5800
Ser
14 Jun 07

From: Investigating Officer
To: Commander, Carrier Strike Group XX

Subj: JAGMAN INVESTIGATION INTO THE GROUDING OF USS ARLEIGH BURKE (DDG 51) THAT OCCURRED ON 15 MAY 07

Ref: (a) JAGMAN Chapter II
(b) COMNAVAIRFORINST/COMNAVSURFORINST 3530.4A of 24 Feb 05
(c) WSN7 Technical Manual S9427-AN-MMO-010
(d) NAVSSI Technical Manual EE170-AJ-OMI-030/SSN-6
(e) OPREP-3NB Initial 010, USS ARLEIGH BURKE 1523330Z May 07 (C)
(f) United States Navy Regulations (1990)
(g) OPNAVINST 3120.32C (SORM)

Encl: (1) Convening Order CSG12 ltr 5830 Ser N02L/111 of 16 May 07
(2) Bridge Chart 12208
(3) Bridge Chart 12222
(4) CIC Chart 12208
(5) CIC Chart 12222
(6) CIC Position Log of 14 (excerpt) and 15 May 07
(7) Bridge Position Log of 14 and 15 May 07
(8) Bridge Bearing Log and Gazetteer of 15 May 07
(9) CIC Radar Navigation Gazetteer and Log of 15 May 07
(10) Ship's Deck Log of 14 and 15 May 07
(11) Engineering Log (excerpt) of 14 May 07
(12) Engineering Log (excerpt) of 15 May 07
(13) CSMC Log of 15 May 07
(14) Navigation Brief, Muster and Slide Show of 15 May 07
(15) Sea and Anchor Watchbill of 15 May 07
(16) Fathometer Log dtd 14 and 16 May 07
(17) CIC Watchlog of 15 May 07
(18) Bridge RT Log of 15 May 07
(19) Combat Systems U/W Check-off List of 14 May 07
(20) Entering Port Check-list of 15 May 07
(21) Daily Draft Report of 15 May 07
(22) VMS printout of 15 May 07

(23) British Admiralty TotalTide Version Printout
(24) TotalTide Units Printout
(25) CAPN Voyager Mosaic Version Printout
(26) RADNAV Training Refresher Certificate and Muster of 5 and 6 Sep 06
(27) 20th Quarter PMS Schedule Workcenter CA01
(28) 20th Quarter PMS Schedule Workcenter CE03
(29) 21th Quarter PMS Schedule Workcenter CA01
(30) 21th Quarter PMS Schedule Workcenter CE03
(31) FLTMPS Training Vs Requirements NEC Requirement Printout
(32) FLTMPS Training Vs TYCOM Requirements NEC Requirement Printout
(33) NAVSSI CSOSS CP 1/SSN6 dtd 10/11/06
(34) WSN-7 CSOSS CP 1/WSN7 dtd 10/11/06
(35) Engineering Bell Log (excerpt) of 15 May 07 and Legend
(36) Preclean Biofouling Inspection Data dtd 02/02/07
(37) Aft WSN-7 Printout of 15 May 07
(38) FWD WSN-7 Printout (One Second Increments) of 15 May 07
(39) FWD WSN-7 Printout (Thirty Second Increments) of 15 May 07
(40) FWD WSN-7 Printout (One Minute Increments) of 15 May 07
(41) WSN Data Legend
(42) Letter of Designation as Piloting Officer for OS2 dtd 1 Sep 06
(43) Letter of Designation as Shipping Officer for OS1 dtd 1 Sep 06
(44) Letter of Designation as Radar Navigation Team Certification Command Representative for LTJG dtd 1 Sep 06

(79) DDG 51 Navigation Bill dtd 20 Feb 07
(80) Commanding Officer's Standing Orders dtd 30 Jun 07
(81) Photo Timeline dtd 15 May 07

(99) Bridge Fix Report
(100) CIC Fix Report
(101) COMDAC Log Manager S/N (810SKH27116271LH2C) and

Hard Copy EPOCH Conversions
(102) Electronic File Data Compact Disc Serial Number B3139II1917846SH with file list
(103) Technical Manual EE170-AJ-OMI-030/SSN-6 NAVSSI Chapter 1 (Section 1-3) Systems Start Up Procedure AN/SSN/6 Block 4.2.0

(105) S9427-AN-MMO-010/WSN-7 Table B-1, Pages B-8, B-9
(106) S9427-AN-MMO-010/WSN-7 Table B-2, Page B-53

(117) Photo Compact Disc Serial Number (E312J5504042238E22) containing (210 Photo's, and 5 Enhanced Photos) IMG-7188-7386, IMG-7933-7400 (and prints of various of above files)
(118) Aft WSN-7 position plot
(118A) Enhanced Power Point Slide
(119) Forward WSN-7 position plot
(119A) Enhanced Power Point Slide
(120) Faxed copy of ARB Hull Inspection Report dtd 5/16/07, and 5/17/2007.

