H10818

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-10-10-98

Registry No. H-10818

LOCALITY

State Alaska

General Locality Sumner Strait

Sublocality Shakan Strait to Shakan Bay and Vicinity

1998

CHIEF OF PARTY
CAPT Alan D. Anderson, NOAA

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DATE MAY 7 1999

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HYDROGRAPHIC TITLE SHEET

H-10818

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-10-10-98

State: Alaska

General locality: Sumner Strait

Locality: Shakan Strait to Shakan Bay and Vicinity

Scale: 1:10,000 Date of survey: June 2, 1998 to June 11, 1998

Instructions dated: April 17, 1998 Project No.: OPR-0380-RA

Vessel: RA-(2121),RA-(2122), RA-4(2124),RA-5(2125),RA-6(2126)

Chief of party: CAPT Alan D. Anderson, NOAA

Surveyed by: RAINIER Personnel

Soundings taken by echo sounder, ~~xxxxxxxxxx~~ Side Scan, DSF-6000N, Knudsen 320M, EG&G Model 272-T

Graphic record scaled by: RAINIER Personnel

Graphic record checked by: RAINIER Personnel

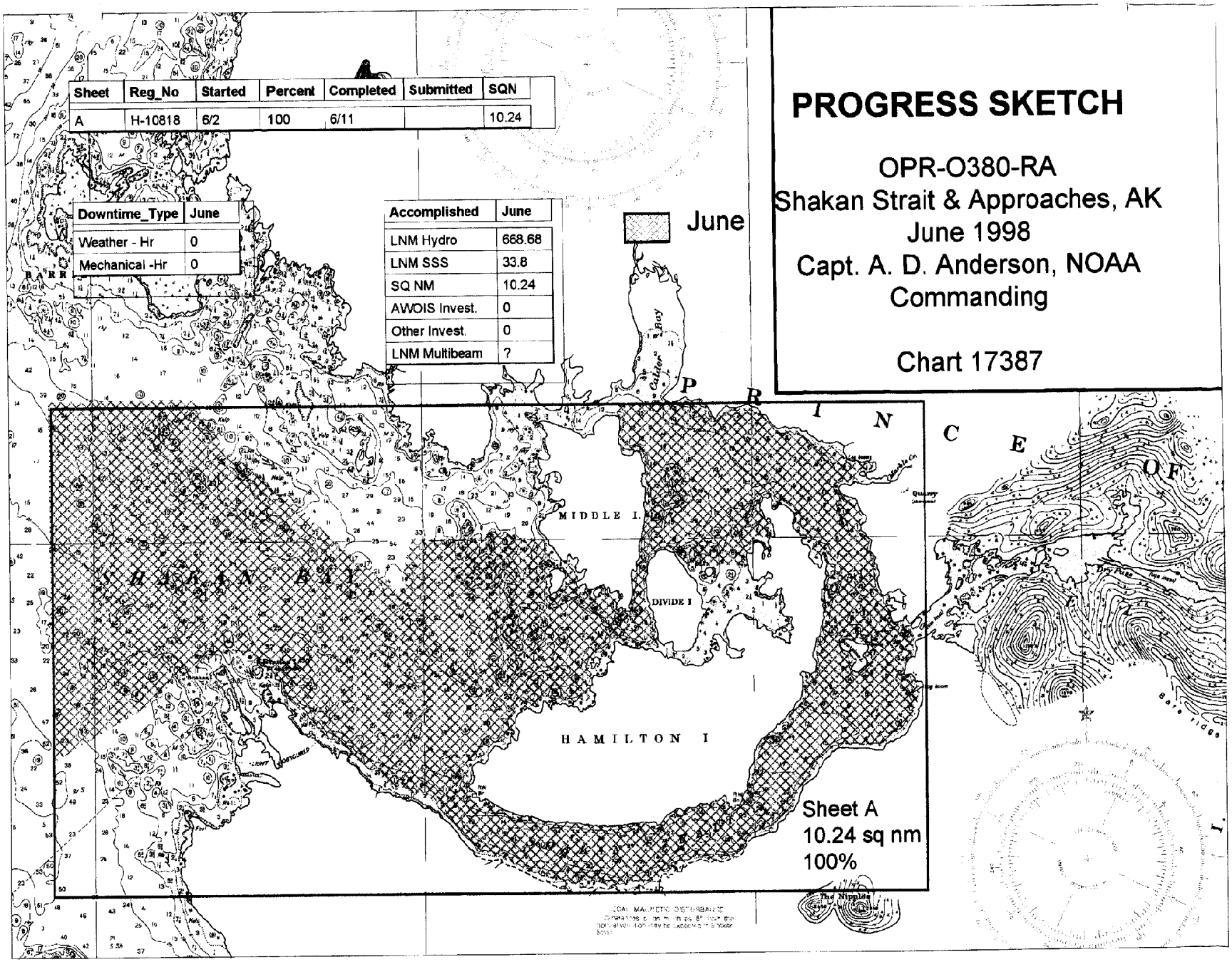
Evaluation by: B. Mihailov ~~Protracted by~~ Automated plot by: HP Design Jet 650C

Verification by: E. Domingo, M. Bigelow, R. Mayor, D. Doles

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

REMARKS: All times are 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 4/7/99


Sheet | Reg_No | Started | Percent | Completed | Submitted | SQN
A | H-10818 | 6/2 | 100 | 6/11 | | 10.24
Downtime_Type | June
Weather - Hr | 0
Mechanical -Hr | 0
Accomplished | June
LNM Hydro | 668.68
LNM SSS | 33.8
SQ NM | 10.24
AWOIS Invest. | 0
Other Invest. | 0
LNM Multibeam | ?
June
PROGRESS SKETCH
OPR-O380-RA
Shakan Strait & Approaches, AK
June 1998
Capt. A. D. Anderson, NOAA
Commanding
Chart 17387
SHAKAN BAY
MIDDLE I.
DIVIDE I
HAMILTON I
PRINCE OF
Sheet A
10.24 sq nm
100%

Descriptive Report to Accompany Hydrographic Survey H-10818

Field Number RA-10-10-98
Scale 1:10,000
May 1998
NOAA Ship RAINIER
Chief of Party: Captain Alan D. Anderson, NOAA

A. PROJECT ✓

This hydrographic survey was completed as specified by Project Instructions OPR-O380-RA dated April 17, 1998. Survey H-10818 is the only sheet in this project. This survey is being conducted in response to a request from the Southeastern Alaska Pilot's Association and the Seventeenth United States Coast Guard District. There are plans to load limestone on 600-feet long deep draft vessels at Sea Alaska Corporation's Calder Mine operation in Shakan Strait beginning in June 1998.

B. AREA SURVEYED ✓ See Evid Rpt. Section B.

The survey area is in Sumner Strait. The survey's northern limit is the shoreline of Prince of Wales Island and the southern limit is the shoreline of Kosciusko Island. The survey's western limit is longitude 133° 40' 30" W and the eastern limit is the shoreline of Prince of Wales and Kosciusko Islands. (See Figure 1.) Data acquisition was conducted from June 2nd to 11th, 1998.

