5830
29 Oct 21

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From: RDML Christopher J. Cavanaugh, USN
To: Commander, U.S. SEVENTH Fleet

Subj: COMMAND INVESTIGATION OF THE APPARENT STRIKING OF A SUBMERGED OBJECT BY USS CONNECTICUT (SSN 22) WHILE UNDERWAY IN THE U.S. SEVENTH FLEET AREA OF OPERATIONS ON 2 OCTOBER 2021

Ref: (a) COMSEVENTHFLT 5800 Ser N013/080J ltr of 5 Oct 21 (U/~~CUI~~)

Encl: (1) Final Investigation Report ~~(S/NF)~~

1. (U) Reference (a) directed me to complete a command investigation into the facts and circumstances surrounding the apparent striking of a submerged object by USS CONNECTICUT (SSN 22) while underway in the U.S. SEVENTH Fleet area of operations on 2 October 2021.

2. (U) All reasonably available evidence was collected, and all directives in reference (a) were satisfied.

3. (U) Enclosure (1) reports my findings of fact, opinions, and recommendations.

C. J. CAVANAUGH

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## PRELIMINARY STATEMENT

### Scope of Investigation

1. (U) The investigation focused on factors that caused or contributed to a submerged grounding by USS CONNECTICUT (SSN 22) on 2 October 21.

2. (U) The investigation team reviewed results of Defense Equal Opportunity Command Surveys and a Culture Workshop conducted for CONNECTICUT. These results, along with information provided during interviews as part of this investigation, highlighted potential command climate issues and a generally tense relationship between the crew and the staff of Commander, Submarine Development Squadron FIVE (CSDS-5). I determined these potential issues did not have a causal connection to the grounding and were beyond the scope of this investigation. As a result, I did not incorporate them as findings of fact or derive opinions in these areas. CSDS-5 is aware of these potential issues and is addressing them.

3. (U) The investigation team reviewed CONNECTICUT's pre-deployment cycle, which is summarized in findings of fact. We reviewed the results of pre-deployment events and inspections and interviewed key members of the Commander, Submarine Forces U.S. Pacific Fleet CSDS-5 staffs. I determined that the ship was recommended and certified for deployment in accordance with all Type Commander (TYCOM) instructions and other requirements. However, this report includes some Submarine TYCOM recommendations.

4. (U) The investigation team reviewed Commander, Task Force 74 (CTF-74) guidance and tasking to conduct a humanitarian evacuation (HUMEVAC). I determined the tasking was within CONNECTICUT's ability to plan and execute. However, this report includes some CTF-74 recommendations.

5. (U) In accordance with reference (a), contact with the Admiralty Division of the Office of the Judge Advocate General of the Navy (Code 11) confirmed that this case will not be assigned to an investigator and no request for a report is anticipated.

6. (U) At the time of this report, a detailed damage assessment with final repair cost and schedule estimates is not available. Enclosure (105) includes a preliminary damage estimate.

**Methodology**

7. (U) The investigation team consisted of one investigating officer and 13 support personnel. The team included a range of subject matter experts from multiple U.S. Navy communities with extensive experience in command leadership, submarine operations and navigation, operations in the U.S. Indo-Pacific area of responsibility (AOR), material and maintenance management, training, command investigations, and maritime law. A majority of the team members have extensive experience conducting administrative reviews and audits. A complete roster of team members is included in Appendix B.

8. (U) The investigation team collected and analyzed raw data, reviewed documents, interviewed witnesses, and conducted inspections onboard CONNECTICUT. Privacy Act statements were not used because all personal information was obtained from existing records.

9. (U) I conducted an in-brief onboard CONNECTICUT with the Commanding Officer (CO) and CSDS-5 Commodore (CDRE). This discussion took place prior to any interviews while the investigation team collected and reviewed initial data and documents. I provided the CO with a copy of the appointing order and explained the purpose and scope of this investigation, distinguishing it from ongoing efforts by the ship's chain of command and any subsequent safety investigation. The CO made available all requested documents, data, and personnel.

10. (U) Additionally, I solicited subject matter expertise and relevant information from Commanding Officer, EMORY S. LAND (AS 39) as lead maintenance activity (LMA); CSDS-5 staff members; COMSUBPAC staff members, and CTF-74.

11. (U) I conducted the investigation in Guam, co-located with CONNECTICUT. The investigation team received substantial logistics and information technology support from Commander, Submarine Squadron FIFTEEN (CSS-15) and Naval Submarine Training Center Pacific detachment Guam.

12. (U) Each interview team consisted of at least one interviewer, one scribe, and one legal advisor. The team

interviewed 34 personnel over 40 interviews. Interviews were taped and summarized by the interviewer; they underwent multi-tiered review to ensure accuracy. All recordings are safeguarded at CSS-15. At the start of the investigation, I did not suspect any interviewee of violating the Uniform Code of Military Justice (UCMJ). As the investigation proceeded, the investigation team advised nine personnel of their rights under Article 31(b) of the UCMJ prior to conducting interviews based on possible administrative or punitive actions as a result of the investigation.

13. (U) COMSUBPAC convened a Safety Investigation Board (SIB), which was conducted concurrently with this investigation. The SIB did not share privileged witness or derivative information with the investigation team. However, evidence obtained during this investigation was made available to the SIB.

**Executive Summary**

14. (U) On 2 October 2021, CONNECTICUT grounded on an uncharted bathymetric feature while operating submerged in a poorly surveyed area in international waters. This mishap was preventable. It resulted from an accumulation of errors and omissions in navigation planning, watchteam execution, and risk management that fell far below U.S. Navy standards. Prudent decision-making and adherence to required procedures in any of these three areas could have prevented the grounding.

15. (U) Injuries onboard CONNECTICUT were relatively minor. Eleven total crew members were physically injured.

16. (U) CONNECTICUT will be unavailable for operations for an extended period of time due to damage sustained during the grounding. The propulsion plant was not affected.

## FINDINGS OF FACT

### General

1. (U) CONNECTICUT is homeported in Bremerton, Washington. CSDS-5 exercised administrative control, and Commander, U.S. SEVENTH Fleet exercised operational control over CONNECTICUT on 2 October 21. [Ref. (c), Encl. (46)]

2. (U) CONNECTICUT is a SEAWOLF-class submarine equipped with the AN/BYG-1 TI-16/APB-15 SONAR and Combat Control System, Voyage Management System (VMS) version 9.4, and AN/BQQ-10 forward and aft bottom sounders. [Ref. (d), Encl. (47)]

3. (b) (1) (A) [redacted]

#### Key Leader Duties and Responsibilities

##### *Commanding Officer (CO)*

4. (U) The CO is responsible for safe navigation of the ship. [Ref. (e)]

5. (U) While the CO may, at his discretion, delegate authority to subordinates for the execution of details, such delegation of authority shall in no way relieve the CO of continued responsibility for the safety, well-being, and efficiency of the entire command. [Ref. (e)]

6. (U) The CO is responsible for the preparation, planning, and execution of peacetime operations and warfighting missions. [Ref. (f)]

##### *Executive Officer (XO)*

7. (U) The XO is the direct representative of the CO and shall be primarily responsible to the CO for the organization, performance of duty, training, maintenance, and good order and discipline of the entire command. [Ref. (g)]

8. (U) The XO is required to supervise and coordinate the operational plans and schedules of the command. [Ref. (g)]

9. (U) As second in command, the XO is responsible for providing forceful backup to the CO to improve the effectiveness and quality of operational and personnel decisions. [Ref. (g)]

10. (U) The XO is required to ensure the crew complies with procedures and remains vigilant. [Ref. (g)]

11. (U) The XO is responsible for managing manpower, training, and maintenance to avoid fluctuating readiness. [Ref. (f)]

*Chief of the Boat (COB)*

12. (U) The COB reports directly to the CO. The COB ensures Sailors are effectively led and developed. [Ref. (f)]

13. (U) The COB is the enlisted advisor to the command on the formulation and implementation of policies pertinent to morale, welfare, job satisfaction, discipline, utilization, and training of all enlisted personnel. The COB is superior to all other enlisted members. [Ref. (f)]

*Navigator (NAV)*

14. (U) The NAV is responsible for safe navigation and piloting of the ship and for leadership of the Navigation/Operations (NAV/OPS) department. [Ref. (f)]

15. (U) The NAV is normally responsible for both navigation and operations duties onboard submarines. [Ref. (f)]

16. (U) The NAV reports to the CO in all matters pertaining to safe navigation and piloting. [Ref. (f)]

17. (U) The NAV should carefully evaluate chart pedigree (*e.g.*, survey quality, age of the edition, etc.) and recommend to the CO when additional watchstanders should be stationed. [Ref. (b)]

18. (U) When determining an appropriate fix or position interval, the NAV should consider bottom slope, ship maneuvering characteristics (tactical diameter), watchstander proficiency at interpreting and plotting bottom sounder and navigation data, and distance to navigation hazards or boundaries. Commanding Officer Safe Operating Envelope (COSOE) depth and speed limits should also be used in analysis of these factors when submerged. [Ref. (b)]

19. (U) The Submarine Operations Manual (SOM)[1] states that the good navigator remains constantly alert, continuously questions position information and the reliability of the chart, and anticipates danger before it arises. The good navigator not only knows his current situation and its uncertainties but thinks ahead. [Ref. (b)]

20. (U) The NAV is required to brief the open ocean voyage plan to Officers of the Deck (OODs), Conning Officers/Junior Officers of the Deck (JOODs), Assistant Navigator (ANAV), Navigation Supervisors (NAVSUPs), and Quartermasters of the Watch (QMOWs) within three days of commencing a voyage. Following the initial brief, subsequent changes to the voyage plan should be promulgated to navigation watchstanders via the CO's Night Orders or other formal means. [Ref. (b)]

*Operations Officer (OPS)*

21. (U) The OPS is responsible for all operational aspects of the assigned mission, such as maintaining operational readiness in support of battle plans or other instructions as may be directed by higher authority. [Ref. (g)]

22. (U) The OPS is responsible for preparation of operational plans, orders, and other reports and directives. [Ref. (g)]

23. (U) The OPS prepares and issues training schedules. [Ref. (g)]

24. (U) The OPS is responsible for maintenance and dissemination of the ship or unit's operating schedule. [Ref. (g)]

