H10758

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-10-14-97

Registry No. H-10758

LOCALITY

State Alaska

General Locality Southern Stephens Passage

Sublocality Eastern Tracy Arm

19 97

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10758

HYDROGRAPHIC TITLE SHEET

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-10-14-97

State: Alaska

General locality: Southern Stephens Passage

Locality: Eastern Tracy Arm

Scale: 1:10,000 Date of survey: June 21 to June 24, 1997

Instructions dated: ~~12/20/96~~ 1/30/97, Change #1 4/3/97 Project No.: OPR-0324-RA

Vessel: NOAA Ship RAINIER, Launches (2121), (2122), (2123)

Chief of party: CAPT Alan D. Anderson, NOAA

Surveyed by: CAPT A.Anderson, LCDR D.Kurth,LT S LaBossiere, LT K. Bailey, LT D.Baird, CST J.Fleischmann, SST J. Jacobson

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

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

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

~~Protracted by~~

Verification by: R. Davies

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

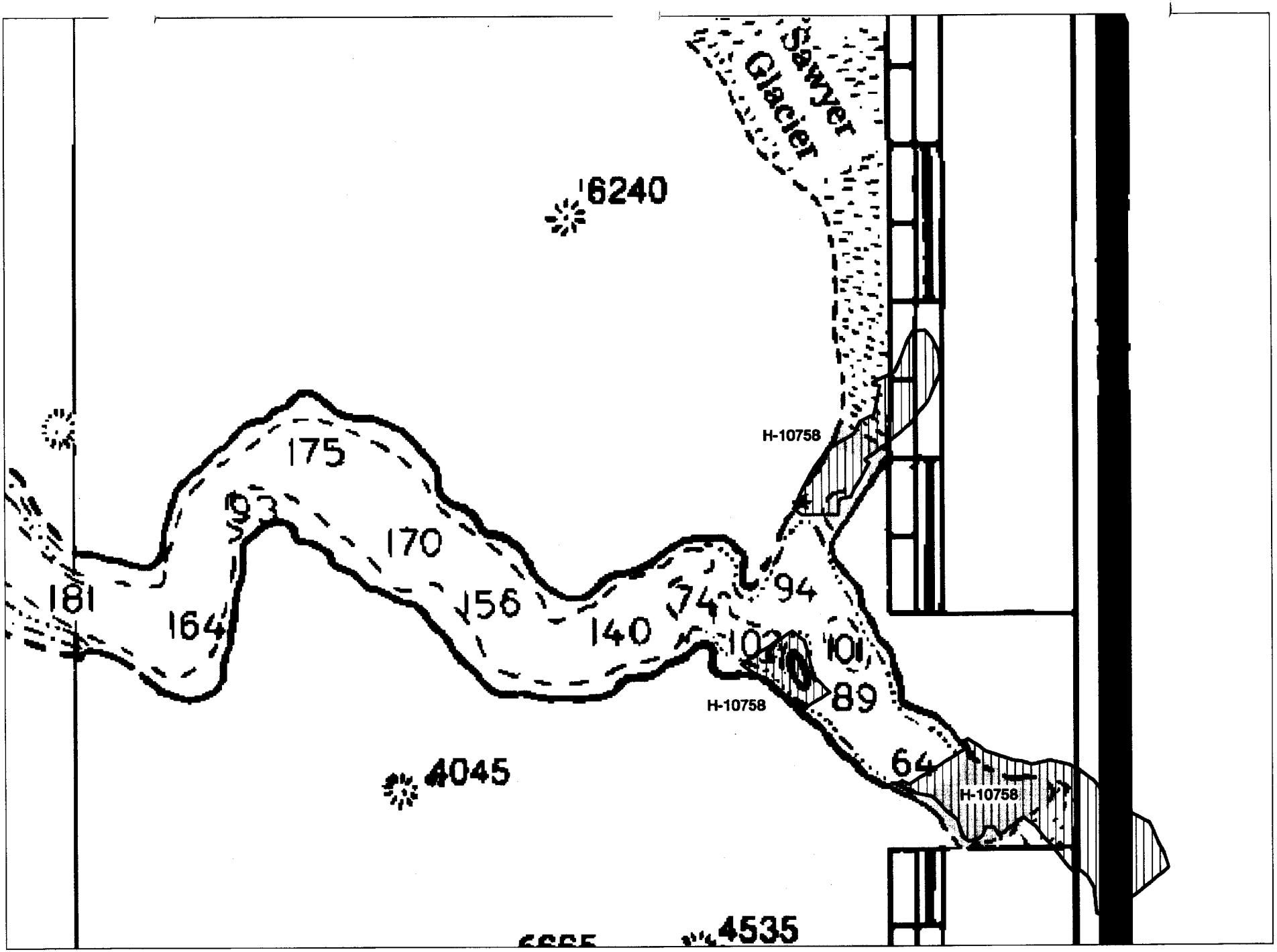
REMARKS: Time in UTC, revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

