

H-10967

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. _____

Registry No. **H-10967**

LOCALITY

State **ALASKA**

General Locality **TONGASS NARROWS**

Sublocality **½ NM SE OF LEWIS PT. TO PT. HIGGINS**

2000

**CHIEF OF PARTY
GERALD DOUTHIT**

LIBRARY & ARCHIVES

DATE _____

HYDROGRAPHIC TITLE SHEET

H-10967

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.

State AlaskaGeneral Locality Tongass NarrowsSublocality 1/2 NM SE of Lewis Point to Point HigginsScale 1:10,000Date of Survey July 28 - Nov. 29, 2000Instructions Date April 15, 2000Project No. OPR-O302-KR-00Vessel Zeus, Jolly Pickle and DucerChief of Party Gerald DouthitSurveyed by T. Howland, C. Kemp, B. Hocker, D. Batton, A. Dollard, F. White
D. Moistner, C. Cooper, B. TaylorSoundings taken by echo sounder, hand lead, pole Reson 8101, 8124

Graphic record scaled by _____

Graphic record checked by _____

Evaluation by B. Taylor Automated plot by HP Designjet 750CVerification by B. TaylorSoundings in Fathoms and tenths at MLLWREMARKS: Time in UTC.**Revisions and annotations appearing as endnotes were****generated during office processing.****All separates are filed with the hydrographic data.****As a result, page numbering may be interrupted or non-sequential**

Descriptive Report to Accompany Hydrographic Survey H-10967

Sheet A

Scale 1:10,000

July-November 2000

Terra Surveys, LLC

Chief of Party: Gerald Douthit

A. AREA SURVEYED

This navigable area and shoreline verification survey was conducted in accordance with Hydrographic Project Instructions OPR-0302-KR, ½ NM SE of Lewis Pt. to Pt. Higgins, Tongass Narrows, Alaska dated April 15, 2000.¹

The purpose of this contract was to provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of this area. Numerous obstructions, wrecks and shoaling have been reported. The project area is approximately 7.9 square nautical miles with the southerly limits located 5 miles north of Ketchikan in southeastern Alaska. The survey area covers the northern end of Tongass Narrows, bound by Revillagigedo Island on the northerly shore and Gravina Island on the southerly shore. The survey encompasses Ward Cove and the north entrance to Tongass Narrows.² Tongass Narrows is transited by over 450 cruise ships annually, the Alaska State Marine Highway ferry system, commercial and sport fishing boats, log barges, recreational boaters (motor, sail and kayaks) and heavy float plane traffic. Ketchikan is a maritime community that depends on the accuracy of NOAA charts.

Two shallow water, multibeam sonar systems were used to locate and determine the least depth over the obstructions, wrecks and shoals as well as to determine the least depths over the entire project area.³ Concurrently, a limited shoreline and near shoreline feature verification survey was conducted. The shoreline survey verified the general location of the MHW shoreline, the MLLW line and all features seaward of MLLW.⁴ Every effort was made to ensure that the survey products could be traced to and reconstructed from the raw data.⁵

COVERAGE GRAPHIC

OPR-O302-KR-00

H-10967

Hydrographic Survey of the

Tongass Narrows, AK.

JULY-NOVEMBER 2000

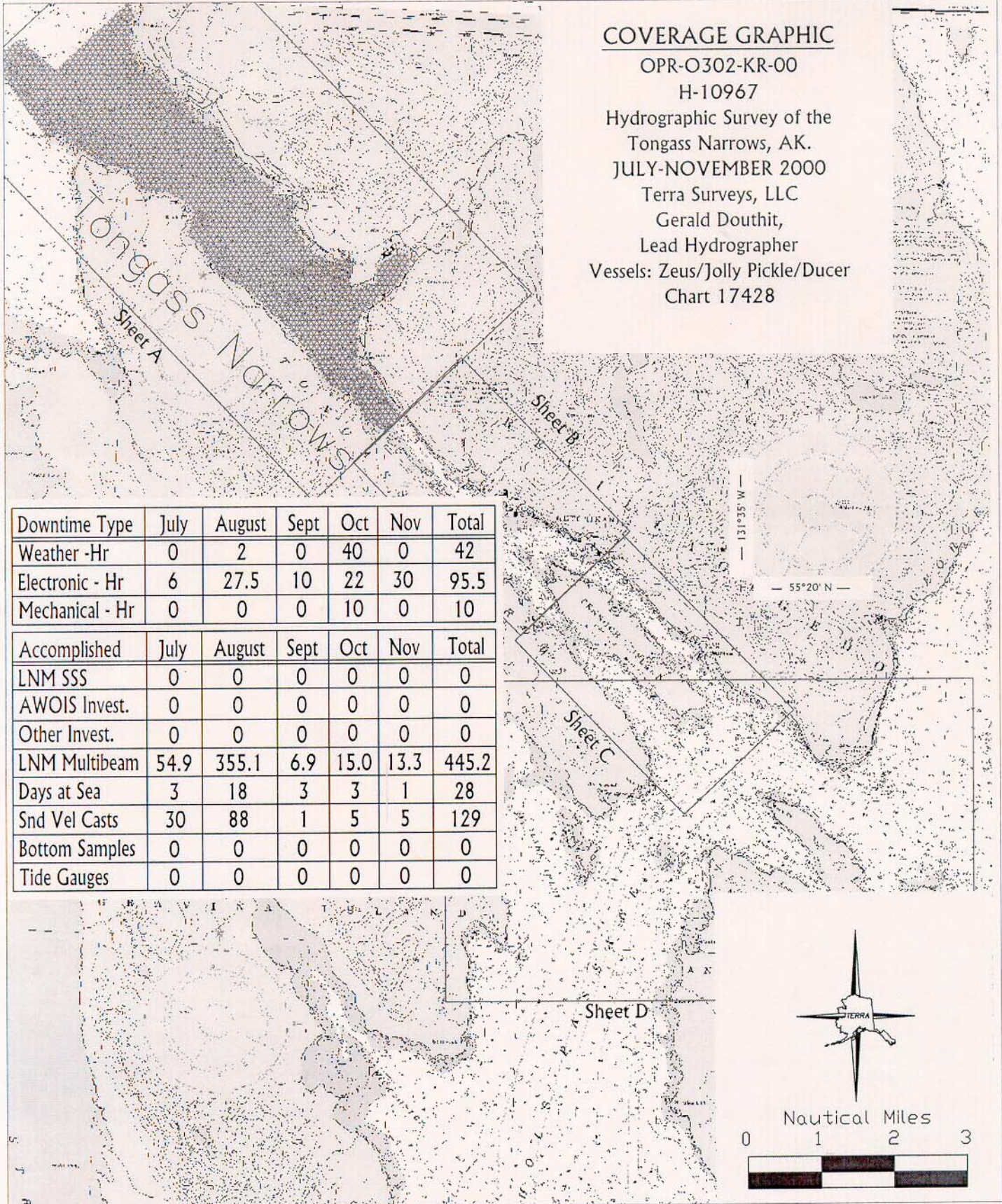
Terra Surveys, LLC

Gerald Douthit,

Lead Hydrographer

Vessels: Zeus/Jolly Pickle/Ducer

Chart 17428



Downtime Type	July	August	Sept	Oct	Nov	Total
Weather -Hr	0	2	0	40	0	42
Electronic - Hr	6	27.5	10	22	30	95.5
Mechanical - Hr	0	0	0	10	0	10

Accomplished	July	August	Sept	Oct	Nov	Total
LNM SSS	0	0	0	0	0	0
AWOIS Invest.	0	0	0	0	0	0
Other Invest.	0	0	0	0	0	0
LNM Multibeam	54.9	355.1	6.9	15.0	13.3	445.2
Days at Sea	3	18	3	3	1	28
Snd Vel Casts	30	88	1	5	5	129
Bottom Samples	0	0	0	0	0	0
Tide Gauges	0	0	0	0	0	0

Section B Data Acquisition and Processing

B.1 Equipment

Zeus

Approximately ninety-eight percent of the soundings for this survey were acquired from the motor vessel *Zeus*, with the remaining data collected from the jet boat *Jolly Pickle*. The *Zeus* is an aluminum retrofitted Vulcan crab vessel with an overall length of forty-four feet, a beam of thirteen and a half feet and a draft of five feet. Major systems used on the *Zeus* are listed on the following table.

VESSEL ZEUS	
LOA: 44 FT, BEAM 13.5 FT, DRAFT: 5 FT	
Equipment	Manufacturer & Model
Multibeam sonar	Reson SeaBat 8101
Positioning	Seatex Seapath 200
	Trimble 7400
Sound velocity	Applied Microsystems 3317 3279 4425
Vessel attitude	Seatex Seapath 200 SG Brown Meridian Gyro

From Day # 210 through Day # 219, the Seatex Seapath 200 was used for positioning on the *Zeus*. Because of the Seapath unit's apparent sensitivity to elevated solar activity, project hydrographers switched primary positioning aboard the *Zeus* to the Trimble 7400,

beginning on Day # 220 and continuing throughout the remainder of the survey. The Seatex Seapath 200 was used for roll, heave, and pitch data, with increased confidence provided by a SG Brown Meridian Gyro. Equipment performance details are provided in the ⁶Data Acquisition and Processing Report, Sections A, Equipment and B, Quality Control.⁷

Jolly Pickle

The *Jolly Pickle* is a twenty-four foot Almar aluminum jet boat with an 8-foot beam and a draft of 1 ft. Major systems used on the *Jolly Pickle* are listed on the following table.

VESSEL <i>JOLLY PICKLE</i>	
LOA: 24 FT, BEAM 8 FT, DRAFT: 1 FT	
Equipment	Manufacturer & Model
Multibeam sonar	Reson SeaBat 8124
Positioning	Seatex Seapath 200 Trimble AG120 DGPS
Sound velocity	Applied Microsystems 3317 3279 77-3 4279
Vessel attitude	Seatex Seapath 200

Ducer

The motor vessel *Ducer*, a 19-foot aluminum Grayling Scamp, was employed for all shoreline verification in the survey area. The *Ducer* has a beam of seven feet and draft of one foot. Major systems used on the *Ducer* are listed in the following table.

