H10742

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-20-1-97

Registry No.: H-10742

LOCALITY

State: Alaska

General Locality: Stephens Passage

Sublocality: Grand Island and Vicinity

1997

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

LIBRARY & ARCHIVES

DATE: MAY 5 1998

☆U.S. GOV. PRINTING OFFICE: 1987—756-980

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.: H-10742

FIELD NO.: RA-20-1-97

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: Alaska

General locality: Stephens Passage

Locality: Grand Island and Vicinity

Scale: 1:20,000 Date of survey: April 22 to June 19, 1997

Instructions dated: 1/30/97 Change 1-4/3/97 Project No.: OPR-0324-RA

Vessel: NOAA Ship RAINIER(2120),(2121),(2123),(2124),(2125)

Chief of party: CAPT Alan D. Anderson, NOAA

Surveyed by: CAPT A.Anderson,LT G.Noll, LCDR D.Kruth,LT M. Larsen,LT S. Lemke, LT K. Bailey, LT D. Baird, ST N.Quanbeck

Soundings taken by echo sounder, hand lead, pole: DSF-6000N, KNUDSEN 320M

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Protracted by: R. Davies Automated plot by: HP Design Jet 650C

Verification by: E. Domingo

Soundings in fathoms ~~feet~~ at ~~MEW~~ MLLW and tenths

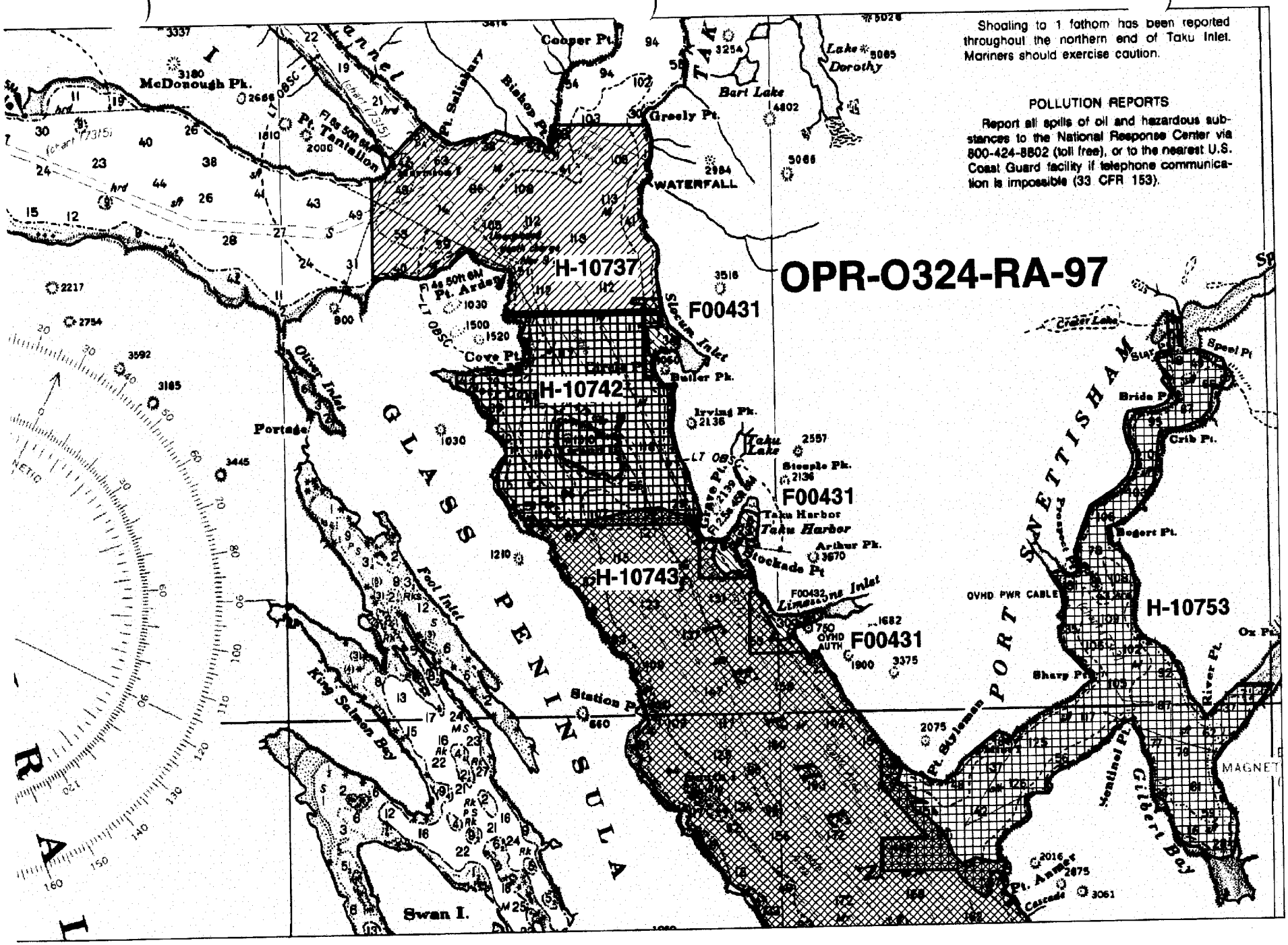
REMARKS: Time in UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