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

AWOIS ✓ & SURF ✓ by MBH 1/7/99

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

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


Sawyer Glacier
6240
175
93
170
181
164
156
140
74
94
102
101
89
64
H-10758
H-10758
H-10758
4045
4535

Descriptive Report to Accompany Hydrographic Survey H-10758

Field Number RA-10-14-97
Scale 1:10,000
June 1997
NOAA Ship RAINIER
Chief of Party: Captain Alan D. Anderson, NOAA

A. PROJECT ✓ See Evaluation Report, section A.

This Navigable Area Survey was added to Project Instructions OPR-O324-RA dated ~~December 20~~ January 30, 1996, and change number 1 dated April 3, 1997. 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 general area have been received from the Southeastern Alaska Pilot's Association (SEAPA), the Alaska Coastwise Pilots Association (ACPA), and the Coast Guard. The surveys were conducted in unsurveyed areas left by two receding glaciers. This Area is heavily trafficked by large vessels from the recreational and cruise ship industries.

B. AREA SURVEYED ✓ See Eval Rpt., Section B.

The survey area is located in Stephens Passage, Alaska, in the eastern end of Tracy Arm.

Hydrography was concentrated in three areas, from the face of Sawyer Glacier south to 57°~~54'10"~~ 53'36" N, the face of South Sawyer Glacier north to a line between 57°~~54'20"~~ 51'51" N 133°10'00"W and 57°52'~~15~~09" N 133°09'~~10~~12"W, and Margarite Island ~~and~~ to the mainland.

Data acquisition was conducted from June 21-June 24, 1997 (DN 172-175).

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 ✓

Not applicable

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 ✓

One sound velocity cast was acquired within the survey limits. Refer to the survey information summary. Sound velocity table nine was used for all 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 Field Procedures Manuel (FPM) 2.4.3. 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".*

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-10758 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 Sawyer Island, locally known and hence forth referred to in this report as Margarite Island, (945-2022) on June 20, 1997 until June 24,1997. 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 is attached to this report (dated Nov 17, 1997)
Use of Margarite Island tide gage data is recommended for final tide correctors.

H. CONTROL STATIONS See Evac Report, 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 Evac Report, section I

All soundings were positioned using differential GPS. Primary control was MIDWAY, the VHF differential reference station installed by RAINIER. 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, MIDWAY and GUSTAVUS, while the launches 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. MIDWAY was compared to GUSTAVUS during 8-hour daily comparisons and occasional performance checks. Some outliers

* Filed with hydrographic data.

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.
Problems with GPS control were encountered due in large part to mountains obstructing VHF and LF radio signals. Data was analyzed during office processing and found to reflect no significant problems.

J. SHORELINE See Final Report, section J

The shoreline manuscript from Coastal Mapping survey CM-8909 was supplied by N/CS341 in Standard Digital Data Exchange Format (SDDEF). The digital files from DM-10310 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. The advanced copy of DM-10310, included with this survey, shows shoreline in the area of Sawyer Glacier that is not available in the digital file.

