

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)

[REDACTED] Additionally,
[REDACTED] ."

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

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

e. "[REDACTED]
[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]
[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] "

. [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 RLGN
- 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
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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]
[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]
[REDACTED]

[encl (225)]

Description and Reference of Relevant Charts

463. (C) Chart E2202, (1st edition 23 June 1979) [REDACTED]
[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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467. (U) Chart 525 (3rd edition 5 February 1983) is a small scale (1:4,000,000) international chart commonly used for long distance voyage track planning. [encls (223), (225), (231)]

468. (U) Chart 526 (10th edition 23 March 1996) is a small scale (1:8,433,180) international chart commonly used for long distance voyage track planning. [encls (223), (225), (231)]

469. (U) DNC12 is the digital navigation chart covering the grounding area and is a digital vector data chart in the Vector Product Format (VPF), based on the contents of traditional paper charts. Even though DNC charts are not in an International Hydrographic Organization (IHO) S-57 format database, NGA produces the content and format according to military specifications to allow for compatibility among all Department of Defense (DoD) assets and to conform to the International Maritime Organization (IMO) Performance Standards and IHO specifications. [encls (223), (225), (232)]

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

Digital Charts

471. (U) Digital charts such as DNC 12 are not authorized as the primary means of submarine navigation. [encl (223)]

472. (U) Vector chart data is data organized into many separate files or layers. It contains graphics files and programs to produce certain symbols, points, lines and areas with associated colors, text, and other chart elements. Vector data supports the computation of precise distances between features and can provide warnings when hazardous situations arise. [encls (231), (234), (235)]

Chart Symbolology and Chart Notes

473. (U) A danger line, as defined by Nautical Chart Symbols Abbreviations and Terms (Chart 1) and referenced as item [K.1], is depicted as a dotted line that separates a blue and white area (See Figure 1). [encl (236)]

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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)]

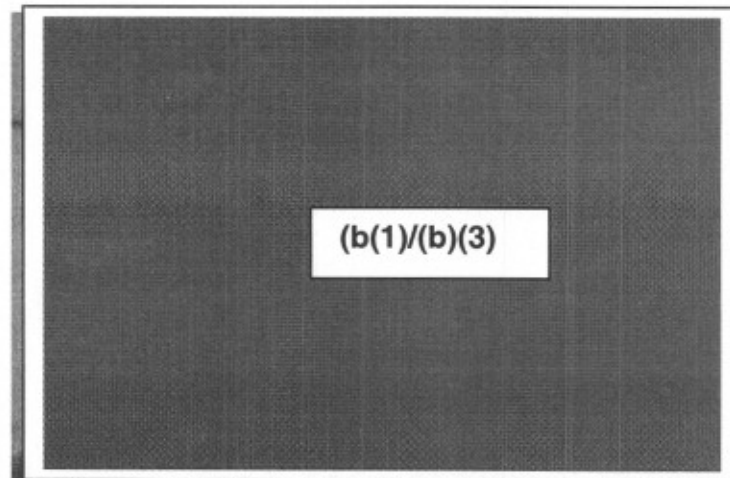


Chart 81023
Figure 3 (C)

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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] (See Figure 4).
[encls (43), (146), (231), (234), (235)]

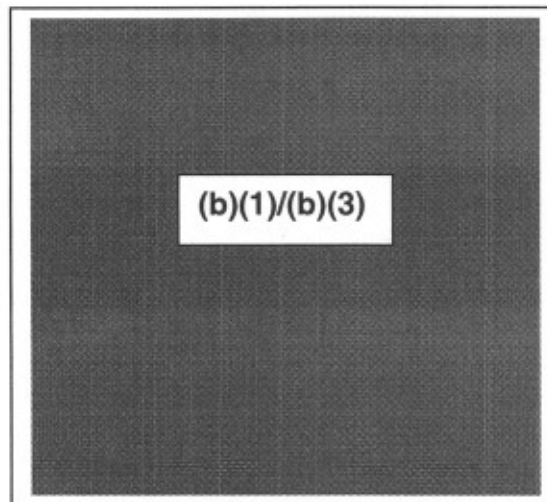


Chart E2202
Figure 4 (C)

