

H10981

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-40-01-00

Registry No. H10981

LOCALITY

State Alaska

General Locality Southern Shelikof Strait

Sublocality Cape Igvak to Cape Providence

2000

CHIEF OF PARTY

Commander D.R. Herlihy, NOAA

LIBRARY & ARCHIVES

DATE

HYDROGRAPHIC TITLE SHEET

H10981

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-40-01-00

State AlaskaGeneral Locality Southern Shelikof StraitSublocality Cape Igvak to Cape ProvidenceScale 1:40,000Date of Survey July 11 - 26, 2000Instructions Date 5/8/00Project No. OPR-P164-RA-00Change No. 1, 6/12/2000Vessel NOAA Ship Rainier 2120 and Launches 2123 and 2124Chief of Party Commander D. R. Herlihy, NOAASurveyed by NOAA Ship Rainier and PHB personnelSoundings taken by echo sounder, hand lead, pole Knudsen 320M, Seabeam 1180, Reson 8101Graphic record scaled by Ship personnelGraphic record checked by Ship personnelEvaluation by R. DaviesAutomated plot by HP Designjet 1050CVerification by E. Domingo, R DaviesSoundings in Fathoms and tenths

at

MLLWREMARKS: Time in UTC.

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

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

Descriptive Report to Accompany Hydrographic Survey H10981

Project OPR-P164-RA-00 South Shelikof Strait

Scale 1:40,000

July 2000

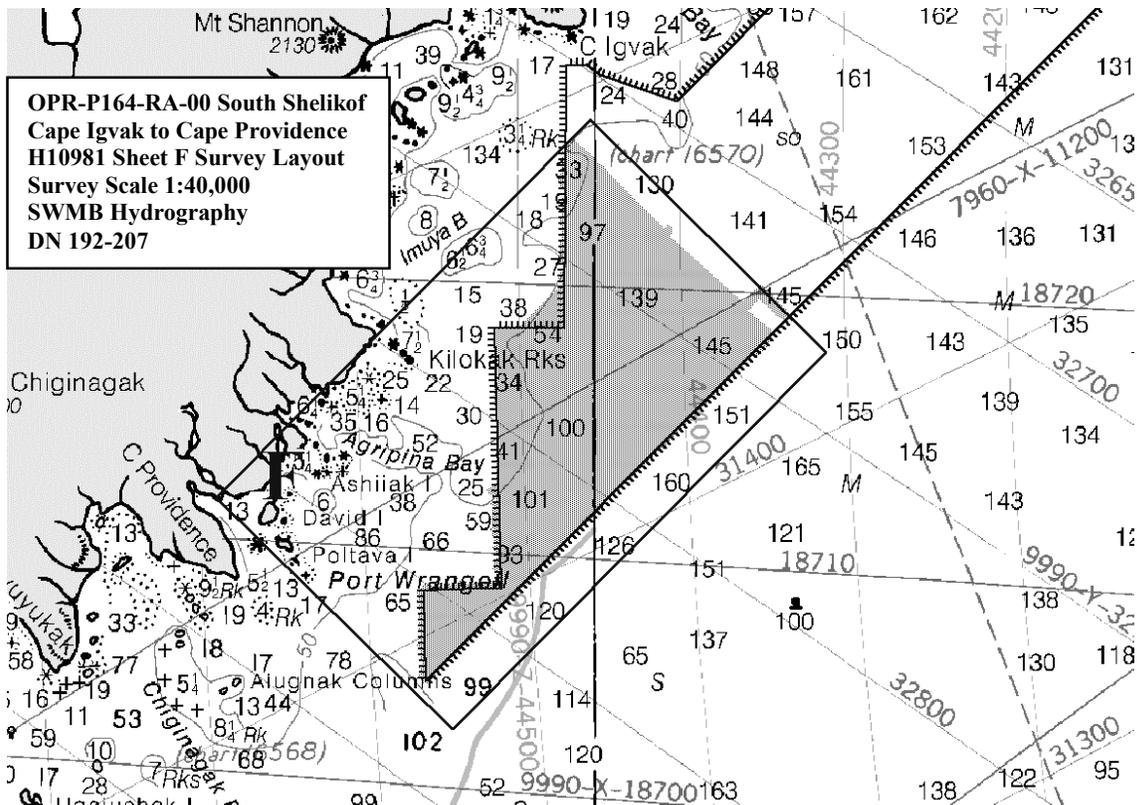
NOAA Ship RAINIER

Chief of Party: Commander Daniel R. Herlihy, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P164-RA-00, dated May 8, 2000, and the Draft Standing Project Instructions dated April 6, 1998. The survey area is located on the eastern coast of the Alaska Peninsula at the southern end of Shelikof Strait, approximately 31 nautical miles west of southwest Kodiak Island. The survey's northern limit is latitude $57^{\circ}21'46''\text{N}$ and the southern limit is latitude $56^{\circ}53'12''\text{N}$. The survey's western limit is longitude $156^{\circ}16'40''\text{W}$ and the eastern limit is longitude $155^{\circ}41'50''\text{W}$.

Data acquisition was conducted from July 11 to July 26, 2000 (DN 192 to 207).



Processing Report submitted under separate cover.¹ 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 two survey launches (vessel numbers 2120, 2123, and 2124). RAINIER was used to collect intermediate-depth multibeam soundings and sound velocity profiles. Vessels 2123 and 2124 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. No vertical-beam echo sounder (VBES) data were acquired for this survey. No unusual vessel configurations or problems were encountered on this survey.²

B2. Quality Control

Crosslines

Multibeam (MB) crosslines totaled 31.1 nautical miles, comprising 4.9% of MB hydrography. The Quality Control Report (CARIS HIPS) for the checkline file averaged 90.76%. See Appendix V for the detailed report.³ The report had a depth tolerance factor of 0.013, which conforms to International Hydrographic Organization Order I specifications as detailed in Special Publication S-44, Edition 4; and NOAA depth accuracy standards as set forth in the NOS Hydrographic Surveys Specification and Deliverables Manual (HSSDM).