(122) NAVSSI Point Paper

Preliminary Statement

1. As directed by enclosure (1) and in accordance with reference (a), an investigation was conducted into the circumstances surrounding the grounding of USS ARLEIGH BURKE (ARB) DDG-51 that occurred on 15 May 2007 IVO Buoy "2C" approximately 2.9NM NE of Cape Henry Light at the entrance to Chesapeake Bay, Virginia Beach, Virginia as reported in reference (e). All times are local time. All dates, except where otherwise indicated, are 15 May 2007.

2.-4. Redacted

5. The ship was returning to Naval Station Norfolk from an Engineering Operations Certification (EOC) in the VACAPES. The position of the ship at the time of the mishap was approximately 36°57.308'N and 075°57.344'W and is based on a review of logbook entries, enclosures (7) through (9),

charts, enclosures (2), (4), and COMDAC log manager, enclosure (101).

FINDINGS OF FACT

FF1. On Monday, 14 May at 0726, ARB got underway from Pier 5, Berth 1, NAVSTA Norfolk to conduct EOC Drills in the VACAPES, enclosure (10).

FF2. The WSN-7 gyros were not aligned IAW CSOSS. Reference (c) and enclosures (34) and (104). This improper setup is the normal underway configuration onboard ARB since the BFTT install in the Fall of 2006, enclosure (97).

FF3. The CO, XO, and Navigator did not have confidence in the reliability or accuracy of NAVSSI. The Navigator wrote a Point Paper on the ship's NAVSSI issues and forwarded it to the CO, enclosures (121) and (122).

FF4. On Monday, 14 May at 1900, ARB conducted the previously scheduled (1800) EOC and Commodore pick-up Brief with the unscheduled navigation brief for entering port Norfolk, Virginia on 15 May 07. All required personnel were present with the exception of the First Lieutenant, (who missed ship's movement) and the Helm Safety Officer. A new Helm Safety Officer was assigned who was present at the brief, enclosures (14), (15), and (121).

FF5. On Monday, 14 May, the CO reviewed the charts and signed them as had been done on previous occasions. The only other signatures on the bridge chart 12208 are QMC, one of which is dated 11 May 2007. QMC was transferred TAD in February 2007 to XXX, Norfolk, enclosure (2), and (121).

FF6. On Monday, 14 May at 2000, the extracted COMDAC Log Manager file begins with the ships position source as INS2, reference (101). The positions were not compared with any other source throughout the underway period, enclosures (6) and (7), contrary to directives in reference (b).

FF7. All charts were briefed as corrected through Notice to Mariners (NTM) 20/07. The Bridge chart 12208 was

missing the correction from NTM 10/07. The CIC chart was corrected up to date, enclosure (2) and (4). All charts had shoal water highlighted at 36ft, enclosure (2) through (5). The ARB NAVBILL specifies a 40Ft danger depth, enclosure (79). The track was briefed for an 18KT SOA. The currents data that was briefed was calculated and graphed utilizing CAPN Voyager Mosaic, enclosures (14) and (25), which does not meet the requirements of reference (b).

FF8. During conversation with the Commodore the CO was challenged to confirm if CIC was following the six rules of DR. Upon investigation, the CO found that CIC was not following these rules and ordered OSC (Acting CICO/NavLCPO) to conduct training and maintain a proper plot, enclosure (107).

FF9. Due to a previous late arrival during a Navigation Check-ride by CDS XX, the CO did not want to repeat that performance with CDS XY, enclosures (107) and (121).

FF10. After successful completion of the EOC and consultation with the Navigator the CO intended to commence the transit at 25kts, use Standard Rudder and slow to 18kts in vicinity of Buoy "CH". They realized they were behind schedule and this would allow completion of the remainder of the transit at the planned speed and make ERB3 (Pilot Pickup) close to ARB's scheduled ETA of 1800.. The CO briefed the Commodore on her plan, enclosures (107) and (121).

