

H10488

NOAA FORM 70-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. RA-10-16-93
Registry No. H-10488

LOCALITY

State Alaska
General Locality Alaska Peninsula
Sublocality Amber Bay

1993

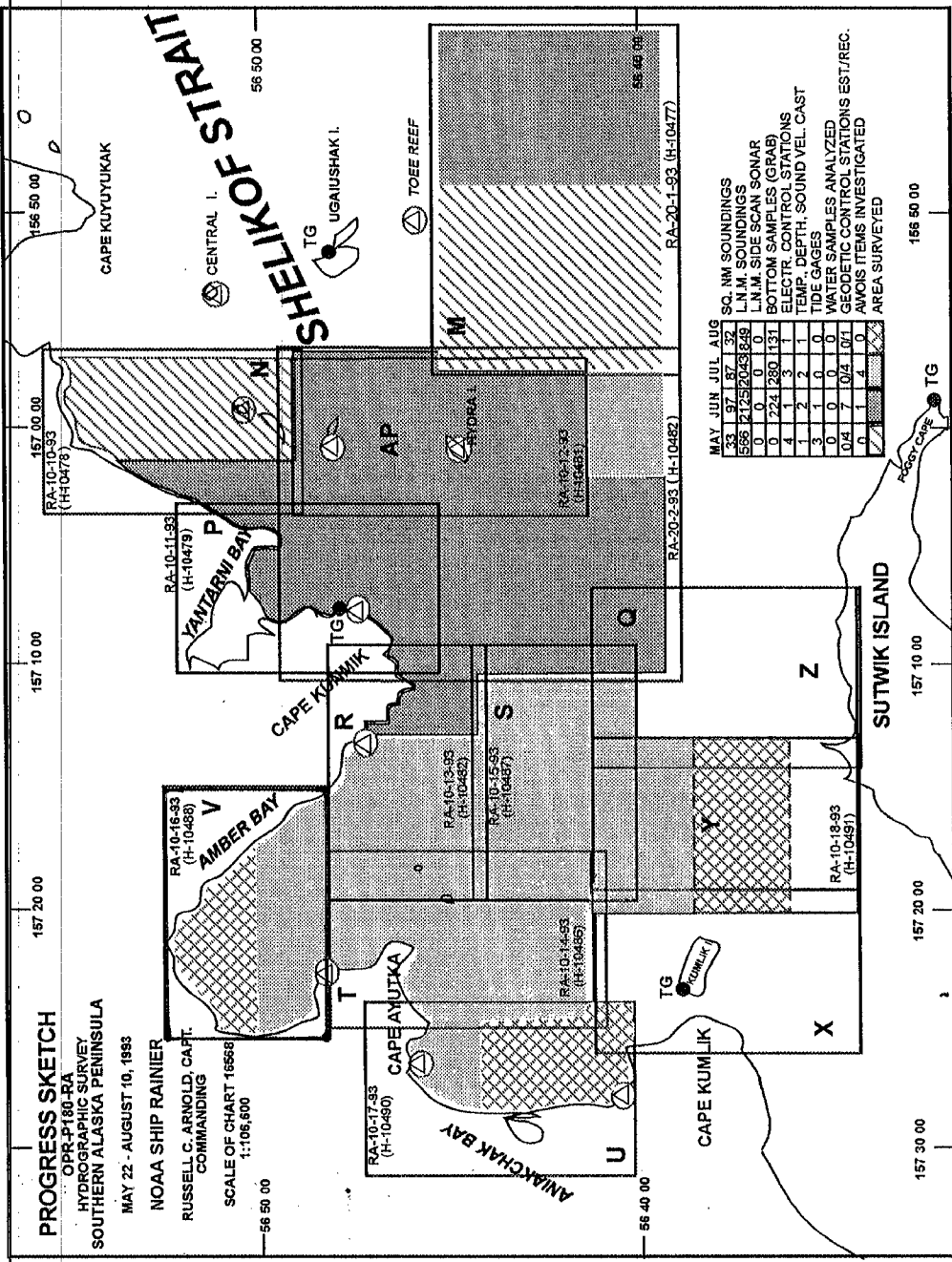
CHIEF OF PARTY
CAPT Russell C. Arnold, NOAA

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DATE APR 11 1995

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO.
HYDROGRAPHIC TITLE SHEET		H-10488
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-10-16-93
State	Alaska	
General locality	Alaska Peninsula	
Locality	Amber Bay	
Scale	1:10,000	Date of survey July 17 - August 8, 1993
Instructions dated	4/13/93, Change #1-4/23/93 Project No. OPR-P180-RA Change #2-6/21/93	
Vessel	NOAA Ship RAINIER (2120), Launches (2123), (2124), (2125), (2126)	
Chief of party	CAPT Russell C. Arnold, NOAA	
Surveyed by	LT M. Brown, LT D. Neander, LTJG S. Lemke, ENS J. Graham, ENS G. Glover ENS D. Pitts	
Soundings taken by	echo sounder, hand level DSF-6000N	
Graphic record scaled by	RAINIER Personnel	
Graphic record checked by	RAINIER Personnel	
Evaluation by:	R. Davies	Automated plot by PHS Kynetics Plotter
Verification by	R. Shipley	
Soundings in	feet Meters & Decimeters at MLLW MLLW	
REMARKS:	<p>Time in UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.</p> <p>All depths listed in this report are referenced to mean lower low water unless otherwise noted.</p> <p style="text-align: right;">Surf / AWOL 6/20/95 ncr</p> <p>50 1-27-97 4-11-95</p>	

PROGRESS SKETCH
 OPR-PT80-RA
 HYDROGRAPHIC SURVEY
 SOUTHERN ALASKA PENINSULA
 MAY 22 - AUGUST 10, 1993
 NOAA SHIP RAINIER
 RUSSELL C. ARNOLD, CAPT.
 COMMANDING
 SCALE OF CHART 16568
 1:106,800



