

9422

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-20-1-74 .....  
Office No. .... H-9422 .....

**LOCALITY**

State ..... ALASKA .....  
General Locality ..... PRINCE WILLIAM SOUND .....  
Locality ..... UPPER PORTION OF VALDEZ .....

19 74

CHIEF OF PARTY  
M. H. Fleming

**LIBRARY & ARCHIVES**

DATE ..... 12/20/74 .....

9422

HYDROGRAPHIC TITLE SHEET

H9422

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-20-1-74

State Alaska

General locality Prince William Sound

Locality Upper Portion of Valdez Arm

Scale 1:20,000

Date of survey 15 May - 21 May, 1974

Instructions dated 4 February 1974

Project No. OPR-999-74

Vessel NOAA SHIP DAVIDSON CSS-31, DA-1, and DA-2

Chief of party M.H. FLEMING

Surveyed by J. Kapler, J. Sarb, R. West

Soundings taken by echo sounder, ~~XXXXXX~~ Ross SN #1048, 1053

Graphic record scaled by DAVIDSON Personnel

Graphic record checked by " "

Protracted by " "

Automated plot by PMC - Gerber Digital Plotter

Soundings penciled by " "

Soundings in fathoms ~~XXXX~~ at ~~XXXX~~ MLLW

REMARKS:

*Applied to slide 1/13/75*

*MB*

*XWW 3/7/74*

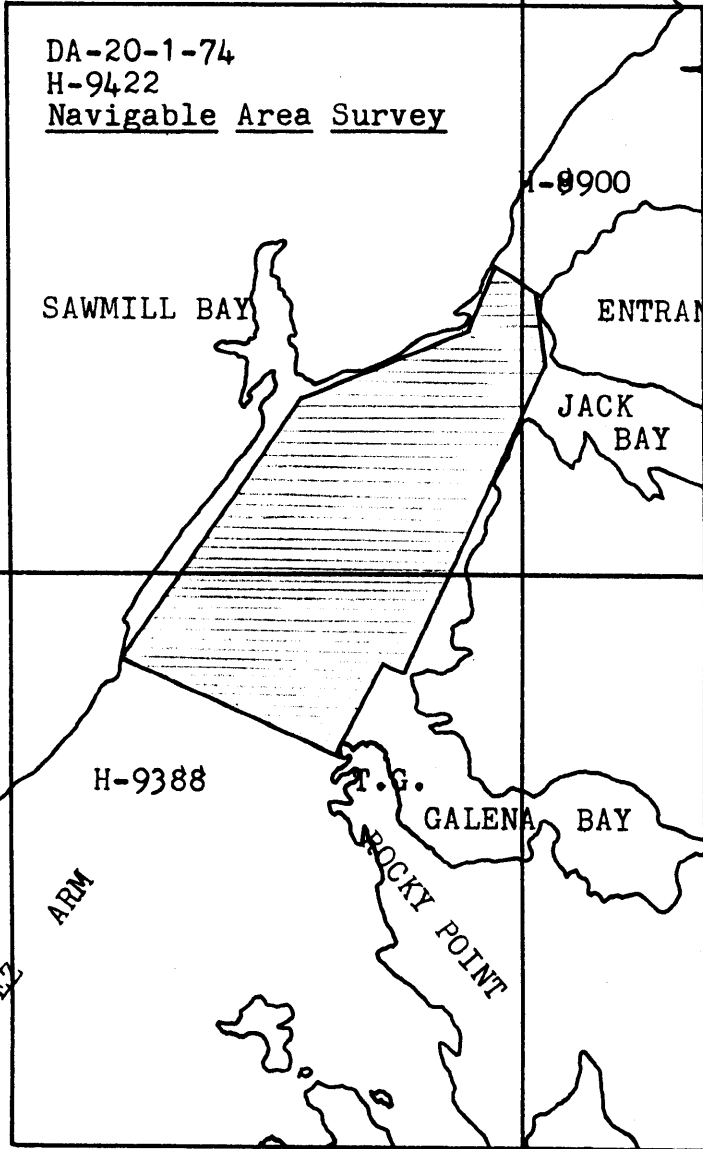
147° 00'