VESSEL <i>DUCER</i>	
LOA: 19 FT, BEAM 7 FT, DRAFT: 1 FT	
Equipment	Manufacturer & Model
Singlebeam sonar	Odom 3100
Positioning	Trimble AG120 DGPS
Sound velocity	N/A
Vessel attitude	N/A

As noted in the Project-Wide Report, singlebeam sonar on the *Ducer* was coordinated with predicted tides for monitoring water depths in nearshore areas in the course of limited shoreline verification. Singlebeam sonar data was not utilized for project depth soundings.⁸

B2. Quality Control

The internal consistency and integrity of the survey data was found to be good.⁹ Survey H-10967 (Sheet A) had 369.6 Nautical Miles of main scheme lines and 24.8 NM of crosslines which is 6.7% of the mainscheme lines. This exceeds the 5% specified in the statement of work. The soundings collected in the survey met or exceeded the accuracy of the specifications.¹⁰

Analysis of the crosslines was done by comparing each line in totality to a DTM of soundings made from the mainscheme lines. Crossline reports were generated from six regional dtms, referred to as blocks. Blocks 1 through 6 all showed general trends as well as inconsistencies. (See Separate_V_Crossline_Comparisons)¹¹

Two different methods of comparison were used. An analysis of individual beams was considered as well as by soundings grouped by angle from nadir. Both categories were also grouped by depth in 10 meter classes. Crossline reports were generated with the Caris program Makehist.exe using a classfile which specified the acceptable NOAA specifications for this project. This is the classfile used for these reports:

Each error in the file is for a depth mid way between each group (ex. -10.00 to -20.00 uses -15 depth to compute an allowable error of .54). From -50 on a slope was computed. The computed allowable errors met NOAA specifications for this project.¹²

Min. Depth	Max. Depth	Allowable Error
0.0m	-10.00m	0.52m
-10.00m	-20.00m	0.54m
-20.00m	-30.00m	0.60m
-30.00m	-40.00m	0.68m
-40.00m	-50.00m	0.77m
-50.00m	-1000.00m	1.4%

The analysis of the soundings grouped by angle from nadir was undertaken primarily to determine a useable filtering setting for line editing. Using the reports as a guideline, it was decided to filter out all beams which were collected outside of 60 degrees from nadir. Individual beam numbers were not necessarily eliminated. On the Reson 8101, this would effectively eliminate beams 1-9 and 92-101 if the vessel was level. The natural roll of the vessel during collection accounts for the small number of accepted soundings seen in the Smoothsheet histogram outside of 10-91. The beam analysis reports show that 8 out of 20 crosslines in Sheet A would have some unacceptable beams near the nadir. These would have fallen below the average dtm surface just outside the acceptable standard. This observation is seemingly supported by the histogram of smoothsheet soundings which shows a general “smile” trend. It should be noted however, that the histogram was compiled from a shoal biased data set while the quality reports refer to an average sounding value dtm.

The results also show a decreasing acceptable swath width with increasing depth. This was confirmed by observation of the soundings in subset mode. The probable cause of this phenomenon is compounding error caused by rays bending over increasing distances while depending on less than perfect SVP data. During subset editing it could be seen that especially on downward slopes, dispersion in soundings would increase with depth. A depth dependant angle from nadir filter would have been ideal in this case unfortunately one is not available at this time. In practice the subset editor would begin by filtering out beams greater than 60 degrees. There were cases where port and starboard swaths were filtered differently when one side was considerably deeper. A line which was in relatively deep water (over 50m) would be filtered at 50 degrees before editing. Other possible reasons for inconsistencies in the reports may include SVP errors and possible positioning error combined with the steep slopes in the crossline areas covered.¹³

B3. Corrections To Echo Soundings

Hydrographic Survey H-10967 was performed with three other surveys in Project OPR-0302-KR. Any changes to the corrections to echo soundings affects all four surveys in the area and is described in the project wide Data Acquisition and Processing Report.¹⁴

Vertical and Horizontal Control

Soundings for this survey were tide adjusted using data from Tide Station Ketchikan 945-0460. Preliminary water level data was downloaded daily from the NOAA web site (<http://www.co-ops.nos.noaa.gov>) and applied as the data was processed in CARIS. Verified tide data from the Ketchikan gage was then downloaded off the Internet site and applied to the final smoothsheet soundings. Both preliminary and final tide adjustments used tidal zoning provided by NOAA.¹⁵

The horizontal control datum for this survey is North American Datum of 1983(NAD 83). The projection used during collection was UTM, Zone 9. Control station *Penthouse* was established and used to send correctors to the survey vessels. A 24-hour observation on USGS Monument *WRONG* was used as a fixed point DGPS performance check on *Penthouse*. The observation survey showed the position on *Penthouse* to meet the required accuracy standards. The control survey to establish *Penthouse* and the 24-hour observation survey is detailed in the Project Wide Vertical and Horizontal Control report. In addition to station *Penthouse*, the United States Coast Guard (USCG) DGPS Beacon at Annette Island was used during hydrographic operations for the Shoreline Verification Survey and for daily confidence cross checks. A summary of the daily DGPS confidence checks can be found in the Project Wide Vertical and Horizontal Control report.¹⁶

The only deviation exclusive to H-10967 was a change in the positioning system on Day # 211. The Seapath 200 positioning system used from Day # 200 to 210 did not work well under the active ionosphere conditions experienced this year, resulting in delays. A Trimble 7400 receiver was installed and proved to be much more robust. The Trimble 7400 was used for positioning for the duration of the project.¹⁷

D1. Chart Comparison¹⁸

The last Notice to Mariners to cover the time surveyed was the December monthly edition, Notice number 49. There were no items that prompted chart comparison.

There was no Danger to Navigation reports submitted for this survey¹⁹.

This survey was compared in Autocad Map to the following charts:

Chart	Scale	Edition	Date
17428	1:40,000	7 th	February 25,1995
(inset)	1:10,000		

General agreement between the chart and this survey was good.²⁰ There are no noticeable shoaling or deepening trends²¹. There were numerous rocks surveyed that are not shown on the chart, most notably in Ward Cove.²² This is probably the result of the high sounding density of this survey.²³

Chart Depth	H-10967 Fathoms	Latitude				Longitude				Comment On Agreement With Chart
Main Chart (17428)										
30	28	55°	26'	30.48"	N	131°	50'	44.88"	W	Near 30 fathoms ²⁴
34	43	55°	25'	45.84"	N	131°	49'	19.59"	W	Near 34 fathoms ²⁵
11	9.6	55°	23'	52.44"	N	131°	46'	10.92"	W	Near 11 fathoms outside of 10 fathom curve ²⁶
N/A	17.5	55°	24'	19.44"	N	131°	45'	29.16"	W	Rock not noted on chart ²⁷
N/A	17.8	55°	24'	21.60"	N	131°	45'	28.08"	W	Rock not noted on chart ²⁸
N/A	3.8	55°	22'	32.88"	N	131°	44'	50.64"	W	Outside 5 fathom curve ²⁹
N/A	5.6	55°	22'	28.25"	N	131°	43'	45.12"	W	Rock not noted on chart ³⁰
67	62	55°	27'	09.03"	N	131°	50'	43.45"	W	Near 67 fathoms ³¹
20	22	55°	26'	09.09"	N	131°	51'	52.94"	W	Near 20 fathoms ³²

Chart Depth	H-10967 Fathoms	Latitude				Longitude				Comment On Agreement With Chart
Main Chart (cont)										
N/A	8.2	55°	26'	01.64"	N	131°	47'	55.84"	W	Rock not noted on chart ³³
N/A	14.2	55°	25'	15.52"	N	131°	49'	07.37"	W	Rock not noted on chart ³⁴
35	29	55°	24'	54.85"	N	131°	47'	42.23"	W	Rock not noted on chart near 35 ³⁵
N/A	2.9	55°	23'	55.69"	N	131°	47'	13.44"	W	Rock not noted on chart ³⁶
N/A	13.5	55°	24'	00.38"	N	131°	45'	06.17"	W	Rock not noted on chart ³⁷
20	23	55°	23'	26.80"	N	131°	45'	35.29"	W	Near 20 fathoms ³⁸
20	15.1	55°	23'	36.91"	N	131°	44'	30.31"	W	Falls on 20 fathom contour line ³⁹
16	13.3	55°	23'	57.06"	N	131°	44'	07.87"	W	Near 16 fathoms ⁴⁰
N/A	5.3	55°	23'	15.08"	N	131°	44'	21.79"	W	Rock not noted on chart ⁴¹
N/A	4.4	55°	26'	09.09"	N	131°	51'	52.94"	W	Rock not noted on chart ⁴²
21	24	55°	23'	27.09"	N	131°	44'	36.49"	W	Near 21 fathoms ⁴³
Chart Inset (Ward Cove)										
N/A	5.5	55°	24'	14.30"	N	131°	43'	28.19"	W	Rock not noted on chart ⁴⁴
N/A	3	55°	24'	14.09"	N	131°	43'	31.25"	W	Rock not noted on chart ⁴⁵
N/A	13.7	55°	24'	08.16"	N	131°	43'	24.75"	W	Rock not noted on chart ⁴⁶
N/A	12.1	55°	24'	11.20"	N	131°	43'	43.13"	W	Rock not noted on chart ⁴⁷
N/A	12.7	55°	24'	11.26"	N	131°	43'	54.42"	W	Rock not noted on chart ⁴⁸
N/A	18.3	55°	24'	06.76"	N	131°	43'	53.36"	W	Rock not noted on chart ⁴⁹
N/A	11.8	55°	24'	03.15"	N	131°	43'	24.54"	W	Rock not noted on chart ⁵⁰
N/A	19.6	55°	24'	02.14"	N	131°	43'	56.80"	W	Rock not noted on chart ⁵¹
16	13.3	55°	23'	57.06"	N	131°	44'	07.87"	W	Near 16 fathoms ⁵²

AWOIS Items⁵³

This contract did not require AWOIS investigations. A list of AWOIS items in the area was provided for “informational purposes only”. A review of the items compared to the chart and a digital terrain model produced from the survey is summarized below.

Record	Vesselterms	Comment
52512	Pilings	Pilings on the west shore of Tongass Narrows. This item agrees with the chart. Two rows of pilings are clearly visible in the DTM. The item is adequately represented on the chart by a single row of pilings running down the center of the two rows visible in the digital terrain model.
52513	Disposal Area	Disposal site in the middle of the channel. There is no obvious evidence of a disposal pile at this location without further investigation. The digital terrain model does shows relief in that area.
50608	Obstruction	Nothing apparent in digital terrain model.
50607	SNDG	No Data collected at exact position. History depth = 3 fathoms. Position falls near a smoothsheet sounding of 4.4 fathoms.
50606	Unknown	Nothing apparent.
52508	Obstruction	No pier found in the shoreline verification. Nothing apparent on the digital terrain model.
52509	Obstruction	No pile clearly visible in this shoal area on the digital terrain model.

