H11002

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-10-07-00

Registry No. H-11002

LOCALITY

State Alaska

General Locality Southwest Prince William Sound

Sublocality South of Green Island - Vicinity of The Needle

2000

CHIEF OF PARTY

Commander Daniel R. Herlihy, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28
(11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-11002

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-10-07-00

State: **Alaska**

General Locality: **Southwest Prince William Sound**

Sublocality: **South of Green Island - Vicinity of the Needle**

Scale: **1:10,000** Date of Survey: **9/13/00 - 10/19/00**

Instructions Dated: **Aug. 25, 2000** Project No.: **OPR-P139-RA**

Vessel: **RA-1(2121), RA-2(2122), RA-3(2123). RA-4(2124), RA-5(2125), and RA-6(2126)**

Chief of Party: **Commander D. R. Herlihy, NOAA**

Surveyed by: **Ship personnel and physical scientists from Pacific Hyrographic Branch**

Soundings taken by echo sounder, hand lead, pole: **SB 1180, RESON 8101, Knudsen 320**

Graphic record scaled by: **RAINIER Personnel**

Graphic record checked by: **RAINIER Personnel**

Evaluation by: **L. Deodato** Automated plot by: **HP DesignJet 1050C**

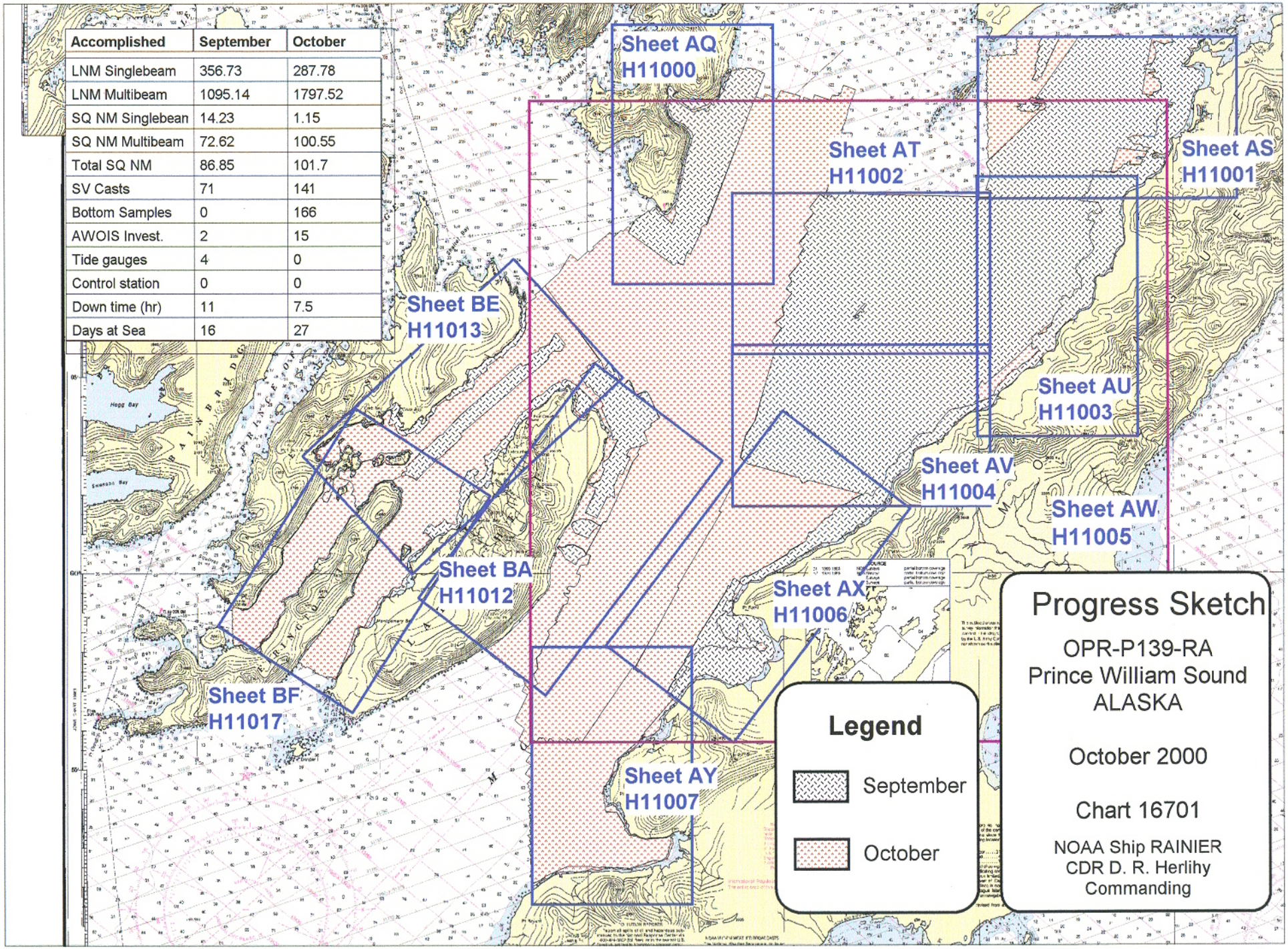
Verification by: **R. Shipley, E. Domingo, R. Davies, R. Mayor, L. Deodato**

Soundings in: **Fathoms** at **MLLW**

REMARKS: **Time in UTC.**

Revisions and annotations appearing as endnotes were generated during office processing..

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



Accomplished	September	October
LNM Singlebeam	356.73	287.78
LNM Multibeam	1095.14	1797.52
SQ NM Singlebean	14.23	1.15
SQ NM Multibeam	72.62	100.55
Total SQ NM	86.85	101.7
SV Casts	71	141
Bottom Samples	0	166
AWOIS Invest.	2	15
Tide gauges	4	0
Control station	0	0
Down time (hr)	11	7.5
Days at Sea	16	27

Descriptive Report to Accompany Hydrographic Survey H11002

Project OPR-P139-RA-00[1] Southwest Prince William Sound
Scale 1:10,000
September – October, 2000
NOAA Ship RAINIER
Chief of Party: Commander Daniel R. Herlihy, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P139-RA-00[2], dated August 25, 2000, and the Draft Standing Project Instructions dated April 6, 1998. The survey area is located South of Green Island in the vicinity of the Needle. The survey's northern limit is latitude 60°09'40.53[3]"N and the southern limit is latitude 60°05'29.35[4]"N. The survey's western limit is longitude 147°40'34.31[5]"W and the eastern limit is longitude 147°29'45.25[6]"W.

