H10806

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-10-5-98

Registry No. H-10806

LOCALITY

State ..... Alaska

General Locality ..... Lynn Canal

Sublocality ..... Taiya Inlet

.....

1998

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.

HYDROGRAPHIC TITLE SHEET

H-10806

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-10-5-98

State: Alaska

General locality: Lynn Canal

Locality: Taiya Inlet

Scale: 1:10,000 Date of survey: April 29-May 27, 1998

Instructions dated: March 5, 1998 Change #1 dated 3/30/98 Project No.: OPR-0340-RA

Vessel: RAINIER(2120),RA-2(2122),RA-3(2123),RA-4(2124),RA-5(2125),RA-6(2126)

Chief of party: CAPT Alan D.Anderson, NOAA

Surveyed by: CAPT A.Anderson, LT R. Fletcher, LT D.Baird, RH M. Lathrop, ST J. Lazar, ST D. Pattison, ST W. Lin, ST F. Lozier, ST M. Stecher

Soundings taken by echo sounder, ~~hand lead, pole~~: DSF-6000N, Knudsen 320M, HYDRO CHART II(IDSSS) RESON SEABAT 8101(SWMB)

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

Evaluation by:

~~Protracted by~~: I. Almacen Automated plot by: HP Design Jet 650C

Verification by: M.Bigelow,D.Doles,E.Domingo,D.Hill,R.Shipley,R.Mayor,G.Nelson,I.Almacen

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

REMARKS: All times are UTC, revisions and marginal notes in black were generated during office of 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

3/25/99, MCR

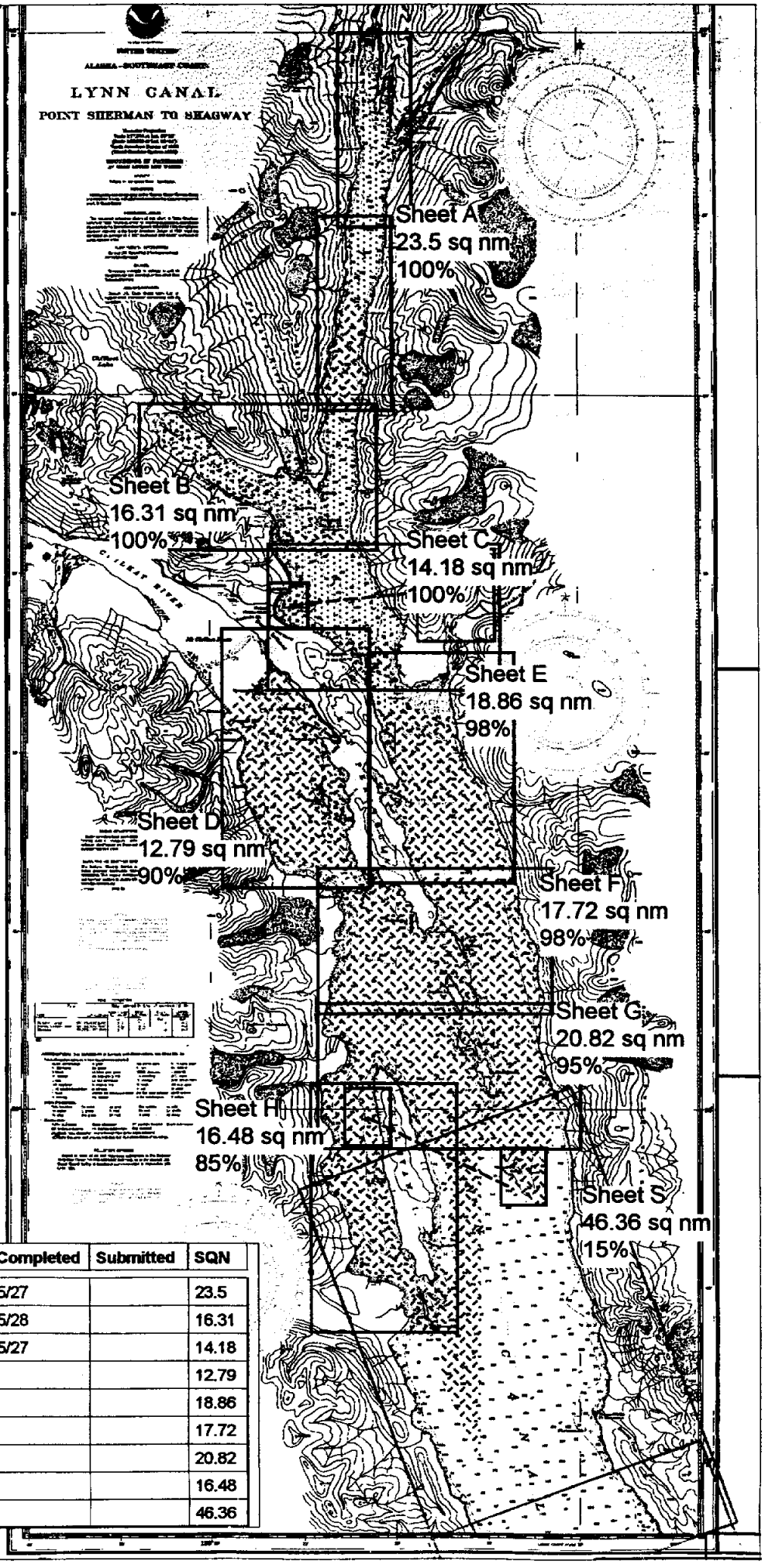
8/6/99 mcr

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

PROGRESS SKETCH

OPR-O340-RA
Lynn Canal, Alaska
April - May 1998
Capt. A. D. Anderson, NOAA
Commanding

