel in its original packaging during the Commercial Fishing Vessel Exam and the closed box was seen in videos and pictures onboard the vessel on September 16, September 21, and October 6, 2023. Beginning in 1993, Category 2 EPIRBs were allowed on commercial fishing vessels less than 36 feet or vessels greater than 36 feet if certified by the manufacturer as having inherently buoyant material which would prevent the boat from sinking. Although the vessel was only required to have a Category 2 EPIRB, had the F/V CAROL ANN been equipped with a properly mounted Category 1 EPIRB, it would have automatically launched and activated when the F/V CAROL ANN sank, increasing the survivability of the crew.

5.9 **Failure to properly install EPIRB.** There was an EPIRB on the vessel during the Commercial Fishing Vessel Exam on August 16, 2023. During the exam the EPIRB was in its original packaging in the wheelhouse of the vessel. One of the deficiencies issued to the vessel during the exam was for not having the EPIRB properly mounted. On September 16, September 21, and October 6, 2023, videos of the vessel taken by the master and owner show the EPIRB box next to the helm of the vessel. It is reasonable to assume that the EPIRB was not properly mounted on October 14, 2023, when the vessel departed Brunswick, GA. Had the Category 2 EPIRB been properly mounted at or near the steering station it would have been easier for the crew to locate and activate during vessel emergencies.

5.10 **Stowage of life raft**. The vessel was equipped with a properly rigged and recently serviced 6-person float free life raft. The life raft was stowed on the top of the wheelhouse but was underneath the a-frame radar mount (See Figure 13). To date the life raft has not been located. When the vessel lost stability and sank the hydrostatic release likely operated properly, but the life raft may have caught in the a-frame radar mount while floating to the surface. It is reasonable to assume that the life raft never reached the surface, and the crew of the vessel was not able to utilize it. Had the life raft been stowed forward on the wheelhouse, clear of the a-frame radar mount, it would have increased the ability of the life raft to float freely to the surface greatly increasing the survival chances of the crew.

Figure 13: F/V CAROL ANN life raft stowed underneath a-frame radar mount Source: F/V CAROL ANN owner's Facebook.

5.11 **No lights on lifejackets.** The vessel was equipped with three lifejackets, but during the Commercial Fishing Vessel Exam on August 16, 2023, the lifejackets were not equipped with lights as required. There were no receipts or other proof that lights had been purchased for the lifejackets following the exam. Therefore, it is reasonable to assume that the lifejackets did not have lights when the F/V CAROL ANN departed Brunswick, GA on October 14, 2023. If the crew was able to locate and don the lifejackets while in distress it would have been difficult for nearby vessels or Search and Rescue assets to locate the crew in the dark.

5.12 **Failure to conduct monthly training and drills under the supervision of a person with a drill conductor card.** No crew member had taken the drill conductor course and obtained a drill conductor card as noted during the Commercial Fishing Vessel Exam on August 16, 2023. Additionally, the crew was not conducting monthly drills and instruction under the supervision of a person with a drill conductor card as noted during the Commercial Fishing Vessel Exam on August 16, 2023. Had the crew conducted this required monthly training under a certified person they would have been trained on abandoning the vessel, minimizing flooding, launching survival craft, making distress calls, and donning personal floatation devices. This training and experience likely would have increased the crew's chances of survival when the vessel was in distress.

5.13 **Lack of satellite phone or HF radio.** During the Commercial Fishing Vessel Exam on August 16, 2023, the vessel was not equipped with either a satellite phone or HF radio as required. The owner confirmed that on October 14, 2023, the vessel and crew were only equipped with a VHF radio and the DeLorme inReach SE 2-Way Satellite Communicator

which did not appear to be operational at the time of the incident. Had the vessel been equipped with a satellite phone or HF radio the vessel may have been able to call for help more readily when it was in distress. Additionally, the owner could have used the satellite phone/HF radio to establish regular communications with the vessel.