Junctions

There are no contemporary surveys that junction with H10981.⁴

Data Quality Factors

In HDCS Subset Mode there were some roll problems observed in the data collected by RAINIER, primarily at the beginning of survey lines. These roll problems in most cases were unresolvable. The Hydrographer feels this problem was caused from starting data acquisition to soon following a turn, before the ship's motion sensor had a chance to "settle." These lines had outer beams that did not match up properly with those of adjacent lines and therefore these data were rejected. In addition, CARIS standard deviation filters were used to selectively clean data, which were in close agreement with adjacent data, but still outside the depth accuracy specifications. This procedure, though not standard practice on the RAINIER, was used to process data only in deeper water, generally greater than 100 meters, and was closely tracked to ensure that high point of features were not filtered from the data. Some holidays in coverage were created through this process; however no holidays were large enough to affect the required sounding density on the Final Field Sheet. In all cases, these holidays were closely inspected to ensure that no shoal data were rejected. The Hydrographer believes that these steps have adequately ensured the quality of multibeam data acquired by RAINIER on this survey.⁵

No other unusual conditions were encountered during the survey, which affected the expected accuracy and quality of survey data.⁶

B3. Data Reduction

Data reduction procedures for survey H10981 conform to those detailed in the *OPR-P164-RA-00 Data Acquisition and Processing Report*.

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H10981 can be found in the *OPR-P164-RA-00 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. The US Coast Guard Beacons at Kodiak, AK, and Kenai, AK, were the sources of differential correctors. 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-P164-RA-00 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 Kodiak, Alaska (945-7292) will serve as control for datum determination. RAINIER personnel installed Sutron 8200 “bubbler” tide gauges at the following subordinate stations in accordance with the Project Instructions:

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Puale Bay	945-8209	30-day	05/23/2000	06/24/2000
Poltava Island	945-8471	30-day	06/27/2000	07/25/2000

Raw water level data from these gauges were forwarded to N/OPS1 throughout the project period, with the final package submitted on September 2, 2000 in accordance with Hydrographic Survey Guideline (HSG) 50 and Field Procedures Manual (FPM) 4.7. The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing.⁷ A request for delivery of final approved (smooth) tides for survey H10981 was forwarded to N/OPS1 on August 16, 2000 in accordance with FPM 4.8.