FF11. Commodore had previously explained to the CO that there was no rush to get to in. He had the authority to change the pilot pickup time and not to worry about arriving at ERB3 at 1800, enclosure (121).

FF12. On Tuesday, 15 May at 1530, ARB stationed the Navigation Detail, enclosure (10). ARB was 2.55NM SSE of the shoal water (Fish Haven) in vicinity of buoy "CB", enclosures (6) and (7). ARB NAVBILL defines Piloting Waters as 2 - 15NM from shoal water and requires fixes at intervals of 3 - 15 minutes as conditions warrant. It also

defines Restricted Waters as less than 2NM to shoal water and requires fixes at 2 Min intervals, enclosure (79). This is more stringent than the requirements set forth in reference (b), however, the actual logged fix intervals did not meet either requirement as set forth in reference (b) or enclosure (79).

FF13. At 1540 the unauthorized U/I Bridge Bearing Recorder starts logging FURUNO GPS in accordance with normal procedures as directed by QM1 and approved by the Navigator, enclosures (8) and (97). The Plotter began plotting electronic positions directly from COMDAC, enclosure (2), (97), (98), and (121). CIC Recorder logged , and the CIC Plotter plots, COMDAC INS2 Positions, enclosures (9) and (97).

FF14. COMDAC was displaying INS2 position information, enclosures, (22), (97), (117), and (121).

FF15. COMDAC does not display Figure of Merit values for INS positions. Figure of Merit 1 was logged by CIC, enclosure (9). FURUNO GPS does not display any Figure of Merit information, enclosure (97) and (102). Figure of Merit 1 was logged by the Bridge, enclosure (8).

FF16. The Navigator reported to the CO that every fix was a GPS fix with a Figure of Merit 1, enclosures (8), (9), and (107).

FF17. At 1551 and 29 seconds WSN-7 CDU Error Code 223, (System undamped (Excessive Time)) alerted on the Aft WSN-7. The alarm displayed for 8 seconds, and indicates that the WSN-7 became undamped NLT 1427, 15 May. It is unknown how the alarm was cleared, enclosures (97), and (104) through (106). The ships position source is still INS2 (Aft WSN-7) FF2

FF18. At 1554, ARB entered Restricted Waters (4000yds to shoal water), enclosure (2). The bridge logs indicated a fix at 1500, 1540, 1545, 1550, 1600, 1610, 1615. The CIC logs indicate a fix at 1500, 1515, 1530, then 5-minute intervals until 1618, enclosures (6) through (9).

FF19. At approximately 1555, CIC Navigation Radar Operator left his post to route the SORTS message to the XO on the Bridge, he did not checkout with any CIC supervisors. The Surface Detector Tracker/FLEET TAC Operator covered the NAV SCOPE watch position, enclosures (97) and (98).

FF20. At 1611, ARB stationed the Special Sea and Anchor Detail. Distance to shoal water was 1,900yds, Fix interval was 5 minutes, enclosures, (8) through (10).

FF21. At 1612 ARB came to 15kts, 1,550yds to Shoal water enclosures, (8) and (10).

FF22. At 1615, ARB came to 22kts, distance to shoal water was 1,470yds, ARB was at CPA with shoal water on STBD beam, enclosures, (8) and (10).

FF23. At 1618, fix interval was 3 minutes, enclosures, (8) and (10).

FF24. At 1620, the OOD's relieved on the bridge, ship's speed increased to 25kts, enclosure (10). All GTM's placed online for full power. Received high vibration alarm from GMT 1B, commenced normal shutdown, enclosures (12) and (96). The CO decided to enter port on Tri-power, enclosures (96), (107) and (121). INS fix positions begin to rapidly deviate from associated GPS positions due to a Schuler Oscillation caused by the undamped condition in WSN-7's, enclosures, (97), (104), (118), (118A), (119), and (119A).

FF25. At 1624, the Conning Officers relieved on the bridge, enclosure (10).

FF26. At 1626, CO is off the bridge. GTM 1B stop completed, enclosures (10), and (12).

FF27. At 1628, The Bridge commenced fixing the ships position at 2 minutes intervals, enclosure (10). Shoal water (36ft curve) was 3,800yds off the Stbd Bow, enclosures (2) and (8).

FF28. At 1630, CO was on the bridge, enclosure (10).

FF29. At 1633, Navigation marked turn to 316°T. Position error (difference between GPS and INS) is approximately 1622yds, enclosures (8), (9), (10), (22), and (102).

FF30. The Commodore was informed by the CO that she was going to do an award ceremony (spot NAM) for GSE3 enclosure (121).

