

9713

Diag. Cht. No. 8551-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey ... HYDROGRAPHIC
Field No. FA-10-1-77
Office No. H-9713

LOCALITY

State ALASKA
General Locality .. PRINCE WILLIAM SOUND
Locality PORT ETCHES

1977

CHIEF OF PARTY
Bruce I. Williams

LIBRARY & ARCHIVES

DATE April 4, 1978

9713

HYDROGRAPHIC TITLE SHEET

H-9713

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.

FA-10-1-77

State Alaska

General locality Prince William Sound

Locality Port Etches

Scale 1:10,000 Date of survey September 1-10, 1977

Instructions dated 5 August 1977 Project No. OPR-452-FA-77

Vessel NOAA Ship FAIRWEATHER (2020), FA-3 (2023), FA-4 (2024), FA-5 (2025)

Chief of party CDR B. I. Williams, CMDG

Launched,
 Surveyed by LCDR L. Thomas, LT J. Withrow, LTJG G. Leigh, LTJG B. Crowell, ENS S. Knight, ENS M. Finke, ENS L. Roberts

Soundings taken by echo sounder, XXXXXXXXXX Ross Fathometers (1046, 1054 and 1036)

Graphic record scaled by FAIRWEATHER Personnel

Graphic record checked by FAIRWEATHER Personnel

Positions verified XXXXXXXXXX by D. L. Duffy Automated plot by PMC Xynetics Plotter

Soundings Verification by D. L. Duffy

Soundings in fathoms XXXX and tenths at MLLW MLLW

REMARKS: The survey was run on GMT. The mean longitude of the survey is 146°40'00".

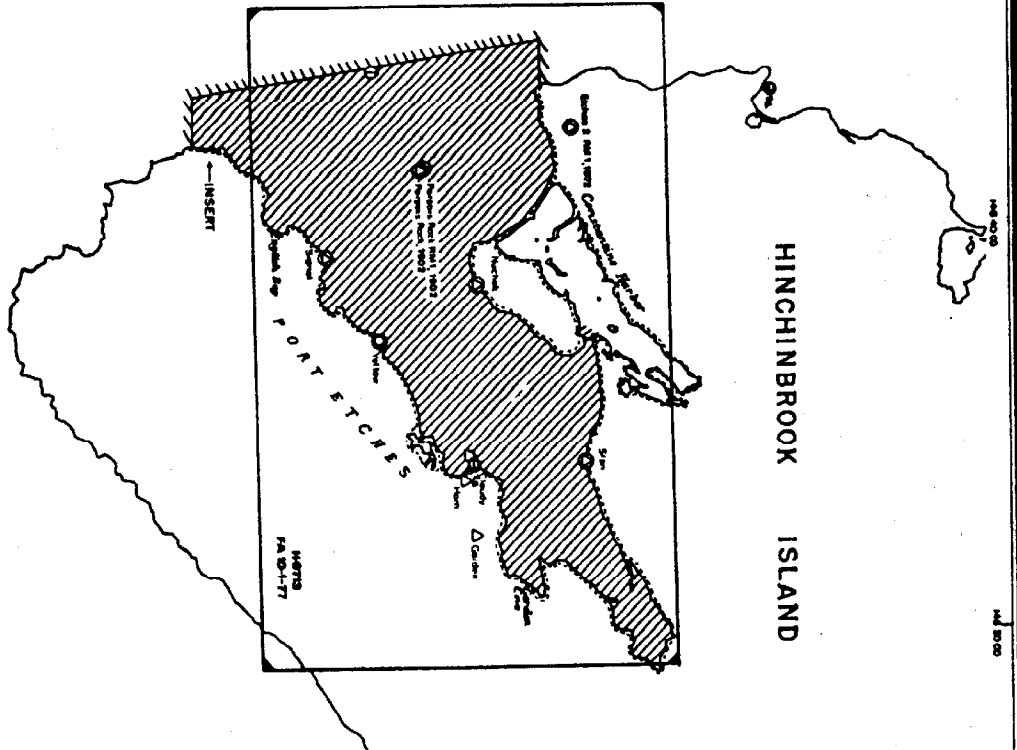
Misc. items have been removed from this D.R. and are filed in the Cabinet with the field records.

Applied To Standards 9-6-78

OPR-452-RA-77
 PROGRESS SKETCH
 HINCHINBROOK ISLAND
 NOAA SHIP FAIRWEATHER (S-220)
 CDR BRUCE I. WILLIAMS, CMDG
 SCALE OF NOS CHART 16079
 SEPTEMBER 1977

- △ STA. RECOVERED
- STA. RECOVERED (MINI RANGER)
- ⊙ GTD CAST (MARTEK)
- UNMOUNTED STA. (MINI RANGER)
- FIELD EXT

LNM SOUNDING LINE	382.1
SO NM SOUNDING LINE	14.3
BOTTOM SAMPLES	23
GTD CAST (MARTEK)	1



DESCRIPTIVE REPORT
NOAA SHIP FAIRWEATHER S 220
OPR-452-FA-77
SURVEY H-9713 (FA-10-1-77)

A. PROJECT

This survey was accomplished in accordance with Project Instructions OPR-452-RA-77, Navigable Area Surveys, Port Etches and Jack Bay, Prince William Sound, AK, dated ~~11~~² August, 1977, and with change number 1 dated 6 September, 1977, and with the PMC OpOrder. ✓