The Poltava Island tide gauge (945-8471) did not operate properly during the final two days of data acquisition (DN 206-207), logging several zeroes in place of valid water level data. After discussions with N/OPS1, it was decided that combined correctors from the RAINIER-installed tertiary stations at Puale Bay (945-8209), as well as the continuously operating primary NWLON stations at Kodiak Island, Sand Point, and Seldovia, Alaska, would be used to fill in gaps in water level data for this time period. This may have an effect of the final zoning and smooth tide correctors applied to this survey.⁸

D. RESULTS AND RECOMMENDATIONS

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

There were no AWOIS items located within the limits of Survey H10981.⁹

D.2 Chart Comparison

Survey H10981 was compared with chart 16580 (10th Ed.; July 18, 1998, 1:350,000), chart 16570 (9th Ed.; November 19, 1998, 1:50,000), and chart 16568 (11th Ed.; July 20, 1996, 1:106,600).¹⁰ Most of the survey area of H10981 was not covered by prior surveys and therefore chart comparison was limited to the areas in which there were corresponding soundings.¹¹

Chart 16580

Depths from Chart 16580 agreed generally within two fathoms of survey depths. Notable differences are addressed below.

In the vicinity of a charted 19-fathom sounding at 57°18'42"N, 156°03'04"W (317790.22E, 6321388N) the present survey revealed a depth of 15.7 fathoms (Pos. #366,964). This area was covered by 100% SWMB.¹²

In the vicinity of a charted 57-fathom sounding at 57°15'15"N, 156°02'06"W (316918.72E, 6349766.54N) the present survey revealed a depth of 49 fathoms (Pos. # 364,220). This area was covered by 100% SWMB.¹³

In the vicinity of a charted 140-fathom sounding at 57°14'14"N, 155°55'54"W (323073.4E, 6347585.9N) the present survey revealed a depth of 134 fathoms (Pos.#293,709). This area was covered by 100% MB.¹⁴

In the vicinity of a charted 149-fathom sounding at 57°11'10"N, 155°46'56"W (331857.76E, 6341535.32W) the present survey revealed a depth of 143 fathoms (Pos. #315,628). This area was covered by 100% MB.¹⁵

Between a charted 69-fathom sounding at 57°17'02"N, 156°02'41"W (316507.0E, 6353110.0N) and a charted 85-fathom sounding at 57°16'21"N, 155°58'57"W (320149.7E, 6351585.0N), the present survey revealed a least depth of 38 fathoms (Pos. # 360,866). This area was covered by 100% SWMB.¹⁶

Chart 16570

Depths from Chart 16570 agreed generally within three fathoms of survey depths.¹⁷ Notable differences are addressed below:

In the vicinity of a charted 124-fathom sounding at 57°18'02"N, 155°57'41"W (321512.72E, 6354746.52N) the present survey revealed a depth of 118 fathoms (Pos. # 346,064). This area was covered by 100% MB.¹⁸

In the vicinity of a charted 85-fathom sounding at 57°16'25"N, 155°58'57"W (320184.92E, 6351782.29N) the present survey revealed a depth of 69 fathoms (Pos. #346,976). This area was covered by 100% MB.¹⁹

Chart 16568

Depths from Chart 16568 agreed generally within two fathoms of survey depths with differences to four fathoms.²⁰ One notable difference is addressed below:

E. APPROVAL

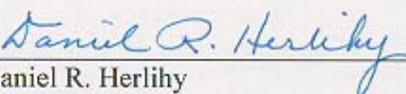
As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; the Field Procedures Manual, and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2000.²⁹

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.

