H11069

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-40-02-01

Registry No. H-11069

LOCALITY

State Alaska

General Locality SW Alaska Peninsula & Semidi Islands

Sublocality Offshore-East of Semidi Islands

2001

CHIEF OF PARTY

Captain 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

H-11069

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-40-02-01

State: Alaska

General Locality: Southwest Alaska Peninsula and Semidi Islands

Sublocality: Offshore-East of Semidi Islands

Scale: 1:40,000

Date of Survey: July 11 - August 2, 2001

Instructions Date: 6/1/2001

Project No.: OPR-P182-RA

Vessel: NOAA Ship Rainier(2120), RA-3(2123) and RA-4(2124)

Chief of Party: Captain James C. Gardner, NOAA

Surveyed by: Rainier Personnel

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

Graphic record scaled by: Rainier Personnel

Graphic record checked by: Rainier Personnel

Evaluation by: C. Barry

Automated plot by: HP Design Jet 750C

Verification by: R. Davies, R. Mayor, C. Barry, G. Nelson

Soundings in: Fathoms and tenths at MLLW

REMARKS: Time in UTC. Revisions and end notes in red were generated during office processing. All separates are filed with the hydrographic data. As a result, page numbering may be interrupted or non-sequential.

All depths listed in this report are referenced to mean lower low water unless otherwise noted.

Descriptive Report to Accompany Hydrographic Survey H11069

Project OPR-P182-RA-01
Southwest Alaska Peninsula and Semidi Islands, Alaska
Scale 1:40,000
July-August 2001
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-01, dated June 1, 2001. The purpose of this project is to provide contemporary surveys for updating National Ocean Service (NOS) nautical charts. Many charted features in the project area originate from observations made prior to 1897. Sparse hydrographic data is from 1924-1943 track line reconnaissance surveys and lead-line hydrographic surveys. This project responds to requests from a U.S. Congressman, a U.S. Senator, the domestic commercial fishing industry, the United States Coast Guard, and NOAA, that emphasize concern about chart adequacy and safe navigation in offshore regions of the Alaska Peninsula.

The survey area covers an offshore area east of the Semidi Islands and encompassing the northern and southern offshore extents of the Semidi Islands. H11069 is bounded on the west by approximate longitude 156° 54' 00" W, and on the east by approximate longitude 156° 23' 00" W. The northern and southern limits are latitudes 56° 22' 00" N and 55° 54' 00" N[1], respectively.

Data acquisition was conducted from July 11 through August 02, 2001 (Julian Day Numbers 192-214). One hundred percent shallow-water multibeam coverage was obtained within the survey area.