No shoreline verification was done for this survey as very little of the shoreline available was in the area of hydrography. The current chart shows the glaciers in most of the area surveyed. Approximate shoreline was sketched on the smooth field sheet based on the hydrographer's view from the launch while conducting the hydrography. Shown on the smooth sheet as dashed red.

K. CROSSLINES ✓

No crosslines were done on this survey Concur

L. JUNCTIONS ✓

No contemporary surveys junction with this survey. Concur

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

Because this survey was to collect data in areas where the glaciers have receded, there is very little that coincides with prior surveys. Prior surveys H-1999 (1:40,000, 1889) and H-9480 (1:20,000, 1974) coincide with this survey in the area next to Margarite Island. H-1999 is not on board the ship. When compared to the digital copy of H-9480 using MapInfo and correcting for datum shift from NAD 27 to NAD 83, there is a general shoaling of approximately 1-6 fathoms in most of the common area. This could be because of sedimentation from these very active glaciers and possibly some glacial rebound as the glaciers continue to retreat from the island. Concur In the area immediately south of Margarite Island the current soundings were compared to three soundings from H-9480. The new soundings are between 8 and 30 fathoms shoaler. The cause for such a significant difference in such a small area is not evident.

There is a slight overlap between the current survey and H-9480 in the area in front of Sawyer Glacier. These soundings compare quite well. Concur

There is no overlap between the current survey and H-9480 in the area in front of South Sawyer Glacier. This survey picks up where H-9480 left off. The new data shows significantly shoaler water in the southern half of the inlet in the immediate vicinity of the junction with H-9480. The shoaling has the appearance of a small terminal moraine. Concur The new data did not overlap the prior so it is not possible to determine if the shoaling is new since H-9480 was conducted or it was deposited as the glacier receded without affecting the area covered by H-9480. The glacier face was in this area when the prior was conducted. Concur

Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey.

N. ITEM INVESTIGATIONS ✓

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

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

Chart 17300, 1:209,978, 27th Edition, 8/14/93 is the largest scale chart covering the survey area. There were no soundings in common with the survey area. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

Dangers to Navigation ✓

No new dangers were found.

P. ADEQUACY OF SURVEY See Final Report, section M and T.

H-10758 is adequate to supersede prior soundings in the small areas common with prior surveys and to provide soundings in the areas previously uncharted.

Q. AIDS TO NAVIGATION ✓

There were no Aids to Navigation on this survey. Concur

R. STATISTICS ✓

Refer to the survey information summary. *

S. MISCELLANEOUS ✓

No bottom samples were collected on this survey, depths here are beyond anchorable depths. No Secchi disk observations were made. The water carries a high load of glacial sediment and fresh water which block visibility.

T. RECOMMENDATIONS ✓

Holkham Bay, Tracy Arm, and Endicott Arm are visited by a very large volume of vessel traffic, from small sailboats to 600-foot cruise ships. This area is near Juneau, and just off Stephens Passage which is a major waterway for all north/south vessel traffic in Southeast Alaska. The area is very scenic and accessible to many types of craft. The volume of traffic has increased considerably in recent years and will continue to increase in the future. The coverage of these areas on 17300 and 17360 is inadequate for this traffic with particular emphasis on the areas in front of Sawyer and South Sawyer Glaciers. It is recommended that a new chart be compiled to cover Holkham Bay, Tracy Arm, and Endicott Arm. A large scale chart of this area will provide more adequate information for all sizes of traffic as well as provide information on the limited anchorage areas for small boats. Additional survey work was performed this year in the Holkham Bay area to fill in gaps in the coverage and make the charts more useful to small craft. If a new chart is not possible, it is essential that an inset be made of upper Tracy Arm for 17300. It is further recommended that shoreline in the newly surveyed area be obtained from NOS or an alternate source.

