

H-11139

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-20-02-02

Registry No. H-11139

LOCALITY

State ALASKA

General Locality SW Alaska Peninsula and Semidi Islands

Sublocality Semidi Islands - Vicinity of Chowiet Island

2002

CHIEF OF PARTY

CAPT James C. Gardner, NOAA

LIBRARY & ARCHIVES

DATE

HYDROGRAPHIC TITLE SHEET

H11139

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-20-02-02

State Alaska

General Locality Southwest Alaska Peninsula and Semidi Islands

Sublocality Semidi Islands - Vicinity of Chowiet Island

Scale 1:20,000 Date of Survey 6/20/2002-7/29/2002

Instructions Dated 3/16/2002 Project No. OPR-P182-RA-02

Vessel NOAA Ship Rainier (2120) and Launches 2122, 2123, 2124,
2125, 2126

Chief of Party CAPT James C. Gardner, NOAA

Surveyed by RAINIER Personnel

Soundings taken by echo sounder, hand lead, pole Seabeam/Elac 1050D MKII,
Knudsen 320M, Reson SeaBat 8125, Seabeam/Elac 1180

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by E. Domingo & B. Taylor Automated plot by HP1050c

Verification by B. Taylor

Soundings in Fathoms and tenths at MLLW

REMARKS: Time in UTC.

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 H11139

Project OPR-P182-RA-02
Southwest Alaska Peninsula, Alaska
Scale 1:20,000
June - July 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-P182-RA-02, dated May 16, 2002, and the Draft Standing Project Instructions as updated for 2002. The survey area is located in the North Pacific Ocean, along the southeast coast of the Alaska Peninsula, adjacent to the Semidi Islands in the vicinity of Chowiet Island. This survey corresponds to sheet "BF" in the sheet layout provided with the Letter Instructions.¹

One hundred percent shallow-water multibeam (SWMB) coverage was obtained in the survey area in waters up to a 5 meter² depth overlap with LIDAR soundings (H11064) as specified in the Hydrographic Survey Letter Instructions, Section 6.8.1.³ Vertical-beam echo sounder (VBES) data were acquired in along the shoreline for verification with LIDAR (H11064).⁴

Data acquisition was conducted from June 20 to July 29, 2002 (DN 171 to 210).

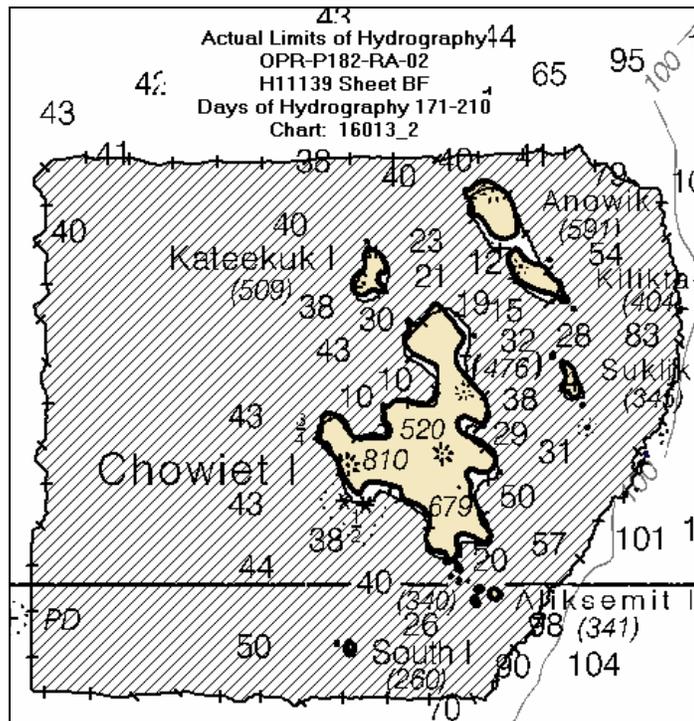


Figure 1. H11139 Survey Limits.

