

# 9384

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. .... **DA-10-3-73**  
Office No. .... **H-9384**

### LOCALITY

State ..... **ALASKA**  
General Locality ..... **PRINCE WILLIAM SOUND**  
Locality ..... **BLIGH REEF**

19 73

CHIEF OF PARTY  
**Michael H. Fleming**

### LIBRARY & ARCHIVES

DATE ..... **2/25/74**

9384

HYDROGRAPHIC TITLE SHEET

H-9384

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.

DA-10-3-73

State ALASKA

General locality Prince William Sound

Locality Bligh Reef 7-25 - 8-2

Scale 1:10,000 Date of survey July 15 - August 2, 1973

Instructions dated 14 February 1973 Project No. OPR-999-DA-73

Vessel NOAA Ship DAVIDSON CSS-31 Launches DA-1 and DA-2

Chief of party Michael H. Fleming, Cdr., NOAA

Surveyed by Ship's Commissioned Officers (See Below)

Soundings taken by echo sounder, ~~and lead line~~ Raytheon DE-723 S/N 1284; Ross 5000 S/N 1048

Graphic record scaled by DAVIDSON Personnel

Graphic record checked by DAVIDSON Personnel

Positions verified Clarence R. Lehman Automated plot by PMC - Gerber Digital Plotter

Soundings ~~checked~~ <sup>verified</sup> by Clarence R. Lehman

Soundings in fathoms ~~xxx~~ at ~~xxxx~~ MLLW

REMARKS:

Surveyed by: H. B. Milburn, R. L. Crozier, E. R. Krisher  
R. H. West, K. X. Gores, J. H. Koster, J. L. Oswald

Chart  
8551  
8519

Applied to stks 2-28-74  
Re-applied to stks 11/5/74

XWW 3/7/74

DESCRIPTIVE REPORT

To Accompany

Hydrographic Survey H-9384  
Prince William Sound  
Bligh Reef  
Alaska

NOAA Ship DAVIDSON CSS-31

Chief of Party  
Michael H. Fleming  
Cdr., NOAA

1973

DESCRIPTIVE REPORT

DA-10-3-73

H-9384

Bligh Reef, Alaska

A. PROJECT

This survey was completed in accordance with Project Instructions, OPR-999-DA-73, Corridor Survey, Prince William Sound, Alaska dated 14 February 1973.

B. AREA SURVEYED

The survey area <sup>includes</sup> ~~is~~ Bligh Reef. It encompasses the area bounded by Latitudes  $60^{\circ} 48.5' N$  to  $60^{\circ} 52.5' N$  and Longitudes  $146^{\circ} 56' W$  to  $146^{\circ} 50' W$ .  
*60° 52.5' N*  
*146° 56.5' W*  
*146° 50' W*  
*48.95'*

This survey began on 25 July 1973 and was completed on 2 August 1973.

C. SOUNDING VESSELS

The following vessels were used to obtain data on this survey:

<u>Vessel</u>	<u>Position Number</u>	<u>Color</u>
Launch DA-2		Blue
Launch DA-1		Red

Bottom samples are shown in color of the vessel used.

D. SOUNDING EQUIPMENT

Launch DA-2 used a Ross Fineline Model ~~5000~~ fathometer, serial number 1048. The digitized depths from the Ross Fineline ~~5000~~ were assumed to have no phase error, or initial error. The initial on the Ross was set at zero fathoms.

Launch DA-1 used a Raytheon-723 fathometer, serial number 1284. Initial on the Raytheon was set at zero fathoms. Phase errors were eliminated in the Raytheon by use of a digital phase checker before leaving Seattle. A - F checks were made periodically.

TRA corrections were determined from daily bar checks but not applied to soundings. Velocity corrections were determined from a combination of Martek & Nansen casts.

*applied to 53*

D. SOUNDING EQUIPMENT (Cont.)

All soundings are in fathoms referenced to MLLW using predicted tides for Ellamar. Survey times were based on 135° W time meridian. ✓

See Appendix for tide note. Also see "Correction to Echo Sounder, OPR-999-DA-73".

E. SMOOTH SHEET

The smooth sheet <sup>was</sup> will be constructed and plotted by the Processing Division, Pacific Marine Center, Seattle, Washington. ✓

F. CONTROL ✓

Position control for the entire survey was Hasting Raydist, operated in a Range-Range mode. Operational frequency - ~~3300~~.4 Khz.

The Raydist stations were located by third order or better methods or placed over existing triangulation. Two station pairs of Raydist were used in this survey.

Calibration was set and checked daily using three point sextant fixes with the Raydist values generated by the WANG Range-Range calibration program.

Raydist arcs for red, green, and blue stations were hand-plotted by Ship's personnel.

There is no Raydist corrector tape. The error should be zero as drift in the Raydist set is negative.

See "Electronic Control Report, OPR-999-1973", and Appendix for "Abstract of Raydist Calibration".

---

F. CONTROL (Cont.)

RAYDIST STATIONS *off sheet*

<u>Station</u>	<u>Signal No.</u>	<u>Color Code</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Vessel</u>	<u>Positions</u>	<u>Julian Date</u>
Smit RM-1, 1973	Ø26	Red	60° 31' 51.38"	147° 20' 27.91"	DA-1	10-1157	206-214
						<del>2000-2247</del>	
						<del>4001-4004</del>	
						<del>5001-5164</del>	
Zap RM-1, 1973	Ø27	Green	60° 27' 07.34"	146° 39' 10.89"	DA-1 DA-2 DA-1 DA-2	10-1157	206-212
						5001-5164	
						<del>4001-4004</del>	
						<del>4005</del>	
Elf, 1947 t. 1973	Ø30	Blue	60° 56' 38.52"	147° 03' 16.72"	DA-1	2000-2247	214

G. SHORELINE

In accordance with Project Instructions, shoreline field edit and shoreline verification were not undertaken. Shoreline was transferred directly from manuscript T-12997. T-13000 for

H. CROSSLINES *Reef ISLANDS with adjoining rocks and reefs. More lines not added, as not required per Project Instructions*

The percentage of crosslines to sounding lines is 11.4. There is good agreement.

I. JUNCTIONS

Junctions were made with contemporary surveys: H-9382<sup>(913)</sup> (DA-40-1-73) and H-9388<sup>(913)</sup> (DA-20-4-73). There is good agreement at the junctions.