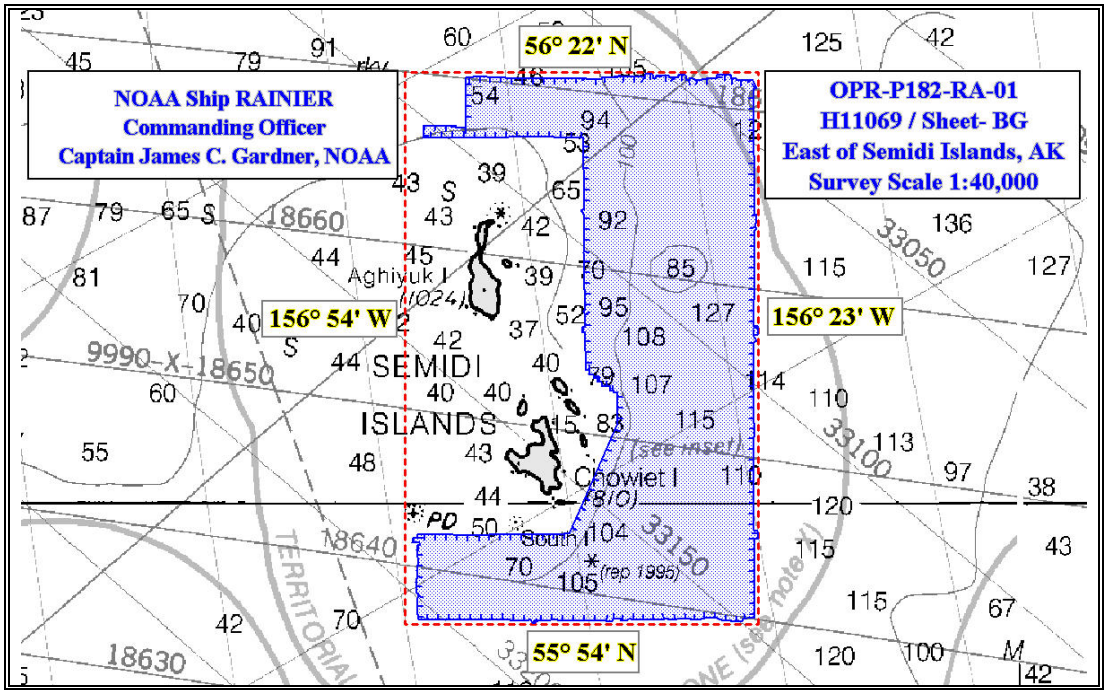


Figure 1. Approximate Survey Limits of H11069

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-P182-RA-01 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, 2123, 2124). Vessels 2120, 2123 and 2124 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. No unusual vessel configurations or problems were encountered during this survey.

B2. Quality Control

Crosslines

Shallow-water multibeam (SWMB) crosslines totaled 121.05 nautical miles, equating to 10.3% of SWMB hydrography. The Quality Control Report (CARIS HIPS) for the checkline file averaged 97.2%, with a depth tolerance factor of 0.013, which conforms to International Hydrographic Organization Order I specifications detailed in Special Publication S-44, Edition 4, as well as NOS Hydrographic Surveys Specifications and Deliverables Manual. See Appendix V[2] for the detailed report.

Junctions

The following contemporary surveys junction with H11069: *Surveys H11062 and H11063 are concurrent contract surveys conducted by Thales - Geopacific in 2001.*

Registry #	Scale	Date	Junction side
H10554	1:40,000	1994	Northwest
H11067[3]	1:20,000	Planned 2002	North and West
H11068[4]	1:20,000	Planned 2002	South and West
H11062	1:40,000	2001	Southwest
H11063	1:40,000	2001	South

Vertical-beam echo sounder survey H10554, conducted by the NOAA Ship RAINIER in 1994, junctions with the northwest corner of this survey. The overall agreement was good: the average difference in soundings is zero to two meters where multibeam soundings overlay the vertical beam echo sounder smooth sheet soundings.[5] Additionally, survey soundings were shoaler between H10554 smooth sheet soundings even though agreement at the position of the charted depths was good.[6] This can be attributed to increased bottom coverage using SWMB methods.[7]

Surveys H11067 (Sheet BE) and H11068 (Sheet BF) of project OPR-P182-RA-01 are scheduled for completion by NOAA Ship RAINIER during the year 2002 field season. Junction comparisons will be performed upon completion.

Contract surveys H11062 and H11063 were not completed prior to submittal of survey H11069. Junction comparisons with these surveys will be made at the Pacific Hydrographic Branch (PHB), N/CS34.[8]

All final junction comparisons will be made by PHB (N/CS34) after the application of approved water levels and tide zoning correctors.