MAY	JUN	JUL	AUG	
33	97	187	32	SQ. NM SOUNDINGS
566	2125	2043	849	L.N.M. SOUNDINGS
0	0	0	0	L.N.M. SIDE SCAN SONAR
0	224	280	131	BOTTOM SAMPLES (GRAB)
4	1	3	1	ELECTR. CONTROL STATIONS
1	2	2	1	TEMP. DEPTH. SOUND VEL. CAST
3	1	0	0	TIDE GAGES
0	0	0	0	WATER SAMPLES ANALYZED
0	0	0	0	GEODETTIC CONTROL STATIONS EST./REC.
0	4	4	0	AVIONS ITEMS INVESTIGATED
2	2	2	2	AREA SURVEYED

Descriptive Report to Accompany Hydrographic Survey H-10488

Field Number RA-10-16-93

Scale 1:10,000

July - August 1993

NOAA Ship RAINIER

Chief of Party: Captain Russell C. Arnold

A. PROJECT ✓

This basic hydrographic survey was completed in ^{Alaska Peninsula} Shelikof Strait, Alaska, as specified by Project Instructions OPR-P180-RA dated April 19, 1993, change No. 1 dated April 23, 1993 and change No. 2 dated June 21, 1993.

Survey H-10488 corresponds to "Sheet V" as defined in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts, and for constructing two 1:100,000 scale metric charts. The new charts will cover inshore and offshore areas between Sutwik Island and Mitrofanina Island along the southern Alaska Peninsula. Requests for hydrographic surveys and updated charts have been received from the U.S. Coast Guard, Alaska congressional delegates, NOAA, Defense Mapping Agency, and local fishermen.

B. AREA SURVEYED *See EVAL Report, section 1*

This survey area is located in Shelikof Strait along the Alaska Peninsula, southwest of Kodiak Island. The northern limit is defined by the Alaska Peninsula shoreline between longitude 157°17'40" W and 157°28'24" W, encompassing Amber Bay. The southern survey limit extends south to latitude 56°48'00" N. The east and west shoreline of Amber Bay is for the most part comprised of steep bluffs with flat rocky beaches extending offshore, while the head of Amber Bay is a sand beach.

Data acquisition was conducted from July 17, Day Number (DN) 198, through August 8, DN 220.

C. SURVEY VESSELS ✓

Data were acquired by the NOAA SHIP RAINIER and four survey launches as noted below:

<u>Vessel</u>	<u>EDP No</u>	<u>Operation</u>
RAINIER	2120	Sound Velocity Cast
RA-3	2123	Hydrography
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Bottom Samples Shoreline Verification
RA-6	2126	Hydrography Shoreline Verification

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Data acquisition and processing were accomplished with the following HDAPS programs:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
AUTOST	3.00	9/24/92
BACKUP	2.00	9/24/92
BASELINE	1.13	9/24/92
BIGABST	2.03	9/24/92
BLKEDIT	2.00	9/24/92
CARTO	2.04	3/1/93
CONVERT	3.51	9/24/92
DAS_SURV	6.33	5/17/93
DP	2.13	3/1/93
EXCESS	4.10	9/24/92
FILESYS	3.02	5/17/93
GRAFEDIT	1.01	2/26/93
LSTAWOIS	3.01	9/24/92
LISTDATA	1.00	9/24/92
MAINMENU	1.00	9/24/92
MAN_DATA	2.00	9/24/92
NEWPOST	6.00	9/24/92
PLOTALL	2.08	2/26/93
PRESURV	7.01	2/26/93
PRINTOUT	4.01	9/24/92
QUICK	2.03	2/26/93
RAMSAVER	1.01	9/24/92
REAPPLY	2.01	9/24/92
SYMBOLS	2.00	9/24/92
ZOOMEDIT	2.10	9/24/92

Velocity corrections were determined using:

<u>Program Name</u>	<u>Version</u>	<u>Date Installed</u>
VELOCITY	2.0	24 Mar 1993

E. SONAR EQUIPMENT ✓

Side scan sonar equipment was not used on sheet V.

F. SOUNDING EQUIPMENT ✓

DSF-6000N serial numbers are included on the headers of the daily Raw Master Printouts.*

* Filed with the hydrographic data.

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the casts listed below:

<u>Velocity Table No.</u>	<u>Cast No.</u>	<u>Deepest Depth (m)</u>	<u>Applicable DN</u>	<u>Cast Position</u>	<u>Day</u>
4	4	204.2	198-204	56°40'38"N (Outside 157°10'41"W SURVEY AREA)	194
5	5	159.0	208-220	56°40'24"N 156°18'18"W	212

The sound velocity casts were acquired with SBE SEACAT Profiler S/N 220.

Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) #69. A printout of the Sound Velocity Corrector Tables used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV, Sounding Equipment Calibrations and Corrections." *

Static Draft ✓

A transducer depth was determined for launches 2123, 2124, 2125 and 2126 on March 19, 1993 and is in the offset tables* for each launch.

Settlement and Squat ✓

Correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.2 and 2.3, and are included with project data for OPR-P180-RA. The data used was collected in Shilshole Bay, Washington on March 11, 16, and 18 of 1992. Revised settlement and squat correctors were received from Pacific Marine Center on October 21, 1992. Authorization was obtained from N/CG241 to use the 1992 data. These revised correctors were applied to the data on sheet V. (4-10988)

Offset Tables *

<u>Vessel</u>	<u>Offset Table No.</u>
2123	3
2124	4
2125	5
2126	6

Heave ✓

Data acquired during periods of significant sea action were scanned to account for inaccuracies caused by heave.

* Filed with the hydrographic data.

Bar Check and Lead Lines ✓

Bar check and lead lines were calibrated by RAINIER personnel on February 19, 1993 at PMC. Calibration forms are included with project data for OPR-P180-RA.