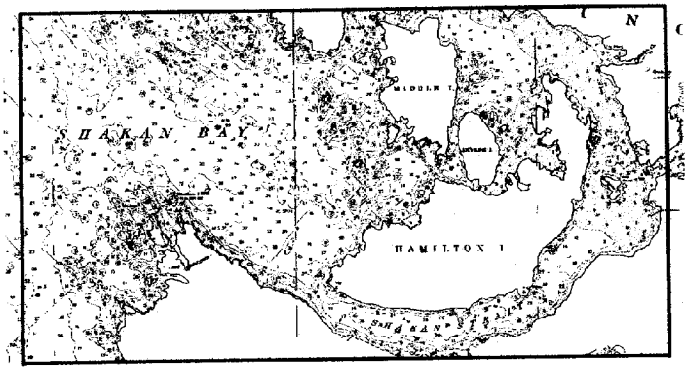


Figure 1. H-10818 Survey Area

C. SURVEY VESSELS ✓

Data ~~were~~ was acquired by RAINIER* and her survey launches as noted in the Survey Information Summary ~~included with~~ attached to this report. * NOAA Ship Rainier was not involved in data gathering.

This project included the use of a new vessel configuration. Launches 2121 and 2123 were recently configured with a Reson SeaBat 8101 Shallow Water Multibeam (SWMB) system. (See Section F., Sounding Equipment, for details.) The center of the launch keels were cut and modified to house the transducers. The originally installed DSF-6000N single beam transducers remained installed as before.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired using the HYPACK version 7.1a and preliminary processing was accomplished with HPS and MapInfo. Final Detached Positions, Features, and Soundings based on predicted tides were saved in MapInfo 4.5 format. The MapInfo workspaces are described in Appendix VIII. - Filed with the hydrographic records.

E. SONAR EQUIPMENT ✓

Side scan sonar (SSS) operations were conducted using an EG&G 272-T-dual channel towfish (S/N 016989). The towfish was operated on the 100 kHz frequency.

The SSS towfish was towed with a 70 meter EG&G lightweight tow cable. The towfish was deployed manually on the starboard quarter of launch 2125, attached to the aft fall shackle by line and lead around the stern railing. The length of towcable deployed was determined by noting the measured markings on the towfish cable as these markings met the stern railing. The SSS towfish was adjusted to maintain a height off the bottom of 8 to 20 percent of the range scale. The 100- and 150-meter range scales were used. SSS operations were conducted at or less than 4 knots.

One hundred percent SSS collection was conducted over the areas identified for survey priority 1 and 2. Degraded sonograms were rejected and rerun. A swath plot depicting SSS bottom coverage indicates that 100% SSS coverage was completed over the priority areas, with 200% SSS coverage over a 200-meter radius within the priority areas. Two hundred percent SSS collection was conducted east and south of Fontaine Island, southwest of the mine, and at the entry to Shakan Strait southwest of Hamilton Island. The recorder gain setting was adjusted for the best return for changing bottom conditions. A rub test was successfully conducted prior to operating the SSS.

Side scan sonograms were manually scanned for significant contacts in accordance with section 7.3.2 of the project instructions. Significant contacts were further developed using single beam echo sounders to determine a least depth. See the evaluation report, section P, for further information.
Shallow-water multi-beam (SWMB) echo sounder equipment was used on this survey. Survey launches 2121 and 2123 are equipped with a Reson SeaBat 8101 multibeam transducer, a Triton Isis data acquisition system, and Hypack version 7.1a. The Reson SeaBat 8101 is a multibeam echosounder system that measures relative water depths across a wide swath perpendicular to the vessel's path. 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. The system's maximum depth range under actual field conditions has proven to be much less. RAINIER has discovered that maximum attainable depths are approximately 80-150 meters, depending on sea conditions and bottom topography. Serial numbers are included in the Separates.* SWMB launches were used to collect full-bottom coverage of select areas identified in the project files. SWMB launches were not used for shoreline verification due to the extremely high risk of damaging the SWMB transducers on submerged rocks. Concur

An error was noticed during acquisition of SWMB data using Isis version 3.19 - a shifting of the bathy packet time stamp - by graphing the roll (in degrees) over time (in microseconds), comparing the registered POS/MV roll versus the same rolls in XTF and 6042 format. A representative from Reson, Mr. Burr Bridge, was aboard and wrote a conversion program to shift the XTF files by one ping - thereby allowing the ship to convert data collected with Isis 3.19 and mitigate the bathy packet time stamp error. Isis version 3.21 writes the SWMB data in the correct bathy packet time stamp and was used to collect data starting with DN155.

* Filed with the hydrographic records.

The SWMB data collected during this survey was extremely "noisy" and the software from several components could not correct quickly enough for the action of the launch in rough seas. The data was therefore, difficult to process. Several factors have led to the delay in processing the SWMB data, including lack of experience with the collection and cleaning systems, the large percentage of inexperienced personnel, the continued collection of SWMB data during subsequent projects, and the field party's desire to clean data as it is acquired. Due to the nature of multibeam software development, the SWMB data collected during this survey is of significantly lower quality than SWMB data in the fall of 1998, a mere 3 months later. However, the SWMB data from H-10818 is of value to the application of chart 17387 and will continue to be processed and submitted at a later date.

* Shallow Water MultiBeam data has not been Final processed and is not included with the Smooth plotted data.

F. SOUNDING EQUIPMENT

All launches are equipped with a Raytheon DSF-6000N or a KNUDSEN 320M echo sounder. The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. The KNUDSEN 320M is a dual-frequency (100 kHz, 24 kHz), thermal echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts.* All DSF-6000N soundings were acquired in meters using the High + Low, high frequency digitized setting.

G. CORRECTIONS TO ECHO SOUNDINGS

Two sound velocity casts were used for application of correctors to single beam data for this survey; and twenty-four sound velocity casts were used for corrections to SWMB data. Eleven sound velocity casts were conducted prior to data collection to differentiate the seawater characteristics of the survey area. (see MapInfo graphics displaying the sv casts in Appendix III)* This was necessary due to the limited amount of seawater in Shakan Strait, as compared to Shakan Bay. Information on the casts used for correctors is included in the Survey Information Summary report. The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 219), calibrated ~~December 15, 1996~~ 1-23-98. Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.1 (1997), in accordance with Hydrographic Survey Guideline (HSG) No. 69. A printout of the Sound Velocity Corrector Table used in the HPS 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 2.3 for vessels 2121-2126 in the spring of 1998. Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2. using FPM Fig. 2.4, and are included with project data for OPR-O380-RA. The data for launches 2121 and 2123 were collected in the Strait of Juan de Fuca, Washington in the spring of 1998, data for launches 2122, 2124, and 2126 were collected in Shakan Strait in June 1998, and data for launch 2125 was collected in Lynn Canal in June 1998. 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. Offset table 9 is for RAINIER. The offset tables are included with project data for OPR-O380-RA. Launches 2122, 2124, 2125, and 2126 are not equipped with heave, roll, and pitch sensors.

The Oceanographic Products and Services Division, User Services Branch (N/CS44), through N/CS31, provided predicted tides for the project on diskette for the Sitka, Alaska reference station (945-1600). HPS 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-10818 are provided in the Survey Information Summary included with this report.

* Filed with the hydrographic records.