RECD VESLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

NATIVLAT	<input type="text" value="55/24/05.00"/>	NATIVLON	<input type="text" value="131/47/35.00"/>	NATIVDATUM	<input type="text" value="31"/>
LAT83	<input type="text" value="55/24/05.00"/>	LONG83	<input type="text" value="131/47/35.00"/>	GPQUALITY	<input type="text" value="Med"/>
LATDEC	<input type="text" value="55"/> <input type="text" value="24"/> <input type="text" value="5"/>	LONDEC	<input type="text" value="131"/> <input type="text" value="47"/> <input type="text" value="35"/>	GPSOURCE	<input type="text" value="Scaled"/>
	<input type="text" value="55.401388888889"/>		<input type="text" value="131.793055555556"/>		

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED

TECNIQ
 Techniqnote

History

Fieldnote

Proprietary YEARSUNK NIMANUM SYSTEMNUM

RECRD VESSTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

NATIVLAT	<input type="text" value="55/23/55.29"/>	NATIVLON	<input type="text" value="131/43/35.58"/>	NATVDATUM	<input type="text" value="31"/>
LAT83	<input type="text" value="55/23/55.29"/>	LONG83	<input type="text" value="131/43/35.58"/>	GPQUALITY	<input type="text" value="High"/>
LATDEC	<input type="text" value="55"/> <input type="text" value="23"/> <input type="text" value="55.29"/>	LONDEC	<input type="text" value="131"/> <input type="text" value="43"/> <input type="text" value="35.58"/>	GPSOURCE	<input type="text" value="Scaled"/>

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECHNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM SYSTEMNUM

RECD VESLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

NATIVLAT NATIVLON NATIVDATUM
 LAT83 LONG83 GPQUALITY

 LATDEC LONDEC

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ

Techniqnote

History

Fieldnote

Proprietary

YEARSUNK NIMANUM SYSTEMNUM

RECD VESLTERMS CHART AREA
 CARTOCODE SNDINGCODE DEPTH

NATIVLAT NATIVLON NATIVDATUM
 LAT83 LONG83 GPQUALITY
 LATDEC LONDEC GPSOURCE

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ

Techniqnote

50608
 HISTORY
 H8101/53WD--NO PROJECT NUMBER. SEE 22-SRO, S-1-HO, DATED 23 MARCH 1953, SPECIAL WIRE DRAG SURVEY OF WARD COVE, ALASKA. FILL BEHIND ALMOST THE ENTIRE FACE OF WHARF ENCROACHES ON THE 30 FT DEPTH CURVE. FILL CONSISTS OF BROKEN ROCK AND BOULDERS. LIKELIHOOD EXISTS THAT THIS FILL MATERIAL MAY HAVE BEEN DISLODGED SEAWARD DURING CONSTRUCTION OF PIER OR SUBSEQUENT TO CONSTRUCTION BY NATURAL CAUSES.
 MAR--11/83, S-0907-RA-83: LD OF 3.5FMS AT PREDICTED MLW IN LAT.55-24-25N, LONG.131-43-29.4W. (LEAD LINE AND ECHO SOUNDER INVESTIGATION).
 FE251/83--S-0907-RA-83: LD OF 3.5 FM. LOCATED IN LAT. 55-24-25N.
 LONG. 131-43-29.5W (PREDICTED MLW). PULP MILL OFFICIALS BELIEVED SHOALING ALONG PIER FACE RESULT OF ACCUMULATION OF SUNKEN LOGS AND WOOD CHIPS (BOTTOM SAMPLES INDICATED BOTTOM MADE UP OF PRIMARILY WOOD CHIPS).
 EVALUATOR STATES THAT FIVE (5) FATHOM DEPTH CURVE HAS BEEN DISPLACED OFFSHORE APPROX. 10 METERS FROM CHARTED CURVE. OUTSIDE THE CHARTED 10 FATHOM CURVE, SHOALING ATTRIBUTED TO WOOD CHIPS IS APPARENT.

Fieldnote
 Evaluator Comment: The 5 fathom depth curve is now primarily seaward of this location, probably indicating shoaling from debris and wood chips since 1953 as reported. Chart selected soundings from 2000 survey.

Proprietary

YEARSUNK NIMANUM SYSTEMNUM

RECRD VESLTERMS CHART AREA
 CARTOCODE SENDINGCODE DEPTH

NATIVLAT	<input type="text" value="55/24/26.40"/>	NATIVLON	<input type="text" value="131/43/24.00"/>	NATVDATUM	<input type="text" value="6"/>
LAT83	<input type="text" value="55/24/25.13"/>	LONG83	<input type="text" value="131/43/30.06"/>	GPQUALITY	<input type="text" value="High"/>
LATDEC	<input type="text" value="55.24.25.13"/>	LONDEC	<input type="text" value="131.43.30.06"/>	GPSOURCE	<input type="text" value="NA"/>

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ

Techniqnote

50607
 HISTORY
 H8101/53WD--NO PROJECT NO. SEE 22-SRO, S-1-HO, DATED 23 MARCH 1953, SPECIAL WIRE DRAG SURVEY OF WARD COVE, ALASKA. LEAD LINE LEAST DEPTH OF 19 FT. CLEARED BY 16 FT. 18 FT LEAST DEPTH OBTAINED BY SUPPLEMENTAL HYDROGRAPHY (FATHOMETER). SHOAL CREATED BY EARTH SLIDE DURING PIER CONSTRUCTION. MAR--11/83, S-O907-RA-83: 2.3FM DEPTH FOUND AT LAT.55-24-27.0N, LONG.131-43-23.2W. ECHO SOUNDER INVEST. FE251/83--S-907-RA-83; SHOAL VERIFIED BY ECHO SOUNDER AND LEAD-LINE INVESTIGATION. SPILLING OF WOOD CHIPS CAUSED SHOALING ACCORDING TO PULP MILL OFFICIALS.

Fieldnote

Proprietary YEARSUNK NIMANUM SYSTEMNUM

RECD 50606 VESLTERMS UNKNOWN CHART 531 AREA 10
 CARTCODE 0370 SNDNGCODE 127 DEPTH 41

NATVLAT	55/24/21.35	NATVLON	131/43/23.48	NATVDATUM	6
LAT83	55/24/20.09	LONG83	131/43/23.54	GPQUALITY	High
LATDEC	55 24 20.09	LONDEC	131 43 23.54	GPSOURCE	NA
	55.405580555556		131.72487222222		

PROJECT 09PR-0302 ITEMSTATUS Assigned SEARCHTYPE Full
 RADIUS 200 INIT MBH ASSIGNED 1/3/2000
 TECNIC MB,S2,ES,D1,SD

Technicnote

History

50606
 HISTORY
 NMT19/51--SUNKEN BARGE, 125 FT. LONG, IN 11 FMS., APPROX. 175 YDS., 354 DEG. FROM CHARTED POS. OF WARD COVE BUOY 1, IN APPROX. POS. LAT. 55-24-18N, LONG. 131-43-20W.
 HT768/51--NO PROJECT NO. SEE LETTER TITLED "SPECIAL SURVEY OF WARD COVE AND VICINITY, ALASKA", DATED 27 MARCH 1951, FATHOMETER LD OF 6.9 FMS WITH THE NOTE "SUNKEN BARGE", LEAD LINE LD OF 7.0 FMS. IN LAT. 55-24-34N LONG. 131-43.40W. SEXTANT CONTROL.
 HB101/53WO--NO PROJECT NO. SEE 22-SRO, S-1-HO, DATED 23 MARCH 1953, SPECIAL WIRE DRAG SURVEY, WARD COVE, ALASKA, HANG AT 44 FT. LEAD LINE DEPTH OF 41 FT. IN LAT. 55-24-21.36N, LONG. 131-43-23.48W. SEXTANT CONTROL.
 MAR--11/83, S-0907-RA-83: NO INVESTIGATION. SEMI-PERMANENT "HOUSE FLOAT" MOORING AT THIS LOCATION.
 FE/251/83--S-0907-RA-83: NO INVESTIGATION; ANCHORED "HOUSE FLOAT" OVER SEARCH AREA. HYDRO. RECOMMENDS ITEM REMAIN AS CHARTED. EVALUATOR NOTES A SHOAL DEPTH OF 3.9 FATHOMS LOCATED 35 METERS SOUTH OF CHARTED WIRE-DRAG CLEARED DEPTH. THIS 3.9 FATHOM SHOAL BELIEVED TO BE THE RESULT OF WOOD CHIP DEPOSITS. RECOMMENDS THE HOUSE FLOAT AREA LIMITS AND THE 3.9 FATHOM SOUNDING BE CHARTED EVEN THOUGH THE WRECK HAS NOT BEEN DISPROVEN. ALSO RECOMMENDS THE WRECK BE RECHARTED IF ANCHORED HOUSE FLOAT IS MOVED. DURING AWOIS CHECK, IT WAS NOTED (3/8/85) THAT THE WRECK IS CHARTED AS CLEARED BY 6 FATHOMS 5 FEET (41 FEET) WHEREAS THE SOURCE (H-8101 WD) INDICATES A HANG AT 44 FT. AND A LEAD LINE DEPTH AT THE HANG OF 41 FT.

Fieldnote

Evaluator Comment: Area was surveyed with 100% multibeam. Barge is not evident in survey record and is not charted. Depths are now shoaler than 6 fathoms 5 feet in the vicinity, probably due to a general shoaling trend from wood debris. Chart selected soundings from 2000 survey smoothsheet. Do not chart barge.

Proprietary

YEARSUNK NIMANUM SYSTEMNUM 9299 Print Record

RECD VESLTERMS CHART AREA
 CARTOCODE SENDINGCODE DEPTH

NATIVLAT	<input type="text" value="55/24/25.00"/>	NATIVLON	<input type="text" value="131/46/36.00"/>	NATIVDATUM	<input type="text" value="31"/>
LAT83	<input type="text" value="55/24/25.00"/>	LONG83	<input type="text" value="131/46/36.00"/>	GPQUALITY	<input type="text" value="Med"/>
LATDEC	<input type="text" value="55.4069444444444"/>	LONDEC	<input type="text" value="131.776666666667"/>	GPSOURCE	<input type="text" value="Scaled"/>

PROJECT ITEMSTATUS SEARCHTYPE
 RADIUS INIT ASSIGNED
 TECNIQ

Techniqnote
 History
 SOURCE UNKNOWN--NOT ON THE FIRST EDITION OF CHART 17428 (FORMERLY 8080) IN APRIL, 1969 BUT ON THE SECOND EDITION IN JULY, 1972. NEITHER THE STANDARDS NOR THE AID PROOFS GIVE INDICATION OF THE SOURCE. THE ONLY REFERENCE TO A DUMPING AREA IN THE CHART HISTORY IS CL357/69 WHICH IS A CHART LETTER REVISING THE POSITION OF AN OVERHEAD POWER CABLE IN THE UPPER HUDSON RIVER, NY. THE SCALED POSITION IS THE CENTER OF THE CHARTED DISPOSAL AREA. (ENTERED 1/2000 BY MBH)

Fieldnote
 Evaluator Comment: Complete multibeam coverage failed to reveal evidence of disposal (relief) in the charted area. Recommend that MCD investigate the existence of the charted disposal area. Compiled soundings from H10967 have been depicted within the disposal and the charted note has been revised to read "Charted depths from survey of 2000."