*Assistant Navigator (ANAV)*

25. (U) The ANAV assists the NAV in all aspects of navigating, piloting, and administration of navigational charts and publications. [Ref. (f)]

[1] (U) The SOM provides submarines guidance on navigation; several key operational topics; and operational planning, risk management, and assessment. The SOM was first issued in 2007 following the USS SAN FRANCISCO (SSN 711) grounding to consolidate navigation guidance that previously spread across multiple references. Throughout the deployment, CONNECTICUT operated with the following version of the SOM: Rev A CH-7 w ACN 1-8. [Ref. (b)]

26. (U) The ANAV assists the NAV in all navigation functions. [Ref. (f)]

27. (U) The ANAV reviews all navigational logs and reports at least daily, to ensure completeness, neatness, and accuracy, addressing noted errors or omissions. The ANAV shall ensure these reviews are appropriately annotated. [Ref. (f)]

*Operational Safety Officer (OSO)*

28. (U) The OSO manages lessons learned and, if desired by the CO, independently assesses safe operations. [Ref. (b)]

29. (U) The OSO shall maintain the ship's library of lessons learned, critiques, and other materials necessary to support operational planning and risk management. [Ref. (b)]

30. (U) If desired by the CO, the OSO should remain apprised of operational risk management processes and provide recommendations for improvement. [Ref. (b)]

31. (U) If desired by the CO, the OSO should monitor and assess the effectiveness of operational plan execution and inform the CO of instances where shortfalls in a plan's execution create safety vulnerabilities. [Ref. (b)]

Watchstander Duties and Responsibilities

32. (U) CONNECTICUT has three watch sections for underway operations: HARDER, TRIGGER, and GROWLER. [Encl. (48)]

33. (U) The following table lists key watchstanders in these sections.

| Section | HARDER | TRIGGER | GROWLER |
|---|---|---|---|
| OOD | Engineer | Navigator | Weapons Officer |
| DOOW | ITSCS (b) (6) | MMACS (b) (6) | MMA1 (b) (6) |
| NAVSUP | ETV3 (b) (6) | ETVC (b) (6) | ANAV |
| QMOW | ETV2 (b) (6) | ETV2 (b) (6) | ETV3 (b) (6) |

34. (U) Section HARDER stood watch between 2330Z-0730Z. Section TRIGGER stood watch between 0730Z-1530Z. Section GROWLER stood watch between 1530Z-2330Z. [Encl. (48)]

35. (U) All watchstanders listed in the table above were qualified to stand their respective watches on 2 October 2021.[5] [Encl. (49)]

*Command Duty Officer (CDO)*

36. (U) The CDO assumes the CO's duties in his absence. [Ref. (e)]

37. (U) The CDO supervises and directs the OOD in matters concerning the general operation and safety of the ship. [Ref. (g)]

38. (U) While underway, the CDO shall maintain awareness of the tactical situation and of factors affecting safe navigation of the ship. [Ref. (g)]

39. (U) The CDO shall ensure that the OOD maintains an alert and efficient watch. [Ref. (g)]

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[2] (U) During the Pre-Overseas Movement Evaluation (POMEVAL), ETV3 (b) (6) stood watch and was evaluated as QMOW. [Encl. (13)]
[3] (U) ETVC (b) (6) reported onboard CONNECTICUT just prior to the POMEVAL and was not evaluated during POMEVAL as NAVSUP. [Encl. (52)]
[4] (U) ETV2 (b) (6) reported onboard CONNECTICUT just prior to the POMEVAL and was not evaluated during POMEVAL as QMOW. [Encl. (52)]
[5] (U) All watchstanders listed in the table were evaluated by CSDS-5 and CTF-74 staff during the mid-deployment and shallow water check ride on 2 August 2021. [Encl. (66)]

*Officer of the Deck (OOD)*

40. (U) The CO designates the OOD to be in charge of the ship underway and to be primarily responsible for safe and proper operations. [Ref. (g)]

41. (U) The OOD must remain alert to unusual conditions and inform the NAV and ANAV when in doubt. [Ref. (b)]

*Quartermaster of the Watch (QMOW)*

42. (U) The QMOW's primary responsibility is safe navigation. [Ref. (b)]

43. (U) If the QMOW is ever in doubt or uncertain about the ship's position or safety, the QMOW shall immediately notify the OOD, NAV, and ANAV in that order. [Ref. (b)]

44. (U) When the fathometer runs continuously absent a dedicated Fathometer Watch, the QMOW shall routinely monitor the fathometer readout and trace to identify unexpected bottom contour trends and take action as required. [Ref. (b)]

45. (U) The QMOW must be familiar with the ship's track and expected bathymetry and is required to carefully review the chart and planned track (dead reckoning in area operations) and conduct a running evaluation of the fathometer trace. [Ref. (b), Encl. (82)]

46. (U) The QMOW must notify the OOD, ANAV, and NAV when soundings do not appear to correlate with ship's track. [Ref. (b)]

47. (U) The QMOW must check the total water depth (TWD) logged versus the charted water depth and notify the OOD and the NAV whenever the logged TWD does not agree with the charted sounding within Commander, Submarine Force Atlantic (COMSUBLANT) and COMSUBPAC Operation Order (OPORD) 2000 requirements. [Ref. (b)]

**Pre-Deployment**

Key Personnel

48. (U) On 6 August 2019, CSDS-5 issued a Letter of Expectations to Commander Aljilani as CONNECTICUT's prospective CO. This is standard practice in CSDS-5 for new COs. [Encls (7), (50)]

49. (U) On 8 August 2019, Commander Aljilani assumed command of CON. He was in command for 26 months at the time of the grounding. [Encl. (2)]

50. (U) The following personnel reported onboard CONNECTICUT on the dates listed leading up to the 2021 deployment. [Encls (52), (84)]

| Personnel | Date |
|---|---|
| ANAV | 12 December 2018 |
| COB | 15 March 2019 |
| NAV | 4 September 2019 |
| Engineer (ENG) | 9 May 2020 |
| Weapons Officer (WEPS) | 21 August 2020 |
| XO | 8 November 2020 |
| QMOW (on watch during grounding) | 5 May 2021[6] |
| OPS | 7 May 2021 |

Fleet Response Training Plan (FRTP)[7]

51. (U) During the CO's 784 days of command leading up to the date of the grounding, CONNECTICUT was away from homeport for 527 days (67%) and in homeport for 257 days (33%). [Encl. (53)]

52. (U) In October 2019, CONNECTICUT conducted a Combat Readiness Evaluation (CRE). [Encl. (54)]

[6] (U) The QMOW on watch during the grounding previously qualified as QMOW onboard CONNECTICUT during work-up and execution of an Ice Exercise (ICEX) in March 2020. [Encl. (13)]

(b) (1) (A)

[redacted]

53. (b) (1) (A)
(b) (1) (A)

54. (b) (1) (A)
(b) (1) (A)

55. (b) (1) (A)
(b) (1) (A)

56. (U) In March 2020, CONNECTICUT participated in an Ice Exercise (ICEX). [Encl. (55)]

57. (U) In July 2020, Submarine Training Facility (STF), San Diego assessed CONNECTICUT during the ship's Intermediate Pre-Deployment Training (IPDT) period. [Encl. (56)]

58. (U) STF developed IPDT utilizing theater commander guidance, recent ship evaluation inputs, COMSUBPAC guidance, core competencies and mission areas, recent ship's operations, the CO's desires, and recent deployment lessons learned. [Encl. (56)]

59. (b) (1) (A)
(b) (1) (A)

60. (U) On 10 July 2020, CSDS-5 formally counseled the CO via a Letter of Performance. The letter addressed "inadequate supervisory oversight, ineffective accountability practices, and superficial self-assessment." [Encl. (58)]

(b) (1) (A)

61. (b) (1) (A)
(b) (1) (A)

62. (b) (1) (A)
(b) (1) (A)

63. (b) (1) (A)
(b) (1) (A)

64. (b) (1) (A)
(b) (1) (A)

65. (b) (1) (A)
(b) (1) (A)

66. (b) (1) (A)
(b) (1) (A)

67. (b) (1) (A)
(b) (1) (A)

[9] (U) A peacetime surge deployment is typically conducted on short notice in support of a Combatant Commander's Request for Forces. These deployments focus on a specific mission and may not require completion of a full FRTP. [Ref. (m)]

[10] (b) (1) (A)
(b) (1) (A)

(b) (1) (A)

68. (b) (1) (A)
(b) (1) (A)

69. (U) On 16 February 2021, CSDS-5 issued a formal Letter of Instruction to the CO directing him to address the command's overall performance, lack of improvement, and reluctance to accept feedback. [Encl. (62)]

70. (U) In April 2021, CONNECTICUT completed an Advanced Pre-Deployment Training (APDT) period at STF San Diego. [Encl. (63)]

71. (U) STF developed APDT utilizing theater commander guidance, recent ship evaluation inputs, COMSUBPAC guidance, core competencies and mission areas, recent ship's operations, the CO's desires, and recent deployment lessons learned. [Encl. (63)]

72. (b) (1) (A)
(b) (1) (A)

Pier Allision and POMEVAL

73. (U) On 14 April 2021, CONNECTICUT allided with a pier while mooring at Naval Base Point Loma. [Encl. (64)]

74. (U) Before departing San Diego, CONNECTICUT conducted a safety stand-down to address deficiencies noted by a command-level critique of the pier allision. [Encls (2), (4), (5), (7)]

75. (U) At the safety stand-down, CONNECTICUT trained on various topics including danger recognition, risk mitigation, formality and communications, and basic watchstanding. [Encls (2), (4), (65)]

76. (U) On 17 April 2021, CSDS-5 directed a command investigation into the allision. [Encl. (64)]

77. (U) On 7 May 2021, LCDR (b) (6) reported to CONNECTICUT to serve as OPS during the deployment. CSDS-5 coordinated this temporary assignment to help address

CONNECTICUT's substandard operational planning. LCDR (b) (6) is permanently assigned as NAV in USS TOLEDO (SSN 769), undergoing a shipyard availability. [Encl. (84)]

78. (U) From 7 to 13 May 2021, CSDS-5 conducted a POMEVAL for CONNECTICUT. [Encl. (67)]