5.14 **Lack of requirement for high water alarms.** Commercial Fishing Vessels over 36 feet are required to have visual and audible alarm to indicate levels of high water in any spaces containing through hull fittings or any other space subject to flooding. The F/V CAROL ANN was not equipped with high water alarms and was not required to be. However, had the F/V CAROL ANN been flooding via through hull fittings in its unmanned spaces (engine compartment) the high-water alarm would have activated notifying the crew of the flooding immediately. This would have given the crew additional time to react to the flooding and prepare lifesaving equipment before the vessel lost stability.

5.15 **Outcomes of the F/V CAROL ANN Considered**

5.15.1 Fire: The engine of the F/V CAROL ANN caught fire offshore resulting in the sinking of the vessel and subsequent disappearance of the crew members. The recovered fish box was part of the F/V CAROL ANN and showed no signs of fire and/or smoke damage. Pictures of the vessel and the description from the owner place the fish box on the stern of the vessel aft of the engine compartment. See Figures 1, 3, 5, and 13.

5.15.2 Collision/Allision: The F/V CAROL ANN collided or allided with another vessel or object while offshore resulting in the sinking of the vessel and subsequent disappearance of the crew members. Phone records indicated that around 1545 on October 14, 2023, the F/V CAROL ANN was near Brunswick Channel Entrance buoys #1 and #2. Eight vessels transmitting AIS were offshore Brunswick between 1600-2359 on October 14, 2023. Figure 14 shows the times each of these vessels crossed the probable path of the F/V CAROL ANN based on AIS data. See Figure 14.

5.15.2.1 EMERALD PRINCESS II (52-meter passenger vessel): The EMERALD PRINCESS II was a casino boat/passenger vessel that operates off the coast of Brunswick, GA. The EMERALD PRINCESS II transited out of the Brunswick River around 1938 on October 14, 2023, and stayed east of Brunswick Channel Entrance buoys #1 and #2. They transited to their home dock in the Brunswick River on October 15, 2023, around 0051.

5.15.2.2 GRAYCLIFFS (34-meter motor yacht): On October 14, 2023, from 1601 to 1643 the GRAYCLIFFS was traveling south and was in the vicinity of the probable path of the F/V CAROL ANN. However, the F/V CAROL ANN was likely traveling 7-10 knots and would not have passed the location where the paths of the vessels crossed until around 1800.

5.15.2.3 DELIBERATELY LUCKY (38-meter motor yacht): On October 14, 2023, at 2157 the DELIBERATELY LUCKY was traveling South and was in the vicinity of the probable path of the F/V CAROL ANN. However, the F/V CAROL ANN was likely traveling 7-10 knots and would have passed the location where the paths of the vessels crossed around 1630.

5.15.2.4 DRINKABILITY (32-meter yacht): On October 14, 2023, at 1941 the DRINKABILITY was traveling south and was in the vicinity of the probable path of the F/V CAROL ANN. However, the F/V CAROL ANN was likely traveling 7-10 knots and would have passed the location where the paths of the vessels crossed around 1700.

5.15.2.5 VALIANT ACE (200-meter Ro-Ro): The VALIANT ACE passed Brunswick Channel Entrance buoys #1 and #2 at approximately 1918 on October 14, 2023, and proceeded to sea on an easterly route. This was three and a half hours after the F/V CAROL ANN was in the vicinity of Brunswick Channel Entrance buoys #1 and #2.

5.15.2.6 BRAVERY ACE (200-meter Ro-Ro): The BRAVERY ACE passed Brunswick Channel Entrance buoys #1 and #2 at approximately 1933 on October 14, 2023, and proceeded to sea on a southeasterly route. This was three and a half hours after the F/V CAROL ANN was in the vicinity of Brunswick Channel Entrance buoys #1 and #2.

5.15.2.7 FRONTIER ACE (190-meter Ro-Ro): The FRONTIER ACE approached the Brunswick Channel Entrance buoys #1 and #2 from the south and began its inbound transit around 2338 on October 14, 2023. This was eight hours after the F/V CAROL ANN was in the vicinity of Brunswick Channel Entrance buoys #1 and #2.

5.15.2.8 BRUNSWICK (15-meter pilot boat): The BRUNSWICK is a vessel utilized by the local pilots to embark/disembark vessels to be piloted in/out of the Brunswick River. The BRUNSWICK passed Brunswick Channel Entrance buoys #1 and #2 at 1919 on October 14, 2023. This was almost three and a half hours after the F/V CAROL ANN was in the vicinity of Brunswick Channel Entrance buoys #1 and #2.