Proprietary
 YEARSUNK NIMANUM SYSTEMNUM

D.2 Additional Results

Shoreline Investigation Results⁵⁴

Limited shoreline verification was conducted from the *Ducer* along all shores in the survey area to confirm nearshore features. Three categories of results derived from limited shoreline verification of the survey area: verification of nearshore structures, verification of shorelines and natural features, and discovery of new, uncharted features. Each is discussed below.

Nearshore Structures

Table D.2.1⁵⁵ summarizes the nearshore or alongshore structures verified. Each structure was mapped (by area), annotated, and linked to all associated information in the Shoreline Verification MapInfo database under the following Workspace files:

Ketch_ANE1.wor

Ketch_ANE2.wor

Ketch_ANE3.wor

Ketch_ANE4.wor

Ketch_ANE5.wor

Ketch_ANE6.wor

Ketch_ANE7.wor

Ketch_ASW1.wor

Shorelines and Natural Features⁵⁶

Shoreline types and natural features agreed with chart depictions and were annotated in the Shoreline Verification Aids titled ASL-1 through ASL-17.⁵⁷

New Features

A number of new or altered features were found to result from ongoing development of area shorelines for private and commercial use. These items were investigated and detached positions were taken. Associated coordinates, heights, depths, observation times, and digital photographs are mapped and detailed within the Shoreline Verification MapInfo database in Workspace file Ketch_ITBI.wor.⁵⁸ A summary of new features investigated is given in Table D.2 2.⁵⁹

Table D.2.1
H-10967
Summary of Nearshore Structures Verified

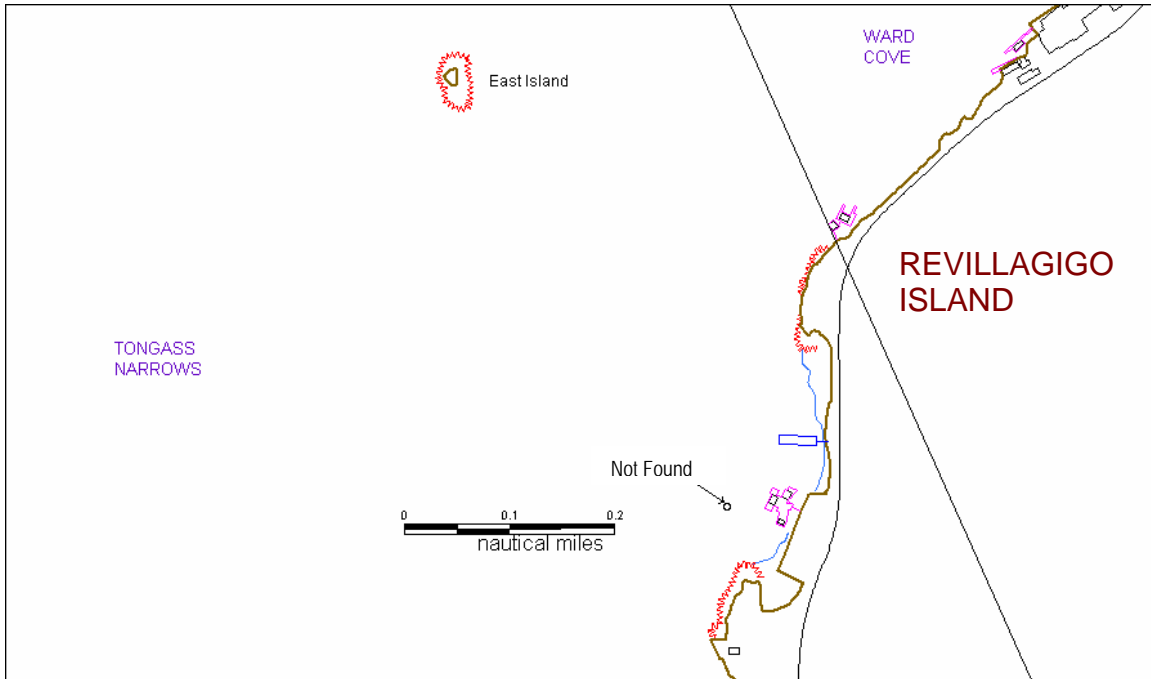
ID	OBJECT	INFORMATION	VERIFIED	PROVIDED BY NOAA			
				LATITUDE N	LONGITUDE W	UTM NORTHING	UTM EASTING
1	Pier.Fixed		YES	55° 25' 4.0224"	131° 46' 11.6724"	6144773.74	324683.11
31	Pier.Floating		YES	55° 22' 13.4004"	131° 43' 14.5020"	6139378.54	327590.94
36	Pier.Fixed		YES	55° 22' 14.1708"	131° 43' 18.0192"	6139404.72	327530.01
37	Pier.Floating		YES	55° 22' 21.2988"	131° 43' 26.5800"	6139630.91	327387.94
37	Pier.Floating		YES	55° 22' 21.6012"	131° 43' 26.1480"	6139639.90	327395.89
40	Pier.Fixed		YES	55° 22' 21.5688"	131° 43' 26.9616"	6139639.52	327381.54
41	Pier.Fixed		YES	55° 23' 4.0488"	131° 44' 13.5168"	6140984.27	326613.98
42	Pier.Floating		YES	55° 23' 4.4196"	131° 44' 13.4700"	6140995.66	326615.25
43	Pier.Floating		YES	55° 23' 6.9792"	131° 44' 14.1648"	6141075.22	326606.16
49	Pier.Fixed		YES	55° 23' 7.2960"	131° 44' 13.6932"	6141084.77	326614.82
50	Pier.Floating		YES	55° 22' 49.7424"	131° 44' 3.3396"	6140535.20	326775.67
51	Pier.Fixed		YES	55° 22' 49.2024"	131° 44' 2.2092"	6140517.72	326794.87
52	Pier.Fixed		YES	55° 22' 49.7388"	131° 44' 2.6844"	6140534.63	326787.18
53	Pier.Floating		YES	55° 22' 49.4832"	131° 44' 4.2720"	6140527.76	326758.90
55	Pier.Floating		YES	55° 22' 38.4060"	131° 43' 47.2296"	6140173.71	327045.30
56	Pier.Floating		YES	55° 22' 27.5232"	131° 43' 35.6376"	6139829.41	327236.08
57	Pier.Floating		YES	55° 22' 27.0444"	131° 43' 35.3136"	6139814.43	327241.20
61	Pier.Floating		YES	55° 23' 22.1316"	131° 44' 12.8976"	6141542.63	326646.86
63	Pier.Fixed		YES	55° 23' 25.5120"	131° 44' 10.8060"	6141645.63	326687.76
64	Pier.Floating		YES	55° 23' 38.2200"	131° 44' 5.0748"	6142034.31	326804.01
65	Pier.Floating		YES	55° 23' 47.4360"	131° 43' 48.9504"	6142307.93	327098.76
68	Pier.Floating		YES	55° 23' 46.4100"	131° 43' 51.4164"	6142277.96	327054.16

ID	OBJECT	INFORMATION	VERIFIED	PROVIDED BY NOAA			
				LATITUDE N	LONGITUDE W	UTM NORTHING	UTM EASTING
69	Pier.Floating		YES	55° 23' 51.0360"	131° 43' 42.6252"	6142414.82	327214.37
74	Pier.Fixed		YES	55° 23' 56.3424"	131° 43' 31.3968"	6142571.09	327418.24
79	Pier.Floating		YES	55° 24' 21.2688"	131° 43' 28.4160"	6143339.21	327500.81
80	Pier.Fixed		YES	55° 24' 25.3152"	131° 43' 28.5600"	6143464.42	327503.22
81	Pier.Floating		YES	55° 24' 27.2448"	131° 43' 28.6356"	6143524.09	327504.22
84	Pier.Fixed		YES	55° 24' 20.5956"	131° 43' 44.4900"	6143329.55	327217.41
86	Pier.Floating		YES	55° 24' 20.7972"	131° 43' 41.7468"	6143333.83	327265.91
87	Pier.Fixed	Access blocked by Log Rafts	NO	55° 24' 27.6588"	131° 43' 21.0864"	6143531.71	327637.45
89	Pier.Fixed		YES	55° 24' 25.2252"	131° 43' 14.6820"	6143452.02	327747.08
90	Pier.Fixed	Access blocked by Log Rafts	NO	55° 24' 28.1808"	131° 43' 29.0892"	6143553.29	327497.37
93	Pier.Fixed		YES	55° 24' 9.3600"	131° 45' 46.8000"	6143042.12	325045.03
94	Pier.Floating		YES	55° 24' 12.0204"	131° 44' 40.4088"	6143103.24	326223.77
96	Pier.Floating		YES	55° 24' 13.7340"	131° 44' 33.1800"	6143151.15	326352.99
98	Pier.Fixed		YES	55° 24' 13.5108"	131° 44' 31.9092"	6143143.45	326375.06
99	Pier.Floating		YES	55° 24' 13.0608"	131° 44' 34.4940"	6143131.32	326329.04
100	Pier.Fixed		YES	55° 24' 13.0572"	131° 44' 32.1540"	6143129.56	326370.21
101	Pier.Fixed		YES	55° 24' 15.5700"	131° 44' 36.2472"	6143210.08	326301.28
105	Pier.Floating		YES	55° 24' 14.9076"	131° 44' 36.9924"	6143190.10	326287.35
109	Pier.Fixed	Dock falling apart, abandoned	YES	55° 24' 18.6948"	131° 44' 39.3972"	6143308.84	326249.68
110	Pier.Fixed	Floatplane dock at seaward end	YES	55° 24' 21.8340"	131° 44' 44.5632"	6143409.42	326162.71
114	Pier.Floating		YES	55° 24' 19.0332"	131° 44' 41.0640"	6143320.35	326220.84
129	Pier.Fixed		YES	55° 24' 19.4292"	131° 44' 40.5960"	6143332.32	326229.52

ID	OBJECT	INFORMATION	VERIFIED	PROVIDED BY NOAA			
				LATITUDE N	LONGITUDE W	UTM NORTHING	UTM EASTING
777	Pier.Fixed		YES	55° 24' 18.1368"	131° 44' 49.5348"	6143298.64	326070.81
778	Pier.Fixed		YES	55° 24' 19.6992"	131° 44' 48.3288"	6143346.01	326093.88
780	Pier.Floating		YES	55° 24' 18.5580"	131° 44' 46.8564"	6143309.79	326118.40
783	Pier.Floating		YES	55° 24' 17.6472"	131° 44' 49.0200"	6143283.06	326079.23
785	Pier.Floating		YES	55° 22' 54.3252"	131° 45' 22.1652"	6140731.44	325394.46
786	Pier.Fixed	Industrial Equip. (Logging)	YES	55° 22' 54.4008"	131° 45' 22.1724"	6140733.79	325394.40
788	Pier.Fixed		YES	55° 24' 11.3076"	131° 44' 36.8772"	6143078.82	326285.00

