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03 Feb 05

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From: Rear Admiral (Select) [REDACTED], U.S. Navy
To: Commander, SEVENTH FLEET

Subj: COMMAND INVESTIGATION OF THE APPARENT SUBMERGED GROUNDING
OF USS SAN FRANCISCO (SSN 711) APPROXIMATELY 360 NM
SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

Ref: (a) JAG Manual, Chapter II
(b) NAVSEA S9SSN-W4_SSM-NA0/688CL, SSN688 Class Ship
Systems Manual (SSM)
(c) U.S. Navy Regulations
(d) OPNAVINST 3120.32C (Navy SORM)
(e) COMNAVSUBFORINST 5400.29 (NODORM)
(f) COMNAVSUBFOR OPORD 2000

Encl: (1) COMSEVENTHFLT ltr 5800 Ser N013/007 of 09 Jan 05
(Appointing order) with 19 Jan 05 amendment (U)
(2) CTF74 040409Z JAN 05 (SUBNOTE 001) (C)
(3) CTF74 232259Z DEC 04 (OPSKED 02-05) (C)
(4) Transcript of Interview of CDR [REDACTED], USN;
Transcript of Supplemental Interview [REDACTED]
[REDACTED] (C)
(5) Transcripts of Interviews of LCDR [REDACTED],
USN; Transcript of Supplemental Interview [REDACTED]
[REDACTED] (U)
(6) Transcript of Interviews of LCDR [REDACTED],
USN; Transcript of Supplemental Interview [REDACTED]
[REDACTED] (C)
(7) Voluntary statement of ETCS(SS) [REDACTED]
[REDACTED] (C)
(8) Transcripts of Interview of ETCS(SS) [REDACTED],
[REDACTED]; Transcript of Supplemental Interview (C)
(9) Voluntary Statement of ET1(SS) [REDACTED], USN
[REDACTED] w/ appended 12 Jan
05 statement (C)

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Derived from: DOE-DOD Classification Guide
CG RN 1 Revision 3 dated February 1996 Multiple sources.
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Additionally,

c. "One QMOW U/I demonstrated [REDACTED]"

d. "Compass checks are [REDACTED]. Although a [REDACTED]"

e. "[REDACTED]"

f. "[REDACTED]"

[encl (197)]

417. (C) A Pre-Overseas Movement Certification (POMCERT) of SAN FRANCISCO was completed on [REDACTED]. The POMCERT Team concluded that [REDACTED]

[REDACTED]. COMSUBPAC N3, CAPT [REDACTED], observed the certification. Navigation was evaluated as [REDACTED]

418. (C) The POMCERT team consisted of CAPT [REDACTED] (CSS-15 Commodore), CAPT [REDACTED] (CSP N3), CDR [REDACTED] (CSS-15 Deputy), CDR [REDACTED] (CSS-15 Deputy-Reserve Officer), LCDR [REDACTED] (CSS-15 Operations Officer), CMDCM(SS) [REDACTED] (CSS-15 Command Master Chief), and STSCS(SS) [REDACTED] (CSS-15). [encl (198)]

419. (U) SAN FRANCISCO's 2004 POMCERT Team included a served Navigator (CSS-15 Operations Officer), but did not include a qualified Assistant Navigator. [encl (196)]

420. (U) CDR [REDACTED] commented during his POM work up ride in August 2004, CO's Night Orders "are very long (4-5 pages) and contain an extreme amount of detail." He recommended that the CO should, "consider scoping these down so as not to dilute the main things you want to emphasize." [encl (259)]

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421. (U) CDR [REDACTED] observed that daily operations briefs were deficient in that they did not focus on operational issues, but spent significant time on peripheral issues. Specific comments included: "a. Material status does not address operational impact of [Out of Commission] equipment or address [Temporary Standing Orders] in effect as would be appropriate, [and] b. The initial daily Ops Brief discussed administrative items not pertinent to ops. This improved in subsequent briefs." He also noted that "lessons learned and ways to improve are not part of the Ops Brief. Only the CO had constructive watch team improvements ready to discuss." [encl (259)]

422. (C) The following Navigation [REDACTED]

Further, [REDACTED]

reported [REDACTED]

. " SAN FRANCISCO

. [encls

(18), (199)]

423. (C) The following additional [REDACTED]

report:

a. " [REDACTED]

. "

b. " [REDACTED]

. "

c. " [REDACTED]

. "

d. " [REDACTED]

. "

e. "On at least one occasion [REDACTED]

"

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f. " [REDACTED] "

g. " [REDACTED] "

h. " [REDACTED] "

[REDACTED] . " [encl (18)]

Shipboard Training and Self Assessment

424. (U) The Submarine Readiness Manual (SRM) states that "each commander is responsible for implementing Operational Risk Management (ORM) within their command, drawing upon guidance provided in OPNAVINST 3500.39B (ORM Instruction).

a. One of the most challenging aspects of naval operations is successfully managing risk--identifying and assessing hazards, then employing tools to make sure those hazards don't harm our shipmates and destroy equipment. ORM is such a tool. It's a process for making disciplined informed decisions that are critical to safety in both peacetime and war. During operational planning, ORM promotes two-way communication in the chain-of-command, makes better use of lessons learned, and equips us to minimize hazards that are a by-product of change. It doesn't stifle creative approaches to problem solving. Instead, ORM clarifies the best course of action available via use of a clear, logical process.

b. ORM clearly identifies the controls necessary to limit such risks and alerts the chain-of command regarding when it's necessary to more carefully evaluate the "risk versus payoff" inherent in all operational decisions. ORM is a proven process that prevents the loss of precious lives and valuable systems." [encls (200), (202)]

425. (U) The SRM requires SSNs to "conduct training such that the entire Submarine Force Commander's Collision/Grounding Presentation will be covered annually... with all personnel involved in navigation of the ship." [encl (202)]

426. (U) In 2004, SAN FRANCISCO conducted training on 9 of 10 submarine collision briefs, and 8 of 12 submarine grounding

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briefs. All of these training sessions were attended by
Navigation Division personnel and officers. [encl (203)]

427. (U) The following submarine grounding briefs were not
completed by SAN FRANCISCO during 2004: USS HONOLULU, USS
AUGUSTA, USS FLYING FISH, USS JEFFERSON CITY. Further, the
following submarine collision brief was not completed in 2004:
USS JACKSONVILLE (2). The NAV said these five collision and
grounding briefs were to be presented during this underway to
Australia. [encls (6), (203)]

428. (U) In 2004, all collision and grounding briefs were given
by junior officers and monitored by the CO. [encl (203)]

429. (U) In 2004, all non-collision & grounding QMOW training
topics were given by an E-7 or below. [encl (204)]

430. (U) In 2004, the NAV is documented as having monitored
twelve training sessions. [encl (204)]

431. (U) In 2004, the XO is documented as having monitored six
training sessions. Furthermore, the XO stated that "I usually
go for 15 minutes... If it's something I like or something I
find interesting, then I would stay a little longer. Most of
the time I'm there for part of it." [encls (5), (204)]

432. (U) In 2004, in addition to the collision & grounding
topics, the CO is documented as having monitored nine QMOW
training topics. [encl (204)]

433. (U) Neither the CO nor the XO recall monitoring any QMOW
training related to voyage planning or chart preparations.
[encls (4), (5)]

434. (U) The CO said he had not done any detailed training for
the NAV on charts, expectations, or chart preparations. He
said, "early in my command tour I got together with the NAV and
the ANAV and talked about some of my general philosophy type
things with charts. My initial observations during my PCO time
and in my initial chart reviews were the way that they prepare
charts restricted the ship unnecessarily in operations on the
charts. They didn't use depth bands and soundings to open up
the charts for maximum operational use." [encl (4)]

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435. (U) The CO stated that since "I did not serve as a Navigator... I don't know how effective I would've been at training him (NAV). But I certainly shared all my-any bit of navigation knowledge I had with him." [encl (4)]

436. (U) The SAN FRANCISCO "Monitoring and Assessment Programs" instruction 20 July 2004 implemented a requirement of a "Top Five List", which is "a list of the most important items with which the program manager is concerned. For these areas of concern, you must have specific action in place to correct and follow-up to verify the adequacy of your corrective action. This list is required to be updated monthly[.]" [encl (207)]

437. (U) Navigation Division's "Top Five" for July 2004:

- a. Procedural compliance
- b. Qualification progress
- c. Isolating faults and ports on RLGNS
- d. Maintenance tracking (Pre-underway equipment lineups)
- e. Formality/Communications

[encl (208)]

438. (U) Navigation Division's "Top Five" for August 2004:

- a. Effective monitors
- b. NAV/OOD/Contact Coordinator communication
- c. Offsets for secondary fixes and RLGNS
- d. Aggressively pursuing repair of damaged/broken equipment
- e. Procedural compliance

[encl (208)]

439. (U) Navigation Division's "Top Five" for October 2004:

- a. Effective monitors

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- b. NAV/OOD Communication
- c. Offsets for Secondary Fixes and RLGN
- d. Electrical Safety/CPR
- e. Radar Operations

[encl (209)]

440. (U) Navigation Division's "Top Five" for November 2004:

- a. Basic electrical distribution and theory
- b. Offsets for secondary fixes and RLGN
- c. RLGN reset theory
- d. Troubleshooting techniques/Use of tech manuals
- e. Electrical safety

[encl (210)]

441. (U) Tab U of SAN FRANCISCO's Navigation Division Assessment Program binder documents four 'Open Ocean Monitors' in 2004 using attribute checklists, with the following grades: 8MAY04-92%, 2JUN04-92%, 3JUN04-92.6%, 7JUN04-90.2%. There is no documentation of corrective actions associated with these four monitors. There is no documentation of who conducted these four monitors. Deficiencies noted in these 'Open Ocean Monitors' included the following:

- a. "Gyro checks all conducted and logged during one monitored watch."
- b. "2 out of 6 gyro checks not conducted during one monitored watch."
- c. "Position uncertainty passed within 1NM of 100FM curve."
- d. "Red and Yellow soundings too constrictive when operating in the vicinity of the 100 fathom curve."
- e. "Fathometer operator was not familiar with BQS-15."

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- f. "OOD attempted to go deep without a sounding."
- g. "OOD was not aware of planned operations and how it affected his track."
- h. "Not all opportunities taken to get a bottom contour fix."
- i. "Position uncertainty was rarely shrunk to fit current ship's operations."
- j. "The QMOW did not completely understand why he was in six minute intervals."
- k. "Formal communications were below average."
[encl (211)]

442. (U) Tab U of SAN FRANCISCO's Navigation Division Assessment Program binder documents the following "QMOW Open Ocean" recurring deficiencies from 15 July and 14 August 2004:

- a. J5600 PMI not checked upon watch relief
- b. Not aggressive in obtaining Bottom Contour Fixes
- c. Gyro checks not conducted/logged each hour as required
- d. Future track not evaluated for watch + 6 hours
[encl (211)]

443. (U) Tab N of SAN FRANCISCO's Navigation Division Assessment Program binder documents four NAV ETs conducting a "SUBNOTE entry into VMS" monitored evolution. The evolutions were monitored by the NAV, ANAV, and ETC(SS) [REDACTED] (NAV DIV LPO), and assigned grades were one no grade (17 Nov 04), two average (both 28 Nov 04), one above average (28 Nov 04). [encl (212)]

444. (U) Tab N of SAN FRANCISCO's Navigation Division Assessment Program binder documents four NAV ETs conducting a "Anchorage for Precision Navigation VMS" monitored evolution on 29 November 2004. Evolutions were monitored by the ANAV and ETC, and assigned grades were three above average and one average. [encl (213)]

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445. (U) Tab E of SAN FRANCISCO's Navigation Division Assessment Program binder documents one NAV ET conducting a "VMS voyage plan development" monitored evolution. The evolution was monitored by an ETC(SS) [REDACTED] (NAV Div Chief), and a grade of Average was assigned. [encl (214)]

446. (U) The following QMOW training goals were documented for first quarter 2004:

a. Goal #1: "Increase level of knowledge on Ring Laser Gyro Navigator casualties..." This goal was assessed as "Not Achieved."

b. Goal #2: "Increase level of knowledge on chart preparation of all junior members of Navigation Division so that all junior members will be able to correct and prepare charts. All senior personnel will be able to correct, prepare, layout tracks, setup Red/Yellow/Minimum expected soundings, PIM track, and establish turn bearings and ranges for piloting charts, as well as VMS tracks, MHNs, stovepipes, anchoring and Mine-ex operations." This goal was assessed as 'Partially Achieved' and carried over to the next quarter for VMS operations only.

c. Goal #3: "Proper routing of all required navigation reports to the Commanding Officer, Navigator, and ANAV submitted properly and with sufficient time to allow routing." This goal was assessed as "Partially Achieved."
[encl (215)]

447. (U) The following QMOW training goals and assessments were documented for second quarter 2004:

a. Goal #1: "Increase level of knowledge on Ring Laser Gyro Navigator casualties..." This goal was assessed as 'Partially Achieved.'

b. Goal #2: "Increase level of knowledge on chart preparation of all junior members of Navigation Division so that all junior members will be able to correct and prepare charts. All senior personnel will be able to correct, prepare, layout tracks, setup Red/Yellow/Minimum expected soundings, PIM track, and establish turn bearings and ranges for piloting charts, as

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well as VMS tracks, MHNs, stovepipes, anchoring and Mine-ex
operations." This goal was assessed as "Achieved."

c. Goal #3: "Increase level of knowledge on littoral
operations such that all members on the navigation division can
define restricted waters. QMOWs can reach and maintain a 15-
minute plotting interval with all logs and plots during
restricted waters operations." This goal was assessed as
"Accomplished." [encl (216)]

448. (U) The following QMOW training goals were documented for
third quarter 2004:

a. Goal #1: "Increase level of knowledge on operation and
employment of AN/BQN-17 and BQS-15. Fathometer Operators can
operate the fathometers in all modes, correctly interpret chart
scale and execute loss of sounding procedures."

b. Goal #2: "Increase level of proficiency during shallow
water high contact density environments. Quartermasters can
plot a minimum cyclic routine and be able to track and develop
contact solutions for a minimum of 3 surfaced/submerged contacts
within 15 minutes."

c. Goal #3: "Increase level of knowledge of Ring Laser Gyro
Navigator casualties..."

d. The Training binder did not contain documentation of end
of quarter assessments for third Quarter 2004. [encl (217)]

449. (U) The following QMOW training goals were documented for
fourth quarter 2004:

a. Goal #1: "Increase Navigation Division level of
knowledge on 'day to day' operations of RLGN system for
precision navigation..."

b. Goal #2: "Increase QMOW's proficiency in shallow
water/high contact density environment."

c. Goal #3: "Increase level of proficiencies on the
development of all offsets during all piloting evolutions with
specific emphasis on RLGN offsets during a loss of GPS and
Visual fix information."

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d. Goal #4: "Increase QMOW level of knowledge on advanced VMS operations. Specifically on EBL, offset insertion, voyage planning, area insertion, and precision navigation utilizing anchoring feature." [encl (218)]

450. (U) A 13 August 2004 critique report documents a chart preparation error that resulted in an erroneously plotted track on chart E2203. This was discovered during the chart shift to E2203. There is no documentation in the QMOW/PILOTING training binder that shows completion of corrective training directed in the critique. This critique is not included in the ship's forward critique binder. [encls (219), (251)]

Pipeline Training

451. (U) The current Prospective Submarine ANAV course includes the following topics related to open ocean submarine navigation:

- a. Nautical computations and open ocean chart cross-checks.
- b. Interpreting operations messages.
- c. Operations briefs.

(A full listing of course topics can be found in enclosure (188). ETCS(SS) [REDACTED] did not attend the Prospective Submarine ANAV course due to his status as a served ANAV when the course initially stood up in 2003. [encl (188)]

452. (U) The current Submarine Junior Officer 3 (JO3) Course curriculum has a one-hour lecture on OOD considerations for ship driving and voyage planning to include red and yellow sounding development. Additionally, there is a one-hour lecture on OOD considerations for open ocean voyage planning, position uncertainty, and set and drift. [encl (221)]

453. (U) The current Submarine Officer Advanced Course (SOAC) curriculum has eight hours of navigation-related lectures, twelve hours of VMS practicals, a seminar on the 2001 USS GREENEVILLE grounding, a seminar with a waterfront Navigator, four self-study VMS topics, and a voyage planning practical that included chart preparations. (Specific topics are listed in enclosure (221).) SAN FRANCISCO's NAV ([REDACTED]) attended SOAC before the VMS topics were offered. [encl (221)]

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454. (U) The CO does not recall specific training on navigation charts or the "precise details on how charts were made" during the Prospective CO (PCO) course. He did recall that during the PCO course "we do all the collisions and groundings in the database. The one that I think applies most specifically to our case is the AUGUSTA grounding in the Gulf of Maine." [encl (4)]

455. (U) Enclosure (222) documents the ORM instruction provided as part of PCO instruction as related by CAPT [REDACTED], the PCO instructor who taught CDR [REDACTED]. [encl (222)]

Chart Availability

456. (U) The American Practical Navigator (Bowditch) states "The accuracy of a chart depends upon the accuracy of the hydrographic surveys and other data sources used to compile it and the suitability of its scale for intended use." Bowditch also states, "If a chart is based upon very old surveys, use it with caution. Many early surveys were inaccurate because of technological limitations of the surveyor." [encl (223)]

457. (C) The Catalog of Hydrographic Products and its classified counterpart, [REDACTED], show that the following charts provide the best coverage of the grounding area:

- a. [REDACTED]
- b. [REDACTED]
- c. [REDACTED]
- d. [REDACTED]
- e. [REDACTED]
- f. [REDACTED]
- g. [REDACTED]
- h. [REDACTED]

[encls (224), (225)]

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458. (S) A [REDACTED]

[encls (224), (225), (226)]

459. (U) Bottom Contour (BC) charts are identified by an Echo designation followed by four numbers (e.g., E2202). BC charts are commonly referred to as "Echo series charts" or "Echo charts" due to their alphanumerical designation. [encl (227)]

460. (C) In accordance with SUBPAC Nautical Chart and Publications Allowances (COMSUBPACINST S3530.2E), SAN FRANCISCO and CSG-7 (CTF 74) are required to [REDACTED] [encl (228)]

461. (C) Limited site inventories of SAN FRANCISCO and CSG-7 showed that [REDACTED] [encls (229) (230)]

462. (C) Per the [REDACTED] and its [REDACTED] [encl (225)]

Description and Reference of Relevant Charts

463. (C) Chart E2202, (1st edition 23 June 1979) [REDACTED] [encl (224)]

464. (U) Chart INT 506 (2nd edition 3 February 1996) is a small scale (1:3,500,000) international chart commonly used for long distance voyage track planning. [encls (223), (225)]

465. (U) Chart INT 507 (2nd edition 14 September 1996) is a small scale (1:3,500,000) international chart commonly used for long distance voyage track planning. [encls (223), (225), (231)]

466. (U) Chart 524 (12th edition 27 January 1996) is a small scale (1:7,304,330) international chart commonly used for long distance voyage track planning. [encls (223), (225), (231)]

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470. (C) At the time of the grounding, [REDACTED]
[REDACTED]
[REDACTED] . [encls (36), (233)]

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Danger line
Figure 1 (U)

474. (U) Discolored water, as defined by Chart 1 and referenced as item [K.e], is depicted as a blue area surrounded by a dashed line with the marking "Discol Water" (See Figure 2). [encl (236)]

Discol water
Figure 2 (U)

475. (U) A reported feature, as defined by Chart 1 and referenced as item [I.3.1], is a feature that is reported but not surveyed and is depicted with the marking "Rep." [encl (236)]

476. (U) Depicted in Chart 1 as item [I.30], various shades of blue are used on charts to identify ranges of depths. For example, on a given chart, white may be used for all depths greater than 100 fathoms and light blue used to show all depths less than 100 fathoms. [encl (236)]

The Discolored Water Spot and Variability between Charts

477. (U) Chart 81023 has "Discolored Water Rep," at 07°42.5' N, 147°38.0' E (See Figure 3). [encls (146), (236)]



Chart 81023
Figure 3 (C)

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478. (U) On chart 81023, the charted feature at 07° 42.5' N, 147° 13.0' E is a combination of features [K.1] [K.e] and [I.3.1] of Chart 1, and in its entirety is a discolored water spot surrounded by a dotted danger line with the annotation that it is a reported feature. The blue coloring on this chart indicates a depth of 20 meters or less. [encls (146), (236)]

479. (U) On chart 81023, the "discolored water reported" is located within the directed MHN 2.5 NM south of track and 2.0 NM from the grounding. [encls (2), (146), (236)]

480. (C) On chart E2202, there is no indication of "[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] (See Figure 4).
[encls (43), (146), (231), (234), (235)]

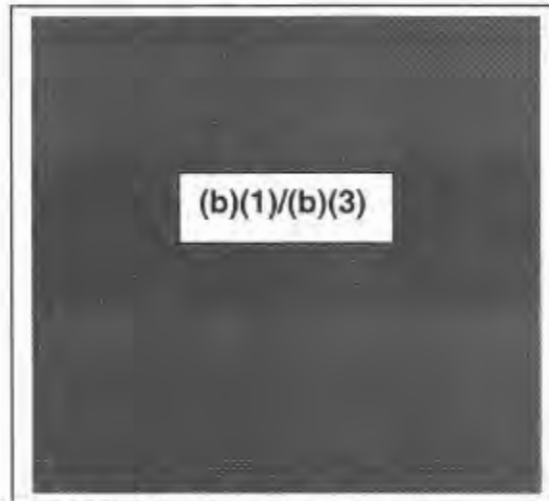


Chart E2202
Figure 4 (C)

481. (C) The marginalia data on E2202 states, "[REDACTED]
[REDACTED] The following comment appears directly below the Bathymetric Information diagram: [REDACTED]
dependent upon the density of these random [REDACTED]
[REDACTED]" (See Figures 5,6) [encl (43)]

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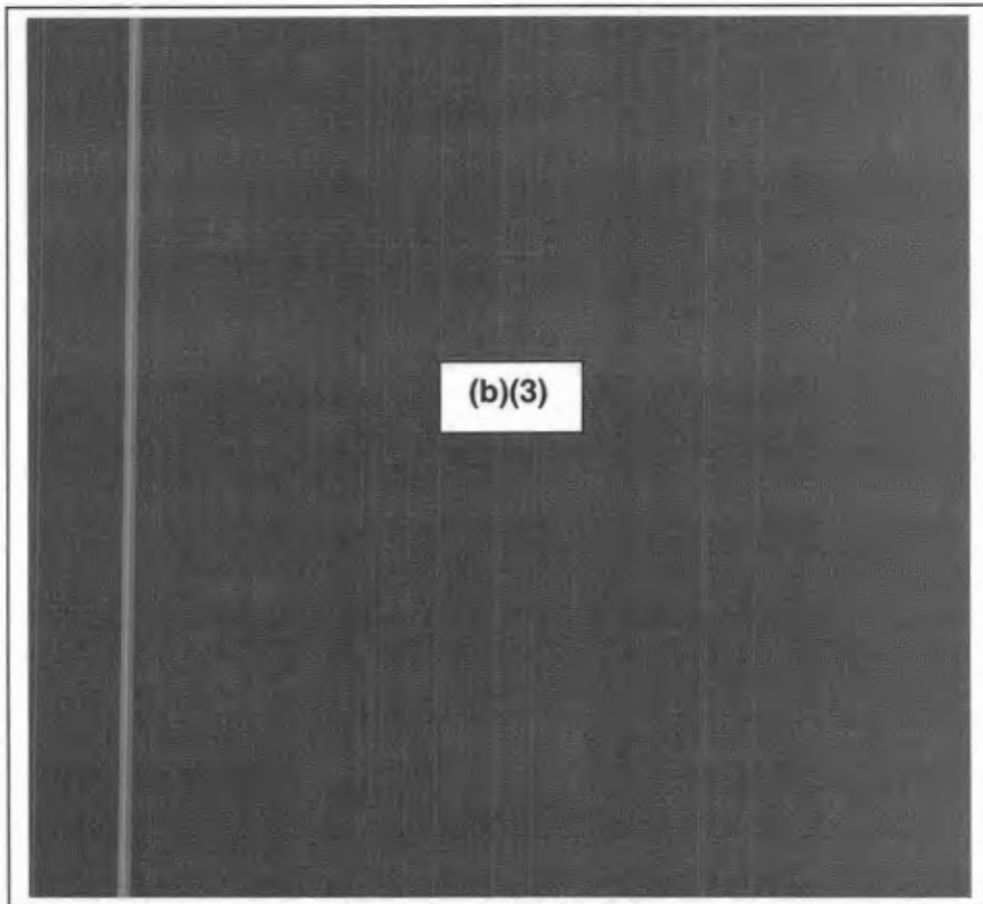


Chart E2202 Marginalia Data
Figure 5 (U)

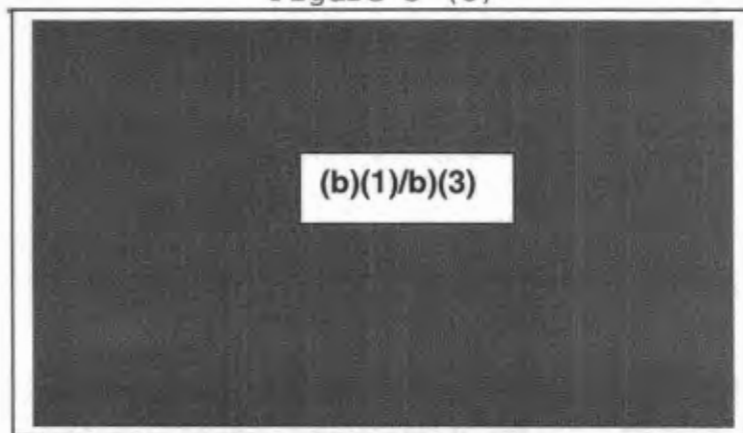


Chart E2202 Marginalia Data with track superimposed

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Figure 6 (C)

482. (U) Sailing Directions Pub 126 reports, "Discolored water has been reported to lie 23 miles NE of the island (Satawal)." [encl (237)]

483. (U) Several discrepancies in the printed charted features are referenced in the "Micronesia West of 148E" section of the Sailing Directions Pub 126. Specifically the following reports were within 50 NM of SAN FRANCISCO's track:

a. "Caution. - Satawal was reported (1987) to lie about 1.75 miles NNW of its charted position."

b. "Discolored water has been reported to lie 23 miles NE of the island."

c. "In 1982, the island [Fayu Island] was reported to lie nearly one mile WSW of its charted position."

d. "In 1954 this shoal [11.5 miles WNW of Pikelot] was reported to lie about 0.8 mile S of its charted position and to have extended SW for about 4 miles."