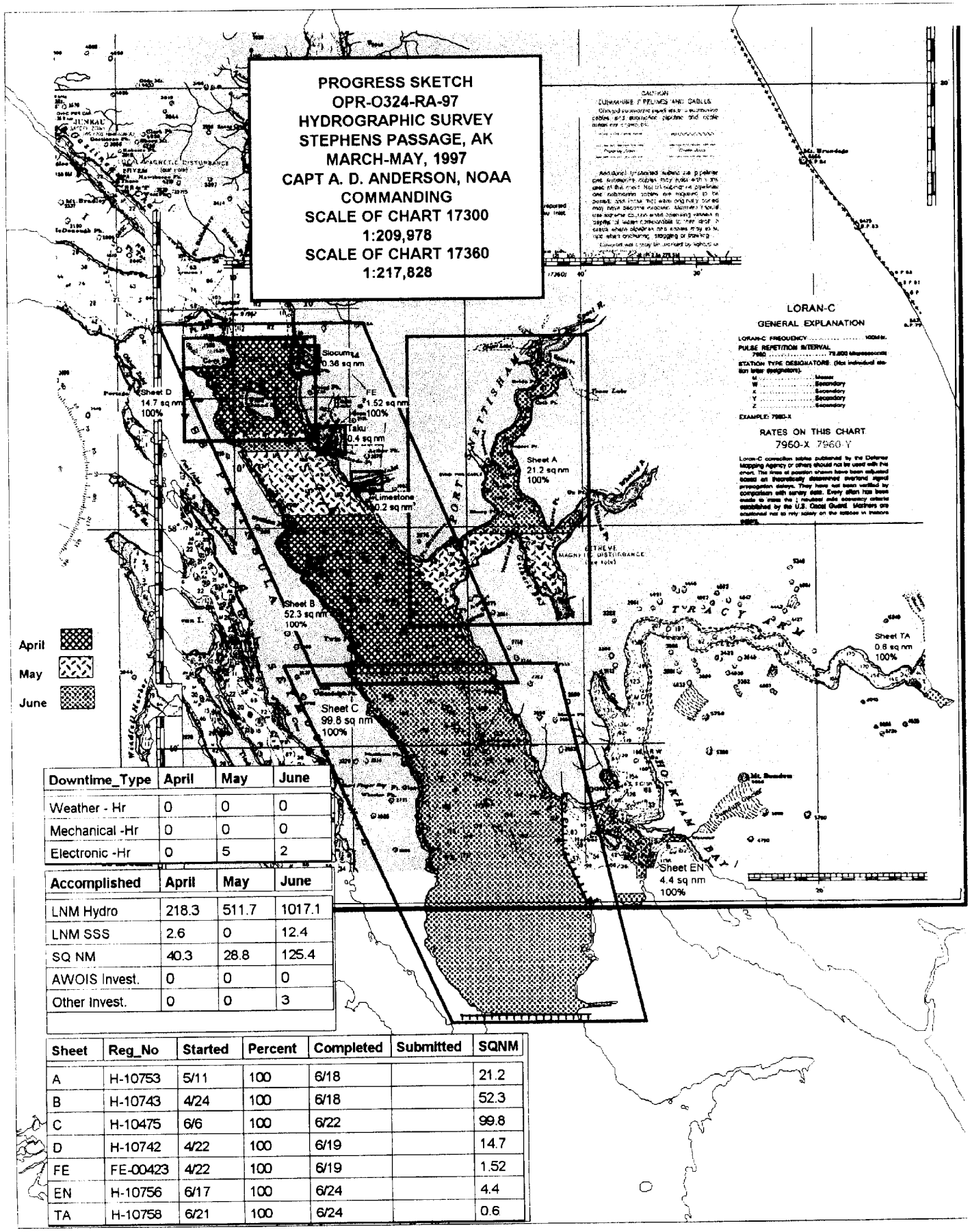
All depths listed in this report are referenced to mean lower low water unless otherwise noted.

AWOIS and SURF ~ 4/98 RWD

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215


Shoaling to 1 fathom has been reported throughout the northern end of Taku Inlet. Mariners should exercise caution.
POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).
OPR-O324-RA-97
H-10737
H-10742
H-10743
H-10753
F00431
F00431
F00431
F00432
GLASS PENINSULA
PORT SNETTISHAM
Taku Harbor
Taku Lake
Limestone Inlet
Fool Inlet
Oliver Inlet
Portage
Cove Pt.
Cooper Pt.
Grooly Pt.
Bart Lake
Lake Dorothy
WATERFALL
McDonough Ph.
Pt. Tentallion
Pt. Salisbury
Bishop Pt.
Pt. Ardery
Sturgeon Inlet
Butler Pk.
Irving Pk.
Steeple Ph.
Arthur Pk.
Blockade Pt
Station Pt.
King Salmon Bay
Swan I.
Crater Lake
Speel Pt
Bride Pt.
Crib Pt.
Sugert Pt.
Ox Pt.
River Pt.
Sharp Pt.
Sentinel Pt.
Gilbert Bay
Pt. Anmer
Cascade
Pt. Styleman
OVHD PWR CABLE
OVHD AUTH
MAGNET



Downtime_Type	April	May	June
Weather - Hr	0	0	0
Mechanical -Hr	0	0	0
Electronic -Hr	0	5	2

Accomplished	April	May	June
LNM Hydro	218.3	511.7	1017.1
LNM SSS	2.6	0	12.4
SQ NM	40.3	28.8	125.4
AWOIS Invest.	0	0	0
Other Invest.	0	0	3

Sheet	Reg_No	Started	Percent	Completed	Submitted	SQNM
A	H-10753	5/11	100	6/18		21.2
B	H-10743	4/24	100	6/18		52.3
C	H-10475	6/6	100	6/22		99.8
D	H-10742	4/22	100	6/19		14.7
FE	FE-00423	4/22	100	6/19		1.52
EN	H-10756	6/17	100	6/24		4.4
TA	H-10758	6/21	100	6/24		0.6

Descriptive Report to Accompany Hydrographic Survey H-10742

Field Number RA-20-1-97
Scale 1:20,000
April - June 1997
NOAA Ship RAINIER
Chief of Party: Captain Alan D. Anderson, NOAA

A. PROJECT ✓

This hydrographic survey was completed as specified by Project Instructions OPR-O324-RA dated January 30, 1997. Survey H-10742 corresponds to sheet D as defined in the sheet layout. This survey will provide contemporary hydrographic survey data as part of a continuing program to improve chart coverage of the Inside Passage in southeast Alaska. Requests for hydrographic surveys and updated charts in this area have been received from the United States Coast Guard (USCG), Southeastern Alaska Pilot's Association (SEAPA), the Alaska Department of Transportation, and the Alaska Department of Environment and Conservation in support of cruise line, commercial fishing, mining, and logging industries.