J. COMPARISON WITH PRIOR SURVEY

The prior survey of this area is H-2628, 1:20,000 scale, hydrographic survey completed in 1902. The 1902 and present survey agree in the basic hydrography. The present hydrography has a better delineation of shoals and indicates least depths in these areas which are, in the case of pre-survey items, up to 4.0 fathoms less than those reported in 1902. This can be attributed to a higher sounding density, use of an echo sounder, and recent uplift as a result of earthquake activity. *Prior Survey control was inadequate for detailed comparison.*

Pre-survey review general:

<u>Reported</u>	<u>Found</u>
23 fathoms @ 60° 50.65', 146° 55.60' <sup>45</sup>	<del>19</del> fathoms 18
10 fathoms @ 60° 50.40', 146° 53.90'	<del>14</del> fathoms 8' nearby
1.5 fathoms @ 60° 53.90', 146° 49.15'	<del>2.9</del> fathoms 0' (10' nearby)

The pre-survey review listed several items which are answered herein:

<u>Reported</u>	<u>Found</u>
#10 Rock awash or near surface @ 60° 50.50', 146° 50.92'	No rock found ✓
# Rock awash or near surface @ 60° 50.45', 146° 50.81'	No rock found ✓ Found 70 m to SE

*See review for disposition of these PSR items*

J. COMPARISON WITH PRIOR SURVEY (Cont.)

Reported

#11 The wreck reported @  
60° 53.60', 146° 49.35'

The wreck reported @  
60° 50.31', 146° 53.01'

Found

Revise charted \* to \*  
The wreck was seen at  
its reported position. ✓  
It was not relocated.

The wreck was searched  
for by divers but not  
located. ✓  
*Delete submerged wreck symbol from chart*

K. COMPARISON WITH THE CHART

Comparison with the largest scale chart of the area: USC&GS chart  
number 8519, 11th Edition, August 12, 1972, 1:80,000 scale, shows ✓  
good agreement with the exception of pre-survey review items noted.  
The delineation of the shoal is more extensive than on Chart 8519.

L. ADEQUACY OF SURVEY

This corridor survey is considered complete and adequate to supersede ✓  
prior surveys within the limits of the corridor.

M. AIDS TO NAVIGATION

There is one floating aid to navigation, Bligh Reef Buoy, on this  
sheet. The Bligh Reef Buoy is a Ra Ref, R "2", FL 6 sec. Located ✓  
by raydist @ Latitude 60° 50' 10.0"N and Longitude 146° 53' 24.0"W.  
*Fixed aid to navigation Buxton Island light, 60° 53' 45.208", 146° 48' 53.624"*

N. STATISTICS

<u>Vessel</u>	<u>Number of Positions</u>	<u>Nautical Miles Sounding Line</u>	<u>DP</u>	<u>Bottom Sample</u>
DA-2	164	23.5	1	Ø
DA-1	1382	194.6	4	89
	<del>1546</del>			

Positions 1110-1118 and 1137-1157 were plotted on the position  
overlay but the representative soundings between those positions  
were not inked on the sounding overlay.  
*sndg. appear on 55.*



N. STATISTICS (Cont.)

<u>Day</u>	<u>Raydist Station</u>	<u>Vessel</u>	<u>Vol.</u>	<u>Positions</u>	<u>Sounding Lines</u>	<u>Number of Bottom Samples (Pos. Nos.)</u>	<u>D.P.</u>
206	Smit Rm-1, 1973 Zap Rm-1, 1973	DA-2	R-2	5001-5164	23.5	0	4005
206	"	DA-1	R-3	10-270 No. Pos. 112	40.8	0	4001-4004
207	"	DA-1	R-4	271-533 No Pos. 351	38.4	0	0
209	"	DA-1	R-5	534-740	28.5	0	0
210	"	DA-1	R-6	741-954	27.7	0	0
212	"	DA-1	R-7	955-1157 No Pos. 1109	27.0	9 8000-8008	0
214	Smit Rm-1, 1973 Elf, 1947 r. 1973	DA-1	R-8	2000-2247 No Pos. 2209-2215	32.2	0	0

N. STATISTICS (Cont.)

This survey covers approximately 5.6 square miles. There are 12 tapes (volumes) with this survey:

R-1	Signal Tape		✓
R-2-8	Sounding and Position Tapes		✓
R-9	Velocity Correction		✓
R-10	TRA (TC/TI)		✓
R-11	Detached Positions	Volume	✓
R-12	Bottom Sample	Volume	✓

O. LOGGING

Logging was accomplished during the survey. A Climatronics Electronic Logger coupled to a Model 33 Teletype was used aboard Launch DA-1. Launch DA-2 used a Hydrographic Logger, serial number 01, by Aircraft Standards Inc., coupled to a Model 33 Teletype. The Model 33 Teletype utilizes ASCII Code.

P. MISCELLANEOUS

It is recommended that the U. S. Coast Guard, Juneau, be furnished a copy of this boat sheet for possible relocation of Bligh Reef Buoy in 1974. *Position is adequate to mark feature.*

Q. RECOMMENDATIONS

It is recommended that this survey supersede prior surveys within the limits of the corridor. ✓

R. REFERENCES

"Corrections to Echo Sounder OPR-999-1973"  
 "Report on Electronic Control OPR-999-1973" - *not forwarded to Rockville*

OFFICE OF MARINE SURVEYS AND MAPS  
MARINE CHART DIVISION  
HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9384

FIELD NO. DA-10-3-73

Alaska, Prince William Sound, Blight Reef

SURVEYED: July 25 through August 2, 1973

PROJECT NO.: OPR-999-DA-73

SCALE: 1:10,000

SOUNDINGS: Ross 5000 Digital Depth  
Recorder Raytheon DE-723  
Depth Recorder

CONTROL: Raydist (Range-  
Range)

Chief of Party ..... M. H. Fleming  
Surveyed by ..... H. B. Milburn  
..... R. L. Crozier  
..... E. R. Krisher  
..... R. H. West  
..... K. X. Gores  
..... J. J. Kapler  
..... J. L. Oswald  
Automated Plot by ..... Gerber Digital Plotter  
(PMC)  
Verified and Inked by ..... C. R. Lehman  
Reviewed by ..... D. J. Hill  
Date: 2-19-75  
Inspected by ..... R. H. Carstens

1. Description of the Area

Two very irregular areas are covered on this survey; one is Bligh Reef and vicinity and the other a small area off Busby Island. Extremes of depths range from about 160 fathoms to rocks uncovering with the tide.