e. "Matsuye Bank, a 12.8m patch, lies about 5 miles SE of the SE end of Condor Reef. This patch and the S side of Condor Reef are marked by discoloration."

f. "A bank, with depth of 27m and marked by discolored water, was reported to lie in 3.5 miles NNE of Olimarao Atoll."

g. "The island [Gaferut] was reported (1969) to lie 2.5 miles W of its charted position. In 1977, the depths encountered S of Gaferut were reported to be less than charted depths." [encls (237), (238)]

484. [REDACTED] On chart INT 507, a feature in vicinity of 07° 42.5' N, 147° 13.0' E is an encircled danger area as depicted in Chart 1 item [K.1]. The blue coloring on this chart indicates a depth of 200 meters or less. The center of this spot [REDACTED] (See Figure 7). [encls (2), (236)]

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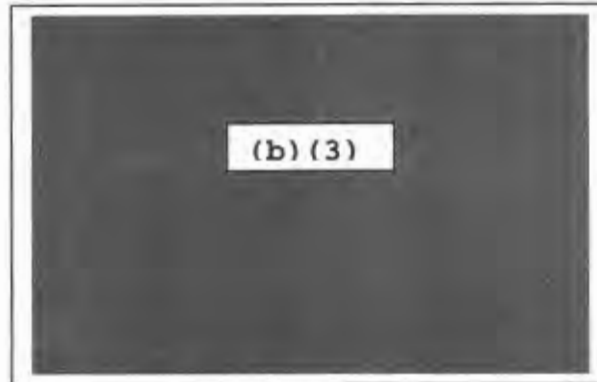


Chart INT 507
Figure 7 (U)

485. (U) On chart INT 506, a feature in vicinity of 07° 40' N, 147° 14' E is an encircled danger area as depicted in Chart 1 item [K.1]. The blue coloring on this chart (See Figure 8 below) indicates a depth of 200 meters or less. The center of this spot is 5 NM south of track. [encls (2), (236)]

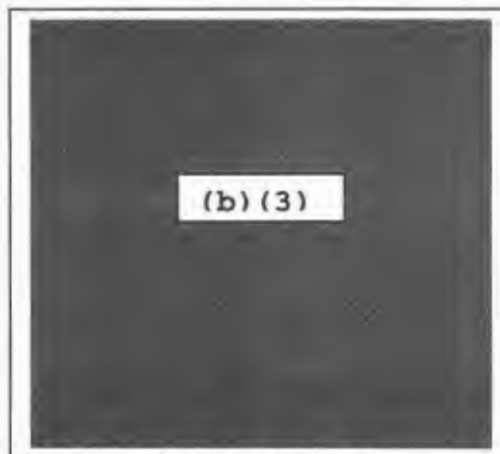


Chart INT 506
Figure 8 (U)

486. (U) Marginalia of charts INT 506 and INT 507 read "DOUBTFUL DATA. Reported but unconfirmed depths or dangers are indicated by an encircling dotted line." [encls (236), (239), (240)]

487. (U) On chart 525, a 618 fathom spot in vicinity of 07° 32' N, 147° 06' E is shown (See Figure 9 below). This sounding does not appear on the E2202 or 81023 and lies [REDACTED]. [encls (2), (43), (146)]

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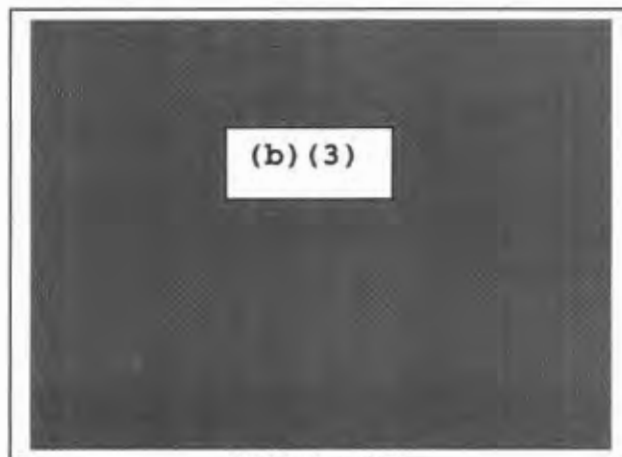


CHART 525
Figure 9 (U)

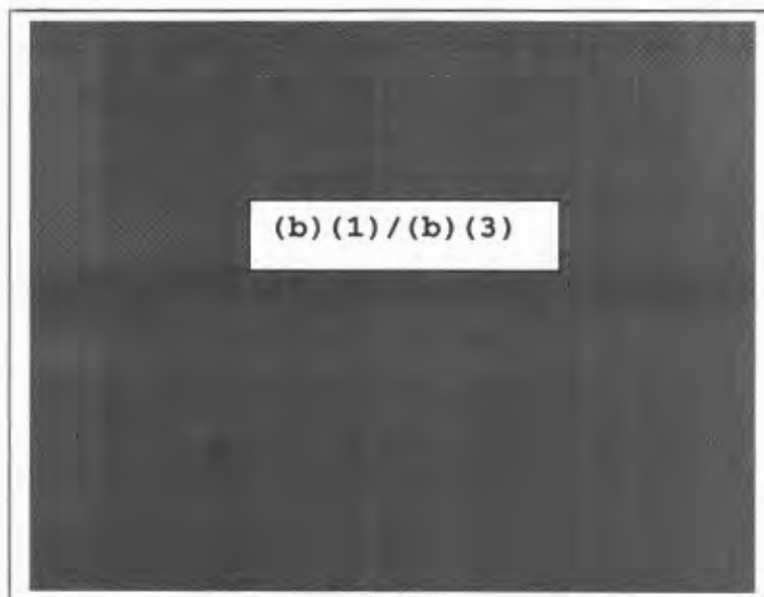
488. (C)

[REDACTED]

(See Figure 10). [encl (115)]

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VMS
Figure 10 (C)

489. (U) As viewed by VMS 5.0, the reported discolored water spot's vector data can be reviewed. This reveals the following stored information on this chart feature (See Figure 11):

Feature center location - 07°42.285'N 147°13.135'E
Range from feature center to query point: 2239.63 m.
Bearing from feature center to query point: 137.086 deg.
CHART: NIMA-GEN12C

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Unique ID: 0|GEN12C|4|dangera.aft|OBS|BD030|1

Date : Information as of _____

FACC Code : Discolored Water

Value : 0

Existence Category : Reported

Accuracy Category : Accurate"

[encl (115)]



VMS Data Block

Figure 11 (U)

490. (U) NGA reports, the source of the Charted feature on chart 81023 in vicinity of 07° 42.5' N, 147° 13.0' E was a Japanese Notice to Mariners from 1966 that was originally reported in 1963. [encl (232)]

491. (U) Bowditch states, "In some case, reports of discolored water at the sea surface have been investigated and found to be the result of newly formed volcanic cones on the sea floor. These cones can grow rapidly and within a few years constitute a hazardous shoal." [encl (223)]

492. (U) Bowditch states, "Large blank areas or absence of depth contours indicate a lack of sounding in the area. Operate in an area with sparse sounding data only if required and then only with extreme caution" and specifically add the recommendation to "operate at a reduced speed." [encl (223)]

493. (S) A review of the [REDACTED]

[REDACTED]. Specifically, [REDACTED]

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appropriate damage control action to maintain watertight integrity, optimize communications readiness, and minimize the probability of other casualties. [encl (145)]

305. (U) Witnesses related total surprise that a collision or grounding had occurred. Many crewmembers said the noise level and its duration was of such magnitude that they knew the ship had grounded or collided with something. [encls (6), (100), (103), (111), (112), (120), (121), (127), (130), (140)]

306. (U) An Emergency Blow was ordered by the OOD and actuated by the COW. [encls (6), (111), (112), (124), (126), (127), (140)]

307. (U) The COW sounded three blasts of the Diving Alarm in accordance with the Emergency Surface Procedure. Emergency Surface is a rapid ascent from any initial depth and is used in casualty situations where time constraints prevent a normal surface. [encls (6), (100), (124), (130), (147)]

308. (U) The Collision Alarm was not sounded nor was word passed via the IMC that a collision had occurred. [encls (100), (112), (145)]

309. (U) Emergency surfacing is accomplished by releasing the high-pressure air from air banks 1, 2, 4, and 5 into the MBTs. The high-pressure air rapidly expels water from the ballast tanks, causing the ship to ascend. The ascent continues until the ship is surfaced. Ship's speed, if available, and stern and fairwater planes, if functioning, are used to control the angle of the ascent. Once surfaced, the Low Pressure Blower is used to expel residual water from the MBTs. Because of the time-sensitive situation requiring emergency surfacing, there is no advance preparation phase as in the normal surface procedure. Because of the rapid ascent during an emergency surfacing and the uncertainty concerning surface ship locations, use of the procedure is reserved for situations involving ship safety that require an immediate surfacing. [encls (147), (148)]

310. (U) As a result of the grounding, the PLO-125 (Main Engine control oil isolation valve) operating handle was dislodged from its holder causing PLO-125 to shut. It was found by Engine Room Upper Level (ERUL) Watch (MM2 [REDACTED]) to be extended and dangling. [encl (130)]

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311. (U) Consistent with the Collision Procedure, the COW scanned the Ballast Control Panel and noticed the MBT 2A/B indicating open. The COW attempted to shut MBT 2A/B. The open indication remained. The COW shifted the switch to neutral to limit risk of further suspected damage to the MBT 2A/B vent mechanism. [encls (124), (145)]

312. (U) The sonar system was suspected to be damaged at 1147K and at 1152K the sphere was suspected to be flooded. At 1157K the Sonar Supervisor reported that sonar would not come up. A ground on Starboard lighting was isolated to the sonar sphere. [encls (100). (130)]

313. (U) After the grounding, NAV effectively relieved LTJG [REDACTED] of the Conn due to LTJG [REDACTED]. [encls (6), (109), (143)]

314. (C) The [REDACTED]
[REDACTED] . [encls (95),(128),(130),(183)]

315. (U) At approximately 1143K, numerous injury reports were being made via the 4MC. At 1145K an announcement of "Petty Officer Ashley has a head injury in Main Seawater Bay" was made on the 1MC. [encls (6), (100), (112), (124)]

316. (U) Engineering watchstander actions in response to the casualty are detailed in enclosure (130). [encl (130)]

317. (U) CO Standing Orders require that "If you are uncertain whether the ship is in safe navigable water, stop or slow and maneuver toward good water, come shallow (if submerged) and obtain a fix." [encl (35)]

318. (U) CO Standing Orders require that in the event of a Red Sounding (effectively obtained by grounding while submerged): "Immediately stop and back down. Reverse course if safe to do so, turning away from the direction of shoaling water... Order continuous soundings." [encl (35)]

319. (U) Following the emergency surfacing, the ship resumed steering previously ordered course 090. The heading was maintained until 1202K when the CO directed a retracing of the ship's eastward track to begin heading for Guam. No fathometers

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were working and the modified piloting party was not stationed.
[encls (4), (6), (60), (101)]

320. (U) There were no reports of personnel injury resulting
from improperly stowed material or equipment. [encl (143)]

321. (U) Upon manning the Bridge following the grounding at
1144K, the OOD noted significant damage to the ship's bow. No
floating debris was seen. [encls (4), (13), (60)]

322. (U) Following the grounding, the ship transmitted six
OPREP 3 messages and six other status messages to external
commands. The CO personally wrote the majority of these
messages. [encls (4), (13)]

323. (U) SAN FRANCISCO's Low Pressure Blower was run
continuously from 1159K, 8 January 2005 until the ship moored
and a bridle blow was configured on the evening of 10 January.
[encls (60), (149)]

Medical Response

General

324. (U) The majority of SAN FRANCISCO crewmembers sustained
injuries as a result of the grounding. Documented injuries
ranged from minor bruising and muscle strains to a fatal head
injury. There were no secondary injuries reported related to
the casualty response. MM2(SS) Ashley sustained a fatal closed
head injury. [encls (143), (150)]

325. (U) All crewmembers received a medical evaluation and
treatment prior to return to homeport. A total of 98
crewmembers were noted to have injuries on medical evaluation.
29 crewmembers sustained injuries that were also evaluated and
treated in the Emergency Department of Naval Hospital Guam.
Three of these patients were admitted overnight for further
evaluation and treatment. 68 of the crewmembers were evaluated
and treated onboard. Two crewmembers suffered shoulder
dislocations that were reduced onboard the submarine. 38
crewmembers were evaluated and found to have no complaints.
Crewmember injuries and opinions about the probability of
disability are detailed in enclosure (151). Probability of
disability is discussed in the opinion section of this report.
[encls (151), (143)]

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Treatment of MM2(SS) Ashley

326. (U) Regarding the treatment of MM2(SS) Ashley the standard of medical care is defined by the IDC Training Curriculum and Basic and Advanced Pre-hospital Trauma Life Support. [encls (152), (153)]

327. (U) HM1(SS/SW) [REDACTED], SAN FRANCISCO's Independent Corpsmen (IDC), was not injured in the grounding. He located MM2(SS) Ashley from IMC reports. On initial evaluation MM2(SS) Ashley was minimally responsive and had spontaneous respiration and an adequate airway. He was noted to have significant facial swelling and swelling of his head with distortion but not loss of landmarks. There was no evidence that he had been moved by or cared for by another crewmember. He was immobilized in C-spine (cervical spine) precautions and moved in Reeves Sleeve to crew's mess. The patient was placed on high flow Oxygen by non-rebreather (NRB) facemask. An intravenous line (IV) was established. Initial vital signs were 190/74 with a heart rate of 74 with a respiratory rate of 25. A gag reflex was noted. On initial evaluation he was given a Glasgow Coma Scale (GCS) of 5 with the qualification that his pupillary response could not be graded due to facial swelling. [encls (139), (154)-(158), (160), (165)]

328. (U) Actions taken by HM1(SS/SW) [REDACTED] included, but were not limited to, verification of airway/breathing/circulation (ABC's), therapeutic oxygen, immobilization of the cervical spine in a head injured patient, no entrance into the nasal pharynx due to facial injury, and placement of a foley catheter with matching of intake and output. He also maintained oxygen saturations over 95% for the majority of the patient's course. Blood pressure was monitored and hypotension was avoided. Oral airways were not used due to a positive gag reflex. Under medical direction he provided sedation and therapy with Mannitol. He additionally intervened to reestablish an airway by opening the front of the patients C-collar (Cervical Collar). [encls (139), (154)-160)]

329. (U) HM1(SS/SW) [REDACTED] conducted serial evaluations of MM2(SS) Ashley's status including vital signs, including pulse oximetry, and evaluation of his Glasgow Coma Scale (GCS). HM1(SS/SW) [REDACTED] instructed other crew members how to suction and monitor the airway of MM2(SS) Ashley. [encls (125), (139), (158)]

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330. (U) HM1(SS/SW) [REDACTED] triaged the injured personnel sent to him and identified a second patient that he believed to be seriously injured. MM2(SS) [REDACTED] was noted to be [REDACTED]. His ABC's were verified and he was immobilized on a Miller spine board. An IV and a foley catheter were placed. He was placed in Crew's Mess next to MM2(SS) Ashley. MM2(SS) [REDACTED] condition [REDACTED]. He was removed from the spine board after consultation with the COMSUBPAC medical watch. [encls (139), (154)-(156), (158)]

331. (U) LTJG [REDACTED] stated that he [REDACTED] [REDACTED] [encl (158)]

332. (U) LTJG [REDACTED], a prior Corpsman, acted as medical communicator on SAN FRANCISCO in the initial phase. [encls (139), (158)]

333. (U) LTJG [REDACTED] provided basic evaluation and medical care to multiple crewmembers including wound care and dressings, splinting, and serial evaluations. He also provided logistical support to HM1(SS/SW) [REDACTED]. [encls (139), (158)]

334. (U) HM1(SS/SW) [REDACTED] was primary care provider for MM2(SS) Ashley and MM2(SS) [REDACTED] for 21 hours until the arrival of LCDR [REDACTED], Medical Corps (MD, Undersea Medical Officer (UMO)). In addition, he triaged and directed the treatment the other members of the crew. [encls (139), (154), (158), (160), (161)]

335. (U) During the period eight to ten hours after the grounding HM1(SS/SW) [REDACTED] sutured the most serious of the lacerations between providing care for his other patients. He was assisted in this by LTJG [REDACTED], YN2(SS) [REDACTED] EM2(SS) [REDACTED] and members of the Emergency Medical Assistance Team (EMAT). They cleaned and irrigated the wounds and prepped the injured crew for suturing by HM1(SS/SW) [REDACTED]. [encls (139), (154), (155), (158), (160), (161)]

336. (U) HM1(SS/SW) [REDACTED], under SATHICOM direction of physicians provided care for his patients. The care of MM2(SS) Ashley included repeated airway suction, maintenance of euvoolemia, maintenance of adequate oxygen saturation, Mannitol to reduce intracranial pressure, morphine to reduce heart rate and respiratory rate. Even with continuous medical care MM2(SS)

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Ashley's condition deteriorated. [encls (139), (154), (155), (160)]

337. (U) Additional medical personnel, LCDR [REDACTED] and HM2 (SEAL) [REDACTED] (Special Operations Corpsman), were transported to SAN FRANCISCO via helicopter. LCDR [REDACTED] was chosen for the transfer, in part, due to his prior training as a Navy SEAL. [encls (62), (159), (162)-(164)]

338. (U) Advanced airway interventions by LCDR [REDACTED] included two attempts at oral endotracheal intubation and an open cricothyrotomy. Copious oral secretions prevented successful oral endotracheal intubation. Advanced airway management and a secure airway were discussed prior to the MEDEVAC attempt by LCDR [REDACTED] and LCDR [REDACTED], Medical Corps (trauma surgeon aboard STOCKHAM, from Naval Hospital Guam). This type of airway management is not taught to Submarine IDC's. The cricothyrotomy was successful with the assistance of HM2 (SEAL) [REDACTED]. The cricothyrotomy was intended to lower the risk of the MEDEVAC. [encls (139), (162), (163), (166)]

339. (U) MM2(SS) Ashley was moved to Control in the Reeves Sleeve stretcher in preparation for evacuation by helicopter from the submarine Sail. The on scene commander and the CO of the submarine had determined that use of the escape trunks to transfer the patient was not feasible due to ship's condition and sea state. Two attempts were made to lift MM2(SS) Ashley through the Sail. The first was stopped due to dislodgement of the cricothyrotomy tube. After the tube was replaced and the patient was hyperventilated, the lift was again attempted. The medical team was unable to pass MM2(SS) Ashley through the Upper Bridge Hatch. [encls (139), (158), (159), (162), (163)]

340. (U) After return to port, a reenactment of the MEDEVAC path with a mannequin in the Reeves Sleeve stretcher was conducted on SAN FRANCISCO. The mannequin was padded to partially simulate the patient. The crew was unable to pass the stretcher past the Upper Bridge. They were able to pass the stretcher with the mannequin only after deforming the head and face of the mannequin. Twelve 688 Class submarines attempted to pass Reeves Sleeve stretchers without patients. Five of twelve could not pass the Upper Bridge Hatch. Further evaluation is in progress. [encl (167)]

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341. (U) A commercially available device was used to secure the endotracheal tube prior to the final lift attempt. The tube was not displaced while this device was in use. ACLS (advanced cardiac life support) training materials suggest the use of this type of device. [encls (162), (163), (168)]

342. (U) The Reeves Sleeve stretcher meets OSHA requirements for vertical lifting of patients. Other stretchers on the submarine are not designed for vertical lift. [encl (169)]

343. (U) After the second attempt to lift MM2(SS) Ashley to the top of the sail LCDR [REDACTED] was lowered from the helicopter. He reassessed the patient upon arrival. Shortly after his arrival the patient's heart stopped and CPR was initiated. During CPR a pulse was noted with compressions and chest expansion was noted with ventilation. A spontaneous pulse returned for a short period after the use of atropine. Multiple doses of epinephrine were used without a return of a spontaneous pulse. [encls (139), (154), (155), (158), (159), (160), (162), (163), (166)]

344. (U) After approximately 30 minutes of Advanced Cardiac Life Support interventions under the direction of LCDR [REDACTED] MM2(SS) Ashley was pronounced dead by LCDR [REDACTED]. The body of MM2(SS) Ashley was prepared for transport and accompanied by another crewmember until transported off of the submarine after arrival in Guam. [encls (139), (154), (155), (158) - (160), (162), (163), (166)]

345. (U) The medical team then assisted HM1(SS/SW) [REDACTED] and LTJG [REDACTED] with medical evaluation and care of the crew during the remainder of the transit. All crewmembers were evaluated and injuries were treated. This included dressing changes splinting and the reduction of one dislocated shoulder. Another crewmember's dislocated shoulder reduced spontaneously after dislocation. The crew was triaged and information was passed to Naval Hospital Guam in preparation for the return to port. [encls (139), (154), (155), (158) - (160), (162), (163), (166)]

346. (U) HM1(SS/SW) [REDACTED] prior four quarterly quality assurance reports were noted to be satisfactory or better. He obtained 15 continuing education units in 2004 exceeding the required 12 units. [encl (170)]

347. (U) A review of the medical records of, and interviews with the crew present in control at the time of the grounding

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revealed no illness or medication usage with the exception of
[REDACTED] used by MMCS(SS) [REDACTED]. [encls
(5), (6), (19), (109), (112), (121), (124)-(127), (140), (170), (256)]

348. (U) The CO reported that he was feeling ill during the
underway period prior to the grounding. In his words "Guam
Crud" with symptoms of [REDACTED].
He self medicated with occasional Motrin and throat lozenges.
He did not seek care for the symptoms and did not consider them
debilitating. [encl (4)]

Preliminary Autopsy results for MM2(SS) Ashley

349. (U) Preliminary autopsy report finds cause of death in
patient MM2(SS) Ashley, Joseph to be "Blunt Force Injury of the
Head". [encl (150)]

350. (U) Preliminary autopsy report finds manner of death to be
"Accident". [encl (150)]

351. (U) Findings did not include significant natural disease.
[encl (150)]

352. (U) Findings did not include evidence of brainstem
herniation. [encl (150)]

353. (U) The full text of the Preliminary Autopsy is contained
in enclosure. [encl (150)]

354. (U) The injuries sustained by MM2(SS) Ashley were
considered inevitably fatal by the participating pathologist who
evaluated his injuries at autopsy. [encl (171)]

Medical Material Items

355. (U) Suction Device: Leaks at the rim of the storage cup of
the suction machine were noted. This was repaired by the EDMC
MMCM(SS) [REDACTED] with EB Green Tape. The suction tip of the
device was larger in diameter than oral suction catheters.
Oxygen tubing was adapted for use as an oral suction device.
[encls (139), (158), (172)]

356. (U) Oxygen supply: The Authorized Medical Allowance List
(AMAL) supply of six bottles of oxygen was expended. MMCS(SS)
[REDACTED] improvised an oxygen supply off of the ship's oxygen bleed
tube in the overhead of Crew's

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Mess. Information was provided by both CSG-7 and COMSUBPAC to assist. [encls (139), (154), (155), (158), (160)]

357. (U) Propac monitor pick up stickers and cables: There were multiple faults due to poor adhesion and unknown problems with the machine limited the quality of the signal. [encl (139)]

358. (U) Endotrachial tube balloons: Multiple failures were reported. Cause of high failure rate is unclear. [encls (139), (154), (155), (158)-(160), (162), (163), (166)]

359. (U) Reeves Sleeve: Modifications to the submarine were performed prior to the transport of MM2(SS) Ashley. This included the removal of a false bulkhead (above SK scuttle) and multiple ladder railings (outboard railing of ladder outside of countermeasures, Navcenter ladder railings, railings of ladder from midlevel nine man berthing to lower level, and railings from ladder from mid level to command passageway). A light in the overhead just forward of the sail lower hatch was also removed. Some of the modifications required cutting. [encls (139), (158), (172)]

360. (U) Surgical staples and skin closure glue are not required by the submarine AMAL. They were not carried on SAN FRANCISCO. [encls (139), (173)]

361. (U) The members of the EMAT team are not trained as emergency medical technicians (EMTs). Other crewmembers had medical training and provided assistance. [encls (139), (161), (174)]

362. (U) Submarine IDC training does not include advanced airway management beyond endotrachial intubation without medication. [encl (139)]

363. (U) Medical personnel noted poor radio communication skills on the part of some of the other medical personnel. Difficulties were noted when medical information was passed through non-medical personnel. [encls (139), (156)-(158), (162)]

364. (U) Extremely High Frequency (EHF) radio on SAN FRANCISCO was not functional after the grounding which prevented white board and chat communications with supporting activities. [encl (176)]

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365. (U) Multiple medical personnel stated that HM1(SS/SW) [REDACTED] was away from his patients for communications. HM1(SS/SW) [REDACTED] and LTJG [REDACTED] felt this was disruptive. (encls (139), (157), (158), (162))

366. (U) During the Helicopter operations, the bridge suitcase could not be heard due to noise. Bridge to bridge radios were then used for communications between sail and control. (encls (158), (162), (163))

Medical Response External to SAN FRANCISCO

367. (U) Twenty-five minutes after OPREP-3 Navy Blue message was transmitted LT [REDACTED], MC, USN, UMO of CSG-7 was available in the CSG-7 Command Center for medical advice. HMCS(SS) [REDACTED] of CSG-7 was in the CSG-7 building at the time of the grounding and he responded immediately to the Command Center. (encls (154), (160))

368. (U) CDR [REDACTED], MC, USN, UMO, COMSUBPAC Medical Officer was notified after the COMSUBPAC Watch Officer received the OPREP-3 Navy Blue message. (encls (155), (160))

369. (U) RADM Gove appointed CDR [REDACTED] (CSS-15 Deputy) On-scene Commander. (encl (177))

370. (U) Local medical assets were requested by CSS-15. The following local units provided support: Naval Hospital Guam, CSS-15, NSWU-1, USS FRANK CABLE (AS-40), and HC-5. Details of the personnel and their embarkation are provided in enclosure (161). (encls (139), (159), (161)-(164), (166), (177), (255))

371. (U) LCDR [REDACTED], Executive Officer, Naval Special Warfare Unit ONE, when asked (if a C-130 aircraft could have been used to transport the SEALs to SAN FRANCISCO shortly after the grounding), he stated it would not have been possible to prepare a boat, load aircraft and drop the boat and personnel at the location of SAN FRANCISCO before dark even if it had been initiated immediately after grounding. (encl (164))

372. (U) CDR [REDACTED] embarked on the GALVESTON ISLAND along with medical staff from CSS-15 and from Naval Hospital Guam. This was the first ship to sortie in support of SAN FRANCISCO from Guam. CDR [REDACTED] stated that he chose this ship because it was ready to sail and would arrive ahead of STOCKHAM, despite limitations to its communication capabilities. He stated that