Sitka, Alaska (945-1600) and Ketchikan, Alaska (945-0460) are the primary control stations for datum determination. RAINIER personnel installed Sutron 8200 tide gages at Shakan Bay Entrance (945-0982) and at Shakan Strait (945-0987) on April 17th, and the gages were removed on June 11th, 1998. Refer to the Field Tide Notes and supporting data in Appendix V* for individual gage performance and level closure information. This information has been forwarded to N/CS41 in accordance with HSG 50 and FPM 4.7. A request for approved tides was forwarded to N/CS41 at the completion of the project. A tide note for survey H-10818, dated October 20, 1988 is attached to this report.

H. CONTROL STATIONS ✓ See Eval Rpt, section H.

The horizontal datum for this project is NAD 83. The control stations used for this survey are listed in ~~Appendix III~~ this report. See the OPR-O380-RA-98 Horizontal Control Report for more information.

I. HYDROGRAPHIC POSITION CONTROL ✓ See Eval. Rpt, section I.

All soundings were positioned using differential GPS. Primary control was the VHF differential reference station at DEAD 2. The US Coast Guard Beacon at ANNETTE was used as backup. Single launch to known position DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from the DGPS station DEAD 2. 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 reference stations. DEAD 2 was compared to ANNETTE at least once a week while installed. Some outliers were noted, but none indicated systematic or continuous errors in either the ANNETTE beacon or the VHF station at DEAD 2. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-O380-RA.

J. SHORELINE ✓ See Eval. Rpt, section J.

The shoreline manuscript from prior surveys H-8151 and H-8243 was supplied by N/CS34 in Standard Digital Data Exchange Format (SDDEF) for lands adjacent to the priority survey areas. The rest of the shoreline was digitized from chart 17387, 11th edition, 7/24/93, aboard RAINIER using MapInfo. Shoreline shown on the smoothsheet originates from shoreline maps T-9624, T-9625 and T-9627 digitized at PHB and 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 5-15 meters offshore of apparent low tide. Water depths along this limit of safe navigation are generally 3-5 meters at Mean Lower Low Water. Features shown inshore of the NALL are the hydrographer's representation of the shoreline while slowly transiting along the shore, and are intended to aid chart compilation. Shoreline verification data was analyzed during office processing and shown on the smooth sheet as warranted. Shoreline manuscript and field features were compared to an enlargement of chart 17387, 11th edition, July, 1993, plotted by RAINIER personnel, as well as digital overlay of data on the chart image in MapInfo. Charted features matched the shoreline as observed during the current survey except for the following.

* Filed with the hydrographic records.

SS

Charted Feature	Geographic Position	Observed Feature	
None	56° 09′ 03.5″ N 133° 31′ 18.2″ W ✓	Rock ~~Ledge~~ (Submerged)	
	56° 09′ 05.0″ N 133° 32′ 11.1″ W ✓	"	ledge (11)
	56° 09′ 02.9″ N 133° 32′ 22.2″ W ✓	"	ledge
	56° 08′ 52.7″ N 133° 32′ 21.9″ W ✓	"	ledge (10)
Ledge	56° 08′ 38.3″ N 133° 32′ 27.9″ W ✓		ledge (13)
	56° 08′ 17.9″ N 133° 33′ 54.9″ W ✓		ledge (3)
Rock	56° 10′ 23.0″ N 133° 28′ 42.8″ W ✓ Transferred # (5) from prior survey which plots 50 meters north.	Rock not found after 5 minute visual search at low water, 5-15 meter depths, 5 meter visibility	concur
Rocks	56° 08′ 38.4″ N 133° 32′ 46.0″ W ✓	Rock Ledge	ledge (7)
Islets & Ledge	56° 09′ 18.3″ N 133° 32′ 01.6″ W ✓ 56° 09′ 03.4″ N 133° 32′ 16.2″ W ✓	Rock Ledge	ledge & islets
~~None~~ Ledge	56° 08′ 39.6″ N 133° 32′ 27.7″ W ✓	Rock	ledge (15)

Shoreline manuscript was digitized from the prior surveys H-8243 and H-8151. The digital shoreline features matched the shoreline as observed during the current survey except for the following.

SS

Shoreline Manuscript Feature	Geographic Position	Observed Feature	
None	56° 08′ 50.5″ N 133° 37′ 32.9″ W ✓	Rock	(2)
	56° 08′ 37.6″ N 133° 37′ 01.3″ W ✓	" (Submerged)	08 RK
	56° 07′ 43.9″ N 133° 33′ 44.8″ W ✓	"	ledge (7)
	56° 07′ 08.6″ N 133° 33′ 01.0″ W ✓	"	(10)
	56° 07′ 08.5″ N 133° 32′ 54.5″ W ✓	"	(2)
	56° 07′ 08.2″ N 133° 32′ 40.3″ W ✓	"	(5)
	56° 07′ 36.7″ N 133° 31′ 46.1″ W ✓	" (Submerged)	06 RK
	56° 07′ 06.2″ N 133° 32′ 03.1″ W ✓	" (Submerged)	06 RK
	56° 07′ 42.2″ N 133° 31′ 13.6″ W ✓	"	(0)
	56° 07′ 34.0″ N 133° 29′ 51.3″ W ✓	"	(3)
	56° 08′ 49.6″ N 133° 29′ 11.0″ W ✓	"	(0)
	56° 09′ 04.7″ N 133° 28′ 14.6″ W ✓	"	(1)
	56° 09′ 28.7″ N 133° 28′ 00.9″ W ✓	" (Submerged)	05 RK
	56° 09′ 44.8″ N 133° 28′ 43.3″ W ✓	"	ledge
	56° 09′ 00.0″ N 133° 31′ 00.0″ W ✓	"	Transferred 3 rocks from prior survey
None	56° 08′ 29.2″ N 133° 36′ 52.4″ W ✓	Rock Ledge	ledge
	56° 07′ 09.8″ N 133° 33′ 08.4″ W ✓	"	(9)
	56° 07′ 42.9″ N 133° 33′ 41.8″ W ✓	"	ledge (7)
	56° 07′ 40.7″ N 133° 33′ 25.0″ W ✓	"	(5)
	56° 07′ 20.2″ N 133° 30′ 34.7″ W ✓	"	(6)
	56° 07′ 43.4″ N 133° 29′ 30.2″ W	"	ledge
	56° 07′ 56.5″ N 133° 29′ 15.6″ W	"	ledge
	56° 09′ 37.3″ N 133° 28′ 50.9″ W	"	ledge
	56° 09′ 43.8″ N 133° 28′ 42.3″ W	"	ledge

The charted shoreline should be revised using the manuscript shoreline* and fieldwork notes as recorded in the MapInfo digital file named "Shoreline_Remarks" within the bounds of the survey. Concur with Clarification

* There were no revisions to the mean high water line. Shoreline is from 1983 photogrammetric surveys shown in brown on the smooth sheet for orientation only. Shoreline verification data should be used in conjunction with prior survey information to accurately portray the survey area.

K. CROSSLINES ✓

Crosslines agreed within 1 meter with mainscheme hydrography, except in areas of steep bathymetry. There was a total of 25.5 nautical miles of crosslines, comprising 13.4% of mainscheme hydrography.

L. JUNCTIONS ✓

There are no contemporary surveys in this area that junction with H-10818. Concur

M. COMPARISON WITH PRIOR SURVEYS

Prior surveys covering this survey area are H-8151, 1:10,000, 1954-55 and H-8243, 1:10,000, 1955.