* Filed with the hydrographic data

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	1997	N/CS34
OPR-O324-RA 1997 Coast Pilot Report	1997	N/CS26
Project related data for OPR-O324-RA	Incremental	N/CS34

Respectfully Submitted,

J.D. Fleischmann
Chief Survey Tech., NOAA Ship Rainier

Approved and Forwarded,

Alan D. Anderson
Captain, NOAA
Commanding Officer

CONTROL STATIONS as of 6 Sep 1997 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
1	F	058:25:06.000	135:41:48.000	0	250	0.0	0.0		03/01/92	GUSTAVUS
2	F	057:59:22.443	133:50:34.643	0	250	0.0	0.0		03/01/92	SNET
3	F	057:54:43.873	133:59:33.022	0	250	0.0	0.0		03/01/92	TWIN
4	F	057:50:12.165	133:48:50.563	0	250	0.0	0.0		03/01/92	MIDWAY ISLAND LT

APPROVAL SHEET

for

H-10758

Standard techniques of Navigable Area Survey and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the Field Procedures Manual, as updated for 1994.

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.

DATE: August 8, 1997

Approved and Forwarded,

Alan D Anderson

Alan D. Anderson
Captain, NOAA
Commanding Officer
NOAA Ship RAINIER

Survey Information Summary

Project: OPR-0324-97 **Project Name:** STEPHENS PASSAGE

Instructions Dated: 1/30/97 **Project Change Info:**

Change #	Dated
1	4/3/97

Sheet Letter: TA **Registry Number:** H-10758

Sheet Number: RA-10-14-97

Survey Title: EASTERN TRACY ARM - HDAPS # 11 & #12

Data Acquisition Dates: **From:** 21-Jun-97 172 **To:** 24-Jun-97 175

Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2121	2				1			
2122	4	4	3		1			
2125	1							

Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
9		174	275.5	57/51/45 133/08/15	172-175

Tide Zone Information

Zone #	Time Corr.	Height Corr.
SEA10	000 hr 30 min	X1.04

Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-2022	SAWYER ISLAND	6/20/97	6/24/97

Statistics Summary

Type	Total:
DEV	2.17
MS	17.58
S/L	7.8
SPLIT	6.43

Percent XL:	0%
SQNM:	0.6

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-O324-RA
HYDROGRAPHIC SHEET: H-10758

LOCALITY: Stephens Passage, AK. (Sheet TA)

TIME PERIOD: June 21 - June 24, 1997

TIDE STATION USED: 945-2022 Sawyer Island, AK.
Lat. 57° 52.7'N 47 Lon. 133° 11.4'W 24
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.498 meters
4.50

REMARKS: RECOMMENDED ZONING SEA10
Use zone(s) identified as: SEA10B
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.