Chart 17317

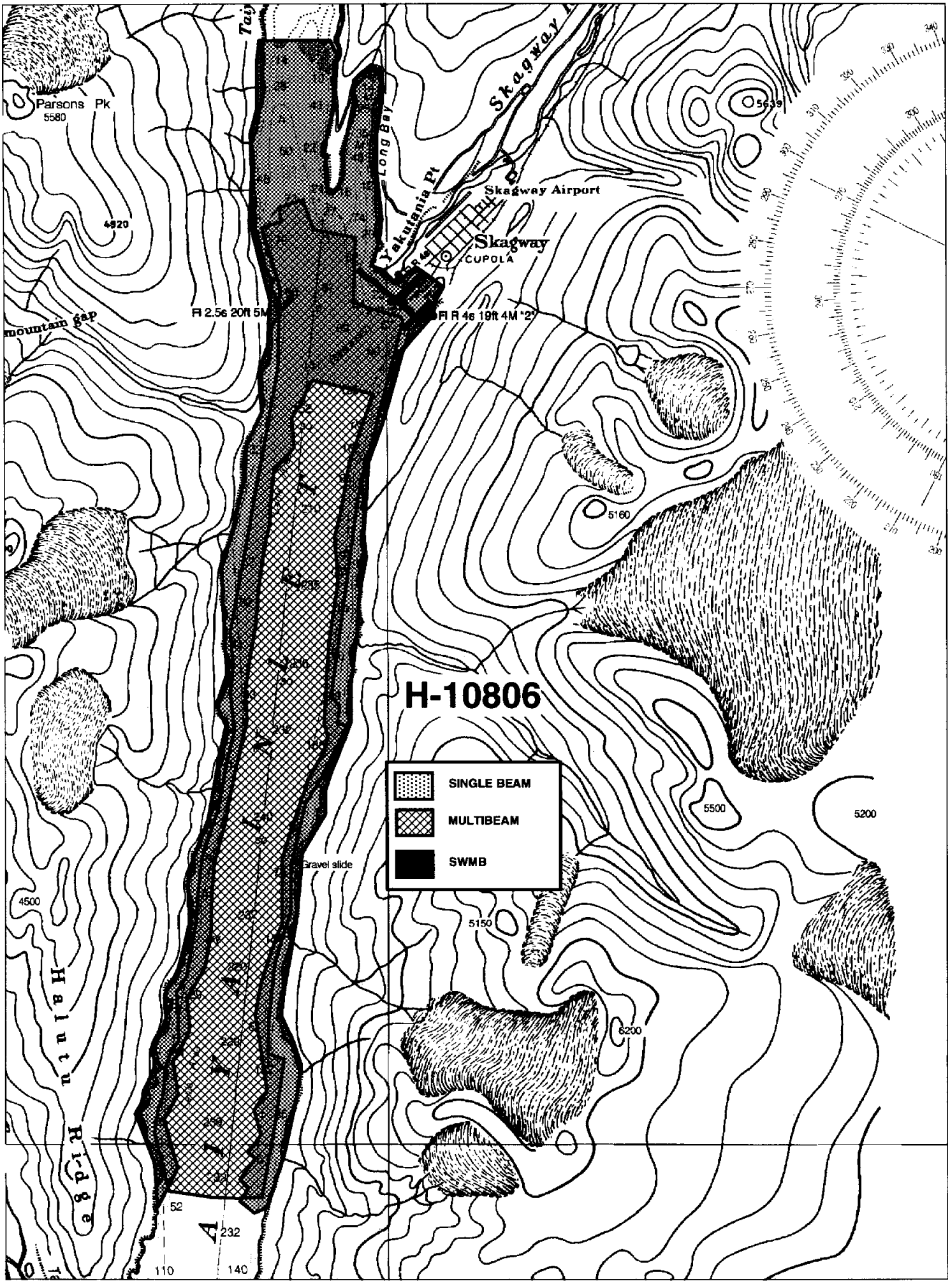


Downtime_Type	April	May
Weather - Hr	0	0
Mechanical -Hr	0	0
Electronic -Hr	1	0

Accomplished	April	May
LNM Hydro	745.57*	1787.8*
LNM SSS	0	0
SQ NM	43.89	98.20
AWOIS Invest.	0	16
Other Invest.	0	2
LNM Multibeam	59.7	395.3
Days at Sea	15	25

* Does not include SWMB

Sheet	Reg_No	Started	Percent	Completed	Submitted	SQN
A	H-10806	4/29	100	5/27		23.5
B	H-10736	4/22	100	5/28		16.31
C	H-10808	4/24	100	5/27		14.18
D	H-10811	5/11	90			12.79
E	H-10807	4/28	98			18.86
F	H-10810	5/6	98			17.72
G	H-10812	5/12	95			20.82
H	H-10815	5/21	85			16.48
S	H-10816	5/28	15			46.36


Parsons Pk
5580
4920
Long Bay
Yakutania Pt
Skagway Airport
Skagway
CUPOLA
Fl R 4s 19ft 4M "2"
Fl R 2.5s 20ft 5M
mountain gap
5639
5160
5500
5200
6200
5150
4500
H-10806
SINGLE BEAM
MULTIBEAM
SWMB
Gravel slide
Haluta Ridge
52
232
110
140

Descriptive Report to Accompany Hydrographic Survey H-10806

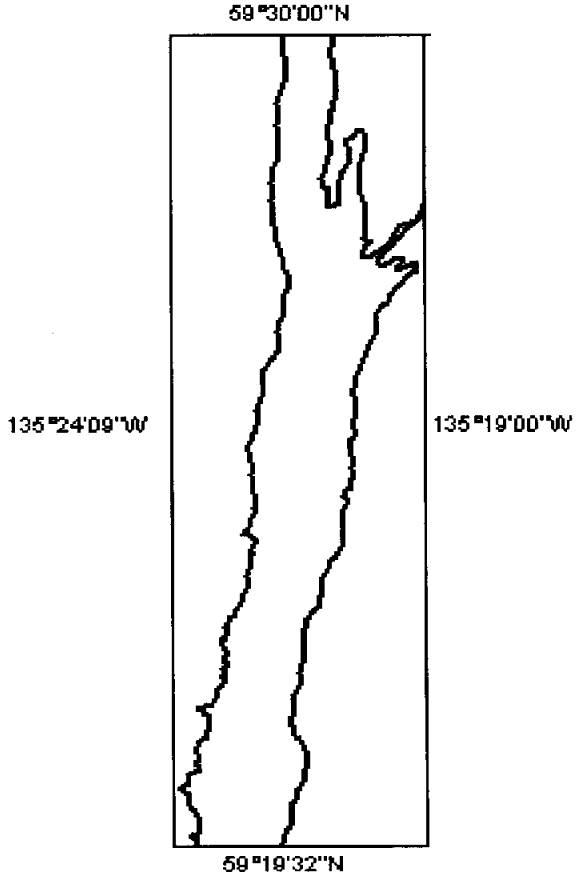
Field Number RA-10-5-98
Scale 1:10,000
NOAA Ship RAINIER
Chief of Party: Captain Alan D. Anderson, NOAA

A. PROJECT ✓

This basic hydrographic survey was completed in Lynn Canal as specified by Project Instructions OPR-O340-RA dated March 5, 1998. There has been one change to the original instructions, dated March 30, 1998. Survey H-10806 corresponds to sheet A as defined in the sheet layout. This survey responds to requests from the Southeastern Alaska Pilot's Association, the commercial fishing industry and the cruise line industry. This survey will provide data to supersede surveys performed in 1905, 1922 and 1943.

B. AREA SURVEYED (See EVAL RPT., Sec. B)

The survey area is Taiya Inlet. Taiya Inlet is a very deep fjord at the northern extension of Lynn Canal. The survey consists of one sheet with the following approximate boundaries: This survey area includes Skagway, Nahku Bay, to the vicinity of Taiya River.



This sheet is divided into two panels 100 cms in length. Data acquisition was conducted from April 29, 1998 (DN 119) to May 27, 1998 (DN 147).

C. SURVEY VESSELS ✓

Data were acquired by the RANIER and the RAINIER survey launches as noted in the Survey Information Summary printout appended to this report. No unusual vessel configurations were used.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

Single beam echosounder data were acquired using Hypack version 7.9 from Coastal Oceanographics and processed using Hydrographic Processing System (HPS). Swath data collected by the RAINIER were acquired and processed using Intermediate Depth Swath Survey System (IDSSS) and Hydrochart II (Seabeam Inc.) programs. Shallow water multibeam echosounder data were acquired using the Reson SeaBat 8101 with ISIS version 3.21 and processed using CARIS software. Raster image and shoreline data in MapInfo facilitated charted and prior survey comparisons. Final Detached Positions and soundings based on predicted tides were saved in MapInfo 4.5 format. A complete listing of software for HYPACK and HPS is included in Appendix VI. *

E. SONAR EQUIPMENT ✓

Side Scan Sonar was not used on this survey. concur. However, during shallow-water multibeam acquisition, a significant manmade object was detected with the Triton ISIS digital sonar imaging. See Separate VII for a completed report listing on the resulting dive operation.

F. SOUNDING EQUIPMENT ✓

The primary sounding instrument for this survey was a Raytheon Model 6000N Digital Survey Echosounder. Both high (100 kHz) and low (24 kHz) frequency sounding data were recorded during data acquisition. DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting, but in depths over 300 meters, low frequency was scanned in place of the high when the fathometer lost its high frequency trace. The Knudsen 320M is a dual frequency, thermal depth sounder using the same transducer frequencies.

The IDSSS data acquisition system (DAS) consists of a Digital Equipment Corporation's (DEC) VAX Station 4000-90 computer system interfaced with a Seabeam Instruments Inc. Hydrochart II sonar system, Datawell heave-roll-pitch sensor (HIPPY), Sperry gyrocompass, a Trimble P-code GPS system, and Ashtech DGPS system. Hydrochart II is a multibeam sonar system that uses two transducer arrays (at 36 kHz) to produce an athwartship swath of bathymetric data approximately 2.5 times the water depth. The DEC VAX Station 4000-90 computer collected input from the Hydrochart II, HIPPY, gyrocompass, and the navigation system. It also provided guidance to the helmsman and plotted a near real time contour map. The DAS consisted of the following equipment:

DAS EQUIPMENT

Hydrochart II Sonar System	DEC Server DSRVW-7C
DEC VAX Station 4000-90 (DAS)	TTi 8212 Tape Drive
Sperry MK 227 Gyrocompass	DATAWELL Hippy
ZETA 24" Plotter	DEC monitor

* Filed with the hydrographic data.