Most prior survey soundings were found to be in good agreement with those from the current survey. Least depths from the current survey were generally more shoal or in agreement with prior surveys.

Position	H-8243 Depth	H-10818 Depth	Fix #	chart drawing (fms)
56° 10' 30.8" N ✓ 133° 28' 36.9" W	3.3 ftm	4.3 ftm Fms 3.7-4.8*	61381	$3\frac{3}{4}$
56° 10' 30.9" N ✓ 133° 28' 39.9" W	5.2 ftm	3.5 ftm Fms 3.9-5.3*	60026	$3\frac{3}{4}$ (See above)
56° 10' 28.9" N ✓ 133° 30' 59.0" W	7.3 ftm	10.8 ftm Fms 10-11.7*	47145	7 (Plots 50 meters to West)
56° 10' 13.6" N 133° 31' 31.0" W	0.7 ftm	1.4 ftm Fms*	62492	$1\frac{1}{2}$
56° 10' 18.5" N 133° 31' 17.4" W	11.0 ftm	7.6 ftm Fms* Excessed for 1.9fms	62421	$1\frac{3}{4}$
56° 09' 29.1" N 133° 27' 58.9" W	3.5 ftm	2.4 ftm Fms	46751	$\frac{1}{2}$ RK (Plots 50 meters West of 2.4 fms)
56° 09' 32.1" N 133° 28' 05.4" W	6.2 ftm	3.5 ftm Fms 2.9-4.1*	40485	5fm curve
56° 09' 21.6" N 133° 28' 17.7" W	2.1 ftm	0.8 ftm Fms*	64195	$\frac{3}{4}$
Same GP as above 56° 10' 18.5" N 133° 31' 17.4" W	1.6 ftm	3.0 ftm Fms (Excessed for 1.9fms)	61940	$1\frac{3}{4}$
56° 07' 48.2" N 133° 34' 26.3" W	6.2 ftm	5.3 ftm Fms 5.4-5.5*	44394	$5\frac{1}{2}$ (DTON)

Position	H-8151 Depth	H-10818 Depth	Fix #	
56° 08' 54.4" N 133° 35' 16.5" W	19 ftm	17.6 ftm Fms*	22262	17
56° 08' 01.5" N 133° 35' 38.3" W	3.8 ftm	4.3 ftm Fms 4.1-4.6*	41118	$\frac{3}{4}$ (Plots 50 meters South)
56° 10' 04.3" N 133° 37' 15.4" W	9 ftm	8.0 ftm Fms*	53684	$6\frac{1}{2}$ (Plots 200 meters to north)
56° 09' 30.7" N 133° 36' 43.4" W	44 ftm	49.0 ftm Fms* 42-45fms within 50meters	13270	32 (Plots 100 meters to NW)

* Corrected for approved tides

Position	H-8151 Depth	H-10818 Depth	Fix #	chart drawing (fms)
56° 09' 06.1" N ✓ 133° 36' 46.4" W	17 ftm	14.8 ftm 7 fms *	53407	13 (Plots 50 meters to West)
56° 10' 54.2" N 133° 38' 53.1" W	7.2 ftm	6.1 ftm 2 fms *	55104	Retain 2½ Charted prior soc
56° 08' 45.8" N 133° 40' 20.4" W	24 ftm	~~38.6 ftm~~ 39.0 fms *	51773	Chart 28 (Plots 50 meters South)

* Corrected for applied tides

Differences between the current survey and priors can probably be attributed to scale and improved modern positioning and sounding equipment. Final comparisons will be done at PHB after reduction to final sounding datum using tidal information collected concurrently with this survey.

N. ITEM INVESTIGATIONS ✓

There were no AWOIS items assigned for survey H-10818. Concur

O. COMPARISON WITH THE CHART See Eval. Rpt, section O.

This survey was compared in the field to features portrayed on chart 17387.

Comparison of charted soundings with the survey is described in Section M, Comparison with Prior Surveys, and requires no further discussion. Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum.

Dangers to Navigation ✓

Six dangers to navigation were discovered during the survey and reported to the Seventeenth Coast Guard District for this survey. ~~See Appendix I.~~ copy of this report is attached.

P. ADEQUACY OF SURVEY ✓ See Eval Rpt., Sections M and P

Survey H-10818 is complete and adequate to supersede prior soundings and features in their common areas. Do not concur

Q. AIDS TO NAVIGATION See Eval Rpt., section Q

Shakan Bay Light (Light List # 23405) was positioned ~~to 3rd Order, Class I standards~~ using static GPS methods on DN 108. Hamilton Island Daybeacon (Light List # 23410) was positioned using static GPS methods on DN 108. Shakan Strait Daybeacon (Light List # 23415) was positioned using static GPS methods on DN 154 and Shakan Strait Daybeacon (Light List # 24890) was positioned using static GPS methods on DN 162. The light and daybeacons are charted adequately on chart 17387. Refer to Section Q, in ~~the Appendices~~ attached this report for more information on the discrepancy between the charted position and the surveyed position. Several aids to navigation were to be installed in Shakan Strait during the latter half of June 1998, but they had not been established by the time of this survey. Concur

R. STATISTICS ✓

Statistics are listed in the Survey Information Summary included ~~with~~ this report.

S. MISCELLANEOUS ✓

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

Strong wind gusts and williwaws* occur occasionally in Shakan Strait, especially during strong wind events in neighboring areas in the winter and spring.

NOAA Form 9-1343 Domestic Geographic Names Report will be submitted with the SWMB data at a later date, with recommendations for naming significant areas on this survey.

T. RECOMMENDATIONS ✓

The hydrographer recommends that a new edition of the chart be compiled once the SWMB data collected during this survey is fully processed. The processing of the Shallow Water Multibeam data has not been completed. The evaluator recommends compiling the new chart edition based on the single beam data collected during this survey.

U. REFERRAL TO REPORTS ✓

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

Title	Date Sent	Office
OPR-O380-RA Horizontal Control Report	June 1998	N/CS34 ✓
Project related data for OPR-O380-RA	Incremental	N/CS34

Submitted by,

Douglas D. Baird, Jr.
Lieutenant, NOAA

Approved and Forwarded,

Alan D. Anderson
Captain, NOAA
Commanding Officer

* A very violent squall, it may occur in any month but occurs most frequently in winter.