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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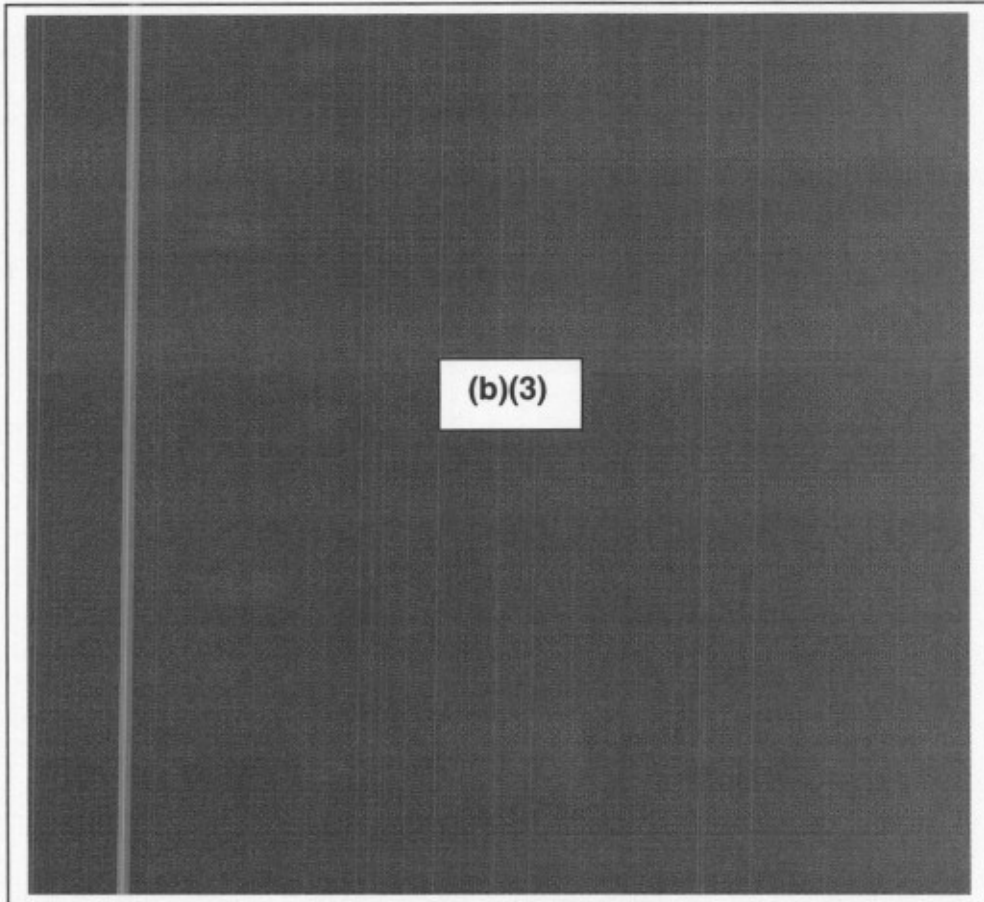


Chart E2202 Marginalia Data
Figure 5 (U)

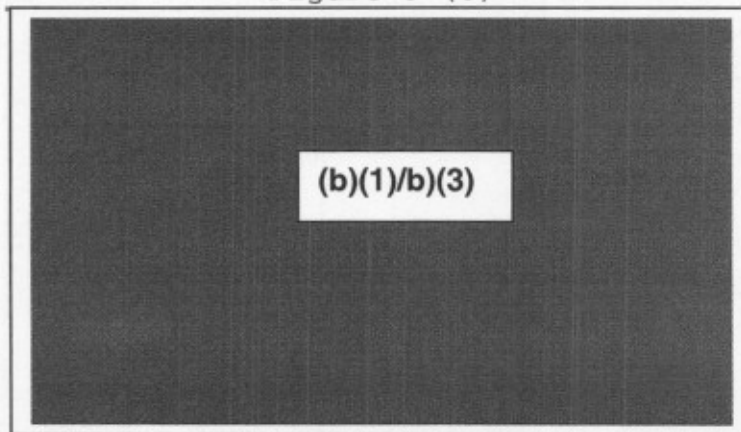


Chart E2202 Marginalia Data with track superimposed

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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. (U) 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)]

(b)(1) (b)(3)

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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)

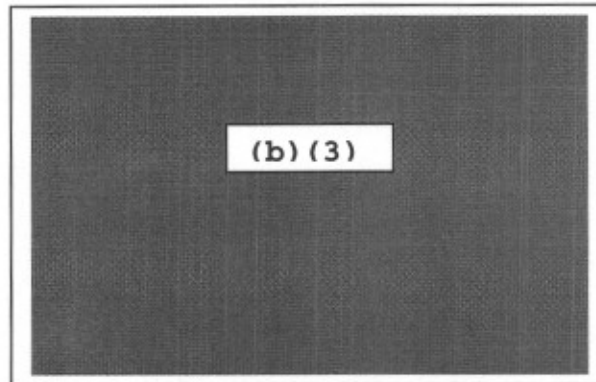


Chart INT 507
Figure 7 (U)

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)]