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his primary plan was to transfer from GALVESTON ISLAND to SAN FRANCISCO along with medical personnel as soon as safely possible via small boat. Operational planning was conducted while en route. [encls (151), (161), (176), (177)]

373. (U) CSS-15 UMO LT [REDACTED] and CSS-15 IDC HMC(SS/FMF) [REDACTED] were embarked on the GALVESTON ISLAND and provided medical advice to the On-scene Commander. They were part of the medical team to be transferred via small boat in the original operational plan. In interviews, LT [REDACTED] and HMC(SS/FMF) [REDACTED] stated they advised the evacuation of MM2(SS) Ashley should be a higher priority (than transfer of a physician or other medical personnel to SAN FRANCISCO). [encl (178)]

374. (U) NSWU-1 personnel, and medical staff embarked upon STOCKHAM along with Helicopter detachment from HC-5. They got underway several hours after GALVESTON ISLAND. This provided a second medical team. While en route NSWU-1, the helicopter crew and the medical personnel conducted operational planning and prepared equipment and medical spaces, including a resuscitative surgical suite on STOCKHAM. [encls (154), (155), (159) - (162), (164), (166), (242) - (245)]

375. (U) Initial patient status reports prompted Dr. [REDACTED] and Dr. [REDACTED] to separately consult with specialists. Neurosurgeons at Naval Hospital Okinawa and Tripler AMC were consulted. The General Surgeon from Naval Hospital Yokosuka provided consultation to LT [REDACTED]. A Maxillofacial Surgeon was also consulted at Tripler. Planning for medical evacuation of MM2(SS) Ashley was initiated after the first reports. Multiple scenarios were explored and modified as the situation evolved. LCDR [REDACTED], the Neurosurgeon from Naval Hospital Okinawa, was sent to Guam to meet MM2(SS) Ashley. Alternate evacuation routes were explored to fit possible best/worse case scenarios. Air assets for the MEDEVAC from Guam to Okinawa were placed on standby. [encls (154) - (157), (159), (160)]

376. (U) After discussion between CDR [REDACTED] and LT [REDACTED] a 24-hour watch was established at COMSUBPAC for medical advice and coordination. [encls (154) - (157), (160)]

377. (U) HM1(SS/SW) [REDACTED] stated that the quality of the communication and to a lesser extent the quality of the medical

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advice degraded after the transfer of control from CSG-7 to COMSUBPAC. [encls (139), (157), (175)]

378. (U) Throughout the course of the medical evacuation the commands involved worked to place STOCKHAM and KISKA in position to "Lilly Pad" the helicopter back to Guam. The "Lilly Pad" concept was to be used to allow the helicopter to refuel on surface ships during its distant transit to Guam. [encls (154), (155), (159), (160), (164), (177)]

379. (U) CDR [REDACTED] team was the first to reach SAN FRANCISCO at approximately 0430. The condition of MM2(SS) Ashley had been stable for several hours. Plans for night transfer of NSWU-1 team members via helicopter and zodiac were proposed by LCDR [REDACTED]. CDR [REDACTED] stated that after discussions with CO of SAN FRANCISCO it was decided that small boat transfer at night was too dangerous. Reassessment at first light was planned. [encls (4), (164), (177)]

380. (U) The safety of small boat transfer was assessed at first light. CDR [REDACTED] and the CO discussed and considered a small boat transfer unsafe. Daylight revealed seas consistently breaking over both the forward and aft escape trunks making evacuation through them impossible. [encls (4), (62), (172), (177)]

381. (U) LCDR [REDACTED] disagreed with the On-scene Commander (CDR [REDACTED]) regarding the feasibility of a small boat transfer on the morning of 9 January 2005. According to CDR [REDACTED], the sea state had increased to such an extent that use of the topside forward escape trunk was not an option. SAN FRANCISCO had significantly less freeboard than a normal SSN 688 class submarine due to the damage to the forward MBTs and seawater was continually covering topside in the vicinity of this hatch. LCDR [REDACTED] discussed how he considered a small boat transfer to the bridge was doable by his team of SEALs. CDR [REDACTED] did not agree with LCDR [REDACTED] risk assessment. [encls (4), (164), (177)]

382. (U) Shortly after dawn on 9 January 2005 sea state was determined by the CO and the On-scene Commander to be too high to conduct small boat transfer in the open ocean. [encls (4), (154), (155), (160), (177)]

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383. (U) LCDR [REDACTED] stated that he had "spotty" communications with the On-scene Commander (CDR [REDACTED]) involving two Iridium phone conversations and bridge-to-bridge VHF radio communications (available once STOCKHAM had rendezvoused with SAN FRANCISCO). Since GALVESTON ISLAND did not have chat capability, chat contents were relayed to the On-scene Commander indirectly through USCG Base Guam using HF voice communications. [encls (159), (164), (176)]

384. (U) LCDR [REDACTED] stated that he was unable to obtain important patient information while onboard STOCKHAM. [encl (166)]

385. (U) In Chat records "SAN FRANCISCO reports her Jacobs ladder in poor condition and requests replacement prior to perstrans" "SAN FRANCISCO has a makeshift ladder that they will use (if required) to get the trauma team aboard." STOCKHAM was prepared to provide a replacement Jacobs ladder. [encls (154), (155), (159), (160), (173)]

386. (U) SAN FRANCISCO's Jacob's Ladder and diver's recovery ladder were examined after the ship returned to port and found to be in sound material condition. [encls (172), (179)]

387. (U) After the small boat transfer was ruled out, a helicopter transfer was initiated. LCDR [REDACTED] was chosen as the physician to transfer due to his prior SEAL training. At 0904 (Guam time) LCDR [REDACTED], HM2(SEAL) [REDACTED], AE2(AW) [REDACTED] - Rescue Swimmer and medical equipment were successfully transferred by helicopter to the Sail of SAN FRANCISCO. The helicopter returned to refuel and picked up LCDR [REDACTED] to provide medical care for the transfer to STOCKHAM. When it became apparent that transfer of the patient via the sail was not possible LCDR [REDACTED] was lowered to the submarine at 1241 (Guam time). MM2(SS) Ashley was pronounced dead at 1311K by LCDR [REDACTED]. [encls (159), (162), (164), (166), (177)]

388. (U) CDR [REDACTED] stated that the first helicopter personnel transfer did not proceed as briefed. Instead of the Medical Officer, LCDR [REDACTED] being the first one lowered to the submarine, AE2(AW) [REDACTED] (the search and rescue swimmer) was transferred first. Next LCDR [REDACTED] was transferred, followed by HM2(SEAL) [REDACTED] and the medical equipment. Transfer of the swimmer first allowed him to assist with LCDR [REDACTED] transfer due to

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problems encountered during the first attempt at lowering LCDR [REDACTED]. [encls (162), (164), (177)]

389. (U) Crew injury information was collected while SAN FRANCISCO was en route to Guam. Additional medical assets were mobilized and transport of the injured was arranged by Naval Hospital Guam. [encls (143), (158), (159), (162), (163)]

390. (U) The Computerized Tomography (CT) scanner at Naval Hospital Guam was not operational during medical contingency planning for MM2(SS) Ashley's evacuation. As a result, the use of Naval Hospital Okinawa was considered. The Naval Hospital Guam's CT scanner was repaired on 10 January 2005. Naval Hospital Guam has an agreement in place for use of CT scanner at Guam Memorial Hospital. [encls (159), (180)]

Damage

391. (C) The forward section of SAN FRANCISCO [REDACTED]

[REDACTED] [encls (181)-(183)]

392. (C) Repairs are expected to take [REDACTED]

[REDACTED] Enclosure (183), the Preliminary Damage Assessment Cost Estimate, provides detailed listing of damage. [encl (183)]

393. (U) MBT 1A has stress cracks and external deformation. MBT 1B has severe metal deformation and a major breach. MBT 2A sustained significant structural metal deformation. MBT 2B is severely deformed and breached in several locations. MBT 3A sustained metal deformation but retained its integrity. MBT 3B sustained significant metal deformation and has a breach into 2B. [encls (181)-(183)]

394. (C) The [REDACTED]
[encls (181)-(183)]

395. (U) Torpedo tube shutter doors have significant structural damage. [encls (181)-(183)]

396. (U) As a result of the grounding, one ADCAP MK 48 Mod 6 torpedo located on the starboard upper stow (E) sustained an approximately 4-foot bare metal scrape extending from the

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warhead section to the nose section due to impact from a poorly
stowed metal box on a special equipment rack on the starboard
outboard upper stow. [encl (183)]

397. (U) Following navigation systems were out of commission as
a result of the grounding:

- a. The AN/BQN-17 fathometer.
- b. The EM Log.
- c. VMS channel 1 and 2 failed. (Ship's force restored VMS
channel 2 while underway.)
- d. EHF Communication system (AN/USQ-38(V) EHF Terminal) was
not available. [encl (183)]

398. (U) Upon emergency surfacing, SAN FRANCISCO was unable to
utilize her Extremely High Frequency AN/USQ-138 (EHF) system.
It was concluded initially that the system had been damaged;
however, upon return to port, CSS-15 technicians were able to
restore EHF operations after shifting onboard timing sources.
The EHF system was not damaged in the grounding. [encl (192)]

399. (U) The ship had all required technical documentation
available onboard to operate and troubleshoot the EHF system.
[encl (241)]

400. (C) Due to a failure in the [REDACTED]
[REDACTED] [encls (130), (183)]

401. (U) Continuity of power and propulsion were maintained
throughout the grounding. No degradation of reactor plant
operations was observed. [encls (130), (183)]

Qualifications and Training

Shipboard Qualifications

402. (U) COMNAVSUBFOR 282107ZFEB03 directs that "ANAV
certification in all cases shall be documented by formal letter
and/or page 13 entry in the individual's service record."
NODORM section 4305 (Assistant Navigator Qualification Card)

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directs that an entry be made in the service record (page 4).
[encls (184), (185)]

403. (U) ETCS(SS) [REDACTED] ANAV certification letter cannot be located by the ship or the squadron. Further, a review of ETCS(SS) [REDACTED] service record holds no documentation of ANAV certification by CSS-15. [encl (186)]

404. (U) On 8 January 2005, SAN FRANCISCO had seven qualified QMOWs:

- a. ETCS(SS) [REDACTED] (Qualified 2 Jan 03)
- b. ETC(SS) [REDACTED] (Qualified 14 Aug 04)
- c. ET1(SS) [REDACTED] (Qualified 19 Jun 02)
- d. ET2(SS) [REDACTED] (Qualified 16 Sep 03)
- e. ET2(SS) [REDACTED] (Qualified 27 Aug 04)
- f. ET2(SS) [REDACTED] (Qualified 27 Nov 04)
- g. ET3(SS) [REDACTED] (Qualified 27 Nov 04)

[encls (187), (188)]

405. (U) On 8 January 2005, all SAN FRANCISCO QMOWs met the Submarine Readiness Manual proficiency requirement of two watches per quarter. The underway watchbill assigned the following QMOW watch rotation:

- a. ET2(SS) [REDACTED] (Section I)
- b. ET2(SS) [REDACTED] (Section II)
- c. ET2(SS) [REDACTED] (Section III)
- d. ET3(SS) [REDACTED] (Section III Under Instruction)

[encls (187), (189), (190)]

406. (U) On 8 January 2005, SAN FRANCISCO had nine qualified OODs:

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- a. LCDR [REDACTED] (Qualified 13 Jul 02)
- b. LCDR [REDACTED] (Qualified 11 Jan 03)
- c. LT [REDACTED] (Qualified 14 May 03)
- d. LTJG [REDACTED] (Qualified 10 Jan 04)
- e. LTJG [REDACTED] (Qualified 16 Jan 04)
- f. LTJG [REDACTED] (Qualified 30 May 04)
- g. LT [REDACTED] (Qualified 2 Oct 04)
- h. LT [REDACTED] (Qualified 4 Oct 04)
- i. LTJG [REDACTED] (Qualified 24 Oct 04)

[encls (187), (191)]

407. (U) On 8 January 2005, all OODs except LCDR [REDACTED] and LTJG [REDACTED] met the proficiency requirement of two watches per month, and the underway watchbill assigned the following OOD watch rotation:

- a. 7 January 2005 Morning (06-12) OOD: LTJG [REDACTED], with LTJG [REDACTED] under instruction (U/I)
- b. 7 January 2005 Afternoon (12-18) OOD: LT [REDACTED]
- c. 7 January 2005 Evening (18-24) OOD: WEPS (LT [REDACTED]), with ENG [REDACTED] U/I to regain proficiency
- d. 8 January 2005 Midwatch (00-06) OOD: LT [REDACTED]
- e. 8 January 2005 Morning OOD: NAV (LCDR [REDACTED] with LTJG [REDACTED])
- f. 8 January 2005 Afternoon OOD: LTJG [REDACTED] with LTJG [REDACTED] U/I
- g. 8 January 2005 Evening OOD: LTJG [REDACTED] with LTJG [REDACTED] U/I. [encls (187), (189)]

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408. (U) The Piloting Party was stationed at 0645K on 7 January 2005. [encl (60)]

409. (U) The Piloting Party was secured, and the Modified Piloting Party stationed at 1010K on 7 January 2005. [encl (60)]

410. (U) The Modified Piloting Party was secured at 1333K on 7 January 2005. [encl (60)]

411. (U) A Navigation Supervisor was stationed continuously from 0609K on 9 January 2005 until the ship returned to homeport on 10 January 2005. [encl (60)]

412. (U) No CDO was stationed on 7 or 8 January 2005. The XO was stationed as CDO at 1520K-2150K on 9 January 2005, and again from 0211K-1059K on 10 January 2005. [encl (60)]

Inspections/Evaluations

413. (C) A navigation evaluation of SAN FRANCISCO was conducted by the CSS-15 Operations Officer (LCDR [REDACTED]) from 7-15 January 2004 using "[REDACTED]". The navigation party's overall performance was [REDACTED]. The following deficiencies in Open Ocean Navigation were noted:

a. "[REDACTED] Training conducted mid-transit resulted [REDACTED]."

b. "[REDACTED] Training conducted mid-transit [REDACTED]."

c. "On one occasion the oncoming OOD [REDACTED]."

d. "[REDACTED]."

e. "On one occasion the OOD did not [REDACTED]. The OOD did [REDACTED]."

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not [REDACTED]
[REDACTED] ."

f. " [REDACTED]
[REDACTED] ."

g. " [REDACTED]
[REDACTED] ."

h. " [REDACTED] ."

[encl (193)]

414. (C) A Tactical Readiness Evaluation (TRE) of SAN FRANCISCO was conducted from 21-24 January 2004. The TRE Team concluded that the ship's overall TRE performance was ABOVE AVERAGE compared to ships recently evaluated. The core competency of 'Navigation and Piloting' was assigned a grade of AT STANDARDS. The 'Open Ocean Navigation' portion of 'Navigation and Piloting' was assigned a grade of BELOW STANDARDS. The 'Piloting' portion of 'Navigation and Piloting' was assigned a grade of ABOVE STANDARDS. 'Open Ocean Navigation' deficiencies included the following:

a. "Position Uncertainty entered an area of [REDACTED]
[REDACTED] ."

b. "A track plan was [REDACTED]
[REDACTED] ."

c. "Red and Yellow soundings [REDACTED]
[REDACTED] . Specifically, the
[REDACTED]
[REDACTED] . These soundings were set for a
[REDACTED]
[REDACTED]

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[REDACTED]
[REDACTED]."

d. "VMS was [REDACTED]
[REDACTED]. Level of knowledge of [REDACTED]
[REDACTED]
[REDACTED] Contributing to this the Navigation
Division [REDACTED]
[REDACTED]."

e. "On one occasion while the ship was near test depth on
the south range, the [REDACTED]
[REDACTED]
[REDACTED]. " [encls (17), (194)]

415. (U) SAN FRANCISCO did not receive a grade of
UNSATISFACTORY in any area during her January 2004 TRE. A
letter report of corrective actions was not required.
Furthermore, CSS-15 did not require any corrective actions in
the area of Open Ocean Navigation as a result of the TRE.
[encls (17), (194), (195), (196)]

416. (C) A navigation evaluation of SAN FRANCISCO was conducted
by the CSS-15 Operations Officer, LCDR [REDACTED], from [REDACTED]
[REDACTED] using [REDACTED], during a
transit from [REDACTED]. The navigation party's
overall performance was [REDACTED]
[REDACTED]
included the following:

[REDACTED]
[REDACTED]. Per OP 61-17 the required
frequency that a [REDACTED]
[REDACTED]
[REDACTED]. On one occasion the OOD [REDACTED]
[REDACTED]
Additionally, QMOWs [REDACTED]
[REDACTED]."

b. "[REDACTED]
[REDACTED]

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get a 12 NM area around it and see what kind of room there would have been to get around that." [encl (73)]

Time of Transmission and Key Operational Milestones

170. (C) Per SUBNOTE 001, the [REDACTED]
[REDACTED]. [encls (2), (39)]

171. (C) CTF 74 transmitted SUBNOTE 001 at [REDACTED]
[REDACTED] [encls (2), (91)]

172. (C) Within the CSG-7 area of operations, SUBNOTES [REDACTED]
[REDACTED]
[REDACTED]. OPORD 302. [encl (65)]

173. (C) SUBNOTE 001 was [REDACTED]
[REDACTED]. [encls (2), (91)]

174. (C) CSG-7 staff members involved in preparing and approving SUBNOTE 001 [REDACTED]
[REDACTED] [encls (67)-(71)]

175. (C) ETC(SS) [REDACTED] stated that SUBNOTE 001 [REDACTED]
[REDACTED]. Additionally, he said the [REDACTED]
[REDACTED]. [encl (74)]

176. (C) SUBNOTES will normally be issued [REDACTED]
[REDACTED] SUBNOTE 001 [REDACTED]
[REDACTED]. [encl (34)]

Voyage Planning upon Receipt of SUBNOTE

177. (U) The CO stated, "I pestered my Navigator on several occasions to get the SUBNOTE or least a draft. I'd say every three days or so, starting on December 26th or 27th, after Christmas, I told the Navigator to call Group SEVEN, and I wanted the SUBNOTE and I wanted it now." [encl (4)]

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178. (U) No officer, including the NAV on SAN FRANCISCO, called CSG-7 or CSS-15 to request the SUBNOTE. [encls (4)-(6)]

179. (U) The ANAV called CSG-7 on 04 January 2005 to check the status of CTF-74 SUBNOTE 001. [encls (7),(8)]

180. (U) The ANAV told ET1(SS) [REDACTED] at CSG-7 that he "needed to get the SUBNOTES out quicker and not to wait until the last minute because the review process will fall down because we don't have enough time to get everything done..." [encls (7),(8)]

181. (U) The ANAV asked ET1(SS) [REDACTED], "How are you routing us? ET1(SS) [REDACTED] replied, "We're giving you guys a standard track... I'll send the planning copy of the rough draft so you can get started on entering the data." [encls (7),(8)]

182. (C) The ANAV stated, "[REDACTED]
[REDACTED]
[REDACTED] in OP 61-17. He also stated that, "[REDACTED]
[REDACTED]
[REDACTED]. It is true, for this portion of the transit, after considering the SUBNOTE, [REDACTED]
[REDACTED], " [encls (7),(8)]

183. (U) NAV stated that "if the chain of command feels that there is a operational risk, for instance, passing within restricted waters, that would be an example, the command team, CO, XO, myself, ANAV, will place additional restrictions on the chart. We'll essentially gather around the Port Plotter and come up with a plan of action for what we're going to do but that depends on precisely what we're doing." [encl (6)]

184. (U) When the NAV was asked if he considered ORM mitigations in the conduct of the voyage about the Caroline Islands, he stated "No... we were not going to enter restricted waters." [encl (6)]

185. (U) ET1(SS) [REDACTED] called CSG-7 on 04 January 2005 to request a draft copy of just the points of CTF-74 SUBNOTE 001, no times. [encls (7)-(10)]

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186. (U) The ANAV based his risk calculations on an impression that this SUBNOTE track had been used previously. He stated that, "With regards to the details of the conversation with ET1 [REDACTED] [CSG 7], I was told that other submarines had used this track previously." No CSG-7 personnel, including ET1(SS) [REDACTED], believe they communicated this message to the ANAV. ET1(SS) [REDACTED] developed SUBNOTE 001 from scratch. [encls (7), (8), (67), (76)]

187. (U) The ANAV informed the NAV by phone at 2030K on 04 January 2005 that SUBNOTE 001 was on board. [encls (6)-(8)]

188. (U) The ANAV stated, "The SUBNOTES for water space are typically, in my opinion, late." [encls (7), (8)]

189. (U) The following CSG-7 personnel performed Chart Corrections for the planned transit to Brisbane Australia: ET1(SS) [REDACTED], ET2(SS) [REDACTED], ET2(SS) [REDACTED], ET2(SS) [REDACTED] ET2(SS) [REDACTED] and ET3(SS) [REDACTED]. [encls (2), (92)]

190. (U) The NAV and ANAV stated that they had enough time to conduct voyage planning and chart approval through chart E2101, [encls (4)-(10)]

191. (U) The CO stated, "I knew there was going to be significant navigation planning to get done." [encl (4)]

192. (U) Regarding his initial review of the charts prior to the ship's underway the CO stated, "I was concerned about the path--how were they going to route us down. I was familiar with the Caroline Islands as being a region that was going to be a concern to drive through[.]" The CO later stated: "The road was 40 miles wide, 20 on either side of my road... my mindset was, I had a road that was 20 miles wide that I was driving down... I had a road that was 20 miles wide that I was driving down that didn't have any navigation hazards on it[.]" [encl (4)]

193. (U) Regarding his opinion as to whether the SUBNOTE track had been used before, the CO stated: "I would assume it's been done before because Guam is sort of a frequent pit stop area, so I would assume it's been transited before... I would think that [CSG-7] probably have the routes to all the various areas on pass down notes, probably saved somewhere, where they just sort of pull them out and use them over and over again. This would

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be sort of the Guam to Brisbane one, would be my thought. I assume it would have been done before." [encl (4)]

194. (U) The XO believed CSG-7 re-used SUBNOTES based on conversations with NAV, who previously served at CSG-7. [encl (5)]

195. (U) The ANAV assessed the area of the Caroline Islands as follows: "As I looked at the E2202, I would characterize the bottom as a sloping bottom. It does not have a steep gradient in that area. Where the ship grounded, with regards to that particular chart, I do believe there to be good soundings in that area, not that specific spot, but the area. I came to that conclusion during the voyage planning. Specifically, in that spot, there is no indication of numerous sounding data. To me, that projected to be flat part of the ocean. I believed that area to be flat when looking at that chart during the planning stages. There were no severe changes in depth or bottom in that area. It's my belief, based off the other areas around it and the amount data that is highlighted on the chart, it's my belief that it was a charted area, that there was sounding data, and that it was a flat spot." [encls (7), (8)]

196. (U) The CO saw chart preparations for the trip to Brisbane going on since November 2004. During the chart preparation process, before his formal review to go through the checklist, the CO conducted a detailed review of the chart with SUBNOTE 001 plotted on it. [encl (4)]

197. (U) ET1(SS) [REDACTED] prepared the track plan and MHN for SUBNOTE 001 using two separate Planned Ops/Navigation Checkoff forms. [encls (9), (10), (93)]

198. (U) ET1(SS) [REDACTED] initialed the front page of the Planned Ops Checklist used for preparing chart E2202 while he was preparing the voyage plan for SUBNOTE 001. [encls (7)-(10), (93)]

199. (U) ET1(SS) [REDACTED] did not initial the Planned Ops Checklist as he completed steps 2 through 6 (pages 2 and 3) while preparing chart E2202 for the voyage plan using CTF74 SUBNOTE 001. He did initial blocks for all other charts prepared on the same checklist. [encls (7)-(10), (93)]

200. (U) The ANAV stated, "It is my anticipation that ET1(SS) [REDACTED] will initial each one of the lines in the checklist."