79. (b) (1) (A)
(b) (1) (A)

80. (b) (1) (A)
(b) (1) (A)

81. (b) (1) (A)
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82. (b) (1) (A)
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83. (b) (1) (A)
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84. (b) (1) (A)
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85. (b) (1) (A)
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86. (b) (1) (A)
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11 (b) (1) (A)
(b) (1) (A)

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87. (b) (1) (A)
(b) (1) (A)

88. (b) (1) (A)
(b) (1) (A)

89. (U) On 18 May 2021, the CSDS-5 investigating officer completed his command investigation into the pier allision. He opined that the allision could have been prevented with early, decisive action and recommended the CO, XO, NAV, OOD,[14] and ANAV receive administrative or disciplinary action for dereliction of duty. [Encl. (64)]

90. (U) On 19 May 2021, CSDS-5 briefed COMSUBPAC and CTF-74 on CONNECTICUT's deployment readiness, including performance and trends in Operational Fundamentals. [Encl. (98)]

91. (U) On 20 May 2021, CSDS-5 endorsed the command investigation, concurring with all the investigating officer's findings of fact, opinions, and recommendations. He determined "while this investigation revealed degraded standards in navigation, planning, poor seamanship, and ineffective command and control, it represented an anomalous performance and not systematic failure." He added, "I observed a safe landing from

[13] (U) To ensure deployed SSNs are maintaining high standards and have appropriately addressed any weak areas identified during the deployment preparation period or by the operational commander, a mid-deployment check ride is required. This check ride will typically occur between the second and fourth months of a six-month deployment. Deployments that last less than three months do not require a mid-deployment check ride. The scope and membership of the check ride shall be proposed by the parent squadron and concurred with by the TYCOM and operational commander. The scope of the check ride shall be based on upcoming operations, previous ship performance, and other factors potentially affecting crew readiness. [Ref. (n)]
[14] (U) This OOD (WEPS) was not the OOD at the time of the grounding (ENG).

the bridge of USS CONNECTICUT on 13 May 2021, indicating appropriate reflection and training of the crew. With completion of POMEVAL on 14 May 2021, I certified the safe navigation of the ship through all phases of submarine operations." [Encl. (64)]

92. (U) On 21 May 2021, [redacted] (b) (6) relieved [redacted] (b) (6) as CSDS-5. [Encl. (94)]

93. (U) On 21 May 2021, COMSUBPAC recommended to Commander, U.S. THIRD Fleet that CONNECTICUT be certified for deployment. COMSUBPAC stated that CONNECTICUT was on plan to complete the Operational Fundamentals upgrade before deployment and that CSDS-5 would coordinate with CTF-74 to conduct a mid-deployment check ride to monitor training progress. [Encl. (92)]

94. (U) On 24 May 2021, Commander, U.S. THIRD Fleet certified CONNECTICUT as ready to deploy. [Encl. (68)]

95. [redacted] (b) (1) (A)

(b) (1) (A)

96. (U) On 25 May 2021, CSDS-5 formally counseled the CO, XO, NAV, WEPS (OOD during allision), and ANAV to correct deficiencies noted in the pier allision command investigation. [Encls (6), (69)]

97. (U) On 26 May 2021, CONNECTICUT completed all pre-deployment repairs, to include returning the forward bottom sounder to a fully operational status.[15,16,17] [Encls (8), (29), (36)]

**Deployment**

98. (U) On 27 May 2021, CONNECTICUT deployed ahead of schedule. [Encl. (68)]

99. (b) (1) (A)
(b) (1) (A)

100. (U/~~CUI~~) On 24 June 2021, COMSUBPAC made the final endorsement of the CSDS-5 allision command investigation and approved its findings of fact and opinions. [Encl. (64)]

101. (U) CTF-74 stated that he was not aware of the pier allision or the associated command investigation prior to CONNECTICUT entering the U.S. SEVENTH Fleet AOR. [Encl. (37)]

102. (b) (1) (A)
(b) (1) (A)

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15 (b) (1) (A)
(b) (1) (A)

16 (b) (1) (A)
(b) (1) (A)

- (b) (1) (A)
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17 (U) Ship's force coordinated with Intermediate Maintenance Activity to troubleshoot and repair the forward bottom sounder throughout the deployment with appropriate technical assistance. [Encls (8), (29), (36)]

103. (b) (1) (A) [redacted]

104. (b) (1) (A) [redacted]

105. (b) (1) (A) [redacted]

106. (U) During the check ride, CSDS-5 evaluated CONNECTICUT's response to simulated loss of sounding and simulated red and yellow sounding drills as satisfactory. However, the evaluation team noted that watchstanders did not fully investigate why the ship received the simulated abnormal soundings. [Encl. (66)]

107. (U) The CSDS-5 and CTF-74 staff members embarked for the check ride did not note any additional navigation deficiencies. [Encl. (66)]

108. (b) (1) (A) [redacted]

Navigation Planning

109. (U) There are three fundamental causes for submarine groundings. First, a submarine may ground on an uncharted hazard. Second, the submarine's position may be in error such that the charted hazard is not anticipated. Third, due to a series of planning and watchstanding errors, the submarine may run into a charted grounding hazard. [Ref. (b)]

110. (U) Chart accuracy depends on the accuracy of the hydrographic surveys, other data sources used to compile it, and the suitability of its scale for its intended use. Large blank areas and absence of depth contours generally indicate lack of soundings in the area. Operations in areas with sparse soundings should only be conducted when required and with extreme caution. [Ref. (j)]

111. (U) Omission and reporting errors must also be considered when assessing the accuracy of the chart.[18] [Ref. (b)]

112. (U) Close proximity to hazards necessitate compensatory measures, including carefully controlling course and speed, meticulously planning the track, and using additional watchstanders to support the navigation effort. [Ref. (b)]

113. (U) In 2007, the Submarine Force developed the COSOE as a formal method to communicate CO's operational intent. The COSOE resulted from previous incidents when submarines failed to operate with due caution. [Ref. (b)]

114. (U) The COSOE provides the OOD with unambiguous boundaries within which the watch section may operate without additional CO permission. [Ref. (b)]

115. (U) COSOE layers consist of speed and submerged depth limits and include the values for red and yellow sounding tripwires. [Ref. (b)]

116. (U) A yellow sounding is the sounding a submarine receives when traveling over the shallowest area associated with the COSOE at the maximum operating depth authorized by the COSOE. Although it is theoretically the minimum expected sounding, the SOM outlines actions upon receipt of a yellow sounding. [Ref. (b)]

117. (U) The red sounding is an established minimum acceptable depth beneath the keel that is half the value of the yellow sounding or 100 fathoms, whichever is less. Receipt of a red sounding indicates the ship is too close to the bottom and demands immediate and assertive action on behalf of the OOD to keep the ship safe from grounding. [Ref. (b)]

COSOE Development

118. (b) (1) (A)

(b) (1) (A)

[18] (U) Many navigation hazards are noted as a result of mariner reporting, and many hazards exist that have not been reported. Therefore, vessel traffic density and the currency of survey data should be considered when assessing the likelihood of uncharted navigation hazards. [Ref. (b)]

(b) (1) (A)

119. (b) (1) (A)
(b) (1) (A)

120. (b) (1) (A)
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121. (b) (1) (A)
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122. (b) (1) (A)
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123. (b) (1) (A)
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124. (b) (1) (A)
(b) (1) (A)

125. (b) (1) (A)
(b) (1) (A)

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19 (b) (1) (A)
(b) (1) (A)

20 (U) During POMEVAL, CSDS-5 emphasized the importance of thoughtfully developing COSOEs and sounding tripwires instead of using standard values.

21 (U) The CO signed the NAVPLAN paperwork on 30 September 2021 and approved it in VMS on 1 October 2021. [Encl. (71), (73)]

22 (b) (1) (A)
(b) (1) (A)

(b) (1) (A)

(b) (1) (A)

126. (b) (1) (A)
(b) (1) (A)

127. (b) (1) (A)
(b) (1) (A)

128. (b) (1) (A)
(b) (1) (A)

23 (b) (1) (A)
(b) (1) (A)
24 (b) (1) (A)
(b) (1) (A)
25 (b) (1) (A)
(b) (1) (A)

129. (b) (1) (A)
(b) (1) (A)

(b) (1) (A)

**Humanitarian Evacuation (HUMEVAC) Transit**

Voyage Planning

130. (b) (1) (A)
(b) (1) (A)

131. (b) (1) (A)
(b) (1) (A)

132. (U) At approximately 0900Z on 1 October 2021, the CO, XO, ANAV, WEPS, ENG, OPS, Acoustic Intelligence Specialist Chief

[26] (b) (1) (A)
(b) (1) (A)

Petty Officer (ACINT STSC), and COB conducted a planning meeting to discuss the voyage plan. [Encls (2), (4), (12), (22), (36)]

133. (b) (1) (A)
(b) (1) (A)

134. (b) (1) (A)
(b) (1) (A)

135. (b) (1) (A)
(b) (1) (A)

136. (b) (1) (A)
(b) (1) (A)

137. (b) (1) (A)
(b) (1) (A)

138. (b) (1) (A)
(b) (1) (A)

139. (U) The ANAV ordered the watchteam to develop a supporting track as a temporary route in VMS. [Encl. (104)]

140. (b) (1) (A)
(b) (1) (A)

(b) (1) (A) [redacted]

141. (U) Portions of the ocean floor in CONNECTICUT's operating area were surveyed, but other portions were not surveyed for bathymetry.[27] [Encl. (71)]

142. (U) Understanding chart pedigree (*e.g.*, accuracy information, inclusive dates of data, data quality, map compilation dates) is critical to safe navigation. [Ref. (b)]

143. (U) The ANAV was aware that "swept areas" were available in VMS, but he did not utilize this information during chart preparations. During his interview, the ANAV stated he believed the soundings were "excellent" and deeper than charted based on a message from CTF-74. [Encl. (12)]

144. [redacted] (b) (1) (A)
(b) (1) (A) [redacted]

145. (U) The CO and NAV were not aware that sounding data quality and information on surveyed/non-surveyed areas is available in VMS. The CO incorrectly believed MATT data was available and in use in the area where CONNECTICUT was transiting.[28] [Encls (2), (104)]