B. AREA SURVEYED ✓ See Exec Report, section B

The survey area is located in Stephens Passage, Alaska, in the vicinity of Grand Island from Slocum Inlet to Grave Point. The survey's northern limit is latitude 58° 08' 40"N and the southern limit is latitude 58° 04' 00"N. The survey is bound by the shoreline of Admiralty Island to the west and the mainland to the east. Data acquisition was conducted from April 22 – June 19, 1997 (DN 112-170).

C. SURVEY VESSELS ✓

Data were acquired by RAINIER and her survey launches as noted on the survey information summary* provided with this report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and preliminary processing was accomplished using the Hydrographic Data Acquisition and Processing System (HDAPS). Using exported HDAPS data in MapInfo facilitated charted and prior survey comparisons. Final Detached Positions and Soundings based on predicted tides were saved in MapInfo 4.1 format. A complete listing of software for HDAPS is included in Appendix VI. ✓*

E. SONAR EQUIPMENT ✓

Neither Side Scan Sonar nor multi-beam echo sounder equipment was used on this survey. Concur

F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. The Knudsen 320M is a dual frequency, thermal depth sounder using the same transducer frequencies. Serial numbers are included on the headers of the daily Raw Master Printouts.* No new problems, which affect survey data, were encountered. All DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting.

* Filed with the hydrographic data

G. CORRECTIONS TO ECHO SOUNDINGS

The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated December 15, 1996. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.3 (1997), in accordance with Hydrographic Survey Guideline (HSG) No. 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".*

Two sound velocity casts were acquired within the survey limits. Refer to the survey information summary.*

A static transducer depth was determined using FPM Fig 2.2 for vessels 2121, 2122, 2123, and 2125 in the spring of 1997. The static draft and offsets for RAINIER, 2120, were collected in 1995.

Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2, using FPM Fig. 2.3, and are included with project data for OPR-O324-RA-97. The data for vessels 2121, 2122, and 2123 were collected in Shilshole Bay, Washington in March 1997. The data for 2124 and 2126 were collected in 1996. The data for vessel 2125 were collected in Young Bay, Alaska in March 1997. All offset tables* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 1-6 correspond to the last digit of the vessel number. The offset tables are included with project data for OPR-O324-RA-97. The launches are not equipped with heave, roll and pitch sensors.

The Coastal and Estuarine Oceanography Branch (N/OES334) through N/CS31 provided predicted tides for the project on diskette for the Juneau, Alaska reference station (945-2210). HDAPS listings of the data used in generating tide corrector tables are included in Appendix V* of this report. Tidal correctors as provided in the project instructions for H-10742 are listed in the survey information summary.*

Juneau, Alaska (945-2210) and Ketchikan, Alaska (945-0460) are the primary control stations for datum determination at all subordinate stations. RAINIER personnel installed a Sutron 8200 tide gage at Taku Harbor (945-2123) on April 21, 1997, which was removed on June 19, 1997. Refer to the Field Tide Notes and supporting data in Appendix V* for individual gage performance and level closure information. This information and the boundaries of the survey have been forwarded to N/OES212. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3. Approved tide note dated Nov. 17, 1997 is attached.

H. CONTROL STATIONS See Evaluation Rpt., Section H.

The horizontal datum for this project is NAD 83. The control stations used for this survey are listed in ~~Appendix III~~ this report. See the OPR-O324-RA-97 Horizontal Control Report for more information.

I. HYDROGRAPHIC POSITION CONTROL See Evaluation Report, section I

All soundings were positioned using differential GPS. Primary control was TWIN, the VHF differential reference station installed by RAINIER. Station CIRCLE was set up as a VHF differential reference station but not used for this survey. The US Coast Guard Beacon at GUSTAVUS was used when not using the VHF station. Launch-to-launch DGPS performance checks* were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two different DGPS base stations, TWIN and GUSTAVUS, while the launches

* Filed with the hydrographic data.

were rafted together with their GPS antennae within 2-3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the USCG Beacon. TWIN was compared to GUSTAVUS during 8-hour daily comparisons and occasional performance checks. Some outliers were noted, but none indicated systematic or continuous errors. The SHIPDIM OUTLIER.SUM results are included on a floppy in the project data for OPR-O324-RA.

J. SHORELINE

See Evac Report, section J

The shoreline manuscript from Coastal Mapping survey CM-8904 was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital files from DM-10~~047~~304 were projected to the survey grid with OPR-O324-RA-97 geodetic parameters using program Shore version 2.0, provided by N/CS32, and plotted on the survey using HDAPS.