B. AREA SURVEYED

The area encompassed by this survey is a roughly triangular area mostly surrounded by Hinchinbrook Island with the western dimension extending from just west of Bear Cape to southwest of English Bay at an angle of 172°T, and including all navigable waters east of this line with the exception of Constantine Harbor. The survey was conducted between 1 September, 1977, and 10 September, 1977. ✓

C. SOUNDING VESSELS

Hydrography on this survey was accomplished by launches FA-3 (EDP 2023, S/N 1011), FA-4 (EDP 2024, S/N 1010), and FA-5 (EDP 2025, S/N 1001). Bottom samples were taken meanwhile, using the Ship (EDP 2020) and FA-4. Miniranger range-range logger, range-azimuth logger, and range-range hydroplot were used for control on both the North and South sheets. ✓

D. SOUNDING EQUIPMENT

All launches were equipped with Ross Fineline fathometers. A TRA corrector of +0.3 fathoms was applied to all soundings taken by all launches. These correctors were based on measured transducer depths and were verified by bar checks. See REPORT ON CORRECTIONS TO ECHO SOUNDINGS, OPR-452-FA-77. Bar checks were taken or attempted at least once daily as weather and/or seastate permitted. ✓

SOUNDING INSTRUMENTS

VESSEL	INSTRUMENT	MODEL	S/N
FA-3	Ross Fineline	5000	1046
FA-4	Ross Fineline	5000	1054
FA-5	Ross Fineline	5000	1036

The depths of soundings on this survey ranged from approximately -1 fathom to 140 fathoms. Occasionally, as the launches transited the near vertical dropoff west of Porpoise Rocks, the digitizer did not digitize the depths, so the fathograms were scanned and these depths were manually picked off the fathograms. Elsewhere, peaks and deeps were picked off the fathograms in the normal fashion. ✓

E. HYDROGRAPHIC SHEETS

The boat sheets were made aboard the Fairweather using the PDP-8 Computer (S/N 09524) and the Houston Instruments Plotter (S/N 6166-22) on Julian Day 244. The scale is 1:10,000. A modified transverse mercator projection was used. The skew for FA-10-1S-77 is 90° and the origin is at 60°14'21"N and 146°39'06"W. The skew for FA-10-1N-77 is 28° and the origin is at 60°17'13"N and 146°40'00"W. A copy of the parameter tape printouts is appended. ✓

F. CONTROL STATIONS

Horizontal control was accomplished with respect to the 1927 North American Datum. Refer to Port Etches Horizontal Control Report OPR-452-FA-77. No photogrammetrically located signals were used. ✓

G. HYDROGRAPHIC POSITION CONTROL

Motorola Miniranger III operating on range-range and range azimuth modes was used to control all of the hydrography and most of the bottom samples on FA-10-1-77. All of the data collected by FA-5 was accumulated in "logger" format in range-azimuth mode, while the data collected by FA-3 and FA-4 was accumulated in both range-azimuth mode or with the Hydroplot Controller in range-range mode. The minirangers were calibrated at the end of hydrography and these electronic correctors are appended. Check calibrations for the hydrography were made daily by either visual sextant angles or ranges on known distances. This data is included with the raw data printouts. Due to the geographic configuration of the area, null zones resulted from the use of Etches 2 RM 1 1972 and shadow areas resulted from each signal configuration. Because of the null zones contributable to Etches 2 RM 1 1972, more area was covered in range azimuth mode from a variety of signals other than Etches 2 RM 1 1972 than was originally planned. To further expedite the hydrography, other range-range configurations were used by the launches equipped with the Hydroplot Controllers. For shadow areas, such as behind Porpoise Rocks, the range was Dead Reckoned. Most of the range-range hydrography was run using Signal and Etches 2 RM1 1972 but Stan and Yellow were also used for the other range-range configuration. Much of the range-azimuth was run from Signal, but Stan, Yellow, Porpoise Rock RM 1, and Nuchek were also used. Bottom samples were run from Etches, in range-azimuth mode, and in range-range mode from Signal-Cloudy and Etches-Stan. See appendix for location of the electronic position control equipment and Electronic Systems Calibration Report OPR-452-FA-77. ✓

H. SHORELINE

The shoreline details were taken from Class Three manuscripts. Because the shoreline was taken from 1:20,000 scale manuscripts, there is a slight discrepancy between the shoreline drawn and the actual shoreline. The delineation of the shoreline appears to be correct except for a strip between Yellow and Cloudy which can be attributed to the change in scales mentioned before and also the east-northeast end of the surveyed area in the already shallow area where it appears that further shoaling has occurred. This area was not sounded adequately to define the zero fathom curve, so the shoreline should still be taken from the manuscripts aforementioned. For further details see also the FIELD EDIT REPORT OPR-452-FA-77, and TP 00634 and TP 00636.

enlarged to double scale

I. CROSSLINES

414.1 nautical miles of hydrography were run on FA-10-1-77. Of this, 41.1 nautical miles, or ten per cent, were crosslines. Comparisons at crossings proved to be excellent with the greatest difference being one fathom.

J. JUNCTIONS

This survey junctions with DA-40-1-74 to the northwest and with DA-20-1-73 to the west. Soundings agree very well with DA-40-1-74 with the possible exception of a few rocks located very near the shore differing in soundings of one to two fathoms. These sounding differences were not significant to merit further development. The junction with DA-20-1-73 was also very good on all except the southwest corner of the survey where there is a disagreement in the rate of bottom change as the soundings moved toward shore. In FA-10-1-77, it was found that the bottom contours changed more rapidly closer to shore than found in the DA-20-1-73 survey. Other than this disagreement, all junctions agree to within one fathom.