Tide Correctors ✓

Predicted tides for the project were provided on diskette by N/OES334 for the Ugaiushak, Alaska reference station (945-8553). Correctors for two different tidal zones on sheet V were used. Latitude 56°50'00" divides the survey area into northern and southern zones. Tidal correctors are:

	TIME(min.)		RANGE RATIO
	High Water	Low Water	
North Zone	0	0	X 1.04
South Zone	0	0	X 1.00

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V* of this report.

Tide gages were installed and maintained by RAINIER personnel at Ugaiushak Island (945-8553), Foggy Cape, Sutwik Island (945-8582), Cape Kunnmik (945-8631) and Kumlik Island (945-8704). The control station was Sand Point, Alaska (945-9450). Ending levels were completed by RAINIER personnel at the end of the project, and the control station was levelled on July 25.

The station descriptions, field tide records, and Field Tide Notes will be forwarded to N/OES212, in accordance with HSG 50 and FPM 4.3, upon arrival in Seattle. Requests for approved tides will be forwarded to N/OES2. *Tide Note generated January 5, 1994 is attached.*

H. CONTROL STATIONS ✓ - *See Evaluation Report, Section 2.*

A listing of the geodetic stations used to control this survey is included in ~~Appendix III~~ of this report.

Positions for all existing stations are from the National Geodetic Survey (NGS) data base. All existing stations were recovered in accordance with methods stated in Section 5.2.4 of the Field Procedures Manual. Further information can be found in the "Summer 1993 Horizontal Control Report for OPR-P180-RA."

I. HYDROGRAPHIC POSITION CONTROL ✓

Method of Position Control ✓

All soundings and features were positioned using differential GPS. Falcon was used solely for GPS system checks. Serial numbers for Falcon R/T units, RPU's and Ashtech GPS equipment are annotated on the data printouts.*

* Filed with the hydrographic data.

Calibrations & Systems Check Methods ✓**Falcon 484**

Baseline calibrations were conducted in accordance with FPM 3.1.2.1 and 3.1.3.2. Calibrations were performed at the MATTHEWS PARK BEACH BASELINE on May 4-7, 1993. Calibration data and a description of the baseline is included with project data for OPR-P180-RA.

Ashtech GPS

Station HYDRA and station LAND were used as the VHF differential shore station. A remote sensor was directly connected to the MXII shore station and its antenna was collocated with the shore station. The computed position was transmitted back to the ship via VHF radio modem link. The difference between the computed location and the station's published position was recorded by the MONITOR program on a PC. Data from a 24-hour period were recorded and examined for signs of multi-path signal reflection, which was not evident at either station.

Launch system checks were either made by a direct comparison of the Falcon position with the GPS position or launch to launch comparison. HDAPS Survey Screen Two was used for the Falcon comparison, and was dumped to the system printer to record the results. Three such dumps were made for each system check. For the launch to launch comparisons, three observations were made by each launch using correctors from the two independent DGPS base stations. System checks were made each day and results were transferred to forms which are included in the Project Data for OPR-P180. An abstract of the calibration results is included in "Separates to be Included with Survey Data, III. Horizontal Position Control and Corrections to Position Data" * ✓

Problems ✓

Initially DGPS station HYDRA was used as the GPS base station for sheet V, however, due to geographical obstructions the broadcast signal proved weak inside Amber Bay. Station LAND was then established as a second GPS base station and used thereafter.

Offset

The launch GPS antenna is mounted on the mast of the Falcon R/T unit. Antenna offsets are stored in the HDAPS Offset Tables as listed in Section G. Copies of the Offset Tables are included in the "Separates to be Included with Survey Data, III. Horizontal Position Control and Corrections to Position Data" * ✓

J. SHORELINE - See Evaluation Report, section 2.

Shoreline maps (T-sheets) used to transfer shoreline detail to the final sheets were TP-01150, TP-01154 and TP-01155 (enlarged to 1:10,000 from 1:20,000, NAD27).

RAINIER noted the poor quality of the shoreline maps for the survey area. Many features were depicted incorrectly or not at all on the T-sheets. For instance rocks depicted on the T-sheets often were above the 0-meter curve near the high water line. It is readily apparent that the aerial photography was conducted at a high stage of tide.

* Filed with the hydrographic data

Shoreline verification was conducted near predicted lower low water in accordance with FPM 7.1. Shoreline verification was accomplished by assigning sequential reference numbers and taking detached positions (DPs) as explained later in this section.

Shoreline and T-sheet features verified via visual inspection were assigned sequential reference numbers, described, and recorded in the field using reference number forms and corresponding 1:10,000 photocopies of the T-sheet. Heights were corrected to MLLW using predicted tides. Corresponding notes were annotated on the photocopies of the T-sheet when deemed necessary. The annotated photocopies of the T-sheets and reference number forms are included with the survey data.

DPs taken during shoreline verification were recorded on the master printouts* and DP forms*, and indicate significant T-sheet features and features not found on the T-sheet. Where possible, positions of some T-sheet features were verified during inshore mainscheme hydrography and annotated on the master printouts.*

Detailed 1:10,000 "Rough Bottom Sample and Detached Position Plots" are provided showing all DPs and reference numbers and notes relating to each feature. The information from these plots was transferred to a field final plot. Verified T-sheet features were retained and shown in black and changes to the shoreline were shown in red. Field cartographic codes were assigned using the HDAPS DP editor. Heights are recorded in meters and are corrected to predicted MLLW. *Heights on the Smooth Sheet have been corrected for approved tides.* There were no changes in the shoreline (HWL).
Charted rocks were either identified as T-sheet rocks, high points or extensions of T-sheet reefs, or high points of boulder beaches.

The T-sheet shoreline north of 056°51'40"N leading into the river at the head of Amber Bay was not investigated due to the fact that the 0-meter curve was determined and access to the river was not feasible.