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the limit of safe navigation of a survey launch is 1-5 meters offshore of apparent low tide, generally 3-40 meters of depth at Mean Lower Low Water. Features shown inshore of the NALL are the hydrographer's representation of the shoreline while slowly transiting along the shore, and are intended to aid chart compilation. Shoreline manuscript and field features were compared to an enlargement of chart 17300, which is included in the submittal. Generally, the charted features matched the shoreline as observed. Discrepancies between charted and field shoreline should be resolved in favor of the manuscript shoreline and fieldwork as shown on the submitted MapInfo digital file.* A list of the MapInfo tables and their contents is appended to this report. ** Features and notes portrayed on the fields detached position/shoreline plot were analyzed during office processing and shown on the smooth sheet as warranted.
The following paragraphs list the differences noted between the manuscript, chart, and this survey:

A new rock at position 58° 07' 41.38~~2~~"N, 134° 09' 58.79~~88~~"W, (Fix number 10321), ~~1.0 meter exposed~~ uncovers 2 ft at MLLW. Concur

The manuscript ledge extends to position 58° 05' 51.55~~45~~"N, 134° 06' 21.61"W, (Fix number 50104), Concur ~~1.5 meter exposed~~. 8 Ct at MLLW (* (8)) High point of ledge.

A charted rock** at position 58° 07' 23.82"N, 134° 10' 23.47"W, was searched for but not found (Fix number 10336). A 10-minute search was conducted in a 50 m radius in 8-12 m water with a 3 m visibility. Fix number 10342.65 was also collected in the area and didn't show any indication of the manuscript rock. The hydrographer recommends removing the manuscript rock. concur** This charted rock is likely part of the ledge as shown on the smooth sheet.

A charted rock at position 58° 04' 30.99"N, 134° 10' 43.93"W, was searched for but not found (Fix number 50230). A 30-minute search was conducted in a 200 m radius in 9-15 m water with a 2 m visibility. A slight shoal of 5.5 meters was found in the area. The hydrographer recommends removing the charted rock. concur The charted rock is likely part of the ledge as shown on the smooth sheet.

A charted rock at position 58° 06' 30"N, 134° 11' 48"W, was inside the NALL and should remain as charted. concur

A charted rock at position 58° 05' 00"N, 134° 11' 18"W, was inside the NALL and should remain as charted. Delete charted rock. A ledge was found in the vicinity of the charted rock. Chart rock at lat. 58/04/58N, long 134/11/18W Do not concur

One non-sounding feature was found offshore of the NALL on this survey. A 1.4 meter sounding at

* Filed with the hydrographic data

position 58° 07' 29.39"N, 134° 10' 05.33"W, fix 10358+2 was developed with 5 meter line spacing to reveal a new rock reef. Least depth of (1.4 meters) 0.8 fathoms at mllw (chart 3/4 Rk)

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography. There was a total of 6.74 nautical miles of crosslines, comprising 4% of mainscheme hydrography. The percentage is low due to the lack of a crossline on the western side of the survey.

L. JUNCTIONS See Evac Report, section L

This survey junctions with H-10743, 1:40,000, 1997 on the south, and H-10737, 1:10,000, 1997 on the north, and FE-00432, 1:5,000, 1997 on the east. Soundings and contours on these surveys were found to be in good agreement based on predicted tides. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

M. COMPARISON WITH PRIOR SURVEYS See Evac Report, section M

H-1897(1888) 1:80,000

Prior surveys H-1920, 1:80,000, 1888, and H-4147WD, 1:40,000, 1921 cover the area surveyed. Clearance depths on the copy of the Wire drag survey are illegible. The note on survey regarding area dragged is not less than 85 ft deep agrees with present survey data. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey. Several rocks along the eastern shoreline of Glass Peninsula originate with the above prior surveys and have been generalized offshore. The present survey found extensive ledges fringing the shoreline but only prominent points extending offshore could be shown.

N. ITEM INVESTIGATIONS ✓

No AWOIS or Pre-Survey review items were assigned to this survey. Concur

O. COMPARISON WITH THE CHART See Evac Report, section O

Chart 17300, 1:209,978, 27th Edition, 8/14/93 is the largest scale chart covering the entire survey area. Chart 17314, 1:20,000, 11th Edition, 5/25/91 covers parts of the eastern portion of the survey. In general, this survey agrees well with the charts. A charted 8 fathoms between Point Arden and Cove Point was not found. A 5^4 fathoms sounding in the digital file was found 100 m inshore of the charted 8 fathoms. A 3^6 fathoms sounding found off of Cove Point extends the 10-fathom contour approximately 100 m further off-shore. Concur This sounding would be a danger to navigation at a larger scale. Concur Final sounding comparisons will be made at PHB after reduction to final vertical datum.

Dangers to Navigation ✓

No dangers were found which could be adequately depicted at the scale of the chart. Concur

P. ADEQUACY OF SURVEY ✓

Survey H-10742 is complete and adequate to supersede prior soundings and features in their common areas. Concur

Q. AIDS TO NAVIGATION ✓

Grand Island Light was positioned using static GPS methods from station TWIN on May 13, 1997. See the attached Section Q insert for detailed comparison of this position to the charted position. See NOAA form 76-40, attached to this report.

R. STATISTICS ✓

There were 4983 selected soundings on this survey. Refer to the survey information summary* for the balance of statistical information.

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. Cable areas were not investigated and should remain as charted. High winds and extensive cloud cover were experienced while surveying this area. Secchi disk observations were not possible due to water surface turbidity coupled with restrictive cloud cover.