FF31. At 1634 and 31 seconds, award ceremony was in progress in the Pilot House, enclosures (81) (107) and (117). ARB's actual position was approximately 500yds past buoy "Red 10", ARB's plotted position based on COMDAC INS2 data was approximately 1,100 yds before buoy "Red 10", enclosures (2), (4), (8), (9), and (22).

FF32. At 1636 and 19 seconds, award ceremony was ending, enclosures (81) and (117). The CO proceeds to make a 1MC announcement regarding the presentation, enclosures, (97) and (121). ARB was actually abeam of buoy "Red 12", ARB's plotted position based on COMDAC INS2 data was abeam buoy "Red 10", enclosures (2), (4), (8), (9), and (22).

FF33. At 1638, Bridge Navigation team started taking bearings to visual NAVAIDS, but visual LOP's were not actually plotted on the chart by the Nav Plotter due to disparity between LOP and plotted INS2 position, enclosures (2), (8), (98) and (121).

FF34. Between 1646 and 1648, the CO thought she saw buoy "CH" just forward of the port beam. The CO questioned the Navigator about the buoy. "The Navigator confidently asserted it was buoy Red 16", enclosure (107), based on the COMDAC INS2 display of ARB's position, enclosures, (97), (98), (107), (109), and (121).

FF35: At 1646, the CICWO and the Bridge JOOW were focused on establishing communications with USS WASP which was in the vicinity of Lynnhaven Anchorages, enclosures (97), (98), (107), and (121).

FF36. At 1648, Bridge and CIC started making preps for the turn towards Thimble Shoal Channel course 276°T using INS2 position source. Actual position based on FURUNO GPS was 3,820yds abeam of buoy "CH". ARB was past her planned turn point by 1,180yds, enclosures (2), (4), (8), (9), and (22).

FF37. At 1650, positional difference between FURUNO GPS and INS2 was 4,300yds. ARB was actually crossing the 36ft Danger Depth. CIC held ARB 500yds to turn, Bridge held ARB 1,000yds to turn to course 276°T, enclosures, (2), (4), (8), (9), (97), (98), (109), and (121). Actual SOG was 22.85kts on course 318.8°T, enclosure (37). During interviews the Navigator and the Conning Officer stated that the ship was 200yds from the turn when it went aground, enclosure (121).

FF38. At 1650 and 2 seconds, ARB's SOG began to drop from the ordered speed of 25kts and it's bow began to pitch up, indicating that ARB was running aground, enclosures (37-40). The CO thought that the loss of speed was caused by a loss of pitch control on the shafts, enclosures, (107) and (121).

FF39. At 1651, The EOOW took throttle control in CCS and ordered "All Stop". CCS received a Sonar Dome Pressure Alarm for 10 seconds, enclosure, (12). Actual SOG is 13.1kts on course 312.8°T, enclosure (37).

FF40. At approximately 1652 the bridge Navigation Plotter plotted FURUNO GPS, Garman GPS, and Visual Bearings to establish ARB's true position. INS2 continued in a Schuler Oscillation that moved southwestward in a button hook motion across the Precautionary Area, and Cape Henry, enclosures (2), (4), (9), (10), (82), (97), (107), (109), and (121).

FF41. At 1727, the CO had a meeting with the following personnel to discuss options: Commodore, XO, OPS, CICWO, OOD, and NAV, enclosures (10), (107), (117), and (121).

FF42. Commodore in consultation with the CO, XO, OPS, CICWO, recommended attempting to use the engines and rudders to free the ship from the shallow water, enclosures (107) and (121).

FF43. The CO accepted Commodore's recommendation and decided to attempt the maneuver, enclosure (107). The XO disagreed with the CO's decision, enclosure (121).

FF44: At 1732, CCS returned thrust control to the bridge, enclosures (10) and (12).

FF45. At 1738, the CO took the CONN and commenced maneuvering, enclosures (9), (10), (17), (107), and (121).

FF46: At 1745, the CO assumed the deck, enclosures (10), (17), and (107).

FF47. At 1748, ARB worked free of the Shoal Water by using 15 degrees of rudder movement and pulsing the engines from Ahead 2/3's to Ahead Full. The ship continued to NAVSTA Norfolk, enclosures (10) and (107).

FF48. At 1749, the assigned Master Helmsman relieved his U/I watch and assumed his duties, enclosures (10) and (107).

FF49: At 1804, the CO relinquished the deck, enclosure (10).