Disprovals

None.

Changes

Eight changes to the T-sheet shoreline were found and depicted on the final field plot.

1. In the vicinity of 56°48'12"N, 157°17'33"W, reference number R5-1 describes a T-sheet ledge that is a rocky beach made up of 1 meter boulders. *A note "boulders (blds)" was added to the smooth sheet.*
2. In the vicinity of 056°49'35"N, 157°19'00"W, reference numbers R5-3 and R5-4 describe T-sheet ledges that are rocky beaches made up of 1 meter boulders. *A note "blds" was added to the smooth sheet.*
3. In the vicinity of 56°50'00"N, 157°19'42"W, reference number R5-5 describes a T-sheet ledge that is a rocky beach made up of 1 meter boulders. *A note "blds" was added to the smooth sheet.*
4. In the vicinity of 56°50'42"N, 157°21'12"W and 56°51'03"N, 157°21'30"W, reference number R5-8 describe T-sheet ledges that are rocky beaches. *A note "blds" was added to the smooth sheet.*
5. In the vicinity of 56°48'18"N, 157°25'55"W, reference number R6-3 describes a T-sheet ledge that is a rocky beach, inside a foul area depicted by hydrography and positions 7701-7706 and 7708-7709 (foul area discussed under new items) *Depicted as a foul area, see smooth sheet.*

* Filed with the hydrographic data.

6. Position no. 5507 is the offshore extension of a ^{foul area} T-sheet ledge in the vicinity of 56°48'35"N, 157°17'51"W.

7. Position no. 5508 is the offshore extension of a ^{foul area} T-sheet ledge in the vicinity of 56°48'42"N, 157°18'10"W. ^{Area has been shown on the smooth sheet with a dashed foul line and labelled submerged ledge.}

8. In the vicinity of 56°50'29"N, 157°23'35"W, position no. 4336 is the high point of a T-sheet reef. The reef was found to be ^{more extensive} than depicted on the T-sheet, exposed at low water and encompassing a very large area. Reef limits were determined by hydrography (50 and 25-meter splits). The surrounding area is relatively flat, with depths ranging from 2 - 7-meters. Upon inspection of the hydrography, it was determined that the area inside the 2-meter curve be depicted as foul due to the fact that the reef and immediate surrounding area is extremely irregular. ^{After application of smooth hides the reef was not as large as shown on FFS. See smooth sheet for depiction of reef.}

Recommendations: The hydrographer recommends that the shoreline changes from this survey be used to supersede prior shoreline information compiled on TP-001152, TP-001154 and TP-001155. COMCWR

New Features ✓

Fourteen new features were found and are depicted on the field sheet.

<u>Item</u>	<u>Approximate Position</u>	<u>Position Number</u>	<u>Depth (m)</u>	<u>Remarks</u>
1. Rock	056°48'01"N 157°17'18"W	5504	0.3	covered Submerged
2. Rock	056°48'04"N 157°17'27"W	5505	-0.2	uncovered Exposed
3. Rock	056°48'07"N 157°17'31"W	5506	-0.7	uncovered Exposed
4. Rock	056°48'53"N 157°18'39"W	5509	0.5	covered Submerged
5. Rock	056°48'55"N 157°18'43"W	5511	-0.2	covered Submerged
6. Rock	056°49'26"N 157°19'23"W	5515	0.3	covered Submerged
7. Rock	056°49'30"N 157°19'28"W	5516	-0.5	uncovered Exposed
8. Rock	056°50'09"N 157°20'18"W	5518	0.6	covered Submerged
9. Rock	056°50'10"N 157°20'24"W	5519	0.5	covered Submerged
10. Rock	056°50'13"N 157°20'36"W	5520	0.5	covered Submerged

11. Ledge 056°50'15"N 5521 0.5 Ledge Submerged
157°20'39"W

Recommendation: The hydrographer recommends that the shoreline detail from this survey be used to supersede prior shoreline information. *CONCUR*

12. In the vicinity of 056°49'42"N, 157°26'55"W, position nos. 7711 - 7712, 7714, 7716 - 7717 and 7719 - 7722 define a new reef. In addition, hydrography (25-meter splits) was run over the reef to better define its limits. *See smooth sheet for limits of new reef.*

Recommendation: The hydrographer recommends that the reef be charted as shown on the *smooth* field sheet. *CONCUR*

13. In the vicinity of 056°48'24"N, 157°20'57"W, a new submerged reef was depicted by hydrography (10-meter splits). The reef is not depicted on the T-sheet, however, it is shown on NOS chart 16568 9th Edition, March 25, 1992, 1:106,600 (NAD 83). *A least depth of 2-meters was found in the area. Check soundings as shown on the smooth sheet and add note "rky".*

Recommendation: The hydrographer recommends that the reef be charted as depicted on the *smooth* field sheet. *CONCUR*

14. The new foul area that extends from the vicinity of 056°48'15"N, 157°25'39"W northwest to the vicinity of 056°49'30"N, 157°28'00"W, is depicted by detached positions 7701-7706, 7708-7709, and hydrography (50-meter splits). The area inshore of the delineated foul area is made up of a rocky beach with numerous 1-meter boulders. The T-sheet depicts nothing in this area, however, NOS chart 16568 depicts an area foul with rocks inside of the new depicted foul area.