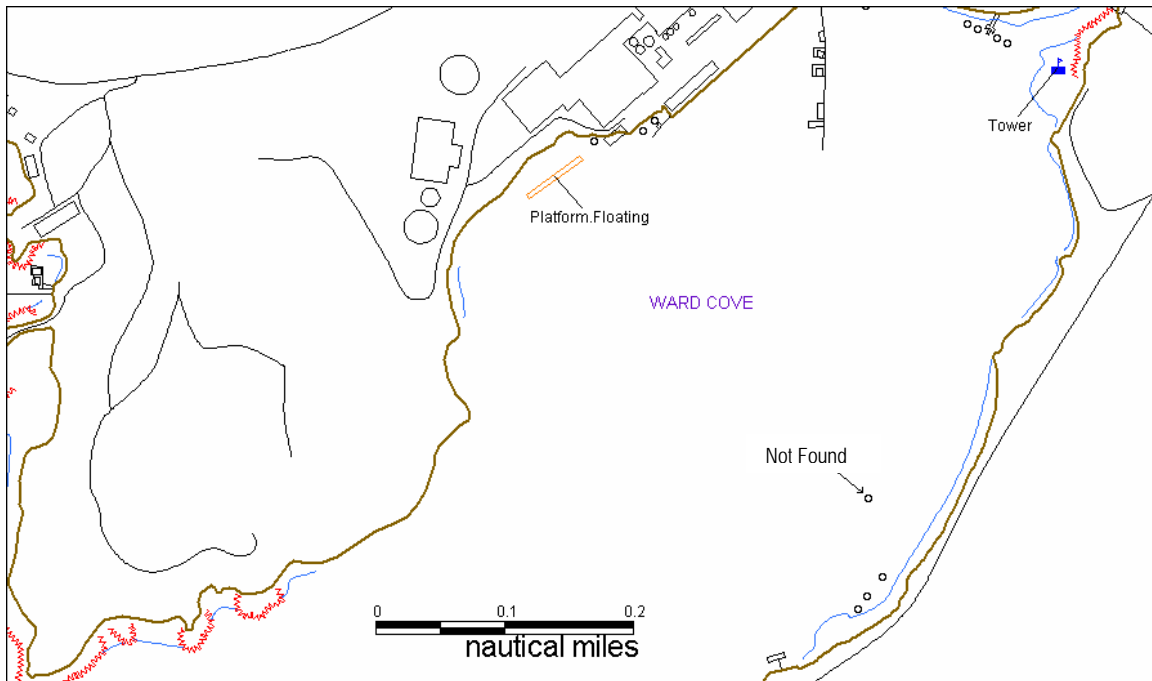
Disprovals

Two nearshore structures, shown in Chart 17428 and ArcInfo Coverage file “piles.e00,” were not found at charted positions. The first was a piling at latitude 55° 23’ 21.4749” north and longitude 131° 44’ 17.8512” west.⁶⁰



MapInfo Window in ASL-6 Workspace, showing charted location of piling not found in survey

The second item not found was a piling at latitude 55° 24’ 3.4901” north and longitude 131° 43’ 24.4913” west.⁶¹



MapInfo Window in ASL-4 Workspace, showing charted location of piling not found in survey

The survey team's search of the area failed to show any structures at or near the given positions. Further investigation of multibeam data in Caris indicated no submerged pilings at these positions.⁶²

Bridges, Cables and Pipelines

No bridges, overhead cables, or overhead pipelines were charted or discovered within the survey limits. Submarine cable areas depicted on Chart 17428 were without signage or water entry points in the survey area, and no uncharted cable signage or water entry points were found.⁶³

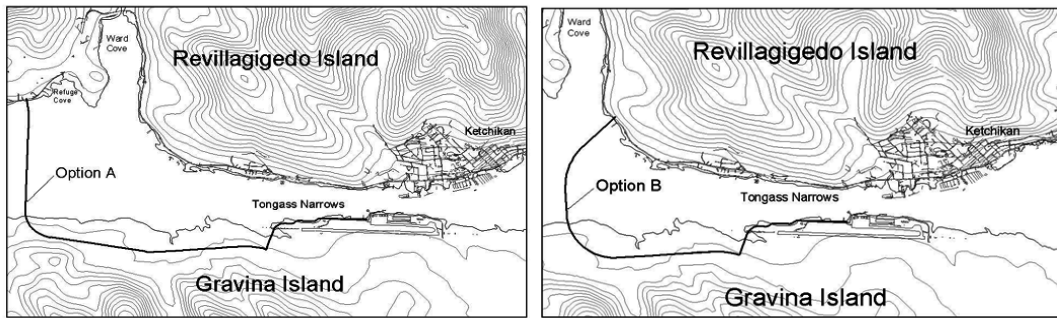
Discussion

A number of uncharted items were discovered during the Shoreline Verification of the area, including new floating docks and other structures of practical value to mariners. New features are discussed above, and in detail in the table later in this section.⁶⁴ No new information of significant scientific value resulted from the survey. Anomalous tidal conditions were not encountered.⁶⁵

Environmental conditions bearing directly on the hydrographic data included the presence of bull kelp throughout many areas shoreward of the four-meter curve⁶⁶, as well as some areas seaward of the four-meter curve. Kelp beneath the sonar head may have caused occasional interference in bottom acquisition; however, in general such interference is readily detectable in processing.⁶⁷

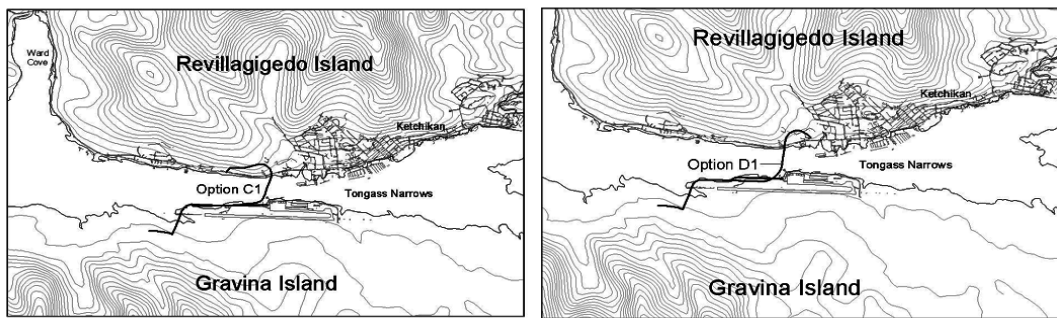
Planned Construction and Need for New Surveys

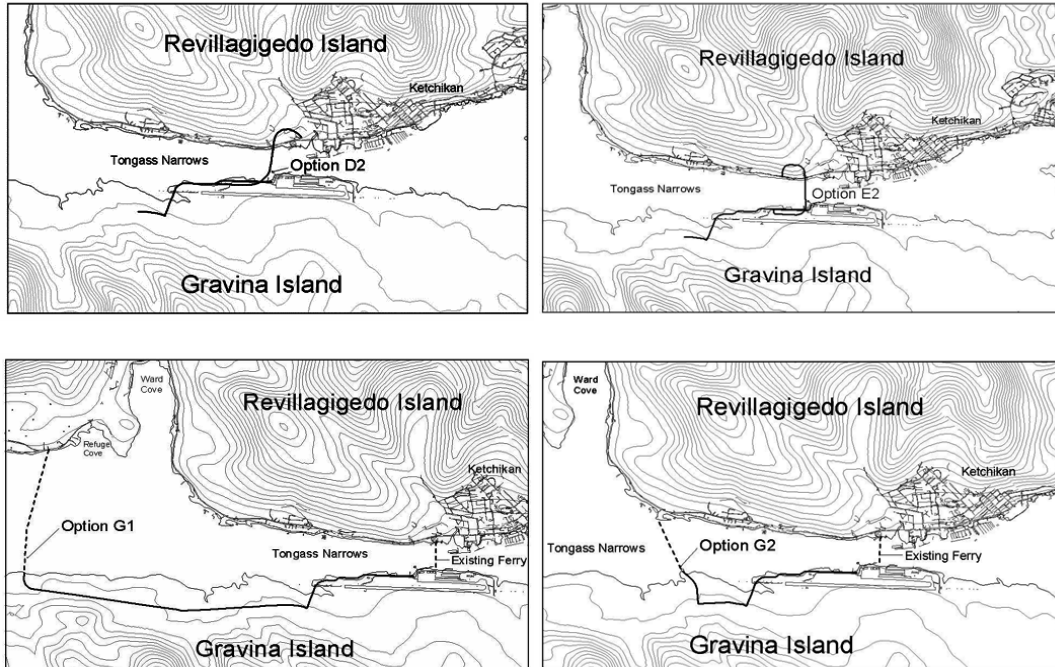
The survey area comprised the northern section of Tongass Narrows, a busy waterway used by AMHS ferries, cruise ships, fishing vessels, float planes, timber interests, and private watercraft. In addition, the shorelines of Revillagigedo, Gravina, and other adjacent islands are frequently impacted by private, commercial, and public development. Two significant activities may indicate the need for new surveys of the area in the near future.⁶⁸ The Gravina Access Project (State of Alaska Department of Transportation and Public Facilities Project #67698, Federal Project #ACHP-0922(5)) includes eight options for bridges, tunnels, or new ferry terminals which, if constructed, would directly impact the survey area. The eight options are represented below.



Proposed Bridge, Tunnel and Ferry Routes Potentially Affecting Surveyed Area

Option A: Proposed Bridge; Option B: Proposed Bridge





Proposed Bridge, Tunnel and Ferry Routes Potentially Affecting Surveyed Area

Option C1: Proposed Bridge; Option D1: Proposed Bridge; Option D2: Proposed Bridge; Option E2: Proposed Tunnel; Option G1: Proposed New Ferry Route; Option G2: Proposed Ferry Route

The Gravina Access Project is scheduled for implementation over the next five years.

Another area where impending activities may indicate the need for new surveys is Ward Cove. Cited in the EPA's Alaska list of Impaired Waters, contaminated sections of Ward Cove may be dredged or capped. In addition, customary periodic dredging of log debris in the Cove may cause incremental change in bottom contours.