2. Control and Shoreline

The source of control is adequately described in the Descriptive Report.

Penciled shoreline on the smooth sheet is from preliminary manuscripts T-12997 and T-13000. The Project Instructions for OPR-999 did not require field edit operations for navigable area surveys and indicated that nearshore shoal areas will be surveyed with the resumption of operations under OPR-452.

### 3. Hydrography

- A. Soundings at crossings are in good agreement.
- B. The usual depth curves were adequately delineated. Several brown curves were added to delineate isolated features.
- C. The development of the bottom configuration is considered adequate except on Busby Island where additional development should be done on resumption of surveys in this area.

### 4. Condition of the Survey

The survey records, automated plotting, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual-Automated Hydrographic Surveys except as follows:

- A. Descriptions of bottom samples were not completely entered on the smooth sheet.
- B. The graphic sounding record for July 28, 1973, (Julian Day 209) was mislabeled.
- C. Basic development was not provided in the small area off Busby Island.
- C. The entire survey was replotted to correct a tide correction error of 12.4 feet.

### 5. Junctions

An adequate junction was effected with H-9382 (1973) on the south and H-9388 (1973) on the north and west.

No contemporary surveys join the present survey on the east. Present survey depths here are in harmony with those charted in this area.

6. Comparison with Prior Surveys

- A. H-2628 (1902-3)  
H-2807 (1905) 1:100,000 Reconnaissance

A comparison with these prior surveys reveals prior depths to be generally within 6 fathoms of present depths. Horizontal control problems on the prior surveys, the irregular sharply sloping bottom together with differences in surveying methods are primarily responsible for these discrepancies. In addition some change has resulted from earthquakes. The latest in 1964 caused an uplift in excess of 2 ft.

The rock awash (Presurvey Review Item No. 10) charted in lat.  $60^{\circ}50.45'$ , long.  $146^{\circ}50.78'$  from H-2628 was located on the present survey 70 meters to the south-east of this position. The adjacent charted sunken rock was not developed on the present survey. These prior features should be disregarded and the reef should be charted from the present survey information.

Several bottom characteristics have been carried forward from H-2628. With these additions the present survey is adequate to supersede the prior surveys in the common area except inshore at Reef Island and in the area off Busby Island where the development of the areas on the present survey is incomplete.

7. Comparison with Chart 8519, 12th Ed., May 11, 1974

A. Hydrography

Much of the charted hydrography originates with the previously discussed prior survey which requires no further consideration.

The partial application of soundings from H-9384 (1973) prior to review should be totally superseded by hydrographic data on the present survey because of replotting the smooth sheet.

Attention is directed to the following:

1. The sunken wreck (Presurvey Review Item 11) charted in lat.  $60^{\circ}53.6'$ , long.  $146^{\circ}49.35'$  from Chart Letter 281 (1914) was seen at its reported position by the hydrographer. However, no verification of the position was obtained. The charted symbol should be revised to a visible wreck symbol.
2. The sunken wreck charted in lat.  $60^{\circ}50.31'$ , long.  $146^{\circ}53.01'$  also from Chart Letter 281 (1914) was investigated by divers who found no remains of it. The wreck should be deleted from the chart.
3. The rock awash charted in lat.  $60^{\circ}50.4'$ , long.  $146^{\circ}53.05'$ , apparently from the boat sheet of the present survey, differs with the smooth sheet position by 140 meters and should be revised on the chart.

The present survey is adequate to supersede the charted information in the common area except in the vicinity of Busby Island and Reef Island where photogrammetric detail and supplemental development on junctional surveys are required to complete the portrayal of these areas.

#### B. Aids to Navigation

Bligh Reef Buoy charted in lat.  $146^{\circ}53.44'$ , long.  $60^{\circ}50.22'$  adequately marks the feature intended.

The charted position of Busby Island Light agrees with its survey position and adequately serves the purpose intended.


#### 8. Compliance with Project Instructions

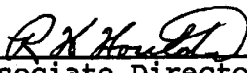
This survey adequately complies with the Project Instructions except that the basic development of the bottom was not provided in the area off Busby Island.

9. Additional Field Work

This is a good basic survey. However, when the inshore hydrography is resumed under OPR-452 additional development and determination of least depths off the west ends of Busby Island and Reef Island should be accomplished.

Examined and Approved:

  
\_\_\_\_\_  
for Chief  
Marine Chart Division

  
\_\_\_\_\_  
Associate Director  
Office of Marine Surveys and Maps

APPROVAL SHEET

HYDROGRAPHIC SURVEY

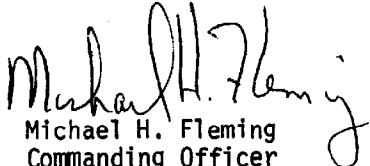
DA-10-3-73

H-9384

PRINCE WILLIAM SOUND

CORRIDOR


The field work on this survey was accomplished under my supervision.  
Frequent inspections were made of the boatsheet and other records.

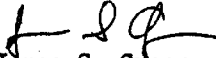
  
Michael H. Fleming  
Commanding Officer  
NOAA Ship DAVIDSON CSS-31  
CDR, NOAA



APPROVAL SHEET

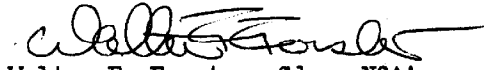
The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report)

Examined and approved, 



James S. Green  
Supervisory Cartographic Technician

Approved and forwarded,



Walter F. Forster, Cdr., NOAA  
Chief, Processing Division  
Pacific Marine Center

 9/11/74 Second Review



RESPONSIBLE PERSONNEL		TITLE
TYPE OF ACTION	NAME	
1. Objects inspected from seaword		<input type="checkbox"/> FIELD INSPECTOR
		<input type="checkbox"/> FIELD EDITOR
2. Positions determined and/or verified		FIELD INSPECTOR
		FIELD EDITOR
3. Forms originated by Quality Control and Review Group and final review activities		COMPILER
		<input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

**INSTRUCTIONS FOR 'METHOD AND DATE OF LOCATION' SECTION**

NOTE: 'Photogrammetric Positions' are dependent entirely, or in part, upon control established by photogrammetric methods. 'Field Positions' are determined by field observations based entirely upon ground control.

**COLUMN TITLE**

**TYPE OF ENTRIES**

**COMPILATION**

Applicable to office identified and located objects only. Enter the number and date of the photograph used to identify the object.