Recommendation: The hydrographer recommends that the area be charted as foul as depicted on the *smooth* field sheet. *CONCUR*

Miscellaneous

In the vicinity of 056°49'07"N, 157°18'50"W position nos. 5512 - 5513 reference two charted rocks that correspond to three T-sheet rocks on a rocky beach made up of 1 meter boulders. *Three shoreline manuscript rocks have been transferred to the smooth sheet in vicinity Lat. 56/49/11N, Long. 157/18/51W.*

Recommendation: The hydrographer recommends that the shoreline detail from this survey supersede prior shoreline information. *CONCUR*

In the vicinity of 056°49'19"N, 157°19'16"W position no. 5514 references two charted rocks that correspond to two T-sheet rocks on a rocky beach made up of 1 meter boulders. *Two shoreline manuscript rocks have been transferred to the smooth sheet in vicinity Lat. 56/49/21N, Long. 157/19/01W.*

Recommendation: The hydrographer recommends that the shoreline detail from this survey supersede prior shoreline information. *A note "blds" has been added to the smooth sheet.* *CONCUR*

In the vicinity of 056°49'00"N, 157°18'00"W, NOS chart 16568 depicts the area foul. Inshore hydrography and shoreline verification determined that this area is a rocky beach made up of 1-meter boulders above the 0-meter curve. *A note "blds" was added to the smooth sheet.*

Recommendation: The hydrographer recommends that shoreline detail from this survey supersede prior shoreline information. *CONCUR*

K. CROSSLINES ✓

Crosslines are in good agreement with mainscheme hydrography. Crosslines totaled 23.1 nautical miles, representing 7.8% of the total mainscheme hydrography.

L. JUNCTIONS *See Section 5 of Ennc Report.*

This survey junctions with survey H-10484 (1:10,000, 1993) and survey H-10486 (1:10,000, 1993) to the south. No irregularities were found when comparing soundings and depth curves.

Final comparisons will be made at the Pacific Hydrographic Section (PHS).

M. COMPARISON WITH PRIOR SURVEYS ✓

There were no prior surveys on sheet V.

N. ITEM INVESTIGATIONS ✓

None.

O. COMPARISON WITH THE CHART *See Ennc Report, section 7*

This survey was compared to NOS chart 16568, 9th Edition, March 25, 1992, 1:106,600 (NAD83).

The charted soundings were found to be in general agreement with this survey. Final comparisons will be made at PHS.

Non-sounding charted features are discussed in Section J, Shoreline.

No AWOIS items were included in this survey. ✓ *Concur*

Dangers to Navigation

One danger to navigation was identified within the limits of survey H-10488 and was reported to the Seventeenth Coast Guard District and DMAHTC. Copies of the radio message and correspondence are included in Appendix I of this report. *Three additional dangers were found during office processing, see attached letter dated, FEB 15, 1995.*

P. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede the T-Sheets and chart ~~letters~~ in the common areas.

Q. AIDS TO NAVIGATION ✓ *Concur*

None.

R. STATISTICS ✓

<u>Vessel:</u>	<u>2120</u>	<u>2123</u>	<u>2124</u>	<u>2125</u>	<u>2126</u>	<u>Total</u>
# of Pos	0	1064	1334	338	381	3117
NM Hydro	0	156.0	179.7	65.6	52.5	453.8
NM ² Hydrography	17					
Velocity Casts	2					
Detached Positions	34					
Tide Stations	0					
Reference Numbers	16					
Bottom Samples	48					

S. MISCELLANEOUS ✓

LORAN C comparisons were observed as required by the Project Instructions.

Bottom samples were sent to the Smithsonian Institution in accordance with the Project Instructions.

The Coast Pilot current and predicted current comparisons were made in accordance with the Project Instructions. The current predictions were adequate and the descriptions accurate.

T. RECOMMENDATIONS ✓

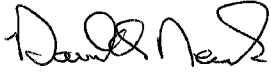
None.

U. REFERRAL TO REPORTS ✓

The following supplemental reports contain additional information relevant to this survey:

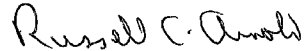
<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Summer 1993 Horizontal Control Report for OPR-P180-RA	1993	N/CG2333
Summer 1993 Coast Pilot Report for OPR-P180-RA	1993	N/CG245
Project related data for OPR-P180-RA	Incremental	N/CG245

Respectfully Submitted,



David O. Neander
Lieutenant, NOAA

Approved and Forwarded,



Russell C. Arnold
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 13 Aug 1993

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
100	F	056:44:35.925	157:00:57.249	36	250	0.0	0.0	0	05/26/93	HYDRA 1944(M/R & DGPS STATION)
101	F	056:45:36.294	156:51:13.289	17	250	0.0	0.0	5	05/27/93	TOEE
102	F	056:50:12.455	156:59:01.802	33	250	0.0	0.0	3	05/23/93	WOLFF
103	F	056:51:01.588	156:53:58.164	112	250	0.0	0.0	2	05/23/93	CENTRAL 1944
104	F	056:48:00.515	157:01:01.282	4	250	0.0	0.0	6	06/15/93	LONG 1944
105	F	056:46:55.025	157:08:22.740	20	250	0.0	0.0	5	06/22/93	EXTRA 1944
106	F	056:47:34.560	157:16:31.888	8	250	0.0	0.0	3	07/08/93	GALE 1945
107	F	056:48:03.128	157:25:16.371	12	250	0.0	0.0	6	07/09/93	GOON 1945
108	F	056:45:19.732	157:29:28.737	27	250	0.0	0.0	5	07/14/93	LAND 1945
109	F	056:40:36.057	157:32:01.653	2	250	0.0	0.0	0	07/15/93	LAG 1945



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

August 12, 1993

**ADVANCE
INFORMATION**

Director
DMAHTC
Attn: MCNM
6500 Brookes Lane
Washington, DC 20315-0030

Dear Sir:

While conducting hydrographic survey operations in Shelikof Strait, Alaska, NOAA Ship RAINIER discovered five dangers to navigation. They have been reported to DMAHTCNAVWARN and the Seventeenth Coast Guard District. A copy of the correspondence describing the dangers is enclosed.