9425
H-9425

H-9385

K. COMPARISON WITH PRIOR SURVEY

This area had been priorly surveyed by the Steamer McArthur in 1902, Survey H-2613. All soundings agree to within two fathoms in the area of less than forty fathoms and to within four fathoms elsewhere. These differences can be accounted for by the differences in surveying techniques and equipment. It also appears that there has been a slight amount of shoaling in the east-northeast end of the survey because there is a disagreement in this shoal area between the 1902 survey and FA-10-1-77, where the depths are consistently up to two fathoms shoaler than those taken in 1902. There are no pre-survey items on this sheet.

L. COMPARISON WITH THE CHART

The boatsheet was compared with chart 16709, Prince William Sound, Eastern Entrance, Seventeenth Edition, 27 November, 1976, scale 1:80,000. Very good agreement was found everywhere with the exception of the entrance to Constantine Harbor where there appears to have been a slight amount of shoaling of up to one fathom, and in

the area between Porpoise Rocks and Pt. Barber where the strip is shoaler by up to one fathom than the charted depths. There is also a disagreement between the charted depths and those on the boat-sheet in the east-northeast section of the survey but this has already been discussed in "Comparisons With Prior Survey."

M. ADEQUACY OF SURVEY

All fathograms of launch survey were scanned and checked for peaks and deeps. There are a few areas where it may appear that soundings are sparse (in shoal areas), but sounding lines are no farther than 150 meters apart. Shorelines were run at one fathom lines and/or 50 meters from the beach. This survey is adequate and complete to supercede all prior surveys for charting.

N. AIDS TO NAVIGATION

There is one mooring buoy in Port Etches located correctly on the chart at 60°20'41"N 146°32'58"W. There are no other aids to navigation located in this survey area.

O. STATISTICS

<u>VESSEL</u>	<u>POSITIONS</u>	<u>HYDROGRAPHY (N.M.)</u>	<u>AREA (Sq.N.M.)</u>
FA-3	807	146.3	5.05
FA-4	403	75.4	2.62
FA-5	1388	192.4	6.65

Total area	14.3 Sq. N.M.
Total Bottom Samples	23
Total Number Martek Casts	1
Tide Stations	2
Total Dives	2

P. MISCELLANEOUS

Greenwich Mean Time (+9 hours) was used for all survey records. Velocity correctors were not applied to the final plot of the field sheet. Bar checks were made except when impractical. Unusual traces were found on Julian Days 249-250, between positions 1001-1032 and 1084-1262. These were developed by running splits on Julian Day 251, between positions 2698-2699. But, since the locations of these positions differed, they were not plotted.

Q. RECOMMENDATIONS

This survey is complete and adequate for charting this area and should supercede all prior surveys. It is also recommended that the community of Nuchek be removed from the chart since it is no longer there.

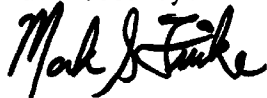
R. AUTOMATED DATA PROCESSING

Range-azimuth data on launches FA-3 and FA-5 was collected by the Aircraft Standards logger system. Program RK-330, Reformat and Data Check, dated 5 May, 1976, was used to reformat the logger data. This data was plotted using programs RK-212, Visual Station Table Load and Plot, dated 1 April, 1974 and program RK-216, Visual Stations and Sounding Plot, dated 5 February, 1976. Range-range data was collected by FA-3 and FA-4 by the hydroplot systems on these launches using program RK-111, Range-range Real Time Plot, dated 30 January, 1976. This range-range data was then plotted using program RK-211, Range-range Non-real Time Plot, dated 30 January, 1976. All this data was plotted on sheets made on the ships hydroplot system using program RK-201, Grid, Signal, and Lattice Plot, dated 18 April, 1975.

S. REFERENCES TO REPORTS

FIELD EDIT REPORT OPR-452-FA-77
HORIZONTAL CONTROL REPORT OPR-452-FA-77
ELECTRONIC SYSTEMS CALIBRATION REPORT OPR-452-FA-77
REPORT ON CORRECTIONS TO ECHO SOUNDINGS OPR-452-FA-77

Submitted by:



Mark S. Finke, Ensign, NOAA

FIELD TIDE NOTE

OPR - 452 (H9713)

Field tide reductions of soundings are based on Cordova (control) predicted tides adjusted to Port Etches using factors from the 1977 Tide Tables. The values were interpolated by the PDP 8/e computer utilizing program AM 500. GMT was used in all cases. The final smooth field plot used tide reducers calculated from the Port Etches tide gage.

Bubbler tide gages were installed at Bear Cape (945-4353) and Port Etches (945-4334) as per the project instructions by NOAA Ship Mc ARTHUR. Locations and periods of operation were as follows:

<u>Site</u>	<u>Location</u>	<u>Period of Operation</u>
Bear Cape (945-4353)	LAT 60°-23.3' N LONG 146°-43.1' W	12 Aug.-10 Sept. 1977
Port Etches (945-4334)	LAT 60°-19.7' N LONG 146°-34.1 W	8 Aug.-10 Sept. 1977

BEAR CAPE

Gage s/n 68A9333, range 0-30 ft, was checked upon arrival on 1 September 1977 by FAIRWEATHER and found to be working properly. The gage functioned well during the period 1-10 September 1977. The gage was removed 10 September 1977.

Staff to Marigram relation - 7.8 ft.

PORT ETCHES

Gage 64A11033, range 0-30 ft, was checked upon arrival on 1 September 1977 by FAIRWEATHER and found to be working properly. The gage functioned well during the period 1-10 September 1977. The gage was removed 10 September 1977.

Staff to Marigram relation - 13.5 ft.

