H11109

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. RA-10-01-02

Registry No. H-11109

LOCALITY

State Alaska

General Locality Sitka Sound to Peril Strait

Sublocality Peril Strait from Kakul Narrows to Bear Bay

2002

CHIEF OF PARTY
CAPT James C. Gardner, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H11109

INSTRUCTIONS The hydrographic sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the office.

FIELD NO.
RA-10-01-02

State: Alaska

General Locality: Sitka Sound to Peril Strait

Sublocality: Peril Strait from Kakul Narrows to Bear Bay

Scale: 1:10,000

Date of Survey: 4/02/2002-5/25/2002

Instructions Date: 3/21/2002

Project No.: OPR-O112-RA-02

Vessel: NOAA Ship launches 2121, 2122, 2123, 2124, 2125, 2126 and 2127

Chief of Party: CAPT James C Gardner, NOAA

Surveyed by: RAINIER Personnel

Soundings taken by echo sounder: Knudsen 320M, Reson SeaBat 8101, Seabeam/Elac 1180

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by: R. Davies

Automated plot by: HP Designjet 1050C

Verification by: R. Davies, E. Domingo

Soundings in: Fathoms and tenths at MLLW

REMARKS: Time in UTC. UTM Projection Zone 8

Revisions and annotations appearing as endnotes were generated during office processing.

All separates are filed with the hydrographic data.

As a result, page numbering may be interrupted or non-sequential

Descriptive Report to Accompany Hydrographic Survey H11109

Project OPR-O112-RA-02
Sitka Sound, Alaska
Scale 1:10,000
April-May 2002
NOAA Ship RAINIER
Chief of Party: Captain James C. Gardner, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-O112-RA-02, dated March 21, 2002, and the Draft Standing Project Instructions dated March 21, 2001. The survey area is located north of Sitka in Peril Strait. This survey corresponds to sheet "E" in the sheet layout provided with the Letter Instructions.

One hundred percent shallow-water multibeam (SWMB) coverage was obtained in the survey area in waters 8 meters and deeper. In waters from 4 meters to 8 meters, SWMB data were obtained at 25-meter line spacing, and in these areas additional coverage was obtained to obtain least depths over features or shoals. Vertical-beam echo sounder (VBES) data were acquired in depths from 4 to 20 meters to define the four-meter curve and to aid in the planning of SWMB data acquisition.

Data acquisition was conducted from April 2nd to May 25th, 2002 (DN 092 to 145).

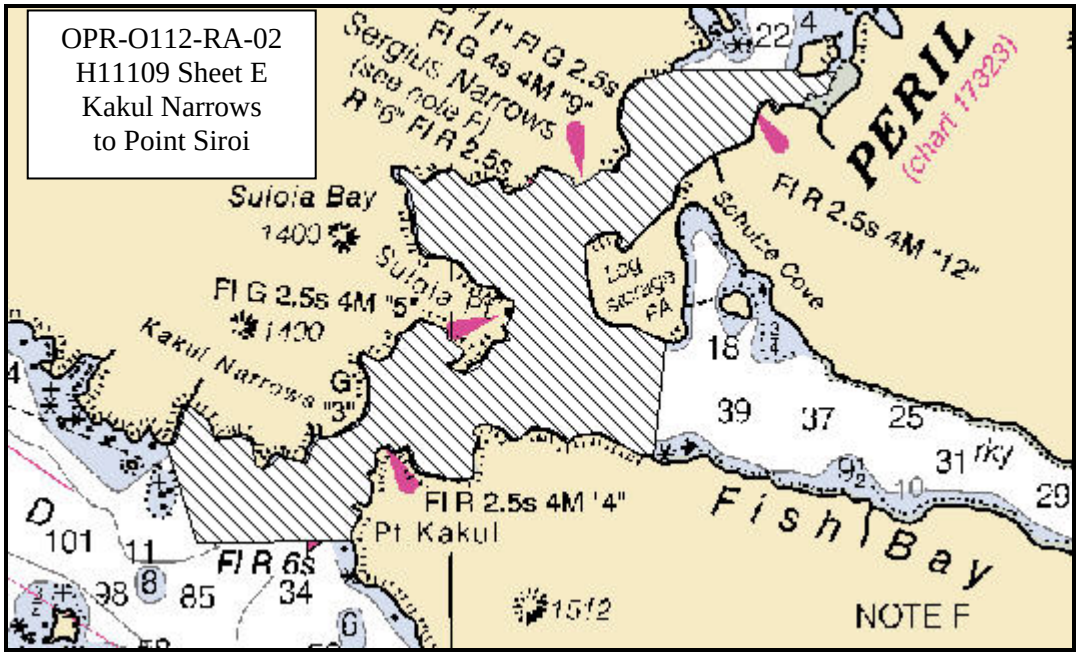


Figure 1. H11109 Survey Limits.

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *OPR-O112-RA-02 Data Acquisition and Processing Report,*[1] submitted under separate cover. Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Data were acquired by RAINIER survey launches (vessel numbers 2121, 2122, 2123, 2124, 2125, 2126, and 2127). Vessels 2121, 2123, 2124 and 2126 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. Vessels 2121 and 2122 were used to acquire vertical-beam echo soundings (VBES) and detached positions (DPs) for shoreline verification. Vessel 2125 was also used to collect bottom samples. No unusual vessel configurations or problems were encountered during this survey.[2]

No unusual vessel configurations were used for data acquisition.[3]

B2. Quality Control

Crosslines

Shallow-Water Multibeam (SWMB) crosslines totaled 15.21 nautical miles, comprising 14.09% of SWMB hydrography. The Quality Control Report (CARIS HIPS) for the checkline file of RESON systems averaged approximately 97%, with a depth tolerance factor of 0.023, which conforms to International Hydrographic Organization Order 2 specifications detailed in Special Publication S-44, Edition 4[4], as well as NOS Hydrographic Surveys Specifications and Deliverables Manual. The checkline file of ELAC systems, based on only three crosslines using beams less than 60 degrees from nadir, averaged approximately 60%, with a depth tolerance factor of 0.023 for Order 2 specifications. The hydrographer believes through manual examination of the data that the accuracy standards have been met and crossline agreement is good. [5] See Appendix V for the detailed reports. [6]