Sincerely,

Russell C. Arnold
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

NOAA Ship RAINIER

August 12, 1993

**ADVANCE
INFORMATION**

Commander
Seventeenth Coast Guard District
Post Office Box 25517
Juneau, AK 99802-5517

Dear Sir:

Attached is a confirmation copy of the radio message sent to your office regarding the dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A copy of the chart showing the areas in which the dangers exist is also attached.

Sincerely,

Russell C. Arnold
Russell C. Arnold
Captain, NOAA
Commanding Officer

Enclosures

cc: DMAHTC
N/CG221
PMC



23:31, Tuesday, 10 August 1993
tPostOUT : Hellickson

RVA
FOO

P 102325 Z AUG 93
NOAAS RAINIER
000DSEVENTEEN JUNEAU AK
DMAHTCCNAVWARN WASHINGTON DC//MCNM//
INFO NOAAMOP SEATTLE WA
ACCT CM-VCAA

**ADVANCE
INFORMATION**

BT
UNCLAS
NOAA SHIP RAINIER HAS LOCATED 5 DANGERS TO NAVIGATION
IN THE VICINITY OF AMBER BAY AND SUTWIK ISLAND, SOUTHERN
ALASKA PENINSULA (PROJECT QPR-P180-RA) WITHIN THE LIMITS
OF HYDROGRAPHIC SURVEYS H-10488 AND H-10491. THE
FOLLOWING INFORMATION IS PROVIDED FOR PUBLICATION IN
THE LOCAL NOTICE TO MARINERS:

CHARTS AFFECTED: 16568 9TH ED MAR 21/92 1:106,600 NAD 83
DEPTH IS REDUCED TO MLLW BASED ON PREDICTED TIDES.

ITEM	DANGER	CHART	DEPTH	LATITUDE	LONGITUDE	(Approx. Center) Pos. 7721
A.	REEF	16568	UNCOVERS 9.5 FEET 2.9m	56/49/39.0N	157/26/52.0W	
B.	SHOAL	16568	7 3/4 fms	56/38/04.645N	157/17/32.101W	
C.	SHOAL	16568	11 fms	56/36/31.483N	157/19/24.751W	
D.	SHOAL	16568	10 fms	56/39/14.851N	157/18/10.107W	
E.	SHOAL	16568	2 3/4 fms	56/35/56.652N	157/21/02.024W	

THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW.
QUESTIONS CONCERNING THIS MESSAGE SHOULD BE DIRECTED TO THE
CHIEF, PACIFIC HYDROGRAPHIC SECTION AT (206)926-6835. A
LETTER WITH ATTACHED CHARTLET WILL BE MAILED TO CONFIRM
THIS MESSAGE.
BT



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
Seattle, Washington 98115-0070

February 15, 1995

Commander (OAN)
Seventeenth Coast Guard District
P.O.Box 25517
Juneau, AK 99802-5517

Dear Sir:

During office review of hydrographic survey H-10488, Alaska, Alaska Peninsula, Amber Bay, three shoal soundings were found and are considered potential dangers to navigation affecting the following chart.

<u>Chart</u>	<u>Edition/date</u>	<u>Datum</u>
16568	9th, 03/21/92	NAD 83

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

Kathy A. Timmons

Kathy A. Timmons
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/HTC
N/CG221



REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10488
Survey Title: State: ALASKA
Locality: ALASKA PENINSULA
Sublocality: AMBER BAY

Project Number: OPR-P180-RA, NOAA Ship Rainier

The following were discovered during hydrographic surveying operations:

Affected nautical chart:

Chart Number	Edition		Horizontal Depth	Datum	Geographic Position	
	No.	Date			Latitude(N)	Longitude(W)
16568	9th	03/21/92	4 fathoms	NAD 83	56/48/40.73	157/23/55.97
16568	9th	03/21/92	3 fathoms	NAD 83	56/49/45.88	157/23/01.61
16568	9th	03/21/92	2½ fathoms	NAD 83	56/49/27.15	157/20/16.31

Depths reduced to Mean Lower Low Water using approved tides.

Questions concerning this report should be directed to the Pacific Hydrographic Section at
(206) 526-6853.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

ORIGINAL

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 5, 1994

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10488

LOCALITY: Amber Bay, Shelikof Strait, Alaska

TIME PERIOD: July 17, 1993 - August 8, 1993

TIDE STATION USED: 945-8631 Cape Kunmik, Alaska
Lat. $56^{\circ} 47.5'N$ Lon. $157^{\circ} 07.5'W$

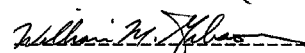
PLANE OF REFERENCE (MEAN LOWER LOW WATER): = 1.01 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: = 9.2 feet

REMARKS: RECOMMENDED ZONING

Times are direct and apply a x0.93 range ratio to heights at
Cape Kunmik, Ak. (945-8631).

NOTE: Hourly heights are tabulated on Greenwich Mean Time.


CHIEF, DATUMS SECTION
J. B. J.



APPROVAL SHEET

for

H-10488
RA-10-16-93

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the Field Procedures Manual in producing this survey. The data were examined daily during data acquisition and processing.

The field sheet and accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.

Russell C. Arnold

Russell C. Arnold
Captain, NOAA
Commanding Officer

HYDROGRAPHIC SURVEY STATISTICS

H-10488

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	1
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	

DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS
COORDINATION FILES	2				
ENVELOPES					
VOLUMES					
CAHRS					
BOXES				1	

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			3117
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	36.5		36.5
VERIFICATION OF SOUNDINGS	36.0		36.0
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	64.5		64.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		4	4
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		13	13
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	137	17
			154

Pre-processing Examination by L. D. Haines	Beginning Date 8/18/93	Ending Date 9/14/93
Verification of Field Data by R. Shipley, B. Mihailov, J. Stringham	Time (Hours) 137	Ending Date 12/6/94
Verification Check by E. Domingo, R. Davies	Time (Hours) 23	Ending Date 2/14/95
Evaluation and Analysis by R. Davies	Time (Hours) 17	Ending Date 2/17/95
Inspection by B. Olmstead	Time (Hours) 17	Ending Date 3/15/95

EVALUATION REPORT
H-10488

1. INTRODUCTION

Survey H-10488 is a basic hydrographic survey accomplished by the NOAA Ship *Rainier*, under the following Project Instructions.