Data acquisition was conducted from September 13 – October 19, 2000 (DN 257 to 293).

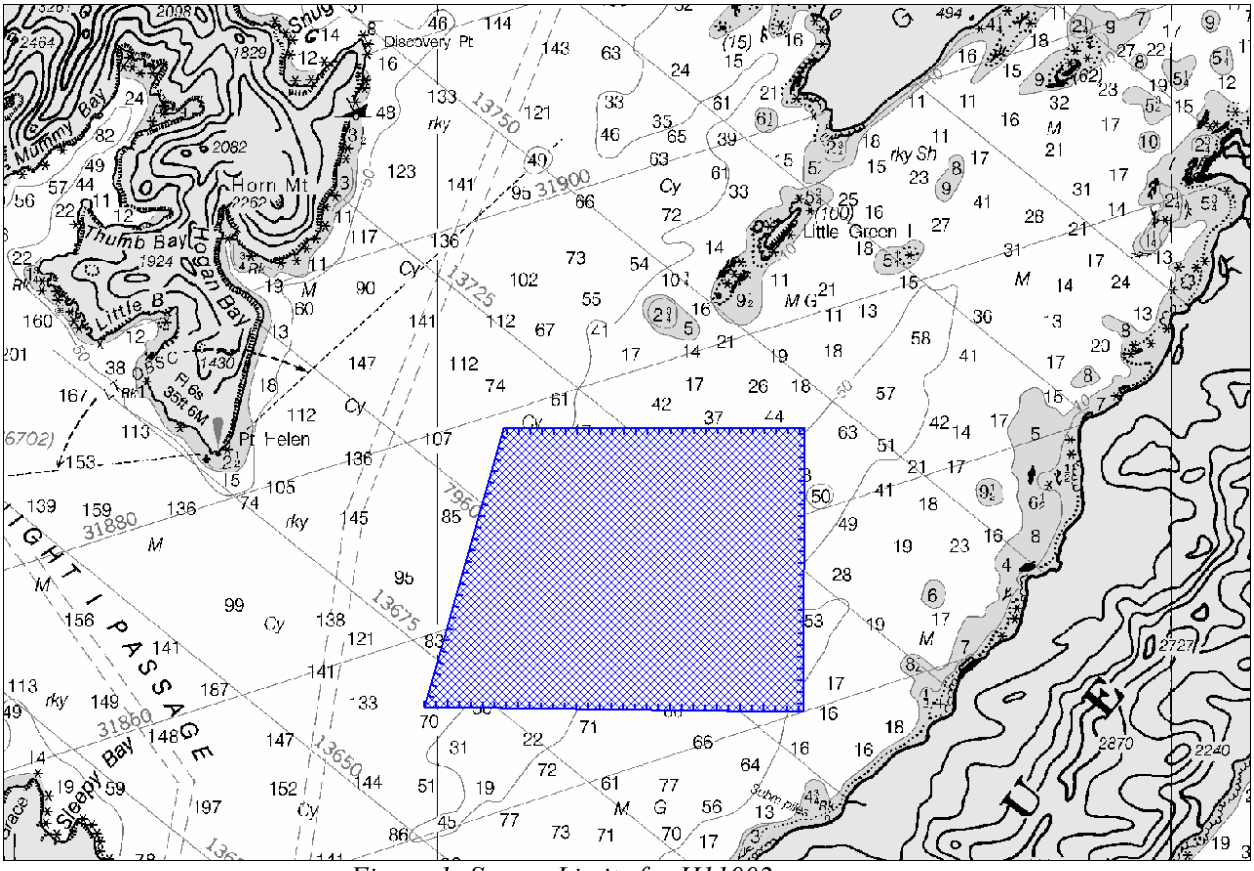


Figure 1: Survey Limits for H11002

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures, and data processing methods, can be found in the *OPR-P139-RA-00 Data Acquisition and Processing Report* submitted under separate cover. Items specific to this survey and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Data were acquired by RAINIER's survey launches (vessel numbers 2121, 2122, 2123, 2124, 2125, and 2126). Vessels 2121, 2123, 2124 and 2126 were used to acquire shallow-water multibeam soundings and sound velocity profiles. Vessels 2122 was used to acquire vertical-beam echo soundings and detached positions. Vessel 2125 was used to collect bottom samples. No unusual vessel configurations or problems were encountered on this survey.

B2. Quality Control

Crosslines

SWMB crosslines totaled 21.40 nautical miles, comprising 9.79% of MB hydrography. The Quality Control Report (CARIS HIPS) for the RESON checkline file averaged 81.63%; the Quality Control Report (CARIS HIPS) for the Seabeam checkline file averaged 83.16%. See Appendix V[7] for the detailed reports. Each report had a depth tolerance factor of 0.013, which conforms to International Hydrographic Organization Order I specifications as detailed in Special Publication S-44, Edition 4; and NOAA depth accuracy standards as set forth in the NOS Hydrographic Surveys Specification and Deliverables Manual (HSSDM). The Hydrographer believes that the low averages from the Quality Control Report are due to the overall nature of the extremely varied underwater terrain found throughout the survey area.[8]

Junctions[9]

The following contemporary surveys junction with H11002:

Registry #	Scale	Date	Junction side
H11003	1:10,000	2000	East
H11004	1:10,000	2000	South
H11005	1:40,000	2000	West
H10940	1:10,000	1999	North