SURVEY SHEET INDEX

OPR-999

Valdez Arm, Alaska

NOAA SHIP DAVIDSON



PORT VALDEZ

61° 00'

## DESCRIPTIVE REPORT

H-9422

DA-20-1-74

### A. PROJECT

This survey was conducted in accordance with Project Instructions OPR-999-DA-74, Navigable Area Survey, Prince William Sound, Alaska, dated 4 February, 1974. ✓

### B. AREA SURVEYED

The survey area is Valdez Arm bounded by Latitude  $61^{\circ} 04.5'$  and Latitude  $60^{\circ} 57.0'$ . The survey began on 15 May, 1974, and was completed on 21 May, 1974. ✓

### C. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Launch DA-1 used a Ross Fathometer Model 5000 Fathometer, Serial Number 544-1048; and Ross Transmitter/Receiver, Serial Number 544-1053. Launch DA-2 used a Ross Fathometer Model 5000 Fathometer, Serial Number 544-1053; Ross Model 6000 Digitizer, Serial Number 544-1048; and Ross Transmitter/Receiver, Serial Number 537-1036. ✓

The Ross sounding system had problems in water deeper than 150 fathoms. Aboard DA-1 we were using the Automatic Gain Control and were recording digitized depths, but the soundings on the analog trace were barely discernable. The digitized depths were often erroneous and the utilization of the Blanking did not solve the problem. Utilizing the Manual Gain Control we were able to get a good analog trace, but unable to obtain digitized depths. We solved this problem by using the Alternate Key while on "D" scale. This gave us an acceptable analog trace and digitized depths; however, there were many erroneous digitized depths. A lead line comparison with the echo sounder was not made due to the steep, rocky bottom configuration. On DA-2 the analog trace was very poor due to electrical noise; however, the Ross digitizing circuitry worked very well with few erroneous soundings. The fathometer was monitored very carefully "on-line" and the data was good. ✓

The velocity of sound was determined from computation, using Martek data. TRA corrections were determined from daily bar checks. There were no initial correctors, scale-phase corrector, or fine arc correctors for the Ross Digitized systems. Settlement and squat have not been considered. Velocity corrections and TRA ✓

corrections have not been applied to sounding data. (See "Report on Correction to Echo Sounders - OPR-999-DA-74," "TRA/TC/TI Abstracts" and "Velocity Corrections Abstract.")

All soundings are in fathoms and tenths, referenced to MLLW, using predicted tides for Rocky Point. Greenwich Mean Time was used through the survey.

D. BOAT SHEETS

The boat sheet was constructed and plotted by the Processing Division, Pacific Marine Center, Seattle, Washington. The smooth boat sheet will be constructed and plotted by the Processing Division at the Pacific Marine Center.

E. STATION CONTROL/POSITION CONTROL

Position Control used on this survey was the Motorola Miniranger III. DA-1 used Receiver/Transmitter, Serial Number 719 with Range Console, Serial Number 710. DA-2 used Receiver/Transmitter, Serial Number 709; with Range Console, Serial Number 716. The transponders used on this survey were: Transponder #1, Serial Number 723; Transponder #2, Serial Number 771; Transponder #3, Serial Number 772; and Transponder #4, Serial Number 773. (See statistics for dates and location of transponders used.)

Miniranger transponders were placed over existing triangulation or located by triangulation methods. Datum for this survey is "North American, 1927." The daily calibration check was done by visual three point fixes to triangulation points. Observed Miniranger rates were compared to values generated by the Wang, Range-Range calibration program. There were no miniranger malfunctions during this survey; the geometry of fixes was strong and the calibrations were good. Miniranger calibration correctors have not been applied to the raw hydrographic control data. There are no slope corrections to the miniranger data. (See "Electronic Correctors Abstract.")