T. RECOMMENDATIONS ✓

The scale of this chart can not adequately portray nearshore soundings and features for small boats transiting to and from Juneau. The hydrographer recommends creating 1:80,000 scale charts for this area. The evaluator recommends Marine Chart Division consider this recommendation. Concur

U. REFERRAL TO REPORTS ✓

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

Title	Date Sent	Office
OPR-O324-RA Horizontal Control Report	August 1997	N/CS34
OPR-O324-RA 1997 Coast Pilot Report	August 1997	N/CS26
Project related data for OPR-O324-RA	Incremental	N/CS34

Respectfully Submitted,

Steven A. Lemke
Lieutenant, NOAA

Approved and Forwarded,

Per Harlene Hoggatt CDR, NOAA
Alan D. Anderson
Captain, NOAA
Commanding Officer

* Filed with the hydrographic data

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HDAPS Pre-Survey Program Version: 7.14        PRE-SURVEY: CONTROL STATION TABLE ✓              13:12:49

Station No
No   Type            Lat              Lon      H Cart     Freq     Vel Code  MM/DD/YY         Station Name

1        F 058:25:04.000 135:41:48.000   0  250      0.0        0       03/01/92  GUSTAVUS
2        F 057:59:22.445 133:50:34.643   0  250      0.0        0       03/01/92  SNET
3        F 057:54:43.873 133:59:33.022   0  250      0.0        0       03/01/92  TWIN
4        F 057:50:12.165 133:48:50.563   0  250      0.0        0       03/01/92  MIDWAY ISLAND LT
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
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           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
           000:00:00.000 000:00:00.000   0    0      0.0        0       03/01/92
```

Section Q: Descriptive Report Insert ✓

Name of Aid: Grand Island Light
Light List #: 23650

Method of Positioning GPS: [X] DGPS: [ ] Other: _____

Positioning Information

	Latitude (N)	Longitude (W)
Charted Pos.	58/06/0	134/06/30
Survey Pos.	58/05/58.07	134/06/27.72

	Easting	Northing
Charted Pos.	10752.5	68638.5
Survey Pos.	10715.3	68698.2

Difference between Charted and Surveyed Position: Distance: 70 meters
(Bearing from Surveyed to Charted Position) Bearing: 148 deg T

Characteristics
Do characteristics match Light List? Yes [X] No [ ]
If no, what are the characteristics? _____

Does the aid adequately serve its apparent purpose? Yes [X] No [ ]
If no, why not? _____

New/Uncharted Aids (if information is known or easily obtained)
Date Est: _____
Maintained By: _____ Private? Yes [ ] No [ ]
Is aid seasonally maintained? Yes [ ] No [ ]
Frequency of Maintenance: _____

Apparent Purpose: _____

Other Information:

NOAA FORM 76-40
(8-74)

Repalces C&GS Form 567

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

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [x] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [ ] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [ ] TO BE CHARTED
- [x] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT *(Field Party, Ship or Office)*	STATE	LOCALITY	DATE
RAINIER	ALASKA	Grand Island and Vicinity Stephens Passage	8/11/97

The following objects HAVE [ ] HAVE NOT [ ] *been inspected from seaward to determine their value as landmarks.*

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
OPR-0324-RA			

CHARTING NAME	DESCRIPTION *(Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)*	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION *(See instructions on reverse side)* OFFICE	FIELD	CHARTS AFFECTED
L.L. # 23650	Grave ND Island Light Fl W 4s	58 05	58.07 1796.6	134 06	27.72 454.1		F-GPS-L 8/11/97	17300 17314

RESPONSIBLE PERSONNEL		
TYPE OF ACTION	NAME	ORIGINATOR
OBJECTS INSPECTED FROM SEAWARD		☐ PHOTO FIELD PARTY ☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER
POSITIONS DETERMINED AND/OR VERIFIED	Capt. A. D. Anderson	FIELD ACTIVITY REPRESENTATIVE OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'

(Consult Photogrammetric Instructions No. 64)

OFFICE

1. OFFICE IDENTIFIED AND LOCATED OBJECTS

Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object.

EXAMPLE: 75E (C) 6042
8 - 12 - 75

FIELD

1. NEW POSITION DETERMINED OR VERIFIED

Enter the applicable data by symbols as follows:

F - Field	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	8 - Sextant

A. Field positions* require entry of method of location and date of field work.

EXAMPLE: F - 2 - 6 - L
8 - 12 - 75

*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.

FIELD (Cont.)

B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.

EXAMPLE: P - 8 - V
8 - 12 - 75
74L (C) 2982

II. TRIANGULATION STATION RECOVERED