List of Horizontal Control Stations ✓

NAME	STATE	TYPE	LATITUDE	LONGITUDE	SITEID	DEC_LAT	DEC_LON
ANNETTE ISLAND	AK	USCG Beacon	55 04.1000N	131 36.0000W	889	55.06833333	131.60000000
DEAD2	AK	DGPS Flyaway	56 08.8192N	133 27.7555W	n/a	56.14698584	133.46259215

Section Q: Descriptive Report Insert ✓

Name of Aid: Shakan Bay Light
Light List #: 23405

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

Positioning Information

	Latitude (N)	Longitude (W)
Charted Pos.	56/08/56	133/37/33
Survey Pos.	56/08/56.65718	133/37/32.96877 ✓

	Easting	Northing
Charted Pos.	7179.3	16584.6
Survey Pos.	7179.9	16604.9

Difference between Charted and Surveyed Position: Distance: 20 meters
(Bearing from Surveyed to Charted Position) Bearing: 182 deg T

Characteristics Flashing White 4 seconds
Do characteristics match Light List? Yes [X] No [ ]
If no, what are the characteristics? _____

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

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

Apparent Purpose: _____

Other Information:

Section Q: Descriptive Report Insert ✓

Name of Aid: Hamilton Island Daybeacon
Light List #: 23410

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

Positioning Information

	Latitude (N)	Longitude (W)
Charted Pos.	56/07/52	133/34/15
Survey Pos.	56/07/51.44562	133/34/14.56828 ✓

	Easting	Northing
Charted Pos.	10595.6	14600.3
Survey Pos.	10603	14583.1

Difference between Charted and Surveyed Position: Distance: 19 meters
(Bearing from Surveyed to Charted Position) Bearing: 337 deg T

Characteristics Red and White dayboards on skeleton tower
Do characteristics match Light List? Yes [X] No [ ]
If no, what are the characteristics? _____

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

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

Apparent Purpose: _____

Other Information:

Section Q: Descriptive Report Insert ✓

Name of Aid: Shakan Strait Daybeacon
Light List #: 23415

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

Positioning Information

	Latitude (N)	Longitude (W)
Charted Pos.	56/07/46	133/30/19
Survey Pos.	56/07/45.00360	133/30/19.38340 ✓

	Easting	Northing
Charted Pos.	14671.8	14412.5
Survey Pos.	14665.2	14381.7

Difference between Charted and Surveyed Position: Distance: 31 meters
(Bearing from Surveyed to Charted Position) Bearing: 12 deg T

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

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

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

Apparent Purpose: _____

Other Information:

Section Q: Descriptive Report Insert ✓

Name of Aid: Dry Pass Daybeacon 28
Light List #: 24890

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

Positioning Information

	Latitude (N)	Longitude (W)
Charted Pos.	56/09/10	133/27/42
Survey Pos.	56/09/10.81751	133/27/41.22918 ✓

	Easting	Northing
Charted Pos.	17382.2	17011.1
Survey Pos.	17395.5	17036.4

Difference between Charted and Surveyed Position: Distance: 29 meters
(Bearing from Surveyed to Charted Position) Bearing: 208 deg T

Characteristics Red daybeacon "28"
Do characteristics match Light List? Yes [X] No [ ]
If no, what are the characteristics? _____

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

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

Apparent Purpose: _____

Other Information:

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

ADVANCE INFORMATION

June 12, 1998

Commander (OAN)
17th Coast Guard District

The following shoal soundings in Shakan Strait may be a hazard to navigation and should be included in the Local Notice to Mariners. The NOAA Ship RAINIER while conducting hydrographic survey H-10818 in Shakan Strait, Alaska, positioned these features. The dangers affect NOS chart 17387, 11 Ed., July 24, 1993. Positions were acquired using differential GPS and are given in NAD 83. Depths are referenced to Mean Lower Low Water based on Preliminary Observed Tides.

Feature Type	Depth (fathoms)	Latitude (N)	Longitude (W)	Position Number	Depth (meters)
Sounding	4	56:09:22.439	133:28:05.377	40533	7.4
Sounding	4	56:09:06.434	133:28:54.525	40655	7.4
Sounding	4 1/2	56:09:15.117	133:27:59.162	64112	8.7
Sounding	5	56:07:48.163	133:34:26.264	44394	9.7
Sounding	5	56:07:43.916	133:29:58.981	45744	9.5
Sounding	6	56:09:19.551	133:28:01.840	50459	11.5

* *see attached 1:20,000 scale chartlets*

This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6836. Refer to the survey project OPR-O380_RA and Danger to Navigation letter RA-03-98. More information on the current RAINIER survey projects may be obtained via e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV.