**FIELD INSPECTION**

1. New Position Determined—Enter the applicable data by symbols as indicated below:

**FIELD EDT AND**

**F - Field**

- 1. Triangulation
- 2. Traverse
- 3. Intersection
- 4. Resection
  - a. Theodolite
  - b. Planetable
  - c. Sextant

**P - Photogrammetric**

- 1. Field identified
- 2. Theodolite
- 3. Planetable
- 4. Sextant

**EXAMPLES:**

- F. 3.c
- P. 2

Immediately beneath the data described above, enter the following:

- a. For 'Field Positions' enter the date of location.
- b. For 'Photogrammetric Positions' enter the date of field work; and, if a photograph was used in locating the object or the object was identified on a photograph, enter the number of the photograph used.
- 2. Triangulation Station Recovered - Enter 'Triang. Rec. mo/day/yr.'
- 3. Position Verified - Enter 'Verif. mo/day/yr.'

## TIDE NOTE

OPR-999

CORRIDOR SURVEY  
PRINCE WILLIAM SOUND  
ALASKA

SHEETS B, R, &amp; M

The reference tide gage for this project was the standard tide gage on the Cordova Municipal Dock in Cordova, Alaska. Field tide reductions of soundings were based on predicted tides for Ellamar, two miles north of the town of Tatitlek, Prince William Sound.

All gages operated on 135° W. time for the entirety of this project. A total of four (4) Bristol bubbler gages were installed in the project area. Location and dates of installation/operation were as follows:

<u>Name</u>	<u>Location</u>	<u>Time Period</u>	<u>Total Days of Operation</u>
CAPE HINCHINBROOK	N. 68° 14.3' 146° 38.9' W.	24 May-13 July	51
JOHNSTONE POINT	N. 68° 29.0' 146° 36.7' W.	19 May-14 August	93
ROCKY POINT	N. 68° 56.8' 146° 45.3' W.	12 July-17 August	37
SMITH ISLAND	N. 68° 31.9' 147° 28.5' W.	17 May-13 August	94

Tide marigrams were corrected for time and height variations wherever possible. However, the heavy surge and varying wave heights made verification of staff-gage relationships somewhat difficult at times. The high's and low's or mean values on the staff were recorded.

Cape Hinchinbrook S/N 62A91, 0-30 foot range; five benchmarks recovered and leveled on 24 May 1973. Gage replaced on 21 June by gage S/N 64A11028. Tide station was withdrawn on 1 August.

Orifice installation was very difficult and time consuming due to the very heavy surge (2-3 feet) in this area. The gage and tubing had to be replaced or repaired many times. Extreme caution is recommended in the surf zone. Marigram reading was set to read at various ranges above staff zero.

Johnstone Point S/N 68A9338, 0-30 foot range. Five benchmarks were established and connected on 19 May 1973. Marigram reading is 10.0 feet above staff zero. Orifice installation hampered by thick beds of kelp.

Rocky Point S/N 68A9337, 0-30 foot range; five benchmarks established and leveled on 12 July 1973. Marigram readings 12.3 feet above staff zero. This gage is located in a small bay which is relatively calm. Orifice is anchored to bottom with heavy rock.

Smith Island S/N 64A11021, 0-30 foot range; five benchmarks established and leveled on 17 May 1973. Marigram reading 5.0 feet above staff zero. A heavy rock was used to anchor the orifice in water. This appears to be the least troublesome of all gages in the project area.

Recommendations:

1. It is recommended that no tide station be established at Cape Hinchinbrook Light Station. An alternative is English Bay in Port Etches, Hinchinbrook Island.
2. Use as many weights as possible to securely anchor orifice tubing as surge may bring the tubing to the surface.
3. Extreme care should be used when landing in the surf zone of this area.

Zoning:

It is recommended that C331 determine which tide gage to use: Smith Island or Johnstone Point for survey H-9382. Both gages were reliable and continuous.

For survey H-9384 and 9388, it is recommended that Rocky Point Tide Station be used.

H-9384

Information for Future Presurvey Reviews

This area is noted for its adverse weather and sea conditions which may hinder survey operations.

With the City of Valdez as the southern terminus of the Trans-Alaska Oil Pipeline, waterborne traffic should increase significantly in this area.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
605	1465	1	1	50 Years
604	1470	1	1	50 Years
605	1470	1	1	50 Years

4/25/74

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): Rocky Point

Period: July 12, 1973 - August 17, 1973

HYDROGRAPHIC SHEET: H9388, H9384

OPR: 999

Locality: Prince William Sound, SW Alaska

Plane of reference (mean lower low water): 13.7 ft. on mangrove  
which is feet on tide staff.

Height of Mean High Water above Plane of Reference is 10.9 ft.

Remarks:

Zone directly with Rocky Point.

*C. L. Thurston*

Chief, Tides Branch

May 3, 1974

TIDE NOTE

by Tides Branch

Subject: Datum Correction

The MLLW datum for Rocky Point, Prince William Sound, included on the tide note dated November 19, 1973, was computed 1.3 feet on the tide staff instead of 13.7 feet on the marigram.

To correctly reduce soundings for hydrographic sheets H-9382, H-9384, and H-9388, apply constant +12.4 feet.