LEVELS

Bear Cape was leveled to five marks upon reinstallation and removal. There is no evidence of orifice movement during the recording period.

Information of levels at Port Etches is sketchy. It appears that the gage was reinstalled on 8 August 1977 and leveled to three bench marks. Upon removal on 10 September 1977, the gage was releveled to five bench marks. A staff stop at 11 feet on the staff was used because no stop was found at 10 feet as indicated in the previous levels. There is good agreement in differences between bench marks but the gage to staff levels do not agree. There is no indication of staff movement but since there is no information on the methods used by the Mc Arthur there can be no rectification of the disagreement.

MISCELLANEOUS

Even though the levels for Port Etches (945-4334) do not agree there is very little possibility of orifice movement. The bay where the orifice was placed was not subject to extreme current or weather conditions. The staff itself did not appear to have moved and the staff to gage relation remained constant. It is therefore felt that the data collected was good.

VELOCITY TABLE
Sound Velocity Corrector Abstract

The following sound velocity correctors are to be applied to all soundings on the survey H-9713 (FA-10-1-77).

Depth Fathom	Corrector (Fathom)
000.0-003.0	0.0
003.1-008.7	0.1
008.8-014.4	0.2
014.5-020.8	0.3
020.9-027.8	0.4
027.9-035.5	0.5
035.6-044.0	0.6
044.1-054.4	0.7
054.5-066.8	0.8
066.9-079.7	0.9
079.8-092.7	1.0
092.8-105.7	1.1
105.8-119.0	1.2
119.1-132.5	1.3
132.6-145.6	1.4
145.7-158.5	1.5

OPR-452 SIGNAL TAPE PORT ETCHES

ETCHES 2 RM 1 1972										
001	3	60	20	59143	146	42	17315	250	0546	000000
				58832						
SIGNAL (ESTB. 1977)										
002	6	60	18	00427	146	39	11777	250	0007	000000
PORPOISE ROCK RM1 1902										
003	5	60	19	09789	146	41	24556	250	0025	000000
PORPOSE ROCK 1902										
004	3	60	19	09858	146	41	24525	139	0025	000000
NUCHEK (ESTB. 1977)										
005	6	60	19	47091	146	38	31599	250	0000	000000
STAN (ESTB. 1977)										
006	6	60	21	03901	146	34	17551	250	0000	000000
CLOUDY (ESTB. 1977)										
007	3	60	19	37252	146	34	17300	139	0000	000000
GARDEN (ESTB. 1977)										
008	3	60	19	43184	146	32	20289	139	0000	000000
									284	
YELLOW (UNMARKED - ESTB. 1977)										
009	3	60	18	35261	146	37	14056	254	0000	000000
HORN 1972										
010	4	60	19	36082	146	33	46225	139	0003	000000

OPR-452-FA-77

LOCATION OF MINIRANGER CONSOLES FOR HYDRO

Console 703 and T/R 703-FA-3 All days of Hydro
Console 701 and T/R 701-FA-4 All days of Hydro and Bottom Samples
Console 702 and T/R 702-FA-5 All days of Hydro

LOCATION OF MINIRANGER TRANSPONDERS

Transponder S/N 701-Porpoise Rock 1902	JD 244
Signal	245-246, 249-251
Yellow	251
Nuchek	252
Stan	252
Yellow	252
Stan	253

Transponder S/N 702-Etches RM 1	JD 245-250
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Transponder S/N 703-Signal	JD 246
Stan	249-251
Signal	251
Stan	251
Yellow	252-253
Porpoise RM 2	253

Transponder S/N 704-Etches RM 1	JD 245-250
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FATHOMETER LOCATIONS

FA-3 - S/N 1046 All Hydro
FA-4 - S/N 1054 All Hydro
FA-5 - S/N 1036 All Hydro

CALIBRATION DISTANCES

Julian Day	Launch	Position
244-245	2025	60/18/55.23 146/38/18.75
245-246	2023	60/18/148.05 146/39/41.59
245-246	2024	60/19/14.95 146/37/38.30
246	2024	60/18/51.92 146/38/05.09
249	2023	60/19/29.24 146/38/10.72
249-250	2024	60/19/22.38 146/38/10.84
249-250	2025	60/18/46.67 146/40/24.51

STAN-CLOUDY	2672 Meters
STAN-SIGNAL	7255 Meters
YELLOW-SIGNAL	2105 Meters

*Mean sea level used here may mean
MHW - otherwise the descriptions are inconsistent*

STATION DESCRIPTIONS

PORPOISE ROCK: Located on the northernmost island of Porpoise Rocks. It is located on the seaward side of the island about 1 1/2 meters from the edge of the cliff and is approximately 25 meters above sea level.

PUFFIN: Located on the southernmost of Porpoise Rocks in the approximate center of the top of the island on a flat outcrop that is elevated about 25 meters above mean sea level.

SIGNAL: Located on a small rock ledge that lies approximately 20 feet and 130° Mag from an eroded, ten meter high rock cliff. A prominent slide area is located 600 feet southwest of the station. The station is about 6 meters above mean sea level.

STAN: Located on the eastern edge of a group of large boulders that lie on the beach and just off the shore near the base of a twelve hundred foot mountain. The boulder lies about 130 feet offshore from the base of the mountain, is flat-topped, and measures 15 feet by 15 feet at high water. The station is centered on the top of the boulder and is elevated about 1/2 meter above mean sea level.

CLOUDY: Located atop a pinnacle rock that is elevated above mean sea level. Station lies about four feet south and 1/4 meter lower than the highest point on the rock.