Junctions

The following contemporary surveys junction with H11109:

Registry #	Scale	Date	Junction side
H11108	1:10,000	2002	North
H11110	1:10,000	2002	Southeast
H11111	1:10,000	2002	Southwest

Surveys H11108, H11110 and H1111 junction well with this survey, a cursory comparison indicates differences are generally less than one fathom. [7]

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.[8]

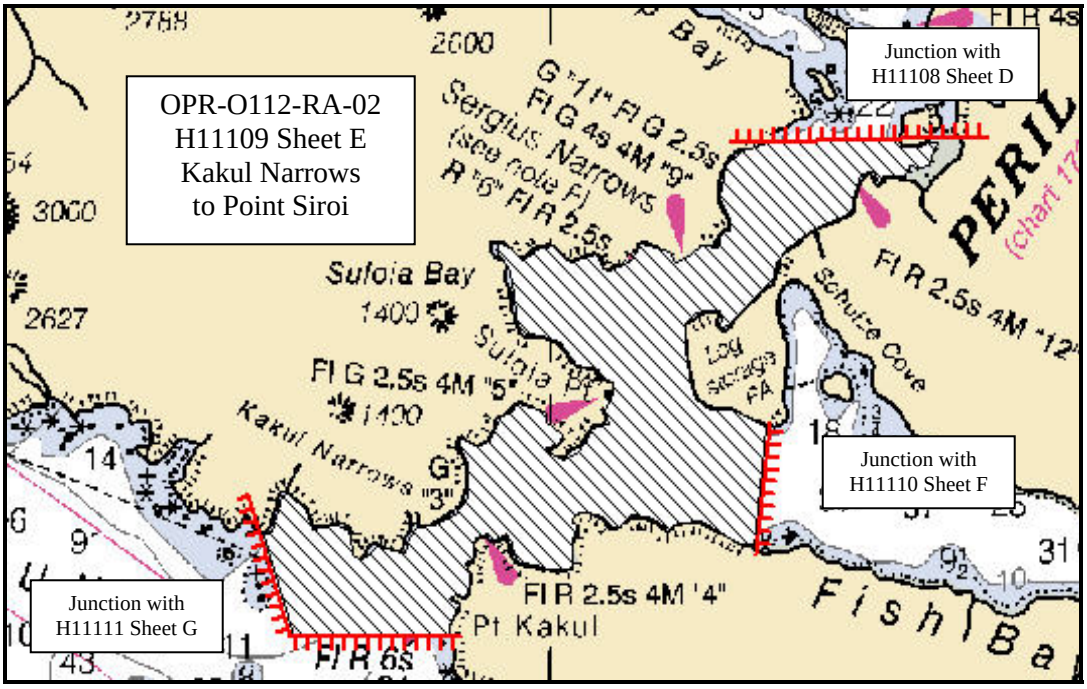


Figure 2. H11109 Junction Surveys.

Data Quality Factors

No unusual conditions were encountered during the survey that affected the expected accuracy and quality of survey data, with the following exceptions:

B3. Data Reduction

Data reduction procedures for survey H11109 conform to those detailed in the *OPR-O112-RA-02 Data Acquisition and Processing Report* with the exception of vessels 2124 and 2126.

The firmware on the TSS motion sensor was changed over the 2001/2002 winter inport and the sign was reversed on the analog heave output and recorded with the incorrect sign during data aquisition. The heave values for the ELAC 1180 data were corrected in post processing through the Pydro utility program “Postacquisitiontools”.

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11109 can be found in the *OPR-O112-RA-02 Horizontal and Vertical Control Report*,[9] submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacon at Biorka Island (305 kHz) were utilized during this survey. Launch-to-launch DGPS performance checks using U.S. Coast Guard beacon Level Island (295 kHz) as the check station were performed weekly in accordance with Section 3.2 of the FPM. Copies of the performance checks are included in the *OPR-O112-RA-02 Horizontal and Vertical Control Report*.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Sitka, AK (945-1600) served as control for datum determination and as the primary source for water level reducers for survey H11109.

RAINIER personnel installed Sutron 8210 “bubbler” tide gauges at the following subordinate stations to provide information for N/OPS1 to determine time and height correctors in accordance with the Project Instructions:

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Povorotni Island	945-0970	30-day	April 6, 2002	May 22, 2002
Sergius Narrows	945-1037	30-day	April 6, 2002	May 26, 2002
Scraggy Island	945-1204	30-day	April 7, 2002	May 25, 2002

The station at Scraggy Island (945-1805) was occupied in lieu of Scraggy Point (945-1802) as specified by the Letter Instructions following consultation with N/OPS1.

All data were reduced to MLLW using unverified observed tides from station Sitka, AK using the tide file 9451600.tid and time and height correctors using the zone corrector file 0112RA2002CORP.zdf.

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. [10] A request for delivery of final approved (smooth) tides for survey H11109 was forwarded to N/OPS1 on May 30, 2002 in accordance with FPM 4.8. A copy of the request is included in Appendix IV.[11]

RESULTS AND RECOMMENDATIONS

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

One AWOIS item was located within the limits of H11109 and investigated during this survey. Investigation methods, results, and charting recommendations have been entered into the Microsoft Access AWOIS database and are submitted with the digital data. Printout of the AWOIS Database form is included in this report.[12]

D.2 Chart Comparison

Survey H11109 was compared with chart 17323 and its inset (10th Ed.; July 10, 1993, 1:40,000, inset 1:20,000)[13]

Chart 17323 [14]

Depths from survey H11109 generally agreed to within one fathom with the depths on chart 17323. [15] In many instances, this survey found shoaler soundings between charted soundings even though agreement at the position of the charted depths was good. [16] This can be attributed to increased bottom coverage using SWMB methods. In many cases the agreeing soundings were found up to 50 m away from the charted sounding. These cases were considered to be a result of less accurate positioning methods used in the prior surveys, and were considered good comparisons. Other cases are described below.