OPR-P180-RA, dated April 13, 1993
CHANGE NO. 1, dated April 23, 1993
CHANGE NO. 2, dated June 21, 1993

This survey was conducted in Alaska along the Southern Alaska Peninsula, southwest of Kodiak Island and is centered in Amber Bay. The surveyed area extends from latitude 56/48/00N to latitude 56/51/51N and from longitude 157/17/11W to longitude 157/28/22W. The shoreline in the northern portion of Amber Bay can be characterized by a long sandy beach. The other two areas, the eastern and western shore, can be characterized by boulder beaches, rock ledges and isolated rocks and reefs offshore. The bottom consists mainly of sand, broken shells, and pebbles. The depths ranges from 0 meters along the shoreline to 20.9 meters offshore.

Depth curves depicted on the smooth sheet were selected from those authorized through HSG 69. However, instead of drafting all authorized curves only those curves considered necessary for the reasonable portrayal of the bottom were drafted. The selected curves were the 0, 2, 5, 10 and 20 meter. A note was added to the smooth sheet to identify these values. A few supplemental depth curves have been added to the smooth sheet in brown as warranted. Bottom characteristics have been annotated on a separate overlay.

Predicted tides for Ugaiushak, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Cape Kunmik, Alaska, gage 945-8631 were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. NAD 83 is used as the horizontal datum for plotting and position computations. The offset values and velocity correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guideline No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in

the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report and the Summer 1993 Horizontal Control Report for OPR-P180-RA contain adequate discussions of horizontal control and hydrographic positioning.

Differential GPS (DGPS) was used to control this survey. Daily system checks by comparison with MiniRanger positions confirmed the DGPS was operating properly. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 289 positions exceeded the limit in terms of HDOP. These positions are isolated and occur randomly throughout the survey area. A review of the data, however, suggests that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable.

The position of the horizontal control station used during hydrography is a published value based on NAD 83. The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -2.703 seconds (-83.602 meters)
Longitude: 7.398 seconds (125.447 meters)

The year of establishment of the control station shown on the smooth sheet originates with the horizontal control report and the hydrographer's signal list.

The following registered shoreline maps compiled on NAD 27 apply to this survey.

<u>Map Number</u>	<u>Photo Date</u>	<u>Scale</u>
TP-01150	July 1982, August 1983	1:20,000
TP-01154	July 1982, August 1983	1:20,000
TP-01155	July 1982, August 1983	1:20,000

Shoreline drawn on the smooth sheet originates from 1:10,000 scale photographic enlargements of the above shoreline maps.

Several rocks on the current edition of chart 16568 originate from TP-01150 and TP-01154. These rocks were verified during shoreline verification and have been transferred to the smooth sheet. However, two rocks that originate from TP-00154, were not addressed by the hydrographer and have been transferred to survey H-10488 at latitude 56/49/03N, longitude 157/18/35W and latitude 56/49/05N, longitude 157/18/35W.

3. HYDROGRAPHY

Except as noted below and elsewhere in this report, hydrography is adequate to:

- a. delineate the bottom configuration, determine least depths, and draw the required depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and
- c. show the survey was properly controlled and soundings are correctly plotted.

The mean lower low water line was defined by ledges, boulder and shallow sand beaches. Certain portions of the zero curve could not be defined by hydrography due to the foul areas on the east and west shoreline of Amber Bay and the extensive shallow sand beaches in the northernmost portions of the survey. In most of these areas, the photogrammetric low water line has been transferred to the smooth sheet and appears to generally agree with the hydrographic information.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, March 1993 Edition.

5. JUNCTIONS

Survey H-10488 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10484	1993	1:10,000	Southeast
H-10486	1993	1:10,000	South

The junctions with surveys H-10484 and H-10486 are complete and the soundings are in good agreement.

6. COMPARISON WITH PRIOR SURVEYS

T-8620(1941-45) 1:20,000

There are no prior hydrographic surveys common to survey H-10488. However, T-8620 a USC&GS survey does falls within the common area. One charted feature, which originates from this prior source, an offshore reef at latitude 56/50/30N, longitude 157/23/30W, was investigated and found to exist. Refer to the hydrographers report, section J, for the disposition of this feature.

Survey H-10488 is adequate to supersede this prior survey within the common area.

7. COMPARISON WITH CHART

Survey H-10488 was compared to the following chart.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16568	9th	March 21, 1992	1:106,600	NAD83

a. Hydrography

Charted hydrography originates with USC&GS reconnaissance survey BP40351 (1945), prior survey T-8620 (1941-45) and the contemporary shoreline maps listed in section 2 of this report. There are no additional items for discussion.

A comparison with the small amount of charted depths indicates a difference of between 2 to 5 meters, the present survey depths were generally shoaler. Differences can be attributed to increased bottom coverage and the less accurate positioning and sounding methods available at the time the reconnaissance surveys were conducted. The charted shoreline appears to originate from the contemporary shoreline manuscripts.

Survey H-10488 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items located within the survey area.

c. Controlling Depths

There are no channels with controlling depths located within the limits of this survey.

d. Aids to Navigation

There are no fixed or floating aids to navigation located within the survey area.

There are no landmarks currently charted within the survey area. The hydrographer recommended no features of landmark value.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

The hydrographer reported one danger to navigation to the Seventeenth District of the United States Coast Guard, Juneau, Alaska. A copy of the message is attached to this report. Three additional dangers to navigation were discovered during office processing and reported to the Coast Guard, DMA/HTC and N/CG221, see attached letter.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10488 adequately complies with the Project Instructions, except where noted in this report.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey. No additional work is recommended.