B. DATA ACQUISITION 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-P182-RA-02 Data Acquisition and Processing Report*, 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 and her survey launches (vessel numbers 2120, 2122, 2123, 2124, 2125, and 2126). Vessels 2120, 2123, 2124, 2125 and 2126 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. Vessel 2122 was used to acquire vertical-beam echo soundings (VBES) and detached positions (DPs) for shoreline verification. No unusual vessel configurations or problems were encountered during this survey.

B2. Quality Control

Crosslines

Shallow Water Multi-beam (SWMB) crosslines totaled 66.42 nautical miles, comprising 7.88% of SWMB hydrography. Visual comparison of depths were completed in MapInfo and compared well, SWMB generally matched within 1.0 meter of SWMB main scheme hydrography. In a few instances differences were up to 2.0 meters. A Quality Control Report (CARIS HIPS) was run for Vessel 2120 and the RESON systems. The checkline file for vessel 2120 averaged 99.73. The checkline file for the RESON systems averaged 94.39. Both reports had a depth tolerance factor of 0.023, which conforms to International Hydrographic Organization Order 2 specifications detailed in Special Publication S-44, Edition 4, as well as NOS Hydrographic Surveys Specifications and Deliverables Manual.⁵ See Appendix V⁶ for the detailed report.

Junctions

The following contemporary survey junctions⁷ with H11139:

Registry #	Scale	Date	Junction side
H11062	1:40,000	2001	West
H11064	1:10,000	2001	Around the Islands (LIDAR)
H11069	1:40,000	2001	East and South
H11138	1:20,000	2002	North

Surveys H11062, H11069 and H11138 junction well with this survey, a cursory comparison indicates differences are generally less than one fathom.⁸

Survey H11064 junctions fairly well with this survey. Generally the soundings were within 2.0 fathoms. Soundings closer to shore ranged from 2.0 fathoms up to 5.0. In a few instances

larger differences were found. This can be attributed to the steep irregular bathymetry near shore.⁹

One LIDAR sounding 1.099 fathoms at $56^{\circ}05'17.830''\text{N}$, $156^{\circ}40'46.330''\text{W}$ (644377.29E , 6218332.51N) was at the junction of H11139 and H11064. A feature was found and half was covered with SWMB. The shoalest sounding found on H11139 in the area was 10.694 fathoms. In addition, during the initial single beam and visual inspection nothing was found.¹⁰

One holiday ($56^{\circ}03'15.270''\text{N}$, $156^{\circ}41'05.320''\text{W}$ (644176.22E , 6214533.55N)) was found post-processing at the junction of H11064 and H11139. The section that is not covered by LIDAR or SWMB is a down sloping area between 28 and 39 fathoms.¹¹ From the rejected outer beams no significant feature is obvious.¹²