A charted 24 fathom sounding at 57-23-58.6 N 135-38-50.99 W (461,060 Easting; 6,362,030 Northing) in mid-channel is 6 fathoms shoaler than the least depth found by this survey in the area. The charted sounding was disproved by 100% SWMB.[17]

A charted 5 fathom 5 foot sounding at 57-21-59.34 N 135-42-40.87 W (457,170 Easting; 6,358,420 Northing) close to Round Island is approximately 6 fathoms shoaler than the least depth found by this survey in the area. The charted sounding was disproved by 100% SWMB.[18]

The Hydrographer has determined that data accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas.[19]

Final chart comparisons will be made at the Pacific Hydrographic Branch after the application of smooth tides.[20]

D.3 Shoreline

Shoreline Source

A complete source shoreline for this survey was not provided. A preliminary partial digital manuscript (DM) from photogrammeteric projects AK9703A (north) and A9703B (south) was supplied by N/NGS3 in the form of a cartographic feature file (CFF). RAINIER conducted limited shoreline verification of the CFF. In the absence of CFF MHL or CFF MLLW RAINIER personnel digitized the largest scale charts in MapInfo and displayed them in HYPACK for field verification. In addition, features shown on the current edition of chart 17323 and its inset that were not depicted on the shoreline source document were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline Verification

Limited shoreline verification was conducted near predicted low water in accordance with the Standing Project Instructions and FPM sections 6.1 and 6.2. Detached positions (DPs) taken during shoreline verification were recorded in HYPACK and on DP forms, and processed in Pydro. These indicate revisions to features and features not found on the verified shoreline. In addition, annotations describing shoreline were recorded on hard copy plots of digital shoreline. DP forms are included in Section I of the *Separates to be Included with Survey Data.* [21]

A detailed Detached Position and Bottom Sample plot,[22] in both paper copy and MapInfo format, is provided showing all detached positions and bottom samples with notes relating to each feature. The updated shoreline and features are also depicted on the final sounding plot. Verified CFF shoreline that did not require revision is in MapInfo tables "H11109_CFF_shoreline" and "H11109_CFF_rocks" and shown in black. New MHW features and changes to the MHW shoreline, CFF or charted, are displayed in red on the "H11109_shoreline_updates" Mapinfo table. Charted shoreline, when used for reference purposes or when source data were not available, is depicted in the MapInfo tables "H11109_chd_MHW", "H11109_chd_MLLW", "H11109_chd_rks", and "H11109_chd_foul_limits" and displayed in brown.[23]

Source Shoreline Changes and New Features

Two CFF ledges off the NW tip of Liesoi Island were not observed visually at low water. Both CFF ledges were depicted as attached to and seaward of another ledge and islet which were confirmed OK. It was not possible to obtain soundings directly over the unobserved CFF ledges due to thick kelp. DP numbers 21365-68 were taken to define the extents of two new areas foul with kelp. The Hydrographer recommends adding the two new areas foul with kelp as defined by the above DP's.[24]The Hydrographer recommends removing the two CFF ledges defined by the following positions at their NW extents: [25]

57-25-15.73 N 135-36-14.21 W (463,691.3 Easting; 6,364,487.7 Northing)
57-25-14.33 N 135-36-21.9 W (463,589.8 Easting; 6,364,376.2 Northing)

Two new submerged rocks approximately 100 m SW of Prowley Rock were observed visually at low water with water over them. They were not approachable for accurate DP's due to the extremely strong tidal current present at the time. The area was later covered with 100% SWMB at high water, revealing 0.5 and 0.8 fathom soundings.[26] The Hydrographer recommends adding two rocks in the following positions defined by the shoalest SWMB soundings in the immediate vicinity:[27]

57-24-18.1 N 135-37-50.4 W (462,105.7 Easting; 6,362,650.8 Northing)
57-24-17.7 N 135-37-48.73 W (462,134 Easting; 6,362,637.5 Northing)

Charted Features

All visual inspection was done when tide height was at or 1-meter below MLLW. Water visibility was approximately 1.5 meters throughout the survey.

The charted foul area at 57-25-15.96 N 135-36-50.65 W (463,115.54 Easting; 6,364,422.80 Northing) was disproved by 100% SWMB coverage. The charted rock in the same location was confirmed OK. The charted isolated kelp surrounding the area was not found visually nor in subset inspection of soundings. The shoal soundings leading up to the shoreline in the area should be depicted by the standard depth contours. The Hydrographer recommends removing the charted foul area.[28]

The charted ledge at 57-23-37.21 N 135-39-35.48 W (460,330 Easting; 6,361,380 Northing) was disproved by 60% SWMB and visual inspection. The Hydrographer recommends removing the charted ledge.[29]

A new MLLW line was added at 57-22-37.46 N 135-41-15.79 W (458,652.37 Easting; 6,359,671.38 Northing) based on S/L observations at low water, VBES and the extent of SWMB coverage. The Hydrographer recommends adding the new MLLW line.[30]

Two charted foul areas were disproved by 100% SWMB and S/L verification. The Hydrographer recommends removing the two charted foul areas in the following positions: [31]

57-22-25.66 N 135-41-57.12 W (457,952.29 Easting; 6,359,212.25 Northing)
57-22-37.46 N 135-41-15.79 W (458,646.39 Easting; 6,359,570.12 Northing)

The charted rock at 57-22-06.74 N 135-42-42.17 W (457,193.63 Easting; 6,358,635.08 Northing) was disproved by S/L visual inspection, and 75% SWMB. The Hydrographer recommends removing the charted rock. [32]

The charted foul area at 57-22-04.05 N 135-42-41.06 W (457,211.28 Easting; 6,358,551.74 Northing) was disproved by S/L visual inspection and 70% SWMB. The Hydrographer recommends removing the charted foul area.[33]

The charted rock and surrounding foul area at 57-22-18.87 N 135-43-22.18 W (456,529.17 Easting; 6,359,017.16 Northing) were disproved by S/L visual inspection and 75% SWMB. The Hydrographer recommends removing the charted rock and surrounding foul area.[34]

The charted foul area at 57-22-13.32 N 135-43-32.26 W (456,358.95 Easting; 6,358,847.42 Northing) was disproved by S/L visual inspection and 50% SWMB. The Hydrographer recommends removing the charted foul area.[35]