The ship speed was reduced to provide full ensonification of the sea floor and provide a minimum of 4 pings per plotable unit area (PUA) A PUA of 50 meters was used during processing of the Hydrochart II data.

The DEC VAX Station 4000-90 computer was used to process the data and create corrected merge files and selected sounding files which were exported and combined with SWMB and single-beam data in HPS and in MapInfo.

Supplemental soundings in and around Skagway Harbor were acquired with the Reson SeaBat 8101 Shallow Water Multibeam (SWMB) system employed on Launch 2123. The Reson SeaBat 8101 ensonifies the seafloor with a 150° swath consisting of 101 individual 1.5° x 1.5° beams. The system was designed to meet International Hydrographic Organization standards to measure the seafloor at a maximum range of 320 meters. Prior to beginning SeaBat data acquisition on this survey, the RA-3 CARIS Vessel Configuration File was updated to define the physical relationship between the various components that comprise the system, including the SeaBat transducer head, POS-MV heave, roll and pitch sensor, and GPS antenna. In addition, this offset file contains heave, roll and pitch biases determined during a "Patch Test" conducted off Port Angeles, WA on March 24, 1998. A copy of the Vessel Configuration File is contained in Separate III. The center of launch 2123's keel was cut and modified to house the transducer. The originally installed DSF-6000N singlebeam transducer remained installed as before. The new configuration is included in Separate III. (Not found in Separate III)

G. CORRECTIONS TO ECHO SOUNDINGS ✓

Three sound velocity casts were acquired within the survey limits as shown in the appended Survey Information Summary report. The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated January 27, 1998, and (S/N 2453), calibrated January 10, 1998, and (S/N 2477), calibrated February 6, 1988. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.3 (1997), in accordance with Field Procedures Manual (FPM) section 2.4.3. Printouts of the sound velocity profile, data, and correctors used in field processing are included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections"*The following velocity casts supplied correctors for this survey:

Cast Number	DN	HPS Table	Applied to Days
98117173.RA	117	9	117-122
98124191.RA	124	2	124-125, 127
98147181.RA	147	7	147

Casts for HPS Tables 7 & 9 were taken outside of the survey limits.

RAINIER'S static transducer depth was determined during dry-dock in April 1998 using the form in Field Procedures Manual (FPM) Fig. 2.2.

Offsets for GPS antennas, static draft, and settlement and squat correctors were tabulated in the HPS Offset Tables. Printouts of these tables are included with project data for OPR-O340-RA-98. Static draft and transducer offsets for launches 2122, 2123, 2124, 2125 and 2126 were measured on March 26, 1998. Offset table #7 was used for the RAINIER

Settlement and squat values for launch 2122 were last measured on June 11, 1998 at Shakan Strait, AK.
Settlement and squat values for launch 2123 were last measured on March 24, 1998 at Port Angeles, WA.
Settlement and squat values for launch 2124 were last measured on June 11, 1998 at Shakan Strait, AK.
Settlement and squat values for launch 2125 were last measured on June 21, 1998 at Chilkat Inlet, AK.
Settlement and squat values for launch 2126 were last measured on June 10, 1998 at Shakan Strait, AK.
Settlement and squat values for the RANIER were last measured on September 21, 1997 at Kings Bay, AK.
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). HPS listings of the data used in generating tidal correctors are included in Appendix V of this report.* Tidal correctors as provided in the project instructions for H-10806 are shown on the appended Survey Information Summary report.

Juneau, Alaska (945-2210) and Skagway, Alaska (945-2400) are the primary control stations for datum determination at all subordinate stations. RAINIER personnel installed Sutron 8200 tide gauges at Taiyasanka (945-2434) on April 22, 1998, and Berners Bay (945-2346) on April 20, 1998. The Taiyasanka gauge was removed on June 20, 1998 and the Berners Bay gauge was removed on June 22, 1998.

Refer to the Field Tide Notes and supporting data in Appendix V* for individual gage performance and level closure information. This information will be forwarded to N/OES212 on a date to be announced in accordance with HSG 50 and FPM 4.3. A request for approved tides will be forwarded to N/OES23 on a date to be announced in accordance with FPM 4.2.3. Approved Tide Note dated September 9, 1998 is attached to this report.

H. CONTROL STATIONS (See EVAL RPT., Sec. H)

The horizontal datum for this project is NAD 83. Station TAI was used to verify and establish local geodetic control for this survey. See the OPR-O340-RA-98 Horizontal Control Report for more information. A list of control stations used on this survey is included in this report.

I. HYDROGRAPHIC POSITION CONTROL (See EVAL RPT., Sec. I)

All soundings were positioned using differential GPS. A VHF differential reference station at station TAI was used as primary hydrographic control. The USCG beacon located at Gustavus, AK was also used when the VHF reference station was unavailable.

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 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. Periodic comparisons and occasional performance checks were logged with the SHIPDIM system. No outliers were recorded. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-O340-RA-98.

J. SHORELINE (See EVAL RPT., Sec. J)

There was no photogrammatic shoreline manuscript provided for this survey. Shoreline shown is from NOS Chart 17317, 16th edition, April 18, 1992, and is shown in brown for orientation purposes only.

Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch is 5-50 meters offshore of apparent low tide, generally 3-10 meters of depth at Mean Lower Low Water. Features shown on the *shorenotes* layer in the MapInfo workspace 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. There was general agreement between the charted shoreline and what the hydrographer found on this survey.

All charted shoreline features were verified in the field. All new positions were verified by detached field positions and are shown in red on the detached position, bottom sample and shoreline plot. Data has been analyzed during office processing and shown on the Smooth Sheet as Warranted.

* Filed with the hydrographic data.

K. CROSSLINES ✓

Concur.

Crosslines agreed within 1 meter with mainscheme hydrography, except in areas of steep bathymetry. There were a total of 11.59 nautical miles of crosslines, comprising 12.1% of mainscheme hydrography.

L. JUNCTIONS (See EVAL RPT., Sec. L)

Junctions with the main survey area:

Registry #	Scale	Date	Junction side
H-10736	1:10,000	1998	South

Junction soundings with the survey above were found to be in general agreement with this survey. Differences of one fathom or less were observed except in steep sloping areas. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

M. COMPARISON WITH PRIOR SURVEYS (See EVAL RPT., Sec. M)

The following table depicts prior surveys that lie within that area surveyed for H-10782.

Registry #	Scale	Date	Area Covered
H-4226WD	1:40,000	1922	Entire Survey
H-6945	1:2,000	1943	Skagway Harbor and Approaches
H-6946	1:5,000	1943	Nahku Bay
FE-358	1:5,000	1990	Vicinity of Skagway
FE-416	1:5,000	1994	" "
H-1057	1:40,000	1890-95	Upper Part of Lynn Canal

H-4226WD covers the entire survey area of sheet A. Due to the great depth of the area, much of the wire-drag was well clear of the bottom. Agreement between the present survey and H-6945 is excellent, except to the northwest of the ferry pier where the present survey shows 6 to 7 fathoms where there was once less than 1 meter. Chart 17317 also shows about 6 to 7 fathoms in this area. H-10806 shows shoaling of 2-3 fathoms since H-6946 was surveyed in Nahku Bay, most likely due to silting from the stream flowing into the head of the bay.

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

N. ITEM INVESTIGATIONS ✓

AWOIS No. 52387 ✓

Item Description: Grounded Barge (PA)
Source: CL1825/76—CPR8
AWOIS Position: 59°28'42.00"N, 135°20'15.20"W
Required Investigation: Full, Visual, Echosounder, 50 m radius
Charts Affected: 17317

Investigation

Date (s)/DN (s): May 27, 1998 / DN 147

Position Number: 21399

Positioned Determined by: DGPS

Investigation Summary: Investigated using visual reconnaissance and photographed with a digital camera (see photo below). A wooden wreck, almost completely rotted away, was found as charted. The detached position was taken by positioning the launch as close as possible (10 m) to the wreck while it was sitting on the shoreline at low tide. Also, the launch was run over the wreck at high tide and echosounder depths were recorded.