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However, I've never enforced that [a]s long as I ask the question if the checklist was used and the prepared signature on the chart itself is signed for." [encls (7),(8)]

201. (U) ET1(SS) [REDACTED] initialed the front page and the step by step columns of the separate Planned Ops Checklist used for preparing charts 81048, 81060 and E2203. [encls (7)-(10),(93)]

202. (U) The CO stated, "I expect the NAV to look at every chart. I would expect them to present to me the best chart to navigate on." [encl (4)]

203. (U) The CO stated, "I did not look at the 81023... I did not look at that chart. I did not ask if there was another chart of this area." [encl (4)]

204. (U) The CO reported having full confidence in LCDR [REDACTED] abilities as NAV and as a voyage planner. He reported finding few errors in his chart reviews. [encl (4)]

205. (U) The CO evaluated the Navigation Department as his best department on the ship. He considered navigation to be one of the ship's strong areas upon taking command. [encl (4)]

206. (U) The CO depended on the XO (a served Navigator) to mentor and train the Navigator, not feeling confident in his own abilities in this area. [encl (4)]

207. (U) In comparing charts after the grounding, the CO stated that there is significantly more information on Chart E2202 than on Chart 81023 in terms of sounding data. However, the CO added that he did not look at Chart 81023 before getting underway and it was his general knowledge that Echo charts are significantly better. [encl (4)]

208. (C) Regarding why he had [REDACTED]

[REDACTED] [.]" [encl (4)]

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209. (U) Chart E2202 is not classified. The CO initially said he thought chart E2202 was classified. When he reviewed the chart during his interview, he realized the Chart was not marked CONFIDENTIAL. [encls (4), (43)]

210. (U) The CO said he did not look at any bathymetric survey information on the right side of the chart and did not review the bathymetric survey information relative to the SUBNOTE track. [encl (4)]

211. (U) The CO stated, "I am aware of the navigation practice of transferring soundings and navigation hazards from one chart to another chart. I would expect that to be done." [encl (4)]

212. (U) The CO stated, "they should have laid our track down on the 81023 chart. When they laid it down on that chart, they should have looked around for navigation hazards, and then transferred them over to the chart." [encl (4)]

213. (C) The ship did not use chart 81023 to verify that the MHN track was safe for navigation. According to interviews with the CO, XO and NAV, SAN FRANCISCO had operated in vicinity of the [REDACTED] of chart E2202 [REDACTED] and had [REDACTED] the E2202 and 81023 charts prior to those operations in [REDACTED] and [REDACTED]. None of the crew involved in Navigation for the January 2005 voyage had transited the Caroline Islands region previously. [encls (4)-(10)]

214. (U) ET1(SS) [REDACTED] and the ANAV said they compared charts E2202 and 81023 in [REDACTED] and agreed that the scales were really close and the sounding data was better on E2202. [encls (9), (10)]

215. (U) When ET1(SS) [REDACTED] pulled chart 81023 from the chart locker, looked at it and remembered how he and the ANAV [REDACTED] "while marginally better in scale, was not nearly as good in sounding data as chart E2202" and put it back in the drawer. [encls (9), (10)]

216. (U) The ANAV reviewed chart 81023 for 15 minutes on 05 January 2005 and noted the corrections from the previous operation in [REDACTED]. He then compared the scales between

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chart 81023 and E2202 and felt the scales were virtually the same. Based on that, and the fact he already reviewed the chart extensively in October, he put chart 81023 away. [encls (7),(8)]

217. (U) The ANAV and ET1(SS) [REDACTED] made the decision to not use chart 81023 while transiting the area of the grounding through the Caroline Islands. [encls (7)-(10)]

218. (U) The XO did not discuss with the ANAV or NAV other charts that cover the area of the grounding. [encl (5)]

219. (U) The XO said he did not know of chart 81023's existence, nor was it presented to him during his review of chart E2202. [encl (5)]

220. (U) When asked how he determined the E2202 chart was the better chart to use, the NAV stated that in his opinion E2202 had better sounding data by review of the contour lines. With respect to the 81023 chart, the NAV stated "It doesn't have contour lines on it. It does have sounding information but it does not have contour lines. Typically on SAN FRANCISCO when faced with this situation of a chart nearly the same scale we use the bottom contour charts because they are in my experience, they have better sounding information and also allow you to more accurately determine whether sounding checks with chart." [encl (6)]

221. (U) The ANAV said, "I did not take both charts [81023 and E2202] and look at them side by side for this transit. In reference to the sounding data, I looked at the Echo chart and looked at the sounding tracks that are provided on the right hand margin. I did look at that prior to this underway. I looked at the sounding tracks and at how many lines are on the chart and how many survey or sounding tracks are on the diagram to the right. That tells me that it was surveyed to some extent and that the sounding data with the contour lines that are available are better than the sporadic dots and sounding marks from the 81023." [encl (7)]

222. (U) The XO stated, "It's my opinion that these Echo Charts have been the best charts we've had... My belief was that the classified charts with the contours on them were the best product that the Navy had to offer... We look at other charts and you see the sounding data is not as extensive and feel that this would be a better chart in general[.]" [encl (5)]

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223. (U) When asked to compare sounding data between chart E2202 and chart 81023, the CO stated "From my review of the chart E2202, I looked to see the quality of the soundings by viewing the contours and sounding data throughout... I would say the contours indicate it's getting deeper there, there being where the incident occurred. Most of the time, it says where they've taken the data or talks about where the sources are. The easiest is just to compare this to that. It's not incredibly easy to do. In my opinion, [the sounding data on chart E2202] seems to be pretty decent. I don't know which chart is better between the E2202 or the 8100 series charts." [encl (4)]

224. (U) Chart INT 507 was not used in voyage planning for the Brisbane transit. [encls (4)-(10)]

225. (U) Charts 81048, 81054, 81060 and E2203 were approved by the CO prior to getting underway. Charts E2202, E2102 and E2101 were approved by the CO after the ship was underway. [encl (93)]

226. (U) ET1(SS) [REDACTED] did not know about the "Discolored Water Rep" spot on chart 81023. [encls (9),(10)]

227. (U) ET1(SS) [REDACTED] stated, "when I was looking at 81023, I do not remember a discolored water spot in the position relative to where the incident occurred. I did not plot the track on chart 81023 because I had determined the scales were close and the sounding data was phenomenally better on the other chart." [encl (9)]

228. (U) The CO, XO, NAV and ANAV did not know of the "Discolored Water Rep" prior to the ship grounding. [encls (4)-(8)]

229. (U) No navigation hazards were plotted on chart E2202 from other charts. [encls (6)-(10)]

230. (U) ET1(SS) [REDACTED] reviewed PUB 126 Sailing Directions 2002 6th edition (PUB 126) during the voyage preparation of SAN FRANCISCO's SUBNOTE. He stated, "There was no discernable information that I got from the Sailing Directions. I opened the Sailing Directions and read through the voyage plan that I had on this chart. I couldn't receive any discernable information from the area that would apply to my SUBNOTE." [encls (9),(10)]

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231. (U) The ANAV stated, "I did not review Sailing Directions SD PUB 126 for this chart this time." [encls (7), (8)]

232. (U) Regarding PUB 126, the NAV stated, "I did not review that for this. We were not approaching within ten nautical miles from land and Sailing Directions cover information prior to entering ports." [encl (6)]

233. (U) The XO did not review PUB 126 during his review of chart E2202. He stated, "it's not a habit of mine to use Sailing Directions for open ocean... In this case, with the water being so deep and we're in a SUBNOTE, it didn't occur to me to use it... I didn't think to consult the Sailing Directions." [encl (5)]

234. (U) The CO stated, "in my past experience I would expect the Sailing Directions to be brought to me if they had relevant information... The type of information that I've seen in Sailing Directions previously was more related to piloting... when I asked them the question if they reviewed the Sailing Directions, and they told me no, I wasn't surprised." [encl (4)]

235. (U) The CO did not review PUB 126 during his approval of chart E2202. He stated, "I did not ask for the Sailing Direction reference." [encl (4)]

Underway Operations Pre-Grounding

236. (U) According to the CO, the crew of SAN FRANCISCO was proficient and operating "at the top of our game" at the time of the underway on 7 January 2005 based on mission and recent inspection results. [encl (4)]

237. (U) In January 2005 CSS-15 awarded SAN FRANCISCO the Squadron's Navigation "N", The Deck "D", the Damage Control "DC", the Supply "S" and the Medical "M" for 2004. [encls (4), (94)]

238. (U) LCDR [REDACTED], the CSS-15 Engineer, stated that the awarding of the Navigation "N" to SAN FRANCISCO related it being a two boat squadron [REDACTED]. [encl (253)]

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239. (U) During a six week ride in Fall 2004, the CSS-15 Engineer observed the SAN FRANCISCO team was pretty weak with the exception of the CO and COB. He added that the CO got very little support from key players and that there was little back up, not only in navigation, but across the board. During the same period the CSS-15 observed that CO was always driving things down with things never coming up to him. He observed that the CO was implementing a cultural changed resisted by others. [encl (253)]

240. (U) According to the CSS-15 Engineer, another Post-XO rider, CDR [REDACTED], described with concern observing a full or flank bell transit conducted by SAN FRANCISCO through challenging waters. [encl (253)]

241. (U) The CSS-15 Engineer observed that SAN FRANCISCO had a habit of operating the ship at high speeds and was aggressive about handling the ship. [encl (253)]

242. (C) In [REDACTED] SAN FRANCISCO received an [REDACTED]
[REDACTED]
[REDACTED]
SAN FRANCISCO received an ABOVE AVERAGE during a Tactical Readiness Evaluation (TRE) and was certified to carry Mines based on a Mine Readiness Certification Inspection (MRCI) during the previous year. SAN FRANCISCO successfully [REDACTED]
[REDACTED] [encls
(4), (16), (17), (95)]

243. (U) CDR [REDACTED], CSS-15 Deputy Commander, assessed the root problems on SAN FRANCISCO in July as follows: "Captain, after spending 3½ days on SAN FRANCISCO I believe we have reaffirmed many of your previous assessments as to the nature of the problems on board. I believe the five main factors contributing to the ship's problems are:

- a. Entrenched informality.
- b. Poor deck plate supervision.
- c. Lack of effective key personnel.
- d. Lack of experienced personnel.
- e. Low OPTEMPO."

[encls (257)-(259)]

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244. (U) Prior to departing Guam, only the first three charts of the transit had been approved through the CO. These charts were scheduled to be used through the evening watch of 7 January 2005. [encls (4), (6), (93), (97), (98)]

245. (U) During the afternoon and evening watches on 7 January 2005, the CO reviewed the next three charts required, covering the areas from the Caroline Islands to the Bismarck Archipelago. These three Echo charts were approved without correction. [encls (4), (97), (98)]

246. (C) Upon review of the entire SUBNOTE track to Australia, the CO recognized that the SUBNOTE would require [REDACTED]

[REDACTED]. [encl (4)]

247. (U) The ship's focus for the transit to Australia was to conduct watchstander qualifications. [encls (4)-(6), (94), (95), (102)]

248. (U) The CO reported "feeling ill" during the several days preceding the underway and the first two days of the transit. He experienced fatigue, low-grade fever and loss of appetite, but had not seen medical personnel, nor taken any medication other than Motrin and throat lozenges. He rested more than normal due to the illness, but reported still carrying out his normal duties: "I was at full power." Other members of the ship's leadership and watchstanders reported him resting for several short periods during the day on 7 and 8 January 2005, including 1020-1120 on the morning of the grounding. [encls (4)-(6), (103)]

249. (U) The ship scheduled a "Crossing the Line" ceremony for 2000K, 8 January 2005, roughly coinciding with the ship's scheduled equator crossing. Some planning and preparatory activity occurred prior to underway and during the underway period before the grounding. The underway activity included an unscheduled 24-minute battlestations period the afternoon of 7 January 2005 following the prank removal of the CO stateroom door, a brief ceremony the evening of 7 January 2005, and a planning meeting for "shellbacks" the morning of 8 January 2005. SAN FRANCISCO's leadership said these events did not distract the crew or the leadership from operations in progress. [encls (4), (5), (94), (102)-(104)]

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250. (U) SAN FRANCISCO leadership held an Ops Brief at 1600K on 7 January 2005. No charts were brought to the meeting, and no discussion of the overall voyage plan or the next day's planned transit of the Caroline Islands was held. The meeting focused on material, training and general scheduling items. It lasted approximately 20 minutes. [encls (4)-(6), (94), (95)]

251. (C) The scheduled evening periscope depth evolution on 7 January 2005 was conducted [REDACTED]

[REDACTED] During an attempt to [REDACTED]

[REDACTED] The ENG attributed the problems to "

[REDACTED] " The CO considered the root cause was [REDACTED]

[REDACTED] [encls (4), (60), (95)]

252. (C) SAN FRANCISCO left the [REDACTED]

[REDACTED] chart E2203 [REDACTED]

[REDACTED] [encls (2), (53), (60)]

253. (C) SAN FRANCISCO shifted onto chart E2202 [REDACTED]

[REDACTED] Although this chart was approved [REDACTED]

[REDACTED] [encls (4), (48)-

(51), (53), (60), (97), (98), (107), (108)]

254. (U) CO reported being very confident in the chart selected for this transit. "I've gone out with these [echo] charts and believed in them. I think I've already stated on several occasions, I had a lot of confidence in this chart [E2202]." [encl (4)]

255. (U) The CO reported that he considered the passage of the Caroline Islands under SUBNOTE 001 to be an "open ocean transit." He described the route through the islands as a "40 mile wide road" centered on his track with no navigational hazards. [encl (4)]

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256. (U) Based on interviews with CO, XO, NAV, and ANAV there had been no instances when SAN FRANCISCO imposed operational constraints on ship's speed or depth due to navigational considerations except when the ship was operating in "restricted waters." [encls (4)-(8)]

257. (U) Other OODs and supervisory personnel also considered this a "standard transit" and "routine." [encls (5), (95), (97), (98)]

258. (U) CO's Night Orders of 7-8 January 2005 directed the OOD to "drive to get [REDACTED] NM ahead, do not get more than [REDACTED] NM behind," and to stay within 4 NM of SUBNOTE track. Maximum speed authorized in the night orders was "Full." There was no plan to station the piloting party or modified piloting party mentioned in the night orders, nor were there any additional navigation precautions imposed. [encls (4), (97), (98), (102), (107) (108)]

259. (U) Although CO verbal direction to the 7 January 2005 1800-2400 watch OOD (LT [REDACTED]) was to get ahead, the OODs did not believe there was an urgent requirement to get far ahead of PIM. The basis for getting ahead was described by the NAV and other OODs as ship's practice, and in anticipation of a drill period to be conducted in the afternoon. The CO stated there was "no particular urgency" but that the ship was constantly doing training and evolutions and had a full schedule for the next afternoon. [encls (4)-(6), (97), (98), (109)]

260. (C) ET2(SS) [REDACTED] the 0000-0600 watch QMOW on 8 January 2005, said he expressed concern about transiting the Caroline Islands to the OOD and off-going QMOW while preparing to relieve the watch. He wondered if "it would be a good idea to station the modified piloting party because of the island chains. The island chains were a concern to me because I have never seen anything driven through the islands like that. I just thought maybe. I don't know when it was the last time that anyone drove through there. The soundings were old, especially with islands; they kind of grow fast. I remember asking someone, I don't remember who, who had drove through the islands before, they said this was a [REDACTED]"

[REDACTED] I was talking to the ANAV, who said it was a [REDACTED]. I left my concerns with the Officer of the Deck." Although neither the off-going QMOW nor the OOD (LT [REDACTED]) remember ET2(SS) [REDACTED] specific

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question, the OOD does remember a discussion about the modified piloting party during his watch. The OOD convinced the QMOW that the modified piloting party was not required due to distance from the ship's track to charted land and shoal water. [encls (50), (51), (107), (108)]

261. (U) No member of the command team reported being concerned for navigational safety on chart E2202 when deciding to authorize or order flank speed. [encls (4)-(6), (97), (98), (102), (109)]

262. (U) According to his statement, the 1800-2400 watch OOD on 7 January 2005 discussed operations at Ahead Flank with the CO, however did not get specific direction to correct the night orders, nor did he discuss the limitation of Ahead Full written in the night orders. OODs stated that they were not aware of the CO Night Order limit being "Ahead Full." The CO stated that he did not remember limiting the ship's speed to Ahead Full in his Night Orders. [encls (4), (95), (97), (98), (102)]

263. (U) The ship's Deck Log documents LCDR [REDACTED] (ENG) as having the Conn for the entire 1800-2400 watch, however he stated that he only had the watch for approximately one hour at the start of the watch, and secured as OOD under instruction (a proficiency watch) to supervise engineering plant maintenance. [encls (60), (95), (97), (98)]

264. (U) According to fathometer logs, during the 1800-2400 watch on 7 January 2005, 15 minute soundings taken with the BQN-17 fathometer varied between 1771 and 4910 fathoms total water depth. All soundings showed deep water with shallowing gradients of over 1300 fathoms per hour were observed at times, however, all soundings were consistent with charted soundings north of the Caroline Islands exiting the region of the Marianas Trench. [encls (53), (61), (110)]

265. (U) QMOWs reported that BQN-17 fathometer soundings during this transit were taken using the aural method only. Digital readouts and the paper trace were not used because they were considered unreliable. [encls (19), (48)-(51)]

266. (U) Although the OODs for the 1800-2400 watch on 7 January 2005 and the 0000-0600 watch on 8 January 2005 discussed operating at Ahead Flank during their turnover, neither annotated the change in limit specified in the night orders. No member of the watch team questioned the operation at flank

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speed, above the night orders authorized maximum. [encls
(6), (97), (98), (102), (107)-(109)]

267. (U) At the time of watch turnover at 0600K on 8 January 2005, SAN FRANCISCO was [REDACTED] NM ahead of PIM. Due to periscope depth evolutions during "Field Day" (a detailed cleaning of the ship), SAN FRANCISCO had fallen back to [REDACTED] NM ahead by 0945K when the ship secured from periscope depth, and [REDACTED] NM ahead when flank speed was ordered at 1131K. [encls (2), (6), (53), (97), (98)]

268. (U) Following scheduled officer training, LCDR [REDACTED] (NAV) relieved the watch at 0930K, with LTJG [REDACTED] taking the Conn as OOD under instruction. At 0958K the Deck Log records the NAV taking the Deck and the Conn, however interviews with the NAV and LTJG [REDACTED] report that LTJG [REDACTED] retained the Conn until the ship grounded at 1142K. [encls (6), (60), (109)]

269. (U) The CO's principle objectives for the periscope depth period during the 0600-1200 watch were to ventilate the ship coincident with Field Day (ship-wide cleaning) and obtain email traffic from the Defense Attaché's office in Australia relating to the upcoming visit to Brisbane. [encls (4), (102)]

270. (U) CO's Night Orders for 7-8 January 2005, effective up to the time of the grounding, prescribed a fix and sounding interval of 15 minutes. [encls (4), (6), (102)]

271. (U) Based on his preliminary review of charts while in port, the CO thought the ocean bottom in the area surrounding the SUBNOTE 001 track was "quite varied." [encl (4)]

272. (U) Although he approved Red and Yellow soundings on the transit charts, a sounding interval of every [REDACTED] minutes, and (b)(2) operations to maximum operating depth at speeds up to maximum, the CO acknowledged in his interview that "without the fathometer in continuous, the Red and Yellow soundings methodology is of limited use." [encls (4), (102)]

273. (U) The 0645K sounding on 8 January 2005 was 832 fathoms beneath the keel, which translated to a total water depth of 935 fathoms. The charted water depth was between 1200 and 1300 fathoms. This sounding did not meet the ship's requirements for "checking with chart." Neither the QMOW nor the OOD noted or reported the discrepancy. [encls (6), (19), (35), (43), (53), (60), (61)]

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274. (U) Field Day was conducted from 0700K to 1000K on 8 January 2005. Control watchstanders reported not being distracted from their duties by the cleaning evolution. [encls (6), (48), (49), (94), (111), (112), (119)]

275. (C) Sonar Search Plan. There was [REDACTED]

Although [REDACTED]

[REDACTED] [encls

(6), (97), (98), (105), (107), (108), (111), (113), (114)]

276. (U) The CO had not promulgated any formal guidance on setting up the Control Room VMS displays available to be monitored remotely in his stateroom. [encls (4), (35)]

277. (U) The digital nautical charts loaded in VMS depicted a shallow danger spot correlating to the discolored water plotted on chart 81023 within several miles of the ship's intended track. Although the VMS chart was displayed on the Conn for the entire transit of the 090 track leg from 1028K to the grounding at 1142K on 8 January 2005, no watchstander noticed it. [encls (7) - (10), (19), (48) - (52), (57), (115), (116), (117)]

278. (U) Weather in the area at the time of the grounding, as reported upon emergency surfacing and manning the Bridge was: clear sky, excellent visibility, sea state 0-1, visibility 10 NM, 30% cloud cover, 2-4 ft wave height, seas from 090, wind 3-5 kts from 090. [encl (123)]

279. (U) The last recorded sounding in the fathometer log prior to grounding was 1032 fathoms beneath the keel, taken at 1130K. The BQN-17 fathometer was set to DEEP-NON SECURE operating mode, MANUAL keying mode, sounding displayed in fathoms. The ship increased speed to Ahead Flank and was ordered to depth 500 feet from 400 feet at 1131K. The OOD and QMOW did not take an additional sounding prior to changing depth, stating that they "had just taken one." [encls (6), (19), (53), (61), (109)]

280. (U) Soundings in the hour before the grounding had been trending shallower, but remained between 1494 and 998 fathoms (total water depth) and were consistent with chart E2202. [encls (43), (61)]

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281. (C) At 1138K on 8 January 2005 at [REDACTED] [REDACTED] [REDACTED]. Although required by CO Standing Order 2 when going deeper, [REDACTED] LT [REDACTED] the OOD under instruction, stated to the OOD that [REDACTED]. The OOD told him that a [REDACTED] Four minutes later, the ship grounded at 07°44.7'N, 147°11.6'E. [encls (6), (47), (60), (61)]

282. (U) The ship's course was altered to starboard during the grounding. After the Emergency Surface, the Helmsman resumed ordered course of 090. The ship continued on the 090 course until 1202K and then reversed course to the left to 270 driving about 800 yards South of the grounding area between 1215K and 1230K." [encls (53), (60), (101)]

Casualty Response

Ship's Status at the Time of Grounding

283. (U) At the time of the grounding, the ship was rigged for high-speed operations. Normal underway watches were stationed. No other significant evolutions were in progress. [encls (6), (19), (112), (122), (124)-(130)]

284. (U) The rig for high-speed operations placed the ship in a condition of maximum safety for submerged operations by imposing special measures and procedures designed to control or to recover from ship control casualties. [encl (131)]

285. (U) Lunch was in progress when the grounding occurred. [encls (7), (94), (103), (111)]

286. (C) The BQN-17 was [REDACTED] [REDACTED]. The BQS-15 [REDACTED] [REDACTED] [encls (61), (132), (133)]

287. (U) No towed sonar array or floating wire was deployed at the time of the grounding. [encls (6), (121)]

288. (U) Shortly before the grounding, Sonar gained DIMUS trace bearing 090T (000R) and was drawing left over a two minute

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interval to 060T (330R), the DIMUS trace was approximately 20 degrees wide, initially classified as environment or rain. The AN/BQQ-5 Spherical Array Passive Broad Band (SAPBB) sonar system was operated in the [REDACTED] mode. The AN/UQN-9 was recording at the time of the grounding. Post-analysis showed a combination of background (biologics, ambient noise) and own-ship flow noise. When the Sonar Supervisor directed [REDACTED] to be secured to gain and analyze the DIMUS Trace, the trace faded. [encls (100), (113), (121)] (b)(2)

289. (U) The DIMUS trace bearing 093T was reported to the OOD as environmental and was not sent to the Fire Control system. [encls (100), (118), (134)]

290. (U) The QMOW on watch at the time of the grounding, ET2(SS) [REDACTED], said he was knocked unconscious for a short time when the ship grounded. According to the ship's Deck Log, the grounding occurred at 07°44.7'N, 147°11.6'E. A relieving QMOW, ET2(SS) [REDACTED], stated that this Deck Log position was taken from the RLGN remote touch screen display that was paused some time after the grounding. [encls (19), (50), (60)]

291. (U) Based on a second-by-second analysis of the ship's deceleration recorded in RLGN channel 1 data, the ship grounded at 1142K (and 20 seconds) at 07°45.5'N, 147°12.3'E. [encl (60)]

292. (C) According to the [REDACTED], SAN FRANCISCO grounded within [REDACTED]

chart 81023

[encls (53), (60), (137), (146)]

293. (C) SAN FRANCISCO had been operating with a [REDACTED]

[REDACTED] chart 81023. The LANDSAT shoal water feature [REDACTED]

[REDACTED]. [encls (43), (53), (102), (137), (146)]

294. (U) SAN FRANCISCO grounded on a seamount. Rocks were found inside the forward ballast tanks, sonar dome, and wedged in the

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torpedo tube shutter doors. This grounding was reported as two distinct impacts occurring in rapid succession. [encls (13), (14), (135), (136), (138)]

295. (C) SAN FRANCISCO [REDACTED]

[encl (101)]

296. (U) At time of grounding:

a. The CO was in the Wardroom sitting at the head of the table and sustained no injuries. [encl (4)]

b. The XO was in Control next to the Helm and was [REDACTED] shearing off an Emergency Air Breathing (EAB) manifold and [REDACTED] outside the CO's Stateroom door. [encl (5)]

c. The COB was sitting in the CPO quarters on the outboard bench locker. [encl (103)]

d. The OOD was standing six inches starboard of centerline and [REDACTED] [encl (6)]

e. The Ship's Independent Duty Corpsman (IDC), HM1(SS) [REDACTED], was in the crews washroom second level and sustained no injuries. [encl (139)]

f. LTJG [REDACTED] was the Conning Officer. He was standing next to the NAV near the ASVDU (sonar repeater) and sustained a [REDACTED] into the Ship's Control Party chairs. [encl (109)]

297. (U) The ship was rigged for high speed operations with the following exceptions:

a. The Diving Officer of the Watch (DOOW) did not have his seatbelt fastened. He was annotating Red, Yellow and minimum expected sounding information on the placard on the SCP.

b. The Chief of the Watch (COW) did not have his seatbelt fastened; he was retrieving a binder in support of the 1200 position report and contacting the COB on the MJ sound powered phones.