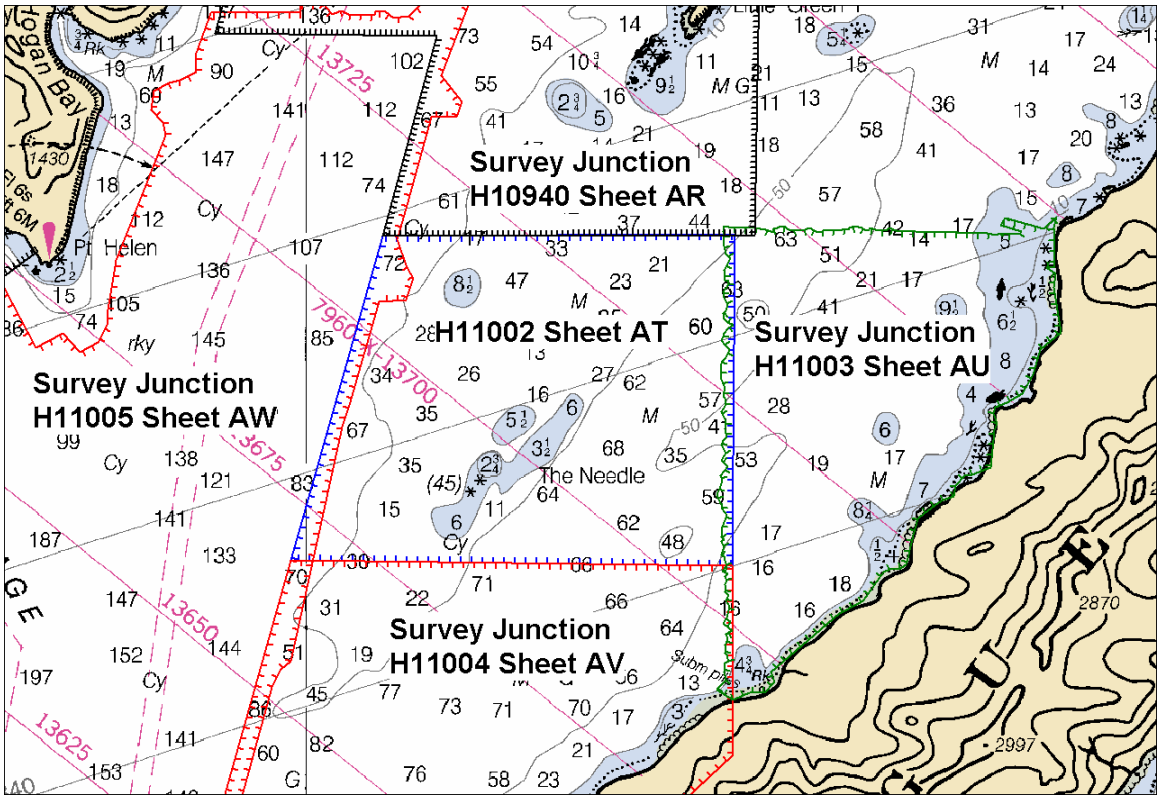


Figure 2: Junctions with Survey H11002

Surveys H11003, H11004, and H11005 junction well with this survey, with differences within one fathom. Survey H10940 junctions well with this survey, with differences generally ranging between one and three fathoms.[10] Notable differences are addressed below.

The present survey shows a 31-fathom sounding at 60°09'33.73"N, 147°35'58.32"W (466720.5 E, 6669311.0 N, Pos. # 267276) where survey H10940 revealed a depth of 25.2 fathoms. This area is over a ridge and was covered with 100% SWMB.[11]

The present survey shows a 47-fathom sounding at 60°09'31.03"N, 147°33'01.82"W (469441.3 E, 6669203.8 N, Pos. # 423931) where survey H10940 revealed a depth of 42.3 fathoms. This area is over a ridge and was covered with 100% SWMB.[12]

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.[13]

Data Quality Factors

A vertical shift in the data acquired from RA-6, DN 263, line 309_1755 (Figure 3) was apparent during data cleaning in HDCS subset mode. The Hydrographer believes this error of up to 0.4 meters is due to marginal weather conditions where eight degrees of pitch and roll were observed. This survey line was run in order to acquire data over a holiday in a deep valley, and therefore the Hydrographer does not feel

that this has adversely affected the quality of survey data. Four soundings in the final selected sounding data set ("H11002_Level0.tab") were selected from this line (Figure 4).

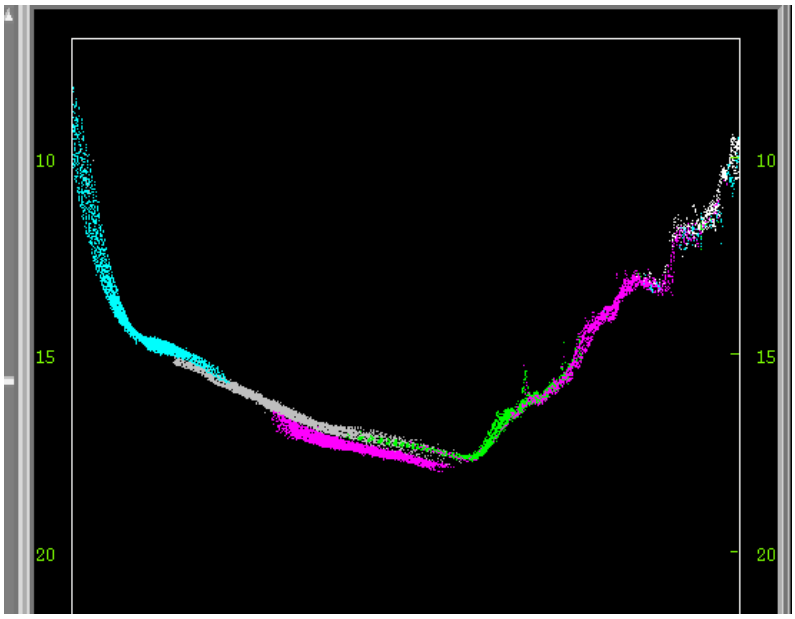


Figure 3: Illustration of data shift from DN 263, RA-6, line 309_1755

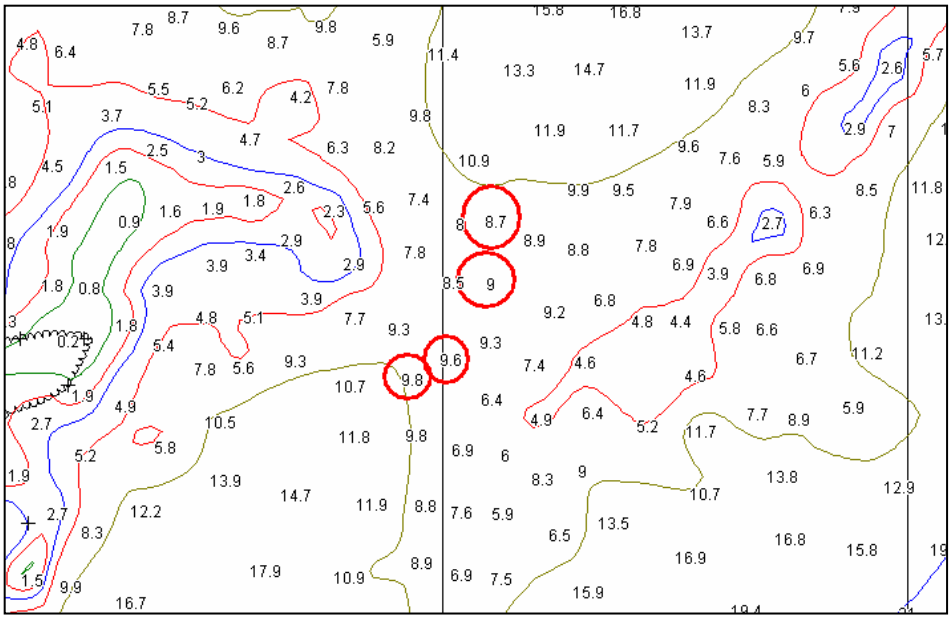


Figure 4: Soundings selected from DN 263, RA-6, line 309_1755 (circled)