FF50. At 1806, CIC achieved its first Radar Fix. This established ARB's position at 36-56-40N 075-59-47W, enclosures (4) and (9).

FF51. At 1809, Restricted Maneuvering Doctrine was placed in effect for the first time during this transit, enclosure (10) and (12). The CO's standing orders call for the Restricted Maneuvering Doctrine to be placed in effect when; "A restricted maneuvering situation exits, and this doctrine will be placed into effect, at Sea and Anchor Detail; During operations in restricted waters..." "For scheduled evolutions, restricted maneuvering will be set

immediately prior to beginning that portion of the evolution that physically places the ship or crew at risk." enclosure (80)

FF52. At approximately 1815, FWD and AFT WSN-7 velocity inputs were reset to GPS by the WSN7 Technician. Both INS1 and INS2 began to track properly, but minimized Schuler Oscillations were still present, enclosures (91), (97), (118), (118A), (119), and (119A).

FF53. At 1817, the CO returned the CONN to ENS

FF54. During the Restricted Water transit, the Navigation Teams made deviations to the signed watchbill in CIC. These deviations occurred without the knowledge or the approval of the Commanding Officer, closures (15), (97), and (98).

FF55. From the start of the transit until the grounding both the Bridge Plot and the CIC plot exclusively used one fix source, enclosure, (2) (4), (8), (9), (97), and (98), in direct contravention of directives from the NAVDORM, reference (b) and the ARB's NAVBILL, enclosure (79), and ARB's CO's Standing Orders, enclosure (80).

FF56. Bridge and CIC navigational plots are missing numerous DR positions as required by reference b and enclosures (79) and (80), enclosures (2 through 4) and (98).

FF57. The Shipping Log was not utilized at all during the transit despite lookout reports of contacts and buoys. The Shipping Log was requested and examined but is not included here due to total lack of information, enclosures (97) and (98).

FF58. Bridge and CIC navigation IVCS circuits were not properly established IAW reference (b) and enclosure (79). Bridge and CIC recorders could not talk to each other. Fathometer Operator was not on line, and is not normally online, enclosures (97) and (98).

FF59. The OOD and Conning Officer failed to verify any Navigation reports with visual landmarks or floating aids to navigation, enclosure (121).

OPINIONS

1. The cause of the grounding of USS Arleigh Burke DDG 51 was the direct result of the loss of situational awareness compounded by poor procedural compliance which allowed an improperly initialized navigation sensor to be utilized as the primary and exclusive fix source.

2. The factors that contributed to the ship going aground were as follows:

a. Lack of rigorous adherence to normal Navigation procedures as required by the NAVDORM. FF5, FF6, FF7, FF8, FF12, FF13, FF14, FF15, FF16, FF18, FF19, FF20, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF54, FF55, FF56, FF57, FF58.

b. Lack of rigorous application of CSOSS procedures for WSN-7 and NAVSSI(COMDAC) to ensure proper equipment setup, alignment and maintenance. FF2, FF17, FF24.

c. Lack of proper watchstander responsibility and accountability. FF6, FF8, FF12, FF13, FF16, FF18, FF19, FF30, FF31, FF32, FF33, FF34, FF50, FF54, FF55, FF56, FF57, FF58.

d. Lack of knowledge of the proper operation of the WSN-7 and NAVSSI(COMDAC), and their limitations. FF2, FF3, FF14, FF15, FF17, FF34, FF40.

e. Lack of proper Bridge Resource Management techniques and failure to establish effective situational awareness. FF20, FF22, FF23, FF24, FF26, FF30, FF31, FF32, FF34, FF38, FF50, FF51.

f. Failure to follow established procedures and instructions as promulgated through the CO'S Standing Orders and Navigation Bill. FF6, FF7, FF12, FF13, FF14,

FF15, FF16, FF18, FF19, FF20, FF21, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF51, FF54, FF55, FF56, FF57, FF58.