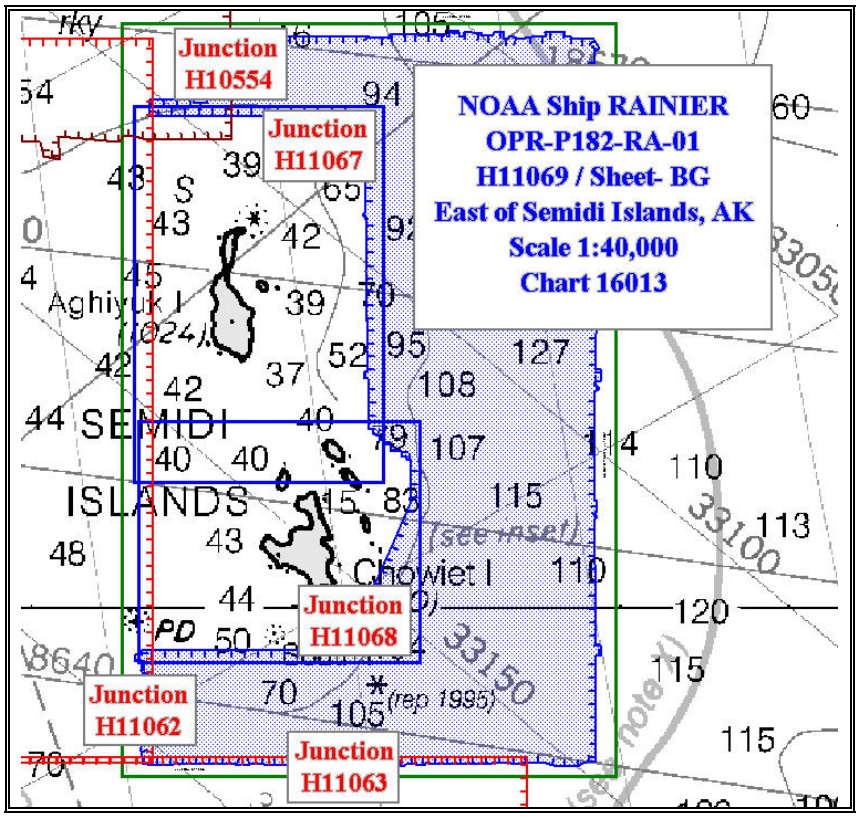


Figure 2. H11069 Junction Surveys

Data Quality Factors

An extreme variance in sound velocity (SV) was found throughout the survey area. SV casts were taken frequently, at intervals no greater than four hours, in order to reduce errors caused by inaccurate sound velocity measurements. In limited instances an SV cast which was closer in distance but not time was applied to sounding data to reduce minor errors caused by variance in sound velocity. All remaining errors in the data due to sound velocity are negligible, and the data meet depth accuracy standards as set forth in the NOS Hydrographic Surveys Specification and Deliverables Manual. This is confirmed by the results of the QC Report (refer to section B.2).

No other unusual conditions were encountered during the survey that affected the expected accuracy and quality of survey data.

B3. Data Reduction

Tide zoning used for this survey is consistent with the Project Instructions. HDCS multibeam data were reduced to mean lower-low water (MLLW) using tide correctors developed by applying preliminary time corrections and range correctors to unverified observed water levels from station Sand Point, AK (945-9450). These data were used to create the following preliminary zone corrected tide files applied in HDCS:

Preliminary Zone Corrected Tide Files		
Rainier - 2120	*Launch RA3 - 2123*	*Launch RA4 - 2124*
9459450_2120.tid	H11069_RA4_obs.tid	H11069_RA4_obs.tid

The procedure for creating zone corrected tide files was performed using the HPTools software program *ZoneHIPS*. *ZoneHIPS* determines which tide zone a particular vessel is in for each time and navigation point, and then referencess the height and time corrector to use for that time. It then calculates a water level corrector for that time by applying the respective correctors to the reference station, and adds that time and value to the CARIS **.tid* file. Therefore, the tide files produced by *ZoneHIPS* are vessel specific. These tide corrector files are submitted with the digital data.

The tide zone correctors that were applied during the application of preliminary unverified water levels are indicated in *Figure 3.*