No additional unusual conditions were encountered during the survey which affected the expected accuracy and quality of survey data.[14]

B3. Data Reduction

Data reduction procedures for survey H11002 conform to those detailed in the *OPR-P139-RA-00 Data Acquisition and Processing Report.*

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11002 can be found in the *OPR-P139-RA-00 Horizontal and Vertical Control Report* submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The U.S. Coast Guard Beacons at Potato Point, AK, and Cape Hinchinbrook, AK, were the sources of differential correctors. Launch-to-launch DGPS performance checks were performed weekly in accordance with Section 3.2 of the FPM. Copies of the performance checks are included in the *OPR-P139-RA-00 Horizontal and Vertical Control Report*.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide stations at Cordova, Alaska (945-4050) and Valdez, Alaska (945-4240) will serve as control for datum determination. RAINIER personnel installed Sutron 8200 "bubbler" tide gauges at the following subordinate stations in accordance with Project Instructions:

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Perch Point	945-4561	30-day	12 September 2000	26 October 2000
Latouche	945-4713	30-day	12 September 2000	27 October 2000
Point Elrington	945-4814	30-day	25 September 2000	25 October 2000

Heavy surf and foul shoreline precluded the installation of a new station in San Juan Bay, Montague Island, as required by the Letter Instructions. After consultation with N/CS31 and N/OPS1, the following historical station was reoccupied in lieu of a new station at San Juan Bay:

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
MacLeod Harbor	945-4674	30-day	21 September 2000	27 October 2000

Raw water level data from these gauges were forwarded to N/OPS1 throughout the project period, with the final package submitted on November 27, 2000 in accordance with HSG 50 and FPM 4.7. The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. A request for delivery of final approved (smooth) tides for survey H11002 was forwarded to N/OPS1 on October 28, 2000 in accordance with FPM 4.8.[15]

D. RESULTS AND RECOMMENDATIONS[16]

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

One AWOIS item was within the limits of H11002 and investigated during this survey. Investigation methods, results, and charting recommendations have been entered into the Microsoft Access AWOIS database and are submitted with the digital data. Printouts of the AWOIS Database Forms are included in Appendix VI of this report.[17]

D.2 Chart Comparison

Survey H11002 was compared with chart 16701 (17th Ed.; July 25, 1998, 1:81,436) and chart 16702 (10th Ed.; June 13, 1998, 1:40,000)[18].

Depths from charts[19] 16701 and 16702[20] generally agreed with survey depths within two fathoms, with occasional differences of up to four fathoms. Notable differences are addressed below. All of the items discussed were covered with 100% shallow-water multibeam. The following comparisons address items not otherwise submitted as dangers to navigation (refer to section D.4):[21]

In the vicinity of a charted (16701) 73-fathom sounding at 60°06'29.30"N[22], 147°31'52.47"W[23] (470465.61 E, 6663573.14 N)[24], the present survey revealed a depth of 61[25] fathoms (Pos. #111280)[26].

In the vicinity of a charted (16701) 60-fathom sounding at 60°06'40.27"N[27], 147°30'05.17"W[28] (472125.10 E, 6663899.64 N)[29], the present survey revealed a depth of 55 fathoms (Pos. #89296)[30].

In the vicinity of a charted (16701) 41-fathom sounding at 60°08'49.41"N[31], 147°33'12.73"W[32] (469262.36 E, 6667917.82 N)[33], the present survey revealed a depth of 48 fathoms (Pos. #401952). Survey H11002 shows a ridge approximately 80 meters to the east with similar soundings of 40 fathoms.[34]

In the vicinity of a charted (16701) 48-fathom sounding at 60°08'32.29"N[35], 147°34'36.23"W[36] (467969.83 E, 6667399.02 N)[37], the present survey revealed a depth of 33[38] fathoms (Pos. #426837)[39].

In the vicinity of a charted (16701) 67-fathom sounding at 60°08'38.68"N[40], 147°35'57.83"W[41] (466712.87 E, 6667608.09 N)[42], the present survey revealed a depth of 59[43] fathoms (Pos. #302816).

In the vicinity of a charted (16701) 54-fathom sounding at 60°08'37.38"N[44], 147°36'35.33"W[45] (466133.91 E, 6667573.07 N)[46], the present survey revealed a depth of 48 fathoms (Pos. #467615)[47].

In the vicinity of a charted (16701) 34-fathom sounding at 60°07'27.45"N[48], 147°36'51.00"W (465872.14 E, 6665412.05 N)[49], the present survey revealed a depth of 54 fathoms (Pos. #193435)[50]. Survey H11002 shows a ridge with similar depths of 36 to 40 fathoms approximately 150 meters to the east.[51]

In the vicinity of a charted (16701) 77-fathom sounding at 60°05'53.82"N[52], 147°39'54.80"W[53] (463006.10 E, 6662543.17 N)[54], the present survey revealed a depth of 64[55] fathoms (Pos. #221621).

In the vicinity of a charted (16701 and 16700) 11-fathom sounding at 60°06'20.78"N[56], 147°35'37.97"W[57] (466980.82 E, 6663339.29 N)[58], the present survey revealed a depth of 24 fathoms (Pos. #615641)[59]. The area is over a ridge and was covered with 100% SWMB. Survey H11002 shows a shoal depth of 8.8 fathoms approximately 260 meters to the west of the charted sounding.[60]

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.[61]

D.3 Shoreline

The photogrammetric T-sheet shoreline data supplied by N/NGS3 did not have useable shoreline in the vicinity of the Needle. Chart 16700 (26th Ed.; September 1998, Scale 1:200,000) and chart 16701 (17th Ed.; July 25, 1998, Scale 1:81,436) were used as source shoreline. Features shown on the current editions were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline verification was conducted near predicted low water in accordance with the Project Instructions and FPM 6.1 and 6.2. For this survey the general limit of safe navigation of a survey launch was 4 meters offshore of the apparent low water line. Water depths along this limit of safe navigation are around 4 meters at Mean Lower Low Water (MLLW). Features unreachable by survey launch are the hydrographer's approximate representation of the shoreline.