3. Commanding Officer:

a. Failed to require adherence to Standing Orders (i.e. 40-foot restricted waters), and the Navigation Bill; FF6, FF7, FF12, FF13, FF14, FF15, FF16, FF18, FF19, FF20, FF21, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF51, FF54, FF55, FF56, FF57, FF58.

b. Allowed the development of a culture that accepted deviations from the NAVDORM; FF5, FF6, FF7, FF8, FF12, FF13, FF14, FF15, FF16, FF18, FF19, FF20, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF54, FF55, FF56, FF57, FF58.

c. Failed to pay attention to the ship's relative position to the local hazards; FF31, FF32, FF34, FF51.

d. Deviated from the Navigation Brief in conducting a personnel award ceremony, which adversely impacted her situational awareness during the 316T leg; FF31, FF32

e. Conducted a 25-knot transit despite briefed 18-knot transit due to perceived pressure to ensure on-time arrival at ERB3; FF9, FF10, FF11, FF24.

f. Failed to properly verify the ship's actual position after questioning the Navigation picture with the Navigator; FF34.

g. Failure to maneuver the ship or reduce speed to avoid the grounding; FF34.

h. Failure to properly review Navigation charts to ensure that they were properly updated; FF5, FF7

4. Officer of the Deck:

a. Failure to exercise proper oversight of the ship's safe Navigation in restricted waters as required by the Navy SORM; FF38, FF59 and FF60.

b. Failure to employ proper Bridge Resource Management (BRM) to ensure the safe Navigation of the ship; FF31, FF32, FF59, FF60.

c. Failed to exercise due diligence in ascertaining the ship's true position while in restricted waters; FF59, FF60.

d. Failure to maintain a proper watch as the OOD, while proceeding at an excessive speed; FF31, FF32, FF59, FF60.

5. Navigator:

a. Failure to properly establish the ship's position in accordance with the NAVDORM and Navigation Bill; FF6, FF8, FF12, FF13, FF14, FF15, FF16, FF18, FF23, FF27, FF33, FF34, FF50, FF55, FF56.

b. Failure to ensure proper logging of the ship's position using an authorized GPS source; FF13, FF14, FF15, FF16, FF18, FF40.

c. Failure to maintain the ship's Position Log and Navigation logs in accordance with the NAVDORM and Navigation Bill; FF6, FF13, FF14, FF15, FF18, FF40.

d. Failure to ensure the proper setup of all Navigation sensors as required by NAVDORM; FF2, FF14.

e. Failure to verify the primary fix source with a visual, radar or composite fix at the minimum requirement of once every third fix interval; FF8, FF33, FF50.

f. Failure to ensure that the charts were correct and up to date; FF7.

g. Failure to confirm ship's position after questioning by the Commanding Officer using an authorized approved alternate source; FF34.

h. Failure to follow established regulations and orders as specified in the NAVDORM, the CO's Standing Orders, and NAVBILL; FF6, FF7, FF12, FF13, FF14, FF15, FF16, FF18, FF19, FF20, FF21, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF51, FF54, FF55, FF56, FF57, FF58.

6. Navigation Plotter:

a. Failure to properly establish the ship's position in accordance with the NAVDORM and Navigation Bill; FF6, FF8, FF12, FF13, FF14, FF15, FF16, FF18, FF23, FF27, FF33, FF34, FF50, FF55, FF56.

b. Failure to ensure proper logging of the ship's position using an authorized GPS source; FF13, FF14, FF15, FF16, FF18, FF40.

c. Failure to maintain the ship's Position Log and Navigation logs in accordance with the NAVDORM and Navigation Bill; FF6, FF13, FF14, FF15, FF18, FF40.

d. Failure to ensure the proper setup of all Navigation sensors as required by NAVDORM; FF2, FF14.

e. Failure to verify the primary fix source with a visual, radar or composite fix at the minimum requirement of once every third fix interval; FF8, FF33, FF50.

f. Failure to ensure that the charts were correct and up to date; FF7.

g. Failure to follow established regulations and orders as specified in the NAVDORM, the CO's Standing Orders, and NAVBILL; FF6, FF7, FF12, FF13, FF14, FF15, FF16, FF18, FF19, FF20, FF21, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF51, FF54, FF55, FF56, FF57, FF58.

7. Navigation Log Keepers (Bridge and CIC):

a. Failure to ensure proper logging of the ship's position using an authorized GPS source; FF13, FF14, FF15, FF16, FF18, FF40.

b. Failure to maintain the ship's Position Log and Navigation logs in accordance with the NAVDORM and Navigation Bill; FF6, FF13, FF14, FF15, FF18, FF40.

c. Falsified Figure of Merit Entries in the logs; FF14, FF15.