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.¹³

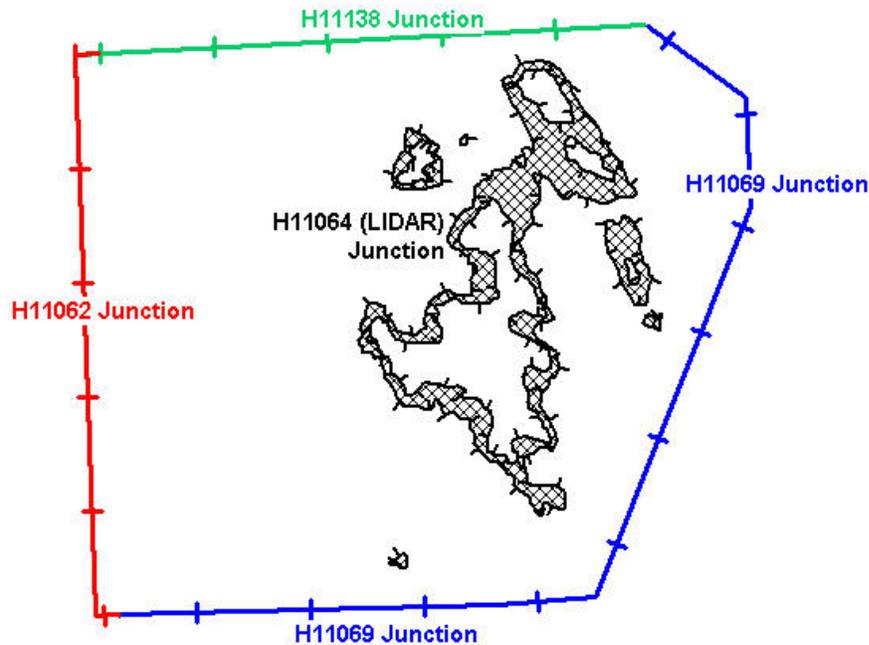


Figure 2. H11139 Junction Surveys

Data Quality Factors

After correction for sound velocity in HDCS, some lines still exhibited the characteristic "smiles" and "frowns" indicative of inaccurate sound velocity corrections. To correct these sound velocity problems, correctors were often applied based on the geographic position of the cast, rather than the time the cast was collected. Such application was performed on a line-by-line basis only on individual lines that exhibited profound sound velocity problems. Despite the best efforts of the Hydrographer to conduct sufficient sound velocity casts

distributed both spatially and temporally, and to correct for sound velocity errors in post processing through methods previously mentioned, sound velocity errors were still noticeable in several regions mainly outer regions of the sheet limits which consisted of ELAC data.¹⁴

B3. Data Reduction

Data reduction procedures for survey H11139 conform to those detailed in the OPR-P182-RA-02 Data Acquisition and Processing Report with the exception of vessel 2126.

The firmware on the TSS inertial motion sensor was changed over the 2001/2002 winter inport and the sign was reversed on the analog input for heave. This affected only the ELAC 1180 data on 2126. The heave value for the ELAC 1180 data was 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 H11139 can be found in the *OPR-P182-RA-02 Horizontal and Vertical Control Report*, 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 Kodiak (313 kHz) and Cold Bay (289 kHz) were utilized during this survey. Launch-to-launch DGPS performance checks were performed weekly in accordance with Section 3.2 of the FPM. Copies of the performance checks are included in the *OPR-P182-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 Sand Point, AK (945-9450) served as control for datum determination and as the primary source for water level reducers for survey H11139.

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
Chankliut Island	945-8849	Tertiary	June 6, 2002	July 30, 2002

All data were reduced to MLLW using unverified observed tides from station Sand Point, AK using the tide file 9459450.tid and time and height correctors using the zone corrector file P182RA2002CORP.zdf.¹⁵

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. A request for delivery of final approved (smooth) tides for survey H11139 was forwarded to N/OPS1 on August 2, 2002 in accordance with FPM 4.8. A copy of the request is included in Appendix IV.¹⁶

D. RESULTS AND RECOMMENDATIONS

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

One AWOIS search was completed on survey H11139. Vessel 2126 completed the requested radius for AWOIS record 52757, an obstruction found at 55°59'28.100"N , 156°53'25.700"W (631585.62E , 6207101.77N). Using 100% SWMB no rock was found anywhere within the limits of H11139.¹⁷

D.2 Chart Comparison

Survey H11139 was compared with charts 16013_1 (29th Ed.; Nov. 1, 2003 1:969,761), and 16013_2 (29th Ed.; Nov. 1, 2003, 1:400,000).

Chart 16013_1

Western depths from survey H11139 generally agreed within 0-5 fathoms of the depths on chart 16013_1. The three-charted soundings in the North East corner of survey H11139 (15, 83 and 79 fathoms) were 5-10 fathoms shoaler than surveyed depths. In addition, a shift in the shoreline up to 400m was noted. This can be attributed to the small scale of the chart and the possibility that original positioning methods used were below the accuracy standards used in modern surveys.¹⁸

Chart 16013_2

Approximately 50% of the depths from survey H11139 agreed within 0-5 fathoms of the depths on chart 16013_2. The charted depths were in most instances either shoaler or at the same depth as those obtained from survey H11139. Four charted depths, 43 fathoms, 32 fathoms, 28 fathoms and 38 fathoms were about 5 fathoms deeper than the surveyed depths. Twelve charted depths were all 5-10 fathoms shoaler than surveyed depths. In addition, a shift in the shoreline up to 500m was noted. This can be attributed to the small scale of the chart and the possibility that original positioning methods used were below the accuracy standards used in modern surveys.¹⁹