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c. The Engineering Officer of the Watch (EOOW) did not have his seatbelt fastened due to watch relief.

d. The Reactor Operator was not sure if he was wearing a seatbelt, but he did not have significant injuries.

e. The Throttleman did not have a seatbelt. Per NAVSHIP drawings the Throttleman chair is not equipped with a seatbelt. SSM OP 61-11. [encls (112), (124), (126), (127), (130), (141), (142)]

298. (U) The DOOW was injured when the DOOW chair was dislocated from the base by the impact of a unidentified person, (possibly ET2(SS) [REDACTED] This caused the DOOW's [REDACTED] [encls (112), (143)]

299. (U) The COW sustained injuries from [REDACTED] [encls (124), (143)]

300. (U) The Throttleman [REDACTED] [encls (130), (143)]

Emergency Procedures

(U) 301. Emergency procedures are actions taken immediately to enhance the ship's ability to minimize effects of the emergency. Actions common to all emergencies include establishing communications, getting sufficiently qualified people to the scene, and securing nonessential evolutions. [encl (144)]

(U) 302. The General Emergency procedure is designed to localize the problem and minimize the probability of compounding the casualty. Combating the emergency successfully requires exercising judgment in an intelligent, coordinated effort. [encl (144)]

(U) 303. The Collision Procedure is designed to place the submarine in best position to control the effects of a collision, including damage to Main ballast tanks (MBTs) and ship control surfaces that may lead to loss of depth control. [encl (145)]

(U) 304. The Collision Procedure is implemented when collision is imminent or has occurred. Immediate actions include sounding the Collision Alarm and announcing that a collision has occurred. Immediate actions also include maneuvering the ship and taking

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Commanding Officer Responsibilities and Actions

40. (U) The Commanding Officer shall require the Navigator to develop a plan for safe and accurate navigation. The CO shall approved the plan before getting underway. OP 61-17 Section 1.4.a. [encl (36)]

41. (U) The ship shall thoroughly brief appropriate members of the ship's navigation and operational teams on each phase of the transit. NODORM Art. 5102.2.e. [encl (42)]

42. (U) The CO said the Operations Brief on 7 January 2005 "didn't talk about voyage planning". Other Wardroom members, including the XO, confirmed this statement. [encls (4)-(8)]

43. (U) The CO said he did not discuss voyage planning for this transit with CSG-7 and had never done so on previous SUBNOTES. He assumed CSG-7 used Echo charts for planning. The CO believes "the ship is fully responsible for safe navigation, not CSG-7." [encl (4)]

44. (U) Per OPORD 2000, the Commanding Officer is required to submit SUBNOTE change requests under certain circumstances. There is no restriction regarding when the Commanding Officer may send such a request. App. 1 to Annex C [encls (39), (66)]

Navigator Responsibilities and Actions

45. (U) The Navigator is required to prepare a voyage plan for safe and prudent passage and use the Voyage Manager Program to lay out the ship's track. The Voyage Planning function of the Voyage Manager serves to generate voyage plans in port and display voyage plans at sea. OP 61-17 Sections 2.3.1.a, 2.3.1.d. [encl (36)]

46. (U) The CO expected the NAV to review all charts available for the areas of operations, select the best charts, and only present the recommended charts to the XO and CO for review and approval. [encl (4)]

Assistant Navigator Responsibilities and Actions

47. (U) The Assistant Navigator is required to ensure that all necessary navigational information is available and up-to-date prior to ship's movements and must review and submit all prepared checklists, voyage plans, and prepared charts and

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publications to the Navigator for review prior to use. NODORM
Art. 1102 Para. 2.i, Para. 2.k [encl (41)]

48. (U) "The Navigation Division Planned Operations Checkoff
List (Art. 5114) is designed to prepare charts for operations
outside piloting waters." NODORM Art. 5102.3.c. [encl (42)]

49. (U) SAN FRANCISCO's navigational chart at the time of the
casualty, chart E2202, was corrected and up to date through the
latest Notice to Mariners. [encls (43), (231), (234), (235)]

Operational Navigation Execution

General

50. (U) OP 61-17 Section 2.3.4 defines operations as either "in
restricted waters" or in "open ocean." [encl (36)]

51. (U) CO Standing Orders caution the crew that "at no time
should total confidence be placed in a single device or
watchstander with regard to navigation." COSO 4, Art. 0430
[encl (35)]

52. (U) OP 61-17 Section 2.3.4.j(4) directs that "when
approaching shallow water while submerged and when authorized by
the Navigator, soundings shall be taken at intervals frequent
enough to ensure that the ship will not proceed into dangerous
water during the interval between soundings. Consideration must
be given to the bottom contour being approached." [encl (36)]

53. (U) During open ocean navigation, OP 61-17 Section
2.3.4.a(6) requires the ship to evaluate "the worst case
position with respect to shoal water or operating area
constraints and projection of when action will be required based
on best and worst case estimated position to avoid a red or
yellow sounding." [encl (36)]

54. (U) CO Standing Orders state that "Unusual coloring of
water" was one of the indications of shoal water. COSO 4, Art.
0455. [encl (35)]

55. (U) CO Standing Order 0420.a define operating in restricted
waters as "operating surfaced or submerged within 10 NM of land,
in shoal water or near other hazards to navigation." When
submerged shoal water is defined as less than 100 fathoms (600

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ft.) deep. "Near other hazards to navigation" applies whenever
within 2 NM of such hazards. [encl (35)]

56. (U) CO Standing Orders specify that when conducting
operations in shallow water, the modified piloting party "shall
be on station prior to entering within 10 NM of the 100 fathom
curve and will remain stationed until greater than 10 NM from
the 100 fathom curve." This is more conservative than the
stationing requirements for normal operations (stationed prior
to 10 NM from land or when operating in water less than 100
fathoms.) COSO 4, Art. 0410, 0420 [encls (35), (45)]

57. (U) OP 61-17 Section 2.3.3 provides the following guidance:

a. "When operating in restricted waters during section
steaming watches, proper caution must be exercised to safely
navigate the ship... The Navigator will recommend, for the CO's
approval, additional watch stations to be manned... to ensure
safe navigation. The Navigator ANAV shall supervise the piloting
party consistent with the navigation challenges facing the
ship."

b. "The OOD's navigational duties are as follows: The OOD
underway shall keep himself continually informed concerning the
geographic factors which may affect the safe navigation of the
ship, and take appropriate action to avoid the danger of
grounding... In no case shall the [OOD, the QMOW, and other
watchstanders responsible to the OOD] hesitate to station or
recommend stationing the full maneuvering watch piloting party
or to request additional navigation personnel assistance." [encl
(36)]

58. (U) OP 61-17 Section 2.3.4.a provides the following
guidance: "Navigation in open ocean shall consist of the
following elements: Periodic fixing by all available means and
evaluation of fixes; Evaluation of position uncertainty;
Continuous position keeping by recording and plotting at least
three independent methods; Comparison and evaluation of the
independent position keeping methods; Evaluation of worst-case
position with respect to shoal water; Careful examination of
charts; and Use of the Fathometer consistent with the nature of
the bottom and the degree of accuracy to which the bottom
topography is charted." [encl (36)]

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59. (U) NODORM Art. 5108.2 states, "Written guidance in the Night Steaming Orders shall be thorough and not leave anything to chance." [encl (46)]

60. (U) "Open ocean navigational practices must be conducted within operational limits prescribed by the CO. These limits describe the safe navigational envelope of the ship and will normally be set forth by the CO in his night orders." OP 61-17 Section 2.3.4.b. [encl (36)]

61. (U) OP 61-17 Section 2.3.4.c directs that ship's position shall be fixed as often as required for safe navigation and that all fixes be evaluated by the Officer of the Deck and the Navigator (or Assistant Navigator) for accuracy and consistency. [encl (36)]

62. (U) Position uncertainty is a tool for the Officer of the Deck and the Quartermaster of the Watch to ensure the ship does not run aground. All plotted positions must remain within the position uncertainty circle. OP 61-17 Section 2.3.4.e. [encl (36)]

Officer of the Deck Responsibilities and Actions

63. (U) Per CO Standing Orders, the Officer of the Deck is the CO's direct representative in all matters related to the ship's operation. The Officer of the Deck remains responsible for safe operation of the ship even if a junior officer is stationed with the Conn. COSO 1, Art. 0100, 0120. [encl (44)]

64. (U) OP 61-17 Section 2.3.4h. requires the Officer of the Deck, in open ocean navigation, to "carefully check the intended track or operating areas on the charts in use for the period of his watch, looking for areas where shallow water or other navigational hazards exists sufficiently close to the track to represent a hazard." The Officer of the Deck is tasked to use both worst and best estimates of ship's position and to determine when action will be required to prevent receipt of a yellow or red sounding." [encl (36)]

65. (U) "With the advice of the NAV, the OOD is responsible for conning the ship to avoid grounding, collision, and other hazards. The OOD should call the Navigator any time he is in doubt of the ship's navigational safety." OP 61-17 Section 2.3.4.g. [encl (36)]

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66. (U) "The [OOD] shall. . . [e]nsure estimated positions from the ship's inertial navigation system and electronic DR are plotted on the chart at least every 30 minutes. Verify that the ship is not standing into danger... Ensure close attention is paid to the hourly compass checks... Ensure the Fathometer is used as required in accordance with the ship's prescribed policy... Ensure all opportunities to use the bottom topography for navigation purposes are exercised." OP 61-17 Section 2.3.4.h. [encl (36)]

67. (U) CO Standing Orders require the Officer of the Deck to "always remain aware of the water depth beneath the keel and what it will be along the track. There have been a number of instances of submarines running into mountain peaks or the shoaling Continental Shelf because of failure to change keel depth to fit the track." COSO 2 [encl (47)]

68. (U) CO Standing Orders require that the Officer of the Deck, "except when "Emergency Deep" is ordered, always take a sounding prior to proceeding to a deeper depth." COSO 2 [encl (47)]

69. (U) CO Standing Orders direct that the Officer of the Deck is "the duty NAV and as such is directly responsible for safely navigating the ship during his watch... When at sea and particularly when approaching land or shoal waters, the OOD shall keep himself continuously informed of the tactical situation and geographic factors which may affect the safe navigation of the ship and take appropriate action to avoid the danger of grounding." COSO 4, Art. 0405 [encl (35)]

70. (U) CO Standing Orders require the Officer of the Deck to review navigation records and position data as part of pre-watch relief process, including reviewing water depth, projected track, navigation hazards and expected soundings. COSO 1, Art. 0115. [encl (44)]

71. (U) The NAV was the OOD at 080945K January 2005 and did not review the last GPS fix prior to the ship going deep. [encls (6), (53)]

72. (U) The last military GPS fix received prior to grounding was at 080945K and was reviewed by an OOD under instruction. [encls (6), (53)]

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73. (U) CO Standing Orders require the Officer of the Deck to obtain CO's permission before closing land closer than 14 miles or restricted waters closer than 10 miles. "Restricted waters" is defined as "operating surfaced or submerged within 10 NM of land, in shoal water or near other hazards to navigation," and further modified by the CO. [encl (35)]

Quartermaster of the Watch Responsibilities and Actions

74. (U) Safe navigation of the ship is the Quartermaster of the Watch's primary responsibility. NODORM Art. 2102. [encl (37)]

75. (U) Per NODORM Art. 2102.2.e Quartermaster of the Watch responsibilities include:

- a. Keeping required logs and records;
- b. Resetting the electronic DR source with the Navigator's approval;
- c. Operating the Fathometer to obtain a sounding with permission of the Officer of the Deck when any fix is obtained and at least every 30 minutes unless otherwise directed;
- d. Taking soundings prior to diving and prior to increasing depth as directed by the Officer of the Deck;
- e. Being careful to double-check all position plotting calculations and procedures;
- f. Ensuring that readings of the master RLGN and steering repeaters are compared every hour and ensuring that a simultaneous comparison of all installed heading sources and heading repeaters are made and recorded once each watch; and
- g. Obtaining a fix whenever possible by all available means.

[encl (37)]

76. (U) CO Standing Orders require the Quartermaster of the Watch to "review the intended track for the watch plus two hours and determine the uncertainty in the ship's position based on fix expansion, checking for navigation aids, depth of water,

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submerged interference, hazards to navigation, shift in soundings, depth zones assigned, shifts in CSE/SPD/DEPTH etc." prior to relieving the watch. [encl (35)]

77. (U) Between fixes, the ship's estimated position shall be maintained using Hand DR (Dead Reckoning), inertial navigation and Electronic DR. Hand DR is the process of determining a projected position by manually projecting ship's course and electromagnetic (EM) log speed ahead from a known position. OP 61-17 Section 2.3.4.d. [encl (36)]

78. (U) OP 61-17 Section 2.3.4.j states "Keel depth should be commensurate with the available depth of water with consideration given to the proximity of shoals and position uncertainty. Soundings shall be obtained... and compared to the ship's plotted position at specific intervals including:

- a. With each fix;
- b. Prior to submerging and prior to a significant increase in own ship's depth when submerged; and
- c. When operating in the vicinity of rapidly shoaling bottom gradients. In such case the Navigator shall reduce the specified sounding intervals such that at least three soundings are obtained before the ship enters within 1,000 yards of dangerously shallow water." [encl (36)]

79. (U) The Quartermaster of the Watch shall give prompt notice to the Officer of the Deck and Navigator if "any unexpected changes in soundings" occur. NODORM Art. 2102.2.a(4). [encl (37)]

80. (U) CO Standing Orders direct that if there is a discrepancy of 20% or more between actual depth and charted depth in water greater than 1000 fathoms the NAV is to be called Control and the OOD, ANAV, XO, and the CO are to be informed." [encl (35)]

81. (U) Per CO Standing Orders, "RED, YELLOW and Minimum Expected soundings will be conservative and realistic, selected not only to avoid shallow water but also to provide timely alert to possible navigational errors." [encl (35)]

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82. (U) OP 61-17 Section 2.3.4.i directs "A check of the master heading source and steering repeaters shall be made and recorded every hour... A simultaneous comparison of all installed heading sources and steering repeaters shall be made and recorded once each watch." [encl (36)]

83. (U) Per CO Standing Orders, "all soundings taken will be timed using a headset and stopwatch, then compared to the digital readout and the chart recorder. All soundings will be reported to the OOD... and include a statement concerning actual water depth compared to charted depth." [encl (35)]

84. (U) The majority of BQN-17 soundings taken during the transit from Guam to the Caroline Islands 7-8 January 2005 were taken using aural/stopwatch method only. [encls (19), (48)-(52)]

85. (U) CO Standing Orders direct watchstanders to "use all available sources of fix information. Bottom contour navigate whenever sufficient variation in bathymetry exists to permit obtaining fixes." [encl (35)]

86. (U) Per watchstanders' statements, no bottom contour fixes were obtained or logged on 7 or 8 January 2005. [encls (4), (6), (19), (48)-(51), (53)]

87. Contrary to OP 61-17, the QMOW and OOD failed to identify and subsequently notify the NAV of two situations where RLGN estimated positions fell outside position uncertainty. Specifically, OP 61-17 states, "the purpose of position uncertainty is to provide a tool for the OOD and QMOW to ensure the ship does not run aground" and that it provides "a trip-wire... to call the NAV to evaluate the navigation picture." [encls (36), (53), (59)]

88. (U) NAV Standing Orders Paragraph 3.a(2) require the Quartermaster of the Watch "to serve as [the NAV's] eyes and ears in Control. Do not rely solely on the judgment of the OOD... Make an independent assessment of the situation..." [encl (54)]

89. (U) QMOWs were directed to set up VMS with a variable range meter circle of 3NM radius when SSN-711 was operating in a MHN. [encl (54)]

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90. (U) QMOWs were directed to use Danger Areas to highlight shoal areas on VMS when operating in shallow water. No Danger Areas were set up on VMS for the Caroline Islands transit (ship's operations did not meet CO's definition of "operations in shallow water"). [encls (45), (54)]

91. (U) CO Standing Orders require the Sonar Supervisor to be aware of the navigation situation, back up the OOD, and be alert to changing external environments. [encl (55)]

92. (U) Electronic charts, including VMS, are not authorized as primary navigation reference material. SSM OP61-17 Section 1.2.i. [encl (36)]

93. (U) COMSUBPAC Readiness and Training Memorandum (RTM) 03-09 Paragraph 1 provides the following guidance: "The Voyage Management System and BPS 15H provide significant improvements in what can best be termed an "electronic seaman's eye." When properly utilized, these systems can provide a user interface that allows a Navigator or Conning officer to obtain an accurate, intuitive and graphical indication of the ship's real time and future position with respect to the approved navigational plan. VMS Mil 5.X is a first step towards the shift to Electronic Navigation, which will not be fully implemented until certification of VMS Mil 6.3. [encl (56)]

94. (U) RTM 03-09 Paragraph 2 states, "Prudent Navigation requires use of all available sources to fix ship's position. While the Mil 5.X software is not authorized for use as the sole Navigational plotting source, a ship is not utilizing a valuable tool if some basic capabilities of the BPS/VMS combination are not employed. When these systems are available, employment of their most useful capabilities should be considered mandatory for prudent Navigation and Contact Coordination. Primary capabilities, use of which should be considered mandatory when available, are as follows... The current Voyage Plan is loaded and running." [encl (56)]

95. (U) SAN FRANCISCO does not use RTM 03-09, which gives guidance for using VMS during piloting and while in open ocean. [encl (57)]

96. (U) NAV Standing Orders had not been revised since 20 November 2002 (current NAV and previous CO). No changes were made to NAV Standing Orders procedures for conducting a sail

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closeout, even though a major incident causing equipment damage had occurred in August 2004 due to improper closeout and a ship's instruction had been issued to cover this process. [encl (54)]

Logkeeping Requirements

97. (U) Ship's Deck Log. In addition to the basic requirement to log significant circumstances and occurrences, the NODORM requires the Quartermaster of the Watch to ensure the Log is up to date and accurate before relieving the watch and requires compass checks to be logged. NODORM Art. 2102.2.c and 6101.3.j [encls (37), (58)]

98. (U) Ship's Position Logs. The NODORM establishes the following requirements for maintaining the Ship's Position Logs:

- a. Use a line entry when shifting logs and to log ship's track;
- b. That all fixes be evaluated by the Officer of the Deck and either the Navigator or Assistant Navigator, and that the evaluating individual initial alongside the entry in the remarks column;
- c. Log reset of Hand DR, DDRT Plotter or RLGN and that Officer of the Deck (or in unusual circumstances Navigation Watch) verify reset and initial in remarks column;
- d. Log total water depth with each logged ship's position and with each fix;
- e. That the NAV review the Position Log at random intervals daily indicated by line entry and signature.
- f. That the ANAV review the Position Log frequently (along with other navigational logs and reports) and indicate by initialing each page. (NODORM 1102, 6103) [encls (41), (58)]

99. (U) Ship's Fathometer Log. The NODORM requires all soundings to be taken with the ships fathometer and be recorded with associated times. The Assistant Navigator is responsible for reviewing and maintaining the Fathometer Log. NODORM 1102, 6103. [encls (41), (58)]

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100. (U) SAN FRANCISCO's Deck Log, Position Logs, and Fathometer Log for 071131K January 2005 to 081142K January 2005, contained the following deficiencies:

- a. Position Logs did not have the correct instruction posted in the inside of the front cover.
- b. 15 orders recorded in columns 23 -40 of the Deck Log were not logged completed.
- c. 9 of 24 required compass checks were not conducted and logged in the Deck Log.
- d. 12 GPS fixes were not initialed in the Position Logs as having been reviewed.
- e. 26 soundings were logged in the Position Log as "Depth Beneath the Keel" vice "Total Water Depth" as required by NODORM Art. 6103.4.m.
- f. 4 soundings were logged in the Position Logs using incorrect values, one of which was initialed as reviewed by the Officer of the Deck, and one fix was logged and initialed as reviewed by the Officer of the Deck, without a sounding being recorded.
- g. On 10 occasions, the ship increased depth without taking a sounding or logging the sounding in the Fathometer Log.
[encls (58)-(61)]

SUBNOTE Processing

SUBNOTE Background Information

101. (C) OPORD 2000 [REDACTED]

[encl (33)]

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102. (U) The SUBNOTE System is primarily intended for submarine accountability and safety (submerged interference) monitoring by the SUBOPAUTH. [encl (33)]

103. (U) COMSUBPAC OPORD 205 Pacific Local Operations (OPORD 205) states that the SUBOPAUTH shall "Review thoroughly the

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schedule and content of planned operations to verify that these
operations:

a. Are conducted within the ship's submerged operating
envelope.

b. Do not place demands on ship's force personnel that are
inconsistent with the demonstrated state of training.

c. Do not require the ship to operate at undue risk."
[encl (40)]

104. (C) In OPORD 2000, COMNAVSUBFOR prescribes that "[REDACTED]

[REDACTED] . " [encl (33)]

105. (C) In OPORD 2000, COMNAVSUBFOR states that within the
PACIFIC FLEET area of responsibility, the [REDACTED]

[REDACTED] otherwise specified in the
SUBNOTE. [encl (39)]

106. (C) OPSEC conditions are defined in OPORD 2000 and
promulgated through SUBNOTES or OPSKEDs to give direction on how

[REDACTED]
[encl (64)]

107. (C) OPORD 2000 states, [REDACTED]

[REDACTED] . [encl (64)]

108. (U) The CSG-7 Submarine Operational Directives/Checklist,
CSG-7 OPSOP 302 CH-10 (OPSOP 302) provides amplifying directions
and checklists for use by the CSG-7 staff to prepare and approve
operational directives including SUBNOTES. Specifically, OPSOP
302 provides procedures for generating and checking operational
directives in support of submarine operations, exercises,
transits and port visits. [encls (65), (83)]

109. (C) The WESTPAC Guide states, "[REDACTED]

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Preparation and Approval Process

117. (U) The following CSG-7 personnel participated in the preparation, approval and back route of SUBNOTE 001:

a. ET1(SS/SW) [REDACTED], USN, was designated as the responsible Electronics Technician (ET)

b. ET1(SS) [REDACTED], USN was the ETNV (CSG-7 ANAV)

c. LT [REDACTED] USN was the CDO

d. LCDR [REDACTED], USNR was the under instruction Operations Officer (N31)

e. LCDR [REDACTED], USN was the acting N31

f. ET2(SS) [REDACTED], USN was the back route ET

g. LT [REDACTED], USN was the back route CDO

[encls (2), (67)-(76), (83)]

118. (C) LCDR [REDACTED], USN, the current N31 and ETC(SS) [REDACTED], USN, the Quartermaster Division Leading Chief Petty Officer, were on holiday leave during the preparation and approval of the SUBNOTE 001. [encls (67)-(71), (74), (75)]

Qualifications and Lessons Learned

119. (U) The OPSOP 302 states that the same ET should be used for all related directives (e.g., SUBNOTES, OPSKEDS, Submarine Arrival Advisories, etc.) regarding a submarine transit to provide continuity. This individual is referred to as the "responsible ET." OPSUP 302 does not provide any qualification requirements for this ET. [encl (65)]

120. (U) ET1(SS/SW) [REDACTED] stated that the "responsible ET" could be any ET assigned to CSG-7. All members involved with processing SUBNOTE 001 agreed that there were no qualification or training requirements to prepare a SUBNOTE. [encl (76)]

121. (U) The CSG-7 QMOW qualification card requires qualifiers to draft two SUBNOTES and two SUBNOTE Changes. There is no qualification requirement to draft a SUBNOTE routing a submarine through restricted waters or straits. [encl (77)]

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122. (U) The CSG-7 Command Duty Officer (CDO) qualification card requires checking two U.S. SUBNOTES, [REDACTED]

[REDACTED] There is no qualification requirement to check a SUBNOTE routing a submarine through restricted waters or straits. [encl (78)]

123. (U) The OPSOP 302 specifies that "designated officers" are to conduct the check of SUBNOTES before they are routed to the Current Operations Officer (N31) for release but does not specify how these officers are designated. The checklist block identifies "designated officers" as "LT/CDO". "Designated officers" is interpreted by CSG-7 personnel to mean a CDO qualified officer. There is no separate issuance that specifically designates these personnel. [encls (65), (78), (85)]

124. (U) The CSG-7 Current Operations Officer was unable to locate ET1(SS) [REDACTED] QMOW qualification card. He reported that his predecessor said ET1(SS) [REDACTED] completed a modified QMOW qualification card because some topics were waived due to previous qualifications. [encls (77), (79)]

125. (U) LT [REDACTED], LT [REDACTED], LCDR [REDACTED] and LCDR [REDACTED] are qualified CDO per the CSG-7 CDO qualification instruction. [encl (80)]

126. (U) The interview sheet for ET1(SS) [REDACTED] CSG-7 ANAV certification and ET2(SS) [REDACTED] QMOW qualification card were not available for review, but CSG-7 Staff has separately certified that both are qualified. [encls (77), (80), (81)]

127. (U) Per the CSG-7 CDO Qualifications, perspective CDOs are required to read the CDO Lessons Learned Binder. [encl (78)]

128. (U) CSG-7 does not have a required reading program that directs the periodic review of their lessons learned. [encl (87)]

129. (U) The CSG-7 CDO and QMOW Qualifications do not specifically require respective watchstanders to review the Sailing Directions within the CSG-7 AOR. [encls (77), (78)]

130. (U) OPSOP 302 does not require the "responsible ET" to review the CDO lessons learned binder before writing SUBNOTES

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for CSG-7 either for initial training or for actual drafting.
[encl (65)]

131. (U) The CSG-7 Lessons Learned binder only contains six items with the oldest on dating back to 4 November 2003 and the newest entry dated 20 February 2004. [encl (88)]

132. (C) During interviews, [REDACTED] were described as [REDACTED]
[REDACTED] This concept is [REDACTED]
[REDACTED]. [encls (65), (67), (68), (77), (78)]

133. (C) Though discussed in several interviews, the practice of [REDACTED]
[REDACTED]. [encls (65), (67), (68), (75), (77), (78)]

134. (U) GCCS-M is the Navy's designated command-and-control (C2) system. GCCS-M provides the capability for a timely, accurate, and complete all-source navigational picture at ranges far beyond the capability of the ship's navigational systems. GCCS-M allows the ship to view the navigational tracks of other ships and access real-time contact reports allowing for more accurate and safer navigation. [encl (82)]

135. (C) Per OPSOP 302, the ET, ETNV, LT/CDO and N31 are required to [REDACTED]

[REDACTED] This is repeated in [REDACTED]

[encl (65)]

136. (C) The process of determining [REDACTED] during the SUBNOTE preparation process is [REDACTED]
[REDACTED] [encls (65), (77), (78)]

137. (C) The process of evaluating if a [REDACTED]
[REDACTED]

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[REDACTED]
[encls (65), (77), (78)]

Preparation and Approval Process

138. (C) Prior transits between Guam and Brisbane [REDACTED]

[REDACTED]
[encls (67)-(71)]

139. (C) [REDACTED]

[REDACTED]
[encls (85), (86)]

140. (C) Review of SUBNOTES through the area in the last five
years, [REDACTED]

[encls (2), (86)]

141. (C) CSG-7 [REDACTED]

[REDACTED] . Additionally, CSG-7 [REDACTED]

[REDACTED] . [encls (67)-(71)]

142. (C) A larger scale chart for the area covering the area of
the Caroline Islands [REDACTED].
Specifically, [REDACTED]

[REDACTED] [encls (67)-(69), (71)]

143. (C) Per OPOD 2000, the SUBNOTE 001 [REDACTED]

[REDACTED]
[encls (33), (67)]

144. (C) Per OPSOP 302, review of the [REDACTED]

[REDACTED]
[encls (65), (67)-(71)]

145. (C) CSG-7 staff members [REDACTED]

[REDACTED]
[encls (67)-(71)]

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146. (C) Even though the CSG-7 Prevention of Mutual
Interference Procedure, CSG-7 OPSOP 301 CH-3 (OPSOP 301),

OPSOP 301

. [encl

(89)]

147. (C) CSG-7 uses the

CSG-7

AOR. The Navigational anomalies are entered into the

practice is that the

. The

identified, OPSOP 301

After

When a SUBNOTE is generated, the

This prompts the SUBNOTE preparer to

[encls (67)-(69), (72), (73), (84), (89)]

148. (C) OPSOP 302 directs a

[encl (65)]

149. (C) There was no discussion about using the

In

practice, CSG-7

[encls (65), (67), (68), (70), (71), (74)-(76)]

150. (C) Before drafting a SUBNOTE, the responsible ET is
required to

[encl (65)]

151. (C) , the acting Current Operations Officer,

. [encl (71)]

152. (C) While preparing to develop SUBNOTE 001,

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[REDACTED] Specifically he said,
" [REDACTED]
[REDACTED] . " [encl (67)]

153. (C) [REDACTED] during his interview that [REDACTED]
[REDACTED] and said [REDACTED]
[REDACTED] He said they
[REDACTED] . [encl (68)]

154. (C) [REDACTED]
[REDACTED] . [encl (67)]

155. (C) When asked about [REDACTED]
[REDACTED] [encl (67)]

156. (C) [REDACTED]
[REDACTED] . [encl (68)]

157. (C) [REDACTED] , in his interview, when asked what
" [REDACTED] means, he stated that " [REDACTED]
[REDACTED] " [encl (69)]

158. (C) When asked about a [REDACTED]
[REDACTED] said that meant " [REDACTED]
[REDACTED] . " [encl (67)]

159. (C) [REDACTED] stated that [REDACTED]
" [REDACTED] " and
that " [REDACTED]
[REDACTED] . " [encl (68)]

160. (C) [REDACTED] stated that [REDACTED]
[REDACTED] would be [REDACTED]
[REDACTED] [encl (69)]

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161. (U) Track points, departure time, and arrival time were not changed after ET1(SS/SW) [REDACTED] submitted draft SUBNOTE 001 to ET1(SS) [REDACTED] for routing. [encl (76)]