*Smooth sheet replotted.*



COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

- (1) PROJECT No. OPR-999 (2) H- No. 9384 (3) FIELD No. DA-10-3-73
- (4) TYPE OF CONTROL: SHORAN, RAYDIST,  HI-FIX, RADAR  
 FREQUENCY (FOR CONVERSION OF RAYDIST OR HI-FIX LANES TO METERS) 3300.4 Khz
- (5) RANGE ONE (R1) Smit Rm-1, 1973 LATITUDE 60 ° 31 ' 51.385 "  
 STATION NAME Smith Island LONGITUDE 147 ° 20 ' 27.914 "
- (6) RANGE TWO (R2) Elf, 1947 r. 1973 LATITUDE 60 ° 56 ' 38.52 "  
 STATION NAME Elf Point LONGITUDE 147 ° 03 ' 16.72 "
- (7) AZIMUTH FROM R1 TO R2 \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "
- (8) BASELINE LENGTH IN METERS \_\_\_\_\_ M.
- (9) LOCATION OF SURVEY WITH RESPECT TO ELECTRONIC BASELINE: CHECK ONE  
 (TO DETERMINE: IMAGINE AN OBSERVER STANDING AT R1 AND LOOKING DIRECTLY  
 AT R2 --- IF THE SURVEY AREA IS TO THE OBSERVER'S LEFT THEN A IS  
NEGATIVE; IF THE SURVEY AREA IS TO THE OBSERVER'S RIGHT THEN A IS  
POSITIVE.)
- \_\_\_\_\_ -A (MINUS)  +A (PLUS)
- (10) IF SHORAN CORRECTIONS ARE APPLIED BY THE EQUATION,  $K(X) + C = D$ ,  
 WHERE X IS SHORAN DISTANCE AND D IS TRUE DISTANCE, ENTER THE CONSTANT  
 COEFFICIENTS OF THE EQUATIONS HERE:  
 K(R1) \_\_\_\_\_, C(R1) \_\_\_\_\_, K(R2) \_\_\_\_\_, C(R2) \_\_\_\_\_
- (11) NUMBER OF VELOCITY TABLES TO BE USED:  
 NONE,  ONE,  MORE THAN ONE.
- (12)  THIS FORM IS SUBMITTED ONLY AS AN AID IN PREPARING A BOAT  
 SHEET PROJECTION.
- \_\_\_\_\_ THIS FORM APPLIES TO ALL DATA ON THIS SURVEY.
- THIS FORM APPLIES TO PART OF THE DATA ON THIS SURVEY -  
 TIME AND DATE LIMITATIONS: FROM 214 To 214 (Julian Days)  
 POSITION NUMBER LIMITATIONS: FROM 2000 To 2247  
 THIS IS FORM #3 SHEET # 2 OF 2 SHEETS FOR THIS SURVEY.
- (13) OTHER REMARKS:

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEYS

(RANGE - RANGE)

- (1) PROJECT No. OPR-999 (2) H- No. 9384 (3) FIELD No. DA-10-3-73
- (4) TYPE OF CONTROL: SHORAN, RAYDIST,  HI-FIX, RADAR  
 FREQUENCY (FOR CONVERSION OF RAYDIST OR HI-FIX LANES TO METERS) 3300.4 KHz
- (5) RANGE ONE (R1) Smit Rm-1, 1973 LATITUDE 60 ° 31 ' 51.385"  
 STATION NAME Hinchinbrook Is. LONGITUDE 147 ° 20 ' 27.914"
- (6) RANGE TWO (R2) Zap Rm-1, 1973 LATITUDE 60 ° 27 ' 07.342"  
 STATION NAME Hinchinbrook Is. LONGITUDE 146 ° 39 ' 10.894"
- (7) AZIMUTH FROM R1 TO R2 \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "
- (8) BASELINE LENGTH IN METERS \_\_\_\_\_ M.
- (9) LOCATION OF SURVEY WITH RESPECT TO ELECTRONIC BASELINE: CHECK ONE  
 (TO DETERMINE: IMAGINE AN OBSERVER STANDING AT R1 AND LOOKING DIRECTLY  
 AT R2 --- IF THE SURVEY AREA IS TO THE OBSERVER'S LEFT THEN A IS  
NEGATIVE; IF THE SURVEY AREA IS TO THE OBSERVER'S RIGHT THEN A IS  
POSITIVE.)

-A (MINUS) \_\_\_\_\_ +A (PLUS)

- (10) IF SHORAN CORRECTIONS ARE APPLIED BY THE EQUATION,  $K(X) + C = D$ ,  
 WHERE X IS SHORAN DISTANCE AND D IS TRUE DISTANCE, ENTER THE CONSTANT  
 COEFFICIENTS OF THE EQUATIONS HERE:

K(R1) \_\_\_\_\_, C(R1) \_\_\_\_\_, K(R2) \_\_\_\_\_, C(R2) \_\_\_\_\_

- (11) NUMBER OF VELOCITY TABLES TO BE USED:  
 NONE, ONE, MORE THAN ONE.

- (12)  THIS FORM IS SUBMITTED ONLY AS AN AID IN PREPARING A BOAT  
 SHEET PROJECTION.

\_\_\_\_\_ THIS FORM APPLIES TO ALL DATA ON THIS SURVEY.

THIS FORM APPLIES TO PART OF THE DATA ON THIS SURVEY -

TIME AND DATE LIMITATIONS: FROM 206 To 212 (Julian Days)

POSITION NUMBER LIMITATIONS: FROM 5001 To 5161 ~~8000~~ to ~~8008~~

THIS IS FORM #3 SHEET # 1 OF 2 SHEETS FOR THIS SURVEY.

- (13) OTHER REMARKS:

Field no. \_\_\_\_\_

**HYDRO I PARAMETER CARDS**  
 Computer G.P.'s from Electronic Controlled Baseline

Form 2/2

Parameter Card I

Parameter	Deg.	Min.	Seconds	Time Coded																	
				1	2	3	4	5	6	7	8	9	10								
Baseline No.	6	5	1	3	8	5															
Hydro Name	LONG	4	7	2	0	2	7	9	1	4	RPD	2	1	7	9	1	1	3	9	0	6
Stave No.	LONG	6	0	5	6	3	2	5	2	0	RPD	5	3	0	4	2	7	9	1	0	6
Hydro Name	LONG	1	4	7	0	3	1	6	7	2											
Attachment	EL to R2	1	9	8	3	7	5	0	6	9	RAD	7	1	5	0	5	8	6	9	0	6
Baseline Distance in Meters												Not Used									
Velocity Code	0 - No Vel. 1 - 1 Vel. 2 - 2 Vel. 3 - 2 Vel. 4 - 2 Vel.																				
Conversion Factor for Electronic	Stav. Int. 10000																				
Identification Number																					
Location of survey with respect to alignment	-<A = 1 <A = 0 <A = 0																				
Velocity Boundary	IVL # 2 IVL # 3																				
Shorten calibration correction equation	use Sherman card) punch 1 in column 80																				

Shoran Card Format (When calibration correction is applied by a line K x + C)  
 (PLY 5, 11, 17, OR 23 IF POS. constant is negative)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

13 Sherman Card KIK Date: 1952 N2A N2C



Field No. 9384  
 Date 21-10-57

PARAMETER CARD II

Plotter Scale/Survey Scale	1:10000	Y20498.6876	SCA	1	0	4	9	8	6	5	0	1	1
North/south axis of sheet - to correspond to (Y axis - 0)			NYX										52
Foot/Fathom indicator	0 - Feet 1 - Fathom		FOF										57
H Identification No.			JN										4
			TR										3