Detached positions (DPs) taken during shoreline verification were recorded in HYPACK and on DP forms,[62] and processed in HPS. These indicate revisions to features, and features not found on the chart.

A detailed "DP and BS Plot,"[63] in both paper copy and MapInfo format, is provided showing all detached positions and bottom samples with notes relating to each feature. The updated shoreline and features are also depicted on the final sounding plot.

Shoreline Changes and New Features

Several changes and new features were found and are depicted on the final DP plot. Charted rocks were often identified as high points or extents of new reefs.[64]

The features comprising the Needle in the vicinity of 60°06'40.458"N, 147°36'01.340"W (466625.4 E, 6663951.3 N) were revised by the Hydrographer. The Needle was found to be a continuous reef delineated by detached positions 20031 through 20039. The reef surrounds a large rock with a height of approximately 20 meters; however this height was estimated by the Hydrographer. Chart 16701 depicts The Needle as an islet with a height of 45 feet above mean high water. The Hydrographer recommends retaining the islet as charted[65], and depicting the surrounding reef as surveyed.[66]

The charted (16701) rock at 60°06'30.282"N, 147°36'15.920"W (466397.4 E, 6663638.5 N, Pos. #20102) was disproved using a ten minute visual and echo-sounder search within a 70-meter search radius in water with 3-meter visibility. The average water depth was 16 meters. The Hydrographer believes this represents the same rock as that disproved on chart 16700 (Pos. #20101), and recommends removing it from the chart.[67]

The charted (16700) rock at 60°06'38.790"N, 147°35'56.609"W (466698.0 E, 666899.0 N, Pos. #20129) was disproved using a ten minute visual and echo-sounder search within a 50-meter search radius in water with 3-meter visibility. However, the Hydrographer believes this rock represents The Needle and recommends revising the depiction of The Needle as recommended above.[68]

The Hydrographer recommends that the shoreline[69] as depicted on the DP and BS plot and final sounding plot[70] supersedes and complements shoreline information compiled on the charts as noted. These revisions are recorded in the MapInfo digital file named "H11002_Shoreline_Updates". In addition, field

notes made by the Hydrographer, including verification of source features and descriptions of shoreline classification, are submitted in the digital MapInfo file "H11002_Shoreline_Notes."

D.4 Dangers to Navigation

Ten[71] Dangers to Navigation were found and reported to the Pacific Hydrographic Branch/U.S. Coast Guard for verification and submission to the U.S. Coast Guard. A copy of the preliminary Danger to Navigation Report is included in Appendix I[72]. The final report will be inserted by the Pacific Hydrographic Branch (PHB) following verification and submission to the U.S. Coast Guard.[73]

D.5 Aids to Navigation

No aids to navigation were located within H11002 survey limits.[74]

E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; the Field Procedures Manual, and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2000.

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

Survey H11002 is complete and adequate to supersede charted soundings and features in their common areas. There is no additional work required on this survey.[75]

Listed below are supplemental reports submitted separately which contain additional information relevant to this survey:

Title	Date Sent	Office
Data Acquisition and Processing Report for OPR-P139-RA-00	11/25/00	N/CS34
Horizontal and Vertical Control Report for OPR-P139-RA-00	TBD	N/CS34
Tides and Water Levels Package for OPR-P139-RA-00	11/27/00	N/OPS1
Coast Pilot Report for OPR-P139-RA-00	TBD	N/CS26

Approved and Forwarded:

Daniel R. Herlihy
Commander, NOAA
Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Sheet Manager:

Shawna K. Bell
Ensign, NOAA

Field Operations Officer:

Edward J. Van Den Ameele
Lieutenant, NOAA

Revisions Compiled During Office Processing and Certification

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[1] PHB Revision -- Strikethrough ~~00~~
[2] PHB Revision -- Strikethrough ~~00~~
[3] PHB Revision -- Strikethrough ~~40.53~~ and replace with 38.0
[4] PHB Revision -- Strikethrough ~~29.35~~ and replace with 33.0
[5] PHB Revision -- Strikethrough ~~34.31~~ and replace with 32.0
[6] PHB Revision -- Strikethrough ~~45.25~~ and replace with 46.0
[7] Filed with the hydrographic data.
[8] Concur
[9] The junctions with surveys H11003, H11004, and H11005 are complete. A "Joins" note has been added to the smooth sheet where applicable. A few soundings from the junction surveys have been transferred within the common area of H11002 to better delineate the bottom configuration. The junction with H10940 was not formally completed since this survey was processed previously. Depths are generally in good agreement within the common area. However, the standard depth curves on the present survey were drawn considering both data sets and therefore should be used with the common area. An "Adjoins" note have been added to the smooth sheet.
[10] Concur with clarification. See endnote 9.
[11] PHB Revision – 25 fathom depth has been transferred to the present survey.
[12] PHB Revision – 42 fathom depth has been transferred to the present survey.
[13] Concur
[14] Concur
[15] Approved tide note dated February 13, 2001 is attached.
[16] The present survey was compared to the following prior surveys.

Survey	Year	Scale	Datum
H2741	1911	1:40,000	Unknown
H5427	1933	1:20,000	Valdez
H5428	1933	1:20,000	Valdez
H5431	1933	1:20,000	Valdez
H9512	1975	1:20,000	NAD27

With the exception of a few charted bottom characteristics, H2741 has been superseded by the survey work conducted in 1933. Prior surveys H5427, H5428, and H5431 were conducted using early echo sounder technology, leadlines, and visual positioning. Present survey depths reflect a consistent shoal bias of 1-3 fathoms. These depth differences can be attributed to present state-of-the-art in positioning, sounding, and data acquisition techniques. Any remaining differences with the prior surveys can likely be attributed to past earthquake activity in Prince William Sound. In accordance with the Hydrographic Guideline No. 39, the effects of the 1964 Prince William Sound earthquake were considered in the comparison of this survey. Prince William Sound experienced a bottom uplift of 4-32 feet during the 1964 earthquake. However, due to differences in data acquisition methods, no reasonable adjustment value for prior soundings could be determined. Some bottom characteristics from H2741, H5427, and H5428 were transferred to the present survey. H9512 is listed as a Category 1 Hydrographic Data Evaluation Group (HDEG) survey in a memo dated September 10, 1990 and has not received final processing. Based on this determination, only a few depths of a significant nature have been

applied to the chart. The present survey depths reflect a consistent shoal bias of 0.5-1 fathom with the 1975 survey work. With the transfer of the bottom characteristics, the present survey is adequate to supersede all prior surveys within the common area.