When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery.

EXAMPLE: Triang. Rec.
8 - 12 - 75

III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH

Enter 'V-Vis.' and date.

EXAMPLE: V-Vis.
8 - 12 - 75

**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.

NOAA FORM 76-40 (8-74)

SUPERSEDES NOAA FROM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION

APPROVAL SHEET

for

H-10742

RA-20-1-97

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Guidelines; and the 1994 version of 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.

Marlene Hoggatt CDR, NOAA
FOR Alan D. Anderson
Captain, NOAA
Commanding Officer

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: November 17, 1997

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-0324-RA
HYDROGRAPHIC SHEET: H-10742

LOCALITY: Stephens Passage, AK. (Sheet D)

TIME PERIOD: April 22 - June 19, 1997

TIDE STATION USED: 945-2123 Taku Harbor, AK.
Lat. 58° 04.1'N Lon. 134° 00.6'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.531 meters

TIDE STATION USED: 945-2249 Young Bay, AK.
Lat. 58° 11.0'N Lon. 134° 35.2'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.690 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEA8
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.

Note 2:
Juneau, AK was used as control for datum determination for all subordinate tide stations for this survey. Relative sea level trends show that the areas of Juneau Alaska are undergoing continual uplift. The relative sea level trend observed at Juneau for the time period 1950 through 1993 is -0.0114 m/yr. with a standard error of 0.0005 m/yr. As a result of high rate of sea level change, the 1960 to 1978 Tidal Epoch value of Mean Lower Low Water (MLLW) used as chart datum and reference datum for NOS tidal predictions does not reflect present conditions. The data are under review to determine an updated value of MLLW. An interim value was computed for Juneau, based on the series of data from 1989 to 1991 and controlled by the 1960-1978 Epoch datums at Ketchikan which is more stable. The provided values adjust the chart datum to a more realistic level and in a direction that is more conservative for navigation purposes.

CHIEF, OPERATIONAL ANALYSIS BRANCH

Final tide zone node point locations for OPR O324-RA-97,
Sheet H-10742.

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 SEA8			
-134.04478 58.239803	945-2123	0	1.00
-133.929274 58.010814	945-2249	-6	0.96
-133.765896 57.91308	945-2210	0	0.97
-134.080082 57.896614			
-134.132552 57.972586			
-134.272032 58.10242			
-134.183573 58.155284			
-134.15 58.207113			
-134.140172 58.234618			
-134.04478 58.239803			

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10742

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17300, 17314	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
ALASKA (title)	X		X							1
CIRCLE POINT	X		X							2
COVE POINT	X		X							3
DOTY COVE	X		X							4
GRAND ISLAND	X		X							5
GLASS PENINSULA	X		X							6
GRAVE POINT	X		X							7
SLOCUM INLET	X		X							8
STEPHENS PASSAGE (title)	X		X							9
STOCKADE POINT *	X		X							10
TAKU HARBOR *	X		X							11
TAKU HARBOR (ppl) *	X		X							12
										13
* Not Plotted on Smooth Sheet										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved

Chief Cartographer

SEP 17 1997

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H)
(9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-10742

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

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

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES						
CAHIERS						
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			
POSITIONS REVISED			
OUNDINGS 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	119		119
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		20	20
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	119	20	139

Pre-processing Examination by M. Bigelow	*Beginning Date* 8/15/97	*Ending Date* 9/2/97
Verification of Field Data by M. Bigelow, E. Domingo, R. Davies	*Time (Hours)* 119	*Ending Date* 12/31/97
Verification Check by B. Olmstead	*Time (Hours)* 3	*Ending Date* 1/15/98
Evaluation and Analysis by R. Davies	*Time (Hours)* 20	*Ending Date* 1/5/98
Inspection by B. Olmstead	*Time (Hours)* 6	*Ending Date* 2/6/98

EVALUATION REPORT

H-10742

A. PROJECT

The hydrographer's report contains a complete discussion of the project information.

B. AREA SURVEYED