The charted foul area at 57-22-35.61 N 135-43-57.9 W (455,938.05 Easting; 6,359,541.17 Northing) was disproved by S/L visual inspection, 50 meter spacing VBES and 70% SWMB. The Hydrographer recommends removing the charted foul area.[36]

The charted foul area at 57-22-22.31 N 135-44-06.21 W (455,796.13 Easting; 6,359,247.82 Northing) was disproved by S/L visual inspection, 50 meter spacing VBES and 100% SWMB. The Hydrographer recommends removing the charted foul area. [37]

Five charted foul areas surrounding islets in the Krugloi Island group at the SW corner of the sheet were disproved by SWMB. All four were replaced with new ledges defined by DP's and the limits of SWMB coverage. The Hydrographer recommends adding the ledges as depicted on the DP and bottom sample plot. The Hydrographer recommends removing the charted foul areas located by the following positions of their NE extents: [38]

57-21-57.89 N 135-43-51.27 W (455,952.23 Easting; 6,358,354.35 Northing)
57-21-59.35 N 135-43-44.86 W (455,091.09 Easting; 6,358,410.88 Northing)
57-22-08.13 N 135-43-19.93 W (456,446.50 Easting; 6,358,437.32 Northing)
57-22-04.39 N 135-43-38.21 W (456,143.40 Easting; 6,358,555.00 Northing)
57-22-01.57 N 135-43-18.58 W (456,476.83 Easting; 6,358,660.01 Northing)

Two charted MLLW lines were disproved by 100% SWMB. The Hydrographer recommends removing the charted MLLW lines located by the following positions of their N extents:[39]

57-23-34.85 N 135-39-24.16 W (460,737.02 Easting; 6,361,336.47 Northing)
57-23-30.29 N 135-39-05.54 W (460,852.00 Easting; 6,361,146.22 Northing)
57-23-26.74 N 135-38-58.73 W (460,936.14 Easting; 6,361,106.23 Northing)

The group of three charted islets centered at 57-21-58.83 N 135-43-21.28 W (456,535.40 Easting; 6,358,408.64 Northing) was repositioned by as much as 50 m based on DP's of their N and S extents, DP's of the surrounding ledges, and the limits of SWMB coverage. The Hydrographer recommends repositioning the group of three charted islets as depicted on the DP and Bottom Sample Plot.[40]

The group of two charted islets centered at 57-22-05.98 N 135-43-20.72 W (456,531.54 Easting; 6,358,643.30 Northing) was repositioned by as much as 50 m based on DP's of the surrounding ledges and the limits of SWMB coverage. The Hydrographer recommends repositioning the group of two charted islets as depicted on the DP and Bottom Sample Plot.[41]

Two charted rocks were found to plot directly on top of the CFF MHW line. Visual inspection found rocks at the MHW line that are not significant to navigation. The charted rocks positioned below were deleted from the final plot.[42]

57-23-28.60 N 135-39-06.03 W (460,826.65 Easting; 6,361,126.89 Northing)
57-23-27.37 N 135-38-59.68 W (460,926.65 Easting; 6,361,016.57 Northing)

Recommendations

The Hydrographer recommends that the shoreline as depicted on the Detached Position and Bottom Sample plot and final sounding plot supersede and complement shoreline information compiled on the CFF and charts as noted. In addition, field notes made by the Hydrographer, including verification of source features or charted features if no source shoreline was available are submitted in the digital MapInfo file "H11109_shoreline_notes."[43]

D.4 Dangers to Navigation

Eight dangers to navigation (DTON) were found and reported to the Pacific Hydrographic Branch for verification and final submission to the Seventeenth Coast Guard District on November 19, 2002. A copy of the preliminary XML file is included in the data submission for this survey. A copy of the final DTON report will be inserted by PHB following verification and submission to the U.S Coast Guard.[44]

D.5 Aids to Navigation

Survey H11109 included ten aids to navigation (ATONs). All ATONs were found to serve their intended purposes. Detached positions were taken on all ATONs for check purposes with the exception of Suloia Point Light 5, which was positioned using static survey methods. See the *OPR-O112-RA-02 Horizontal and Vertical Control Report* for details on the positioning of Suloia Point Light 5.[45]

D.6 Miscellaneous

Bottom samples were collected and are depicted on the Detached Position and Bottom Sample Plot.[46]

E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition, Hydrographic Survey Guidelines, Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2001. The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch. Survey H11109 is complete and adequate to supersede charted soundings in their common areas. No additional work is required for this survey.[47]

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

Title	Date Sent	Office
Data Acquisition and Processing Report for OPR-O327-RA-02	6/17/02	N/CS34
Horizontal and Vertical Control Report for OPR-O327-RA-02	2/12/03	N/CS34
Tides and Water Levels Package for OPR-O327-RA-02	9/2/02	N/OPS1
Coast Pilot Report for OPR-O112-RA-02	TBD[48]	N/CS26

Approved and Forwarded: James C. Gardner 2-6-03

James C. Gardner
Captain, NOAA
Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Sheet Manager: Richard E. Hester Jr.