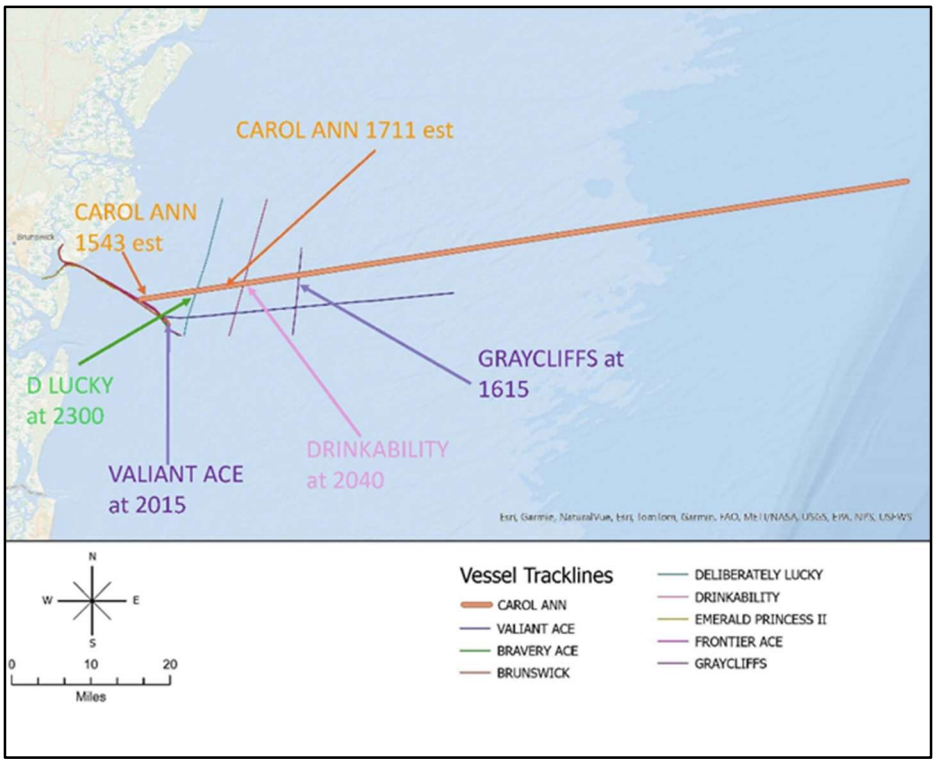

Figure 14: Vessels transmitting AIS crossing the probable path of the F/V CAROL ANN on October 14, 2023. Source: USCG.

5.15.3 Loss of Stability (Environmental Conditions): The F/V CAROL ANN suffered a loss of stability due to quartering seas and swamping resulting in the capsizing and sinking of the vessel and subsequent disappearance of crew members. It is a reasonable scenario that while transiting in following seas on October 14, 2023, a wave broke over the side of the gunwales of the F/V CAROL ANN filling the well deck with water. The freeing ports would not have had the capacity to drain this amount of water leading to changes in the center of buoyancy and gravity. The wave likely would have also shifted the unsecured fish box containing approximately 2,000 pounds of ice. The free surface effect caused by the significant amount of water paired with the shift of the fish box would have caused an unstable condition, capsizing the vessel. This likely would have happened quickly, not allowing the crew members time to retrieve lifejackets from the forward compartment or locate and activate the EPIRB before the vessel sunk.

5.15.4 Loss of Stability (Flooding): The F/V CAROL ANN suffered a loss of stability due to flooding resulting in the capsizing and sinking of the vessel and subsequent disappearance of crew members. The F/V CAROL ANN had penetrations below the waterline in the engine compartment for (1) raw water for cooling the main engine and (2) a suction line for the wash down pump. It is reasonable to assume that the crew would not have been immediately aware of a failure of either of these lines because the vessel did not have a high-water alarm in the engine compartment. The shaft penetration was also below the water line. If the shaft had sheered, allowing water into the vessel, the crew members likely would have noticed immediately but would not have been able

to stop the water ingress. Either situation could have led to free surface effect, and changes in the center of gravity and buoyancy causing a loss of stability likely sinking the vessel.