162. (U) ET1(SS/SW) [REDACTED] stated that he recalled phone calls from the SAN FRANCISCO ANAV, ETCS(SS) [REDACTED] and ET1(SS) [REDACTED] about getting a copy of their SUBNOTE. After several calls, ET1(SS/SW) [REDACTED] sent a preliminary copy of the SUBNOTE to SAN FRANCISCO at 0802K on 4 January 2005. [encls (76), (90)]

163. (U) The preliminary SUBNOTE ET1(SS/SW) [REDACTED] sent to SAN FRANCISCO only contained track points and times. These track points match those in SUBNOTE 001 that was transmitted. [encls (2), (76), (90)]

164. (U) Only ET1(SS/SW) [REDACTED] talked with anyone onboard SAN FRANCISCO about the SUBNOTE. [encl (76)]

165. (U) ETC(SS) [REDACTED] received an email from SAN FRANCISCO about their SUBNOTE but was on leave before the actual SUBNOTE was transmitted. This email was sent on 2 January 2005 by ET2(SS) [REDACTED] as directed by ETCS(SS) [REDACTED]. [encl (76)]

166. (U) When asked how he would treat the discolored water spot had he known it was there, ET1(SS) [REDACTED] stated that "I would never drive over or near discolored water, I would drive around it" and that he considered discolored water to be shoals. [encl (68)]

167. (U) When asked how he would treat the discolored water spot, ET2(SS) [REDACTED] stated "I would stay away from it" [encl (72)]

168. (U) When asked if he had seen chart 81023 during the SUBNOTE review process and if he would do anything different, LCDR [REDACTED] stated that he would probably bias the track a little bit to the north of the discolored spot or consider another track. [encl (71)]

169. (U) When asked if he had seen the discolored water spot, what he would do, LT [REDACTED] stated "If I had seen that I would have measured out the width of the moving haven and measured that from the track and taken a look, basically, at the area and

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- (10) Transcript of Supplemental Interview of ET1(SS) [REDACTED], USN(C)
- (11) OPNAV NOTICE 5400 (Standard Navy Distribution List) (excerpt) (U)
- (12) CNO 111800Z JUN 01 (Homeport Change Message) (U)
- (13) OPREP-3 material, damage reports, and personnel casualty reports (C)
- (14) SAN FRANCISCO ltr 1306 Ser SSN711/ of 6 Jan 05 (Sailing List) (U)
- (15) COMNAVSUBFOR OPORD 2000 Annex J (Command Relationships) (excerpt) (C)
- (16) SAN FRANCISCO Underway Chronology for 2004 (U)
- (17) Senior Member, TRE Team ltr 3590 Ser N70/S12 of 20 Feb 04 (TRE Report) (S)
- (18) Commander Submarine Squadron ltr 3590 Ser N02/S026 of 15 Oct 04 (POMCERT Report) (S)
- (19) Transcript of Interview of ET2 [REDACTED] (C)
- (20) QMOW and Fathometer Qualification Cards from SAN FRANCISCO (U)
- (21) SAN FRANCISCO ltr 5000 Ser N012 of 26 Aug 02 (Navigator's designation letter) (U)
- (22) SAN FRANCISCO ltr 5000 Ser N012 of 28 Oct 02 (ANAV qual. letter) (U)
- (23) CHINFO, United States Navy Fact File (SSN) (website excerpt)
- (24) SSN688 Class Ship Systems Manual Vol. 1, Ch 2 Section 2.2 (C)
- (25) SSN688 Class Ship Systems Manual Vol. 1, Ch 3, Section 4.1 through 4.2 (U)
- (26) SSN688 Class Ship Systems Manual, Vol. 2, Pt 4G, Section 1.2 (AN/WRN-6 GPS System Satellite Receiver) (U)
- (27) SSN688 Class Ship Systems Manual Vol. 1, Ch 3, Section 1.3.2 through 1.3.3 (C)
- (28) VMS Operator's Manual Ch. 1 (U)
- (29) SSN688 Class Ship Systems Manual Vol. 1, Ch 3, Section 7.2B.9 (U)
- (30) SAN FRANCISCO EM Log Calibration Records (C)
- (31) SSN688 Class Ship Systems Manual Vol. 2, Pt 1, Section 1.3m (C)
- (32) U.S. Navy Regulations, Art. 0857 (Safe Navigation and Regulations Governing Operation of Ships and Aircraft) (U)
- (33) COMNAVSUBFOR OPORD 2000 App. 1 to Annex C (Movement

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- Procedures) (C)
- (34) COMSUBGRU7INST C3120.2E (excerpt) (WESTPAC Guide)
(C)
 - (35) SAN FRANCISCO Commanding Officer Standing
Order 4 (Navigation) (U)
 - (36) SSN688 Ship System Manual Vol. 6, Part 1 (OP 61-17)
(Navigation and piloting procedure) (U)
 - (37) COMNAVSUBFORINST 5400.29 (NODORM) Section 2102 (U)
 - (38) COMNAVSUBFOR OPORD 2000 Tab C to App. 1 to Annex C
(C)
 - (39) COMNAVSUBFOR OPORD 2000 Tab A to App. 1 to Annex C
Para 2.e (C)
 - (40) COMSUBPAC OPORD 205 Annex C, Para 7 (U)
 - (41) COMNAVSUBFORINST 5400.29 (NODORM) Sections 1101,
1102 (U)
 - (42) COMNAVSUBFORINST 5400.29 (NODORM) Section 5102 (U)
 - (43) NGA Chart E2202 (copy of ship's annotated
navigational chart) (C)
 - (44) SAN FRANCISCO Commanding Officer Standing
Order 1 (OOD Responsibilities) (U)
 - (45) SAN FRANCISCO Commanding Officer Standing
Order 8 (Shallow Water Operations) (C)
 - (46) COMNAVSUBFORINST 5400.29 (NODORM) Section 5108 (U)
 - (47) SAN FRANCISCO Commanding Officer Standing
Order 2 (Submerged Operations) (C)
 - (48) Voluntary Statement of ET2(SS) [REDACTED], USN (C)
 - (49) Transcript of Supplemental Interview of ET2(SS) [REDACTED]
[REDACTED] USN (U)
 - (50) Voluntary Statement of ET2(SS) [REDACTED],
USN (C)
 - (51) Transcript of Supplemental Interview of ET2 [REDACTED]
[REDACTED], USN (U)
 - (52) Voluntary Statement of ET3(SS) [REDACTED],
USN (U)
 - (53) SAN FRANCISCO Position Log 07-08 Jan 05 (C)
 - (54) SAN FRANCISCO NAVDEPTINST 5400.2G (Navigator's
Standing Orders) (U)
 - (55) SAN FRANCISCO Commanding Officer Standing
Order 5 (Sonar Operations) (U)
 - (56) COMSUBPAC ltr 1500 Ser N70/038 of 16 Jul 03
(Readiness and Training Memorandum 03-09) (U)
 - (57) Transcript of Interview of ETC(SS) [REDACTED],
USN (U)
 - (58) COMNAVSUBFORINST 5400.29 (NODORM) Sections 6101,
6103, 6106 (U)

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- (59) ETCS(SS) [REDACTED], USN, Summary of deficiencies based on review of SAN FRANCISCO navigational logs for period of 7-8 Jan 05 (U)
- (60) SAN FRANCISCO Deck Log of 07-08 Jan 05 (C)
- (61) SAN FRANCISCO Fathometer Log of 07-08 Jan 05 (C)
- (62) Video of Helicopter Transfer to SAN FRANCISCO (U)
- (63) Discussion of Medical Recommendations (U)
- (64) COMNAVSUBFOR OPOD 2000 Tab A to App. 1 to Annex C, Para. 3 (Submarine OPSEC Conditions) (C)
- (65) CSG-7 OPSOP 302 CH-10 of 30 Apr 04 (Submarine Operational Directives/Checklist) (C)
- (66) Tab D to App. 1 to Annex C, to COMNAVSUBFOR OPOD 2000 (excerpt) (C)
- (67) Transcript of Interview with ET1(SS) (SW) [REDACTED], USN [REDACTED] (C)
- (68) Transcript of Interview with ET1(SS) [REDACTED], USN w/ [REDACTED] (C)
- (69) Transcript of Interview with LT [REDACTED], USN [REDACTED] (C)
- (70) Transcript of Interview with LCDR [REDACTED], USN [REDACTED] (C)
- (71) Transcript of Interview with LCDR [REDACTED], USN [REDACTED] (C)
- (72) Transcript of Interview with ET2(SS) [REDACTED], USN [REDACTED] (C)
- (73) Transcript of Interview with LT [REDACTED] (C)
- (74) Transcript of Interview with ETC(SS) [REDACTED] (C)
- (75) Transcript of Interview with LCDR [REDACTED] (C)
- (76) Transcript of Group Interview of COMSUBGRU SEVEN (CTF-74) Staff personnel (C)
- (77) COMSUBGRU7INST C1543.1E (COMSUBGRU SEVEN Operations Department Quartermaster of the Watch Qualification Card) (C)
- (78) COMSUBGRU7INST 1520.2E (Command Duty Officer Qualification Card) (U)
- (79) LCDR [REDACTED], USN memo response to RFI for

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Subj: COMMAND INVESTIGATION OF THE APPARENT SUBMERGED GROUNDING
OF USS SAN FRANCISCO (SSN 711) APPROXIMATELY 360 NM
SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

SAN FRANCISCO JAGMAN Investigation (U)

- (80) Qualification cards for LCDR [REDACTED] LCDR [REDACTED], LT [REDACTED], LT [REDACTED] and Oral Exam Record Form for ET1 [REDACTED] (U)
- (81) ETC(SS) [REDACTED], USN memo of 25 Jan 05 (U)
- (82) Naval Warfare Publication (NWP) 3-21.52.27 (excerpt) (GCCS-M system description) (C)
- (83) CSG-7 OPSOP 302-A CH-10 of 30 Apr 04 (Annotated Checklist for SUBNOTE 001)
- (84) SUBNOTE 001 Task Bar (C)
- (85) LCDR [REDACTED] USN memo of 25 Jan 05 (U)
- (86) Prior CSG-7 SUBNOTES in vicinity of grounding (C)
- (87) LT [REDACTED], JAGC, USN email of 25 Jan 05 12:15 PM (U)
- (88) COMSUBGRU SEVEN PMI Lessons Learned Index (C)
- (89) COMSUBGRU SEVEN OPSOP 301 CH-3 of 10 Feb 03 (Prevention of Mutual Interference Procedures) (C)
- (90) ET1(SS) [REDACTED] email of 04 Jan 05 8:02 AM (draft SUBNOTE 001) (C)
- (91) LCDR [REDACTED], USN memo of 20 Jan 05 (NOTE Timeline) (C)
- (92) Chart Review/Correction Personnel List (U)
- (93) SAN FRANCISCO (COMNAVSUBFORINST 5400.29 Sections 5113, 5114) Piloting Preparations Checkoff, Planned Operations/Navigation Checkoff (U)
- (94) SAN FRANCISCO Plan of the Day for 07-08 Jan 05, Plan of the Week for 07-13 Jan 05 (U)
- (95) Transcript of Interview of LCDR [REDACTED], USN (ENG) (C)
- (96) SAN FRANCISCO Forward and Aft Out of Commission, Reduced Status and Instrument Logs Covering a Period Prior to Grounding (C)
- (97) Voluntary statement of LT [REDACTED], USN [REDACTED] (WEPS) (U)
- (98) Transcript of Supplemental Interview of LT [REDACTED] USN (WEPS) (C)
- (99) SAN FRANCISCO Detailed Casualty Chronology/List of Events (C)
- (100) UNQ-9 Open Microphone Recordings w/ Transcript (S)
- (101) SAN FRANCISCO Ring Laser Gyro Navigator (RLGN) Data (C)
- (102) SAN FRANCISCO Commanding Officer's Night Orders for 071800K JAN 05 through 082400 JAN 05, 081800K JAN 05 through 092400K JAN 05, and

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Subj: COMMAND INVESTIGATION OF THE APPARENT SUBMERGED GROUNDING
OF USS SAN FRANCISCO (SSN 711) APPROXIMATELY 360 NM
SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

091800K JAN 05 through 101600K JAN 05 (C)

- (103) Voluntary statement of CMDCM(SS) [REDACTED],
USN (COB) (U)
- (104) Ship's Material Discrepancy Log (C)
- (105) SAN FRANCISCO Sonar Search Plan (S)
- (106) OPS Brief PowerPoint File (C)
- (107) Voluntary statement of LT [REDACTED], USN [REDACTED]
[REDACTED] (AWEPS) (U)
- (108) Transcript of Supplemental Interview of LT [REDACTED]
[REDACTED], USN (AWEPS) (U)
- (109) Transcript of Interview of LTJG [REDACTED]
[REDACTED] USN [REDACTED]
(U)
- (110) NGA Nautical Chart E2203 (C)
- (111) Voluntary Statement of STSC(SS) [REDACTED],
(Off-going Sonar Supervisor) USN (C)
- (112) Voluntary Statement of MMCS(SS) [REDACTED], USN
(DIVE) (C)
- (113) SAN FRANCISCO Active/Passive Sonar Logs (C)
- (114) PC-IMAT Screen Captures (C)
- (115) VMS display (C)
- (116) Voluntary statement of ET3(SS) [REDACTED], USN
(U)
- (117) Transcript of Supplemental Interview of ET3(SS)
[REDACTED], USN (U)
- (118) Contact Evaluation Plot Digital Data Tape (S)
- (119) Voluntary Statement of FT2(SS) [REDACTED],
USN (U)
- (120) Voluntary statement of FT2(SS) [REDACTED],
USN (U)
- (121) Voluntary statement and Transcript of Supplemental
Interview of STS1(SS) [REDACTED], USN (Sonar
Supervisor) (U)
- (122) Voluntary statement of FT2(SS) [REDACTED],
USN (FTOW) (U)
- (123) LT [REDACTED] memo of 12 Jan 05 (Weather
Report on Manning the Bridge on 08 Jan 05) (U)
- (124) Voluntary statement of CSC(SS) [REDACTED],
USN (COW) (U)
- (125) Voluntary Statement of SKSN [REDACTED], USN
(MOW U/I) (U)
- (126) Transcript of Interview of MMFN [REDACTED]
[REDACTED], USN (Messenger) (U)
- (127) Voluntary Statement of MM2(SS) [REDACTED], USN
(Sternplanes) (C)

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Subj: COMMAND INVESTIGATION OF THE APPARENT SUBMERGED GROUNDING OF USS SAN FRANCISCO (SSN 711) APPROXIMATELY 360 NM SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

- (128) Voluntary statement of LTJG [REDACTED], USN (EOOW) (C)
- (129) SAN FRANCISCO Engineer's Bell Log for 08 Jan 05 (C)
- (130) Summary of Interview of Engineering Watch Section Regarding Casualty Response (C)
- (131) SSN688 Class Ship Systems Manual Vol. 6, Part 1 (OP 61-11) (C)
- (132) BQN-17 Paper Trace (excerpt from 07-08 Jan 05 Underway Period) (U)
- (133) Voluntary statement of STS1(SS) [REDACTED] [REDACTED] USN (C)
- (134) Fire Control Master Contact Log of 07 Jan 05 (C)
- (135) Photo of Rocks Removed from SAN FRANCISCO Forward Free Flood Area(U)
- (136) Photos of SAN FRANCISCO Post-Grounding Underway and Damage (S)
- (137) USNS HESS 1980 Survey Data in vicinity of grounding (S)
- (138) Voluntary statement of ET3(SS) [REDACTED], (Off-going FTOW) USN (U)
- (139) Transcript of Interview of HM1(SS) [REDACTED], USN (Independent Duty Corpsman) (U)
- (140) Voluntary statement of ET3(SS) [REDACTED], USN (Helmsman) (U)
- (141) Maneuvering Reference Drawing (U)
- (142) YNC(SS) [REDACTED] memo of 24 Jan 05 (U)
- (143) Initial Injury List, SF600's, and Emergency Treatment Record summaries Documenting Injuries Caused by the Grounding (C)
- (144) SSN688 Class Ship Systems Manual Vol. 6, part 2 (CP 62-1) (General Emergency Procedure) (U)
- (145) SSN688 Class Ship Systems Manual Vol. 6, part 2 (CP 62-3) (Collision Procedure) (U)
- (146) NGA Chart 81023 (w/ ship's track) (C)
- (147) SSN688 Class Ship Systems Manual Vol. 6, part 1 (OP 61-4) (Surfacing Procedure) (U)
- (148) SSN688 Class Ship Systems Manual, Vol. 3, Part 1 Para. 3.3 (Low Pressure Main Ballast Tank Blow System) (U)
- (149) Initial Annotated Damage Assessment Drawing of SAN FRANCISCO (C)
- (150) Preliminary Report of Autopsy for Joseph A. Ashley of 12 Jan 05 (U)
- (151) Injury Matrix (Analysis of Medical Evaluations of

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OF USS SAN FRANCISCO (SSN 711) APPROXIMATELY 360 NM
SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

- Crewmembers of SAN FRANCISCO) (U)
- (152) [PHTLS] McSwain NE, Basic and Advanced Prehospital Trauma Life Support, Mosby, 2003, pgs 212-221, 423 (U)
 - (153) IDC Curriculum Head Injury Chapter (U)
 - (154) SATHICOM log between SAN FRANCISCO and CTF-74 (C)
 - (155) SATHICOM log between SAN FRANCISCO and COMSUBPAC (C)
 - (156) Transcript of Interview of LT [REDACTED], MC, USN (CGS-7 Medical Officer) (U)
 - (157) Transcript of Interview of CDR [REDACTED] [REDACTED] MC, USN (Force Medical Officer) (U)
 - (158) Transcript of Interview of LTJG [REDACTED], USN (U)
 - (159) Chat Record SAN FRANCISCO and COMSEVENTHFLT (C)
 - (160) Medical Treatment Evacuation Timeline (SATHICOM) (U)
 - (161) Medical Training/Qualifications of Personnel Involved in Medical Response and Attempted MEDEVAC (U)
 - (162) Transcript of Interview of LCDR [REDACTED], MC, USN (Responding Physician) (U)
 - (163) Transcript of Interview of HM2(SEAL) [REDACTED], USN (Responding Corpsman) (U)
 - (164) Transcript of Interview of LCDR [REDACTED], [REDACTED], USN (U)
 - (165) Glasgow Coma Score (U)
 - (166) Transcript of Interview of LCDR [REDACTED] MC, USN (Responding Physician) (U)
 - (167) HMCM(SS) [REDACTED] memo of 21 Jan 05 (U)
 - (168) Advanced Cardiac Life Support Provider Manual (Student Guide) (U)
 - (169) Reeves Sleeve Specifications (U)
 - (170) CDR [REDACTED], MC, USN memo of 21 Jan 05 (Review of Quarterly Quality Assurance Reviews and Training Records ico HM1(SS/SW) [REDACTED]) (U)
 - (171) CAPT [REDACTED], MC, USN memo of 18 Jan 05 (Description and Medical Opinion Regarding MM2(SS) Ashley's Injuries) (U)
 - (172) Photos of Medical Equipment and Attempted Evacuation Route (U)
 - (173) Submarine Authorized Medical Allowance List (U)
 - (174) COMNAVSUBFORINST 6000.2A (EMAT Instruction) (U)
 - (175) CDR [REDACTED] memo of 19 Jan 05 (enclosing CDR [REDACTED] email of 19 Jan 05 7:40 AM) (U)

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- (176) Communications Capabilities of Units Involved in SAN FRANCISCO Operations 08-10 Jan 05 (C)
- (177) Transcript of Interview of CDR [REDACTED], USN [REDACTED] (On Scene Commander for Relief/MEDEVAC) (C)
- (178) Transcript of Interview of LT [REDACTED], MC, USN and HMC(SS) [REDACTED], USN (CSS-15 Medical Personnel) (U)
- (179) CDR [REDACTED], MC, USN memo of 25 Jan 05 (U)
- (180) CDR [REDACTED], MC, USN memo of 24 Jan 05 (U)
- (181) Videos of Damage (DVD) (C)
- (182) Photos of Damage (CD) (C)
- (183) SAN FRANCISCO Preliminary Damage Assessment and Repair Cost Estimate (U)
- (184) COMNAVSUBFOR 282107Z FEB 03 (Documenting ANAV Qualification) (U)
- (185) COMNAVSUBFORINST 5400.29 (NORDORM) Section 4305 (Assistant Navigator Qualification Card) (U)
- (186) CSS-15 (Squadron Secretary) memo of 26 Jan 05 (U)
- (187) SAN FRANCISCO Qualified Watchstanders List (U)
- (188) ANAV Course Curriculum (U)
- (189) SAN FRANCISCO Underway Watchbill for 07-13 Jan 05 (U)
- (190) COMSUBPACINST C3500.1B Annex O (SSN/SSBN Watchstation Proficiency Requirements) (U)
- (191) SAN FRANCISCO Officer of the Deck Qualification Cards (U)
- (192) [REDACTED] memo of 25 Jan 05 (U)
- (193) [REDACTED] memo of 15 Jan 04 (Navigation Evaluation of SAN FRANCISCO) (U)
- (194) COMNAVSUBFORINST 3590.17 N70 of 04 Aug 03 (TRE Instruction) (U)
- (195) Ashore Submarine Tactical Assessment and Training Standards (STATS) (U)
- (196) Transcript of Interview of LCDR [REDACTED] and ETC(SS) [REDACTED] (U)
- (197) LCDR [REDACTED] memo of 20 Aug 04 (Navigation Evaluation) (U)
- (198) List of Riders for 2004 on SAN FRANCISCO (U)
- (199) Report of Completion of POMCERT Deficiencies Message (U)
- (200) OPNAVINST 3500.39B (Operational Risk Management (ORM)) (U)
- (201) COMNAVSUBFORINST 3500.1 Section 1003 (Submarine

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- Readiness Manual) (excerpt) (U)
- (202) COMSUBPACINST C3500.1B Sections 2004, 2168 (excerpt) (C)
- (203) 2004 Record Collision and Grounding Briefs (U)
- (204) QMOW Short Range Training Documents 2004 (U)
- (205) COMNAVSUBFORINST 5400.29 (NODORM) pg. 2 (U)
- (206) SAN FRANCISCO NODORM Review Sheet 2004/2005 (U)
- (207) SAN FRANCISCOINST 5040.3 CO/XO of 20 Jul 04 (Monitoring and Assessment Program) (U)
- (208) New Top Five of 31 Aug 2004 (U)
- (209) New Top Five of 21 Oct 2004 (U)
- (210) New Top Five of 25 Nov 2004 (U)
- (211) NAV Monitor Open Ocean QMOW/OOD (C)
- (212) SAN FRANCISCO Monitor Response Forms (SUBNOTE entry into VMS) (U)
- (213) SAN FRANCISCO Monitor Response Form (Anchorage for Precision Navigation VMS) (U)
- (214) SAN FRANCISCO Monitor Response Form (VMS Voyage Plan Development) (U)
- (215) Quartermaster First Quarter Goals and Assessment 2004 (U)
- (216) Quartermaster Second Quarter Goals and Assessment 2004 (U)
- (217) Quartermaster Third Quarter Goals and Assessment 2004 (U)
- (218) Quartermaster Fourth Quarter Goals and Assessment 2004 (U)
- (219) SAN FRANCISCO Critique Report of 13 Aug 04 (U)
- (220) Amplification of Medical Opinions (U)
- (221) CDR [REDACTED] email of 21 Jan 05 (Navigation Instruction Data Call) (U)
- (222) Text of CAPT [REDACTED] email to RDML(SEL) [REDACTED] (U)
- (223) The American Practical Navigator (CD) (Bowditch) (U)
- (224) DoD Catalog of Charts and Related Products, Part 2, Vol. 2 (8th Edition, May 2003) pp. 24, 25, 50-52 106-07 (S)
- (225) Defense Logistics Agency, Catalog of Hydrographic Products, National Imagery and Mapping Agency (NIMA) Part 2, Volume 1 (12th Ed., April 2002) (Nautical Charts and Publications) pp. 8-1 to 8-3, 8-6 to 8-9, 8-22, 10-1 to 10-11, 10-40 (U)
- (226) LCDR [REDACTED] memo of 20 Jan 05

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- (Chart Review) (S)
- (227) The Defense Mapping Agency, Product Specifications for Bottom Contour Chart (All Series) (4th, March 1985) (U)
 - (228) CSPINST S3530.2E (SUBPAC Nautical Chart and Publication Allowances) (S)
 - (229) LCDR [REDACTED] memo of 21 Jan 05 (SAN FRANCISCO Investigation-limited Chart Inventory) (U)
 - (230) ETC(SS) [REDACTED] memo of 12 Jan 05 (U)
 - (231) Notice to Mariners, Chart Corrections (U)
 - (232) CAPT [REDACTED], USN (Chief, NGA Maritime Division) memo of 13 Jan 05 (U)
 - (233) COMNAVSUBFORINST 5400.29 (NODORM) Chapter VII (U)
 - (234) Classified Summary of Corrections 2003, p. 57 (C)
 - (235) Classified Notice to Mariners, No. 11 (27 Nov 04) p. I-2.1 (S)
 - (236) Chart No. 1 (Nautical Chart-Symbols, Abbreviations and Terms) (excerpt) (U)
 - (237) NIMA Publication 126 (Sailing Directions), Sector 10 (U)
 - (238) LCDR [REDACTED] memo of 15 Jan 05 (U)
 - (239) NGA Chart INT 507 (U)
 - (240) NGA Chart INT 506 (marginalia excerpt) (U)
 - (241) [REDACTED] memos of 25 Jan 05 (Operations of A/N USQ-38 EHF) (U)
 - (242) Voluntary Statement of OSC(SEAL) [REDACTED], USN (U)
 - (243) Voluntary Statement of LT [REDACTED], USN (U)
 - (244) Voluntary Statement of LT [REDACTED], USN (U)
 - (245) Voluntary Statement of LT [REDACTED], USN (U)
 - (246) NGA Chart E2405 (photographic excerpt) (C)
 - (247) [REDACTED] memo of 14 Jan 05 (w/ encl) (S)
 - (248) [REDACTED] and [REDACTED] (NGA) various emails in response to RFI of 14-28 Jan 05 (C)
 - (249) Dr. [REDACTED] (NGA) memo of 13 Jan 05 (C)
 - (250) LT [REDACTED], USN memo of 24 Jan 05 (U)
 - (251) SAN FRANCISCO Forward Critique Binder, Index (U)
 - (252) COMSUBRON FIFTEEN Activity Manpower Document (U)
 - (253) Transcript of Interview of LCDR [REDACTED], USN (CSS-15 Engineer) (S)
 - (254) SAN FRANCISCO NOTE 5215 of 11 Aug 04 (Index of Effective Directives) (U)

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- (255) CAPT [REDACTED], USN memo of 25 Jan 05 (COMSEVENTHFLT Operations Officer) (U)
- (256) CDR [REDACTED], MC, USN memo of 21 Jan 05 (U)
- (257) CSS-15 Deputy for Readiness memo of 19 Jul 04 (Fast Cruise and Ride Observations) (C)
- (258) CSS-15 Deputy for Readiness memo of 19 Jul 04 (Ride Observations) (U)
- (259) CSS-15 Deputy for Readiness memo of 20 Aug 04 (POM Workup Phase I Ride Observations) (C)
- (260) CAPT [REDACTED], USN memo of 24 Jan 05 (w/ email enclosure) (U)

PRELIMINARY STATEMENT

1. (U) As directed by enclosure (1) and pursuant to reference (a), an investigation into the apparent grounding of USS SAN FRANCISCO (SSN 711) (SAN FRANCISCO) in international waters approximately 360 NM South of Guam, on 8 January 2005 was conducted. CDR [REDACTED], JAGC, USN served as Legal Advisor.
2. (U) In accordance with reference (a), contact with the Admiralty Division of the Office of the Judge Advocate General (Code 11) confirmed that the case will not be assigned to an investigator and no request for a report is anticipated.
3. (U) At the time of this report, a detailed damage assessment with final cost estimates and length of time for repair was not available. Enclosure (149) includes a preliminary damage assessment and estimated repair costs.
4. (U) All bearings are true bearings and all courses are true courses. The term "grounding" is used in lieu of "bottoming," defined by reference (b), related specifically to submerged operations.
5. (U) Original records and certified copies are included to the extent they exist. Original logs and training records not enclosed were returned to SAN FRANCISCO.
6. (U) Privacy Act statements were not used as all personal information was obtained from existing records.