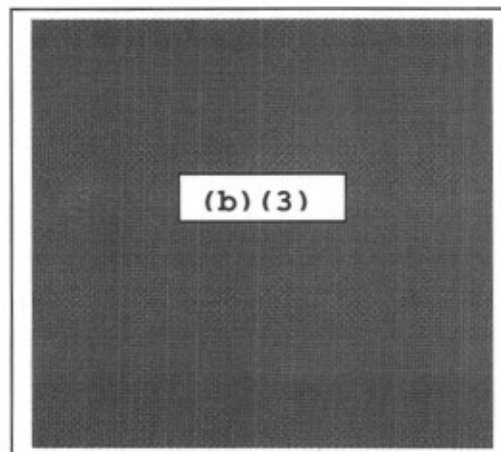


Chart INT 506
Figure 8 (U)

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)]

(b)(1) (b)(3)

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97-124
SECRET

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)

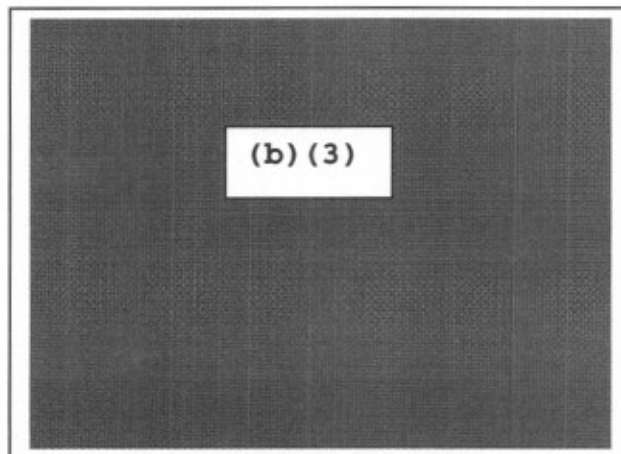
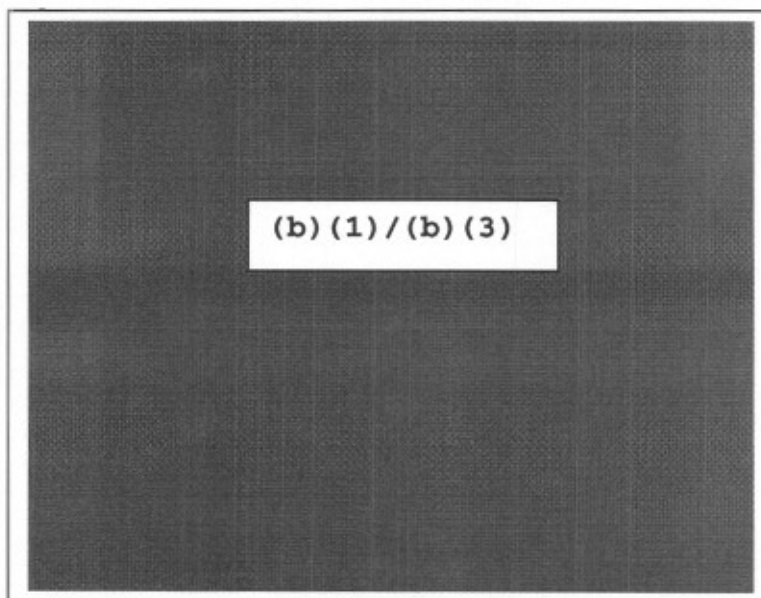


CHART 525
Figure 9 (U)

488. (C) [REDACTED] (See Figure 10). [encl (115)]

(b)(1) (b)(3)



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

Change 1

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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)

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

Date : Information as of ____

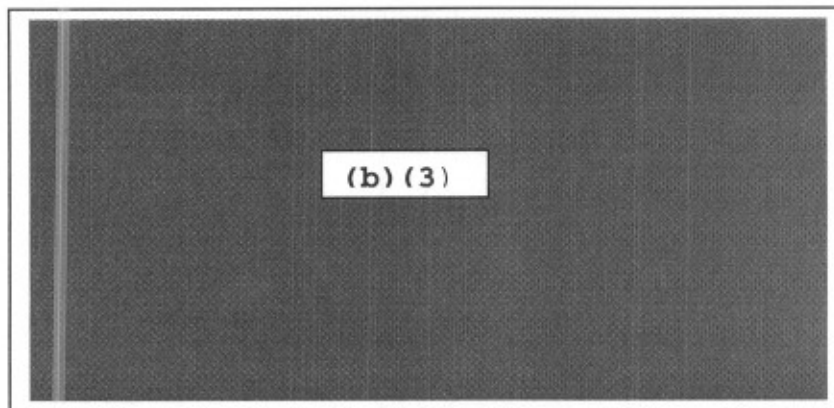
FACC Code : Discolored Water

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]

. Specifically, [REDACTED]

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(b)(1) (b)(3)