F. SHORELINE

The following is a list of topographic manuscripts used to compile the shoreline on this sheet:

T-12991	Potato Point, Valdez Arm, Alaska	1:10,000	1965	Class III
T-12992	Entrance Point, Alaska	1:10,000	1965	Class III
T-12994	Galena Bay, Alaska	1:10,000	1965	Class III
T-12655	Port Valdez, Shoup Bay, Alaska	1:20,000	1967	Class I Adv. Mans.
T-00264	Sawmill Bay, Valdez Arm, Alaska	1:20,000	1972	Class III Incomplete Mans.

All of these manuscripts are incomplete; however, the field edit is complete in the vicinity of hydrography. (See Field Edit Reports) Complying with Project Instructions OPR-999-DA-74, deliniation of the zero fathom curve and complete field edit of the topographic manuscripts were not attempted.

G. CROSSLINES

The percentage of crosslines to sounding lines is 7.4%. The crosslines are in agreement with the regular scheme of sounding lines. They generally agree within one fathom. DA-1 and DA-2 were used in accomplishment of crosslines; both used Ross Model 5000 fathometers. In one instance DA-1 ran a crossline through DA-2's sounding scheme; there was agreement between their work.

H. JUNCTIONS

This survey junctions with H-9388, 1:20,000, 1973, and H-8900, 1:20,000, 1966. They are in agreement within one fathom where the slope is gentle. Where the bottom slope is much steeper, some discrepancies appear. These may be attributed to the use of the older fathometers which have a wide beam width compared to the Ross, which has a narrow beam width; and also whether or not the two sounding lines being compared were run in contrary directions. These factors are important when you consider the types of launches being used (1966 vintage launches, Bertrams, and 1974 aluminum launches) and the bottom slope. Under normal operating conditions the aluminum launch is inclined approximately 4-5 degrees from the horizontal. Considering the narrow beam of the Ross, when the launch is headed towards a shore with a steep slope, the fathometer is looking "ahead" and "uphill." While sounding seaward, the fathometer is looking "ahead" and "downhill." By geometry, in deep water, and a bottom slope of 45 degrees or better, soundings may differ as much as 14%.

I. COMPARISON WITH PRIOR SURVEY AND CHART/PRE-SURVEY REVIEW

The prior surveys for the area covered by this sheet are H-2627, 1:20,000, 1902, and H-2628, 1:20,000, 1902. The largest scale chart of the area is C&GS Chart 8519 (HO 16708), Port Fidalgo and Port Valdez, 11th Edition, August 12, 1972, 1:79,291.

A comparison of the chart and the present survey is good. Generally there is agreement within two fathoms. A one to one comparison of soundings was not made with the prior surveys. Considering the date and survey methods used during the prior survey, this survey had a better sounding density and, therefore, a better deliniation of shoals and depth curves. This area is undergoing

tectonic change (example, the 1964 Alaska earthquake) and one would not expect them to compare.

Pre-survey Review listed several items which are answered herein:

*P.S.R. item 13 originates Chart letter 193(1972) 43 fm at  $61^{\circ}03.21'N$   $146^{\circ}41.12'$*   
#13 43 fathoms was reported at Latitude  $60^{\circ}03.21'$ , Longitude  $146^{\circ}41.12'$ ; we found 52 fathoms at this position. However, this lies at the southeast end of a northwest-southeast trending ridge which shoals to 35 fathoms at Latitude  $61^{\circ}03.21'$ , Longitude  $146^{\circ}41.29'$  (0.26 miles from the beach) and 13 fathoms at Latitude  $61^{\circ}03.29'$ , Longitude  $146^{\circ}41.44'$  (0.17 miles from the beach). *See Review Notes*

*from H-2627(1902)* 61°  
35 fathoms was reported at Latitude  $60^{\circ}03.3'$ , Longitude  $146^{\circ}39.95'$ ; we found 80 fathoms at this position. 24 fathom soundings were found in the vicinity of Latitude  $61^{\circ}03.33'$ , Longitude  $146^{\circ}39.74'$ ; and 22 fathom soundings in the vicinity of Latitude  $61^{\circ}03.31'$ , Longitude  $146^{\circ}39.53'$ . *1677 inset*