FOF - 1

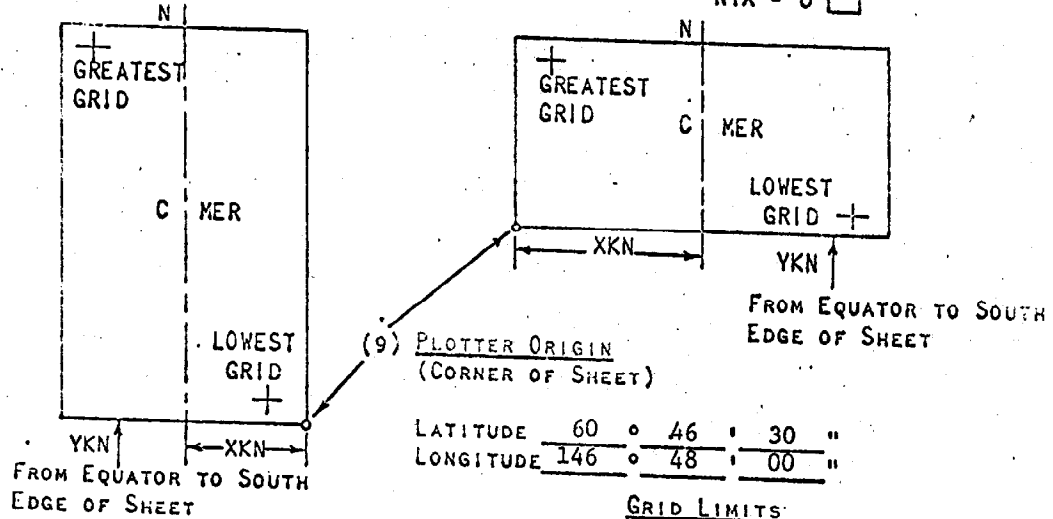
PARAMETER CARD III

Lowest Lat. Intersection	60	47	00	YST	1	2	3	4	5	6	7	8	9	10
Lowest Long. Intersection	146	48	30	XST	2	1	8	2	16	17	18	19	20	
Difference between Grid				DYE	5	2	8	5	1	0	0	0	6	
Interval (Long)				XSN	21	22	23	24	25	26	27	28	29	30
Interval (Lat)				YSN	21	22	23	24	25	26	27	28	29	30

Computed \_\_\_\_\_  
 Punched \_\_\_\_\_  
 Checked \_\_\_\_\_  
 Date \_\_\_\_\_

PARAMETERS FOR DIGITAL COMPUTING  
POLYCONIC PROJECTION

- (1) PROJECT No. OPR-999 (4) REQUESTED BY M.H. Fleming  
 (2) H No. H-9384 (5) SHIP ~~XXXXXXXX~~ DAVIDSON  
 (3) FIELD No. DA-10-3-73 (R) (6) DATE REQUIRED 1 May 1973  
 (7) VISUAL  31003 (8) ELECTRONIC  (FILL OUT FORM #3)  
 (10) XKN (SP 5) DISTANCE FROM CENTER TO EAST EDGE (NYX = 1) 4,541.000  
 OR WEST EDGE (NYX = 0). 0 492  
4,541.100 METERS  
 (11) YKN (SP 242) DISTANCE FROM EQUATOR TO SOUTH EDGE OF SHEET. 6,740,217.5645 METERS  
 (12) CENTRAL MERIDIAN 146 ° 53 ' 00 "  
 (13) SURVEY SCALE 1:10,000  
 (14) SIZE OF SHEET (CHECK ONE) 36X60  42X60  OTHER   
 (15) NYX, ORIENTATION OF SHEET (CHECK ONE)  
 NYX = 1  NYX = 0



LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., SEC.)

- (16) GREATEST LATITUDE 60 ° 54 ' 30 " (PROJECTION LINE  
 (17) LOWEST LATITUDE 60 ° 47 ' 00 " INTERVAL, PAGE 4  
 (18) DIFFERENCE 0 7 ' 30 " HYDRO MANUAL)  
 (19) 00 ' 30 "  
 (20) 15 YSN  
 (21) GREATEST LONGITUDE 146 ° 57 ' 30 "  
 (22) LOWEST LONGITUDE 146 ° 48 ' 30 "  
 (23) DIFFERENCE 0 09 ' 00 "  
 (24) 00 ' 30 "  
 (25) 18 XSN

*Handwritten initials and marks*

## ABSTRACT OF RAYDIST CALIBRATIONS H-9384

<u>DAY</u>	<u>TIME</u>	<u>RED</u> <u>CORRECTOR</u>	<u>GREEN</u> <u>CORRECTOR</u>	<u>POSITIONS</u>	<u>REMARKS</u>
206	0820 1228 1610	+0.04	+0.06	10-270	No Pos. 1-9 or 112
206	0930 1410	-0.01	+0.05	5001-5164	DA-2*
207	0820 1530	-0.04	-0.05	271-533	No Pos. 351
209	0818 1546	+0.06	-0.04	534-740	
210	0837 1527	+0.03	+0.02	741-954	
212	0829 1555	-0.05	-0.02	955-1157	No Pos. <sup>1109</sup> <del>1101</del>
214				<del>2000</del> -2247	No Pos. 2209-2215

NOTE: All work this sheet was accomplished by DA-1 with the exception of Day 206 when DA-2 also sounded on this sheet.

\* Lost 3 lanes on GREEN at Position 1165. RED average of AM and PM calibration; GREEN--morning only.