Russ Davies
Russ Davies
Cartographer

APPROVAL SHEET
H-10488

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 disproof of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

for Bruce A. Overstad
Dennis J. Hill _____ Date: 3/15/95
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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 Evaluation Report.

Kathy Timmons
Kathy Timmons _____ Date: 3/30/95
Commander, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

Andrew A. Armstrong III
Andrew A. Armstrong III _____ Date: 4/12/95
Captain, NOAA
Chief, Hydrographic Surveys Branch

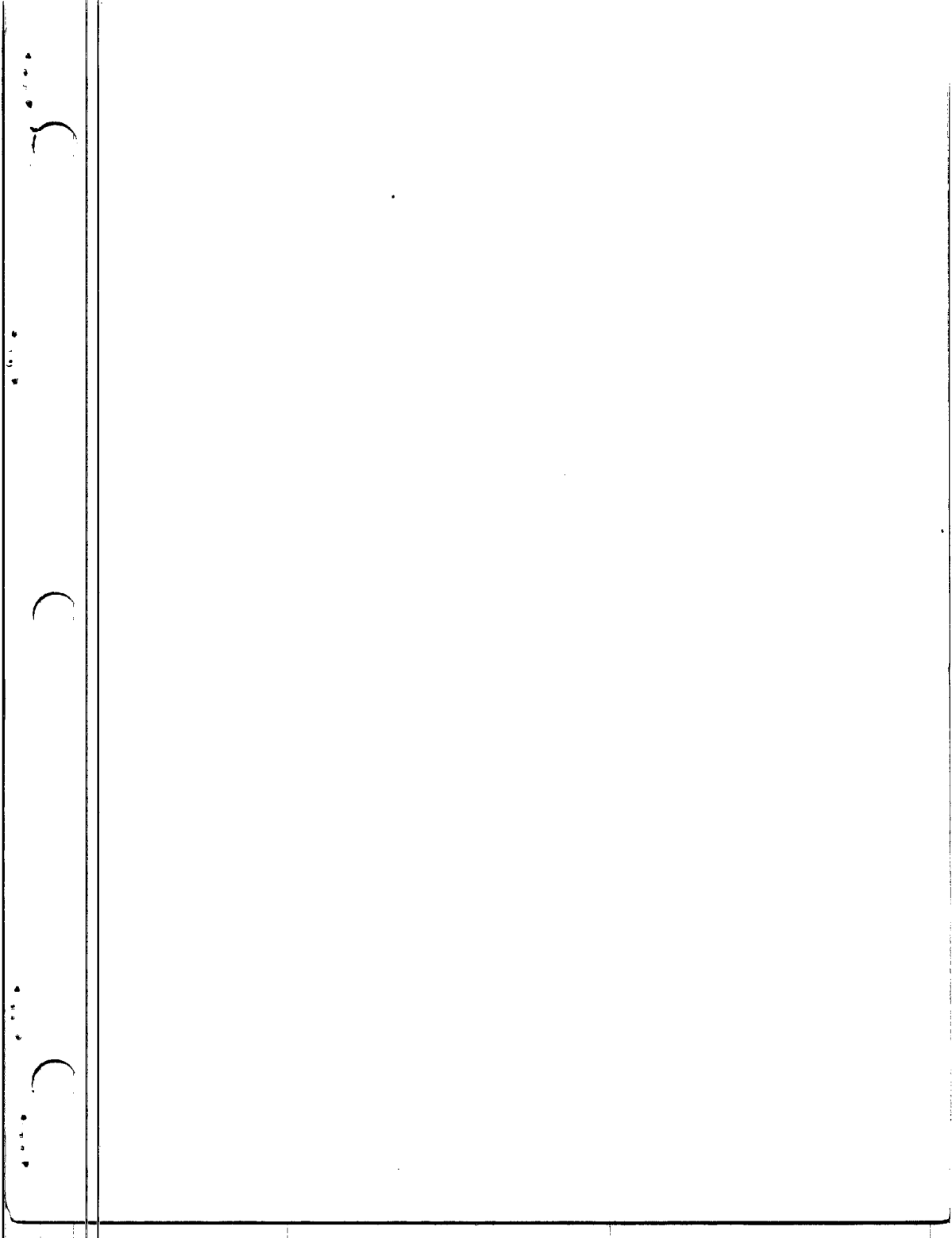
MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 11-10488

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
 1. Enter 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
16568	3-1-94	Miss Davis	Full Part Before After Marine Center Approval Signed Via <i>PARTIAL Application of</i> Drawing No. <i>soundings from preliminary sounding plot</i>
531	7-14-95	R. Elliott	Full Part Before After Marine Center Approval Signed Via
	8-2-95	D. Chapman	Drawing No. 21. <i>NO CORRS. Due to Scale</i>
16568	7-8-93	B. W. H. A. F. A. U.	Full Part Before After Marine Center Approval Signed Via
		D. Chapman	Drawing No. 12 <i>EDITION II FULL APPLICATION OF SOUNDINGS ETC</i>
16013	6-18-96	P. H. NGALINDEN	Full Part Before After Marine Center Approval Signed Via
		D. Chapman	Drawing No. 30 <i>26TH EP AUG 92 REVISED SOUNDINGS</i> <i>THRU CHART 16568 H-DRAWING BP157160</i>
16011	5-22-96	D. Chapman	Full Part Before After Marine Center Approval Signed Via <i>Revised hydro thru</i>
		William J. Ows	Drawing No. 32 <i>16013</i>
16006	8/20/96	Christopher Jones	Full Part Before After Marine Center Approval Signed Via <i>Revised hydro thru</i>
		William J. Ows	Drawing No. 28 <i>16011</i>
			Full Part Before After Marine Center Approval Signed Via
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