Harbor Discussion

The vessels collecting multibeam data did not enter Refuge Cove Harbor. The main shoreline verification boat, the *Ducer*, ran a single beam trace line around the slips. The data was processed and compared to the chart. The trace did not show any obvious concerns and the comparison was good. The single beam soundings collected were used for reconnaissance only and were not used for generating the smooth sheet.⁶⁹

Table D.2.2
H-10967
New Features Investigated




ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A1	ASL-13	Submerged Piling Floating ⁷⁰	55°24'08.7"	131°47'51.6"	A1-SubmergedPile-1.jpg	
A2	ASL-13	Steel Piling ⁷¹ Height MLLW: 12.13m	55°24'19.6 "	131°48'05.7"	A3-SteelPile-2.jpg	
A3	ASL-13	Steel Piling ⁷² Height MLLW: 12.08m	55°24'19.5"	131°48'05.5"	A3-SteelPile-1.jpg	

Table D.2.2
H-10967
New Features Investigated



ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A4	ASL-11	Barge, Dock, & Pilings ⁷³ Height MLLW: 15.86m	55°23'21.3" 55°23'21.1" 55°23'21.0" 55°23'21.1"	131°46'09.1" 131°46'08.9" 131°46'09.3" 131°46'09.6"	A4.jpg	
A5	ASL-11	Barge, Dock, & Tower ⁷⁴ Height MLLW: 13.28m	55°23'01.4" 55°23'01.5" 55°23'02.4" 55°23'02.2"	131°45'37.8" 131°45'37.6" 131°45'39.3" 131°45'39.5"	A5.jpg	

Table D.2.2
H-10967
New Features Investigated



ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A6	ASL-7	Sunken Boat ⁷⁵ Depth MLLW: +0.60m Height MLLW: 7.42m	55°23'18.8"	131°44'13.4"	A6-1.jpg	
A7	ASL-7	3 Pilings ⁷⁶ Height MLLW: 16.52m	55° 23' 12.2"	131° 44' 18.5"	A7-1.jpg	

Table D.2.2
H-10967
New Features Investigated



ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A7	ASL-7	3 Pilings (untied) ⁷⁷ Height MLLW: 16.52m	55°23'11.7"	131°44'18.2"	A7-2.jpg	
A7	ASL-7	3 Pilings (single) ⁷⁸ Height MLLW: 16.52m	55°23'10.7"	131°44'18.1"	A7-3.jpg	

Table D.2.2
H-10967
New Features Investigated



ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A8	ASL-16	Dolphin ⁷⁹ Height MLLW: 14.88m	55°25'34.4"	131°50'51.4"	A8-Dolphin-2.jpg	
A9	ASL-3	New Pier ⁸⁰ (floating) Height above waterline: 0.6m	55°24'12.0" 55°24'11.9" 55°24'12.1" 55°24'12.3"	131°45'12.3" 131°45'12.4" 131°45'13.4" 131°45'13.3"	A9.jpg	

Table D.2.2
H-10967
New Features Investigated



ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A10	ASL-8	Logboom/floating brk. water (south end) ⁸¹ Height above waterline: 0.3m	55°22'09.9"	131°43'13.2"	A10.jpg	
A11	ASL-8	Logboom/floating brk. water (north end) ⁸² Height above waterline: 0.3m	55°22'13.2"	131°43'18.2"	A11.jpg	

Table D.2.2
H-10967
New Features Investigated



ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A12	ASL-8	Logboom/floating brk.water ⁸³ Height above waterline: 0.3m	55°22'12.8" 55°22'12.0"	131°43'12.4" 131°43'15.0"	A12.jpg	
A13	ASL-4	Mooring Buoy - Ward Cove ⁸⁴ Height above waterline: 1.5m	55°23'58.2"	131°43'44.8"	A13.jpg	

Table D.2.2
H-10967
New Features Investigated




ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A14	ASL-4	Mooring Buoy - Ward Cove ⁸⁵ Height above waterline: 1.5m	55°24'08.5"	131°43'24.5"	A14.jpg	
A15	ASL-9	Mooring Buoy - Tongass Narrows ⁸⁶ Height above waterline: 0.5m	55°22'10.0"	131°43'54.7"	A15.jpg	
A16	ASL-9	Mooring Buoy - Tongass Narrows ⁸⁷ Height above waterline: 0.3m	55°22'15.7"	131°44'03.1"	A16.jpg	

Table D.2.2
H-10967
New Features Investigated





ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A17	ASL-3	Mooring Buoy - Refuge Cove ⁸⁸ Height above waterline: 1.0m	55°24'12.9"	131°44'46.0"	A17.jpg	
A18	ASL-3	Mooring Buoy - Refuge Cove ⁸⁹ Height above waterline: 1.0m	55°24'04.2"	131°44'56.3"	A18.jpg	
A19	ASL-3	Mooring Buoy - Refuge Cove ⁹⁰ Height above waterline: 1.0m	55°24'02.6"	131°44'51.3"	A19.jpg	

Table D.2.2
H-10967
New Features Investigated

ID	SUB-SHEET	DESCRIPTION	LATITUDE N	LONGITUDE W	PHOTO FILE	IMAGE
A20	ASL-3	Mooring Buoy - Refuge Cove ⁹¹ Height above waterline: 1.0m	55°24'00.5"	131°44'51.3"	A20.jpg	

Aids to Navigation

Aids to navigation in the survey area served their intended purpose and their general characteristics matched those given in the Chart and Light List. Positions of aids to navigation given in Table D.2.3 are surveyed positions, except for the Guard Island Light; the latter's position is taken from the 2000 Light List, Volume VI. Positions given for floating aids to navigation are meaned between surveyed ebb and flood positions.

Table D.2.3⁹²
H-10967
Aids to Navigation

NAME	INFORMATION	CHARACTERISTIC	USCG NO.	DESCRIPTION	LATITUDE N	LONGITUDE W
Lighted Buoy 10	Lighted FI Red	FI R 2.5s	22240	Buoy, Red	55° 22' 21.2316"	131° 43' 36.5959"
Lewis Reef Light 11	FI Grn	FI G 2.5s	22245	Marine Light On Tower	55° 22' 27.6128"	131° 44' 19.1480"
Peninsula Pt. Reef Buoy 2	Nun		22250	Buoy, Red	55° 23' 3.24045"	131° 44' 28.5178"
Channel Island Light 14	FI red	FI R 4s	22255	Marine Light On Tower	55° 23' 41.4706"	131° 45' 52.9527"
Ohio Rock Lighted Buoy OR	Lighted FI Red	FI (2+1) R 6s	22260	Buoy, Red/Grn	55° 23' 47.6632"	131° 46' 20.0876"
Refuge Cove Entrance Lt 2	FI Red	FI R 6s	22265	Marine Light On Tower	55° 24' 3.8953"	131° 45' 0.0710"
Refuge Cove Daybeacon 3	Green	SG on pile	22270	Daybeacon	55° 24' 6.7093"	131° 45' 3.8875"
Refuge Cove Daybeacon 5	Green	SG on spindle	22275	Daybeacon	55° 24' 14.8548"	131° 44' 49.7069"
Rosa Reef Light 15	FI Grn	FI G 6s	22280	Marine Light On Caisson	55° 24' 48.2288"	131° 48 '8.5832"
Pond Reef Light 16	FI Red	FI R 2.5s	22285	Marine Light On Tower	55° 26' 14.2298"	131° 48 '54.3072"
Vallenar Pt. Buoy 17	Can		22290	Buoy, Green	55° 25' 49.3226"	131° 50' 28.58"
Vallenar Rock Light	FI W	FI W 2.5s	22295	Marine Light On Spindle	55° 25' 52.1993"	131° 51' 46.0871"
Guard Islands Light	FI W	FI W 10s	22300	Marine Light On Building	55° 26' 48"	131° 52' 54"

Shaded rows are floating navigation aids

MapInfo Dataset⁹³

The MapInfo Dataset for the survey area is composed of a collection of tables which contain information on the geographic location of shoreline features, danger areas, obstructions and navigation aids. The majority of these tables apply to the entire survey area, while others contain information specific to a sub-area or sheet. These are identified by letter (A-D) corresponding to the applicable sheet.

The list below contains the primary file names for tables associated with this project. Each table consists of four files, all with the same name, but with different extensions. These are TAB, DAT, MAP, and ID.

The exception to this rule is the _17428.TAB file. It is a raster image and consists of only a TIF and TAB file.

For clarity, we have listed only the TAB filenames.

MapInfo Tables⁹⁴

17428_1.KAP	Obstruction_Point.TAB
area_KR.TAB	obstr_1_line.tab
Contour.tab	obstr_point.TAB
contours_line.tab	piles_point.TAB
cult_feat_line.tab	sheets_KR.TAB
C_Alongshore.TAB	SHORELINE_D.TAB
Danger_Area.TAB	shoreline_line.tab
danger_line.tab	SHORE_A_NDX.TAB
ITBI.TAB	SHORE_B_NDX.TAB
lmrk_point.tab	SHORE_C_NDX.TAB
nav_aids_point.TAB	SHORE_D_NDX.TAB
O302KR2000CORP.TAB	SSVA_INDEX.TAB
O302KR2000LABP.TAB	SSVB_INDEX.TAB
O302KR2000STNP.TAB	SSVC_INDEX.TAB
O302KR_addLimits.TAB	Tid_Titl_KR.TAB
O302KR_addSheet.TAB	Transportation.tab
obstruction_linear.tab	transport_line.tab
	_17428_1.TAB

ArcInfo Coverage⁹⁵

These are copies of the original data files provided by NOAA.

alongshore.e00	lmrk.e00
contours.e00	nav_aids.e00
cult_feat.e00	transport.e00
danger.e00	

Workspaces⁹⁶

A series of maps was prepared to assist the survey party with verification of the shoreline, structures along the shoreline, Aids to Navigation, and possible hazards to navigation.

These maps were created using the MapInfo Professional Desktop Mapping Application. This application enables the building of maps using layers of information. The parameters for these are stored in “Workspaces” that can be called up to permit the user to view a specific area from the same perspective each time it is opened. The objective was to provide the survey party with a set of very large-scale maps that would show, in detail, the salient features of the shoreline. Also included were the Navigation Aids and Hazards in the survey area. The files are listed below.