GARDEN: Located on the north side of a large outcrop of rocks that overlooks Garden Cove and the east end of Port Etches. The station is elevated about 250 meters above mean sea level.

NUCHEK: Lies on an outcrop which lies just offshore and about 120 feet from the base of a twenty meter cliff that borders the beach. The outcrop measures 15 feet by 30 feet at high water line, is elevated about 1/2 meter above mean sea level and is connected to the shore at low tidal stages.

YELLOW: An unmarked, undescribed station which is located on a rock ledge on the face of a cliff. It is approximately 5 meters above mean sea level.

ETCHES 2: Located on the top of a steep ridge approximately 1775 feet above mean sea level.

APPROVAL SHEET

Field No. FA-10-1-77

Register No. H-9713

This fieldsheet and all accompanying records are hereby approved.
This survey was conducted under my supervision and the survey is
complete and adequate for charting purposes.



CDR Bruce I. Williams
Commanding Officer
NOAA Ship FAIRWEATHER, S-220

GEOGRAPHIC NAMES

H-9713

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO. 16189	ON PREVIOUS SURVEY No.	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST			
BEAR CAPE	X										1
CONSTANTINE HARBOR	X										2
ENGLISH BAY	X										3
GARDEN COVE	X										4
GARDEN ISLAND										TP-00634	
HINCHINBROOK ENTRANCE	X										6
HINCHINBROOK ISLAND	X										7
HORN CREEK										TP-00638	
NUCHEK (abandoned)	X										9
PHIPPS POINT	X										10
POINT BARBER										TP-00635	
POINT HORN										TP-00637	
PORPOISE ROCKS	X										13
PORT ETCHES	X										14
											15
											16
											17
											18
										APPROVED	19
										<i>Chas. E. Harrington</i>	20
										STAFF GEOGRAPHER - C328	21
										12 MAY 1978	22
											23
											24
											25

APPROVAL SHEET

FOR

SURVEY H- 9713

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position print-out has been made. A new final sounding print-out has been made.

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the verifier's report.

Date: 2/27/78

Signed: 

Title: Chief, Verification Branch

December 30, 1977

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for Form 362

Tide Station Used (NOAA Form 77-12): 945-4334 Port Etches

Period: September 1-10, 1977

HYDROGRAPHIC SHEET: H-9713

OPR: 452

Locality: Port Etches, Prince William Sound, Alaska

Plane of reference (mean lower low water): 10.2 ft.

Height of Mean High Water above Plane of Reference is
10.4ft.

Remarks: Zone direct

Don M. Spallan

Chief, Tides Branch

BS

HYDROGRAPHIC SURVEY STATISTICS

H-9713

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		7	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		2	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			1-smooth			
CAHIERS	1-printouts, tides & misc. data					
VOLUMES	1					
BOXES			1			
T-SHEET PRINTS (List)		TP-00634	TP-00636	1-tide plot		
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			2584
POSITIONS CHECKED		2584	
POSITIONS REVISED		505	
SOUNDINGS REVISED		391	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		1	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	6		
VERIFICATION OF CONTROL		10	
VERIFICATION OF POSITIONS		39	
VERIFICATION OF SOUNDINGS		62	
COMPILATION OF SMOOTH SHEET		22	
APPLICATION OF TOPOGRAPHY		12	
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		3	
COMPARISON WITH PRIOR SURVEYS & CHARTS		8	
VERIFIER'S REPORT		14	
OTHER		8	
TOTALS	6	178	
Pre-Verification by James S. Green	Beginning Date 11/23/77	Ending Date 11/23/77	
Verification by Dennis L. Duffy	Beginning Date 12/21/77	Ending Date 2/15/78	
Verification Check by A.E. Eichelberger, J.S. Green	Time (Hours) 31	Date 2/22/78	
Marine Center Inspection by HIT	Time (Hours) 16	Date 3/2/78	
Quality Control Inspection by A. W. Wellman	Time (Hours) 50	Date 5-12-78	
Requirements Evaluation by J. Beumgardner	Time (Hours) 4	Date 8-30-78	

Carstens 17 hr 5/24/78

REGISTRY NO. _____

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

REGISTRY NO. H-9713

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

H-9713

Items for Future Presurvey Reviews

The submerged rock PD charted in latitude 60°17.41', longitude 146°40.45' should be investigated and verified or disproved during future work in the area.

<u>Position Index</u>		<u>Bottom Change Index</u>	<u>Use Index</u>	<u>Resurvey Cycle</u>
<u>Lat.</u>	<u>Long.</u>			
601	1465	1	1	50 years
601	1464	1	1	50 years
602	1465	1	1	50 years
602	1464	1	1	50 years

PACIFIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO: H-9713

FIELD NO: FA-10-1-77

Alaska, Prince William Sound, Port Etches

SURVEYED: September 1 to 10, 1977

SCALE: 1:10,000

PROJECT NO: OPR-452

SOUNDINGS: Ross Finline Fathometer

CONTROL: Mini-Ranger
Visual
Range-Azimuth

Chief of Party.....CDR B. I. Williams
Surveyed by.....LCDR L. Thomas, LT J. Withrow,
LTJG B. Crowell, ENS S. Knight,
ENS M. Finke & ENS L. Roberts
Automated plot by.....PMC Xynetics Plotter
Verified by.....Dennis L. Duffy
February 15, 1978

I. INTRODUCTION

H-9713 is a navigable area survey conducted from September 1-10, 1977 by the NOAA Ship FAIRWEATHER. The area surveyed is Port Etches on Hinchinbrook Island, Prince William Sound, Alaska.