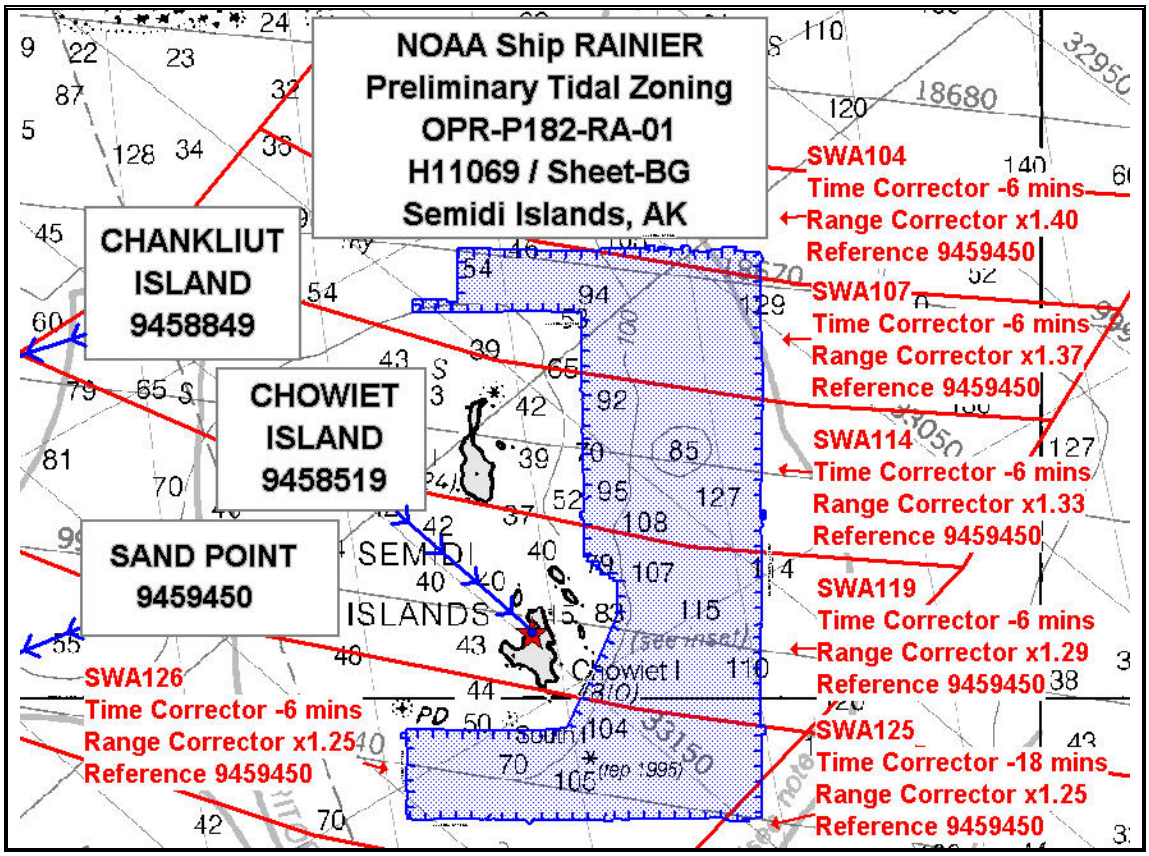


Figure 3. H11069 Preliminary Tidal Zoning

Data reduction procedures for survey H11069 conform to those detailed in the *OPR-P182-RA-01 Data Acquisition and Processing Report.*

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11069 can be found in the *OPR-P182-RA-01 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, AK (313 kHz) and Cold Bay, AK (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-01 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) will serve as control for datum determination and as the primary source for water level reducers for survey H11069.[9] The contractor LCMF personnel installed and maintained the following subordinate tide gauge stations in accordance with the Project Instructions:

Station Name	Station #	Latitude	Longitude	Installed & Maintained
Chowiet Island, AK	9458519	56° 03.0' N	156° 42.5' W	LCMF (contractor)
Chankliut Island, AK	9458849	56° 08.8' N	156° 06.4' W	LCMF (contractor)

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 H11069 was forwarded to N/OPS1 on August 9, 2001 in accordance with FPM 4.8.

D. RESULTS AND RECOMMENDATIONS

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

AWOIS item 52754 was located within the limits of H11069. Investigation methods, results, and charting recommendations have been entered into the Microsoft Access database file "H11069_AWOIS" and submitted with the digital data. Printouts of the AWOIS Database forms are included in Appendix VI[11] of this report.

D.2 Chart Comparison

Five charts are affected by this survey:

Chart	Edition	Date	Scale
500	7th Ed.	June 1, 1996	1:3,500,000
531	20th Ed.	September 4, 1999	1:2,100,000
16006	33rd Ed.	December 23, 2000	1:1,534,076
16011	35th Ed.	December 2, 2000	1:1,023,188
16013	28th Ed.	April 14, 2001	1:969,761

Survey H11069 was compared with chart 16013 (27th Ed.; September 6, 1997, 1:969,761 including Semidi Islands inset 1:400,000). The latest edition of chart 16013 (28th Ed.; April 14, 2001, 1:969,761)[12] was not available for chart comparison. Comparisons performed by N/CS34 should be made with the latest edition.[13]

The overall agreement between the sparse charted soundings and survey depths is good. Most soundings compare within zero to two fathoms. However, two charted soundings with values of 85 fathoms and 124 fathoms had variances from survey depths of 24 and 21 fathoms respectively *(see Figure 4)*.[14] All areas were covered with one hundred percent shallow-water multibeam.