Method	Depth (m)	Depth (fathoms)	Fix #	Latitude (N)	Longitude (W)
DP	-0.2	-0.1	21399	59°28'41.502"N	135°20'16.684"W
Echosounder	0.3	0.1	21561	59°28'42.110"N	135°20'17.048"W

Charting Recommendation

Hydrographer recommends retaining the wreck as charted. Note that this area is a cul-de-sac with little or no vessel traffic. *Concur.*

AWOIS No. 52388 ✓

Item Description: Obstruction (11 charted piles)

Source: CL1825/76—CPR8

AWOIS Position: 59°28'40.50"N, 135°20'13.00"W

Required Investigation: Full, Visual, Echosounder

Charts Affected: 17317

Investigation

Date (s)/DN (s): May 27, 1998 / DN 147

Position Number: none

Positioned Determined by: N/A

Investigation Summary: Investigated using visual reconnaissance at low tide and photographed with a digital camera. Two of the piles appear at the far right of the photo on the previous page. Seven of the eleven charted piles were found. A sketch showing the approximate heights and locations of the seven piles is attached in the Detached Positions Forms Folder. It is possible that the remaining 4 piles could be submerged at low tide.

Charting Recommendation

retaining the remaining charted seven (7) piles found during this survey.

Hydrographer recommends retaining the ~~obstruction~~ piles as charted. Note that this area is a cul-de-sac with little or no vessel traffic. Concur.

****

COMPILATION NOTES

One least depth dive was performed on May 9 1998 (DN 129).

Position	Latitude (N)	Longitude (W)	Depth (fathoms)	Depth (meters)
44090 ✓	59° 26' 50.789" ✓	135° 19' 23.457" ✓	~~6.0~~ 5.7	~~11.0~~ 10.5

ASSIGNED AWOIS # 52443, NCR

This dive was performed on a manmade object near the Railroad Pier at Skagway. This object was discovered during multibeam operations and picked off with the Triton ISIS imagery display. A steel pipe 3.5 meters in diameter was found on a steep slope. Due to the steepness of the slope and the presence of shoaler depths in the vicinity, no Danger to Navigation report was filed. Concur. Chart pipe as a submerged obstn. Chart [5½ obstn]

O. COMPARISON WITH THE CHART (See EVAL RPT., Sec. O)

Two charts are affected by this survey:

Chart 17300
27th Ed. August 1993
Scale: 1:209,978

Chart 17317
18th Ed. June 14, 1997
Scale: 1:77,812
Inset Scale: 1:10,000

Comparisons with Chart 17317 show significant shoaling at the mouth of the Taiya River. The chart shows 8 to 14 fathoms where mud flats are now present. Concur From the northern part of Taiya Inlet to the southern end of the sheet the survey agrees very well with the chart, with allowances made for the extremely steep nature of the bottom. & continuous erosion and silting in the area.

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

Dangers to Navigation ✓

No Dangers to Navigation were reported for this survey. Concur.

P. ADEQUACY OF SURVEY (See EVAL RPT., Sec. P)

Survey H-10806 is complete and adequate to supersede prior soundings and features in their common areas.
Concur with clarification

Q. AIDS TO NAVIGATION (See EVAL RPT., Sec. Q)

The following three fixed navigational aids are within the survey area. They were located and a third-order position was obtained with DGPS. The ~~full reports~~ position computation printouts are in Appendix II. *

Name	Light List No.
Skagway Breakwater Light 2	23935
Skagway Terminal Dock Light	23937
Taiya Inlet Light	23940

* Filed with the hydrographic data.

R. STATISTICS ✓

Refer to the Survey Information Summary attached to this report.

S. MISCELLANEOUS ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. No unusual tidal currents or magnetic variations were found during this survey. Concur.

T. RECOMMENDATIONS (See EVAL RPT., Sec. T)

The Hydrographer recommends removing the green wire drag tint from Chart 17317. Concur.

CRS scanned images were of a very poor quality. Portions of shoreline were unusable. Shoreline was digitized from the usable portions of the CRS and digitized from the chart. In the future if digital shoreline can not be provided then the field unit would rather digitize their own shoreline from the chart. Concur.

The most recent edition of Chart 17317 shows Long Bay in place of Nahku Bay, a departure from earlier editions. Long Bay should be changed back to Nahku Bay, as per the Directory of Alaska Place Names, Geological Survey Professional Paper 567 (p. 670), Dept. of the Interior. Concur.

U. REFERRAL TO REPORTS ✓

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

Title	Date Sent	Office
OPR-O340-RA Horizontal Control Report	TBA	N/CS34
OPR-O340-RA 1998 Coast Pilot Report	TBA	N/CS26
Project related data for OPR-O340-RA	Incremental	N/CS34

Respectfully Submitted,

Mark T. Lathrop
Rotating Hydrographer, NOAA

Approved and Forwarded,

Alan D. Anderson
Captain, NOAA
Commanding Officer

Survey Information Summary

Project: OPR-O340-98 **Project Name:** LYNN CANAL

Instructions Dated: 3/5/98 **Project Change Info:**

Change #	Dated
1	3/30/98

Sheet Letter: A **Registry Number:** H-10806

Sheet Number: RA-10-05-98

Survey Title: Northern Lynn Canal

Data Acquisition Dates: From: 29-Apr-98 119 To: 27-May-98 147

Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2120							1	
2122	2	4		4	1	1		
2124	1	1			2	3		
2125	2	1		1	1	2	1	
2126	1	4	1					

Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
	20	125	287.8	59/06/42	
				135/16/19	
1	20	112	546	59/17/58	
				135/22/43	
9	20	117	551.5	59/18/36	
				135/22/42	
2	20	124	478.8	59/24/45	
				135/21/09	
7	20	147	541.9	59/18/06	
				135/22/42	

} Not used for this survey.

Tide Zone Information

Zone #	Time Corr.	Height Corr.
SEA1D	000 hr 00 min	X1.02

Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-2434	TAIYASANKA HARBOR	4/21/98	

Statistics Summary

Type	Total:
BS	13
DEV	7.88
DP	28
MBMS	31.1
MBSP	2.9
MBXL	5.6
MS	76.65
S/L	10.65
SPLIT	48.34
XL	26.74

Percent XL:	34.9%
SQNM:	23.5

List of Horizontal Control Stations

NAME	STATE	TYPE	LATITUDE	LONGITUDE	SITEID	DEC_LAT	DEC_LON
ACE	AK	DGPS Flyaway	58 58.2659N	135 13.2729W	n/a	58.97109833	135.22121500
ANNETTE ISLAND	AK	USCG Beacon	55 04.1000N	131 36.0000W	889	55.06833333	131.60000000
GUSTAVUS	AK	USCG Beacon	58 25.1000N	135 41.8000W	892	58.41833333	135.69666667
LETNIKOF	AK	DGPS Flyaway	59 10.4206N	135 24.0383W	n/a	59.17367667	135.40063833
TAI	AK	DGPS Flyaway	59 17.2739N	135 24.1058W	n/a	59.28789833	135.40176333

Plot outside the survey area.

APPROVAL SHEET

for

H-10806

Standard field surveying and processing procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the 1994 version of the Field Procedures Manual. 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.

DATE: June 29, 1998

Approved and Forwarded,

Alan D. Anderson

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

NOAA FORM 76-155
(11-72)

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

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10806

Name on Survey	A ON CHART NO. 1737	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
DYEA POINT	X		X							2
LYNN CANAL (title)	X		X							3
NAHKU BAY	X		X							4
SKAGWAY	X		X							5
SKAGWAY RIVER	X		X							6
TAIYA INLET	X		X							7
TAIYA RIVER	X		X							8
YAKUTANIA POINT	X		X							9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Approved:

Chief Cartographer AUG 3 1998

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 9, 1998

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-0340-RA
HYDROGRAPHIC SHEET: H-10806

LOCALITY: Lynn Canal, Taiya Inlet, AK

TIME PERIOD: April 29 - May 27, 1998

TIDE STATION USED: 945-2400 Skagway, Taiya Inlet, AK
Lat. 59° 27.0'N Lon. 135° 19.5'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.799 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEA1C & SEA1D.

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.