Sincerely,

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

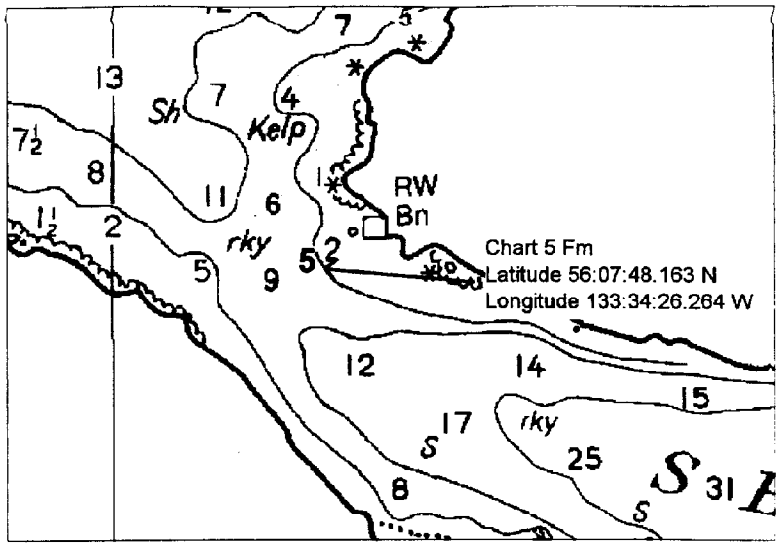
Attachment

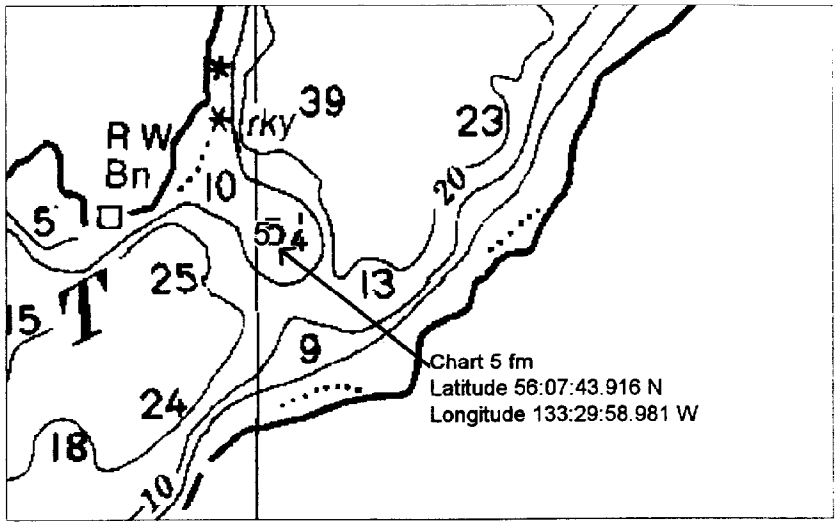
Cc: NIMA
PMC
N/CS261
N/CS34

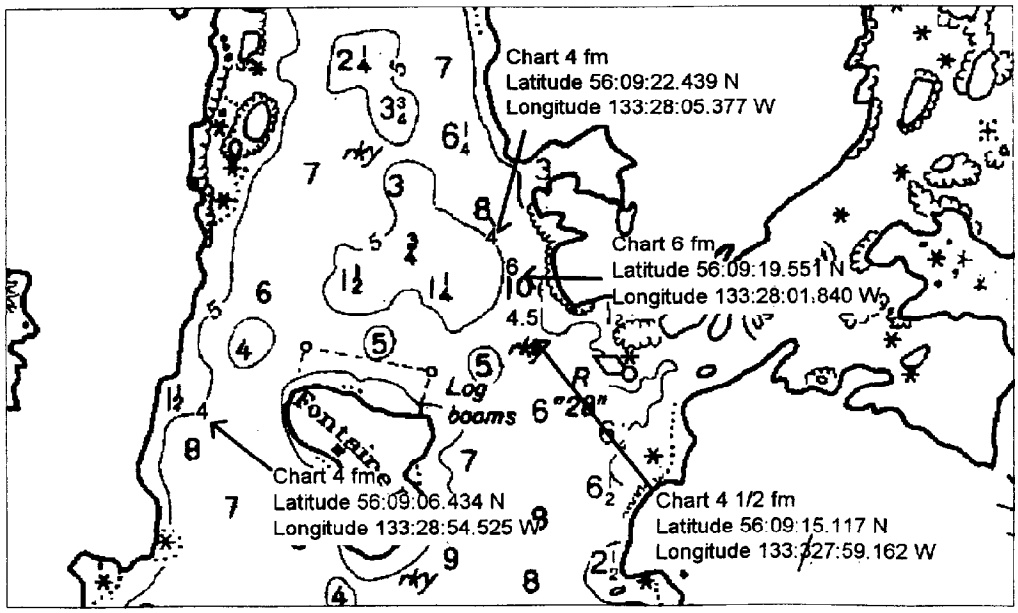
Attachment

NOAA Ship RAINIER
Danger To Navigation Letter
RA-3-98
ADVANCE INFORMATION

Chartlet Scales - 1:20,000







APPROVAL SHEET

for

H-10818

Standard field surveying 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 1998.

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.

Approved and Forwarded,

Alan D. Anderson

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

Survey Information Summary

Project: OPR-O380-98 **Project Name:** SHAKAN STRAIT

Instructions Dated: 4/17/98 **Project Change Info:**

Sheet Letter: A **Registry Number:** H-10818

Sheet Number: RA-10-10-98

Survey Title: SHAKAN STRAIT

Data Acquisition Dates: **From:** 02-Jun-98 153 **To:** 11-Jun-98 162

Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2121	2							
2122	5	3	3	3	8	10		
2124	7	1	3	1	8	9		2
2125	2	2	3		15	15	2	
2126	4	6	4	1	9	9		

Sound Velocity Cast Information

Launch Table #	Ship Table #	Cast DN	Max Depth	Position	Applicable DN
1		153	96.8	56/09/45 133/37/43	153-162
2		153	88.6	56/07/55 133/29/49	153-162

Tide Zone Information

Zone #	Time Corr.	Height Corr.
320	-01 hr 8 min	X1.24
323	00 hr min	X1.24

Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-0987	SHAKAN STRAIT	4/17/98	6/11/98
945-0982	SHAKAN BAY	4/17/98	6/11/98

Statistics Summary

Type	Total:
BS	65
DEV	192.15
DIVE	7
DP	110
MS	189.93
S/L	30.88
SPLIT	255.72
SSS1	33.8
XL	25.5

Percent XL: 13.4%

SQNM: 10.24

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: October 20, 1998

HYDROGRAPHIC BRANCH: Pacific

HYDROGRAPHIC PROJECT: OPR-O380-RA
HYDROGRAPHIC SHEET: H-10818

LOCALITY: Shakan Strait and Approaches,Alaska
TIME PERIOD: June 2 - June 11, 1998

TIDE STATION USED: 945-0982 Shakan Bay Entrance, AK
Lat. 56° 08.2'N Lon. 133° 36.1'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.324 meters

TIDE STATION USED: 945-0987 Shakan Strait, AK
Lat. 56° 08.8'N Lon. 133° 27.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.240 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SEA320, SEA323, SEA324 & SEA327.

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: Use tide data from the appropriate station for each zone according to the order in which they are listed in the Tidezone corrector files. For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available. All zones within a survey sheet may not have the same order of applicable tide stations.

Thomas N. Neu 10/20/98
CHIEF, REQUIREMENTS AND ENGINEERING BRANCH

NOAA FORM 76-155
(11-72)

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

SURVEY NUMBER

H-10818

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 17387	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
CALDER BAY	X		X							2
DIVIDE ISLAND	X		X							3
EL CAPITAN PASSAGE	X		X							4
FONTAINE ISLAND	X		X							5
HAMILTON ISLAND	X		X							6
KOSCIUSKO ISLAND	X		X							7
MARBLE CREEK	X		X							8
MIDDLE ISLAND	X		X							9
PRINCE OF WALES ISLAND	X		X							10
SHAKAN BAY	X		X							11
SHAKAN ISLAND	X		X							12
SHAKAN STRAIT	X		X							13
STATION ISLAND	X		X							14
SUMNER STRAIT	X		X		Approved:					15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25

Dennis L. Romesburg
APR 5 1999

NOAA FORM 76-155 SUPERSEDES C&GS 197

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

U.S. DEPARTMENT OF COMMERCE

REGISTRY NUMBER H-10818

HYDROGRAPHIC SURVEY STATISTICS

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	2					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): T-9624, T-9625, and T-9627

PHOTOBATHYMETRIC MAPS (List): NA

NOTES TO THE HYDROGRAPHER (List): NA

SPECIAL REPORTS (List): NA

NAUTICAL CHARTS (List): 17387, 12th Ed., July 25, 1998

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	296		296
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		40	40
GEOGRAPHIC NAMES			
OTHER* (Chart Compilation)			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	296	40	336

Pre-processing Examination by M. Bigelow	*Beginning Date* 10/26/98	*Ending Date* 11/05/98
Verification of Field Data by E. Domingo	*Time (Hours)* 296	*Ending Date* 2/22/98
Verification Check by B. Olmstead	*Time (Hours)* 16	*Ending Date* 3/12/99
Evaluation and Analysis by B. Mihailov	*Time (Hours)* 40	*Ending Date* 3/11/99
Inspection by B. Olmstead	*Time (Hours)* 15	*Ending Date* 3/25/99

EVALUATION REPORT

H-10818

A. PROJECT

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

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 an Attachment 1 and Attachment 2 (inset).

The bottom consists mainly of mud. Depths range from the Mean Lower Low Water (MLLW) line to 52 fathoms northeast of Station Island.

C. SURVEY VESSELS

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

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data was gathered and processed using the HYPACK/HPS and Microstation 95. The Shallow Water Multibeam system (SWMB) aboard two of the *Rainier* launches was used to collect some of the data. The SWMB data was not included with the survey due to processing problems.

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 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 projection and are depicted on a single sheet.

E. SONAR EQUIPMENT

The hydrographer's report contains a complete discussion of set-up, operation and processing of side scan sonar operations. See evaluation report, section P, for additional information.

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 tide gages, Shakan Bay Entrance, AK, 945-0982 and Shakan Strait AK., 945-0987.

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:	-1.314seconds	(-40.648 meters)
Longitude:	6.242 seconds	(107.745 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 several 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 T-9624, T-9625 and T-9627 1:10,000, were compiled on NAD27 and apply to this survey (see Project Instructions, OPR-0380-RA, section 4.1.1). The shoreline data and the hydrographic data were merged in MicroStation during the compilation of the smooth sheet. Shoreline drawn on the smooth sheet and is shown in brown for orientation purposes only.