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.²⁰

Final chart comparisons will be made at the Pacific Hydrographic Branch after the application of smooth tides.²¹

D.3 Shoreline

Shoreline Source

No source shoreline was provided, however, shoreline from junction survey H11064 (LIDAR) provided a MHW line. Much of the shoreline was too rough to safely approach to conduct traditional shoreline verification. RAINIER conducted cursory investigation of all the shoreline and traditional shoreline verification in just a few small areas safe for nearshore navigation.

Shoreline Verification

Shoreline investigation²² verification was conducted near predicted low water. 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*.²³

Negative LIDAR soundings offshore were digitized into LIDAR rocks following field verification and are found in H11139_Shoreline_Updates. Any additional unusually shoal LIDAR soundings offshore were investigated and digitized into LIDAR rocks if warranted following field verification.

A detailed Detached Position plot, in both paper copy and MapInfo format, is provided showing all detached positions with notes relating to each feature. The updated shoreline and features are also depicted on the final sounding plot.²⁴ Verified LIDAR shoreline that did not require revision is in MapInfo table H11139_Shoreline and shown in black.

One change to the H11064 (LIDAR) MHW line was made and is found in H11139_ShorelineUpdates MapInfo table provided.

Recommendations

The LIDAR MHW line was found to be very accurate and only one change to the MHW line was required. However, the Hydrographer found offshore rocks from the LIDAR survey were frequently digitized at the wrong height and the H11064 (LIDAR) survey occasionally digitized on kelp.²⁵

The one change to LIDAR MHW was found at position 55°59'42.360"N , 156°40'47.980"W (644697.19E , 6207963.31N). The point as depicted in survey H11064 was not found.²⁶ The adjustment is shown in the Detached Position and Final Sounding plot and is included in the

digital "H11139_ShorelineNotes" table. SWMB approaches²⁷ the shore as close as safety allowed for disapproval.

The Hydrographer recommends that the shoreline as depicted on the Detached Position and Final Sounding plot supersede and complement shoreline information compiled on the LIDAR and charts as noted.²⁸ 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 "H11139_ShorelineNotes."²⁹

D.4 Dangers to Navigation

One Danger to Navigation was found located at 56°03'32.72" N 156°38'12.73" W; (647139.46, 6215171.47). The DTON is a rock with least depth of 1.0 fathoms.³⁰ This was reported to the Marine Chart Division for verification and final submission to the Seventeenth Coast Guard District on June 3, 2003. A copy of the preliminary Danger to Navigation email is included in Appendix I³¹ and a copy of the DTON XML file is included in the digital data.³²

D.5 Aids to Navigation

No aids to navigation (ATONs) are located within the limits of H11139.³³

D.6 Miscellaneous

Due to time constraints on the project, bottom samples were not collected.³⁴ This survey area was adequately covered to ensure detection of all significant features.³⁵

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 2002.

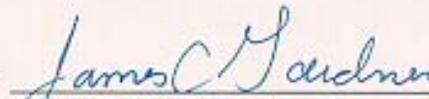
The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Survey H11138 is complete and adequate to supersede charted soundings in their common areas. No additional work is required for this survey.

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

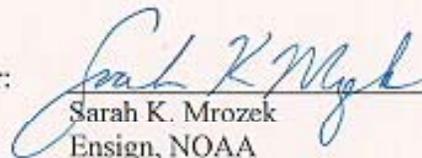
<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Data Acquisition and Processing Report for OPR-P182-RA-02	2 August 2002	N/CS34
Horizontal and Vertical Control Report for OPR-P182-RA-02	12 February 2003	N/CS34
Tides and Water Levels Package for OPR-P182-RA-02	21 August 2002	N/OPS1
Coast Pilot Report for OPR-P182-RA-02	TBD	N/CS26

Approved and Forwarded:

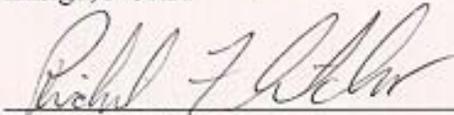
 6-28-03
 James C. Gardner
 Captain, NOAA
 Commanding Officer

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

Survey Sheet Manager:


 Sarah K. Mrozek
 Ensign, NOAA

Field Operations Officer:


 Richard A. Fletcher
 Lieutenant Commander, NOAA

Subject: [Fwd: DTON RA-09-03 (H11139)]

Date: Wed, 04 Jun 2003 07:33:19 -0700

From: "John Lowell" <John.Lowell@noaa.gov>

To: Bruce Olmstead <Bruce.Olmstead@noaa.gov>

CC: "Edward.J.Vandenameele" <Edward.J.Vandenameele@noaa.gov>, Gary Nelson <Gary.Nelson@noaa.gov>, Russ Davies <Russ.Davies@noaa.gov>

Bruce, another for the files, johnl

----- Original Message -----

Subject: DTON RA-09-03 (H11139)

Date: Tue, 03 Jun 2003 20:56:36 +0000

From: "FOO Rainier" <foo.rainier@ranems.pmc.noaa.gov>

To: MCD_DTON <mcd.dton@noaa.gov>

CC: "Swallow Jon" <Jon.Swallow@noaa.gov>, "Lowell John"

<John.Lowell@noaa.gov>, "Rainier CO"

<co.rainier@ranems.pmc.noaa.gov>, "Mrozek Sarah"

<sarah.mrozek@ranems.pmc.noaa.gov>

Attached is a zipped DTON xml file from survey H11139.

--

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>



H111139_BF_DToN1.zip

Name: H111139_BF_DToN1.zip

Type: Zip Compressed Data (application/x-zip-compressed)

Encoding: base64

Danger to Navigation for H11139

Registry Number: H11139
State: Alaska
Locality: SW Alaska Peninsula and Semidi Islands
Sub-locality: Semidi Islands
Project Number: OPRP182RA02
Survey Date: 07/16/2002

Charts Affected

Number	Version	Date	Scale
16013	29th Ed.	11/01/2003	1:400000
16011	36th Ed.	08/01/2004	1:1023188
16006	33rd Ed.	12/23/2000	1:1534076
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	Shoal	1.94 m	56.05908787° N	156.63687026° W	---

1.1) Profile/Beam - 1448/27 from h11139 / r4re_2002 / 2002-197 / 301_1720**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 56.05908787° N, 156.63687026° W
Least Depth: 1.94 m
Timestamp: 2002-197.17:24:46.786 (07/16/2002)
Survey Line: h11139 / r4re_2002 / 2002-197 / 301_1720
Profile/Beam: 1448/27
Charts Affected: 16013_2, 16013_1, 16011_1, 16006_1, 531_1, 500_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11139/r4re_2002/2002-197/301_1720	1448/27	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (16013_2, 16013_1, 16011_1, 16006_1, 530_1)

1fm 0ft (531_1)

1.9m (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 4, 2002

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P182-RA-2002
HYDROGRAPHIC SHEET: H11139

LOCALITY: Chowiet Island, AK
TIME PERIOD: June 20 - July 29, 2002

TIDE STATION USED: 945-8849 Chankliut Island, AK
Lat. 56° 08.7'N Lon. 158° 06.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.368 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SWA156, SWA157 & SWA158.

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.