Richard E. Hester, Jr.
Lieutenant Junior Grade, NOAA

Field Operations Officer: Richard Fletcher

Richard A. Fletcher
Lieutenant Commander, NOAA

Revisions Processed During Office Processing and Certification

[1] Filed with the project records.
[2] Concur
[3] Concur
[4] After office review of the survey data, it was determined that this survey meets IHO S-44 Order 1 specifications.
[5] Concur
[6] Filed with the hydrographic records.
[7] Concur
[8] The junction with survey H11109 and H11108, H11110, H11111and H11112 are complete. A "Joins" note has been added to the smooth sheets where applicable.
[9] File with the project records.
[10] Approved tide note dated December 18, 2003 is attached.
[11] Filed with the hydrographic records.
[12] Concur
[13] Survey H11109 was compared with chart 17323 11th Edition, dated October 1, 2004.
[14] A channel at lat. 57/24/24.5N, long. 135/37/48.1W, with a controlling depth of 18 ft reported April 2001 was investigated. A new controlling depth was found and the shoal was reported as a danger to navigation. It is recommended that the controlling depth be revised. Chart *16 ft 2002* at the above position.
[15] Concur
[16] Concur
[17] Concur, chart according to this survey.
[18] Concur, chart according to this survey.
[19] Concur, for deposition of nearshore features refer to the BS&DP plot.
[20] With the application of smooth tides, no changes to the comparison were noticed. This survey is adequate to supersede all prior surveys and miscellaneous charted data within the common area, except where noted in this report.
[21] Filed with the hydrographic records.
[22] Filed with the hydrographic records.
[23] Shoreline verification conducted by the hydrographer and portrayed on the detached position plot has been analyzed during office processing and shown on the smooth sheet as warranted. A few minor revisions to the CFF shoreline have been shown in dashed red on the smooth sheet.
[24] Concur, chart area as shown on the smooth sheet.
[25] Concur
[26] The smooth tide corrected value for the two rocks is 0.7 and 0.3 fathoms.
[27] Concur, chart according to the smooth sheet.
[28] Concur remove charted foul area and chart single rock according to the smooth sheet.
[29] Concur
[30] Concur
[31] Concur
[32] Concur
[33] Concur
[34] Concur
[35] Concur
[36] Concur, remove foul area and chart MLLW, see smooth sheet for depiction of area.
[37] Concur
[38] Concur
[39] Concur
[40] Concur with clarification; islets are drawn in dashed red because of their approximate positioning.
[41] Concur with clarification; islets are drawn in dashed red because of their approximate positioning.
[42] Concur, the two rocks do not appear on the current edition of the chart. Retain areas as charted.
[43] Shoreline verification conducted by the hydrographer and portrayed on the detached position plot has been analyzed during office processing and shown on the smooth sheet as warranted. A few minor revisions to the CFF shoreline have been shown in dashed red on the smooth sheet.

[44] Attached to this report
[45] The evaluator recommends that MCD use the latest information to chart aids to navigation.
[46] Concur, Bottom characteristics have been shown on the smooth sheet as positioned by the present survey.
[47] Concur
[48] Dated 10/10/03

RECRD	52962	VESSLTERMS	ROUGHNECK	CHART	17323	AREA	o
		CARTOCODE	100	SNDINGCODE		DEPTH	

LAT83	57/24/31.24	LONG83	135/37/24.43	NATIVDATUM	31
LATDEC:	57.408677777778	LONDEC:	135.62345277778	GPQUALITY	Med
				GPSOURCE	Direct

PROJECT	OPR-O112-RA-02	ITEMSTATUS	Assigned	SEARCHTYPE	Full
RADIUS	200	INIT	DAS	ASSIGNED	2/15/2002
TECNIQ	SD, DI, S2, SWMB				

Techniqnote

History

History
LNM 18/86-- The Tug ROUGHNECK, which sank in Sergius Narrows on April 10, is suspected of breaking up. A large oil slick has recently been sighted over the wreck, which has been located approx. 200 ft. from Shoal Point in 26 fathoms water depth at approx. 57/24/32.5N, 135/37/18.0W.
NM 23/86-- Add dangerous wreck PA at 57/24/32.5N, 135/37/18.0W. (ENT DAS 02/15/2002)

Fieldnote

INVESTIGATION

DATE(S): 04/APR/2002 (DN: 094)

HYDROGRAPHIC SURVEY NUMBER:

VN: NOAA Ship RAINIER Survey Launch RA4 TIME: 22:37:10 UTC

INVESTIGATION METHODS USED: (IE DI, 200% SIDE SCAN SONAR, ECHO SOUNDER) 100% SWMB

SURVEYED POSITION: LAT. 57-24-31.81N LONG. 135-37-20.60W

POSITION DETERMINED BY: DIFFERENTIAL GPS

INVESTIGATION SUMMARY: Wreck found approximately at charted position with least depth of 44.965 m. Soundings viewed in subset mode indicate wreck is intact.

CHARTING RECOMMENDATION (HYDROGRAPHER): Remove symbol "submerged wreck dangerous to surface navigation". Add symbol "submerged wreck not dangerous to surface navigation" at surveyed position described above.

EVALUATOR COMMENTS: Concur with clarification, remove charted submerged wreck and chart a 24 Wk at the survey position.

Proprietary

YEARSUNK NIMANUM

Print Record

Subject: DTON RA-01-03
Date: Tue, 04 Feb 2003 23:04:22 +0000
From: FOO Rainier <foo.rainier@ranems.pmc.noaa.gov>
To: DTON <mcd.dton@noaa.gov>
CC: "Rainier, CO" <co.rainier@ranems.pmc.noaa.gov>,
"Swallow, Jon" <Jon.Swallow@noaa.gov>, "Hill, Dennis" <dennis.hill@noaa.gov>

Attached is a zip file with the DTON xml file for survey H11109.

--
LCDR Rick Fletcher, NOAA
Field Operations Officer, RAINIER
1801 Fairview Ave. E.
Seattle, WA 98102

tel; (206)553-4794
cell; (206)660-8747
fax; (206)553-5306

http://www.moc.noaa.gov/ra

H11109_DTON.ZIP	**Name:** H11109_DTON.ZIP **Type:** Zip Compressed Data (application/x-zip-compressed) **Encoding:** base64

Danger to Navigation

Registry Number: H11109

State: Alaska

Locality: Sitrait Sound to Peril Strait

Sub-locality: Peril Strait from Kakul Narrows to Bear Bay

Project Number: OPR0-O112-RA-02

Survey Dates: 04/04/2002 - 05/24/2002

Charts Affected

Number	Version	Date	Scale
17323	11th Ed.	10/01/2004	1:20000
17320	16th Ed.	12/01/2003	1:217828
16016	20th Ed.	11/01/2003	1:969756
531	22nd Ed.	03/01/2004	1:2100000
500	8th Ed.	06/01/2003	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Sounding	4.90 m	57.40626755° N	135.63193101° W	---
1.2	Sounding	8.51 m	57.40255260° N	135.62246311° W	---
1.3	Sounding	8.67 m	57.40303337° N	135.62388010° W	---
1.4	Sounding	10.27 m	57.40198669° N	135.61821337° W	---
1.5	Sounding	2.04 m	57.40160774° N	135.63728748° W	---
1.6	Sounding	1.90 m	57.39671227° N	135.66077835° W	---
1.7	Sounding	10.07 m	57.36807693° N	135.70530771° W	---
1.8	Sounding	6.77 m	57.37184264° N	135.73160040° W	---