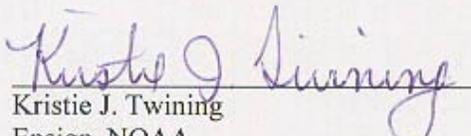
Survey H10981 is complete and adequate to supersede charted soundings and features in their common areas.³⁰ There were no data collected in the northern part of the survey area where H10981 overlaps with sheet E. It is recommended that this area be included within the limits of sheet E, which is scheduled to be surveyed in 2001.³¹

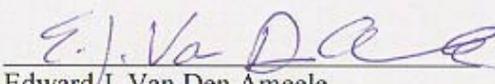
Listed below are supplemental reports submitted separately, which contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Data Acquisition and Processing Report for OPR-P164-RA-00	10/2/2000	N/CS34
Horizontal and Vertical Report for OPR-P164-RA-00	10/13/2000	N/CS34
Tides and Water Levels Package for OPR-P164-RA-00	7/5/2000	N/OPS1
Coast Pilot Report for OPR-P164-RA-00	11/1/2000	N/CS51

Approved and forwarded: 
 Daniel R. Herlihy
 Commander, NOAA
 Commanding Officer

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

Survey Sheet Manager: 
 Kristie J. Twining
 Ensign, NOAA

Field Operations Officer: 
 Edward J. Van Den Ameele
 Lieutenant, NOAA

¹ Concur

² Concur

³ PHB Revision – Filed with the hydrographic data

⁴ Concur

⁵ Concur

⁶ Concur

⁷ PHB revision – Smooth tides were applied to this survey, see attached tide note, dated 11/9/00.

⁸ PHB revision – The smooth tide and zone file that was received from N/OPS1 did not have any gaps and when the files were applied to the present survey no errors occurred.

⁹ Concur

¹⁰ PHB revision – The following charts were compared to survey H10981;
Chart 16570, 9th Edition, dated 11/19/98
Chart 16568, 12th Edition, dated 7/1/02
Chart 16580, 12th Edition, dated 11/1/03

¹¹ Concur

¹² PHB Revision – Concur, chart depth as found on the smooth sheet.

¹³ PHB Revision – Concur, chart depth as found on the smooth sheet.

¹⁴ PHB Revision – Concur, chart depth as found on the smooth sheet.

¹⁵ PHB Revision – Concur, chart depth as found on the smooth sheet.

¹⁶ PHB Revision – Concur, chart depth as found on the smooth sheet.

¹⁷ Concur

¹⁸ PHB Revision – Concur, chart depth as found on the smooth sheet.

¹⁹ PHB Revision – Concur, chart depth as found on the smooth sheet.

²⁰ Concur

²¹ PHB Revision – Concur, chart depth as found on the smooth sheet.

²² Concur

²³ Concur

²⁴ Concur

²⁵ Concur

²⁶ Concur

²⁷ PHB Revision – a comparison was accomplished with prior survey H4398 during office processing and prior survey soundings generally agree within three fathoms with some differences as great as 5 fathoms. All prior survey soundings should be superseded by the present survey within the common area.

²⁸ Concur

²⁹ Concur

³⁰ PHB Revision – Concur with clarification, survey H-10981 is adequate to supersede charted information except for several bottom characteristics which should be retain as charted, see Hdrawings for charts 16570 and 16580.

³¹ PHB Revision – As of 2003 field season, this recommended area has not been surveyed. The evaluator concurs with the hydrographer that this area should be surveyed on a time available basis.



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 9, 2000

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P164-RA-2000
HYDROGRAPHIC SHEET: H-10981

LOCALITY: Offshore Cape Igavk to Cape Providence, AK
TIME PERIOD: July 10 - July 25, 2000

TIDE STATION USED: 945-8471 Poltava Island, AK
Lat. $57^{\circ} 0.8'N$ Lon. $156^{\circ} 29.1'W$
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.116 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SS59, SS62, SS63, SS68, SS70 & SS77.
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.

Fon 

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



Final tide zone node point locations for OPR-P164-RA-2000,
 Sheet H-10981.