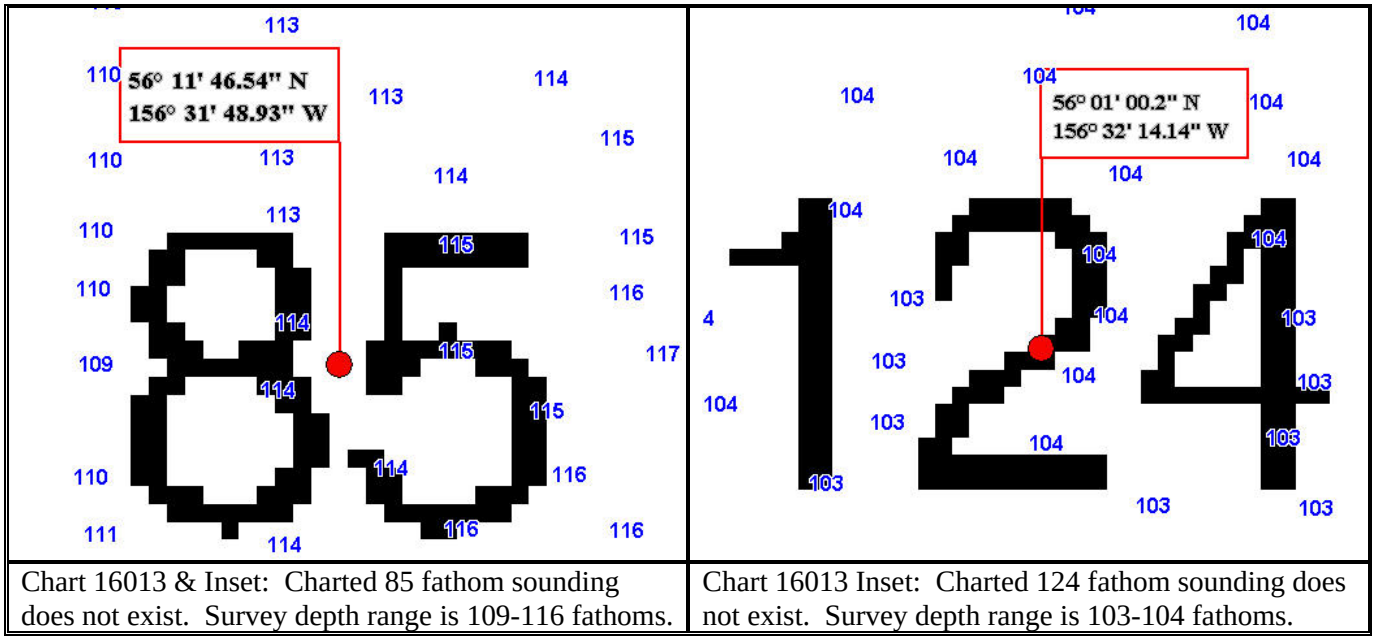


Chart 16013 & Inset: Charted 85 fathom sounding does not exist. Survey depth range is 109-116 fathoms.

Chart 16013 Inset: Charted 124 fathom sounding does not exist. Survey depth range is 103-104 fathoms.

Figure 4. H11069 Gross Chart Discrepancies

Final sounding comparisons will be made at the Pacific Hydrographic Branch after the application of smooth tides.[15]

D.3 Shoreline

No shoreline was located within the limits of H11069.[16] Shoreline from chart 16013 is shown in brown on the Final Field Sheet for orientation purposes only.[17]

D.4 Dangers to Navigation

No Danger to Navigation Reports were submitted for this survey.[18]

D.5 Aids to Navigation

No aids to navigation (ATON's) are located within the limits of H11069.[19]

D.6 Miscellaneous

No bottom samples were taken for survey H11069.[20]

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[21].

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 H11069 is complete and adequate to supersede charted soundings in their common areas.[22] No additional work is required for this survey.[23]

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-P182-RA-01	August 13, 2001	N/CS34
Horizontal and Vertical Control Report for OPR-P182-RA-01	August 13, 2001	N/CS34
Coast Pilot Report for OPR-P182-RA-01	TBD	N/CS26