*from H-2627(1902)*  
4 fathoms was reported at Latitude  $61^{\circ}00.35'$ , Longitude  $146^{\circ}41.74'$ ; we found 7 fathoms at Latitude  $61^{\circ}00.38'$ , Longitude  $146^{\circ}41.70'$ . *1677*

*from H-2627(1902)*  
8 fathoms was reported at Latitude  $60^{\circ}59.10'$ , Longitude  $146^{\circ}42.61''$ ; we found 8.2 fathoms at Latitude  $60^{\circ}59.10'$ , Longitude  $146^{\circ}42.40'$  and 8.7 fathoms at Latitude  $60^{\circ}59.10'$ , Longitude  $146^{\circ}42.50'$ . *1677*

*from L-469(1947)*  
#12 3 fathoms was reported at Latitude  $60^{\circ}57.63'$ , Longitude  $146^{\circ}52.50'$ . This shoal was developed by hydrography in 1973 (H-9388) - it was investigated this year by divers. (See the Appendix for the accompanying report). *H-9388 has soundgs. of 2.2 & 2.3 fms. in area.* *See Review Notes* *1677*

Development of the Pre-survey Review is considered complete within the limits of the corridor; and it is recommended that the results of the investigation be applied to the existing chart. It is also recommended that the disproved features be removed from the chart.

#### J. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys within the limits of the corridor. All fathogram field survey records were scanned and checked for deeps and peaks with the appropriate changes made to the original records. *1677*

#### K. AIDS TO NAVIGATION

There are three fixed aids to navigation on this sheet. (See Form 76-40) As of this date, the navigational aids at Rocky Point, *1677*

Entrance Point and Middle Rock are being upgraded to serve the tanker route through Valdez Arm. A minor light and day mark is being established off Entrance Island. This was located during the survey but since has been re-established. (See Appendix for attached data from the Coast Guard and Form 76-70.)

L. STATISTICS

<u>Vessel</u>	<u>Total Number of Positions</u>	<u>Sounding Miles</u>	<u>Bottom Samples</u>	<u>Date</u>
DA-1	789 (DP 9001, 9002, 9003) (pos. 1-789)	198.6	0	138, 139 135-141
DA-2	436 (pos. 2001-2436) (DP 9004-9005)	86.5	0	137-141 139
NOAA Ship DAVIDSON	0 (pos. 1001-1027) (D.P. 9006-08) (9009-9014)	0.0	27	136 139-141

This sheet covers 21.5 square miles.

LOCATION OF MINIRANGER TRANSPONDERS

(By Day and Station Number)

DAY	X-PONDER 1	X-PONDER 2	X-PONDER 3	X-PONDER 4
135	004	011	003	005
136	004	011	003	005
137	004	011	003	005
138	004	011	003	005
139	004	011	003	009
140	004	011	003	005
141	004	011	003	005 and 006

M. MISCELLANEOUS

A search of Geographical Names was not made. The names that appear on the boat sheet were taken from C&GS Chart 8519, 11th Edition, August, 1972.

There are three Form 3's submitted with this report denoting date, time, and position limitations when hydrography was run on the "A-" side of the baseline. In keeping with the PMC OP-Order, Form 3's were not submitted when hydrography was run on the "A+" side of the baseline.

N. RECOMMENDATIONS

It is recommended that the data from this survey be applied to the existing chart.