6. Conclusions

6.1 Determination of Cause

6.1.1 The most likely initiating event occurred when the F/V CAROL ANN lost stability. Causal factors leading to this event were:

6.1.1.1 Vessel not required to meet any stability regulations.

6.1.1.1.1 No clear aggregate area requirements for freeing ports.

6.1.1.2 Inadequate clear aggregate area of freeing port.

6.1.1.3 Poor sea conditions (quartering seas).

6.1.1.4 Lack of prudent seamanship by master (quartering seas).

6.1.1.5 Master's decision to proceed with voyage despite sea conditions.

6.1.1.6 Lack of requirement for high water alarms.

6.1.2 After the F/V CAROL ANN lost stability, it sunk. Causal factors leading to this event were:

6.1.2.1 Once the F/V CAROL ANN lost stability there was no reasonable means to prevent it from sinking.

6.1.3 After the F/V CAROL ANN sunk, all three crew members went missing, were unable to be located, and were presumed dead. Causal factors leading to this event were:

6.1.3.1 Lack of established scheduled communication between crew and owner.

6.1.3.2 Lack of Category 1 EPIRB.

6.1.3.3 Installation of life raft under the A-frame possibly hindering deployment (life raft not found to date).

6.1.3.4 Lack of lights on life jackets.

6.1.3.5 Master's decision to operate a commercial fishing vessel greater than three nautical miles from shore while not in compliance with commercial fishing vessel regulations.

6.1.3.5.1 Failure to properly install EPIRB.

6.1.3.5.2 Failure to complete monthly drills and instruction under the supervision of a person with a drill conductor card.

6.1.3.5.3 Lack of HF radio or satellite phone.

6.1.4 Additional Initiating Events Considered

6.1.4.1 **Fire**: It is reasonable to assume that had the vessel caught fire and the fire spread to the vessel leading to its sinking the fish box would have sustained fire and/or smoke damage. Therefore, this investigation eliminated fire as an initiating event.

6.1.4.2 **Collision/Allision:** It is reasonable to assume that none of the vessels that were transmitting AIS offshore Brunswick between 1600-2359 on October 14, 2023, collided or allided with the F/V CAROL ANN. Therefore, it is unlikely that a collision or allision was the initiating event.

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 There was no evidence of Act(s) or Violation(s) of Law by any Coast Guard Credentialed Mariner Subject to Action Under 46 USC Chapter 77.

6.3 Evidence of Act(s) or Violation(s) of Law by U.S. Coast Guard Personnel, or Any Other Person

6.3.1 There were no potential acts of misconduct, incompetence, negligence, unskillfulness, or violations of law by Coast Guard employees or any other person that contributed to this casualty.

6.4 Evidence of Act(s) Subject to Civil Penalty

6.4.1 There was no evidence of Act(s) subject to Civil Penalty.

6.5 Evidence of Criminal Act(s)

6.5.1 This investigation did not identify potential violations of criminal law.

6.6 Need for New or Amended U.S. Law or Regulation

6.6.1 This investigation identified the need to change regulations for: (1) EPIRB carriage, (2) life raft stowage, (3) AIS carriage and use, (4) documentation for drills and instruction, (5) high water alarm, (6) Merchant Mariner Credentials (MMC), (7) stability requirements for commercial fishing vessels and (8) freeing port covers.

6.7 Unsafe Actions or Conditions that Were Not Causal Factors

6.7.1 There were no unsafe actions or conditions that were not causal factors identified during this investigation.

7. Actions Taken Since the Incident

7.1 MSU Savannah drafted and routed a Safety Alert regarding the stowage of lifesaving appliances on Commercial Fishing Vessels in December 2023. The Safety Alert is awaiting approval from Coast Guard Headquarters.