There were no MHW revisions on this survey

Reference the hydrographer's report, section J for additional information.

K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

L. JUNCTIONS

There are no contemporary junctional surveys with H-10818.

M. COMPARISON WITH PRIOR SURVEYS

Survey	Year	Scale	Datum
H-8151	1954-55	1:10,000	NAD27
H-8243	1955	1:10,000	NAD27

The above prior surveys cover the entire area of the present survey. Differences in depths generally range from 0.5 to 1 fathom with the present survey. There appears to be no consistent pattern of shoaling and or an increase in depths. A comparison of standard depth curves with the prior surveys reveal little change in configuration except where present hydrography defined new or existing shoal areas. These differences are mostly based on the dynamics of natural bottom changes over the past forty-five years. Justification for smaller changes can probably be attributed to better bottom coverage, improved positioning and sounding techniques, and relative accuracy of the data acquisition methods.

Numerous prior survey rocks and ledges have been transferred to the present survey in color from the prior surveys. Most of these items fall near or inshore of the NALL line and were not specifically addressed by the hydrographer. However, several charted features originating from the prior survey and falling within the survey limits were not investigated and or discussed. These items are listed as follows.

Soundings/Features	Latitude(N)	Longitude(W)	Prior Survey
6^2	56/10/58	133/39/08	H-8151
2^2	56/10/57	133/38/53	H-8151
0^9	56/09/02	133/38/14.5	H-8151
0^9	56/09/01	133/38/12	H-8151
rky	56/09/03	133/38/11	H-8151
0^7	56/09/03	133/38/08	H-8151
6 sndgs centered at	56/08/48	133/37/18	H-8151
5 sndgs centered at	56/08/45	133/37/13	H-8151
1^1 *Rk*	56/08/00	133/35/27	H-8151
9	56/08/25	133/34/22	H-8243
9	56/09/00	133/33/55	H-8243
5 rocks centered at	56/09/13	133/33/39	H-8243
2 rocks centered at	56/09/12	133/33/20	H-8243
rock	56/09/19.5	133/33/11	H-8243
islet	56/09/39	133/34/19.5	H-8243
rock	56/09/27	133/32/21	H-8243
2 rocks centered at	56/09/27	133/31/49	H-8243
rock	56/09/52	133/30/07	H-8243
4	56/07/09	133/31/54	H-8243
2 rocks centered at	56/09/12	133/27/41	H-8243
rock	56/08/22	133/29/36	H-8243

Several kelp symbols have been transferred from the prior surveys in areas where the hydrographer provided no information. These areas are currently charted with the notation *kelp*.

With the inclusion of the features listed above, survey H-10818 is adequate to supersede the prior surveys within the common area.

N. ITEM INVESTIGATIONS

There were no AWOIS items assigned to this survey.

O. COMPARISON WITH CHART

Survey H-10818 was compared with the following chart:

Chart	Edition	Date	Scale
17387	12th	July 25, 1998	1:40,000

a. Hydrography

Charted hydrography originates with the previously discussed prior surveys and miscellaneous sources. The prior surveys have been adequately addressed in section M and require no further discussion. Miscellaneous source data was adequately addressed during survey operations except as listed below. These features were not investigated and or addressed during survey operations and fall within the survey limits.

Feature	Latitude(N)	Longitude(W)
rock	56/09/52	133/33/50
rock	56/09/24	133/33/40
rock	56/09/17	133/33/39
rock	56/09/14	133/33/40
rock	56/09/15	133/33/46.5

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.

With the exception of the above items, survey H-10818 is adequate to supersede charted hydrography within the common area.

b. Dangers To Navigation

Six dangers to navigation were discovered during survey operations and reported to the USCG on June 12, 1998. No additional dangers to navigation were found during office processing. A copy of the report is attached.

P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10818 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 except as follows:

In the event that the field units submission of survey data will exceed four weeks from 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 forward their explanation through the Marine Center Director. Field work for survey H-10818 was completed on June 11, 1998 but not received for office processing until October 26, 1998.

The hydrographer did not provide the appropriate deliverables for side scan sonar survey work as specified in the Field Procedures Manual, Section 5.5.1, Package Content. The following deliverables were not received.

a.) SSS Contact Plot (Analog)
b.) SSS Swath Coverage Plot (Analog)
c.) HPS SSS Contact table (Digital)
d.) Swath Coverage Plot File (.tab file)
e.) Track Plot (.tab file)
f.) Supporting item investigation forms

Several charted features located seaward of the NALL line were not investigated and or addressed during survey operations. When conducting shoreline verification the hydrographer shall verify all features within the limits of safe navigation and provide a position to include a sketch of the features, height/depth information at the time of data acquisition.

Q. AIDS TO NAVIGATION

There are four fixed aids to navigation within the survey area. These aids were positioned and adequately serve their intended purpose. See the hydrographer's report, section Q for additional information.

The following charted floating aids to navigation originate from Local Notice to Mariners 26-98 and installed after the completion of survey work. The evaluator recommends these buoys be retained as charted. These buoys are described as GR "SS", GC "1", RN "2" and RN"4" and mark the channel through the east end of Shakan Strait, between Fontaine Island, Hamilton Island and Prince of Wales Island.

There were no features of landmark value located and or recommended for charting.

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.