8. Piloting Officer:

a. Failure to properly establish the ship's position in accordance with the NAVDORM and Navigation Bill; FF6, FF8, FF12, FF13, FF14, FF15, FF16, FF18, FF23, FF27, FF33, FF34, FF50, FF55, FF56.

b. Failure to ensure proper logging of the ship's position using an authorized GPS source; FF13, FF14, FF15, FF16, FF18, FF40.

c. Failure to maintain the ship's Position Log and Navigation logs in accordance with the NAVDORM and Navigation Bill; FF6, FF13, FF14, FF15, FF18, FF40.

d. Failure to verify the primary fix source with a visual, radar or composite fix at the minimum requirement of once every third fix interval; FF8, FF33, FF50.

e. Failure to follow established regulations and orders as specified in the NAVDORM, the CO's Standing Orders, and NAVBILL; FF6, FF7, FF12, FF13, FF14, FF15, FF16, FF18, FF19, FF20, FF21, FF22, FF23, FF24, FF27, FF33, FF34, FF50, FF51, FF54, FF55, FF56, FF57, FF58.

f. Failure to ensure that all personnel assigned by watchbill were on station by allowing his Radar Operator to leave his watchstation while in restricted waters; FF19.

9. Executive Officer:

a. Failure to supervise the Navigation Team while transiting in restricted waters as required by the NAVDORM; FF60

b. Failed to remain engaged in the Navigation picture by allowing himself to be distracted by embarked personnel, which adversely impacted his situational awareness; FF60

10. Commodore:

a. As the Senior Unrestricted Line Officer Onboard, abrogated his responsibility by his failure to properly mentor the Commanding Officer; FF10, FF11, FF30.

b. Failed to recognize the risk associated with conducting an awards ceremony on the Bridge during a restricted waters transit with excessive speed; FF10, FF30.

11. CIC Watch Officer:

a. Failure to exercise oversight of CIC in restricted waters as required by the SORM, CO's Standing Orders, and NAVBILL; FF6, FF8, FF12, FF19, FF50, FF54, FF55, FF56, FF57, FF58.

b. Failure to ensure adherence to the watchbill as approved by the Commanding Officer; FF19.

c. Failure to properly establish the ship's position in accordance with the NAVDORM and Navigation Bill; FF6, FF8, FF12, FF13, FF14, FF15, FF18, FF23, FF27, FF50, FF55, FF56.

12. Conning Officer:

a. Failed to exercise due diligence in ascertaining the ship's true position while in restricted waters; FF59.

13. JOOW:

a. Failed to exercise due diligence in ascertaining the ship's true position while in restricted waters; FF59.

RECOMMENDATIONS

b. Failed to recognize the risk associated with conducting an awards ceremony on the Bridge during a restricted waters transit with excessive speed; FF10, FF30.

11. CIC Watch Officer:

a. Failure to exercise oversight of CIC in restricted waters as required by the SORM, CO's Standing Orders, and NAVBILL; FF6, FF8, FF12, FF19, FF50, FF54, FF55, FF56, FF57, FF58.

b. Failure to ensure adherence to the watchbill as approved by the Commanding Officer; FF19.

c. Failure to properly establish the ship's position in accordance with the NAVDORM and Navigation Bill; FF6, FF8, FF12, FF13, FF14, FF15, FF18, FF23, FF27, FF50, FF55, FF56.

12. Conning Officer:

a. Failed to exercise due diligence in ascertaining the ship's true position while in restricted waters; FF59.

13. JOOW:

a. Failed to exercise due diligence in ascertaining the ship's true position while in restricted waters; FF59.

RECOMMENDATIONS

1 [b(6)] [b(6)] Commander Destroyer Squadron Two - It is critical that the DESRON Commander understand as a matter of policy what is expected of him in his role while onboard ship, both from a legal and a policy standpoint. He was not directly responsible for the grounding. Recommend appropriate administrative action.

2. [b(6)] [b(6)] Commanding Officer, USS Arleigh Burke DDG 51 - Relieve for Cause - Art 110, Improper Hazarding a Vessel; Art 92, Dereliction of Duty, Failure to Obey Order or Regulation, through her failure to stand a proper watch, failure to obey orders and regulations, and failure to prevent the grounding.

3. [b(6)] [b(6)] , Executive Officer, USS Arleigh Burke DDG 51 - Non-Punitive Ltr, Art. 92, Failure

to Obey Order or Regulation, through failure to follow the proper regulations and the NAVDORM.

4. [b(6)] , Officer of the Deck - Relieve for Cause - Art 110, Improper Hazarding a Vessel; Art 92, Dereliction of Duty, Failure to Obey Order or Regulation, through [b(6)] failure to stand a proper watch and failure to prevent the grounding.