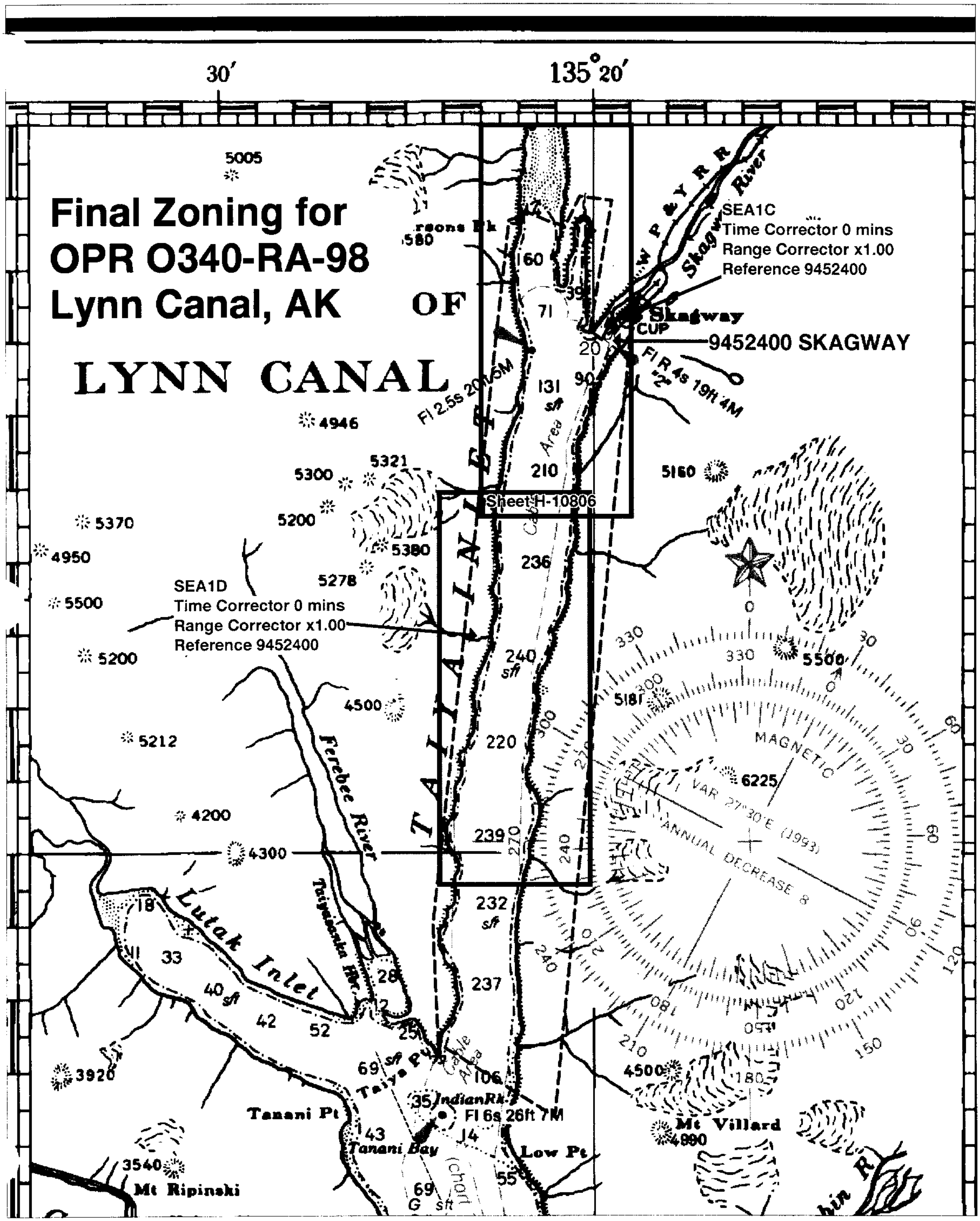
Note 2: Tidal zones north of the provided zones required that tide gauges be installed if hydrographic surveys were conducted there. Although this hydrographic sheet extends beyond the provided zones, no gauges were installed in these areas and therefore it is assumed that hydrographic surveys were not conducted in these areas. Thus, these zones are not provided.

CHIEF, OPERATIONAL ANALYSIS BRANCH

Final tide zone node point locations for OPR 0340-RA-98,
Sheet H-10806.

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 SEA1C			
-135.327167 59.456847	945-2400	0	1.00
-135.335279 59.452373			
-135.330076 59.450301			
-135.323705 59.455552			
-135.327167 59.456847			
Zone SEA1D			
-135.31633 59.45583	945-2400	0	1.00
-135.330076 59.450301			
-135.335279 59.452373			
-135.325555 59.482326			
-135.339823 59.483217			
-135.346609 59.476037			
-135.349706 59.476919			
-135.351254 59.476904			
-135.363299 59.479614			
-135.3659 59.479662			
-135.365621 59.478717			
-135.371399 59.477693			
-135.405623 59.316041			
-135.403119 59.288988			
-135.351351 59.272134			
-135.31633 59.45583			



Final Zoning for
OPR O340-RA-98
Lynn Canal, AK
LYNN CANAL
OF
30′
135°20′
SEA1C
Time Corrector 0 mins
Range Corrector x1.00
Reference 9452400
Skagway
CUP
9452400 SKAGWAY
Fl 2.5s 20ft 6M
Fl R 4s 19ft 4M
"2"
Skagway River
W P & Y R R
Sheet H-10806
SEA1D
Time Corrector 0 mins
Range Corrector x1.00
Reference 9452400
TAIYA INLET
Ferebee River
Lutak Inlet
Taiyasanka Hbr
MAGNETIC
VAR 27°30′E (1993)
ANNUAL DECREASE 8′
Taiya Pt
Indian Rk
Fl 6s 26ft 7M
Tanani Pt
Tanani Bay
Low Pt
Mt Villard
Mt Ripinski
Cable Area

NOAA FORM 77-27(H) (9-83) | U.S. DEPARTMENT OF COMMERCE | REGISTRY NUMBER

HYDROGRAPHIC SURVEY STATISTICS

H-10806

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						

SHORELINE DATA

SHORELINE MAPS (List):	CRS#00298 (BP164347), CRS#00398 (BP164346)
PHOTOBATHYMETRIC MAPS (List):	None
NOTES TO THE HYDROGRAPHER (List):	None
SPECIAL REPORTS (List):	None
NAUTICAL CHARTS (List):	17317, 18th Edition, June 14, 1997

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 (Selected)			24,831
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	360.5		360.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		24	24
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		45	45
GEOGRAPHIC NAMES			
OTHER* (Chart Compilation)		119.5	119.5
TOTALS	360.5	188.5	549.0

*USE OTHER SIDE OF FORM FOR REMARKS

Pre-processing Examination by M. Bigelow	*Beginning Date* 8/4/98	*Ending Date* 8/5/98
Verification of Field Data by I.Almacen, D.Hill, R.Shipley M.Bigelow,D.Doles,E.Domingo,R.Mayor,G.Nelson,	*Time (Hours)* 360.5	*Ending Date* 3/2/99
Verification Check by B. Olmstead	*Time (Hours)* 9	*Ending Date* 2/23/99
Evaluation and Analysis by I. Almacen	*Time (Hours)* 69	*Ending Date* 2/12/99
Inspection by B. Olmstead	*Time (Hours)* 7	*Ending Date* 3/3/99

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10806(AdWk)

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						
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