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

	Tide Station Order	AVG Time Correction	Range Correction
Zone SS59	945-8471	-6	1.08
-156.33021 57.280354			
-156.257831 57.275149			
-156.040216 57.259249			
-155.87124 57.245435			
-155.719529 57.219655			
-155.50714 57.182799			
-155.428743 57.174338			
-155.330587 57.299007			
-155.622173 57.350884			
-155.853138 57.401025			
-155.99169 57.433602			
-156.055867 57.403534			
-156.247241 57.314893			
-156.33021 57.280354			
Zone SS62	945-8471	-6	1.06
-155.428743 57.174338			
-155.50714 57.182799			
-155.719529 57.219655			
-155.87124 57.245435			
-156.040216 57.259249			
-156.257831 57.275149			
-156.33021 57.280354			
-156.394575 57.246831			
-156.427105 57.22373			
-156.121574 57.166842			
-155.949308 57.133065			
-155.702271 57.099284			
-155.491087 57.073847			

-155.443638 57.15538
-155.428743 57.174338

Zone SS63

945-8471

-6

1.04

-156.437916 57.211248
-156.44668 57.14909
-156.293928 57.106429
-156.066416 57.051323
-155.845388 57.015767
-155.637357 56.987319
-155.533966 56.978426
-155.523309 57.01834
-155.491087 57.073847
-155.702271 57.099284
-155.949308 57.133065
-156.121574 57.166842
-156.427105 57.22373
-156.437916 57.211248

Zone SS68

945-8471

-6

1.01

-155.533966 56.978426
-155.637357 56.987319
-155.845388 57.015767
-156.066416 57.051323
-156.293928 57.106429
-156.44668 57.14909
-156.51476 57.139667
-156.524773 57.072677
-156.433784 57.033574
-156.287537 56.987359
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-155.564392 56.878914
-155.533966 56.978426

Zone SS70

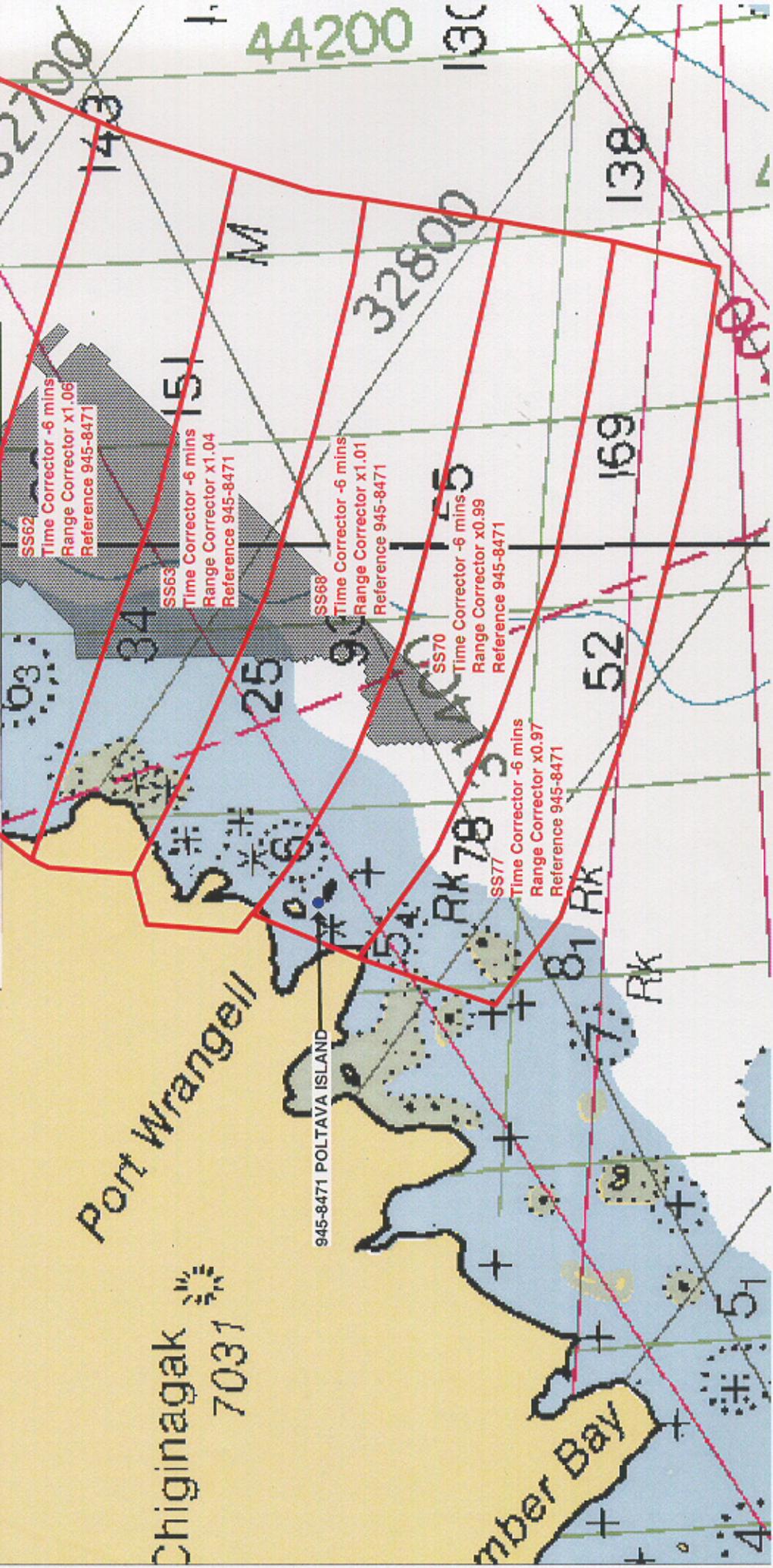
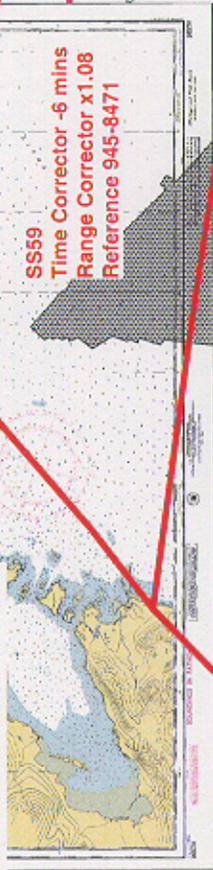
945-8471