O. REFERENCE TO REPORTS



Report on Corrections to Echo Sounders - OPR-999-DA-74  
Electronic Systems Calibrations Report - OPR-999-DA-74  
Electronic Control Report - OPR-999-DA-74  
Horizontal Control Reports  
Field Edit Reports  
Report on Divers' Investigations  
Special Investigation of Report Rock Awash

P. DATA PROCESSING

All data on this sheet were logged "on time" with the exception of detached positions, bottom samples, and additional soundings added. Both DA-1 and DA-2 used Aircraft Standards, Inc., loggers coupled to Model 33 Teletypes using ASCII code. ✓

## APPENDIX

Abstracts of Tapes

Tide Note

Abstracts of Correction to Echo Sounder

Abstracts of Velocity Correction DA-1

Abstracts of Velocity Correction DA-2

Abstracts of TRA/TC/TI DA-1

Abstracts of TRA/TC/TI DA-2

Electronic Abstract Corrector DA-1

Electronic Abstract Corrector DA-2

Stations List

Abstract of Positions

Bottom Sediment Data

Forms No. 3

Forms No. 1

Nonfloating Aids - Landmarks Form 76-40

Diver's Report

Geodetic Control Data

Communique from Coast Guard on Upgrading of  
Navigational Aids

Letter "Chart Inspection, Valdez Narrows, Alaska"

Approval Sheet

## ABSTRACT OF TAPES

1A	Hydrography, DA-1, Pos. 245-255
1	Hydrography, DA-1, Pos. 1-749 not continuous
2	Hydrography, DA-1, Pos. 175-692 not continuous
3	Hydrography, DA-1, Pos. 750-789
4	Hydrography, DA-1, Pos. 383-386
5	Bottom Samples
6	Detached Positions DA-1, DA-2
7	Detached Positions WZ-3040
8	Detached Positions DA-1
9	Velocity corrections, DA-1
10	TRA/TC/TI, DA-1
11	Electronic Control Correctors, DA-1
12	Signal Tape, DA-1, DA-2, DAVIDSON, WZ-3040
13	
14	
15	Hydrography, DA-2 Pos. 2001-2190, 2369-2405
16	Hydrography, DA-2 Pos. 2191-2256
17	Hydrography, DA-2 Pos. 2257-2297
18	Hydrography, DA-2 Pos. 2298-2369, 2406-2436
19	Velocity Corrections, DA-2
20	Electronic Control Correctors, DA-2
21	TRA/TC/TI, DA-2
22	Corrector Tape - Additional Sounding

TRA/TC/TI ABSTRACT

VESSEL: DA-1

SHEET: H-9422

31313574

202730 0 0003 0001 135 000000 000000  
001130 0 0003 0001 136 000000 000000  
000000 0 0003 0001 137 000000 000000  
000000 0 0003 0001 138 000000 000000  
000000 0 0003 0001 139 000000 000000  
182300 0 0003 0001 140 000000 000000  
183340 0 0003 0001 141 000000 000000

VELOCITY CORRECTIONS ABSTRACT

VESSEL: DA-1

H-9422

31313574

000000 0 0000 0001 000 000000 000000

TRA/TC/TI ABSTRACT

H-9422

VESSEL: DA-2

191000	0	0003	0002	137	000000	000000
000220	0	0003	0002	138	000000	000000
000020	0	0003	0002	139	000000	000000
000000	0	0003	0002	140	000000	000000
000220	0	0003	0002	141	000000	000000

VELOCITY CORRECTION ABSTRACT

VESSEL: DA-2

H-9422

3131374

000000 0 0000 0002 000 000000 000000

ELECTRONIC CORRECTION ABSTRACT

VESSEL: DA-1

SHEET: H-9422

31313574

202730	7	1543	0001	135	100001	100001	0000	000	000
001130	7	2040	0071	136	100001	100001	0000	000	000
182900	7	0103	0094	136	100004	100002	0000	000	000
220330	7	0720	0175	136	000001	100002	0000	000	000
000000	7	0412	0228	137	100004	100002	0000	000	000
001730	7	1888	0000	137	000001	100002	0000	000	000
184400	7	0734	0260	137	100006	100006	0000	000	000
223530	7	1823	0365	137	000005	100006	0000	000	000
000000	7	1095	0000	138	100006	100006	0000	000	000
181400	7	0198	0383	138	000000	000005	0000	000	000
183000	7	1646	0387	138	100006	000005	0000	000	000
200320	7	2056	0400	138	000000	000005	0000	000	000
000000	7	0127	0000	139	000000	000005	0000	000	000
185030	7	2001	0489	139	000001	000001	0000	000	000
182300	7	1601	0615	140	100002	000002	0000	000	000
200000	7	1983	0640	140	100001	000002	0000	000	000
188340	7	0460	0693	141	100001	000001	0000	000	000
204640	7	1398	0750	141	000001	100007	0000	000	000