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7. (U) Commander Submarine Force U.S. Pacific Fleet (COMSUBPAC) appointed a Mishap Investigation Board (MIB) to investigate the subject casualty. The MIB did not share privileged witness or derivative information with this investigation. Evidence obtained during this investigation was made available to the MIB at its request.

8. (U) The MIB retained the original of enclosure (43), SAN FRANCISCO's navigational chart at the time of the casualty. To facilitate safe post-casualty surface navigation, SAN FRANCISCO watchstanders erased pre-casualty navigation information from enclosure (43). The erasure did not negatively impact this investigation; pertinent navigational information was reliably reconstructed from ship's logs and other ship's data.

9. (U) In completing this investigation, all involved COMSUBPAC, Commander Submarine Group SEVEN, Commander Submarine Squadron FIFTEEN, Naval Submarine Training Center, Pacific (NSTCP), Naval Oceanographic Command (NAVOCEANO), National Geospatial-Intelligence Agency (NGA), SAN FRANCISCO personnel, and individuals involved in the attempted MEDEVAC, were interviewed. References (c)-(f) and all other relevant regulations, directives, logs, charts, reports and training records were reviewed.

10. (U) The findings of fact show that SAN FRANCISCO, while transiting at flank speed and submerged to 525 feet, hit a seamount that did not appear on the chart being used for navigation. Other charts in SAN FRANCISCO's possession did, however, clearly display a navigation hazard in the vicinity of the grounding. SAN FRANCISCO's navigation team failed to review those charts adequately and transfer pertinent data to the chart being used for navigation, as relevant directives and the ship's own procedures required. If SAN FRANCISCO's leaders and watchteams had complied with requisite procedures and exercised prudent navigation practices, the grounding would most likely have been avoided. Even if not wholly avoided, however, the grounding would not have been as severe and loss of life may have been prevented.

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Subj: COMMAND INVESTIGATION OF THE APPARENT SUBMERGED GROUNDING
OF USS SAN FRANCISCO (SSN 711) APPROXIMATELY 360 NM
SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

FINDINGS OF FACT

Background and General

1. (U) On 7 January 2005, SAN FRANCISCO departed Naval Base, Guam transiting for a scheduled port visit in Brisbane, Australia. A detailed chronology of events executed on board SAN FRANCISCO during the underway period 7 to 10 January 2005 is attached as enclosure (99). [encls (2)-(10), (60), (94), (99), (100), (101)]
2. (U) SAN FRANCISCO is homeported in Guam and is administratively assigned to CSS-15. [encls (11), (12)]
3. (U) The subject casualty occurred at 1142K (local time) on 8 January 2005. SAN FRANCISCO was transiting submerged about 360 NM Southeast of Guam in the vicinity of the Caroline Islands chain. Based on the initial reports from SAN FRANCISCO, the casualty was classified as an apparent grounding. [encl (13)]
4. (U) At the time of the casualty, there were 137 personnel (16 officers and 121 enlisted) on board SAN FRANCISCO. There were no additional military or civilian riders. [encl (14)]
5. (U) Commander, Task Force SEVEN FOUR (CTF-74) (Administrative Title: Commander, Submarine Group SEVEN) is the Submarine Operating Authority (SUBOPAUTH) for the U.S. SEVENTH Fleet Area of Responsibility (AOR) where the casualty occurred. As SUBOPAUTH, CSG-7 prepares and promulgates "SUBNOTE" messages that provide direction for U.S. submarine transits in the AOR. [encl (15)]
6. (U) SAN FRANCISCO was underway 152 days in 2004 and completed an 87-day drydock availability period from 8 February 2004 to 6 May 2004. 127 underway days occurred after the drydock availability. [encl (16)]
7. (U) SAN FRANCISCO conducted a deployment from 19 October 2004 to 1 December 2004 and [REDACTED] [REDACTED]. [encl (16)]
8. (U) Commander, Naval Submarine Force, Pacific Fleet (COMSUBPAC) completed a Tactical Readiness Evaluation (TRE) of SAN FRANCISCO on 20 February 2004. Commander, Submarine Squadron FIFTEEN (CSS-15) completed a Pre-Overseas Movement

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SOUTHEAST OF GUAM THAT OCCURRED ON 8 JANUARY 2005 (U)

Certification (POMCERT) of SAN FRANCISCO on 15 October 2004.
[encls (17), (18), (260)]

9. (U) CDR [REDACTED], USN, was Commanding Officer (CO) of
SAN FRANCISCO at the time of grounding. He assumed command on
12 December 2003. [encl (4)]

10. (U) From 1999 to 2001, CDR [REDACTED] served as Executive
Officer on USS GEORGIA (SSBN 729) (BLUE). He served as Combat
Systems Officer and Engineer during his Department Head tour on
USS COLUMBUS (SSN 762) from 1993 to 1997. He has never served
as a Navigator. During a 1991 to 1993 assignment as an exchange
officer with the United Kingdom Royal Navy, his duties included
preparing SUBNOTES. [encl (4)]

11. (U) LCDR [REDACTED], USN, was Executive Officer (XO) of
SAN FRANCISCO at the time of grounding. He reported to SAN
FRANCISCO in February 2003. From about September 1999 to
January 2001, he was Navigator on USS PROVIDENCE (SSN 719) [encl
(5)]

12. (U) LCDR [REDACTED], USN, was Navigator (NAV) and
also on watch as Officer of the Deck (OOD) of SAN FRANCISCO at
the time of grounding. He reported to SAN FRANCISCO June 2002.
He requalified OOD in July 2002. He relieved and was designated
as NAV by the prior CO in August 2002. [encls (6), (21)]

13. (U) ETCS(SS) [REDACTED], USN, was Assistant
Navigator (ANAV) on board SAN FRANCISCO at the time of
grounding. He was CO designated as ANAV 28 October 2002. [encls
(7), (22)]

14. (U) ET1(SS) [REDACTED], USN, conducted chart
preparations as part of the voyage preparation for the transit
to Brisbane. He is qualified Navigation Supervisor (NAVSUP) on
SAN FRANCISCO and was previously qualified NAVSUP on USS CITY OF
CORPUS CRISTI. [encl (9)]

15. (U) ET2(SS) [REDACTED], USN, was the Quartermaster
of the Watch (QMOW) of SAN FRANCISCO at the time of grounding.
He qualified QMOW 27 August 2004. [encls (19), (20)]

16. (U) SAN FRANCISCO is a 688 (Los Angeles) Class nuclear-
powered submarine commissioned in 1981. As a 688-718 Class
ship, SAN FRANCISCO is configured with fairwater planes control

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surfaces and is not configured with a Vertical Launch (missile)
System. [encl (23)]

m

17. (C) The SSN 688 Class submarine is comprised of [REDACTED]
[REDACTED] sections: A [REDACTED] or [REDACTED]; a
[REDACTED]; an [REDACTED] or [REDACTED]; and a [REDACTED] (b)(1)
[REDACTED] The [REDACTED] includes a [REDACTED]
with associated [REDACTED], three [REDACTED] (b)(3)
[REDACTED], and a variety of [REDACTED]
[REDACTED]. [encl (24)]

18. (U) SAN FRANCISCO was configured with the following systems
and equipment related to navigation:

a. 2 Ring Laser Gyro Navigators (RLGN) (inertial navigation
devices)

b. 1 Ring Laser Gyro (RLG) (gyro compass)

c. Military Global Positioning System (GPS)

d. BQN-17 Fathometer

e. BQS-15 Bottom Sounder

f. Voyage Management System (VMS) (digital chart navigation
computer system) version 5.0

g. 2 Mark-19 Plotters (Port and Starboard) (dead reckoning
plotting devices)

h. 2 Electromagnetic (EM) Logs (1 & 2) (water speed
indicator)

i. The AN/BYQ-6 tactical support system (TSS) (Hewlett
Packard J5600) (J5600) (tactical support hardware and software)

j. The only navigation system that was out of commission or
in reduced status was the AN/BPS-15H radar.

[encls (4), (25)-(31), (95), (96)]

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Navigation Duties and Responsibilities

Commanding Officer Accountability

19. (U) The "commanding officer is responsible for the safe navigation of his or her ship[.]" Art. 0857, U.S. Navy Regulations. [encl (32)]

20. (U) During the SUBNOTE process, navigational safety remains the responsibility of the submarine's CO. COMNAVSUBFOR OPORD 2000 (OPORD 2000) App. 1 to Annex C, Para. 2.c. [encl (33)]

21. (U) Navigation safety and prudent seamanship are absolute requirements... responsibility for ensuring the safe navigation of the ship rests squarely with the CO. Making operational commitments on time is important, but not at the expense of sound navigation and ship safety. COMSUBGRU7INST C3120.2E Paragraph 5.6 (WESTPAC Guide). [encl (34)]

22. (U) Ultimate responsibility for safe navigation, as for all other facets of ship's operations, rests with the CO. CO Standing Orders. [encls (4), (35)]

Executive Officer Responsibility

23. (U) The Executive Officer "shall review and concur in all navigation plans and changes to existing plans" and supervise the Navigator in the execution of the Navigation Bill. SSM OP 61-17 (OP 61-17) Section 1.2, 1.4b. [encl (36)]

24. (U) The Submarine Readiness Manual (SRM) states the Executive Officer is the Training Officer and shall ensure that all training is conducted as scheduled. [encl (201)]

Navigator Accountability and Responsibilities

25. (U) The Navigator is responsible for safe navigation of the ship. (OP 61-17) Section 1.4. [encl (36)]

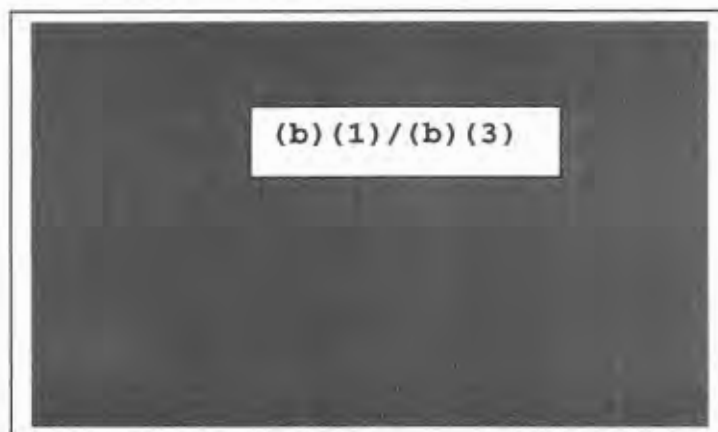
26. (U) The Navigator's duties and responsibilities include determining ship's intended movements, preparing and completing the Planned Operations and Navigation Checkoff List for the Commanding Officer's approval, and preparing a SUBNOTE request if required. The Navigator reports to the Commanding Officer in all matters pertaining to safe navigation. COMNAVSUBFORINST 5400.29, The Navigation and Operations Department Organization and Regulation Manual (NODORM) Art. 1101. [encls (41), (205), (206)]

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E2405
Figure 12 (C)

506. (U) The Product Specifications for Bottom Contour Charts (All Series) used for the 1st edition of chart E2202 has been updated to the fourth edition. The edition used during the construction of chart E2202 was not available for review. [encl (248)]

Chart Cautions and Accuracy

507. (U) NGA reports that "None of the depicted track lines [on E2202] appear to have ensonified the feature in question." [encls (43), (232)]

508. (S) A [REDACTED] [encls (137), (247)]

509. (S) The [REDACTED] [encls (137), (247)]

10. (S) The [REDACTED] a [REDACTED] [encls (137), (247)]

511. (S) The [REDACTED] [encls (43), (137), (247)]

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512. (C) NGA reported on 13 January 2005 that, "[REDACTED]
[REDACTED]. Imagery was analyzed
on 10-11 January 2005. Based on appearance in multiple optical
bands, [REDACTED]
[REDACTED]." [encl (232)]

513. (C) [REDACTED], NGA Spectral Scientist, states,
that "[REDACTED]
[REDACTED]
[REDACTED]" [encl (249)]

514. (C) NGA reported the [REDACTED]
[REDACTED]. [encl (248)]

515. (U) Chart E7102, which the ship would have used further
down its SUBNOTE transit, shows three cautions in the vicinity
of the CSG-7 assigned SUBNOTE track. Specifically, they state:

a. For Tanga Islands, "CAUTION: Tanga islands are reported
to lie about 5 miles 025° from their charted position;"

b. For Nuguria Islands, "CAUTION: The SW extreme of Nuguria
is reported to lie about 5 ½ miles 250 ½° from its charted
position (1944);

c. For New Ireland "CAUTION: The east coast of New Ireland
is reported to be inaccurately charted" (See Figure 13)

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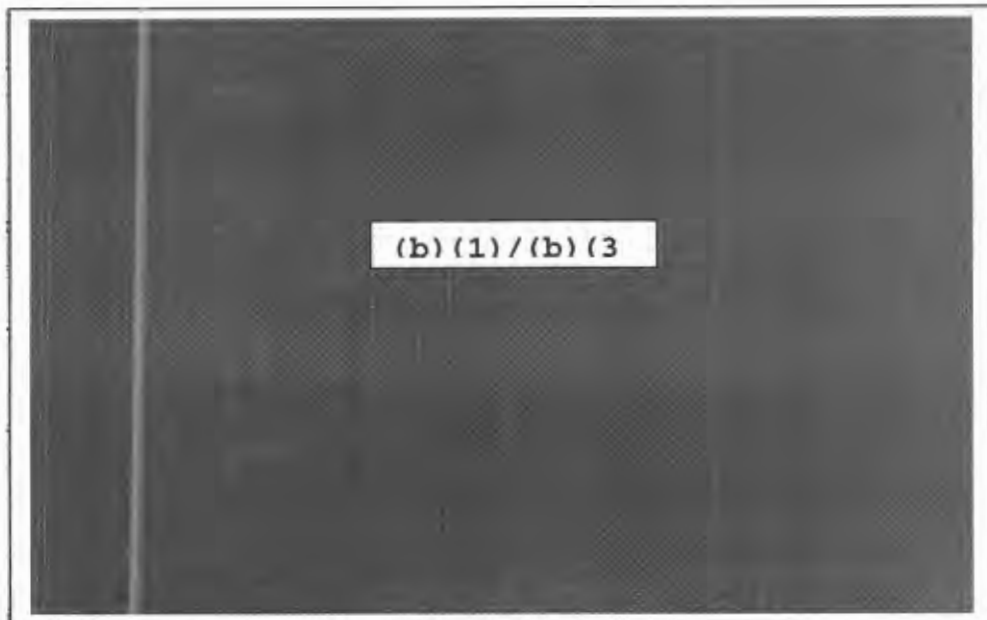


Chart E7102
Figure 13 (C)

516. (U) Sailing Directions, Pub 126 states the following in reference to the cautions on chart E7012:

a. "It was reported that the Nuguria Islands are about 5.5 miles WSW of their charted position;"

b. "The outline of the Tanga Islands is reported to be incorrectly defined on the charts and they were reported to be 2.75 miles WNW of their charted position;"

c. "Caution. - Vessels should pass outside of the islands off-lying New Ireland, or to the S of it due to the uncertainty of the depths off the island's NE coast." [encl (237)]

Squadron Support

517. (U) Per the Activity Manpower Document, CSS-15's Naval Submarine Support Command (NSSC) DET (UIC 3687A) is billeted for one 14NV ETCM OPS ASST and one 14NV ETCS OPS ASST. Additionally, CSS-15 (UIC 43709) is billeted for one 14NV ETCS AOPS. The CSS-15 AOPS billet is currently filled by ETC(SS) [REDACTED]. ETC(SS) [REDACTED] stated that the two CSS-15 NSSC DET OPS ASST billets have never been filled. [encls (196), (252)]

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518. (U) ETC(SS) [REDACTED] and LCDR [REDACTED] said that the manning shortage at CSS-15 burdens them with a large workload, especially when visiting submarines are in town. Many functions that would otherwise be taken care of by NSSC have to be done by CSS-15. As a result, they have scarce time to conduct training for their boats. [encl (196)]

519. (C) Due to [REDACTED]
[REDACTED]. [encls (4),(253)]

520. (U) Since January 2004, CSS-15 has supported every SAN FRANCISCO underway with at least one rider. This included sending the Squadron Engineer to sea for the [REDACTED]
[REDACTED]. [encls (198),(253)]

Operational Risk Management

521. (U) SAN FRANCISCO has no ship's or departmental notice or instruction covering Operational Risk Management. [encl (254)]

522. (U) The CO described his personal process to evaluate the hazards inherent in this transit and put risk mitigation factors into place: "I remember with a nearly 20-mile lane, I know it's not 20 miles everywhere around the ship's track, but with nearly a 20-mile lane through here, I felt good. I had considered operational restrictions and limitations in the time prior to this. But at that time, prior to the ship going to sea, and having reviewed the chart and the track, the thought--I don't know that I stood up, looked in the mirror and made a decision, "I shall not impose any operational restrictions for the portion of track through the Caroline Islands," but I recall thinking that this is going to be okay. That was my thought process." [encl (4)]

523. (U) When XO was asked in his post-grounding interview, "How does the ship incorporate operational risk management with respect to voyage planning, specifically in this SUBNOTE?" He replied, "I have no idea." [encl (5)]

524. (U) During the XO's interview, he was asked, "was there anything about the transit to the Caroline Island chain that caused yourself or anybody, during the review process, the voyage planning process, to want to implement mitigating factors associated with risk management?" He replied, "When I looked at

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where we're going in the SUBNOTE, the only part that concerned me at all was this part here [Caroline Islands]. I expected that a Navigation Supervisor would be required, just knowing it was there. So I looked at it, and realized that based on my understanding of the requirements, that it wasn't required." [encl (5)]

525. (U) SAN FRANCISCO does not have an Operational Risk Management program and does not overtly use this terminology or process in planning and executing operations. In CO Standing Order 2, Submerged Operations, and CO Standing Order 4, Navigation, the word "risk" appears only once, and neither "Operational Risk Management" nor "ORM" appear at all. [encls (4), (6), (93), (207)-(213)]

OPINIONS

1. (U) Failure of the ship's leaders and watchteams to develop and execute a safe voyage plan caused this grounding. The CO is ultimately responsible for the safe navigation of the ship in accordance with Navy Regulations. The CO failed to recognize that the SUBNOTE required the ship to transit a region hazardous to navigation in the vicinity of the Caroline Islands. Had the CO considered all available navigation products, he would have been compelled to operate his ship differently. If prudent measures had been taken based on an assessment of the risks, the ship would have most likely avoided grounding. At the very least, even if not wholly avoided, the severity of the grounding would have been significantly lessened and loss of life may have been prevented. [FF 19-24, 32, 35-37, 39, 40, 43, 44, 48, 51-53, 55, 56, 78, 191-196, 210, 212, 235, 247, 271, 272, 275, 277, 282, 290, 391-397, 413, 414, 416, 422-424, 477, 478, 481-483, 485, 487-489, 491, 492, 521, 522, 525]

2. (U) The XO, NAV and ANAV share in the Commanding Officer's responsibility for the safety of the ship. They prevented him from making a fully informed safety of ship decision by failing to submit a safe voyage plan. [FF 23-27, 32-41, 45-48, 51-53, 55, 67, 81, 177, 178, 195, 211-214, 216-223, 231, 233-235, 402, 403, 473, 474, 477, 478, 481-485, 487-489, 491, 492, 515]

3. (U) Manning aboard SAN FRANCISCO provided sufficient qualified QMOWs and OODs, and did not detract from the planning and execution of the voyage plan. [FF 404-410]

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Operational Risk Management

4. (U) The CO, XO, NAV and ANAV failed to consider all available navigation information throughout voyage planning and execution. The best case scenario was assumed vice the worst case. SAN FRANCISCO saw this as a "business as usual open ocean transit" through a perceived "40 NM wide highway." The CO's own Standing Orders specifically point out the danger of unquestioning reliance on a single item for safe navigation. Chart E2202 and several other indicators in the Control Room were available to the CO and his watchteam showing the ship was heading into dangerous waters. [FF 23-26,27,29,32-34,36,37,39,45,46,48,49,50-52,54,57,67,78,183,186,191,192,193,194,195,203,207-211,213,218,247,254,255,257,260,261,271-273,277,424,473,474,477,478,482,483,515,521-525]

5. (U) SAN FRANCISCO failed to incorporate Operational Risk Management in voyage planning and execution. Choices of speed, depth band, sounding interval, and the watchbill did not take into consideration all available navigation information (charts, sailing directions, VMS, etc.). The Plan of the Day was executed with no regard for navigational safety. The higher speeds at impact resulting from these misplaced priorities led to greater damage and loss of life. [FF 23,24,29,32-35,37-39,42,45,48,51-53,59,60,78,182-184,186,240,241,258,471,472,492,521-525]

6. (U) The CO and XO failed to properly evaluate the accuracy of sounding datum on chart E2202. They ignored marginalia data. This blind faith in the accuracy of Echo charts, combined with their cursory review of chart E2202, directly contributed to the grounding. [FF 32,49,207-210,218,222,223,254]

7. (U) Although the NAV and ANAV reviewed marginalia data on chart E2202, they failed to properly evaluate the accuracy of sounding datum in relation to the expected track. [FF 32,195,220,221]

8. (U) Despite numerous islands and shoal areas surrounding the MHN, as well as significant divergence in bathymetry in the vicinity of the Caroline Islands, the CO, XO, NAV and ANAV failed to appreciate potential hazards and take a conservative approach. Instead, they agreed to operate at maximum speed. This combined with not taking any additional precautions such as stationing additional watchstanders, establishing more

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restrictive limits on speed and depth, and reducing the sounding interval, directly contributed to the grounding. [FF 32,182, 192,195,220,221,255,257,258,261,266,271-273]

9. (U) The CO, XO, NAV, and ANAV assumed that CTF-74 SUBNOTE 001 reflected a standard route navigated previously by other submarines. This incorrect and unfounded assumption created an unwarranted sense of safety throughout the chart approval process. [FF 138,181,186,193,194,257]

10. (U) The OOD (the NAV) and QMOW (ET2(SS) [REDACTED]) failed to recognize and appreciate navigational uncertainties of chart E2202. [FF 32,63,64,74,75,77,79,81,85,86,192,195,220,221,255, 257,258,261,266,271-273]

11. (U) Several crewmembers expressed isolated points of concern with the voyage plan during planning and execution. Unfortunately, these concerns were rationalized away or never acted upon by the individual, or dismissed as irrelevant by more senior supervisors. This not only was a missed opportunity, but also illustrates a culture within the crew of readily accepting answers to operational questions without critical thought or analysis. [FF 39,50,52,53,57,58,59,60,64,66,67,69,81,88,91,195, 414,423]

a. Although the XO was initially concerned about the need to station a Navigation Supervisor during the transit of the Caroline Islands while conducting his review of chart E2202, he failed to assess the prudent measures needed to transit this region. He posed a rhetorical question to the NAV and ANAV to ensure that "restricted water" requirements were not necessary. When they agreed with him, he asked no further questions nor did he require them to explain the basis of their opinion. [FF 23, 24,32,50,57,73,218,219,222,233,250,259,261]

b. The CO went through a similar mental process when he dismissed his initial concern about the nature of this transit. When he initially looked at the chart of Caroline Islands, he thought he would be sailing in "restricted waters," but convinced himself by measuring with dividers that his initial instincts were mistaken. He placed total reliance in the accuracy of the Echo charts, and convinced himself he was driving down a clear lane 20 NM on either side of his track and none of the prudent measures required in "restricted waters"

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were needed. [FF 32,50,57,73,192,203,228,236,250,255,259,261,269,270]

c. ET2(SS) [REDACTED] questioned whether a Modified Piloting Party would be needed to transit the island chain as he was relieving as QMOW the night before the grounding. The OOD did not critically evaluate this concern. ET2(SS) [REDACTED] readily accepted the OOD's response. [FF 57,74,75,260]

d. LTJG [REDACTED] (the JOOD) intended to take a sounding as the ship changed depth from 500 feet to 525 feet four minutes prior to grounding. The OOD (the NAV) dismissed this concern based on his incorrect understanding of the CO's Standing Orders. The OOD failed to take a prudent approach to safe navigation. ET2(SS) [REDACTED] failed to provide the OOD backup regarding the sounding requirement for this depth change. [FF 63,68,74,75,268,279,281]

Procedural Compliance

12. (U) The ANAV and chart preparer (ET1(SS) [REDACTED]) were negligent in voyage planning. They failed to: (1) adequately review all applicable publications to glean all navigation hazards and information for consideration by the CO, XO, and NAV; (2) closely look for hazards to navigation on all available charts along the SUBNOTE route; and (3) identify a hazard/shoal marking in the vicinity of the grounding that existed on charts 81023, INT 506, and INT 507. As a result, they did not transfer this hazard to chart E2202 and directly contributed to the grounding. [FF 27,29,32-34,36-38,47-49,52,53,55,56,180,182,197-201,212,213,216,217,221,224,226-229,231,240,241,457,473-481]