Unusual problems encountered in the verification of H-9713 are documented in applicable sections of this report.

Projection parameters used to prepare the boatsheets have been revised to center the hydrography on the smooth sheet. An inset was created on the smooth sheet because all hydrography could not be displayed without skewing the sheet at an aesthetically unpleasing angle. Parameters used by PMC are appended in the smooth printout.

All correctors used to plot and reduce soundings on H-9713 can be located in the smooth printout.

II. CONTROL AND SHORELINE

A. Horizontal control is adequately described in Sections F and G of the Descriptive Report.

The FAIRWEATHER erroneously used and submitted the geographic position for Etches 2, 1972 in place of the position for Etches 2 RM 1, 1972. Correct

coordinates for Etches 2 RM 1, 1972 were calculated by using the distance and azimuth from Etches 2 to Etches 2 RM 1 as stated in the "Description of Triangulation" for Etches 2, 1972.

B. The following Class I unreviewed manuscripts, with their respective dates of photography and field edit were used for this survey:

TP-00636	1972-77	} This sheet is still designated Class III. The portion of the sheet which pertains to the present survey area however, is considered Class I since field edit. has been applied.
TP-00634	1972-74, 77	

Field edit has not been accomplished on TP-00636 south of Lat. $60^{\circ}16'45''N$. Thus, topographic features in the area are portrayed in pencil on the smooth sounding sheet.

III. HYDROGRAPHY

A. Crosslines are generally in very good agreement, within one or two fathoms in all areas.

B. Standard depth curves could not be drawn in all areas. Particularly in congested areas near the shoreline and in the large foul area extending from Porpoise Rocks northeastward to Point Barber.

The zero fathom curve was not developed. However, either the area 100 meters offshore of the high water line was developed or a one fathom curve was delineated. These limits are in compliance with Section 1.5 of the Project Instructions.

C. Basic hydrography is adequate to delineate bottom configurations and determine least depths. There were no major difficulties encountered in the verification of main scheme soundings.

A rock awash was transferred from the smooth field sheet at $60^{\circ}17'29''N$, $146^{\circ}40'46''W$ with no data available to verify its position. However, there appears to be a rock on the aerial photographs at that location, thus substantiating the existence of the rock.

There were 23 bottom samples taken in this survey.

IV. CONDITION OF THE SURVEY

With the following exceptions, the hydrographic records, overlays, smooth sheet and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual.

A. Several detached positions were misplotted on the smooth field sheet.

B. In an effort by ship personnel to excess redundant soundings, positional data for significant soundings was erroneously eliminated.

C. A submerged rock charted "PD" in English Bay, 60°17.5'N, 146°40.5'W was neither verified nor disproved. (See Section VII of this report for additional discussion.)

D. A detached position was not taken on the mooring buoy charted in the survey area. (The mooring buoy was transferred to the smooth sheet from the boat sheet.)

VI. JUNCTIONS

(See Q.C. Report - item 1-a)

This survey junctions to the west with H-9385, 1:20,000 (1973). Soundings and depth curves are in very good agreement and the junction note is inked accordingly. (See Q.C. Report - item 1-b)

Junction was also accomplished to the northwest with H-9425, 1:20,000 (1974). Soundings and depth curves are in good agreement and the junction note is inked.

There is no contemporary survey to the south of H-9713. However, junctional soundings are in good agreement with charted depths.

VI. COMPARISON WITH PRIOR SURVEYS

H-2612 (1902) 1:40,000

H-2613 (1902) 1:20,000

A. H-2612

H-9713 agrees with H-2612 to within ^{eight} ~~five~~ fathoms in areas deeper than 30 fathoms, with neither survey being consistently deeper nor shoaler. In depths of less than 30 fathoms, H-9713 is generally 1-2 fathoms shoaler, except in an area 200 to 400 meters seaward of the southern shoreline. In this area, H-9713 is about 2 fathoms deeper. (See Q.C. Report - item 3)

Several rocks awash near the shoreline from Lat. 60°16.8'N to Lat. 60°17.2'N were not located on H-9713. These rocks, however, would plot shoreward on the ledge limits on H-9713. For this reason, the rocks were not carried forward on H-9713.

Although H-9713 does not agree well with H-2612, H-9713 is adequate to supersede common areas of hydrography due to the extensive seismic activity that has occurred in Port Etches since 1902.

B. H-2613

H-9713 is generally 1 to 2 fathoms shoaler than H-2613 throughout most of the survey area. However, similar to the comparison with H-2612, H-9713 is 1 or 2 fathoms deeper in the area ~~200~~ to 400 meters seaward of the southern shoreline of Port Etches. (See Q.C. Report-items 2 and 3)

H-9713 is adequate to supersede H-2613 in common areas of hydrography.

There are no pre-survey review items on H-9713.

VII. COMPARISON WITH CHART 16709 (C&GS 8520) 17th Ed., November 27, 1976, 1:80,000.

A. Hydrography

The source was determined for most charted features and soundings and are identified on the accompanying chartlet as follows:

Red	H-2612 (1902)
Green	H-2613 (1902)
Blue	H-9425 (1974)

The source could not be determined for the "Position Doubtful" submerged rock charted at 60°17.4'N, 146°40.4'W. Although a search was not conducted specifically to locate this rock, 100 meter line spacing in the area revealed no trace of a submerged rock. However, H-9713 did locate a previously uncharted rock awash at 60°17'29"N, 146°40'46"W. This location is 250 meters west of the charted submerged rock. This verifier believes the rock awash on H-9713 and the charted submerged rock are in fact the same rock. It is recommended that H-9713 supersede the charted submerged rock. Because most charted hydrography originated with junction and prior surveys, it has been adequately disposed of in Sections V and VI of this report. *The rock originates with CL-300 of 1919. It is not considered to be the rock located on the present survey. Retain on the chart. (See Q.C. Report-item 5.)* Hydrography on H-9713 is adequate to supersede charted hydrography.