Approved and Forwarded: _____ Date: 8-8-01

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: _____

Edward A. Owens
Physical Scientist, NOAA

Field Operations Officer: _____

Edward J. Van Den Ameele
Lieutenant, NOAA

Revisions Compiled During Office Processing and Certification

---

[1] PHB Revision: Actual limits are North: latitude 56º20'56"N; South: latitude 55º54'03"N, East: longitude 156º23'02"W; West: longitude 156º53'22"W.
[2] Filed with the hydrographic data
[3] Rescinded
[4] Rescinded
[5] The junction with H-10554 was not formally completed since this survey was processed previously. A comparison of soundings between the surveys shows close agreement, generally within one to two fathoms, with survey H-10554 tending slightly shoaler. An "adjoins" note has been added to the smooth sheet.
[6] Do not concur. See section D.2., Chart Comparison, PHB endnote 14, for PHB discussion of comparison to charted soundings
[7] Do not concur. See endnote 14
[8] The junctions with contract surveys H-11062 and H-11063 are complete and "Joins" notes have been added to the smooth sheet where applicable. Agreement is good between these junctional surveys, within 0-2 fathoms, with the Rainier survey tending slightly shoaler than the contractor surveys.
[9] Approved tide correctors were obtained from the Center For Operational Oceanographic Products and Services (CO-OPS). The approved tide correctors are zoned from Chowiet Island, Alaska, gauge 945-8519. See attached tide note dated 1/9/02.
[10] Final tides were applied at PHB. See endnote 9.
[11] Attached to this report.
[12] Latest edition is 29th, November 1, 2003.
[13] Continuous Maintenance Drawings for Chart 16013, 28th Edition, last revised 4/29/2002 for the chart, 2/1/2002 for the inset, were used for chart comparison during office processing. A new chart, 16587, 1st Edition (1:135,000) was used for compilation of the Hdrawing.
[14] Corrected smooth sheet depth at the location of the 85 fathom sounding on the chart is 119-120 fathoms; on the inset is 114 fathoms. Corrected smooth sheet depth at the location of the 124 fathom sounding on the inset is 104 fathoms. Geoname placement precluded inclusion of the 124 fathom sounding on the chart.
[15] Charted hydrography originates mainly with miscellaneous source data, but junctional survey H-10554 is the source of soundings for the area of chart 16013 common to both surveys . Chart soundings are overwhelmingly shoaler than the current survey soundings. Most discrepancies range from 0 to four fathoms, but a few differ by as much as 35 fathoms. A more thorough coverage of the area utilizing the shallow water multibeam (SWMB) system was accomplished during this survey. This recent survey has provided a better, more detailed portrayal of the seafloor.
[16] Charted shoreline is displayed on the smooth sheet for orientation purposes only.
[17] Smooth sheet shoreline was digitized from chart 16013 Inset, 28th Edition, April 14, 2001
[18] Concur
[19] Concur
[20] Concur. Bottom samples should be compiled from previously charted data within the common area.
[21] Change 2001 to 2000.
[22] Concur

[23] Concur

RECRD	52754	VESSLTERMS	OBSTRUCTION	CHART	16013	AREA	P
		CARTOCODE	094	SNDINGCODE		DEPTH	

LAT83	55/57/11.4	LONG83	156/37/20.4	NATIVDATUM	31
LATDEC:	55.953166666667	LONDEC:	156.62233333333	GPQUALITY	Med
				GPSOURCE	Direct

PROJECT	OPR-P182-RA-01	ITEMSTATUS	Assigned	SEARCHTYPE	Full
RADIUS	2000	INIT	DAS	ASSIGNED	5/4/2001
TECNIQ	VS, ES, MB, DI				

Techniqnote

History

HISTORY
CHARTED ROCK AWASH
LNM 32/95-- ADD ROCK AWASH AT LAT. 55-57-11.4, LON. 156-37-20.4. SOURCE NOT SPECIFIED. (ENT DAS, 5 MAY 2001)

Fieldnote

INVESTIGATION

DATE(S): 08/02/01 (DN: 214)

HYDROGRAPHIC SURVEY NUMBER: H11069

VN: 2120 TIME: 04:03:48

INVESTIGATION METHODS USED: 100% SHALLOW WATER MULTIBEAM (SWMB)

SURVEYED POSITION: LAT. 55-57-11.4 N LON. 156-37-20.4 W

POSITION DETERMINED BY: DIFFERENTIAL GPS

INVESTIGATION SUMMARY: AWOIS ITEM 52754 WAS INVESTIGATED USING ONE HUNDRED PERCENT SWMB COVERAGE. NO SIGNIFICANT FEATURES WERE LOCATED WITHIN THE SEARCH RADIUS. SURVEY DEPTHS RANGED FROM 104 TO 110 FATHOMS USING PRELIMINARY UNVERIFIED WATER LEVELS REFERENCED TO MLLW.