146. (U) A temporary route may be used at the discretion of the CO, provided the ship is operating on an approved NAVPLAN and has a process for temporary route evaluation and approval. A temporary route does not take into account all features and safety checker functionality that a PIM track does and has no built-in VMS approval process. [Ref. (b)]

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[27] (U) In VMS, surveyed and non-surveyed areas are displayed when the "swept area" feature is enabled. The NAV's Standing Orders require this feature to be enabled. [Encl. (101)]

[28] (U) MATT is a classified vector-based digital product designed specifically to support safe subsurface navigation. Where MATT coverage exists, MATT is the recommended and preferred navigation product (over DNC and TOD) for subsurface navigation. MATT data was available in some of CONNECTICUT's operating areas but unavailable in the area where CONNECTICUT was transiting on 2 October 21. [Ref. (b)]

147. (U) CONNECTICUT does not have a process for temporary route evaluation and approval. [Encls (82), (101)]

148. (U) A temporary route was entered into VMS by the watch team. The CO did not conduct a detailed review of the route. [Encls (2), (3), (71)]

149. (U) The temporary route was periodically adjusted by the QMOW. This practice is contrary to the SOM but was consistent with the CO's expectations. [Ref. (b), Encls (3), (104)]

150. (U) CONNECTICUT's temporary route passed through surveyed and unsurveyed areas on the chart, as evidenced by "swept area" shading. [Encl. (71)]

(b) (1) (A)

[redacted]

151. (b) (1) (A)
(b) (1) (A)

(b) (1) (A)

Transit toward Okinawa

152. (b) (1) (A)
(b) (1) (A)

153. (b) (1) (A)
(b) (1) (A)

154. (b) (1) (A)
(b) (1) (A)

155. (b) (1) (A)
(b) (1) (A)

156. (U) The STSC ACINT said he did not discuss a speed increase with the CO. [Encl. (30)]

157. (b) (1) (A)
(b) (1) (A)

158. (b) (1) (A)
(b) (1) (A)

159. (U) The CO desired to transmit material messages to CTF-74 in sufficient time to either receive the parts during the planned HUMEVAC or to be diverted to Guam for in-port repairs. [Encls (2), (4), (5)]

29 (b) (1) (A)
(b) (1) (A)

160. (U) Sometime between 1600Z and 1700Z on 1 October 2021, the XO stationed as CDO.[30] [Encl. (119)]

Section HARDER on Watch

161. (U) At approximately 2330Z, watchsection HARDER relieved the watch. [Encls (48), (79)]

162. (b) (1) (A)
(b) (1) (A)

163. (b) (1) (A)
(b) (1) (A)

164. (b) (1) (A)
(b) (1) (A)

165. (b) (1) (A)
(b) (1) (A)

166. (U) At 0115Z, as part of the cyclic routine,[34] the QMOW attempted to obtain a sounding. [Encl. (80)]

167. (b) (1) (A)
(b) (1) (A)

168. (U) At 0115Z, the QMOW logged a loss of soundings (LOS) in the fathometer log. [Encl. (80)]

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[30] (U) These times are based on an interview with the XO. The ship's deck log does not record stationing the CDO on 1 October. [Encl. (119)]

[31] (U) The ship reported that although the aft bottom sounder was fully operational, its operation degraded at speeds above 16 knots. The Navy Technical Reference Publication 3-21.41.15 indicates that at a speed of 24 knots the bottom sounder transducers should operate normally up to 1400 fathoms beneath the keel before experiencing degradation. [Ref. (l), Encls (12), (13)]

[32] (b) (1) (A)
(b) (1) (A)

[33] (b) (1) (A)
(b) (1) (A)

[34] (U) The SOM requires the electronic cyclic routine be conducted at every position/fix interval. The electronic cyclic routine requires an evaluation of all ship's position sources with respect to track or area. [Ref. (b)]

169. (b) (1) (A)
(b) (1) (A)

170. (U) The QMOW did not take the required actions for a LOS. [Encls (13), (22), (80)]

171. (b) (1) (A)
(b) (1) (A)

172. (b) (1) (A)
(b) (1) (A)

173. (b) (1) (A)
(b) (1) (A)

174. (b) (1) (A)
(b) (1) (A)

175. (U) At 0145Z as part of the cyclic routine, the QMOW attempted to obtain a sounding. [Encl. (80)]

176. (b) (1) (A)
(b) (1) (A)

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35 (b) (1) (A)
(b) (1) (A)

36 (b) (1) (A)
(b) (1) (A)

37 (b) (1) (A)
(b) (1) (A)

38 (b) (1) (A)
(b) (1) (A)

177. (U) The QMOW did not take the required actions for a LOS. [Encls (13), (22), (80)]

178. (b) (1) (A)

179. (b) (1) (A)

180. (U) At 0200Z as part of the cyclic routine, the QMOW attempted to obtain a sounding. [Encl. (80)]

181. (b) (1) (A)

182. (U) The QMOW did not take the required actions for a LOS. [Encls (13), (22), (80)]

183. (b) (1) (A)

184. (b) (1) (A)

185. (b) (1) (A)

186. (U) At 0323Z, the XO was secured as CDO. [Encl. (79)]

187. (U) CONNECTICUT did not properly mark two "underwater danger/underwater hazard" locations or five areas of "discolored water" as navigation hazards while navigating southeast of them along the temporary route. The OOD stated in his second interview that he was aware of these charted but unmarked navigation hazards. The OOD typically expected navigation

[39] (b) (1) (A)

[40] (b) (1) (A)

hazards to be marked as "stay out" areas in the approved NAVPLAN. [Encls (23), (71)]

188. (U) In the CO's second interview, while watching the VMS replay, he stated he would normally provide "stay out" areas for these types of navigation hazards, but in the absence of "stay out" areas he expected the OOD and his watchteam to conn around them. [Encls (2), (3)]

**Grounding**

189. (b) (1) (A)
(b) (1) (A)

190. (b) (1) (A)
(b) (1) (A)

191. (U) The OOD did not report this navigation hazard to the CO. [Encls (3), (23)]

192. (b) (1) (A)
(b) (1) (A)

193. (U) At 0424Z, the ANAV directed the QMOW to remove the red "stay out" area. The ANAV did not give the QMOW a reason for his order. [Encl. (13)]

194. (U) The QMOW removed the red "stay out" area from the VMS tactical layer. [Encl. (71)]

195. (b) (1) (A)
(b) (1) (A)

196. (U) The CO, XO, NAV, OPS, ANAV, COB, and ACINT STSC attended a daily Operations Brief at 0500Z. [Encls (2), (4), (5), (12), (24), (30), (104)]

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41 (b) (1) (A)
(b) (1) (A)

197. (U) The OSO led the 0500Z Operations Brief. He did not independently monitor and assess the effectiveness of the ship's operational plan. The CO did not require or desire the OSO to perform this duty. [Ref. (f), Encl. (103)]

198. (b) (1) (A)
(b) (1) (A)

199. (b) (1) (A)
(b) (1) (A)

200. (b) (1) (A)
(b) (1) (A)

201. (b) (1) (A)
(b) (1) (A)

202. (U) The tactical layer feature allows operators to add objects to VMS without unapproving the active NAVPLAN. This process is subject to a three-party review. [Ref. (b)]

203. (U) CONNECTICUT had a process for developing and approving tactical layers that meets SOM requirements. [Encls (82), (101)]

204. (b) (1) (A)
(b) (1) (A)

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42 (b) (1) (A)
(b) (1) (A)

43 (b) (1) (A)
(b) (1) (A)

205. (b) (1) (A)
(b) (1) (A)

206. (b) (1) (A)
(b) (1) (A)

207. (b) (1) (A)
(b) (1) (A)

(b) (1) (A)

208. (U) The QMOW reported to the OOD that this sounding did not check with the chart. This was the first time the watchteam identified that a sounding did not check with the chart.[44] [Encls (13), (22)]

[44] (U) If TWD is outside of 10% of charted water depth in water less than 1000 fathoms, the QMOW should report that the sounding does not check with the chart. [Ref. (b)]

209. (U) The fathometer trace indicates soundings did not check with the chart from 0518Z to 0540Z. [Ref. (k), Encl. (71)]

210. (b) (1) (A) [redacted]

211. (b) (1) (A) [redacted]

212. (U) In his interview, the QMOW stated that he obtained three consecutive soundings that checked with the chart and reported this to the OOD at 0535Z. The QMOW did not log these soundings. [Encl. (13)]

213. (U) After identifying that the 0530Z sounding did not check with the chart, the OOD and QMOW did not assess the trend in soundings prior to that time. [Encls (13), (22), (80)]

214. (b) (1) (A) [redacted]

215. (b) (1) (A) [redacted]

216. (b) (1) (A) [redacted]

217. (b) (1) (A) [redacted]

218. (b) (1) (A) [redacted]

219. (b) (1) (A) [redacted]

(b) (1) (A)

220. (U) The CO was unaware of the ship's proximity to the navigation hazard. [Encl. (3)]

221. (b) (1) (A)
(b) (1) (A)

222. (b) (1) (A)
(b) (1) (A)

223. (b) (1) (A)
(b) (1) (A)

224. (b) (1) (A)
(b) (1) (A)

225. (b) (1) (A)
(b) (1) (A)

226. (b) (1) (A)
(b) (1) (A)

227. (b) (1) (A)
(b) (1) (A)

228. (b) (1) (A)
(b) (1) (A)

229. (b) (1) (A)
(b) (1) (A)

45 (b) (1) (A)
(b) (1) (A)

230. (b) (1) (A)
(b) (1) (A)

231. (b) (1) (A)
(b) (1) (A)

232. (b) (1) (A)
(b) (1) (A)

233. (U) The OOD did not report this sounding discrepancy to the CO. [Encl. (2)]

234. (U) The QMOW stated during his interview that after the fathometer trace displayed rapid shoaling, it subsequently went slightly down and steadied with soundings consistently shallower than charted.[48] [Encl. (13)]

235. (U) The off-watch HARDER section NAVSUP entered the Control Room after field day. [Encls (10), (13)]

236. (U) The OOD identified rapidly shoaling soundings on the fathometer and asked if the fathometer "spiked." [Encls (10), (22)]