B. Controlling Depths

There are no controlling depths charted in the survey area of H-9713.

C. Aids to Navigation

The only aid to navigation in the survey area is a mooring buoy charted at 60°20'41"N, 146°32'58"W. Although the ship did not submit positional data for this buoy, they did state in Section N of the Descriptive Report that the buoy is "located correctly on the chart". It is recommended that the buoy remain charted at its current location.

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

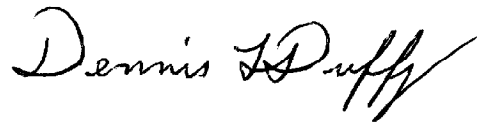
This survey adequately complies with Project Instructions, dated August 5, 1977 and Change No. 1, dated September 6, 1977.

IX. ADDITIONAL FIELD WORK

This survey is considered a good navigable area survey.

No additional field work is recommended at this time.

Respectfully submitted,



Dennis L. Duffy
Cartographic Technician
February 15, 1978

Examined and approved,




James S. Green
Chief, Verification Branch



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Pacific Marine Center, 1801 Fairview Ave. E.
Seattle, WA 98102

15 March 1978

TO: Eugene A. Taylor
Director, Pacific Marine Center

FROM: 
Glen R. Schaefer
Chief, Processing Division

SUBJECT: PMC Hydrographic Survey Inspection Team Report H-9713

This survey is a navigable area hydrographic survey of Port Etches, Prince William Sound, Alaska. This survey was conducted by NOAA Ship FAIRWEATHER in 1977 in accordance with Project Instructions OPR-452-RA-77 dated 5 August 1977 and Change No. 1 dated 6 September 1977.


This survey was accomplished in a satisfactory manner. A few minor but important items were addressed by the verifier to clarify the ship's report and data processing.

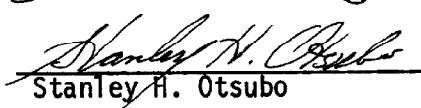
The ship reported that "bar checks were taken or attempted at least once daily..." which implies that they did not meet the PHM requirement for morning and evening bar checks.

The inspection team finds H-9713 to be a very good navigable area survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.


Glen R. Schaefer


John C. Albright


James W. Steensland


Stanley H. Otsubo



ADMINISTRATIVE APPROVAL
H-9713

The smooth sheet and reports of this survey have been examined and the survey is adequate for charting and to supersede common areas of prior surveys.



Eugene A. Taylor, RADM
Director
Pacific Marine Center

March 15, 1978
Date



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C352/KWW

May 12, 1978

TO: *A. J. Patrick*
A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: K. W. Wellman *K. W. Wellman*
Quality Evaluator

SUBJECT: Quality Control Report for H-9713 (1977), Alaska, Prince William Sound, Port Etches

A quality control inspection of H-9713 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths and navigation hazards, junctions, shoreline transfer, decisions and actions by the verifier, and cartographic presentation of data.

In general, the present survey was found to conform to National Ocean Survey standards and requirements except as discussed in the Verifier's Report, the HIT Report, and as follows:

1. Reference section V of the Verifier's Report:

a. Additional work was necessary to reconcile depth curves in the junctional areas and to add the junctional notes to the smooth sheets of the adjoining surveys. Comments pertaining to the steps necessary to complete the junctions should have been included in the referenced section of the Verifier's Report. (See the memorandum dated March 21, 1977, from the Office of Marine Surveys and Maps entitled "Verifier's Report Format.")

b. During quality control inspection, junctional survey (H-9385) depths as much as 38 fathoms shoaler than general present depths of 90 to 100 fathoms were noted in the vicinity of latitude 60°16.38', longitude 146°42.70'. Such extreme junctional depth differences serve to challenge the credibility of the statement that "soundings and depth curves are in very good agreement." It appears, therefore, that the junction was not properly examined during verification.

An examination of all pertinent records revealed a probable indeterminate and irreconcilable gain of approximately 15 to 20 Raydist lanes on



H-9385. The affected hydrography (52 positions) was smooth plotted despite the hydrographer's instruction for its rejection in the raw data printout of H-9385. The more densely developed hydrography on the larger scale present survey provides the most accurate portrayal of the bottom configuration in the area. Accordingly, only the conflicting junctional hydrography on H-9385 has been formally rejected and deleted from the smooth sheet and appropriate printouts. The remaining questionable hydrography on H-9385, although displaced, falls in an area of relatively minor local bottom relief of 5 to 10 fathoms in general depths of 100 fathoms. The rejection of only the questionable hydrography is considered adequate and is preferable to the holiday that would result from a more liberal rejection of data from the smooth sheet of H-9385. Ideally, however, the area in question should have been developed by additional hydrography at the time that the original control problem necessitated the rejection of the 52 positions during the field work on H-9385.

2. Section VI-B of the Verifier's Report is supplemented by the following:

An outlying rock awash on H-2613 (vicinity of Porpoise Rocks--latitude $60^{\circ}19.01'$, longitude $146^{\circ}40.87'$) was not located during the field work on the present survey. It is not verified or disproved by the development on the present survey and has been carried forward to supplement the present survey.