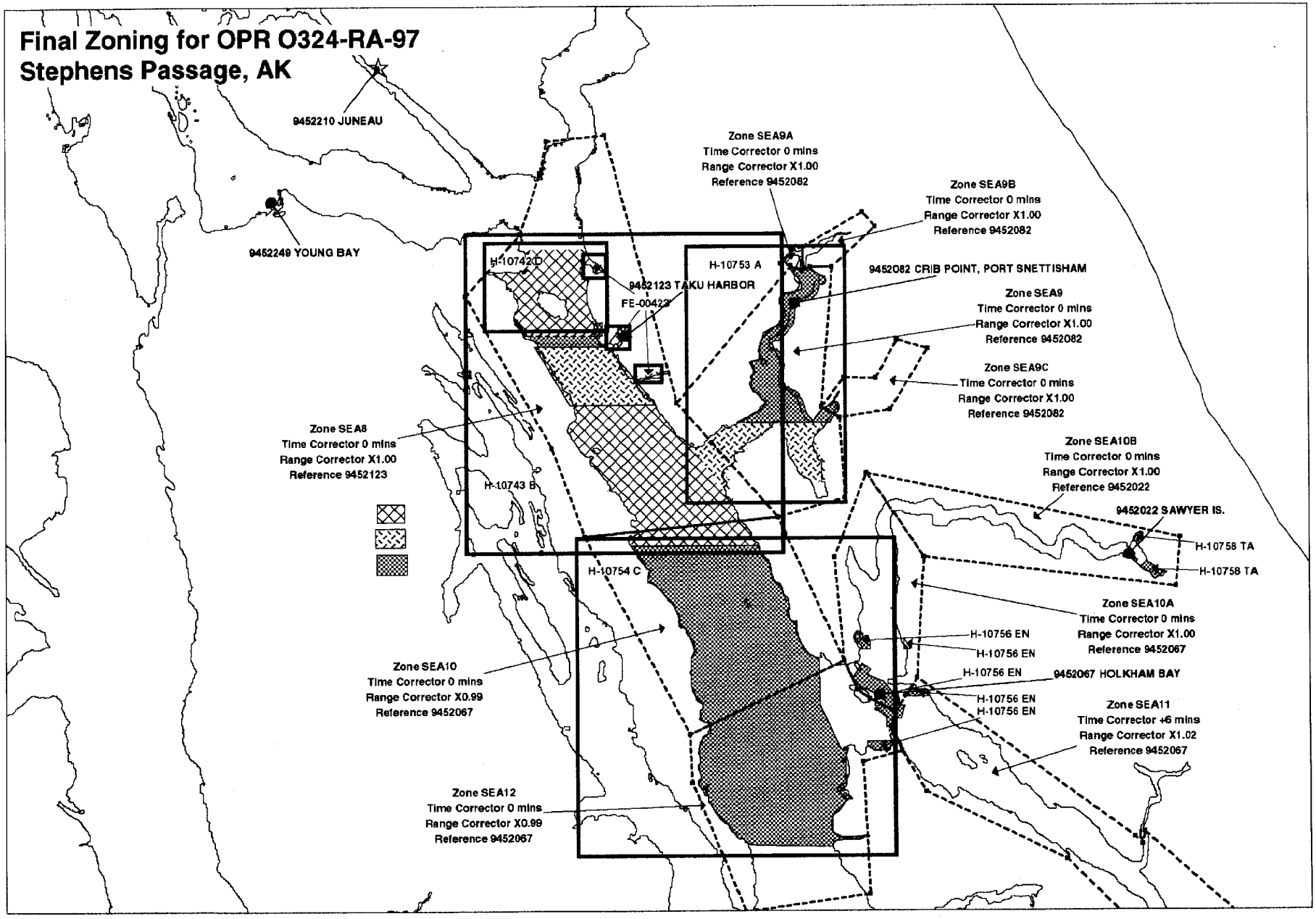
CHIEF, OPERATIONAL ANALYSIS BRANCH

Final tide zone node point locations for OPR O324-RA-97,
Sheet H-10758.

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 SEA10B			
-133.622517 57.950602	945-2022	0	1.00
-133.113872 57.894733			
-133.120708 57.852591			
-133.529631 57.8785			
-133.622517 57.950602			

CORFF.mix


Final Zoning for OPR O324-RA-97
Stephens Passage, AK
9452210 JUNEAU
9452249 YOUNG BAY
Zone SEA9A
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452082
Zone SEA9B
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452082
H-10742 D
H-10753 A
9452123 TAKU HARBOR
FE-00423
9452082 CRIB POINT, PORT SNETTISHAM
Zone SEA9
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452082
Zone SEA9C
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452082
Zone SEA8
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452123
H-10743 B
Zone SEA10B
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452022
9452022 SAWYER IS.
H-10758 TA
H-10758 TA
H-10754 C
Zone SEA10A
Time Corrector 0 mins
Range Corrector X1.00
Reference 9452067
H-10756 EN
H-10756 EN
H-10756 EN
9452067 HOLKHAM BAY
H-10756 EN
H-10756 EN
Zone SEA10
Time Corrector 0 mins
Range Corrector X0.99
Reference 9452067
Zone SEA11
Time Corrector +6 mins
Range Corrector X1.02
Reference 9452067
Zone SEA12
Time Corrector 0 mins
Range Corrector X0.99
Reference 9452067

(11-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

H-10758

Name on Survey	A On Chart No. 17300	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
HOLKHAM BAY (title)	X		X							2
SAWYER GLACIER	X		X							3
SOUTH SAWYER GLACIER			X							4
STEPHENS PASSAGE (title)	X		X							5
TRACY ARM	X		X							6
										7
										8
										9
										10
										11
										12
										13
										14
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										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