Thomas V. Hess 12/4/02

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



RECRD VESSLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

NATIVLAT	<input type="text"/>	NATIVLON	<input type="text"/>	<input type="button" value="convert"/>	NATIVDATUM	<input type="text"/>
LAT83	<input type="text" value="55/59/28.1"/>	LONG83	<input type="text" value="156/53/25.7"/>	<input type="button" value="Update GP"/>	GPQUALITY	<input type="text" value="Poor"/>
	<input type="text" value="55"/> <input type="text" value="59"/> <input type="text" value="28.1"/>		<input type="text" value="156"/> <input type="text" value="53"/> <input type="text" value="25.7"/>		GPSOURCE	<input type="text" value="Scaled"/>
LATDEC	<input type="text" value="55.991138888889"/>	LONDEC	<input type="text" value="156.89047222222"/>			

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ
 Techniqnote

History
 HISTORY
 CHARTED ROCK AWASH
 SOURCE UNKNOWN - FROM OBSERVATIONS TO JUNE 1887, AND INFORMATION FURNISHED BY FISH COMMISSION STEAMER ALBATROSS IN 1898. POSITION SCALED IN MAPINFO FROM KAP CHART 16013_2 INSET AT LAT. 55-59-28.1N, LON 156-53-25.7W
 CL 132775-- CAPTAIN ROBERT P. LARSEN, MASTER, NOAA SHIP JOHN N. COBB CONDUCTED A SERIES OF RECONNAISSANCE HYDROGRAPHY LINES WHILE OPERATING IN THE SEMIDI ISLANDS VICINITY. RADAR BEARINGS WERE USED FOR POSITION CONTROL. THE COBB'S WORK INDICATES THAT THE 100 FATHOM CURVE IS IN ERROR AND SHOULD BE ABOUT 5 MILES CLOSER TO THE SEMIDI ISLANDS. REVISE 100 FATHOM CURVE AND 50 FATHOM TINT. ADD "PD" TO CHARTED ROCK AWASH AS SHOWN ON SKETCH. (ENT DAS, 5 MAY 2001)

Fieldnote
 INVESTIGATION
 DATE(S): 07/16/02, 07/29/02 (DN: 197,210)
 HYDROGRAPHIC SURVEY NUMBER: H11139
 VN: 2126 / 2120 TIME: 0900-1600
 INVESTIGATION METHODS USED: 100% SWMB, visual
 SURVEYED POSITION: LAT. 55/59/28.1 LON. 156/53/25.7
 POSITION DETERMINED BY: DIFFERENTIAL GPS
 INVESTIGATION SUMMARY: The western third of a 1.7 mile radius circle, surrounding the "PD," was completely surveyed with 100% SWMB. The area covered all areas not covered by 2001 surveys. The rock awash was not found visually or with soundings. The area can be classified as a flat bottom with no rocks or DTONS.

Proprietary

YEARSUNK NIMANUM SYSTEMNUM

Revisions Compiled during Office Processing and Certification

¹ Concur.

² ~~Strikethrough in waters up to a 5 meter depth overlap with LIDAR soundings (H11064) as specified in the Hydrographic Survey Letter Instructions, Section 6.8.1.~~ replace with “. The junction with H11064 was surveyed to ensure at least 5 meters depth overlap with LIDAR soundings as specified in the Hydrographic Survey Letter Instructions, Section 6.8.1.”

³ Survey H11064 is a LIDAR survey that encompassed the Semidis Island, Lighthouse Rocks, Atkulik Island, Kak Island, Chankliut Island, and the south end of Nakchamik Island. Data from H11064 was reviewed and accepted by PHB. Data from H11064 will be compiled to the smooth sheets of the junctioning surveys. Survey H11064 will be submitted at a later date.

⁴ The data from H11064 was incomplete when submitted to the Rainier for use in H11139 shoreline verification. Consequently, 74 islets found in H11064 were not shown on the Rainier shoreline data and were not discussed. Re-examination of the Rainier data in Caris Hips during office processing failed to disprove the islets. They have been retained on the smoothsheet and Hdrawing.

At Lat 55/59/2.107 and Lon 156/44/29.181, a Rainier sounding of 1.2 fathoms was shown over a portion of a LIDAR islet. Since the hydrographer did not address the discrepancy, the islet was retained on the smooth sheet and Hdrawing.

⁵ During office review of the survey by a hydrographer, it was the opinion of the hydrographer that the survey conforms to International Hydrographic Organization Order #1 as required by the Letter Instructions. This was determined by qualitative analysis of the data.

⁶ Filed with the hydrographic data.