[17] Copy attached.

[18] PHB Revision -- Strikethrough ~~and chart 16702 (10th Ed.; June 13, 1998, 1:40,000~~ Chart is outside of survey area.

[19] PHB Revision -- Strikethrough ~~s~~

[20] PHB Revision -- Strikethrough ~~and 16702~~

[21] Chart the areas discussed below based on the present survey information.

[22] PHB Revision -- Revise GP to ϕ 60°06'28.0"N

[23] PHB Revision -- Revise GP to λ 147°31'51.0"W

[24] PHB Revision -- Strikethrough ~~(470465.61 E, 6663573.14 N)~~

[25] PHB Revision -- Revise depth to 62

[26] PHB Revision -- Strikethrough ~~(Pos. # 111280)~~

[27] PHB Revision -- Revise GP to ϕ 60°06'39.5"N

[28] PHB Revision -- Revise GP to λ 147°30'02.0"W

[29] PHB Revision -- Strikethrough ~~(472125.10 E, 6663899.64 N)~~

[30] PHB Revision -- Strikethrough ~~(Pos. # 89296)~~

[31] PHB Revision -- Revise GP to ϕ 60°08'49.0"N

[32] PHB Revision -- Revise GP to λ 147°33'10.0"W

[33] PHB Revision -- Strikethrough ~~(469262.36 E, 6667917.82 N)~~

[34] Concur

[35] PHB Revision -- Revise GP to ϕ 60°08'32.0"N

[36] PHB Revision -- Revise GP to λ 147°34'34.0"W

[37] PHB Revision -- Strikethrough ~~(467969.83 E, 6667399.02 N)~~

[38] PHB Revision -- Revise depth to 33

[39] PHB Revision -- Strikethrough ~~(Pos. # 426837)~~

[40] PHB Revision -- Revise GP to ϕ 60°08'38.0"N

[41] PHB Revision -- Revise GP to λ 147°35'56.0"W

[42] PHB Revision -- Strikethrough ~~(466712.87 E, 6667608.09 N)~~

[43] Concur

[44] PHB Revision -- Revise GP to ϕ 60°08'37.0"N

[45] PHB Revision -- Revise GP to λ 147°36'34.0"W

[46] PHB Revision -- Strikethrough ~~(466133.91 E, 6667573.07 N)~~

[47] PHB Revision -- Strikethrough ~~(Pos. # 467615)~~

[48] PHB Revision -- Revise GP to ϕ 60°07'27.0"N

[49] PHB Revision -- Strikethrough ~~(465872.14 E, 6665412.05 N)~~

[50] PHB Revision -- Strikethrough ~~(Pos. # 193435)~~

[51] Concur

[52] PHB Revision -- Revise GP to ϕ 60°05'53.0"N

[53] PHB Revision -- Revise GP to λ 147°39'54.0"W

[54] PHB Revision -- Strikethrough ~~(463006.10 E, 6662543.17 N)~~

[55] Concur

[56] PHB Revision -- Revise GP to ϕ 60°06'20.0"N

[57] PHB Revision -- Revise GP to λ 147°35'37.0"W
[58] PHB Revision -- Strikethrough ~~(466980.82 E, 6663339.29 N)~~
[59] PHB Revision -- Strikethrough ~~(Pos. # 615641)~~
[60] Concur
[61] Concur
[62] Filed with the hydrographic data
[63] Filed with the hydrographic data
[64] Shoreline verification conducted by the hydrographer has been analyzed during office processing and shown on the smooth sheet as warranted.
[65] Do not concur. Islet has been transferred to the smooth sheet from prior survey H05428 (1933) and using the NAD83 geographic position of triangulation station NEEDLE, 1933 at latitude 60°06'37.76"N, longitude 147°36'09.31"W.
[66] Concur
[67] Concur
[68] Concur with clarification. Compile The Needle and surroundings as shown on the smooth sheet.
[69] PHB Revision -- Strikethrough ~~shoreline~~ and replace with ledges
[70] Filed with the hydrographic data.
[71] PHB Revision -- Revise Ten to Nine
[72] Filed with the hydrographic data.
[73] Copy attached
[74] Concur
[75] Concur

REPORT OF DANGERS TO NAVIGATION

ADVANCE INFORMATION

Hydrographic Survey Registry Number: H11002

Survey Title: State: Alaska

Locality: Prince William Sound

Sub-locality: South of Green Island, in the vicinity of The Needle

Project Number: OPR-P139-RA-00

Survey Dates: September - October 2000

Depths are reduced to Mean Lower Low Water using predicted tides. Positions are based on the NAD83 horizontal datum.

CHARTS AFFECTED:

CHART	EDITION	DATE	SCALE
16701	17th	7/25/1998	1:81,436
16700	26th	9/19/1998	1:200,000

DANGERS:

FEATURE	DEPTH (fathoms)	LATITUDE(N)	LONGITUDE(W)
Sounding	2½	60° 06' 53.508" N	147° 35' 00.995" W
Sounding	2½	60° 07' 02.417" N	147° 34' 35.113" W
Sounding	3¾	60° 07' 22.358" N	147° 35' 13.536" W
Sounding	3¾	60° 07' 12.413" N	147° 34' 18.459" W
Sounding	5½	60° 07' 28.300" N	147° 33' 54.471" W
Sounding	5½	60° 06' 13.600" N	147° 36' 28.888" W
Sounding	6½	60° 06' 19.192" N	147° 37' 01.748" W
Sounding	7½	60° 07' 15.580" N	147° 35' 32.221" W
Sounding	8¾	60° 06' 19.663" N	147° 35' 53.679" W

COMMENTS:

To view chartlet click here

Questions concerning this report should be directed to the Pacific Hydrographic Branch (N/CS34) at (206) 526-6836.