Velocity Correction Printout

31320673

000033 0 1001 0001 000 000000 000000

000062 0 0000

000078 0 0001

000155 0 0002

000375 0 0003

000750 0 0002

000910 0 0001

000980 0 0002

002000 0 0003

000008 0 1001 0002 000 000000 000000

000054 0 0000

000077 0 0001

000155 0 0002

000375 0 0003

000750 0 0002

000910 0 0001

000980 0 0002

002000 0 0003



TRA/TC/TI

Launches DA-1 and 2

130700 0 0003  
130700 0 0002  
131500 0 0003  
141100 0 0001  
143845 0 0003  
144645 0 0002  
144930 0 0003  
148900 0 0002  
153715 0 0003  
155830 0 0003 / 0001 210 000000 000000 -  
154215 0 0002 0001 212 000000 000000 -  
154100 0 0001  
154700 0 0003  
155415 0 0001  
159130 0 0005  
151115 0 0003  
155100 0 0004 / 0001 214 000000 000000 -  
103000 0 0003 /  
104030 0 0004 /  
112415 0 0003 /

} avg. = 2.5 = 3.0  
as appears in Smith printout

Triangulation plotter

H-NO.			LATITUDE	LONGITUDE	X	Y	X
09384	026	Smit, RM-1, 1973	73-60315138	147202791	31114	18416	026
09384	027	Zap, RM-1, 1973	73-60270734	146291039	14515	22433	027
09384	030	ELF, 1947-73	73-60563852	147031672	14516	19787	030
09384	008		73-60504384	146503670	02425	02250	008
09384	031		73-60425114	146474722	00769	06538	031
09384	019		73-60482271	146474709	07098	03667	019

00000

**CARDS DESTROYED**  
**DO NOT PLOT**  
**R1 AND R2 DO NOT PLOT -**

APPENDIX

Tide Note

List of Signals ————— *filed with printouts*

Abstract of Raydist Calibration *filed with printouts*

TRA TC/TI Printout ————— *filed with printouts*

Velocity Tape Printout —————

Floating Aids or Landmarks for Charts

Form 1's

Form 3's

Approval Sheet

Reg. No. H-9384

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 9-30-82 TIME REQ'D \_\_\_\_\_ INITIALS JAC

REMARKS:

**HYDROGRAPHIC SURVEY STATISTICS**  
**HYDROGRAPHIC SURVEY NO. H-9384**

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET <del>1</del> & PNO		1	BOAT SHEETS		1	
DESCRIPTIVE REPORT		1	OVERLAYS		1	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES	2	3				
BOXES			1			
T-SHEET PRINTS (List) <del>1</del> (1)						
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	REVIEW	TOTALS
POSITIONS ON SHEET				1546
POSITIONS CHECKED		1546	20	1566
POSITIONS REVISED		3	0	3
DEPTH SOUNDINGS REVISED		40	73	113
DEPTH SOUNDINGS ERRONEOUSLY SPACED			0	0
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED			0	0
	TIME (MANHOURS)			
<del>XXXXXXXXXXXXXXXXXXXX</del> Verification of Control TOPOGRAPHIC DETAIL		2	0	2
<del>XXXXXXXXXXXXXXXXXXXX</del> Verification of Positions JUNCTIONS		49	16	65
<del>XXXXXXXXXXXXXXXXXXXX</del> VERIFICATION OF SOUNDINGS SOUNDINGS RECORDS		128	16	144
<del>XXXXXXXXXXXXXXXXXXXX</del> Smooth Sheet Compilation SPECIAL ADJUSTMENTS		33 85	0	85
ALL OTHER WORK			67	67
<b>TOTALS</b>		<b>212 264</b>	<b>103+6</b>	<b>367</b>
PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE		
VERIFICATION BY Clarence R. Lehman <i>Clarence R. Lehman</i>	BEGINNING DATE	ENDING DATE 28 January 1974		
REVIEW BY <i>Dennis J. Hill</i>	BEGINNING DATE Dec 16, 1974	ENDING DATE Feb 19, 1975		

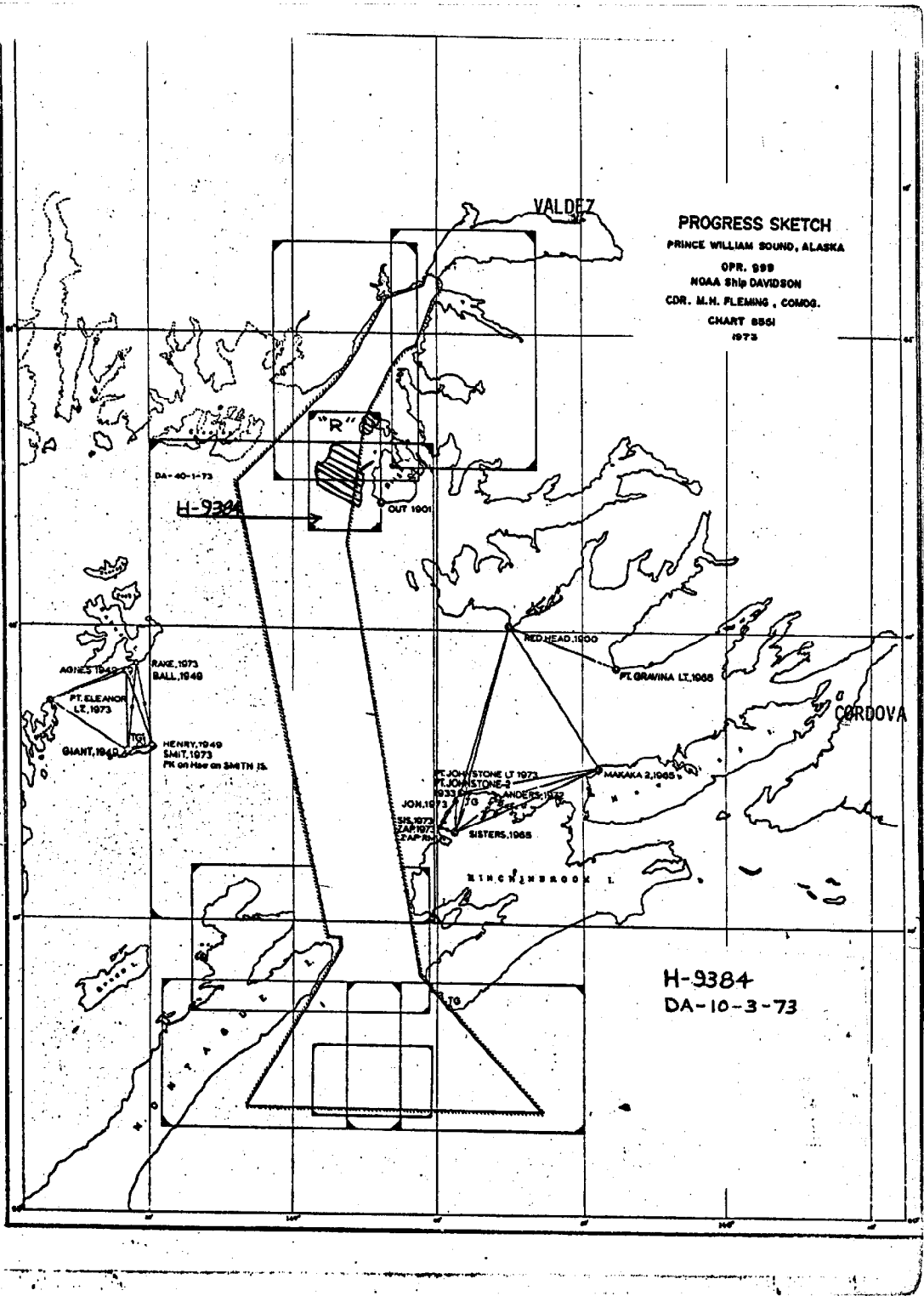
*Insp Dennis J. Hill  
 4-2-75 28 hrs.  
 CARSTENUS 4/1/75 14hr*