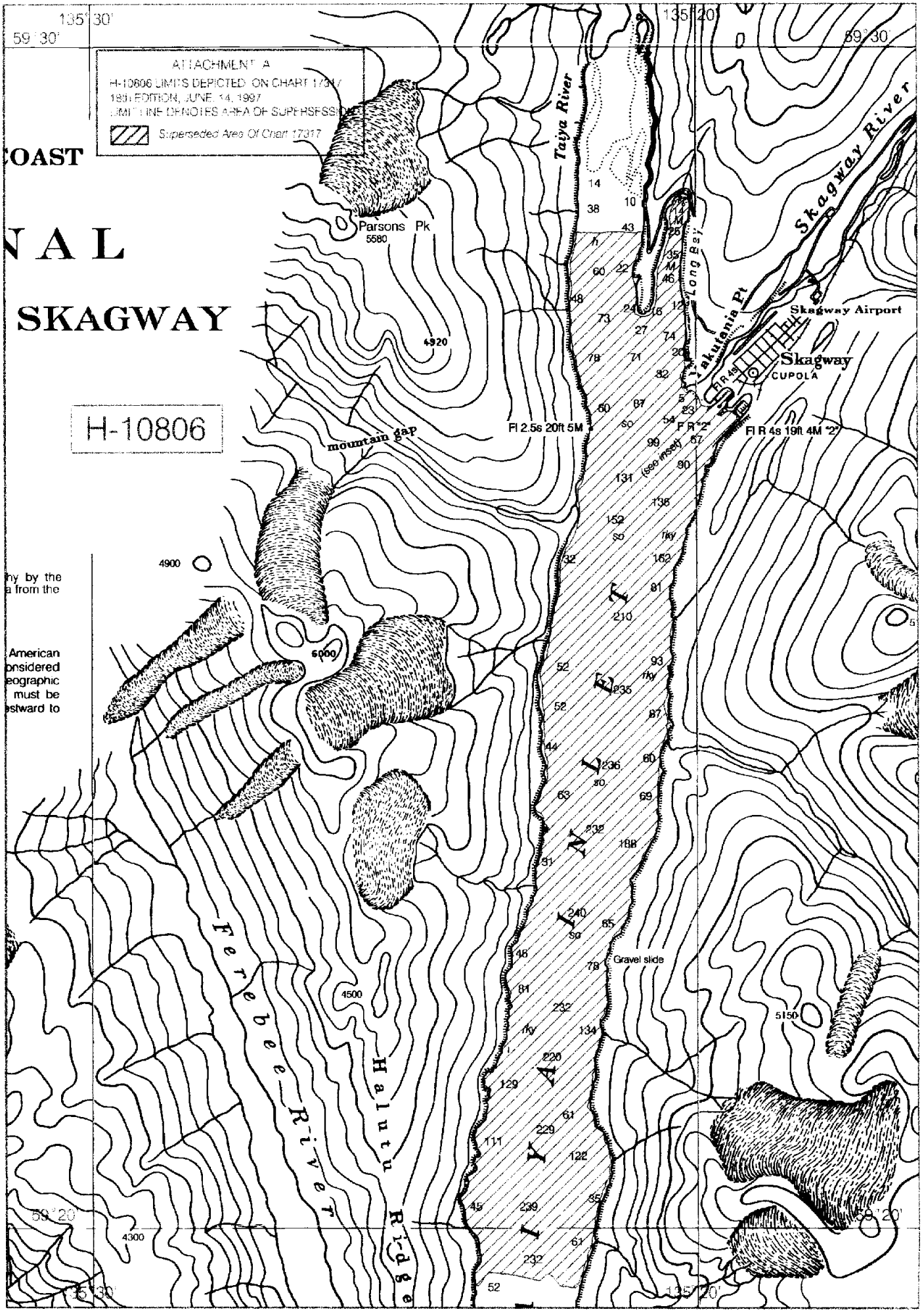
SHORELINE MAPS (List):	CRS#00298 (BP164347)
PHOTOBATHYMETRIC MAPS (List):	None
NOTES TO THE HYDROGRAPHER (List):	None
SPECIAL REPORTS (List):	None
NAUTICAL CHARTS (List):	17317, 18th Edition, June 14,1997

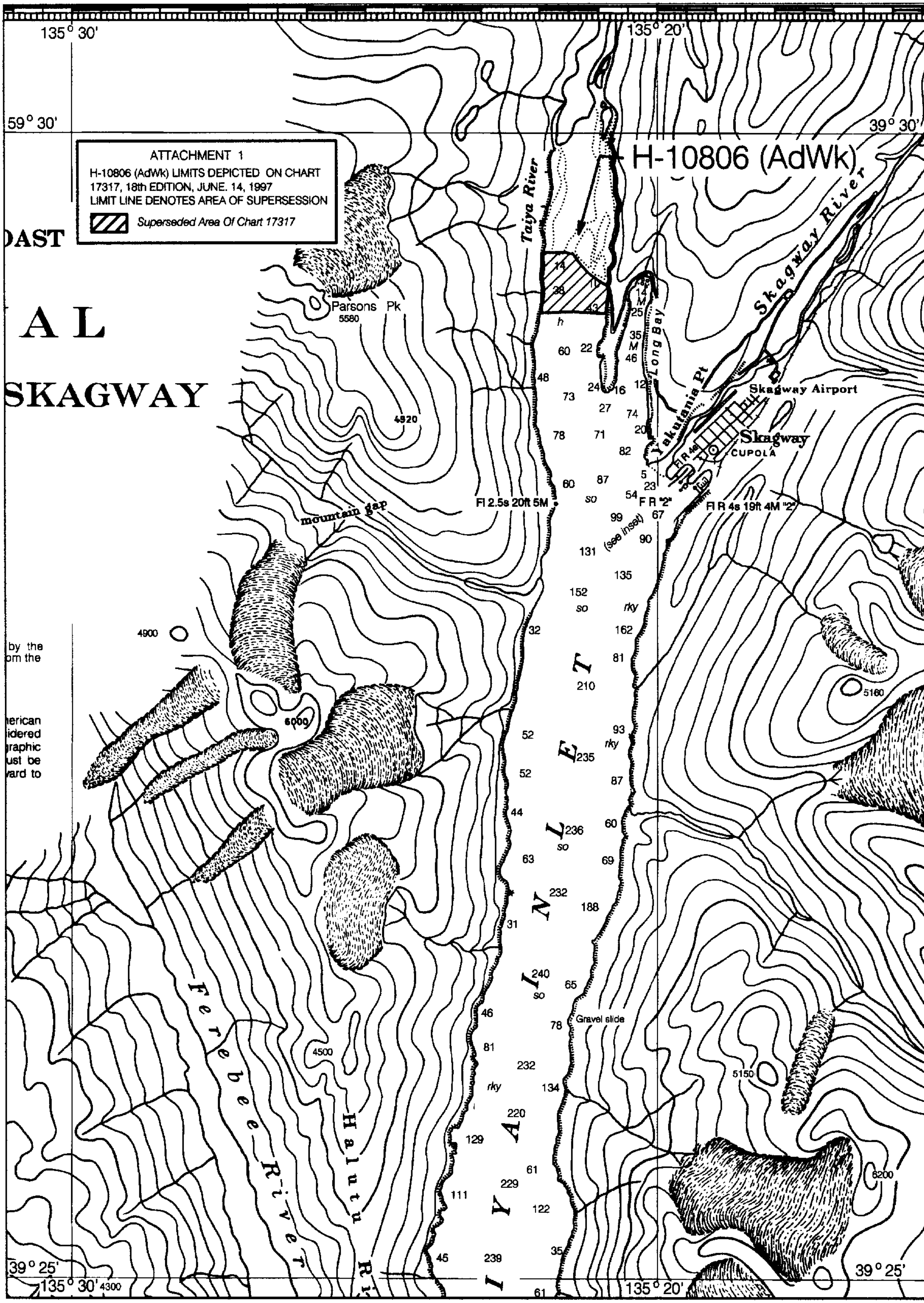
OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED (Selected)			415
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	36.5		36.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		1.0	1.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		8.0	8.0
GEOGRAPHIC NAMES			
OTHER* (Chart Compilation)		4.5	4.5
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	36.5	13.5	50.0

Pre-processing Examination by: M. Bigelow	*Beginning Date*: 5/3/99	*Ending Date*: 5/3/99
Verification of Field Data by: E. Domingo, I. Almacen, M. Bigelow	*Time (Hours)*: 36.5	*Ending Date*: 6/25/99
Verification Check by: D. Hill	*Time (Hours)*:	*Ending Date*:
Evaluation and Analysis by: I. Almacen	*Time (Hours)*: 9.0	*Ending Date*: 6/30/99
Inspection by: D.Hill	*Time (Hours)*: 2.0	*Ending Date*: 7-13-99