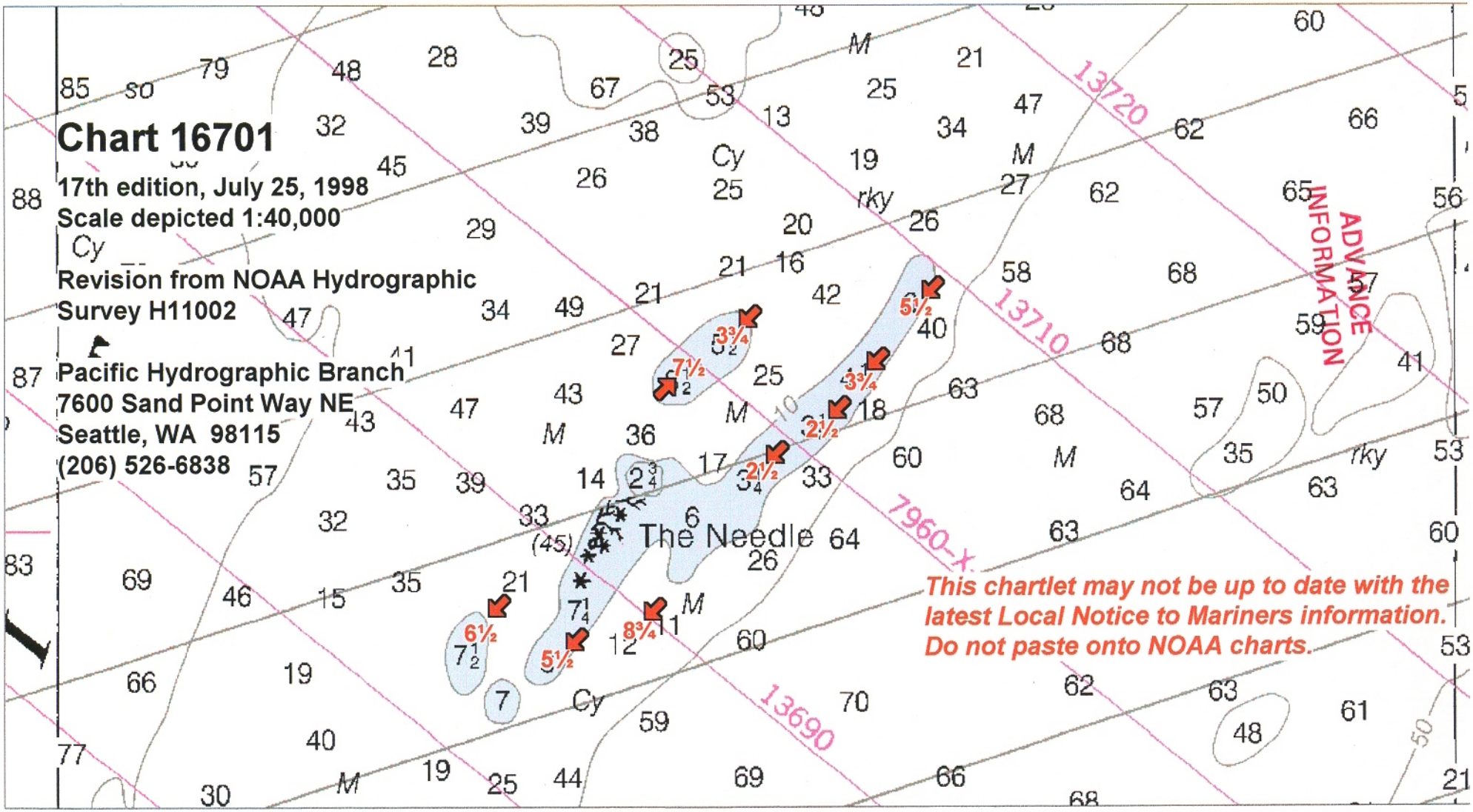


Chart 16701
17th edition, July 25, 1998
Scale depicted 1:40,000
Revision from NOAA Hydrographic Survey H11002
Pacific Hydrographic Branch
7600 Sand Point Way NE
Seattle, WA 98115
(206) 526-6838
The Needle
13720
13710
13690
7960-X
ADVANCE INFORMATION
This chartlet may not be up to date with the latest Local Notice to Mariners information.
Do not paste onto NOAA charts.

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: February 13, 2001

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P139-RA-2000
HYDROGRAPHIC SHEET: H-11002

LOCALITY: Vicinity of the Needle, Prince William Sound, AK
TIME PERIOD: September 13 - October 19, 2000

TIDE STATION USED: 945-4561 Perch Point, AK
Lat. 60° 7.6'N Lon. 147° 23.7'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.254 meters

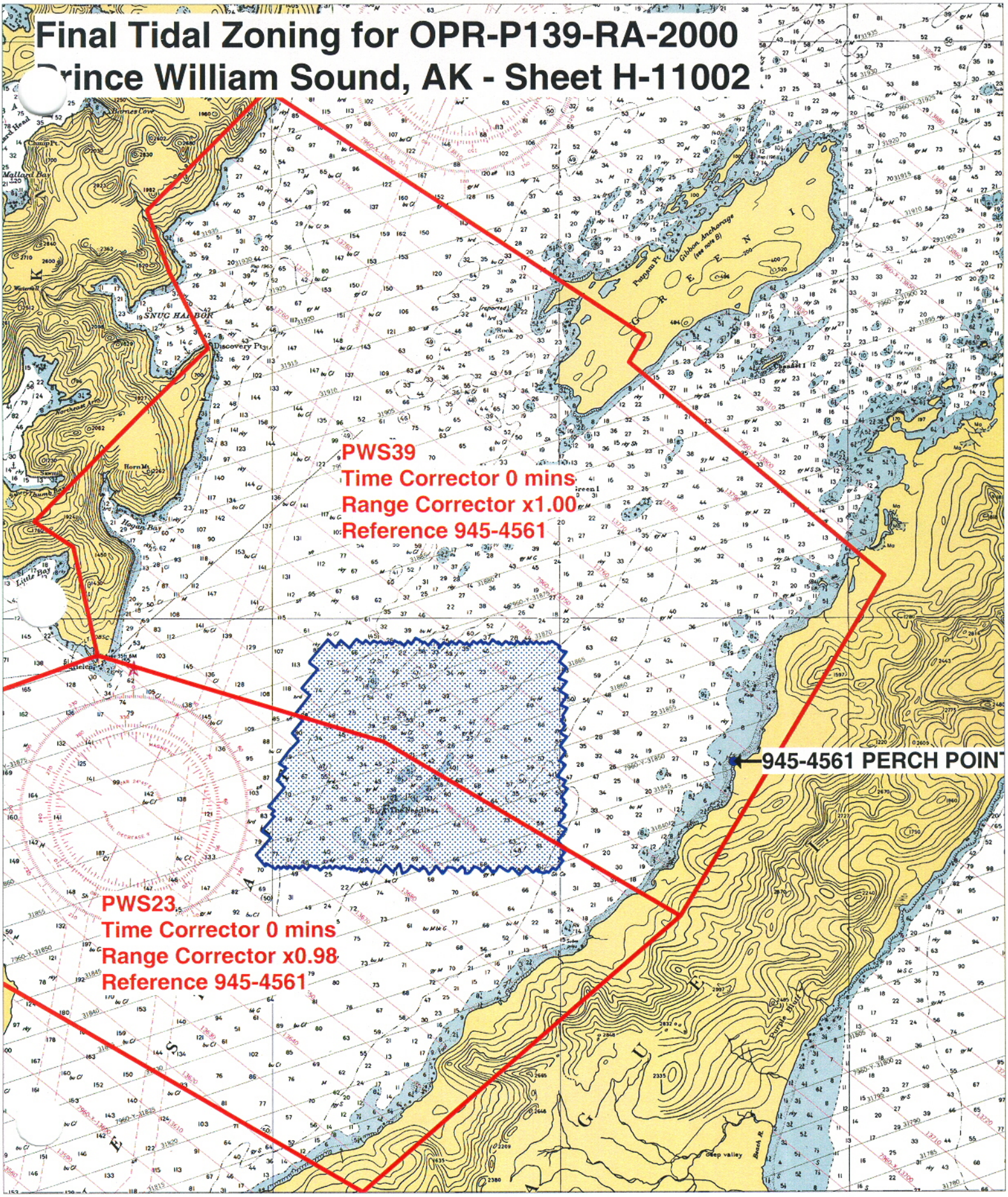
REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PWS23 & PWS39.