[signature]

Chief Geographer DEC 14 1998

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-10758

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

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

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):	DM-10310, GC 10439
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	Chart 17300 27th Edition, dated August 14, 1993

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS: VERIFICATION	AMOUNTS: EVALUATION	AMOUNTS: TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			

	TIME-HOURS: VERIFICATION	TIME-HOURS: EVALUATION	TIME-HOURS: 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	56		56
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		22	22
GEOGRAPHIC NAMES			
OTHER* (Chart Compilation)		5	5
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	56	27	83

Pre-processing Examination by: M. Bigelow	Beginning Date: 12/8/97	Ending Date: 12/8/97
Verification of Field Data by: R. Mayor, M. Bigelow, R. Davies	Time (Hours): 56	Ending Date: 12/8/98
Verification Check by: B. Olmstead	Time (Hours): 2	Ending Date: 12/9/98
Evaluation and Analysis by: R. Davies	Time (Hours): 22	Ending Date: 12/8/98
Inspection by: B. Olmstead	Time (Hours): 2	Ending Date: 12/10/98

EVALUATION REPORT

H-10758

A. PROJECT

In the original project instructions this survey area was not included. The hydrographer added this hydrographic survey to project OPR-O324-RA; dated January 30, 1997 at the request of the Southeastern Alaska Pilot's Association, the Alaska Coastwise Pilots Association and the U.S. Coast Guard.

B. AREA SURVEYED

The survey area is adequately described in the hydrographer's report.

The hydrographer has determined the inshore limits of safe navigation by defining a Navigable Area Limit Line (NALL) 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. A page-size plot of the charted area depicting the specific limits of supersession accompanies this report as Attachment 1.

No bottom samples were taken during surveying operations. Depths range from 1.5 to 119 fathoms

C. SURVEY VESSELS

The hydrographer's report contains adequate 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.

Processed digital data for this survey exists in the standard HPS format, a database format using the .dbf extension. In addition, the smooth sheet drawing is filed in the MicroStation format, i.e., dgn extension. Copies of these files have been forwarded to the Hydrographic Surveys Division and a backup copy retained at PHB. 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 names text, line-type data, and symbolization. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 35 and No. 75.

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

E. SONAR EQUIPMENT

Side scan sonar equipment was not used during survey H-10758.

F. SOUNDING EQUIPMENT

Sounding equipment has been adequately addressed in the hydrographer's report.

G. CORRECTIONS TO SOUNDINGS

Soundings and elevations below Mean High Water (MHW) 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 gauge: Sawyer Island, Alaska, 945-2022.

H. CONTROL STATIONS

Section 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:	-1.185 seconds	(-36.647 meters)
Longitude:	6.170 seconds	(101.694 meters)

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The quality of 87 positions exceeds limits 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. DGPS performance checks were conducted in the field and found adequate.

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

Additional information concerning specific control system type, 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 maps DM 10310 (1989) aerial photography and GC 10439 (1991) satellite imagery scales 1:20,000, were compiled on NAD83 and apply to this survey. Shoreline drawn on the smooth sheet in black originates from the above digital data as provided by the Coastal Mapping Program. The shoreline data and the hydrographic data were merged in MicroStation during the compilation of the smooth sheet.

There was considerable overlap between the shoreline maps, DM-10310 and GC-10439. Both shoreline maps were registered to survey H-10758 and considered as the source of the Mean High Waterline. Where the shoreline map agreed with the hydrography (best fit), that particular shoreline map was chosen as the source for the MHWL and identified on the smooth sheet. When neither shoreline map agreed with the hydrography, a dashed red line was drawn showing the approximate location of the shoreline based on the present hydrographic information.

Because of the physical dynamic changes of the area due to glacial activity shoreline changes have likely taken place continually between and after the photogrammetric compilation conducted in 1989and 1991.

The shoreline map and the results of the fieldwork as portrayed on the smooth sheet should supersede charted shoreline.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10758 does not junction with any contemporary survey.