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[46] (U) The SOM required the QMOW to be familiar with the ship's track and expected bathymetry and to notify the OOD, ANAV, and NAV when soundings did not correlate with ship's track. Steep slopes may decrease fathometer performance. [Ref. (k)]

[47] (b) (1) (A)
(b) (1) (A)

[48] (U) The CO's Standing Orders require personnel monitoring the fathometer to promptly identify when bottom slope trends deviate from expected trends and formally evaluate the charted sounding. [Encl. (82)]

(b) (1) (A)

[redacted]

237. (U) At 0616Z, the QMOW and the NAVSUP discussed with the OOD shifting the fathometer to transmit in a non-secure mode and attempting another sounding. [Encls (10), (13), (22)]

238. (U) The QMOW advocated taking a non-secure sounding because the sounding trace had been clear and then trailed off to a barely faint trace. [Encl. (13)]

239. (U) The OOD stated during his interview that he intended to call the CO to request permission to alter the emission control lineup and shift the fathometer to a non-secure mode.[49] [Encls (10), (13)]

[49] (b) (1) (A)

(b) (1) (A)

[redacted]

240. (U) Per the CO's Standing Orders, the OOD does not need the CO's permission to shift fathometer modes. During his interviews, the CO stated that he expects the OOD to shift fathometer modes when necessary for safety of ship. [Encls (2), (3), (82)]

241. (b) (1) (A)
(b) (1) (A)

242. (b) (1) (A)
(b) (1) (A)

243. (U) The OOD stated he was concerned with the shallower-than-expected soundings but that he did not assess a need to take aggressive action. [Encl. (23)]

244. (U) The OOD did not consider ordering a lower speed. [Encl. (23)]

245. (U) The OOD and DOOW used a one-degree up angle to change depth because the ship was concluding field day. The DOOW was not aware of the shallower than expected soundings. [Encls (33), (76)]

246. (U) At approximately 0618Z, the Sonar Supervisor identified a trace near the bow. The trace was classified as biologics. The Sonar Supervisor stated there were no other contacts. [Encl. (27)]

247. (b) (1) (A)
(b) (1) (A)

248. (b) (1) (A)
(b) (1) (A)

249. (b) (1) (A)
(b) (1) (A)

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(b) (1) (A)

250. (b) (1) (A) [redacted]

(b) (1) (A) [redacted]

251. (U) CONNECTICUT was operating in international waters at the time of the grounding. [Ref. (i), Encl. (71)]

(b) (1) (A) [redacted]

**Post-Grounding Actions**

252. (U) At 0618Z, the Helmsman pulled full rise on the control column. [Encls (33), (72), (76)]

253. (U) At 0618Z, the OOD ordered a depth of 160 feet and a speed of All Ahead Standard. [Encls (22), (79)]

254. (U) The DOOW did not hear the order to change depth to 160 feet. [Encls (22), (33)]

255. (U) At 0619Z, the Digital Electromagnetic Log (EDML) lost indications. SONAR reported severe degradation from the spherical array. [Encls (20), (27), (30)]

[50] (U) Based on the RLGN-to-GPS offset determined using CONNECTICUT's first GPS fix on the surface. [Encl. (107)]

256. (U) At 0619Z, the ship achieved a 31-degree up angle. The DOOW announced "the ship is going to the surface." The DOOW grabbed both control columns and assisted in positioning the planes to full rise. [Encls (33), (72), (76)]

257. (U) Lee Helm informed the DOOW that the ship was rigged for high speed operations and the bow planes were retracted. [Encls (33), (34), (72), (76)]

258. (U) At 0619Z, the Chief of the Watch (COW) sounded the collision alarm, made a 1MC for all watchstanders to report damage to the Control Room, and stood by to conduct an Emergency Main Ballast Tank (EMBT) blow. [Encls (16), (34)]

259. (U) During the ascent, the Fire Control Technician of the Watch (FTOW) and Sonar Supervisor aligned their equipment for periscope depth operations. [Encls (18), (27)]

260. (U) At 0619Z, the OOD ordered All Stop to reduce CONNECTICUT's ascent rate and to enable the DOOW to reach the ordered depth of 160 feet without going shallower. [Encl. (22)]

261. (U) The DOOW did not receive or acknowledge the order. [Encls (22), (33)]

262. (U) At 0619Z, the CO entered the Control Room and made a 1MC that the ship had a "collision or an allision" and ordered personnel to report any damage or flooding throughout the ship. [Encls (16), (27)]

263. (U) At 0619Z, CONNECTICUT proceeded past 160 feet toward the surface. [Encls (33), (72), (76)]

264. (U) At 0619Z, the ship broached and reached a depth of 36 feet. [Encls (33), (72), (76)]

265. (U) At 0620Z, the WEPS raised and manned #2 periscope. [Encls (20), (36)]

266. (U) At 0620Z, the CONNECTICUT obtained a Global Positioning System (GPS) fix with a 1200-yard offset to the northwest from CONNECTICUT's plotted RLGN position to the GPS position. [Encls (13), (76)]

267. (U) The COW attempted to deballast the ship by pumping water from auxiliary tanks to sea. The trim system was properly aligned but failed to pump water. [Encls (16), (33), (34)]

268. (U) The CM relieved the OOD, and the Assistant Engineer stationed as the CM. [Encls (22), (25)]

269. (U) At 0623Z, CONNECTICUT's speed dropped to approximately 0 knots, and the ship's depth began to increase due to the inability to deballast the ship. [Encl. (76)]

270. (U) The COW recommended cross-connecting the trim and drain systems to deballast the ship. Depth control was not used to discharge water overboard. [Encls (16), (33)]

271. (U) The COB and the DOOW recommended increasing speed to maintain the ship broached. The OOD ordered All Ahead Two Thirds followed by All Ahead Standard. [Encls (2), (5), (108)]

272. (U) At 0624Z, the WEPS relieved the OOD. [Encls (25), (36), (79)]

273. (U) At 0624Z, CONNECTICUT's depth was 74 feet and increasing. The CO ordered the COW to conduct an EMBT blow. [Encls (2), (5), (16), (76), (79)]

274. (U) At 0625Z, the DOOW prepared to surface. [Encl. (16)]

275. (U) At approximately 0625Z, a watchstander incorrectly reported a propulsion lube oil (PLO) rupture in the Engine Room.[51] [Encls (18), (34)]

276. (U) At approximately 0626Z, the Engineering Officer of the Watch (EOOW) identified and reported that a loss of PLO had not occurred. [Encls (18), (34)]

277. (U) At 0626Z, the OOD ordered All Stop followed by All Ahead Standard. [Encls (2), (108)]

278. (U) At 0627Z, the OOD ordered the DOOW to prepare to place a low-pressure blow on all Main Ballast Tanks (MBTs). [Encls (16), (36), (79)]

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[51] (U) Approximately five gallons of cooking oil stored in Shaft Alley spilled into Engine Room Lower Level. This oil was the basis for announcing a PLO rupture. [Encl. (36)]

279. (U) At 0628Z, the High Data Rate (HDR) mast was raised for communications. [Encl. (79)]

280. (b) (1) (A)
(b) (1) (A)

281. (U) At 0630Z, the COW restored the trim pumps by pumping from one vented auxiliary tank to another. With the system restored, he commenced deballasting and pumped approximately 100,000 pounds of water overboard. [Encls (16), (33)]

282. (U) At 0640Z, CONNECTICUT made an initial OPREP-3 voice report of the incident. [Encl. (109)]

283. (U) At 0641Z, the OOD ordered the DOOW to commence a low pressure blow on all MBTs. [Encls (16), (36)]

284. (U) The number two trim pump was in reduced status due to a material deficiency with the pump's motor controller. The motor controller overheated during sustained operation of the pump. [Encls (16), (110)]

285. (U) A Temporary Standing Order (TSO) directed the Auxiliary Machinery Room Watch (AMR) to monitor the number two trim pump resistor panel with the pump in operation. [Encl. (111)]

286. (U) At 0710Z, the number two trim pump motor controller glowed red and smoked. This was called away as an electrical fire. [Encl. (79)]

287. (U) At 0715Z, power was secured to the trim pumps, and the fire from the number two trim pump motor controller was extinguished. [Encls (16), (33), (79)]

288. (U) The QAO relieved the OOD and shifted the watch to the bridge. [Encl. (25)]

289. (U) The CO ordered the OOD to maintain the low pressure blow on all MBTs. [Encls (25), (112)]

290. (b) (1) (A)
(b) (1) (A)

291. (U) CTF-74 directed CONNECTICUT to transit to Guam. [Encl. (113)]

292. (U) On 8 October 2021, CONNECTICUT moored in Guam. The bow dome detached during the transit. [Encls (105), (114)]

**Injuries and Damage**

Injuries

293. (U) Due to the force of the impact, 11 personnel reported physical injuries. [Encls (19), (115)]

294. (U/~~CUI~~) CONNECTICUT's Maintenance Material Management Coordinator (3MC) hit his head on a mounting bracket in the vicinity of the Countermeasures Space. He suffered a scalp laceration and displayed symptoms of a concussion. [Encls (19), (115), (116)]

295. (U/~~CUI~~) The OOD fractured his right scapula when he hit carry-on equipment in the Control Room.[52] [Encls (19), (115), (116), (117)]

296. (U/~~CUI~~) In addition to 3MC and the OOD, nine other crew members were evaluated for minor injuries due the grounding.[53] [Encls (19), (115)]

297. (U) During the transit to Guam, CONNECTICUT identified seven Sailors who would benefit from mental health treatment. During his interview, the IDC stated that number grew to approximately 50 Sailors. [Encl. (19)]

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[52] (U/~~CUI~~) CONNECTICUT transmitted a MEDADVICE message informing CTF-74 of its proposed treatment plan in response to the OOD's injuries. CTF-74 responded to CONNECTICUT, concurring with the ship's proposed treatment plan. The OOD was later evaluated at Naval Hospital Guam and returned to Bremerton, Washington for follow-on medical care. [Encls (115), (117), (118)]

[53] (U/~~CUI~~) These nine diagnosed injuries consisted of: one Sailor with tightness in neck and shoulder, one Sailor with a right hand contusion, one Sailor with a possible finger fracture, one Sailor with a contusion to his right lower back, one Sailor with a slight laceration to the surface of his left hand, one Sailor with a contusion to his right elbow, one Sailor with left upper arm pain, one Sailor with a contusion and superficial laceration to his sternum, and one Sailor reported to medical but was determined not to be injured. [Encl. (115)]