CHARTING RECOMMENDATION (HYDROGRAPHER): REMOVE CHARTED ROCK SYMBOL AND TEXT "(rep 1995)".

EVALUATOR COMMENTS: CONCUR

Proprietary

YEARSUNK NIMANUM

Print Record

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 9, 2002

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P182-RA-2001
HYDROGRAPHIC SHEET: H11069

LOCALITY: Southwest Alaska Peninsula and Semidi Islands, AK
TIME PERIOD: July 11 - August 2, 2001

TIDE STATION USED: 945-8519 Chowiet Island, AK
Lat. 56° 03.1'N Lon. 156° 41.9'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.485 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SWA104, SWA107, SWA113, SWA114, SWA119, SWA120, SWA125, & SWA126.

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 K. Meyer 1/10/02

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final tide zone node point locations for **OPR-P182-RA-2001, Sheet H11069.**

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 SWA104			
-156.068111 56.393731	945-8519	+6	1.08
-156.199466 56.398178			
-156.64511 56.424375			
-156.927793 56.478454			
-157.004954 56.504027			
-157.107648 56.445969			
-156.937857 56.395634			
-156.704922 56.352554			
-156.333004 56.319101			
-156.169669 56.312115			
-156.068111 56.393731			
Zone SWA107			
-157.107648 56.445969	945-8519	+6	1.05
-157.241858 56.370111			
-157.032765 56.306289			
-156.730153 56.246814			
-156.366023 56.203353			
-156.30685 56.201619			
-156.169669 56.312115			
-156.333004 56.319101			
-156.704922 56.352554			
-156.937857 56.395634			
-157.107648 56.445969			
Zone SWA113			
-154.842056 56.230755	945-8519	-6	1.02
-154.847998 56.203081			
-154.864756 56.102176			

-155.133653 56.089296
-155.798963 56.053871
-156.453487 56.083477
-156.368298 56.151019
-156.30685 56.201619
-155.871846 56.188861
-155.33695 56.20937
-154.956803 56.22315
-154.842056 56.230755

Zone SWA114			
-157.241858 56.370111	945-8519	+6	1.02
-157.271849 56.353122			
-157.463905 56.279948			
-157.095579 56.174362			
-156.535086 56.0872			
-156.453487 56.083477			
-156.368298 56.151019			
-156.30685 56.201619			
-156.366023 56.203353			
-156.730153 56.246814			
-157.032765 56.306289			
-157.241858 56.370111			

Zone SWA119			
-156.453487 56.083477	945-8519	+6	0.99
-156.535086 56.0872			
-157.095579 56.174362			
-157.463905 56.279948			
-157.70266 56.188715			
-157.561336 56.143358			
-157.172021 56.057531			
-156.607631 55.969471			
-156.573673 55.986595			
-156.453487 56.083477			

Zone SWA120			
-154.864756 56.102176	945-8519	-6	0.99
-155.133653 56.089296			
-155.798963 56.053871			
-156.453487 56.083477			
-156.573673 55.986595			
-156.607631 55.969471			
-155.744446 55.919675			
-155.081499 55.931725			