M. COMPARISON WITH PRIOR SURVEYS

Survey	Year	Scale	Datum
H-9480	1974	1:20,000	NAD 27

The hydrographer's discussion of comparison with the prior surveys is covered in section M and supplemented as follows.

Prior survey H-9480 covers an area between latitude 57/51/51N and latitude 57/53/52N of the present survey. Sounding agreement is fair with the present survey depths shoaler by 1 to 6 fathoms. However, the standard depth curves show little change. Differences in depths with the prior survey are likely attributed to isostatic rebound and the deposition of glacial debris.

North of latitude 57/53/52N and south of latitude 57/51/51N there are no prior surveys. The receding South Sawyer Glacier and the Sawyer Glacier has permitted hydrographic operations to be conducted not possible in 1974. Sawyer Glacier and South Sawyer Glacier appear to have receded from 1-1.5 nautical miles since 1974. This is reflected in the fact that present hydrography was collected in these areas not covered by the prior survey work. A noticeable area of shoaling is evident in two locations, a 23 fathoms depth at latitude 57/51/55N, longitude 133/09/41W and a 29 fathoms depth at latitude 57/51/12N, longitude 133/07/05W. These two areas may have been caused by the deposition of a terminal moraine. A comparison with the prior shoreline reveals some significant changes primarily in the vicinity of Sawyer and South Sawyer Glacier where dynamic processes associated with glacial receding are readily evident.

One rock has been brought forward from the prior survey at latitude 57/53/43N, longitude 133/11/11W. Although the rock is located in approximately 5 fathoms of water, there was an inadequate investigation to disprove it.

With the transfer of the prior rock mention above, survey H-10758 is adequate to supersede the prior survey within the common area.

N. ITEM INVESTIGATIONS

There were no AWOIS items assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10758 was compared with the following chart:

Chart	Edition	Date	Scale
17300	27th	Aug. 14, 1993	1:209,978

a. Hydrography

Charted hydrography originates with the previously discussed prior. The prior survey has been adequately addressed in section M and requires no further discussion.

The application of this survey to charts of a scale less than 1:40,000 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 greater than 1:40,000 may be accomplished without generalization of features. The areas containing features which might be subject to generalization are described as:

Survey H-10758 is adequate to supersede charted hydrography within the charted area.

b. Dangers To Navigation

No dangers to navigation were discovered during survey. No additional dangers to navigation were found during office processing.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10758 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.

Hydrography on survey H-10758 was acquired in the field in metric units while the smooth sheet for this survey was compiled in fathoms to conform to the sounding unit of the existing NOS nautical charts in the area.

With the exception of the following 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.

In the event that the field units submission of survey data will exceed four weeks from the completion of field work, the Chief of Party will submit a written explanation for the delay indicating the anticipated transmittal date to the Chief of the appropriate processing section. Marine Center ships will forward their explanation through the Marine Center Director. Fieldwork for survey H-10758 was completed on June 24, 1997 but not received for office processing until December 5, 1997.

Q. AIDS TO NAVIGATION

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

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

R. STATISTICS

Statistics are adequately itemized in the hydrographer's report.