An adequate discussion of the survey area is found in the hydrographer's report.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line throughout the survey area. Charted features and soundings inshore of this limit line have not been specifically addressed during survey operations and should be retained as charted. Two page-size plots of the charted area depicting the limits of supersession accompany this report as Attachment 1.

The bottom consists mainly of gray mud and some fine sand. Depths range from 0 to 128 fathoms.

C. SURVEY VESSELS

The hydrographer's report contains information relating to survey vessels.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer, the Hydrographic Processing System (HPS), and MicroStation 95.

Digital data for this survey exists in the standard HPS format, that is a database format using the .dbf extension. In addition, the plot is filed both in the MicroStation drawing format, i.e., dgn (extension), and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data forwarded to headquarters has been accepted and approved. Database records forwarded are in the Internal Data Format (IDF) and are in compliance with specifications in existence at the time of survey processing.

The drawing files necessarily contain information that is not part of the HPS data set such as geographic name text, line-type data, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guidelines No. 35 and No. 75.

The data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

Side Scan Sonar and multibeam echo sounder equipment was not used on survey H-10742.

F. SOUNDING EQUIPMENT

The hydrographer's report contains a discussion on sounding equipment.

G. CORRECTIONS TO SOUNDINGS

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for an actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications.

Predicted tides were used for reduction of soundings during field processing. During office processing, tide reductions were derived from approved hourly heights zoned direct from the following tide gages: Taku Harbor, Alaska, gage 945-2123 and Young Bay, Alaska, gage 945-2249.

H. CONTROL STATIONS

Sections H and I of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning.

The positions of horizontal control stations used during hydrographic operations are published values based on NAD 83. The geographic positions of all survey data are based on NAD 83. The smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with the 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:	-1.191 seconds	(-36.842 meters)
Longitude:	6.304 seconds	(103.258 meters)

The year of establishment of control stations originate with the horizontal control records for this survey.

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 7.5 was computed for survey operations. The quality of several positions exceeds limits in terms of horizontal dilution of precision (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.

NAD 83 is used as the horizontal datum for plotting and position computations.

Additional information concerning calibrations and system checks can be found in the hydrographer's report and in the separates related to horizontal position control and corrections to position data.

J. SHORELINE

Shoreline map DM-10304, scale 1:20,000 was compiled on NAD 83 and applies to this survey. Shoreline drawn on the smooth sheet originates from 1:20,000 scale digital files provided by Coastal Mapping Program.

There were no MHW revisions on this survey.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10742 junctions with the following surveys:

Survey	Year	Scale	Area
H-10743	1997	1:40,000	South
H-10737	1997	1:10,000	North
F00432	1997	1:5,000	East

The junction with F00432, H-10743 and H-10737 is complete; soundings and depth curves are in good agreement within the common area. Several soundings have been transferred to the present survey within the junction areas to better portray the bottom configuration within the common area. A "Joins" note has been shown on the smooth sheet.

M. COMPARISON WITH PRIOR SURVEYS

H-1897 (1888) 1:80,000
H-1920 (1888) 1:80,000

Prior surveys H-1897 and H-1920 cover the entire area of the present survey. Sounding agreement is fair with the present survey depths differing between 1 and 5 fathoms. There appears to be no consistent pattern of shoaling or an increase in depths between the present survey and prior surveys. Differences may be attributed to greater sounding coverage, improved positioning and sounding methods, relative accuracy of the data acquisition techniques, and charting generalization.

Eight bottom characteristics have been brought forward from prior surveys H-1897 and H-1920 at the following positions.