5. [b(6)] Conning Officer – Non-Punitive Ltr - Art. 92, Failure to Obey Order or Regulation, Failure to follow the proper regulations and the NAVDORM

6. [b(6)] Navigator - Relieve for Cause - Art 110, Improper Hazarding a Vessel; Art 92, Dereliction of Duty, Failure to Obey Order or Regulation, through failure to properly execute [b(6)] duties and responsibilities and failure to prevent the grounding

7. [b(6)] [b(6)] Navigation Plotter - Punitive Ltr - Art 110, Improper Hazarding a Vessel; Art 92, Dereliction of Duty, Failure to Obey Order or Regulation, by failing to ensure that a proper and accurate Navigation Plot was maintained. Failure to follow the proper regulations and the NAVDORM

8. [b(6)] CIC Watch Officer - Punitive Ltr - Art 110, Improper Hazarding a Vessel; Art 92, Dereliction of Duty, Failure to Obey Order or Regulation, by failing to ensure that a proper and accurate Navigation Plot was maintained. Failure to follow the proper regulations and the NAVDORM

9. [b(6)] Piloting Officer - Punitive Ltr- Art 110, Improper Hazarding a Vessel; Art 92, Dereliction of Duty, Failure to Obey Order or Regulation, by failing to ensure that a proper and accurate Navigation Plot was maintained. Failure to follow the proper regulations and the NAVDORM

10. [b(6)] [b(6)] CIC Navigation Radar Operator - Admiral's Mast - Art 86 Unauthorized Absence, Art 92 Dereliction of Duty as evidenced by leaving [b(6)] assigned watchstation during the Navigation Detail.

11. [b(6)] Junior Officer of the Deck/Watch - Letter of Instruction, [b(6)] must understand as a

matter of policy what is expected of [b(6)] in [b(6)] role as a Bridge Watchteam Member.

12. [b(6)] Junior Officer of the Deck/Watch - Letter of Instruction, [b(6)] must understand as a matter of policy what is expected of [b(6)] in [b(6)] role as a Bridge Watchteam Member.

13. Bridge and CIC Navigation Log Recorders, CO Letter of Instruction to remind and reinforce proper procedures as required by applicable instructions.

14. Fathometer Operator, CO Letter of Instruction, to remind and reinforce proper procedures as required by applicable instructions.

ADDITIONAL RECOMMENDATIONS

1. The following additional recommendations are provided for consideration:

a. Recommend Carrier Strike Group Twelve draft a 'Personal For' Message that offers relevant guidance to Commodores and Commanding Officers so they may understand exactly what their roles and responsibilities are when Senior Officers embark their vessels from both a legal and policy standpoint.

b. Recommend a sanitized version of this investigation be forwarded to the Surface Warfare Officer School for incorporation into the PCO/PXO, Major Command, and Department Head courses, as well as the Afloat Training Groups and Navigation schoolhouses.

c. Recommend the appropriate authority develop a post-mishap checklist for electronic records, to include ECDIS-N and NAVSSI hard drives, WSN-7 CDU's, AEGIS Data Tapes, Bridge-to-Bridge recorders and other electronic files, to ensure the proper documentation of navigation sensor and equipment settings and displays. In support of this, the Investigating Officer has requested that SPAWARSYSCEN San Diego extract any and all NAVSSI data files from the cloned NAVSSI hard-drives to document what is recoverable and relevant.

DEPARTMENT OF THE NAVY

COMMANDER CARRIER STRIKE GROUP TWELVE
UNIT 60009
FPO AE 09506-4704

5830
Ser N02L/111
16 May 2007

From: Commander, Carrier Strike Group
To: CAPT USN

Subj: CONVENING ORDER FOR THE INVESTIGATION INTO THE GROUNDING OF USS ARLEIGH BURKE (DDG 51) THAT OCCURRED 15 MAY 2007

Ref: (a) JAGMAN Chapter II
(b) JAGMAN Investigations Handbook

1. You are hereby appointed to investigate the grounding of USS ARLEIGH BURKE (DDG 51) that occurred 15 May 2007.

2. Conduct your investigation in accordance with guidance contained in references (a) and (b) regarding command investigations.

3. Investigate the cause of the grounding, resulting injuries or damage, and any fault, neglect, or responsibility therefore, and recommend appropriate administrative or disciplinary action, if any.

4. Complete your investigation no later than 15 June 2007. You may seek assistance from my Staff Judge Advocate, LCDR , USN, who can be reached at .

Rear Admiral, U.S. Navy

ENCLOSURE 1