8. Recommendations

8.1 Safety Recommendations

8.1.1 It is recommended that the Commandant change the regulation regarding EPIRB carriage on Commercial Fishing Vessels. Currently commercial fishing vessels less than 36 feet in length can meet the carriage requirements with a Category 2 EPIRB. This does not account for total structural failure of a vessel or collisions/allisions resulting in catastrophic damage to the vessel. Category 2 EPIRBs were allowed by the regulations in 1993 to reduce costs for vessel operators. When these regulations were published in 1993 the cost of a Category 1 EPIRB was $1,350. Today a Category 1 EPIRB averages $800 while a Category 2 averages $500. The cost of an EPIRB overall has decreased, and the cost difference between a Category 1 and Category 2 EPIRB today is not significant enough to cause financial burden to mariners. All Commercial Fishing Vessels should be required to use Category 1 EPIRBs ensuring activation regardless of the nature of the distress.

8.1.2 It is recommended that the Commandant amend the current Commercial Fishing Vessel life raft stowage requirements found in 46 CFR 28.125. Current regulations do not address the stowage of life rafts beyond requiring that they are stowed to be to able float free and automatically inflate if the vessel sinks. Most other commercial vessel life raft stowage requirements include the condition “The arrangement must ensure that the life raft or life rafts, when released and inflated, are not dragged under by the sinking vessel” as described in 46 CFR 199.130(c)(7). This additional requirement would give Coast Guard Commercial Fishing Vessel Examiners greater leverage to ensure proper stowage of life rafts.

8.1.3 It is recommended that the Commandant amend the current regulations to require that all Commercial Fishing Vessels be equipped with AIS and that the AIS be powered on while vessels are operating. Currently, only Commercial Fishing Vessels 65 feet or more in length are required to have AIS. AIS is a maritime navigation safety communications system that is standardized by the International Telecommunication Union and adopted by the International Maritime Organization. It provides vessel information including the vessel's identity, type, position, course, speed, navigational status, and other safety-related information automatically. The information is transmitted to similarly equipped shore stations, other ships, and aircraft. Position information is typically broadcasted every 2-10 seconds depending on the vessel’s speed or every 3 minutes if at anchor. If the F/V CAROL ANN had been equipped with AIS Coast Guard Search and Rescue would have been able to determine the last known location and base search patterns off known positions rather than speculation.

There is no evidence that indicates that the F/V CAROL ANN collided with another vessel. However, Commercial Fishing Vessels often operate (and are frequently anchored) in high traffic areas, AIS would allow deep draft vessels to monitor and avoid these smaller vessels.

8.1.4 It is recommended that the Commandant add a regulation requiring that the monthly drills and instruction for Commercial Fishing Vessels be documented. 46 CFR 28.270 requires the master or individual in charge of each vessel to give instruction and conduct drills for safety measures at least once per month. There is no method for CFVEs to verify if monthly drills and instruction are being completed under the supervision of a person with a drill conductor card.

8.1.5 It is recommended that the Commandant amend current Commercial Fishing Vessel regulations to require all Commercial Fishing Vessels to be equipped with a high-water alarm as listed in 46 CFR 28.250. Currently, vessels less than 36 feet are exempt from this requirement. High water alarms in unmanned spaces give crew members additional time to react in case of flooding. This extra time allows a crew to enact damage control measures, and if those fail, allows time to prepare lifesaving equipment for abandoning ship.

8.1.6 It is recommended that the Commandant obtain legislative authority to require that all operators of Commercial Fishing Vessels operating outside the boundary line obtain and hold a Coast Guard MMC. Currently, only operators on Commercial Fishing Vessels over 200GT are required to hold an MMC. This would ensure operators have basic safety and emergency knowledge. Additionally, this would allow Coast Guard Boarding Officers to terminate unsafe voyages operated by uncredentialed mariners.