Ketch.WOR	Ketch_BNE4.WOR
Ketch_SSVA_A_NDX.WOR	Ketch_BPI.WOR
Ketch_ANE1.WOR	Ketch_BSW1.WOR
Ketch_ANE2.WOR	Ketch_BSW2.WOR
Ketch_ANE3.WOR	Ketch_BSL_NDX.WOR
Ketch_ANE4.WOR	Ketch_BSL1.WOR
Ketch_ANE5.WOR	Ketch_BSL2.WOR
Ketch_ANE6.WOR	Ketch_BSL3.WOR
Ketch_ANE7.WOR	Ketch_BSL4.WOR
Ketch_AS_L_NDX.WOR	Ketch_BSL5.WOR
Ketch_AS_L1.WOR	Ketch_BSL6.WOR
Ketch_AS_L2.WOR	Ketch_BSL7.WOR
Ketch_AS_L3.WOR	Ketch_BSL8.WOR
Ketch_AS_L4.WOR	Ketch_BSL9.WOR
Ketch_AS_L5.WOR	Ketch_SSVA_C_NDX.WOR
Ketch_AS_L6.WOR	Ketch_CNE1.WOR
Ketch_AS_L7.WOR	Ketch_CNE2.WOR
Ketch_AS_L8.WOR	Ketch_CNE3.WOR
Ketch_AS_L9.WOR	Ketch_CNE4.WOR
Ketch_AS_L10.WOR	Ketch_CPI1.WOR
Ketch_AS_L11.WOR	Ketch_CPI2.WOR
Ketch_AS_L12.WOR	Ketch_CSW1.WOR
Ketch_AS_L13.WOR	Ketch_CSL_NDX.WOR
Ketch_AS_L14.WOR	Ketch_CSL1.WOR
Ketch_AS_L15.WOR	Ketch_CSL2.WOR
Ketch_AS_L16.WOR	Ketch_CSL3.WOR
Ketch_AS_L17.WOR	Ketch_CSL4.WOR
Ketch_AS_W1.WOR	Ketch_CSL5.WOR
Ketch_SSVA_B_NDX.WOR	Ketch_CSL6.WOR
Ketch_BNE1.WOR	Ketch_CSL7.WOR
Ketch_BNE2.WOR	Ketch_CSL8.WOR
Ketch_BNE3.WOR	Ketch_CSL9.WOR

Ketch_CSL10.WOR
Ketch_CSL11.WOR
Ketch_DSL_NDX.WOR
Ketch_DSL1.WOR
Ketch_DSL2.WOR
Ketch_DSL3.WOR
Ketch_DSL4.WOR
Ketch_DSL5.WOR
Ketch_DSL6.WOR
Ketch_DSL7.WOR
Ketch_DSL8.WOR
Ketch_DSL9.WOR
Ketch_DSL10.WOR
Ketch_DSL11.WOR

Ketch_DSL12.WOR
Ketch_DSL13.WOR
Ketch_DSL14.WOR
Ketch_DSL15.WOR
Ketch_DSL16.WOR
Ketch_DSL17.WOR
Ketch_DSL18.WOR
Ketch_DSL19.WOR
Ketch_DSL20.WOR
Ketch_DSL21.WOR
Ketch_DSL22.WOR
Ketch_ITBI.WOR
Ketch_NAV_AID_ID.WOR
Tide_Zone.WOR

ITBI IMAGES⁹⁷

The acronym ITBI has become a misnomer since the initial list of items to be investigated has been refined into a list of items investigated. Each of these items has been photographed and the image is linked to the corresponding map object.

The linking process generates an additional file with the same name but a different extension; specifically TAB. For clarity, we have listed only the image file names.

A1-SubmergedPile-1.jpg	A13.jpg	B18-B.jpg
A2-SteelPile-1.jpg	A14.jpg	B19.jpg
A2-SteelPile-2.jpg	A15.jpg	B20.jpg
A3-SteelPile-1.jpg	A16.jpg	B21.jpg
A3-SteelPile-2.jpg	A17.jpg	DSL-9MVC006F
A4.jpg	A18.jpg	DSL-9MVC001F
A5.jpg	A19.jpg	ITBI_1A_220.jpg
A6-1.jpg	A20.jpg	ITBI_1A_233.jpg
A6-2.jpg	B1&2.jpg	ITBI_1B_226.jpg
A7-1.jpg	B3.jpg	ITBI_2D_220.jpg
A7-2.jpg	B4&5.jpg	ITBI_5A_232.jpg
A7-3.jpg	B8.jpg	ITBI_6A_220.jpg
A8-Dolphin-1.jpg	B10.jpg	navaid_BSL-5_224.jpg
A8-Dolphin-2.jpg	B11.jpg	navaid_BSL-
A9.jpg	B12.jpg	5_224_d.jpg
A10.jpg	B13.jpg	D1-DSL-
A11.jpg	B14.jpg	9MVC006F.jpg
A12.jpg	B15.jpg	D2-DSL-
	B18-A.jpg	9MVC001F.jpg

Aids to Navigation Images⁹⁸

Each of these items has been photographed and the image is linked to the corresponding map object.

The linking process generates an additional file with the same name but a different extension; specifically TAB. For clarity, we have listed only the image file names.

BaileyRock.jpg	Nav_Bouy_4A_a.jpg
Blank Island Light-1.jpg	Nav_Bouy_4A_b.jpg
Blank Island Light-2.jpg	Nav_bouy_grn9.jpg
grnbouy17_1.jpg	Nav_Bouy_PR_a.jpg
grnbouy17_2.jpg	Nav_Bouy_PR_b.jpg
Guard_Islands_Light_1.jpg	Nav_Bouy_WR6_a.jpg
Guard_Islands_Light_2.jpg	Nav_Bouy_WR6_b.jpg
Guard_Islands_Light_3.jpg	Nav_Buoy_4A_c.jpg
ITBI_1B_230.jpg	Nav_Grn7_a.jpg
ITBI_2A_230.jpg	Nav_Grn7_b.jpg
ITBI_4A_230.jpg	navgrn3_1.jpg
Marine_Hwy_Wharf_N_a.jpg	navgrn3_2.jpg
Marine_Hwy_Wharf_N_b.jpg	Navgrn5_1.jpg
Marine_Hwy_Wharf_N_c.jpg	Navgrn5_2.jpg
Marine_Hwy_Wharf_S_a.jpg	Navgrn11_a.jpg
Marine_Hwy_Wharf_S_b.jpg	Navgrn11_b.jpg
Mt Point Day Beacon 2-1.jpg	Navgrn15_1.jpg
Mt Point Day Beacon 2-2.jpg	Navgrn15_2.jpg
Mt Point Light.jpg	NavOR_1.jpg
navaid_BSL-5_224.jpg	NavOR_2.jpg
navaid_BSL-5_224_d.jpg	Navred14.jpg
navaid_fixedgreenlight_BSL-5_224_b.jpg	navred2.jpg
navaid_fixedredlight_BSL-5_224_a.jpg	navred_10.jpg
navaid_fixedredlight_BSL-5_224_b.jpg	navred16_1.jpg
navaid_fixedredlight_BSL-5_224_c.jpg	navred16_2.jpg
Nav_BarHrb(S)_Day3S_a.jpg	navred_dayshape2.jpg
Nav_BarHrb(S)_Day3S_b.jpg	Nav_Thomas_red2_a.jpg
Nav_BarHrb(S)_red2S_a.jpg	Nav_Thomas_red2_b.jpg
Nav_BarHrb(S)_red2S_b.jpg	Nav_Vallendar_a_sheetA.jpg
Nav_BarHrb_Day3_a.jpg	Nav_Vallendar_b_sheetA.jpg
Nav_BarHrb_Day3_b.jpg	Nav_Vallendar_c_sheetA.jpg
Nav_BarHrb_red2N_a.jpg	Walden Rock-1.jpg
Nav_BarHrb_red2N_b.jpg	Walden Rock-2.jpg
Nav_BarHrb_red2_a.jpg	Walden Rock-3.jpg
Nav_BarHrb_red2_b.jpg	Walden Rock-4.jpg

Field Notes⁹⁹

As the shoreline verification proceeded, the survey party made notes on the large-scale maps provided for this purpose. As each area was completed, the annotated maps were scanned and stored as images. These images were then linked to the index maps for each sheet.

The linking process generates an additional file with the same name but a different extension; specifically TAB. For clarity, we have listed only the image file names.

ASL_NDX.JPG

ASL-1.JPG

ASL-2.JPG

ASL-3.JPG

ASL-4.JPG

ASL-5.JPG

ASL-6.JPG

ASL-7.JPG

ASL-8.JPG

ASL-09.JPG

ASL-10.JPG

ASL-11.JPG

ASL-12.JPG

ASL-13.JPG

ASL-14.JPG

ASL-15.JPG

ASL-16.JPG

ASL-17.JPG

BSL-NDX.JPG

BSL-01.JPG

BSL-02.JPG

BSL-03.JPG

BSL-04.JPG

BSL-05-1.JPG

BSL-05.JPG

BSL-06.JPG

BSL-07.JPG

BSL-08.JPG

BSL-09.JPG

CSL-NDX.JPG

CSL-01.JPG

CSL-02.JPG

CSL-03.JPG

CSL-04.JPG

CSL-05.JPG

CSL-06.JPG

CSL-07.JPG

CSL-08.JPG

CSL-09.JPG

CSL-10.JPG

CSL-11.JPG

Revisions Compiled During Office Processing and Certification

¹ Concur.

² Concur.

³ Concur.

⁴ Concur with clarification. Features appearing in the ArcInfo database supplied by NOAA, used for development of the hydrographer's MapInfo Shoreline Verification Aids, were verified. Refer to endnote 18 for features not addressed by the hydrographer.

⁵ Concur.

⁶ Insert Project Wide.

⁷ Filed with the hydrographic data.

⁸ Concur.

⁹ Concur.

¹⁰ Concur.

¹¹ Filed with the hydrographic data.

¹² Concur.

¹³ Concur. Data was analyzed during office processing and found to be consistent with surrounding and historical depths. The evaluator considers this data acceptable for charting.

¹⁴ Filed with the hydrographic data.

¹⁵ Concur.

¹⁶ Concur.

¹⁷ The data was analyzed during office processing and found to be consistent with surrounding survey data.

¹⁸ Survey H10967 was also compared with the following prior surveys:

<u>Survey</u>	<u>Year</u>	<u>Scale</u>
H08716	1963	1:10,000
H08800	1964	1:10,000
H08801	1964-1967	1:10,000
H07869	1951	1:5,000

The soundings of these four prior surveys compare well with the present survey. Soundings generally differ from 0 to 2 fathoms, with differences up to 6 fathoms in upper Ward Cove. (See endnote 21, below.) New cultural and natural features have been identified. It is recommended that the prior surveys be superseded in the common areas except for features and bottom characteristics brought forward from the chart, shown in green on the H-drawing.

The following features from 17428, continuous maintenance raster, were not addressed by the hydrographer. Their charted positions are:

Latitude 55/25/2.63N Longitude 131/46/9.34W, pile
Latitude 55/25/4.18N Longitude 131/46/6.70/W, pile
Latitude 55/22/50.57N Longitude 131/45/13.87W, pile
Latitude 55/22/49.97N Longitude 131/45/17.55W, pile

Latitude 55/22/29.06N Longitude 131/44/27.5W, subm ruins
Latitude 55/22/1.62N Longitude 131/43/37.98W, mooring buoy
Two AWOIS features from 17428, Ward Cove Inset, were at the survey limit and were not evident in the data. Their charted positions are:

Latitude 55/23/55.35N Longitude 131/43/35.42W, subm pile
Latitude 55/23/54.05N Longitude 131/43/37.5W, subm ruins
Two rocks were retained from 17428 on the H-drawing for redesigned 17430, north panel. Because this drawing had no raster and the rocks were near the survey limit, their depiction in the H-drawing was deemed important for complete information. Their positions are:

Latitude 55/24/48.94N Longitude 131/46/0.98W
Latitude 55/23/28.96N Longitude 131/44/11.83W

Retain all the above features as charted.