Electronic Corrector Abstract

VESSEL: DA-2

Sheet: H-9422

31313774

191000	7	0475	2001	137	000002	000003	0000	000	000
000220	7	1658	2072	138	000002	000003	0000	000	000
181600	7	0177	2089	138	000001	000001	0000	000	000
000020	7	0016	2078	139	000001	000001	0000	000	000
191740	7	0083	2191	139	000004	000000	0000	000	000
225640	7	0025	2257	139	000000	000000	0000	000	000
000000	7	0614	2284	140	000000	000000	0000	000	000
184420	7	1640	2298	140	000003	100005	0000	000	000
215820	7	1336	2369	140	000001	000003	0000	000	000
000820	7	1404	2415	141	100005	100005	0000	000	000

List of Stations H-9422

STA	LATITUDE	LONGITUDE	CRT	ELEV	F. KHZ	TYPE/NAME	SOURCE
003	60° 58' 55.47"	146° 43' 38.93"	139	0005	149835	Side, 1901, r. 1972 (003)	* H-2627 & H-2628
004	61 01 33.66	146 47 59.36	139	0015	149835	Devish Sub Pt Ecc '74 (004)	*
005	61 01 52.96	146 40 16.13	139	0006	149835	Jack, 1901, r. 1972 (005)	* H-2627
006	61 03 24.45	146 41 40.62	139	0006	149835	Hut 3, 1965 (006)	*
009	61 02 50.56	146 44 15.77	139	0004	149835	Bug, 1973 (009)	*
011	61 03 49.01	146 39 36.08	139	0008	149835	Entrance Pt Bcn, 1947, r. 1972 (011)	*

All of the above stations were Mini-ranger sites. All of the above and all of the below stations were used in calibrations or for positions for detached positions or bottom samples.

001	60 57 04.03	146 45 58.96	139	0010		Rocky Pt Lt (1974) (001)	*
002	60 57 43.91	146 52 48.80	139	0007		Flow, 1901, r. 1972	or H-2628
007	61 04 53.84	146 39 03.32	139	0007		Middle Rk Lt, '47, r '72 (007)	*
008	61 04 53.63	146 39 54.65	139	0004		Bunch, 1901, r. 1965 (008)	*
010	60 59 49.68	146 50 49.70	139	0003		Snag, 1973 (010)	*

\* Unpublished Control. Obtained from PMC by personal communique. \*

# DIVING REPORT

## INVESTIGATION OF SHOAL

N 60° 57.6', 146° 52.3' W

VALDEZ ARM, ALASKA

This shoal was dived upon on two consecutive days: <sup>130</sup> 19 & <sup>141</sup> 20 May, 1974,  
by Ens. R.W. Mercer and Ens. J.L. Oswald. *Volume indicates days 139 & 141*  
*Pas. 9006-9014*

### METHODS

The approximate location of the shoal was approached using Mini-Ranger III ranges. When the fathometer indicated peaks of five fathoms or less, a marker buoy was dropped. Four marker buoys were dropped about thirty meters apart along the general ridge of the shoal. A fathometer check of the offshore area beyond the marker buoys was made to ascertain that the outermost limits of the shoal had been marked. Divers then entered the water at the NE end of the line of buoys and commenced to tag line search the area between buoys for about fifty feet either side of the line of buoys. When a rocky peak was encountered, its depth was measured using a small buoy on a calibrated line with marks at five foot intervals along the line; unit feet were estimated between marks. The diver's buoy was then dipped twice, signaling the tending launch to take a fix on the buoy's position; the launch would signal to the divers that a fix had been taken, and they would then continue their tag line search. Each detached position fix consisted of a series of three Mini-Ranger ranges, as described on the appended Positioning Note.