S. MISCELLANEOUS

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

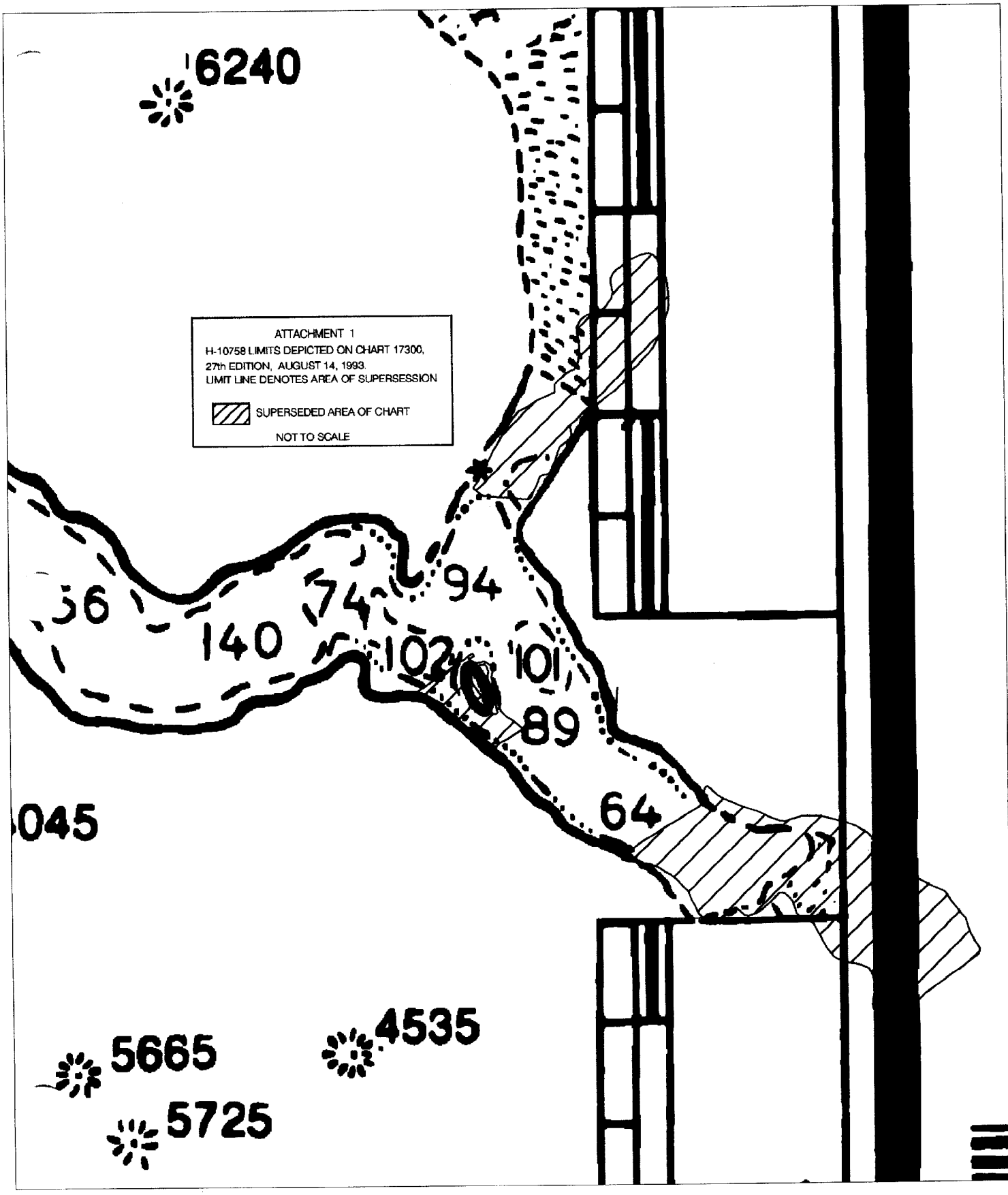
T. RECOMMENDATIONS

This is an adequate hydrographic survey. Additional fieldwork is recommended on a low priority basis to verify or disprove the rock mention in section M of the evaluation report. A recommendation to compile a new chart in Holkham Bay is addressed in the hydrographer's report, section T.

U. REFERRAL TO REPORTS

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

Russ Davies
Cartographer


6240
ATTACHMENT 1
H-10758 LIMITS DEPICTED ON CHART 17300,
27th EDITION, AUGUST 14, 1993.
LIMIT LINE DENOTES AREA OF SUPERSESSION
SUPERSEDED AREA OF CHART
NOT TO SCALE
36
140
74
94
102
101
89
64
045
4535
5665
5725

APPROVAL SHEET
H-10758

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: 12/10/98
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.

James C. Gardner Date: 12/22/98
James C. Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: Feb 19, 1999
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-10758

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	12/10/98	Russ Davies	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. Full application of soundings and features from smooth sheet.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.