3. Sections VI-A and VI-B of the Verifier's Report are supplemented by the following:

The noted depth differences are attributed to the less detailed and less accurate methods employed on the prior surveys.

4. A few duplicate position numbers were noted in inset 1 on the present smooth sheet. They should have been appropriately annotated during verification.

5. The sunken rock PD charted in latitude $60^{\circ}17.4'$, longitude $146^{\circ}40.4'$ is from C.L. 300 (1919) which states that a submerged rock covered by 18 feet was found in the entrance to English Bay. It is recommended that the chart be appropriately revised to be in better agreement with the reported information.

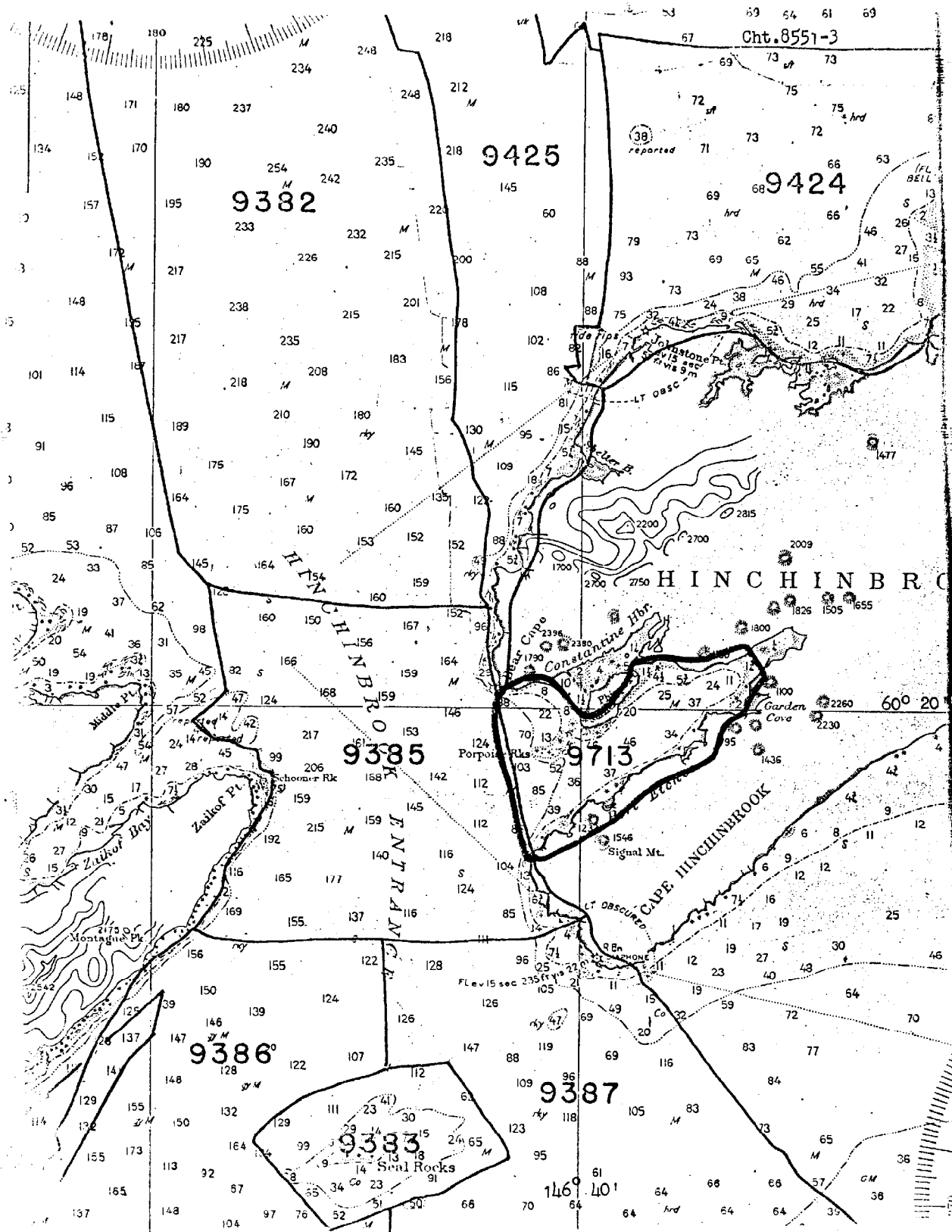
6. Some of the soundings on the reef between Porpoise Rocks and shore may have been interpreted from the fathograms in error because of kelp in this area and the lack of supporting hand lead soundings to assist in the interpretation.

7. The soundings between positions 1702 and 1703 in English Bay (vicinity of latitude $60^{\circ}17.40'$, longitude $146^{\circ}40.17'$) were noted to be inconsistent

with the surrounding hydrography. It is considered that the sounding line in question was intended to generally follow the shoreline. Indeed, when plotted on time and most likely course the soundings agree favorably with the crossline soundings in the area. Such inconsistent soundings and/or isolated deeper depths may indicate the need for further examination of the records during verification. (See provisional manual--section 6.3.3, page 6-14.) The positions of the affected soundings were appropriately revised during quality control evaluation.

8. A previously undetected isolated shoal depth was noted on the fathogram (vicinity of latitude $60^{\circ}19.23'$, longitude $146^{\circ}41.72'$) just prior to the commencement of the sounding line beginning at position number 347. (See provisional manual--section 6.3.4.1.1(3).) The shoal sounding was added to the smooth sheet during quality control evaluation.

cc:
C35
C351



Cht. 8551-3

9425

9382

9424

38 reported

9385

9713

9386

9387

9383

146° 40'