8.1.7 It is recommended that the Commandant amend regulations to require that all Commercial Fishing Vessels comply with the *Stability Instructions* requirements in 46 CFR 28.530 and the *Freeing Port* requirements in 46 CFR 28.555. Currently, these regulations only apply to Commercial Fishing Vessels 79 feet in length or greater without a load line. In December of 2022 the Fishing Vessel Safety Division of the Coast Guard Office of Commercial Vessel Compliance instructed local CFVEs to identify and document specific unsafe conditions related to stability during exams. This instruction was created following an increase in fishing vessel sinkings and crew fatalities due to vessels operating in unsafe stability conditions. Common conditions included: operators not following relevant stability instruction information (when available), not maintaining watertight integrity, and lack of situational awareness when operating during hazardous conditions. CFVEs were instructed to visually inspect watertight doors/hatch covers to ensure watertight capabilities and operable securing mechanisms, inspect freeing ports to ensure water could flow outboard but not inboard, and initiate a discussion with the master regarding the required stability information. The F/V CAROL ANN was not required to have stability instruction information or freeing ports. Stability instruction information could have mitigated the master's decision to operate in quartering seas and larger freeing ports could have decreased the potential for free surface effect that likely led to the sinking of the vessel.

8.1.8 In addition to requiring that all Commercial Fishing Vessels comply with *Freeing Port* requirements in 46 CFR 28.555, it is recommended that the Commandant amend regulations to require that all freeing ports on all Commercial Fishing Vessels have a cover or flap that are constructed and fitted to allow water to readily flow outboard but not inboard. Currently the *Freeing Port* requirements in 46 CFR 28.555 permit freeing port covers that allow water to flow outboard, but do not require them. A March 2009 study by Transport Canada found that the benefit of larger freeing ports is greatly increased by having a device that hinders the in-flow of water but not the out-flow. Freeing port covers could have decreased the amount of water that was caught on the well deck of the F/V CAROL ANN, decreasing free surface effect and improving stability.

8.1.9 It is recommended that the Commandant change Coast Guard policy to authorize Coast Guard Boarding Officers to terminate voyages of Commercial Fishing Vessels that are found to be operating without proof of a satisfactory Coast Guard Commercial Fishing Vessel Exam (i.e. operating without a Commercial Fishing Vessel Safety Decal) outside of the boundary line. If voyages outside the boundary line could be terminated for not possessing a Commercial Fishing Vessel Safety Decal, operators would be more inclined to request and pass Commercial Fishing Vessel Exams to ensure their voyages will not be terminated. This would likely increase Commercial Fishing Vessel compliance with safety regulations as operators strive to avoid termination.

8.1.10 It is recommended the Commandant change Coast Guard policy to strategically partner with the National Oceanic and Atmospheric Association (NOAA) and other local government agencies to identify known offshore fishing grounds and increase targeted boardings of Commercial Fishing Vessels by Coast Guard Boarding Officers. More frequent boardings would likely increase Commercial Fishing Vessel compliance with regulations that can result in terminated voyages. Compliance with these regulations would increase the survivability of the crew in situations like this loss.

8.1.11 It is recommended that the Commandant address the U.S. Supreme Court Case *Carpenter v. United States* (2018). This ruling held that cell-site record requests during criminal investigations qualified as a fourth amendment search requiring a warrant supported by probable cause. Cell phone service providers have interpreted this to include records for missing persons involved in investigations under 46 U.S.C. Chapter 63 (not criminal investigations). Although Coast Guard Casualty Investigators have the authority to issue subpoenas for evidence and testimonies, their investigations are not criminal in nature. Therefore, Investigators do not have the ability to obtain search warrants. Investigators served subpoenas for the phone records for all crew members onboard the F/V CAROL ANN, but due to cell phone service providers' interpretation of the above ruling, they would not provide investigators with the cell phone ping coordinates. This hindered Casualty Investigators from obtaining timely data critical to determine the cause of the casualty.

8.1.12 It is recommended that the Commandant work with the National Commercial Fishing Safety Advisory Committee to study the feasibility of fully or partially funding

the purchase of lifesaving equipment for Commercial Fishing Vessels. Specifically funding for Category 1 EPIRBs for all Commercial Fishing Vessels. If all vessels carried Category 1 EPIRBs, the time and resources spent on multi-day, large scale search and rescue operations would decrease directly offsetting the funding of these lifesaving devices. Additionally, the survivability and rescue of Commercial Fishing Vessel crews involved in marine casualties would significantly increase.

8.2 Administrative Recommendations:

8.2.1 Recommend this investigation be closed.

Civilian, U.S. Coast Guard
Investigating Officer