1 - Dangers to Navigation

1.1) Profile/Beam - 1598/1 from h11109 / r4re_2002 / 2002-094 / 027_2236

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.40626755° N, 135.63193101° W

Least Depth: 4.90 m

Timestamp: 2002-094.22:40:53.747 (04/04/2002)

Survey Line: h11109 / r4re_2002 / 2002-094 / 027_2236

Profile/Beam: 1598/1

Charts Affected: 17323_2, 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

least depth in Sergius Narrows

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r4re_2002/2002-094/027_2236	1598/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2 ½fm (17320_1, 16016_1, 530_1)

2fm 4ft (17323_2, 17323_1, 531_1)

4.9m (500_1, 50_1)

1.2) Profile/Beam - 183/84 from h11109 / r3mb_2002 / 2002-094 / 037_1902

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.40255260° N, 135.62246311° W

Least Depth: 8.51 m

Timestamp: 2002-094.19:02:56.274 (04/04/2002)

Survey Line: h11109 / r3mb_2002 / 2002-094 / 037_1902

Profile/Beam: 183/84

Charts Affected: 17323_2, 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r3mb_2002/2002-094/037_1902	183/84	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

4 ½fm (17320_1, 16016_1, 530_1)

4fm 4ft (17323_2, 17323_1, 531_1)

8.5m (500_1, 50_1)

1.3) Profile/Beam - 525/101 from h11109 / r3mb_2002 / 2002-094 / 037_1902

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.40303337° N, 135.62388010° W

Least Depth: 8.67 m

Timestamp: 2002-094.19:03:24.138 (04/04/2002)

Survey Line: h11109 / r3mb_2002 / 2002-094 / 037_1902

Profile/Beam: 525/101

Charts Affected: 17323_2, 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r3mb_2002/2002-094/037_1902	525/101	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

4 ¾fm (17320_1, 16016_1, 530_1)

4fm 4ft (17323_2, 17323_1, 531_1)

8.6m (500_1, 50_1)

1.4) Profile/Beam - 1486/86 from h11109 / r3mb_2002 / 2002-094 / 032_1844

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.40198669° N, 135.61821337° W

Least Depth: 10.27 m

Timestamp: 2002-094.18:47:04.745 (04/04/2002)

Survey Line: h11109 / r3mb_2002 / 2002-094 / 032_1844

Profile/Beam: 1486/86

Charts Affected: 17323_2, 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r3mb_2002/2002-094/032_1844	1486/86	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

5 ½fm (17320_1, 16016_1, 530_1)

5fm 3ft (17323_2, 17323_1, 531_1)

10.2m (500_1, 50_1)

1.5) Profile/Beam - 269/1 from h11109 / r4re_2002 / 2002-115 / 183_1849

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.40160774° N, 135.63728748° W

Least Depth: 2.04 m

Timestamp: 2002-115.18:49:24.908 (04/25/2002)

Survey Line: h11109 / r4re_2002 / 2002-115 / 183_1849

Profile/Beam: 269/1

Charts Affected: 17323_2, 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r4re_2002/2002-115/183_1849	269/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (17320_1, 16016_1, 530_1)

1fm 0ft (17323_2, 17323_1, 531_1)

2.0m (500_1, 50_1)

1.6) Profile/Beam - 515/226 from h11109 / r4re_2002 / 2002-144 / 020_1941

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.39671227° N, 135.66077835° W

Least Depth: 1.90 m

Timestamp: 2002-144.19:44:07.036 (05/24/2002)

Survey Line: h11109 / r4re_2002 / 2002-144 / 020_1941

Profile/Beam: 515/226

Charts Affected: 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r4re_2002/2002-144/020_1941	515/226	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (17320_1, 16016_1, 530_1)

1fm 0ft (17323_1, 531_1)

1.9m (500_1, 50_1)

1.7) Profile/Beam - 202/11 from h11109 / r3mb_2002 / 2002-142 / 034_1927

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.36807693° N, 135.70530771° W

Least Depth: 10.07 m

Timestamp: 2002-142.19:30:24.274 (05/22/2002)

Survey Line: h11109 / r3mb_2002 / 2002-142 / 034_1927

Profile/Beam: 202/11

Charts Affected: 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r3mb_2002/2002-142/034_1927	202/11	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

5 ½fm (17320_1, 16016_1, 530_1)

5fm 3ft (17323_1, 531_1)

10.0m (500_1, 50_1)

1.8) Profile/Beam - 1965/86 from h11109 / r5mb_2002 / 2002-118 / 070_1808

DANGER TO NAVIGATION

Survey Summary

Survey Position: 57.37184264° N, 135.73160040° W

Least Depth: 6.77 m

Timestamp: 2002-118.18:11:41.353 (04/28/2002)

Survey Line: h11109 / r5mb_2002 / 2002-118 / 070_1808

Profile/Beam: 1965/86

Charts Affected: 17323_1, 17320_1, 16016_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11109/r5mb_2002/2002-118/070_1808	1965/86	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3 ¾fm (17320_1, 16016_1, 530_1)

3fm 4ft (17323_1, 531_1)

6.7m (500_1, 50_1)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: December 18, 2003

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-O112-RA-2002
HYDROGRAPHIC SHEET: H11109-revised

LOCALITY: Peril Strait, Alaska
TIME PERIOD: April 2 - May 25, 2002

TIDE STATION USED: 945-1600 Sitka, AK
Lat. 57° 3.1'N Lon. 135° 20.5'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.791 meters

TIDE STATION USED: 945-1853 Sergius Narrows
Lat. 57° 24.6'N Lon. 135° 37.6'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.709 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEA201A, SEA202, SEA203, SEA204, SEA205, SEA206, SEA207, SEA208, SEA209, SEA210, SEA211, SEA212, SEA213, SEA214, SEA215, SEA216, SEA217, SEA218, SEA219, SEA220