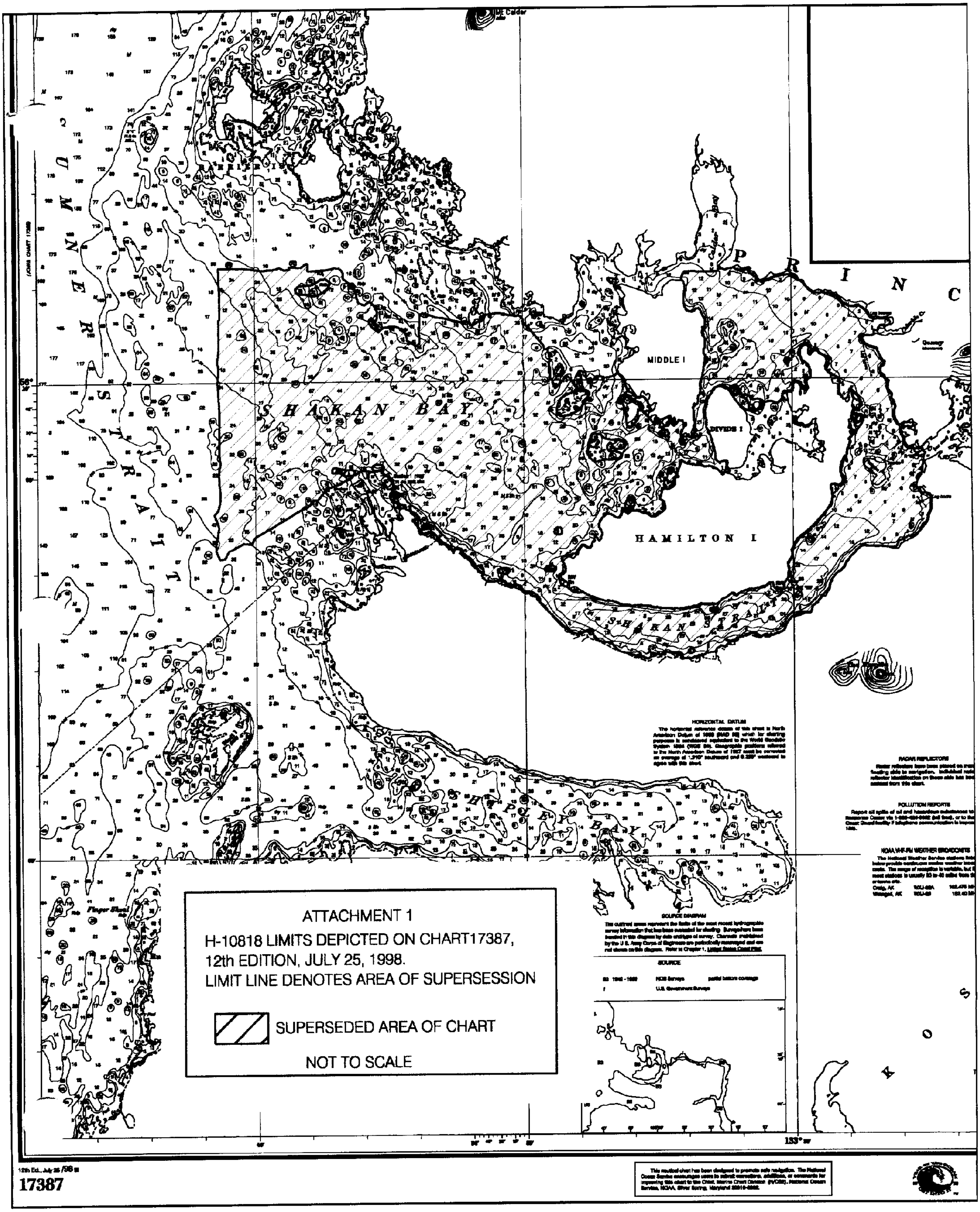
T. RECOMMENDATIONS

This is a good hydrographic survey. Additional work on a low priority basis is recommended to investigate those items discussed in section M and O.

U. REFERRAL TO REPORTS

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

Bob Mihailov
Cartographer

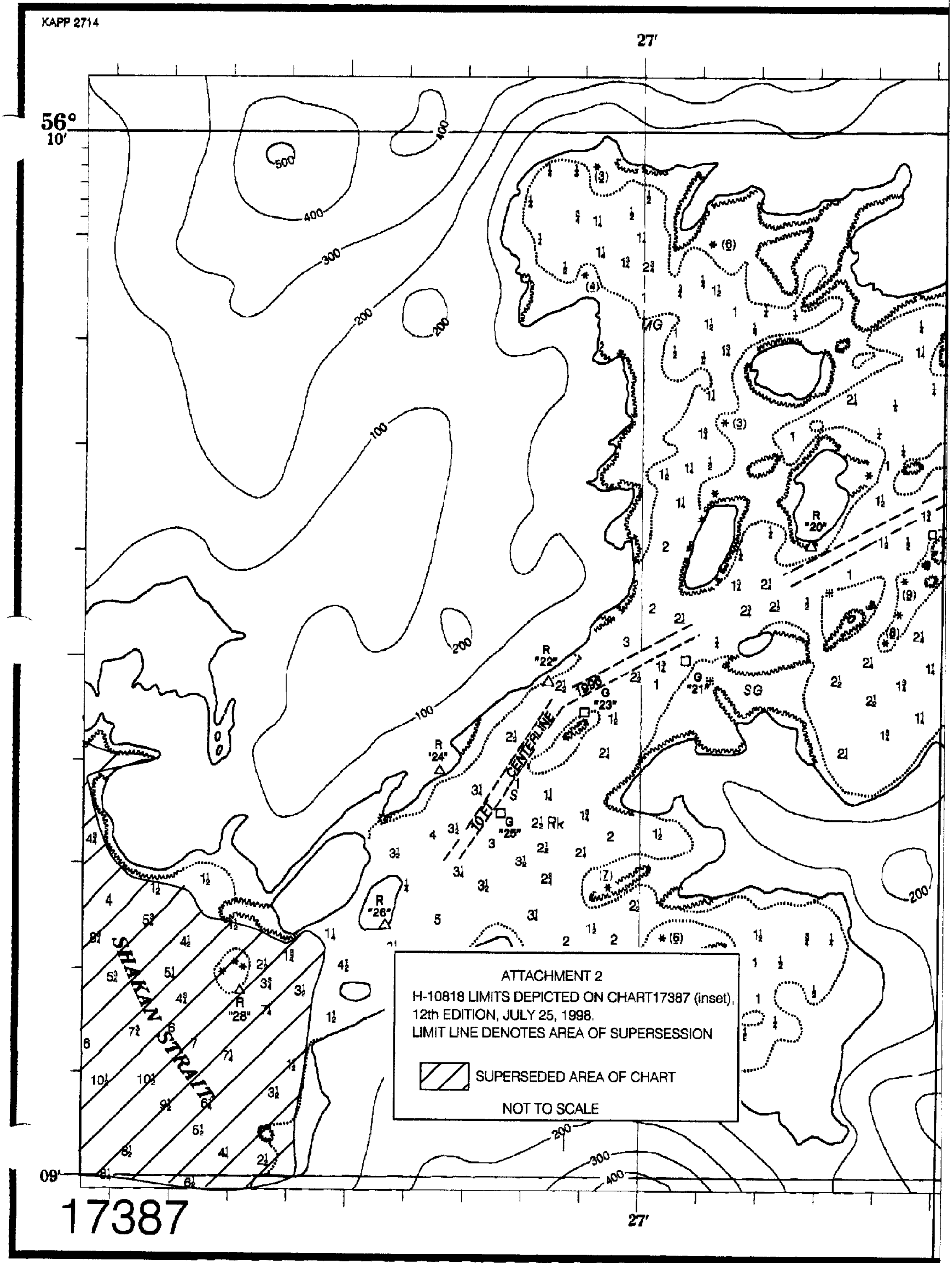


ATTACHMENT 1

H-10818 LIMITS DEPICTED ON CHART17387,
12th EDITION, JULY 25, 1998.
LIMIT LINE DENOTES AREA OF SUPERSESSION

SUPERSEDED AREA OF CHART

NOT TO SCALE


KAPP 2714
27′
56°
10′
09′
SHAKAN STRAIT
10 FT CENTERLINE
ATTACHMENT 2
H-10818 LIMITS DEPICTED ON CHART17387 (inset),
12th EDITION, JULY 25, 1998.
LIMIT LINE DENOTES AREA OF SUPERSESSION
SUPERSEDED AREA OF CHART
NOT TO SCALE
17387

APPROVAL SHEET
H-10818

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: 3/30/99

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: 3-31-99

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

****

Final Approval

Approved:

Samuel P. DeBow Date: May 6, 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-10818

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
17387	2/16/99	B. Mchaffer	(Full) Part Before After Marine Center Approval Signed Via Full application
			Drawing No. of sndgs and features from SS and
			thru inset
17387			(Full) Part Before After Marine Center Approval Signed Via full application
(inset)	2/16/99	B. Mchaffer	Drawing No. of sndgs and features from SS
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.