Damage

298. (b) (1) (A)
(b) (1) (A)

299. (b) (1) (A)
(b) (1) (A)

300. (b) (1) (A)
(b) (1) (A)

301. (b) (1) (A)
(b) (1) (A)

302. (b) (1) (A)
(b) (1) (A)

303. (b) (1) (A)
(b) (1) (A)

304. (b) (1) (A)
(b) (1) (A)

305. (b) (1) (A)
(b) (1) (A)

306. (b) (1) (A)
(b) (1) (A)

307. (b) (1) (A)
(b) (1) (A)

308. (b) (1) (A)

309. (b) (1) (A)
(b) (1) (A)

310. (b) (1) (A)
(b) (1) (A)

311. (b) (1) (A)
(b) (1) (A)

312. (U) Detailed repair cost and schedule estimates for CONNECTICUT were not available at the time of this report. [Encl. (105)]

**Post-Grounding Assessment**

313. (U) Performance Monitoring Team Bangor verified proper operation of CONNECTICUT's depth detection system following the ship's arrival in Guam. [Encl. (45)]

314. (U) Divers found rocks in MBTs 1A and 1B. [Encls (105), (106)]

315. (b) (1) (A)
(b) (1) (A)

316. (b) (1) (A)
(b) (1) (A)

## OPINIONS

### General

1. (b) (1) (A)
(b) (1) (A)

2. (U) No single action or inaction caused this mishap, but it was preventable. It resulted from an accumulation of errors and omissions in navigation planning, watchteam execution, and risk management. Prudent decision-making and adherence to standards in any one of these three areas could have prevented the grounding. [FF 135, 143, 145, 147, 150, 151, 155, 170, 177, 178, 182, 187, 188, 191, 193, 194, 197, 201, 208, 211-213, 219, 220, 231, 233, 236, 239-246]

3. (U) A grounding at this speed and depth had the potential for more serious injuries, fatalities, and even loss of the ship. Injuries onboard CONNECTICUT were relatively minor. Eleven total crew members were physically injured. The two most serious injuries were a fractured right scapula and a mild head trauma. [FF 247-249, 293-297]

4. (U) Actions immediately following the grounding were effective. The crew put the ship in a stable condition on the surface, managed injuries and equipment damage, and transited to Guam safely and securely. [FF 252-289]

5. (b) (1) (A)
(b) (1) (A)

### Navigation Planning

6. (U) CONNECTICUT's NAVPLAN for the day of the grounding failed to meet safe navigation standards. The navigation review team,

54 (b) (1) (A)
(b) (1) (A)

including the CO, failed to identify and properly mark at least ten charted hazards to navigation in the vicinity of the grounding, including two charted water depths shallower than the COSOE maximum operating depth. [FF 132, 135, 140, 142, 143, 146, 148, 149, 151, 184, 187, 188, 190, 191-194, 198, 199, 204, 219]

7. (b) (1) (A)
(b) (1) (A)

8. (U) The CO's decision to use a temporary route instead of updating the NAVPLAN with a PIM track significantly contributed to the grounding. This decision ultimately prevented the CO, NAV, and ANAV from bringing their experience to bear in voyage planning and compounded all other navigation errors and omissions. The CO verbally approved the temporary route in the VMS tactical layer without a detailed or formal review. During an interview, the CO described the temporary route as his "commander's intent" and indicated he was not concerned when the watchteam conned around charted but unmarked navigation hazards near the track or altered it on several occasions. [FF 135, 139, 146-151, 184, 187, 190, 198, 199]

9. (U) The navigation review team, including the CO, incorrectly assessed that CONNECTICUT would be operating in an open ocean environment. They should have recognized the ship would be in restricted waters based on the planned track passing near multiple navigation hazards. Had they done so, a modified piloting party would have been stationed with additional watchstanders focused on navigation safety. [FF 18, 109, 110, 112, 122, 125, 127, 128, 132, 135, 140, 151, 187, 188, 190, 192, 199, 218-220]

10. (b) (1) (A)
(b) (1) (A)

11. (b) (1) (A)
(b) (1) (A)

**Watchteam Execution**

12. (b) (1) (A)
(b) (1) (A)

13. (b) (1) (A)
(b) (1) (A)

14. (U) Upon identifying the charted but unmarked navigation hazards near the temporary route, the CO, CDO, OOD, and QMOW should have recognized the area of the transit as restricted waters. Accordingly, they should have stationed a modified piloting party with additional watchstanders focused on navigation safety. [FF 18, 109-112, 122, 125, 127, 128, 132, 135, 140, 151, 187, 188, 190, 192, 199, 218-220]

15. (U) The ANAV undermined the on-watch navigation team by actively preventing the QMOW from marking a charted navigation hazard two hours before the grounding. [FF 192-194]

16. (U) The QMOW's focus on identifying and avoiding charted but unmarked navigation hazards among other constraints detracted from his ability to properly monitor and operate the fathometer.

For example, he failed to shift to a SHALLOW mode during a portion of the hour leading up to the grounding, as would have been appropriate based on observed soundings. [FF 151, 165, 166, 168, 170, 173, 176-178, 181-183, 187, 190, 192-194, 199, 207-210, 212, 231, 232, 236-238]

17. (U) The OOD and QMOW were complacent with the inability to obtain soundings at high speed and were generally not sensitive to the risk of grounding. For example, the QMOW lost soundings on multiple occasions early in his watch but failed to carry out actions prescribed in the CO's Standing Orders. [FF 46, 47, 166-169, 172, 174, 176, 177, 180, 198, 207-209, 211-213, 226-229, 231, 233, 234, 236-238, 241, 243]

18. (U) After identifying a sounding that did not check with the chart, the OOD, ANAV, and QMOW failed to critically assess sounding trends relative to charted bathymetry along the ship's track. [FF 212, 213, 231, 232, 234, 237, 238]

19. (U) The QMOW failed to formally recommend corrective actions for safety of ship. The QMOW should have recommended reducing speed and depth and shifting to a non-secure fathometer mode to obtain an accurate sounding at several points during his watch. [FF 169, 172, 173, 178, 183, 209-211, 213, 236-239]

20. (b) (1) (A)

(b) (1) (A)

**Risk Management**

21. (b) (1) (A)

(b) (1) (A)

(b) (1) (A)

22. (b) (1) (A)

(b) (1) (A)

**Issue Resolution**

23. (U) Failure of the CO, XO, NAV, and ANAV to identify, self-assess, and hold personnel accountable for previous navigation deficiencies led to low standards. The CO periodically found NAVPLAN errors but did not conduct critiques or fact-finding meetings to address the errors. Similarly, the CO, XO, NAV, and ANAV failed to internalize and correct operational planning and navigation deficiencies identified by CSDS-5. [FF 60, 73-75, 96]

24. (U) When the watchteam identified significant COSOE errors approximately one hour prior to the grounding, the CO or OOD should have slowed the ship and conducted a critical assessment of the voyage plan. Instead, the CO approved a new COSOE in the VMS tactical layer without involving the NAV. [FF 18, 122, 124, 125, 127-129, 187, 188]

25. (U) The CO, XO, COB, NAV, and ANAV missed a significant opportunity for self-reflection and improvement following the pier allision in April 2021. This mishap resulted from multiple errors and omissions by the navigation team, failure of the OOD to take decisive action upon recognizing danger, and lack of CO involvement. The ship conducted a safety stand-down to address these problems, but it was not adequately focused on addressing the root causes of the allision. [FF 73-75, 89, 96, 100]

26. (U) Overall, CONNECTICUT peaked to perform at standards during inspections and evaluations as evidenced during the POMEVAL and mid-deployment check ride. In the absence of external oversight or evaluation, the CO, XO, COB, and other leaders failed to maintain day-to-day standards. [FF 63, 78, 86-88, 91, 104-107, 189-298]

**Material**

27. (U) A fully operational forward bottom sounder would not have prevented this grounding. At a speed of 24 knots, it would have provided only a few additional seconds of warning relative to the aft bottom sounder. However, recurring material deficiencies with both bottom sounders may have contributed to the watchteam questioning fathometer indications and delaying action. [FF 97, 99, 164, 170, 177, 182, 237-239, 241, 243]

28. (U) The CO should have issued a TSO to provide guidance to the watchteams on how to operate with the forward bottom sounder unavailable in DEEP modes. [FF 97, 99, 164, 170, 177, 182, 237-239, 241, 243]

29. (U) CONNECTICUT attempted to troubleshoot and repair the forward bottom sounder throughout the deployment and received appropriate technical support. [FF 97, 99]

**Individual Actions**

30. (U) In accordance with Navy Regulations, the CO is ultimately responsible for safe navigation of the ship. CONNECTICUT's CO failed to set and maintain high standards, missed opportunities for self-assessment and improvement, and failed to adequately train his team. He failed to evaluate and mitigate risk, and he abdicated his responsibility to conduct an effective review of the voyage plan for the day of the grounding. [FF 4-6, 60, 96, 132, 135, 147, 149, 155, 197-248]

31. (U) As second in command, the XO shares in the CO's responsibility for safety of the ship. He failed to support the CO in maintaining high standards, conducting effective self-assessment and improvement, and mitigating risk. As CDO, he did not question the ship's voyage plan or identify watchteam errors. [FF 7-11, 36-39, 96, 105, 160, 168, 170, 177, 182, 184, 188, 197-248]

32. (U) The NAV bears responsibility for safe navigation of the ship. He reviewed and recommended an inadequate and unsafe NAVPLAN to the CO for approval. A prudent review of the NAVPLAN would have revealed a number of identifiable errors. His failure to execute such a review directly contributed to the grounding. [FF 14-20, 120-129, 132, 135, 251]

33. (U) The ANAV bears responsibility for safe navigation of the ship. As the most experienced navigator onboard, the ANAV prepared an unsafe and imprudent NAVPLAN. When consulted regarding soundings that did not check with the chart, he was not diligent in determining root causes and failed to make prudent recommendations to the watchteam. Most egregiously, he directed the QMOW to remove a "stay out" area around a navigation hazard along the planned track that would have required the OOD to station the modified piloting party. These failures directly contributed to the grounding. [FF 25-27, 50, 139, 143, 192-194, 200]