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.

Thomas N. Moore 2/13/01

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION


Final Tidal Zoning for OPR-P139-RA-2000
Prince William Sound, AK - Sheet H-11002
PWS39
Time Corrector 0 mins
Range Corrector x1.00
Reference 945-4561
945-4561 PERCH POIN
PWS23
Time Corrector 0 mins
Range Corrector x0.98
Reference 945-4561

Final tide zone node point locations for OPR-P139-RA-2000,
Sheet H-11002.

Format: Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone PWS23			
-147.430708 60.080034	945-4561	0	0.98
-147.614981 59.99982			
-147.833691 60.063871			
-147.909718 60.046036			
-147.976527 60.06845			
-147.996234 60.084179			
-147.915026 60.129755			
-147.767908 60.155922			
-147.602299 60.130868			
-147.430708 60.080034			
Zone PWS39			
-147.703642 60.244653	945-4561	0	1.00
-147.738627 60.227865			
-147.804771 60.1946			
-147.781996 60.187238			
-147.767908 60.155922			
-147.602299 60.130868			
-147.430708 60.080034			
-147.312699 60.178864			
-147.459741 60.240591			
-147.450789 60.248219			
-147.669435 60.31933			
-147.73888 60.284518			
-147.726093 60.266771			
-147.703642 60.244653			

RECRD	**52496**	VESSLTERMS	SOUNDING	CHART	16701	AREA	P
		CARTOCODE	0130	SNDINGCODE		DEPTH	

LAT83	60 08 56.85	LONG83	147 36 31.13	NATIVDATUM	06
LATDEC:	60.149125	LONDEC:	147.60864722222	GPQUALITY	Med
				GPSOURCE	Scaled

PROJECT	OPR-P139-00	ITEMSTATUS	Assigned	SEARCHTYPE	Full
RADIUS	200	INIT	MCR	ASSIGNED	7/15/1999
TECNIQ	MB,ES,DI				
Techniqnote	DEVELOP EXTENT OF SHOAL FOR LEAST DEPTH, SEARCH RADIUS FOR GENERAL GUIDANCE				

History

HISTORY
H-9512/75--SP-PMC-4-DA-75; 8.5 FM LEAST DEPTH ON SHOAL, MLLW PREDICTED. ENTERED 7/99 MCR

Fieldnote

INVESTIGATION

DATE(S): 09 /14/00 (DN: 258)

POSITION NUMBERS: 608,075

INVESTIGATION USED: 100% MB bottom coverage development

SURVEYED POSITION: LAT: 60/08/56.85 LON: 147/36/31.13

POSITION DETERMINED BY: DIFFERENTIAL GPS

INVESTIGATION SUMMARY: LD over SHL is 8.2 FM at MLLW using zoned verifed tides.

CHARTING RECOMMENDATION (HYDROGRAPHER): Chart the LD from H11002 after application of smooth tides.

EVALUATOR COMMENTS:Chart least depth of 8fms at latitude 60/08/56.373N, longitude 147/36/34.388W.

Proprietary

YEARSUNK NIMANUM

Print Record

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER
H-11002

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

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

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET			r 141
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT			30
GEOGRAPHIC NAMES			
OTHER: (Chart Compilation)			21
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS			192

Pre-processing Examination by	*Beginning Date* 03/16/2001	*Ending Date*
Application of Field Data by Shipley, R. Mayor, R. Davies, E. Domingo, L. Deodato	*Time (Hours)* 141	*Ending Date*
Verification Check by	*Time (Hours)*	*Ending Date*
Evaluation and Analysis by L. Deodato	*Time (Hours)* 30	*Ending Date* 08/13/2002
Inspection by B. Olmstead	*Time (Hours)* 31	*Ending Date* 12/03/2003

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

APPROVAL SHEET
H11002

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 for Date: 12/3/2003
Dennis Hill
Chief, Cartographic Team
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 Descriptive Report.

Date: 1/20/04
John E. Lowell, Jr.
Commander, NOAA
Chief, Pacific Hydrographic Branch

AWOIS check 3/3/04 MCR

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-11002

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
16701	1/22/02	Leo Deodato	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. Application of soundings and features from smooth sheet.
16701	4/13/04	Christy ? Eyre Rev. T. Alexander 4/?/04	Full ~~Part Before~~ After Marine Center Approval Signed Via Application of
			~~Drawing~~ No. soundings and features from smooth sheet.
16700	4/13/04	Christy ? Eyre Rev. T. Alexander 4/?/04	Full ~~Part Before~~ After Marine Center Approval Signed Via Application of
			~~Drawing~~ No. soundings and features through overlap of
			chart 16701 ED 19.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.