¹⁹ Concur.

²⁰ Concur.

²¹ Do not concur. The upper (northeastern) area of Ward Cove shows an irregular shoaling trend of approximately 1 to 6 fathoms. Retain cautionary notes B and C as worded on the Ward Cove Inset for Chart 17428:

“Log booms are not permanently placed. Locations of log storage areas vary.”

“A general shoaling trend of 6 to 12 feet is evident due to logging operations.

Extreme caution should be used while navigating in the area.”

²² Concur with clarification. See H-drawing, recommendations below, and smoothsheet for the depiction of the area.

Four other rocks identified on the smoothsheet are not mentioned in the DR. One is 17 fathoms deep at Latitude 55/25/19.3N, Longitude 131/49/22.4W. Chart the nearby least depth as depicted on H-drawing. The second is 4 fathoms deep at Latitude 55/24/16N, Longitude 131/43/29.5W. Chart vicinity as *rky*. The third and fourth are in Refuge Cove: 8.1 fathoms at Latitude 55/24/13.68N, Longitude 131/44/43.98W; and 7.8 fathoms at Latitude 55/24/16.13N, Longitude 131/44/42.38W. Chart the vicinity as *rky*.

Eight additional rocks not listed in the DR have been identified from office analysis of the smoothsheet and DTM. These rocks are located so close to rocks previously charted on 17428 that they may be assumed to be the same rocks. Chart with new positions and depths as depicted on the H-drawing:

Latitude 55/23/55.9572N, Longitude 131/44/47.2588W, Rock awash symbol

Latitude 55/23/54.8916N, Longitude 131/44/42.8388W, Rock awash symbol

Latitude 55/25/3.7056N, Longitude 131/48/52.0128W, Rock awash symbol

Latitude 55/24/10.5516, Longitude 131/44/59.2476W, Rock awash symbol

Latitude 55/24/1.638N, Longitude 131/47/20.0688W, Rock awash symbol

Latitude 55/26/25.49N, Longitude 131/52/35.198W, 0 fathom 3 foot *Rk*

Latitude 55/24/19.41N, Longitude 131/47/45.72W, 0 fathom 3 foot *Rk*

Latitude 55/24/9.86N, Longitude 131/44/47.31W, 4 fathom 3 foot *Rk*

Note that where the present survey found a previously charted *Rk* to be shoaler than 2 feet deep at MLLW, the depiction has changed to a rock awash symbol.

²³ Concur.

²⁴ Chart this area based on the present survey.

-
- ²⁵ Chart this area based on the present survey.
- ²⁶ Chart this area based on the present survey.
- ²⁷ Chart vicinity as *rky*.
- ²⁸ Chart vicinity as *rky*.
- ²⁹ Chart this area based on the present survey.
- ³⁰ Chart as 5 fathom 3 foot *Rk*.
- ³¹ Chart this area based on the present survey.
- ³² Chart this area based on the present survey.
- ³³ Chart as 8 fathom 1 foot *Rk*.
- ³⁴ 14 fathom *Rk* has not been depicted on the H-drawing due to shoaler depths near the feature. Recommend charting least depth as shown on H-drawing.
- ³⁵ Chart as least depth.
- ³⁶ Chart as 2 fathom 5 foot *Rk*.
- ³⁷ Chart as 13 fathom *Rk*.
- ³⁸ Chart this area based on the present survey.
- ³⁹ Chart this area based on the present survey.
- ⁴⁰ Chart this area based on the present survey.
- ⁴¹ Chart as 5 fathom 2 foot *Rk*.
- ⁴² Do not concur. No rock or similar depth is evident at this location on the smoothsheet. There is a rock at latitude 55/24/30.15N, longitude 131/48/21.0708W at this depth (4.4 fathoms). Chart as positioned on smoothsheet.
- ⁴³ Chart this area based on the present survey.
- ⁴⁴ Chart vicinity as *rky*.
- ⁴⁵ Chart as 3 fathom *Rk*.
- ⁴⁶ Feature is a mooring buoy anchor. Do not chart.
- ⁴⁷ Chart as 12 fathom *Rk*.
- ⁴⁸ Chart as 12 fathom *Rk*.
- ⁴⁹ Chart vicinity as *rky*.
- ⁵⁰ Rock is near charted obstruction. No other obstruction is evident in the survey data. Recommend charting according to survey as 12 fathom *Rk*.
- ⁵¹ Rock is not noted on smoothsheet. Chart vicinity as *rky*.
- ⁵² Chart this area based on the present survey.
- ⁵³ Refer to the AWOIS Item Investigation Records for charting disposition.
- ⁵⁴ Shoreline verification conducted by the hydrographer was analyzed during office processing and shown on the smoothsheet as warranted.
- ⁵⁵ Attached to this report.
- ⁵⁶ In some areas of the survey, reef lines that were addressed in shoreline verification and fieldsheets were not depicted on the smoothsheet. For these areas, depict as shown on the H-drawings. The areas are:
- Mud Bay, generally latitude 55/25/6.6N, longitude 131/46/13.7W
 - Channel Island, generally latitude 55/23/42.2N, longitude 131/45/49.5W
 - East Island, generally latitude 55/23/45.6N, longitude 131/44/44.9W
 - Refuge Cove, generally latitude 55/24/14N, longitude 131/45/00W
 - latitude 55/24/16.3N, longitude 131/45/5.4W
 - latitude 55/24/7.7N, longitude 131/44/34.7W

Pond Reef, generally latitude 55/26/15.2N, longitude 131/48/49.3W
Tongass Narrows, generally latitude 55/24/22.4N, longitude 131/45/14.4W
In three locations at the survey limit, the smoothsheet depicted small ledge lines where the raster showed rocks with danger curves. These locations are:

Latitude 55/25/46.46N, Longitude 131/51/53.13W

Latitude 55/25/44.39N, Longitude 131/51/5.35W

Latitude 55/25/40.43N, Longitude 131/51/0.91W

Chart as rocks (2 feet or more above MLLW) with danger curve in smoothsheet locations, as depicted on the H-drawing.

⁵⁷ Filed with the hydrographic data.

⁵⁸ Filed with the hydrographic data.

⁵⁹ Attached to this report.

⁶⁰ Concur. Delete pile shown on Chart 17428 maintenance raster at Latitude 55/23/21.4749N, Longitude 131/44/17.8512W.

⁶¹ Concur. This feature is not depicted on the continuous maintenance raster for Chart 17428. However, the survey did find a bottom feature near this position, see endnote 50. Chart at position depicted on smoothsheet as 12 fathom *Rk*.

⁶² Concur. Chart area as depicted on smoothsheet.

⁶³ Concur. Retain cable areas as charted.

⁶⁴ See smooth sheet for depiction of the survey area.

⁶⁵ Concur.

⁶⁶ Where kelp is not depicted on the smoothsheet, it has been indicated on the H-drawing in the locations given on Chart 17428. Chart using smoothsheet and Chart 17428.

⁶⁷ Chart soundings according to the smoothsheet.

⁶⁸ Concur with clarification. This area should be resurveyed at an interval appropriate to local conditions and available resources. See National Survey Priorities 2004.

⁶⁹ Retain charted information in these areas.

⁷⁰ Chart as deadhead at the survey position.

⁷¹ Chart as pile at the survey position.

⁷² Chart as pile at the survey position.

⁷³ The float is attached to a shore structure which was not positioned in the survey or graphically depicted on the smoothsheet. Chart as floating pier as depicted on the smoothsheet.

⁷⁴ The float is attached to a shore structure which was not positioned in the survey or graphically depicted on the smoothsheet. Chart as floating pier as depicted on the smoothsheet.

⁷⁵ Chart as wreck at survey position.

⁷⁶ Chart as dolphin at the survey position.

⁷⁷ Chart as dolphin at the survey position.

⁷⁸ Chart as piles at the survey position.

⁷⁹ Chart as dolphin at survey position.

⁸⁰ The float is attached to a shore structure which was not positioned in the survey or graphically depicted on the smoothsheet. Chart as floating pier as depicted on the smoothsheet.

⁸¹ Outside survey limit. Positioned on H10987.

-
- 82 Outside survey limit. Positioned on H10987.
 - 83 Outside survey limit. Positioned on H10987.
 - 84 Chart as mooring buoy at survey position.
 - 85 Chart as mooring buoy at survey position.
 - 86 Chart as mooring buoy at survey position.
 - 87 Chart as mooring buoy at survey position.
 - 88 Chart as mooring buoy at survey position.
 - 89 Chart as mooring buoy at survey position.
 - 90 Chart as mooring buoy at survey position.
 - 91 Chart as mooring buoy at survey position.
 - 92 It is recommended that these aids to navigation be charted with the most recent information from the USCG, District 17.
 - 93 Filed with the hydrographic data.
 - 94 Filed with the hydrographic data.
 - 95 Filed with the hydrographic data.
 - 96 Filed with the hydrographic data.
 - 97 Filed with the hydrographic data.
 - 98 Filed with the hydrographic data.
 - 99 Filed with the hydrographic data.

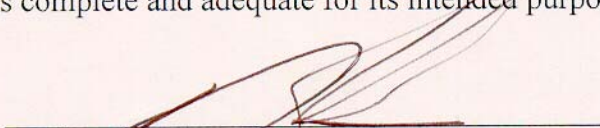
LETTER OF APPROVAL REGISTRY NO. H-10967

This Report and the accompanying smooth sheet are respectfully submitted.

Field operations contributing to the accomplishment of survey H-10967 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report, smooth sheet, digital data, and accompanying records have been closely reviewed and are considered complete and adequate as per the Statement of Work. Other reports to be submitted with this survey include Data Acquisition and Processing Report, Vertical and Horizontal Report, which were submitted on ~~00/00/00~~.

I believe this survey is complete and adequate for its intended purpose.

THOMAS S NEWMAN



Gerald Douthit, Hydrographer
Terra Surveys, LLC

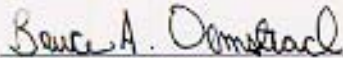
Date

6/5/01

APPROVAL SHEET
H10967

Initial Approvals:


The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.



Bruce A. Olmstead
Cartographic Team
Pacific Hydrographic Branch

Date: 2/7/2005

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 Descriptive Report.



Donald W. Haines
LCDR, NOAA
Chief, Pacific Hydrographic Branch

Date: 17 FEB 2005