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the **new 1983-2001 National Tidal Datum Epoch (NTDE).**

For ----------

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

0Final tide zone node point locations for OPR-O112-RA-2002, H11109 - revised

Format: Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction
Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone SEA201A	945-1600	0	0.99
-135.751821 57.374727			
-135.75757 57.34186			
-135.660098 57.240082			
-135.63572 57.22865			
-135.587342 57.238446			
-135.54899 57.246623			
-135.507067 57.261928			
-135.535848 57.284876			
-135.629869 57.326705			
-135.687406 57.362636			
-135.713991 57.368695			
-135.715543 57.379779			
-135.733426 57.379779			
-135.751821 57.374727			
Zone SEA 202	945-1600	6	1.01
-135.715543 57.379779			
-135.695792 57.382579			
-135.688863 57.376974			
-135.679191 57.370765			
-135.674561 57.366193			
-135.687406 57.362636			
-135.713991 57.368695			
-135.715543 57.379779			
Zone SEA203	945-1600	6	1.02
-135.606239 57.405593			
-135.624952 57.388795			
-135.639399 57.388504			
-135.65282 57.388634			
-135.655256 57.388781			
-135.678009 57.390156			
-135.695792 57.382579			
-135.688863 57.376974			
-135.679191 57.370765			

-135.674561 57.366193
-135.492421 57.347471
-135.475501 57.36559
-135.578942 57.401543
-135.606239 57.405593

Zone SEA204	945-1853	-12	0.76

-135.639399 57.388504
-135.624952 57.388795
-135.62846 57.390464
-135.639204 57.390514
-135.651607 57.390378
-135.654451 57.39034
-135.655256 57.388781
-135.65282 57.388634
-135.639399 57.388504

Zone SEA205	945-1853	-12	0.78

-135.62846 57.390464
-135.62955 57.392358
-135.642876 57.392803
-135.654294 57.392378
-135.65645 57.391384
-135.654451 57.39034
-135.651607 57.390378
-135.639204 57.390514
-135.62846 57.390464

Zone SEA206	945-1853	-6	0.8

-135.62955 57.392358
-135.630087 57.394308
-135.641132 57.394778
-135.646852 57.394879
-135.654934 57.394778
-135.662209 57.394375
-135.664155 57.394225
-135.662082 57.392504
-135.65645 57.391384
-135.654294 57.392378
-135.642876 57.392803
-135.62955 57.392358

Zone SEA207	945-1853	-6	0.82

-135.630087 57.394308
-135.630147 57.396202
-135.636841 57.39649
-135.645297 57.396792
-135.654407 57.397134
-135.662038 57.39701

-135.669794 57.396591
-135.673909 57.396091
-135.664155 57.394225
-135.662209 57.394375
-135.654934 57.394778
-135.646852 57.394879
-135.641132 57.394778
-135.630087 57.394308

Zone SEA208	945-1853	-6	0.84

-135.630189 57.397262
-135.636468 57.397967
-135.645111 57.398806
-135.661808 57.399393
-135.675887 57.400115
-135.677614 57.400103
-135.675663 57.396695
-135.673909 57.396091
-135.669794 57.396591
-135.662038 57.39701
-135.654407 57.397134
-135.645297 57.396792
-135.636841 57.39649
-135.630147 57.396202
-135.630189 57.397262

Zone SEA209	945-1853	-6	0.86

-135.636468 57.397967
-135.630189 57.397262
-135.629893 57.398322
-135.641256 57.39988
-135.649898 57.400753
-135.656799 57.401558
-135.666126 57.402633
-135.678312 57.404277
-135.679737 57.404286
-135.677614 57.400103
-135.675887 57.400115
-135.661808 57.399393
-135.645111 57.398806
-135.636468 57.397967

Zone SEA210	945-1853	-6	0.88

-135.649898 57.400753
-135.641256 57.39988
-135.629893 57.398322
-135.629938 57.398983
-135.638546 57.400832

-135.644986 57.401961
-135.651577 57.402935
-135.659722 57.404378
-135.667618 57.405653
-135.676944 57.406761
-135.683006 57.4074
-135.681631 57.405989
-135.679737 57.404286
-135.678312 57.404277
-135.666126 57.402633
-135.656799 57.401558
-135.649898 57.400753

Zone SEA211	945-1853	0	0.89

-135.629535 57.399345
-135.632857 57.400314
-135.636655 57.401391
-135.642775 57.402917
-135.66255 57.409216
-135.679629 57.410473
-135.683006 57.4074
-135.676944 57.406761
-135.667618 57.405653
-135.659722 57.404378
-135.651577 57.402935
-135.644986 57.401961
-135.638546 57.400832
-135.629938 57.398983
-135.629535 57.399345

Zone SEA212	945-1853	0	0.91

-135.629535 57.399345
-135.628386 57.399482
-135.634448 57.402012
-135.64194 57.404579
-135.64889 57.406714
-135.649922 57.407275
-135.654737 57.409512
-135.66255 57.409216
-135.642775 57.402917
-135.636655 57.401391
-135.632857 57.400314
-135.629535 57.399345

Zone SEA213	945-1853	0	0.93

-135.64889 57.406714
-135.649922 57.407275
-135.647521 57.408289

-135.644041 57.408683
-135.642546 57.40793
-135.637948 57.405572
-135.632738 57.403153
-135.626997 57.3997
-135.628386 57.399482
-135.634448 57.402012
-135.64194 57.404579
-135.64889 57.406714

Zone SEA214	945-1853	0	0.95

-135.644041 57.408683
-135.640749 57.409338
-135.637495 57.40969
-135.634386 57.407633
-135.62935 57.403254
-135.625594 57.40003
-135.626997 57.3997
-135.632738 57.403153
-135.637948 57.405572
-135.644041 57.408683

Zone SEA215	945-1853	0	0.97

-135.637495 57.40969
-135.631203 57.409456
-135.63001 57.408314
-135.625196 57.403797
-135.619843 57.397088
-135.624296 57.397267
-135.625937 57.399176
-135.625594 57.40003
-135.62935 57.403254
-135.634386 57.407633
-135.637495 57.40969