-154.954487 55.937279
-154.873558 56.048921
-154.864756 56.102176

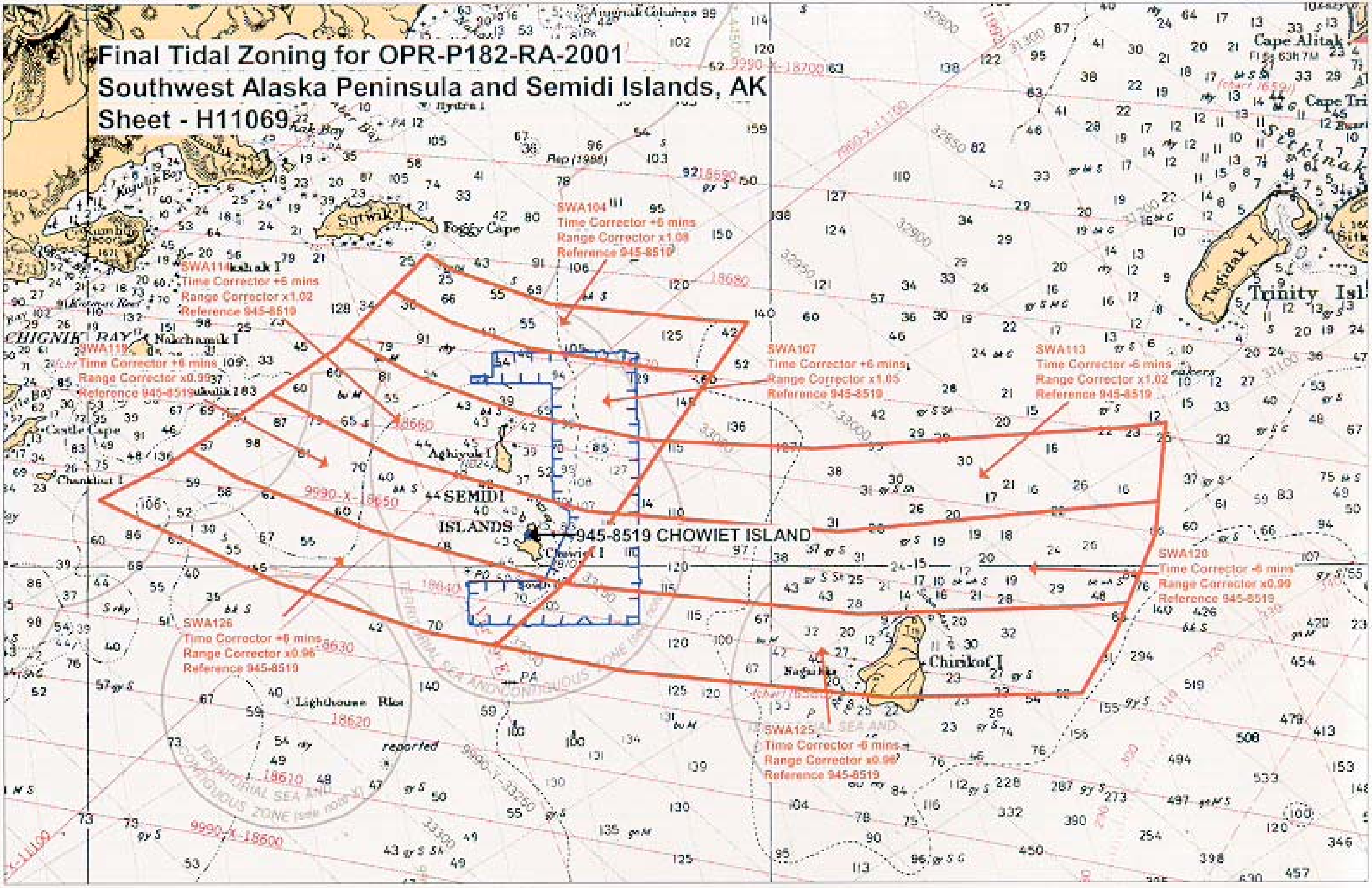
Zone SWA125

-154.954487 55.937279	945-8519	-6	0.96
-155.081499 55.931725			
-155.744446 55.919675			
-156.607631 55.969471			
-156.806844 55.86912			
-156.425537 55.827042			
-155.65796 55.784023			
-155.089371 55.790246			
-154.991989 55.885426			
-154.954487 55.937279			

Zone SWA126

-157.70266 56.188715	945-8519	+6	0.96
-157.773372 56.161757			
-157.966354 56.106955			
-157.846555 56.074959			
-157.439901 55.971501			
-157.007725 55.891311			
-156.806844 55.86912			
-156.607631 55.969471			
-157.172021 56.057531			
-157.561336 56.143358			
-157.70266 56.188715			

Final Tidal Zoning for OPR-P182-RA-2001 Southwest Alaska Peninsula and Semidi Islands, AK Sheet - H11069



APPROVAL SHEET
H11069

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.

Date: 5/12/05

Russ Davies
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: 17 MAY 2005

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

Kyle R. Ward

Digitally signed by Kyle R. Ward
DN: CN = Kyle R. Ward, C = US, O = HSD, OU = OPS
Reason: AWOIS and SURF check
Date: 2005.05.20 15:37:30 -04'00'

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H11069

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
16587	5/5/05	G. NELSON	Full ~~Part Before~~ After Marine Center Approval Signed Via APPLICATION OF
			~~Drawing No.~~ SOUNDINGS + CURVES FROM
			SMOOTH SHEET
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.