### RESULTS

The shoal was located but the measured depths, when reduced for Rocky Point predicted tide values, differed from the previously determined least depth by 0.5 fathoms, the diver-measured depths being the deeper. The entire shoal area was not completely covered by the divers, but it is felt that the outermost portion of the shoal was adequately inspected.

### RECOMMENDATIONS

The diver-determined least depth was <sup>2.2</sup>~~2.3~~ fathoms, which was <sup>H-9388 (1973)</sup> ~~0.5~~ fathoms deeper than the least depth found by survey DA-20-4-73. This difference <sup>see</sup> might be attributed to a dense growth of brown algae (genus "Alaria") <sup>Reviewers</sup> extending 2-4 feet above the peak of the shoal or may be attributed <sup>Notes</sup> to the difference between predicted tides and true tides. It is recommended that this data be considered a verification of soundings from DA-20-4-73 <sup>(H-9388)</sup> and that data from that survey be applied to charts of the area. The bottom encountered was very rocky with many sharp pinnacles rising from 5-6 fathoms to 2-3 fathoms almost vertically. The possibility that other

*Note: The 2.3 fathom depth (adjusted to 2.2 fm.) mentioned above originates with H-9388 (1973). The shoalest depth recorded by Divers on the present survey was 5.0 fm. (adjusted to 4.1 fm.)*

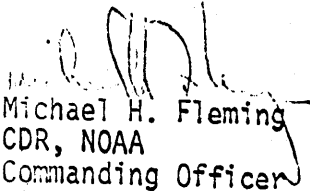
pinnacles, more shoal than those discovered, does exist. This shoal should certainly be considered as a hazard to navigation.

Report Submitted by

*Roger W. Mercer*

Roger W. Mercer  
Ensign NOAA  
Diving Officer  
NOAA Ship DAVIDSON

Approved by

  
Michael H. Fleming  
CDR, NOAA  
Commanding Officer  
NOAA Ship DAVIDSON

APPENDIX

Geodetic Positions of Mini-Ranger Transponders

Abstract of Positions and Depths

Abstract of Mini-Ranger Calibration Checks

Sounding Overlay

Position Overlay

H-9388 1:10,000 Blow Up with Depth Curves

Original Data

Positioning by Mini-Ranger III system  
All ranges in meters

Mini-Ranger Channel A

Transponder #2 on Signal #011

ENTRANCE POINT BEACON 1947, 1972

N 61° 03' 49.01", 146° 39' 36.08" W

Mini-Ranger Channel B

Transponder #3 on Signal #003

Station SIDE 1901, 1972

N 60° 58' 55.47", 146° 43' 38.93" W

A series of three ranges were taken over the marker buoy when divers signaled it was over a pinnacle rock on the shoal. These ranges were averaged and entered in the position and sounding abstract.

ABSTRACT OF POSITIONS AND DEPTHS

ENTRANCE PT. BEACON ON CHANNEL A  
STATION SIDE ON CHANNEL B

<u>FIX #</u>	<u>TIME GMT</u>	<u>DEPTH FMS</u>	<u>CHANNEL A</u>	<u>CHANNEL B</u>	<u>JULIAN DATE</u>
1	203122	3.6	16268	8158	139
2	203715	3.7	16247	8145	139
3	204620	6.7	16222	8101	139
4	001435	3.2	16257	8143	141
5	002343	3.3	16299	8188	141
6	003614	2.3	16330	8223	141
7	004245	2.4	16338	8236	141
8	004846	2.6	16303	8197	141
9	010026	2.6	16329	8224	141

Depths are in fathoms converted from depths taken with a buoy line marked at five foot intervals.