13. (U) The NAV was negligent in voyage planning. He failed to: (1) adequately review all applicable publications to glean all navigation hazards and information for consideration by the CO and XO; (2) closely look for hazards to navigation on all available charts along the SUBNOTE route; and (3) identify a hazard/shoal marking in the vicinity of the grounding that existed on charts 81023, INT 506, and INT 507. As a result, he did not ensure that this hazard was transferred to chart E2202 and directly contributed to the grounding. [FF 26,29,32-34,36-38,40,45-48,52,53,55,56,180,182,212,213,216,217,221,228,229,231,240,241,457,473-481]

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14. (U) The XO was negligent in voyage planning. He failed to: (1) adequately review all applicable publications to glean all navigation hazards and information for consideration by the CO; (2) closely look for hazards to navigation on all available charts along the SUBNOTE route; and (3) identify a hazard/shoal marking in the vicinity of the grounding that existed on charts 81023, INT 506, and INT 507. As a result, he did not ensure that this hazard was transferred to chart E2202 and directly contributed to the grounding. [FF 23,24,29,32-34,36-38,40,46,48,52,53,55,56,202,203,207,212,213,218,219,222,228,229,240,241,457,463,464-469,484-487,490-493]

15. (U) The CO was negligent in voyage planning. He not only failed to review the necessary charts and publications for the Caroline Islands during his approval of the voyage plan on chart E2202, but he also failed to ensure his team properly executed voyage planning, which directly contributed to the grounding. [FF 19-22,26,29,32-34,36-38,40,44,46,48,52,53,55,56,202,203,207,212,213,218,219,222,228,229,240,241,457,463-469,484-487,490-493]

16. (U) The CO, XO, NAV and ANAV were negligent in that they uniformly dismissed Sailing Direction Pub 126 based on their mindset that this was an open ocean transit. This action precluded the consideration of crucial navigation information that highlighted inaccuracies of charted features in the vicinity of the Caroline Islands. [FF 19-25,29,33,34,37,45,48,57,230,231-235,482,483]

17. (U) The CO, XO, NAV (the OOD), ANAV and QMOW (ET2(SS) [REDACTED]) established and employed an inappropriate sounding and position plotting interval of [REDACTED] minutes while at All Ahead Flank in the vicinity of the Caroline Islands. These conditions did not allow three soundings prior to entering within 1,000 yards of dangerously shoaling waters as required by OP 61-17. [FF 19-25,29,52,53,59,60,63,74,75,78,85,86,240,241,272] (b)(2)

18. (U) The QMOW under instruction watch (ET2(SS) [REDACTED], a qualified fathometer operator) failed to look at all available indications on the fathometer per CO Standing Orders while taking a sounding during the morning watch. Additionally, he and the qualified QMOW (ET2(SS) [REDACTED]) failed to recognize the 0645K sounding did not check with charted water depth. Consequently, this discrepancy was not reported to the OOD. These lapses prevented the watchteam and command leadership from

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recognizing inaccuracies of water depth on chart E2202 and
deprived them of the opportunity to take appropriate measures.
[FF 61,74,75,79,80,83,84,265,273]

19. (U) The lack of review and scrutiny of QMOW practices
during the morning watch by the OOD (the NAV) likely contributed
to the poor watchstanding performance exhibited by this QMOW
(ET2(SS) [REDACTED]), [FF 62,77,87,97,98,265,252,273]

20. (U) Although the current NODORM checklist is adequate, it
could be improved to aid its user by:

a. (U) Requiring all personnel conducting voyage planning
sign or initial for review of all applicable references;

b. (U) Requiring all applicable charts are reviewed for
hazards to navigation along the ship's track;

c. (U) Reflecting the OPORD 2000 warning regarding possible
disparity in navigational information among charts and emphasis
that all available navigation safety information must be used
for voyage planning;

d. (U) Specifying a maximum number of charts that can be
used per checklist; and

e. (U) Formalizing chart preparer procedures and
accountability.
[FF 48]

21. (U) OP 61-17 requires improvement. Although OP 61-17
Section 2.3.4.f provides clear instruction to "review other
charts covering the same area . . . to verify all known hazards
are in fact identified", it should be updated to ensure "all
identified hazards are plotted on the chart to be used for
navigation." [FF 37-39]

Command Leadership and Culture

22. (C) Having completed a recent deployment, receiving an

[REDACTED]
[REDACTED] Although he realized he [REDACTED]

[REDACTED] Instead, he [REDACTED]

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[REDACTED] [FF
1,236-238,240-242,250,255,256,258,259,261,262,267,270,279,281]

23. (U) The CO placed excessive faith in the Navigation Division, believing he had a "stacked deck" of ETs. Accordingly, he focused on other areas at the expense of the Navigation Division. [FF 46,51,202,204-206,211,212,228,236,237,244,245,254,413-417,419,422,423,441-443,445,454,455]

24. (U) The CO did not feel confident in his own navigation skills, not having served as a Navigator himself. He depended on the XO to mentor, train and supervise the NAV. This led him to overlook the fact that Navigation Division was not preparing charts and voyage plans as required. [FF 46,51,191,196,202,203,206,211,212,228,254,255,258,271,272,432-435,437-439,445,455]

25. (U) Although a served navigator, the XO failed to meet his responsibility to oversee the ship's navigational safety. He provided the NAV little assistance in upgrading performance standards in open ocean navigation. There are no records of his participation in any monitored evolutions of Navigation Division associated with open ocean navigation. The XO did not monitor the NAV to ensure Navigation Division used all applicable instructions, guidance and checklists for open ocean voyages. [FF 47,193,206,218,219,222,228,233,239,431,433,441,443-445,523,524]

Poor Watchstanding Practices

26. (U) The CO, XO, NAV and ANAV failed to establish and uphold watchstanding formality and standards as evident by persistent administrative errors and a lack of attention to detail. [FF 56,58,61,65,66,70-72,74,75,82,85,86,97-100,251,252,263,264,280]

27. (U) Although the CO's Night Orders provided extensive direction, cursory reviews by the watchteam were commonplace. This reflects a command culture where a lack of attention to detail and procedural compliance were the norm. [FF 59-61,253,258,262,420,421]

28. (U) SAN FRANCISCO Navigation Division did not use VMS effectively during open ocean navigation despite the fact that this was pointed out as a recurring deficiency. [FF 76,89,90,92-95,276,277,290,414,443-447,449,453,488,489]

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[REDACTED]
[FF 30,31,172-176]

35. (C) The lessons learned system at CSG-7 [REDACTED]
[REDACTED]
[REDACTED] [FF 127,128,
130,131]

36. (C) Qualification requirements for personnel involved [REDACTED]
[REDACTED] Currently
there are [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] [FF 108,119-127,129,133,136,137,150-153]

37. (C) No consideration is given to the [REDACTED]
[REDACTED]
[REDACTED]

Individuals associated in generating the SUBNOTE 001 stated that
[REDACTED]
[REDACTED]

Although this did not [REDACTED]
[REDACTED]
[REDACTED]

The SUBNOTE was [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] [FF 104,105,
111,112,114,116,143,144,148-153,161]

38. (C) CSG-7 should [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] [FF 108,135-137,141,142,144,148-153,155-
161]

Casualty Response

39. (U) The ship's response to the grounding was proper in all
critical attributes of the operation and casualty procedures and
directly resulted in the ship's safe return to port. [FF 278,
283-289,292-303,322,411,412]

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40. (U) Any deviations or omissions from standard casualty procedures did not affect overall recovery of the ship and were understandable, given the severity and suddenness of the initial impact and contradictory operating/casualty procedures between the Collision and Emergency Surfacing procedures in the SSM and actions in the CO Standing Order for Red Sounding. [FF 301-310, 312,317-319]

41. (U) The SAN FRANCISCO immediately took actions which enhanced the ship's ability to minimize the effects of the grounding. The ship appropriately conducted an emergency surfacing and subsequently sustained the low-pressure blow continuously until return to port, maintaining post-grounding stability. [FF 301-312,316-319]

42. (U) The OOD ordered the Helmsman to resume steering course 090 at approx 1143:30K, about 80 seconds after the grounding. All Ahead 2/3 was ordered. No fathometer was in operation. The ship proceeded further down the original track for approximately 15 minutes, then reversed course at 1202K and passed over the area where the ship had grounded. The OOD should have considered reversing course to known good water sooner. [FF 317-319]

43. (U) Since only chart E2202 was prepared, the ANAV ordered all positional information removed to facilitate plotting ship's position for its return to Guam. The ship then went over the same spot where it grounded. This ship should have considered avoiding this spot. [FF 282,319]

44. (U) Once surfaced, SAN FRANCISCO transited over the area of the grounding. This proves the CO could have avoided the grounding by transiting this area on the surface, which his SUBNOTE allowed. [FF 106,107,282,292]

Medical Opinions

45. (U) The severe head injury to MM2(SS) Ashley was inevitably fatal. Earlier evacuation or arrival of medical officers would not have changed the outcome for MM2(SS) Ashley. The deterioration of MM2(SS) Ashley's medical condition after his initial injury is consistent with the injuries noted at autopsy. [FF 315,324,326-330,334,336,338,339,341,343,344,349-354]

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46. (U) Petty Officer Ashley's death was in the line of duty and not due to misconduct. FF [324]

47. (U) Earlier evacuation or arrival of medical officers would not have changed the outcome for any other injured crewmember. The injuries of the remainder of the crew were in the line of duty and not due to their misconduct. Risk of permanent disability for those crewmembers ranges from minimal to moderate (one case). The risk of Post Traumatic Stress Disorder is indeterminate at this time. Some cases should be anticipated. [FF 290,297-300,313,320,324,325,327,332,333,334,335,345,389] (Individual line of duty misconduct determinations are documented on Standard Form 600 and are provided for all injured crewmembers in enclosure (143)).

48. (U) A review of the medical records and interviews with the Ship's Control Party, XO and Control Room watchstanders revealed no medical conditions or medication usage factored in the grounding. The CO's illness did not impair his ability to execute his command responsibility. [FF 248,347,348]

49. (U) The medical care delivered by the HMI(SS/SW) [REDACTED] met or exceeded the standard of medical care for pre-hospital trauma life support. This care was delivered under very difficult conditions. Other crewmembers provided critical medical support. Without the additional medical skills of the crew, HMI(SS/SW) [REDACTED] would have been overwhelmed by the number and severity of the casualties. Training and medical oversight of HMI(SS/SW) [REDACTED] provided by CSS-15 prior to the grounding was at or above standards. [FF 324-336,345,349-354,361,362,389]

50. (U) The composition and training of the EMAT team met the requirements of COMNAVFORINST 6000.2A. Additional EMT-level training for the EMAT team members would have been valuable. The continuity of the EMAT team should be maintained. Consideration should be given to augment the submarine Independent Duty Corpsmen (IDC) with two EMT trained crewmembers. Drills involving multiple casualties and evacuation should be part of submarine training. [FF 325, 333-336,345,346,361,389]

51. (U) The medical equipment onboard, the design of the submarine, and the IDC training were not optimal for this unique casualty. These factors did not have an adverse effect on the medical outcome of the crew. Equipment and submarine

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configuration limitations were largely overcome with exceptional creativity and initiative by the crew. The Jacobs ladders and diver's recovery ladder on SAN FRANCISCO were in good material condition. [FF 324-366,385,386,389] (Additional discussion of this opinion can be found in enclosure (261)).

52. (U) BUMED should provide Advanced Cardiac/Advanced Trauma Life Support (ACLS/ATLS) training to submarine IDCs. Specific protocols for remote physician assistance to IDCs in advanced airway management should be developed. Equipment should be selected and provided to support these capabilities. [FF 327-329,336,341,343,362] (Additional discussion of this opinion can be found in enclosure (63)).

53. (U) Medical evacuation of a critically injured crewmember using a Reeves Sleeve stretcher through the Sail is not possible without modifying the submarine. [FF 327,338-340,342,343,359]

54. (U) Fleet response in support of SAN FRANCISCO was rapid and appropriate. A full range of medical evacuation and assistance options were explored and only the practical options were used. Contingency planning for evacuation and aftercare rapidly adapted to the dynamic circumstances. The medical care provided by personnel transferred to SAN FRANCISCO via helicopter was excellent under less than ideal conditions, including open cricothyrotomy and Advanced Cardiac Life Support. FF [325,335,336-339,343-345,367-376,378-382,388-390]

55. (U) Medical advice provided to HM1(SS/SW) [REDACTED] was based on appropriate consultation with specialists. FF [375]

56. (U) Medical support communication after the grounding was not optimal between HM1(SS/SW) [REDACTED] and medical personnel outside of SAN FRANCISCO due to a combination of factors. Communication between the On Scene Commander and other units involved in medical assistance was hampered by the ship's internal configuration, limited connectivity and limited interoperability. These deficiencies did not affect the medical outcome for any crewmember. Communication protocol should be a required part of operational medical officer training. Discussions of lessons learned from incidents with injuries to multiple crewmembers should be added to training schedule for operational medical officers, and other medical personnel that could be tasked to respond. [FF 324,325,330,336-339,343-345,363-384,388,389]

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57. (U) The shift of the medical communication, while appropriate, was not seamless. Major command centers should be staffed by two physicians during significant casualties. Continuity of, and direct communication with, the unit's IDC should be a priority. Major command centers should ensure the presence of, and regularly update, contact and resource lists and suggested protocols for possible multiple casualty situations. [FF 332,335,336,365,376,377]

58. (C) EHF capability was [REDACTED]
[REDACTED]
Communication capability, [REDACTED]
[REDACTED] . [FF 332,335,336,365,376,377,398,399]

Communication capability,

[FF 332,335,336,365,376,377,398,399]

59. (U) Exceptional outside support was provided by a disparate group of units, including Coast Guard, USS FRANK CABLE (AS 40), Naval Special Warfare, Naval Aviation, Military Sealift Command ships, and shore stations. [FF 337-339,343-345,367-387,389]

60. (U) Evacuation of MM2(SS) Ashley through the Sail by helicopter was the only viable option given the sea state and the operating condition of the submarine (low freeboard due to damage to the main ballast tanks). [FF 321,369,372,378-381]

61. (U) Local medical support was excellent and timely, allowing the deployment of two medical teams. The redundancy of the medical teams provided critical flexibility for the On Scene Commander. On scene support by elements of the Coast Guard, FRANK CABLE, Military Sealift Command, HC-5 and Naval Special Warfare Unit ONE was outstanding. Naval Hospital Guam provided exceptional care and support during SAN FRANCISCO's transit to Guam following the grounding and after the return to port. [FF 322,370,372,374,378-381,388,389]

62. (U) Although not covered by any existing multiple casualty procedures, SAN FRANCISCO wisely used the Crew's Mess as a medical triage treatment area, which proved to be extremely effective. Prolonged oxygen therapy and evacuation of a patient after spinal immobilization from the Wardroom would have been nearly impossible. Additional space and access to the oxygen bleed tube was available for injured personnel in Crew's Mess.

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The use of the Crew's Mess and access to the oxygen bleed station was critical in caring for multiple casualties.
[FF 325-335,338,356,359]

Material

63. (C) Although the grounding caused some [REDACTED]
[REDACTED] [FF 310,314,400,401]

64. (U) The ship's EHF Communication System could have been restored at sea and used following the grounding. After the ship returned to port, the problem was attributed to an equipment line up error. Although the ship had technical documentation onboard to troubleshoot and restore EHF communications, that material may not have provided enough clarity to allow the operators to restore the EHF system while at sea. [FF 398,399]

Training

65. (U) The CO, XO, NAV and ANAV failed to implement and oversee an effective training and self-assessment program for voyage planning and open ocean navigation. Although the ship had quarterly training goals, a 'Top 5' self assessment program, and a monitored evolution program, none of these processes provided a critical look at recurring deficiencies in these areas with substantive corrective actions. [FF 23,24,96,413-450]

66. (U) The CO, XO, NAV and ANAV failed to adequately upgrade poor practices in open ocean navigation and voyage planning following the 2004 TRE, POMCERT and Navigation Evaluations, to include use of VMS, selection of Red and Yellow Soundings, OOD supervision of the Navigation Plot, and accomplishment of hourly compass checks. Similar poor practices were repeated on 7 and 8 January 2005. [FF 23,24,85,86,96,413-423,433,436-450]

67. (U) The current Prospective ANAV course curriculum covers topics related to voyage planning chart preparation. However, OPORD 2000 is not listed as a reference in the lesson plan for topic 3.1 (Nautical Computations and Open Ocean Chart Cross-Checks), and it is not obvious that prospective ANAVs are taught the mechanics of reviewing "classified, unclassified, bottom

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contour, general bathymetric and other available charts and information" and plotting "known dangers . . . on the chart actually being used to navigate the ship." Additionally, the Prospective ANAV curriculum does not sufficiently cover submarine collision and grounding briefs. Only one collision brief is discussed for Topic 1.1 (Rules of the Road).
[FF 37,38,451]

68. (U) The current Submarine Officer Advanced Course (SOAC) curriculum for Department Heads covers topics related to voyage planning and chart preparation for Department Heads. A 2-hour topic titled "Navigation-The Third Dimension" references OPORD 2000 and covers chart selection and comparison. However, this topic does not teach prospective Department Heads the mechanics of reviewing "classified, unclassified, bottom contour, general bathymetric and other available charts and information" and plotting "known dangers . . . on the chart actually being used to navigate the ship." Additionally, the SOAC curriculum does not sufficiently cover submarine collision and grounding briefs. Only the GREENEVILLE grounding brief is discussed.
[FF 37,38,452,453]

69. (U) The current Submarine Command Course curriculum (formerly Prospective Commanding Officer Course) adequately covers topics related to the risk management of voyage planning and chart preparation for Commanding Officers and Executive Officers. [FF 424,454,455]

70. (U) Since January 2004, CSS-15 has supported every SAN FRANCISCO underway with at least one rider. This included sending the Squadron Engineer to sea for the [REDACTED] during the Fall of 2004. Squadron assistance played an important role in improvements seen on SAN FRANCISCO, particularly in Engineering. [FF 243,519,520]

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71. (U) CSS-15 is not manned adequately to provide navigation oversight and mentoring. Manning deficiencies at CSS-15 have resulted in one squadron ANAV (14NV) doing the job of three for the previous year. The current squadron ANAV has never gone to sea to observe navigation practices on SAN FRANCISCO despite being assigned to the job for over a year. The lack of squadron ANAV deck plate presence may have led to missed opportunities to correct the poor practices in open ocean navigation that contributed to the grounding. [FF 517,518]

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Chart Management

72. (U) The chart products onboard SAN FRANCISCO were sufficient to identify the existence of navigation hazards along the SUBNOTE track. [FF 456-462, 464, 465, 469, 470, 472-479, 481-486, 488, 489]

73. (U) The extent of the navigation hazard on which SAN FRANCISCO grounded cannot be definitively known until a comprehensive bathymetric survey of the area is completed. It is most likely that the feature upon which SAN FRANCISCO grounded is the same feature associated with the discolored water spot and the shallow area that was imaged by LANDSAT. [FF 477, 490-492, 507-509, 512, 513]

74. (U) The omission of the reported navigation hazard on the E2202 directly contributed to the grounding in that it is reasonable to assume that had the feature been added to the E2202, it would have influenced the CSG-7 SUBNOTE generation process and provided the SAN FRANCISCO's navigation team another opportunity to identify the navigation hazard near their track. [FF 166-169, 459, 473-476, 478]

75. (U) Adding the Product Specification for Bottom Contour Charts to the allowance lists of all submarines and SUBOPAUTHs would better enable submariners to properly train on how the bottom contour charts are constructed and how the hydrographic information is selected for incorporation on these charts. [FF 155-157, 207, 208, 215, 220, 222, 494, 495, 500, 501, 503, 505]

76. (U) Although NGA reported that the Product Specification for Bottom Contour Charts does not specifically require inclusion of "discolored water" on Echo series charts, it does not forbid including this hazard. Consequently, all critical information regarding navigational hazards should be included on Echo series charts. [FF 496-499, 502, 505, 506]

77. (C) Chart products are [REDACTED] For example, [REDACTED] [FF 457, 462-465, 483, 504, 508-511, 514-516]

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RECOMMENDATIONS

1. (U) That CO, CDR [REDACTED]
[REDACTED] SAN FRANCISCO
grounding on 8 January 2005.
2. (U) That XO, LCDR [REDACTED]
[REDACTED] SAN FRANCISCO grounding on 8 January
2005.
3. (U) That NAV and OOD, LCDR [REDACTED]
[REDACTED] SAN FRANCISCO grounding on
8 January 2005.
4. (U) That ANAV, ETCS(SS) [REDACTED]
[REDACTED] SAN FRANCISCO grounding
on 8 January 2005.
5. (U) That the Chart Petty Officer, ET1(SS) [REDACTED]
[REDACTED]
6. (U) That the on-watch QMOW, ET2(SS) [REDACTED]
[REDACTED]
7. (U) That the off-going QMOW, ET2(SS) [REDACTED]
[REDACTED]
8. (U) That the off-going Fathometer Operator, ET2(SS) [REDACTED]
[REDACTED]

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9. (U) That COMNAVSUBFOR take the following actions:

a. (U) Review the NODORM for improvements considering the information provided by this investigation. (Opinion 20)

b. (C) Review OPORD 2000 and other associated instructions for appropriate changes to include, but not limited to:

 Opinions 21, 31, 33, 34-38)

c. (U) Evaluate all material problems resulting from the grounding identified in this investigation for improvements and possible design change. (Opinions 51, 53, 63)

d. (U) Evaluate improvements required to provide reliable voice and data communications between submarine medical personnel and supporting organizations ashore during patient care in treatment areas. (Opinions 58, 64)

e. (U) Evaluate SSM OP 61-17 for all submarine classes, for appropriate change requiring transfer of navigational hazards from all available navigation products to the chart being used for navigation. (Opinion 21)

f. (U) Review SUBOPAUTH routing processes (including the qualification program for those who create and approve SUBNOTES, and associated checklists). (Opinions 31-38)

g. (U) Evaluate submarine medical procedures for immobilized patient evacuation, and adequacy in handling multiple injured crewmembers, including requirements for Emergency Medical Assistance Teams, to include team composition and training. (Opinions 50, 52, 62)

h. (U) Provide the lessons learned from this incident to the submarine force regarding voyage preparations (including open ocean use of VMS), and that this incident be added to the submarine force grounding/collisions briefing materials. (Opinions 1-28, 33, 42-44, 64, 67-69, 75)

10. (U) That COMNAVSUBFOR and OPNAV (including, at a minimum, OPNAV N7C (Oceanographer)) work with NGA to evaluate the procedures and specifications used to update charts, ensuring

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all available sources are included and the accuracy is clearly
portrayed. (Opinions 73-77)

11. (U) That BUMED review the material and training issues
identified in this report and take appropriate action.
(Opinions 51,52,56)

12. (U) That COMSUBPAC in coordination with COMPACFLT evaluate
the personnel detailing practices for submarine staff manning at
CSS-15 and other associated commands at Guam to avoid gaps in
critical manning areas, and address needed policy changes with
NAVPERSCOM (PERS 4). (Opinion 71)

13. (U) That CSG-7 assess SAN FRANCISCO Navigation Team
proficiency and compliance with standards regarding chart
preparation and open ocean navigation, and implement a training
and certification plan as warranted. This assessment should also
include VMS utilization for all facets of navigation. (Opinions
1-28,33,42-44,65,66,75)

14. (U) That COMNAVSUBFOR and BUMED provide the lessons learned
from this incident to the submarine force and appropriate
medical personnel regarding multiple casualty procedures.
(Opinions 45-62)



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Assistant Navigator General Responsibilities

27. (U) The Assistant Navigator duties and responsibilities include frequently reviewing all navigational oriented logs and reports to ensure completeness, neatness, and accuracy; bringing errors or omissions to the attention of the person concerned; and ensuring appropriate and proper corrections are made and that the watch officers concerned review and initial corrections. Assistant Navigator's review shall be evidenced by initialing each sheet of the log or record book. NODORM Art. 1102.e. [encl (41)]

General Navigational Considerations

28. (U) "The Submarine Notice (SUBNOTE) System is primarily intended for submarine accountability and safety (submerged interference) monitoring by the SUBOPAETH." OPOD 2000. [encl (33)]

29. (U) The SUBNOTE track should not be assumed to be safe from a navigational standpoint. OPOD 2000. [encl (33)]

30. (C) The SUBNOTE REQUEST message is designed for [REDACTED] to [REDACTED]

[REDACTED]. OPOD 2000. [encl (38)]

31. (C) SUBOPAETHS can [REDACTED] and will honor requests for [REDACTED] whenever possible. OPOD 2000. [encl (39)]

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32. (C) "[REDACTED] Submarines should be [REDACTED]

[REDACTED]." WESTPAC Guide Para. 5.6.1. [encl (34)]

Voyage Planning

Chart Considerations, Navigation References and Data

33. (U) Principles of navigation and piloting consist of proper planning and execution of the navigation plan through use of all navigation techniques and equipment to ensure the ship is safely navigated. OP 61-17 Section 1.3. [encl (36)]

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34. (U) The ship shall "Prepare in detail the navigational and operational plans for those portions of the voyage outside of restricted waters[.]" NODORM Art. 5102.2.c. [encl (42)]

35. (U) "The contour of the ocean bottom, the depth of the water, proximity to shoal water, hazards to navigation, channel width, etc., should be evaluated carefully when selecting the ship's speed." OP 61-17 Section 2.1. [encl (36)]

36. (U) The ship shall ensure the correct charts are selected for intended operations, and that charts to be used are corrected up to date. NODORM Art. 5102.2.a. [encl (42)]

37. (U) By OPORD 2000, COMNAVSUBFOR warns that "all charts for a given area do not necessarily reflect all known dangers regarding that area." As such, COMNAVSUBFOR directs that "all available navigation safety information must be used when planning submarine operations and transits." OPORD 2000 App. 1 to Annex C, Para. 2.c [encl (33)]

38. (U) OPORD 2000 directs units to review navigational charts including "classified, unclassified, bottom contour, general bathymetric and other available charts and information" as part their review of available navigation safety information. Then, "known dangers must then be plotted on the chart actually being used to navigate the ship." App. 1 to Annex C, Para. 2.c [encl (33)]

39. (U) OP 61-17 Section 2.3.4.f requires the Navigator, Officer of the Deck, and Quartermaster of the Watch to check all intended tracks and operating areas, paying close attention to areas where depth of water constitutes a hazard to the ship or other navigation hazards exist. In evaluating these situations, they must consider ship's position uncertainty. Charts in use should be carefully searched for areas where water depth could be a hazard to the ship, or for other navigational hazards, and these areas should be identified. In making such a search, other charts covering the same area should be consulted to verify that all known hazards are identified. Shallow areas and other navigational hazards ahead and behind, as well as on both sides of the intended track, should be identified. [encl (36)]

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