135° 30'
59° 30'
135° 20'
59° 30'
ATTACHMENT A
H-10806 LIMITS DEPICTED ON CHART 17317
18th EDITION, JUNE 14, 1997
LIMIT LINE DENOTES AREA OF SUPERSESSION
Superseded Area Of Chart 17317
COAST
NAL
SKAGWAY
H-10806
Taiya River
Skagway River
Parsons Pk
5580
4920
Long Bay
Yakutania Pt
Skagway Airport
Skagway
CUPOLA
Fl R 4s
Fl 2.5s 20ft 5M
Fl R 4s 19ft 4M "2"
mountain gap
(see insets)
4900
6000
4500
4300
5150
Gravel slide
Ferebee River
Haluta Ridge
59° 20'
135° 30'
135° 20'
59° 20'


ATTACHMENT 1
H-10806 (AdWk) LIMITS DEPICTED ON CHART 17317, 18th EDITION, JUNE. 14, 1997
LIMIT LINE DENOTES AREA OF SUPERSESSION
Superseded Area Of Chart 17317
H-10806 (AdWk)
135° 30'
135° 20'
59° 30'
39° 30'
39° 25'
DAST
A L
SKAGWAY
Parsons Pk
5580
4920
4900
6000
4500
4300
5160
5150
6200
Taiya River
Skagway River
Long Bay
Yakutania Pt
Skagway Airport
Skagway
CUPOLA
mountain gap
Fl 2.5s 20ft 5M
F R "2"
Fl R 4s 19ft 4M "2"
(see inset)
Gravel slide
Ferebee River
Halutu Ri
T E L N I
T A Y I
so
rky
by the
om the
nerican
idered
graphic
ust be
ard to

EVALUATION REPORT

H-10806

A. PROJECT

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

B. AREA SURVEYED

The survey area is adequately discussed 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. Charted features and soundings inshore of this limit line which have not been specifically addressed during survey operations should be retained as charted. Page-size plots of the charted area depicting the specific limits of supersession accompanies this report as Attachment A and B.

The bottom consists mainly of mud. Depths range from 0 to 247 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 Multibeam Support Vax System, CARIS, HYPACK, the same Hydrographic Processing System (HPS) as used in the field, and MicroStation 95.

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 which is not part of the HPS data set such as geographic names 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 Guideline No. 35 and No. 75.

The data is plotted using a Modified Transverse Mercator(MTM) projection and are depicted on a single 1:10,000 scale sheet.

E. SONAR EQUIPMENT

Side Scan Sonar was not utilized during this survey.

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 the reduction of soundings during field processing. During office processing, tide reductions were derived from approved hourly heights zoned from Skagway, Taiya Inlet, AK, tide gage 945-2400. Refer to the approved tide note attached to this report concerning recommended tidal zoning.

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 NAD27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude:	-1.177 seconds	(-36.427 meters)
Longitude:	6.586 seconds	(103.854 meters)

I. HYDROGRAPHIC POSITION CONTROL

Hydrographic position control is adequately discussed in the hydrographer's report.

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 maximum (HDOP) allowable limit has not been exceeded during this survey and the quality of data obtained is good. The reference site confirmation test and daily 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 correction to position data.

J. SHORELINE

There were no registered photogrammetric source data available for this area of Lynn Canal (refer to Change #1, Amendment to Project Instructions dated March 30, 1998). The shoreline shown in brown on the smooth sheet is for orientation only, and originates with Chart 17317, 18th Edition dated June 14, 1997. Portions of shoreline originating from Chart 17317 have been graphically revised based on the following cartographic revision surveys (CRS) originating from 1993 uncontrolled photogrammetric sources.

Blueprint #	Scale	Year	Area
BP164347 (CRS#00298)	1:40,000	1993	Taiya Inlet
BP164346 (CRS#00398)	1:10,000	1993	Skagway

Changes in the mean high water line to the charted shoreline and the photogrammetric mean low water line have been shown in black from the cartographic revision surveys listed above. In addition, hydrographic changes to the CRS blueprints and or charted shoreline have been shown in dashed red on the smooth sheet and are listed below

Latitude (N)	Longitude (W)
59/22/12	135/23/08
59/22/25	135/23/03
59/22/48	135/22/44
59/22/50	135/21/05
59/26/26	135/21/52
59/26/50	135/21/46
59/28/32	135/20/07

The charted shoreline should be revised based on the latest shoreline map information around the area of this recent survey.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

Survey H-10806 junctions with the following survey.

Survey	Year	Scale	Area
H-10736	1998	1:10,000	Southern Limits

The junction to the south with survey H-10736 is complete. A "Joins" note has been added to the smooth sheet at the junction area of the survey. The soundings and depth curves between the two surveys are in satisfactory agreement.

There are no contemporary surveys to the north towards Taiya River. However, a comparison with the charted depths in the area reveals fair agreement with the present survey.

M. COMPARISON WITH PRIOR SURVEYS

Survey	Year	Scale	Datum
H-2057	1890-95	1:40,000	Valdez
H-4226WD	1922	1:40,000	Valdez
H-6945	1943	1:2,000	NAD 27
H-6946	1943	1:5,000	NAD 27
FE-57	1945	1:1000	NAD 27
FE-71	1948	1:2,000	NAD 27
FE-84	1950	1:2,000	NAD 27
FE-358	1990	1:5,000	NAD 83

FE-416 1994 1:5,000 NAD 83

H-2057 is a survey of the upper part of Lynn Canal covering the area of Taiya Inlet to Taiya River. Sounding agreement is fair with the present survey generally shoaler by about 2-15 fathoms particularly along the deep middle section of the inlet.

Wire-drag survey H-4226(WD) covers Taiya Inlet excluding the areas of Nahku Bay and Skagway Harbor. There were no conflicts found between the present survey depths and the effective wire sweep depths of this prior survey. An adequate sounding coverage of the area was accomplished during this survey to substantiate the supersession of the prior wire drag information within the common area and the removal of the wire drag green tint on chart 17317.

The 1943 prior surveys H-6945 and H-6946 cover the areas of Skagway Harbor and Nahku Bay respectively. Comparison of depths reveals the priors and the present survey generally differ by 1-3 fathoms except in the vicinity of the ferry terminal where occasional dredging have been undertaken since the last survey. Survey H-6945 was superseded by a later field investigation (FE-358) in 1990 covering the same area of the harbor. Aside from the effect of silting around the bay, the present differences in depths may also be attributed to improved positioning and sounding methods, and the relative accuracy of the data acquisition process employed during this recent survey.

Field investigations FE-57, FE-71 and FE-84 were conducted from 1945 to 1950 around the area southwest of the harbor at the site where White Pass Railroad dock is presently located. These earlier investigations were subsequently superseded by the later surveys of Skagway Harbor before and after the 1994 reported marine landslide in the area.

Prior survey FE-358 was accomplished in 1990 covering Skagway Harbor prior to the 1994 reported marine landslide in the area. Sounding agreement is fair with the present survey depths differing between 1 and 5 fathoms except in the vicinities of the piers and ferry terminal where deeper depths could be found as the results of periodic dredging of the harbor. There is generally no consistent pattern of shoaling or increase in depths noted between the two surveys.

Prior survey FE-416 was a "suitcase survey" executed to assess the conditions of local shipping channels in Skagway harbor following the November 4, 1994 submarine landslide that carried away a portion of the White Pass Railroad dock. It was also investigated to ascertain whether the slide created some new navigational hazards within the area. No dangers to navigation were found during this survey.

The following features originating from the prior surveys FE-358 were brought forward on the present survey.

Features	Latitude (N)	Longitude (W)
Obstn (concrete mooring)	59/26/37.3	135/19/39.4
Obstn (submerged pile)	59/26/38.1	135/19/40.0
Pile	59/26/41.7	135/19/36.2
Pile	59/26/57.5	135/19/47.5
Dolphin	59/26/58.1	135/19/44.0
Dolphin	59/26/59.0	135/19/43.4

The following charted bottom characteristics originating from the prior surveys were carried forward on the smooth sheet.