34. (U) The OOD is responsible for safe and proper operation of the ship. He did not adequately resolve errors. After recognizing danger, the OOD did not take sufficient action to keep the ship safe. The OOD's failure to take decisive action directly contributed to the grounding. [FF 40, 41, 161-251]

35. (U) The QMOW's primary responsibility is safe navigation. With the ANAV, he developed an imprudent and unsafe NAVPLAN. He then inappropriately amended the temporary route, in violation of the SOM. Although the QMOW identified some hazards, he imprudently deleted a "stay out" area in VMS when directed by the ANAV. Due to the NAVPLAN errors, the QMOW was too distracted to operate the fathometer in the correct mode, to take appropriate actions for a loss of soundings, or to make clear and direct recommendations to the OOD with indications of a rapidly shoaling trend on the fathometer. The QMOW's failures are indicative of the environment in which he was trained and developed. Regardless, these failures directly contributed to the grounding. [FF 42-47, 168, 170, 171, 177, 182, 184, 194, 199, 208, 212, 231]

36. (U) As one of the CO's principle advisors, the COB is responsible for issue resolution and enforcement of standards. He failed to facilitate a questioning attitude among watchstanders and fostered the environment that allowed the

grounding to occur. [FF 12, 13, 105, 125, 127-129, 147-149, 170, 177, 182, 184, 187, 190, 193, 194, 199, 233]

37. (U) The OPS is not culpable in the grounding. He was not involved in NAVPLAN review and led a planning meeting where leaders determined a transit speed of 16 knots was appropriate. OPS was not involved in the CO's subsequent decision to increase speed. As such, his effectiveness was marginalized. [FF 21-24, 77, 132, 134, 138]

38. (U) The OSO is not culpable in the grounding. The CO did not empower him to independently monitor and assess effectiveness of the ship's operational plan. [FF 28-31, 197]

**CTF-74**

39. (U) CTF-74 tasking to conduct a HUMEVAC was within CONNECTICUT's ability to plan and execute. [FF 130, 131]

**TYCOM**

40. (U) CONNECTICUT's modified FRTP resulted in high operational and personnel tempo, but it did not cause or contribute to the grounding. [FF 50, 51, 56, 62, 64, 67]

41. (b) (1) (A)
(b) (1) (A)

## RECOMMENDATIONS

### Accountability

1. (U) I recommend the CO, CDR Cameron M. Aljilani, U.S. Navy, be subject to nonjudicial punishment for violation of UCMJ Art. 92, Dereliction of Duty and Art. 110, Improper Hazarding of a Vessel for negligence contributing to and failure to prevent CONNECTICUT's grounding on 2 October 2021. I also recommend the administrative chain of command initiate detachment for cause.

2. (U) I recommend the XO, LCDR Patrick C. Cashin, U.S. Navy, in his capacity as Command Duty Officer, be subject to nonjudicial punishment for violation of UCMJ Art. 92, Dereliction of Duty. I also recommend the administrative chain of command initiate detachment for cause.

3. (U) I recommend the NAV, LCDR (b) (6), U.S. Navy, be subject to nonjudicial punishment for violation of UCMJ Art. 92, Dereliction of Duty and Art. 110, Improper Hazarding of a Vessel for negligence contributing to and failure to prevent CONNECTICUT's grounding on 2 October 2021. I also recommend the administrative chain of command initiate detachment for cause.

4. (U) I recommend the OOD, LCDR (b) (6), U.S. Navy, be subject to nonjudicial punishment for violation of UCMJ Art. 92, Dereliction of Duty and Art. 110, Improper Hazarding of a Vessel for negligence contributing to and failure to prevent CONNECTICUT's grounding on 2 October 2021. I also recommend the administrative chain of command initiate detachment for cause.

5. (U) I recommend the ANAV, ETVCS (SS) (b) (6), U.S. Navy, be subject to nonjudicial punishment for violation of UCMJ Art. 92, Dereliction of Duty and Art. 110, Improper Hazarding of a Vessel for negligence contributing to and failure to prevent CONNECTICUT's grounding on 2 October 2021. I also recommend the administrative chain of command initiate detachment for cause.

6. (U) I recommend the on-watch QMOW, ETV2 (b) (6), U.S. Navy, be subject to nonjudicial punishment for violation of UCMJ Art. 92, Dereliction of Duty.

7. (U) I recommend administrative counseling for the COB, STSCM (SS) Cory I. Rodgers, U.S. Navy, regarding his duties and responsibilities to uphold standards. The administrative chain of command should determine, based on overall performance,

whether STSCM Rodgers has the requisite leadership abilities to return CONNECTICUT to standards.

**CTF-74**

8. (b) (1) (A)
(b) (1) (A)

9. (b) (1) (A)
(b) (1) (A)

10. (b) (1) (A)
(b) (1) (A)

**Submarine TYCOMs**

11. (U) I recommend reviewing processes for training, evaluating, and certifying ships in submerged navigation to incorporate lessons learned from this incident. For example, I recommend ensuring the FRTP includes sufficiently challenging navigation scenarios in open ocean and restricted waters stressing chart accuracy and pedigree, loss of soundings, soundings that do check with the chart, and uncharted features.

12. (b) (1) (A)
(b) (1) (A)

(b) (1) (A)

13. (U) I recommend reviewing CO, XO, and department head talent management and assignment processes to identify any lessons learned from this incident. Although the CONNECTICUT CO, XO, and department heads were fully qualified for their assignments, this was a particularly weak team.

14. (U) I recommend reviewing any recurring deficiencies in the material condition of SEAWOLF-class bottom sounding equipment. Personnel interviewed during this investigation indicated bottom sounder reliability is a class-wide problem.

**Naval Sea Systems Command**

15. (U) I recommend coordinating with National Geospatial Agency (NGA) and VMS stakeholders to develop operator aids to identify areas of poor chart accuracy and to better identify navigation hazards. The inspection team, comprised of officers and senior enlisted leaders from multiple U.S. Navy communities, reviewed VMS chart features in detail with the following recommendations. First, develop a tool that provides VMS operators information on the zone of confidence (ZOC)[55] of chart regions below A1 (or some other quantitative measure of poor chart accuracy) and incorporate automated warnings when own ship's look-ahead approaches ZOC regions C, D, or U. Second, digitize the depth of underwater navigation hazards and label them on the top-level VMS display rather than requiring an operator to query the object. Third, automatically include de-selectable "stay out" areas of a pre-determined diameter around navigation hazards.

16. (U) I recommend coordinating with NGA, VMS stakeholders, and other appropriate organizations to review or develop a process for supplementing VMS with reliable chart information from allies and partners. Prioritize information in areas of low

[55] (U) The Zone of Confidence (ZOC) system uses survey data, position accuracy, depth accuracy, and sea floor coverage. The ZOC assessments within each chart enable mariners to assess the limitations of hydrographic data from which the chart was compiled and the associated level of navigation risk in particular areas. Bowditch refers. [Ref. (j)]

chart accuracy and pedigree, particularly where U.S. submarines are likely to operate.

17. (b) (1) (A)

(b) (1) (A)

18. (U) I recommend coordinating with Submarine TYCOMs to upgrade the bottom sounder digital display coasting algorithm. At the time of this grounding, the fathometer displayed a substantial and stable digital depth beneath the keel with no alarm, even as the digital trace rapidly shoaled.

# APPENDIX A

References

(a) JAGINST 5800.7G (JAGMAN), Chapter Two (U)

(b) [redacted] (b) (1) (A)

(c) OPNAV INSTRUCTION 5400.45, Standard Naval Distribution List (U)

(d) [redacted] (b) (1) (A)

(e) U.S. NAVY REGULATIONS, 1990 (U)

(f) COMSUBLANT/COMSUBPACINST 5400.49, Submarine and Organizational Regulation Manual (SORM) (U)

(g) OPNAV INSTRUCTION 3120.32D CH-1, Standard Organization and Regulations of the Navy (U)

(h) [redacted] (b) (1) (A)

(i) United Nations Convention of The Law of The Sea (U)

(j) Publication Number 9, "The American Practical Navigator," Bowditch, Volume 1, 2019 Edition (U)

(k) [redacted] (b) (1) (A)

(l) [redacted] (b) (1) (A) (b) (1) (A)

(m) [redacted] (b) (1) (A)

(n) [redacted] (b) (1) (A) (b) (1) (A)

Enclosures

(1) COMSEVENTHFLT ltr Ser N013/080J of 5 Oct 21 (U/~~CUI~~)