Zone SEA216	945-1853	0	0.99

-135.619843 57.397088
-135.625196 57.403797
-135.629983 57.408284
-135.631203 57.409456
-135.627391 57.410526
-135.626567 57.409712
-135.623791 57.407563
-135.619671 57.403728
-135.615577 57.398324
-135.617244 57.397561
-135.619843 57.397088

Zone SEA217	945-1853	0	1.01

-135.619671 57.403728
-135.623791 57.407563
-135.626567 57.409712
-135.627391 57.410526
-135.622071 57.412921
-135.613934 57.409408
-135.608016 57.406134
-135.607298 57.405485
-135.610443 57.40244
-135.615577 57.398324
-135.619671 57.403728

Zone SEA218	945-1853	0	1.03

-135.622071 57.412921
-135.625484 57.415363
-135.623825 57.421345
-135.618952 57.42304
-135.607129 57.418909
-135.601951 57.416674
-135.593468 57.411852
-135.608016 57.406134
-135.613934 57.409408
-135.622071 57.412921

Zone SEA219	945-1853	0	1.05

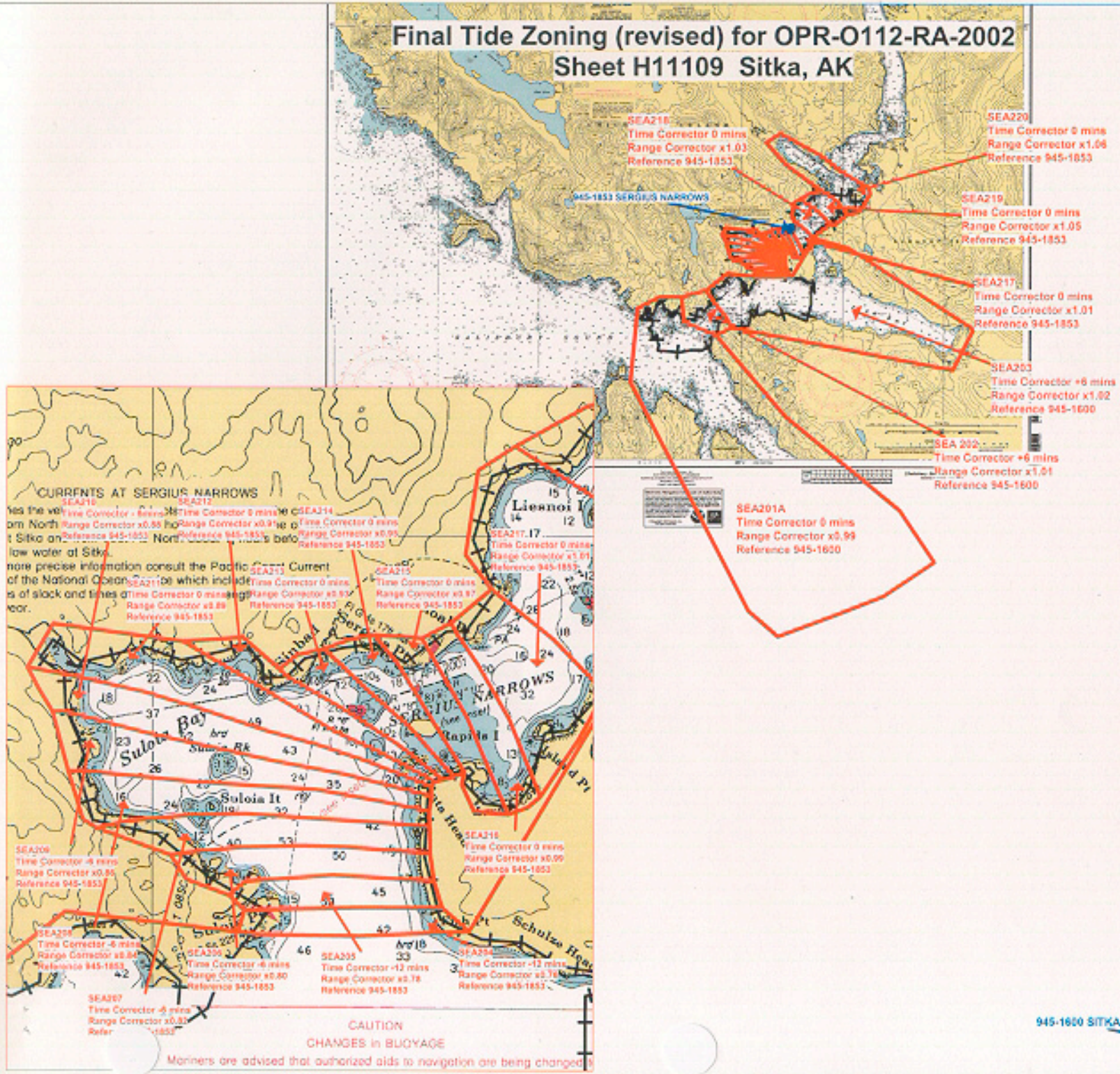
-135.618952 57.42304
-135.609422 57.425903
-135.600833 57.426647
-135.588488 57.422341
-135.579502 57.416323
-135.58939 57.411756
-135.593468 57.411852
-135.601951 57.416674
-135.607129 57.418909
-135.618952 57.42304

Zone SEA220	945-1853	0	1.06

-135.602998 57.442829
-135.593706 57.439181
-135.586153 57.435865
-135.56162 57.427734
-135.560755 57.425174
-135.570002 57.417213
-135.579502 57.416323
-135.588488 57.422341
-135.600833 57.426647
-135.630575 57.438512
-135.64668 57.44826

-135.635043 57.452237
-135.602998 57.442829

Final Tide Zoning (revised) for OPR-O112-RA-2002
Sheet H11109 Sitka, AK



APPROVAL SHEET
H11109

Initial Approvals:

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

Bruce Olmstead Date: Jan 17, 2006

Bruce Olmstead
Cartographic Team
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.

CDR/NOAA Date: 18 Jan 2006

Donald W. Haines
CDR, NOAA
Chief, Pacific Hydrographic Branch

Digitally signed by Jeremy McHugh
Reason: AWOIS / SURF check complete
Date: 2006.01.20 16:29:18 -05'00'