GEOGRAPHIC NAMES

Survey No. H-9384

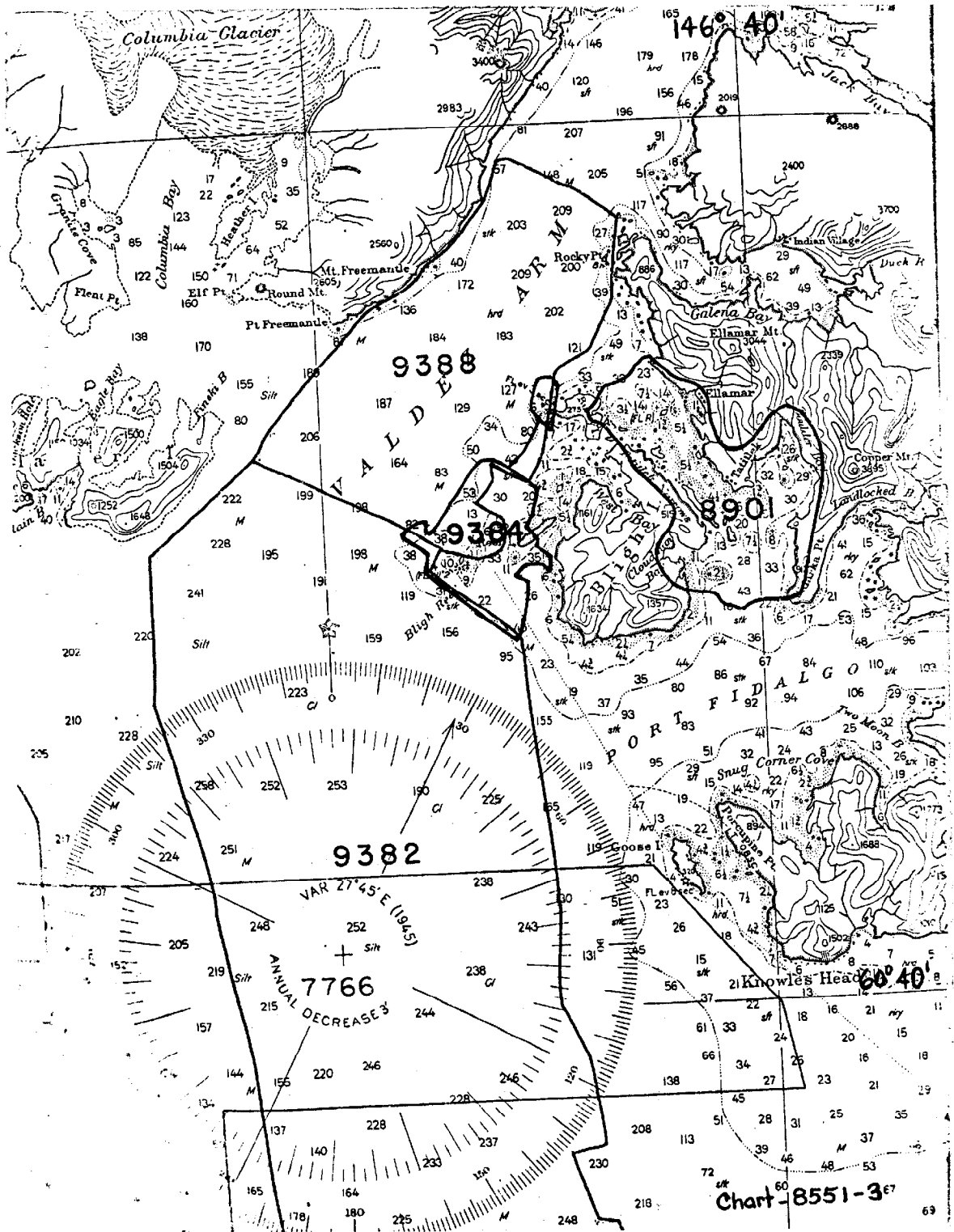
Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
<del>BLIGH ISLAND</del>										1
BLIGH REEF										2
BUSBY ISLAND										3
PRINCE WILLIAM SOUND										4
VALDEZ ARM										5
REEF ISLAND										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Approved by:  
*Chas. E. Hamilton*  
 Staff Geographer  
 27 March 1974



**PROGRESS SKETCH**  
 PRINCE WILLIAM SOUND, ALASKA  
 OPR. 999  
 NOAA Ship DAVIDSON  
 CDR. M.H. FLEMING, COMDG.  
 CHART 8561  
 1973

H-9384  
 DA-10-3-73





## RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9384

## 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
8519	3/6/74	M. D. Konis	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No.
8551	3/13/74	M. D. Konis	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Applied thru Chart 8519
8519	11/6/74 checked D.K. 11/6/74	H. Borawski	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Exam'd for etc critical changes only.
			Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No.
8551	4/18/75	T. W. Alexander	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Exam'd for critical errors only. Revised entire quantity due to 8519 faulty tide error. (edge, curves, shoal side.)
8519	4/19/75	T. W. Alexander	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Revised entire vicinity due to faulty side error (soundings, curves, shoal side.)
8519	11-21-75	H. J. Borawski	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Re-App'd Survey, Revised Numerous Sndgs, changed Alignment of Depth Curves!
8551	11-21-75	H. J. Borawski	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Re-App'd Thru Cht. 8519, Revised Soundings Thru-out + Adjusted Depth Curves
			Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No.
8519	9/30/77	H. J. Borawski	Fully app'd 211 hydro
8551	10/7/77	Macl. J. Frise	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. Fully app'd hydro throughout common area thru Chart 8519 DWG. A.P. #16
16707	1/21/78	Raitel	Fully app'd After Engraving DWG #1