(2) Summary of Interview – CO of 12 Oct 21 ~~(S)~~

(3) Summary of Interview – CO Re-interview of 21 Oct 21 ~~(S)~~

(4) Summary of Interview – XO of 12 Oct 21 ~~(S)~~

(5) Summary of Interview – COB of 12 Oct 21 ~~(S)~~

(6) Summary of Interview – CDRE M. of 12 Oct 21 ~~(S)~~

(7) Summary of Interview – CAPT R. of 14 Oct 21 ~~(S)~~

(8) Summary of Interview – CAPT S. of 14 Oct 21 ~~(S)~~

(9) Summary of Interview – COMSUBPAC N7 of 14 Oct 21 ~~(S)~~

(10) Summary of Interview – NAVSUP of 10 Oct 21 ~~(S)~~

(11) Summary of Interview – NAVSUP Re-interview of 14 Oct 21 ~~(S)~~

(12) Summary of Interview – ANAV of 10 Oct 21 ~~(S)~~

(13) Summary of Interview – QMOW of 10 Oct 21 ~~(S)~~

(14) Summary of Interview – QMOW Re-interview of 14 Oct 21 ~~(S)~~

(15) Summary of Interview – 3MC of 11 Oct 21 ~~(S)~~

(16) Summary of Interview – COW of 9 Oct 21 ~~(S)~~

(17) Summary of Interview – DCA of 11 Oct 21 ~~(S)~~

(18) Summary of Interview – FTOW of 11 Oct 21 ~~(S)~~

(19) Summary of Interview – IDC of 11 Oct 21 ~~(S)~~

(20) Summary of Interview – AENG of 11 Oct 21 ~~(S)~~

(21) Summary of Interview – Off-going QMOW of 11 Oct 21 ~~(S)~~

(22) Summary of Interview – OOD of 9 Oct 21 ~~(S)~~

(23) Summary of Interview – OOD Re-interview of 21 Oct 21 ~~(S)~~

(24) Summary of Interview – OPS of 10 Oct 21 ~~(S)~~

(25) Summary of Interview – QAO of 11 Oct 21 ~~(S)~~

(26) Summary of Interview – RCA of 11 Oct 21 ~~(S)~~

(27) Summary of Interview – SONAR SUP of 10 Oct 21 ~~(S)~~

(28) Summary of Interview – SQOPS of 21 Oct 21 ~~(S)~~

(29) Summary of Interview – SQWEPS of 21 Oct 21 ~~(S)~~

(30) Summary of Interview – ACINT STSC of 10 Oct 21 ~~(S)~~

(31) Summary of Interview – SONAR DIV LCPO STSC of 11 Oct 21 ~~(S)~~

(32) Summary of Interview – ACINT STSCS of 10 Oct 21 ~~(S)~~

(33) Summary of Interview – DOOW of 9 Oct 21 ~~(S)~~

(34) Summary of Interview – Lee Helm of 10 Oct 21 ~~(S)~~

(35) Summary of Interview – Embarked Sailor of 10 Oct 21 ~~(S)~~

(36) Summary of Interview – WEPS of 11 Oct 21 ~~(S)~~

(37) Summary of Interview – CTF 74 of 22 Oct 21 ~~(S)~~

(38) Suspect's Rights Acknowledgment ICO CO of 12 Oct 21 and 21 Oct 21 (U)

(39) Suspect's Rights Acknowledgment ICO XO of 12 Oct 21 and 26 Oct 21 (U)

(40) Suspect's Rights Acknowledgment ICO NAV of 19 Oct 21 (U)

(41) Suspect's Rights Acknowledgment ICO NAVSUP of 14 Oct 21 (U)

(42) Suspect's Rights Acknowledgment ICO ANAV of 14 Oct 21 (U)

(43) Suspect's Rights Acknowledgment ICO OOD of 20 Oct 21 (U)

(44) Suspect's Rights Acknowledgment ICO QMOW of 14 Oct 21 (U)

(45) Memorandum for the Record – Performance Monitoring Team of 15 Oct 21 (U)

(46) CTG 34.4 242143Z May 21 ~~(C)~~

~~SECRET//NOFORN~~

(47) USS CONNECTICUT 040015Z SEP 20 ~~(S)~~

(48) Underway Watchbills of 11 Aug 21 and 14 Sep 21 (U)

(49) Watchstander Qualifications (Screen Shot) (U/~~CUI~~)

(50) COMSUBDEVRON FIVE ltr of 6 Aug 19 (U)

(51) Suspect's Rights Acknowledgement ICO OPS of 26 Oct 21 ~~(S)~~

(52) FLTMPS Data (U/~~CUI~~)

(53) COMSUBDEVRON FIVE Schedule ~~(S)~~

(54) COMSUBDEVRON FIVE Combat Readiness Evaluation IRT USS CONNECTICUT of Oct 19 ~~(S)~~

(55) COMSUBPAC N7 POMEVAL Write Up of 17 May 21 ~~(S)~~

(56) SUBLEARNCEN Det San Diego ltr Ser 00/S-11 of 31 Jul 20 ~~(S)~~

(57) Pre-Deployment Training Grades ~~(C)~~

(58) COMSUBDEVRON FIVE ltr Ser N00/232 of 10 Jul 20 (U)

(59) COMSUBDEVRON FIVE ltr Ser N04/C of 17 through 20 Nov 20 ~~(C)~~

(60) USS CONNECTICUT 041237Z Dec 20 ~~(C)~~

(61) COMPACFLT ltr Ser N01/C082 of 30 Dec 20 ~~(C)~~

(62) COMSUBDEVRON FIVE ltr of 16 Feb 21 (U)

(63) STF San Diego ltr Ser 00/S-003 of 8 Apr 21 ~~(S)~~

(64) COMSUBPAC ltr Ser N02L/055 of 24 Jun 21 (w/o enclosures) (U/~~CUI~~)

(65) USS CONNECTICUT rpt of 20 May 2021 ~~(C)~~

(66) COMSUBDEVRON FIVE ltr Ser N00/S-022 of 2 Aug 21 ~~(S)~~

(67) POMEVAL Comments ICO USS CONNECTICUT of 13 May 2021 ~~(S)~~

(68) COMTHIRDFLT 242236Z May 21 ~~(S)~~

(69) COMSUBDEVRON FIVE ltr of 25 May 21 (U)

~~SECRET//NOFORN~~

(70) CTF 74 Schedule ~~(S)~~

(71) Navigation Plan in Voyage Management System ~~(S)~~

(72) Summary of Interview – Helm of 10 Oct 21 ~~(S)~~

(73) (E) SCS Navigation Plan of 30 Sep 21 ~~(S)~~

(74) CTF 74 302229Z Sep 21 ~~(S)~~

(75) CTF 74 DECLASSIFIED MESSAGE OF CHART DISCREPANCIES ~~(S)~~

(76) Ring Laser Gyro Navigator Data from 1 Oct 21 through 2 Oct 21 ~~(S)~~

(77) CO's Night Orders of 1 Oct 21 ~~(S)~~

(78) USS CONNECTICUT 251039Z Aug 21 and 302239Z Sep 21 ~~(S)~~

(79) USS CONNECTICUT Ships Deck Log of 2 Oct 21 ~~(S)~~

(80) USS CONNECTICUT Fathometer Logs from 27 Sep to 3 Oct 21 ~~(S)~~

(81) USS CONNECTICUT Fathometer Screen Grab – PowerPoint Slide ~~(S)~~

(82) SSN22INST C3120.1 of 30 Aug 21 – CO's Standing Orders ~~(S)~~

(83) SSN22INST S3121.1L CH-4 of 30 Jul 21 – Patrol Orders ~~(S)~~

(84) COMSUBDEVRON FIVE ltr Ser N00/S-009 of 16 May 21 ~~(S)~~

(85) COMSUBPAC 091334Z Jan 20 ~~(S)~~

(86) COMSUBPAC 071134Z Aug 20 ~~(S)~~

(87) COMSUBDEVRON FIVE ltr of 1 Sep 20 ~~(S)~~

(88) COMSUBPAC 111134Z Dec 20 ~~(S)~~

(89) USS CONNECTICUT 030045Z May 21 ~~(S)~~

(90) USS CONNECTICUT 250010Z Apr 21 ~~(S)~~

(91) COMSUBDEVRON FIVE 150210Z May 21 ~~(S)~~

(92) COMSUBPAC 212233Z May 21 ~~(S)~~

(93) USS CONNECTICUT 172058Z May 21 ~~(S)~~

(94) COMSUBDEVRON FIVE 212101Z May 21 (U)

(95) USS CONNECTICUT 241648Z May 21 ~~(S)~~

(96) COMSUBDEVRON FIVE 271621Z May 21 ~~(S)~~

(97) USS CONNECTICUT 261433Z May 21 ~~(S)~~

(98) USS CONNECTICUT 2021 Ready to Deploy Conference Brief ~~(S)~~

(99) USS CONNECTICUT 311013Z May 21 ~~(C)~~

(100) USS CONNECTICUT 060613Z Oct 21 ~~(C)~~

(101) SSN22NAVDEPTINST 3120.1E of 25 Apr 20 – NAV's Standing Orders ~~(C)~~

(102) ETVCM Shelly Memorandum for the Record of 27 Oct 21 ~~(S)~~

(103) Summary of Interview – OPSO Re-interview of 26 Oct 21 ~~(S)~~

(104) Summary of Interview – NAV of 9 Oct 21 ~~(S)~~

(105) USS EMORY S LAND ltr Ser AS39/S526 of 15 Oct 21 ~~(S)~~

(106) Picture of the Rocks Found in Main Ballast Tanks ~~(S)~~

(107) Johns Hopkins University Corrected Data ~~(S)~~

(108) USS CONNECTICUT Bell Log from 27 Sep to 3 Oct 21 ~~(S)~~

(109) USS CONNECTICUT 020750Z Oct 21 ~~(S)~~

(110) USS CONNECTICUT Reduced Status Log ~~(C)~~

(111) CO's Temporary Standing Order 21-46 of 2 Oct 21 (U/~~CUI~~)

(112) USS CONNECTICUT Chat Logs

(113) COMSUBRON FIFTEEN 031036Z Oct 21 ~~(C)~~

(114) COMSUBRON FIFTEEN 050421Z Oct 21 ~~(C)~~

(115) USS CONNECTICUT CONMEDEVAC Summary (Spreadsheet) ~~(C)~~

(116) USS CONNECTICUT 021011Z Oct 21 (U/~~CUI~~)

(117) USS CONNECTICUT 021251Z Oct 21 (U/~~CUI~~)

(118) CTF 74 040555Z Oct 21 (U)

(119) Summary of Interview – XO Re-interview of 26 Oct 21 ~~(S)~~

(120) Japanese Maritime Self-Defense Force Charts ~~(S)~~

(121) USNS MARY SEARS Preliminary Collection Analysis ~~(S/NF)~~

## APPENDIX B

| Name | Role/Area of Expertise | Command |
|---|---|---|
| RDML Christopher Cavanaugh | Investigating Officer | COMUSPACFLT |
| CAPT (b) (6) | Operations | CVN 73 |
| CAPT (b) (6) | Operations | CJCS |
| CAPT (b) (6) | Operations | NSS |
| CDR (b) (6) | Operations | COMSUBPAC |
| CDR (b) (6) | Operations | JFMCC STRAT |
| CDR (b) (6) | Legal Advisor | RLSO WESTPAC |
| LCDR (b) (6) | Legal | RLSO WESTPAC |
| LT (b) (6) | Legal | RLSO WESTPAC |
| CMDCM (b) (6) | Operations | COMSUBGRU 2 |
| ETVCM (b) (6) | Navigation | COMSUBRON 7 |
| FTCS (b) (6) | Ship's Control | COMSUBPAC |
| LN1 (b) (6) | Legal | RLSO WESTPAC |
| YN2 (b) (6) | Administrative | AS 39 |