Bottom characteristics	Latitude(N)	Longitude(W)
sft M	58/04/18	134/05/07
sft M	58/06/31	134/05/21
hrd	58/05/11	134/05/50
hrd	58/06/57	134/05/03
stk	58/07/01	134/06/07
hrd	58/07/10	134/05/36
stk	58/07/41	134/05/20
stk	58/07/49	134/06/00

Except for the bottom characteristics, survey H-10742 is adequate to supersede the prior surveys within the common area.

H-4147WD (1921) 1:40,000
H-4147a WD (1921) 1:40,000

Wire-drag surveys H-4147WD and H-4147aWD cover the entire area of the present survey. An 8.0-fathom depth at latitude 58/08/35N, longitude 134/10/00W, originates from the above prior surveys and is currently charted. The depth does not represent a hang or clearance depth. An investigation of this charted depth revealed a 5.7-fathom depth at latitude 58/08/28.09N and longitude 134/10/03.28W. This 5.7-fathom depth should supersede the 8-fathom charted depth.

Survey H-10742 is adequate to supersede the prior wire-drag surveys within the common area.

N. ITEM INVESTIGATIONS

There were no AWOIS items assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10742 was compared with the following charts:

Chart	Edition	Date	Scale	Datum
17300	27th	Aug. 14, 1993	1:209,978	NAD83
17314	11th	May 25, 1991	1:20,000	NAD83

a. Hydrography

Charted hydrography originates with the previously discussed prior surveys and miscellaneous source data. The prior surveys have been adequately addressed in section M and require no further discussion.

The application of this survey to charts of a scale greater than 1:80,000 may require the generalization of features such as ledges and reefs. The recommended charting disposition of specific ledges or reefs is their depiction as isolated rocks. The application of this survey to charts of a scale less than 1:80,000 may be accomplished without generalization of features. Features from survey H-10742 have been generalized on chart 17300 along the western shoreline of Glass Peninsula and around Grand Island.

Survey H-10742 is adequate to supersede charted hydrography within the charted area.

b. Dangers To Navigation

No dangers to navigation that could be adequately depicted at the scale of the chart were discovered during survey operations. No additional dangers to navigation were found during office processing.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10742 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 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, April 1994 Edition, with the exception of the following.

The distance between bottom samples did not meet the requirements stated in the Hydrographic Manual.

Q. AIDS TO NAVIGATION

Q. AIDS TO NAVIGATION

One fixed aid, Grand Island Light was located and adequately marks the features intended. No floating aids to navigation exist within the survey area. See the hydrographer's report, section Q insert and NOAA form 76-40 for complete details.

There were no features of landmark value located within the area of this survey.

R. STATISTICS

Statistics are itemized in the hydrographer's report.

S. MISCELLANEOUS

Miscellaneous information is discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

T. RECOMMENDATIONS

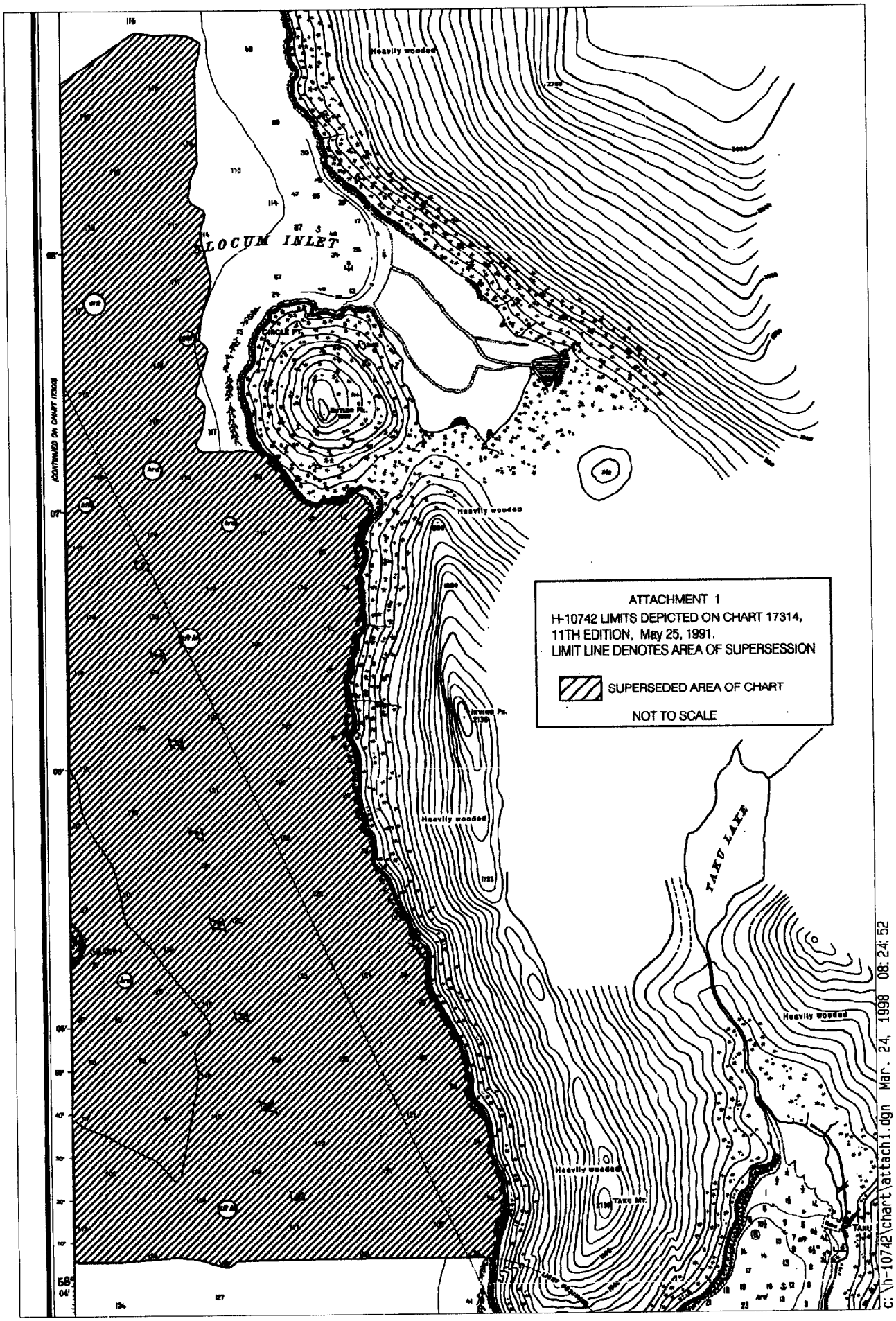
This is a good hydrographic survey. Additional work is recommended on a low priority basis to obtain bottom samples at the specified spacing in the common area of this survey

U. REFERRAL TO REPORTS

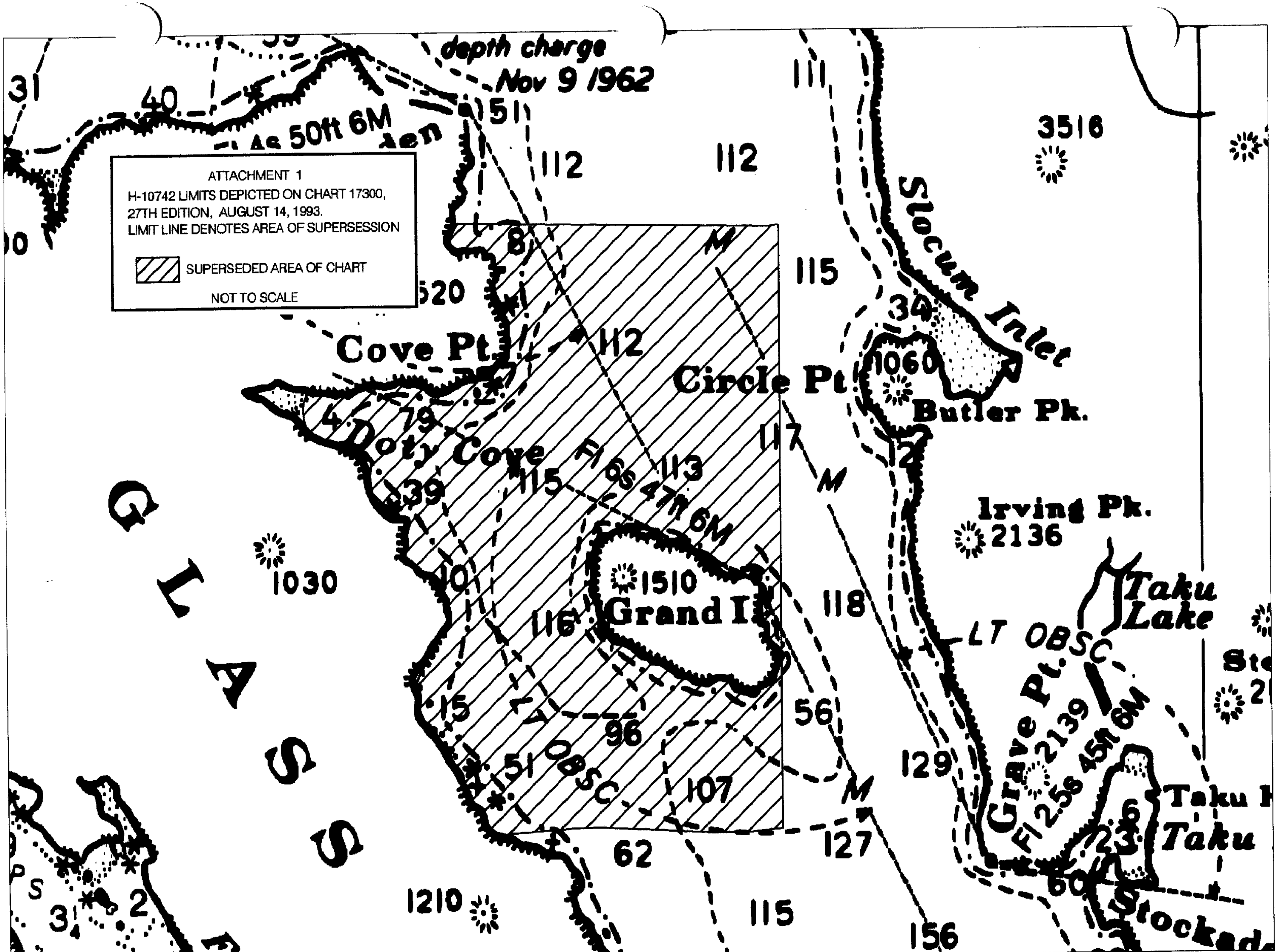
Referral to reports is discussed in the hydrographer's report.

Charles R. Davies

C. R. Davies
Cartographer



c:\h-10742\chart\attach1.dgn Mar. 24, 1998 08:24:52



c: \h-10742\chart\17300h10.742 Dec. 23, 1997 14:52:58

APPROVAL SHEET
H-10742

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 Evaluation Report.

Bruce A. Olmstead Date: 2/6/98
Bruce A. Olmstead
Senior Cartographer, Cartographic Section
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 Evaluation Report.

for Kathy Timmons Date: 2/12/98
Kathy Timmons
Commander, NOAA
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: May 5, 1998
Andrew A. Armstrong III
Captain, NOAA
Chief Hydrographic Surveys Division

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. H-10742

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
17300	1-2-98	Russ Davies	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. sndgs, features and curves from smooth sheet
17314	1-5-98	Russ Davies	Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. sndgs, features and 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.
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.