Bottom Characteristic	Latitude (N)	Longitude (W)
M (mud)	59/26/35.0	135/19/51.0
Rky (rocky)	59/26/41.0	135/19/43.0
M (mud)	59/26/48.5	135/19/34.0
SM (sand and mud)	59/26/50.0	135/19/51.0
S (sand)	59/26/52.5	135/19/15.5
M (mud)	59/26/53.0	135/20/26.5
SP (sand and pebble)	59/26/56.5	135/19/56.0
SM (sand and mud)	59/27/02.5	135/19/31.0
SM (sand and mud)	59/27/04.5	135/20/17.0
M (mud)	59/27/29.5	135/20/28.5
M (mud)	59/28/20.5	135/20/21.5
M (mud)	59/28/36.5	135/20/18.0

Additional information regarding prior survey comparison is found in the hydrographer's report, section M.

With the exception of the items listed above, H-10806 is adequate to supersede the prior surveys within the area of common coverage.

N. ITEM INVESTIGATIONS

AWOIS Items #52387 and #52388 were investigated during this survey. These items originate from Chart Letters of 1976. The disposition of these features were adequately addressed in section N of the hydrographer's report.

O. COMPARISON WITH CHART

Survey H-10806 was compared with the following chart.

Chart	Edition	Date	Scale	Datum
17317	18th	June 14, 1997	1:77,812	NAD83

a. Hydrography

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

Some of the presently charted soundings, features and bottom characteristics originating from prior surveys mentioned in the preceding section of this report were retained and depicted in green during chart compilation.

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. Features from survey H-10806 have been generalized on chart 17317 along the shoreline where applicable.

The presently charted geographic name "Long Bay" should be deleted and replaced by "Nahku Bay" as listed on the Directory of Alaska Place Names published by the U.S. Department of Interior and in the approved Geographic Names list included in this report.

The new geographic name "Dyea Point" should be charted as listed on the same directory and as depicted on this survey.

With the exception of features mentioned in the preceding sections of this report, survey H-10806 is adequate to supersede charted hydrography within the common area.

b. Dangers to navigation

No dangers to navigation were discovered during survey operations and/or during office processing.

P. ADEQUACY OF SURVEY

The hydrography contained on survey H-10806 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 following exceptions.

The installation of a tide gage required in the Project Instruction to cover the area within tidal zone SEA1a was not accomplished during this survey. The hydrographic data collected within the area north of latitude 59/28/~~27.8~~ 25.0 N towards Taiya River were rejected due to the lack of appropriate tide correctors for the collected soundings in the area. According to the Coast Pilot report, Taiya River, at the head of Taiya Inlet is navigable for small boats and canoes. However, significant shoaling at the mouth of the river and around the rejected area of hydrography were noted during this survey. It is recommended that a survey be conducted in the future to determine the present condition of the area. mcr 3/25/99

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-10806 was completed May 27, 1998 but not received for office processing until August 4, 1998.

Q. AIDS TO NAVIGATION

The following aids to navigation were located during this survey. These aids were found to be in good condition and adequately serve their intended purpose.

Aid Name	Lt. List #	Latitude (N)	Longitude (W)
Skagway Breakwater Light 2	23935	59/26/55.66	135/19/21.50
Skagway Terminal Dock Light	23937	59/26/57.74	135/19/34.33

Taiya Inlet Light 23940 59/26/47.15 135/21/46.50

Skagway Terminal 2 Dock Light (LL #23930) was not positioned during this survey and not mentioned in the hydrographer's report. This aid should be retained as charted.

There were no features of landmark value found during 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.

T. RECOMMENDATIONS

Survey H-10806 is a good hydrographic survey. However, additional work is required on a low priority basis to adequately determine the changes noted along the approaches to Taiya River mentioned in section P of this report.

U. REFERRAL TO REPORTS

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

Isagani A. Almacen
Cartographer

APPROVAL SHEET
H-10806

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: 3/3/99
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: 3-15-99
James C. Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

Final Approval

Approved:

Samuel P. De Bow Date: August 25, 1999
Samuel P. De Bow
Commander, NOAA
Chief, Hydrographic Surveys Division

ADDENDUM TO EVALUATION REPORT

H-10806

A. PROJECT

This project was initiated following a review of survey results from the 1998 season. That review disclosed several deficiencies, which required additional work to resolve. The evaluation report for the previous survey contains further information on the specific nature of the deficiencies while the hydrographer's report details the additional work conducted to resolve them.

B. AREA SURVEYED

The survey area is adequately described in the hydrographer's report. A page-size plot of the charted area depicting the limits of supersession accompany this report as Attachment 1.

The bottom consists mainly of mud. Depths range from 0.0 to 42.0 fathoms.

C. SURVEY VESSELS

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data were collected with the Reson 8101 shallow water multibeam system and HYPACK systems. It was processed onboard RAINIER with the CARIS/HIPS system and formatted for delivery to the processing center as HPS data.

In the office the data were checked for compliance with specifications using the CARSIS/HIPS system, reduced to chart datum with the HPS system and compiled to the smoothsheet with Microstation 95.

The processed digital data used for the compilation of the smoothsheet exists in the standard HPS format, a database format using the .dbf extension and will be forwarded to the Hydrographic Surveys Division in the IDF format. The smooth sheet drawing exists in the Microstation format, i.e., dgn extension and will be forwarded in that format. Backup copies of these files will be retained at PHB.

The smoothsheet drawing files necessarily contain information that is not part of the HPS database such as geographic names 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 Guideline No. 35 and No. 75.

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

E. SONAR EQUIPMENT

Side scan sonar equipment was not used during this survey.

F. SOUNDING EQUIPMENT

Shallow water multibeam equipment was used during this survey as detailed 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, static draft, dynamic draft (settlement and squat), sound velocity, and heave, pitch and roll. 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 derived from approved hourly heights zoned direct from the tide gage 945-2400 Skagway, Taiya Inlet, AK was used for zone SEAID2.

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.

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS(DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 4.0 was computed for survey operations. The maximum allowable HDOP has not been exceeded during a relatively few number of fixes for this additional work. The quality of the data obtained is good.

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

Refer to the earlier evaluation report for information on shoreline.

The MHW changes to the CRS blueprint (CRS#00298) listed in the earlier evaluation report have been shown in dashed red on the smooth sheet.

K. CROSSLINES

Refer to original evaluation report.

L. JUNCTIONS

The additional work comprising this portion of the survey junctions well with the previous work. Depths are in good agreement.

M. COMPARISON WITH PRIOR SURVEYS

Survey	Year	Scale	Datum
H-2057	1890-95	1:40,000	Valdez

The present survey was compared to a copy of H-2057. Sounding agreement is poor with the present survey depths shoaler by about 7 to 14 fathoms. These differences were attributed mainly to the extensive and continuous accumulation of sediments at the entrance to Taiya River as noted during this survey. The present survey is adequate to supersede prior survey H-2057 within the common area of Taiya Inlet.

N. ITEM INVESTIGATIONS

N/A

O. COMPARISON WITH CHART

Survey H-10806 additional work was compared with the following chart

Chart	Edition	Date	Scale	Datum
17317	18th	June 14, 1997	1:77,812	NAD 83

a. Hydrography

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

Survey H-10806 is adequate to supersede charted hydrography within the charted area.

b. Dangers To Navigation

No dangers to navigation were discovered during survey operations or during office processing.

P. ADEQUACY OF SURVEY

The hydrography acquired during H-10806 additional work 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, 3rd Edition.

Q. AIDS TO NAVIGATION

There are no fixed or 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 discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

T. RECOMMENDATIONS

This is a good hydrographic survey. Although data specified in section P of the earlier report was rejected, the depth of the area precludes the necessity for additional work.

U. REFERRAL TO REPORTS

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

Isagani A. Almacen
Cartographer

APPROVAL SHEET
H-10806 (AdWk)

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.

Dennis Hill Date: 7-13-99

Dennis Hill
Chief, 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: 7-14-99

James C. Gardner
Commander, NOAA
Chief, Pacific Hydrographic Branch

****

Final Approval

Approved:

Samuel P. DeBow Date: August 24, 1999

Samuel P. De Bow
Commander, 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-10806 & H-10806 AdWk

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
17317 (INSET)	1/14/99		Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. features and soundings from smooth sheet.
17317	2/12/99		Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. features & sndgs. from smooth sheet thru 17317 (inset)
17317	6/30/99		Full ~~Part~~ ~~Before~~ After Marine Center Approval Signed Via Full application of
			Drawing No. soundings from smooth sheet (H-10806 AdWk)
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.