⁷ ~~Strikethrough survey junctions~~, replace with “surveys junction.”

⁸ Concur.

⁹ Concur with clarification. LIDAR soundings from H11064 were placed on Level 20 of the smooth sheet to complete coverage of near-shore areas.

Since LIDAR may be affected by turbidity, it is currently assumed that multibeam soundings become increasingly more accurate than LIDAR with increasing depth. Where there were differences between multibeam and LIDAR soundings in the survey, generally the multibeam soundings were shoaler. (Exceptions were cases of inaccurate LIDAR soundings due to kelp, noted on the DP plot.)

In two areas where there was no multibeam coverage, LIDAR soundings were chosen for the Hdrawing:

6 fathoms 2 feet at Lat 56/04/52.09N and Lon 156/39/23.49W

5 fathoms 4 feet at Lat 56/01/35.859N and Lon 156/40/58.775W

In another area the shoalest sounding came from LIDAR and was chosen for the Hdrawing:

2 fathoms at Lat 56/03/33.577N and Lon 156/38/54.303W

These soundings are noted and displayed on Level 8 of the Hdrawing. Chart areas according to the smooth sheet and Hdrawing.

¹⁰ Concur. At chart scale the feature abuts the shore and is not depicted in the Hdrawing. The evaluator considers the survey data inadequate to disprove the feature, and it is depicted on

the smooth sheet.. It is recommended that the feature receive further investigation as resources allow.

¹¹ Strikethrough ~~fathoms~~, replace with “meters.”

¹² Do not concur. Review of the data indicated that coverage was inadequate to confirm that there were no features in the area. It is recommended that the area receive further investigation as resources allow.

¹³ The junction with surveys H11062, H11064, H11069, and H11138 are complete; soundings and depth curves are in good agreement within the common area. A “Joins” note has been shown on the smooth sheet where applicable.

¹⁴ The data has been reviewed and is acceptable for charting.

¹⁵ Tide Note is appended to this report.

¹⁶ Filed with the hydrographic data.

¹⁷ Concur. See AWOIS form attached to this report for charting recommendation.

¹⁸ Concur.

¹⁹ Concur with clarification. The smooth sheet shows two charted rocks from 16013_2 (identified on the DP plot) that were confirmed by H11064 and verified by H11139. Chart the rocks at the smooth sheet position.

²⁰ Concur, except as specifically noted in this report.

²¹ Concur. Office review and comparison after application of smooth tides agreed with the hydrographer’s findings. See endnotes 18 and 19 above.

²² Insert “and.”

²³ Filed with the hydrographic data.

²⁴ In some cases, the DP field annotations indicated that a feature was a rock, but it was depicted on the DP plot and the smooth sheet as an islet. It is assumed that in these cases the feature was confirmed as an islet after tide correctors were applied.

²⁵ Concur. Chart according to the smooth sheet.

²⁶ Concur. Chart according to the smooth sheet. On the Hdrawing, the piece of corrected shoreline is shown in red on Level 1, while all other shoreline is shown in red on Level 5.

²⁷ Strikethrough ~~approaches~~, replace with “approached.”

²⁸ Concur with clarification. Three rocks discovered in H11139 have been displayed on Level 1 of the Hdrawing:

Lat. 56/03/04.478N, Long. 156/38/36.229W

Lat. 56/02/39.827N, Long. 156/38/24.376W

Lat. 56/02/32.8N, Long. 156/38/5.26W

Verified LIDAR rocks from the smooth sheet are shown on Level 8, along with soundings originating from H11064.

²⁹ Filed with the hydrographic data.

³⁰ Concur. No other dangers were found during office processing. Chart the DTON in the smooth sheet position.

³¹ Attached to this report.

³² Filed with the hydrographic data.

³³ Concur.

³⁴ Concur. Chart retained bottom samples from 16013 and other sources.

³⁵ Concur, except as specifically noted in this report.

APPROVAL SHEET
H11139

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.



Russ Davies
Cartographic Team
Pacific Hydrographic Branch

Date: 6/28/05

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.



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

Date: 6 July 2005