-6

0.99

-156.501899 57.061244
-156.553448 56.99344
-156.560589 56.984152
-156.560589 56.984152
-156.414378 56.926944
-156.23562 56.882504
-156.024351 56.839839
-155.761055 56.811388
-155.591561 56.796247

**Final Tidal Zoning for OPR-P164-RA-2000
Offshore Cape Igavk to Cape Providence, AK
Sheet H-10981**



HYDROGRAPHIC SURVEY STATISTICS

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET			SMOOTH OVERLAYS: POS., ARC, EXCESS			
DESCRIPTIVE REPORT			FIELD SHEETS AND OTHER OVERLAYS			
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS	
ACCORDION FILES						
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

- SHORELINE MAPS (List):
- PHOTOBATHYMETRIC MAPS (List):
- NOTES TO THE HYDROGRAPHER (List):
- SPECIAL REPORTS (List):
- NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET			
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT			
GEOGRAPHIC NAMES			
OTHER (Chart Compilation)			
USE OTHER SIDE OF FORM FOR REMARKS	TOTALS		

Pre-processing Examination by	Beginning Date	Ending Date
Verification of Field Data by	Time (Hours)	Ending Date
Verification Check by	Time (Hours)	Ending Date
Evaluation and Analysis by	Time (Hours)	Ending Date
Inspection by	Time (Hours)	Ending Date

APPROVAL SHEET
H10981

Initial Approvals:

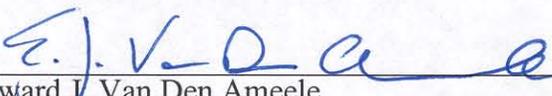
The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report.



Russ Davies
Cartographic Team
Pacific Hydrographic Branch

Date: 5/5/04

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.



Edward J. Van Den Ameerle
Lieutenant, NOAA
Chief, Pacific Hydrographic Branch

Date: 5/10/04

AWOIS + SURF
5/17/04 mCR