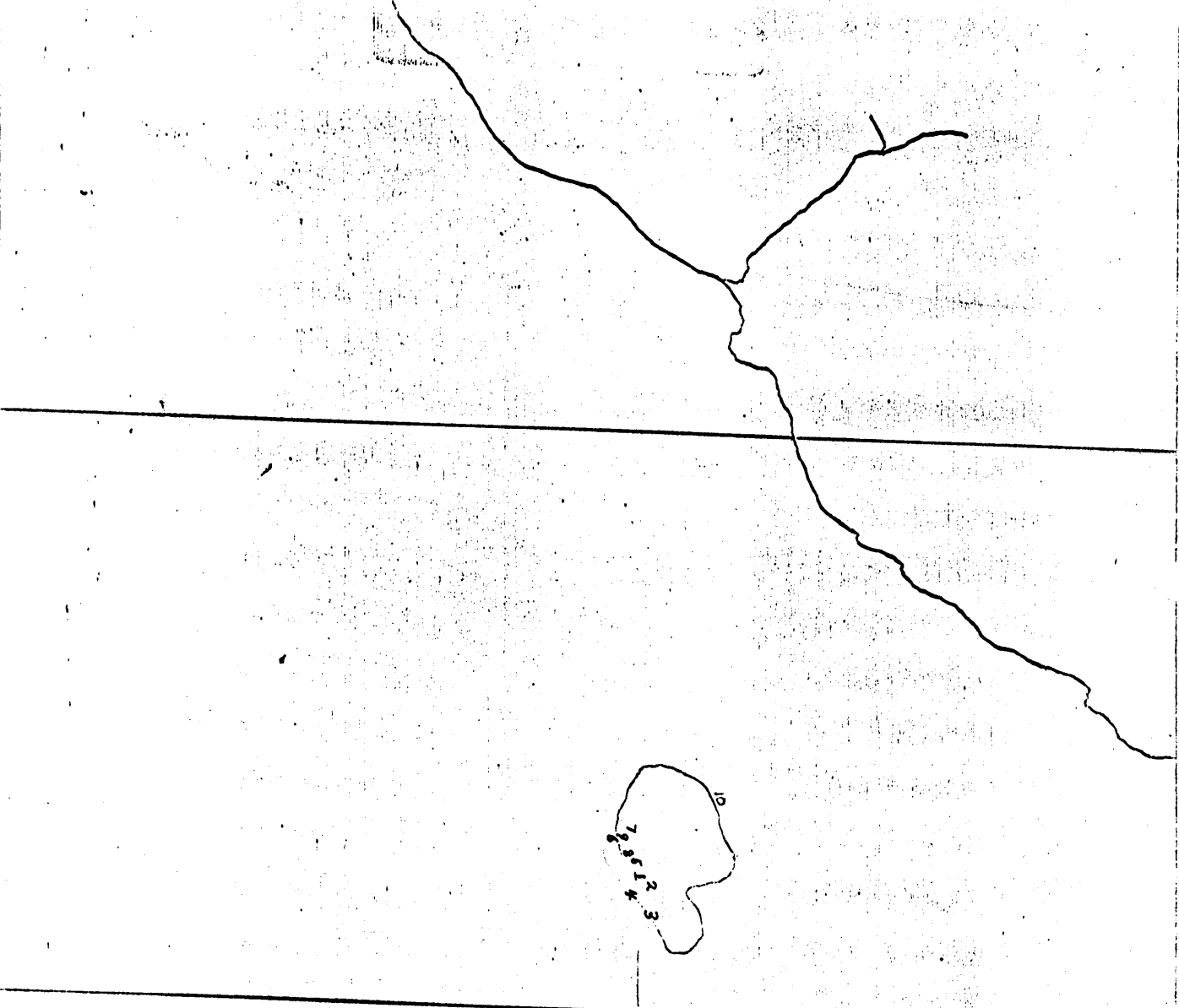
Time and date are for GMT.

Depths are reduced to MLLW based upon Rocky Point predicted tide values.

Mini-Ranger correctors have been applied to the above position data.







NOAA Ship DAVIDSON

Position Number Overlay

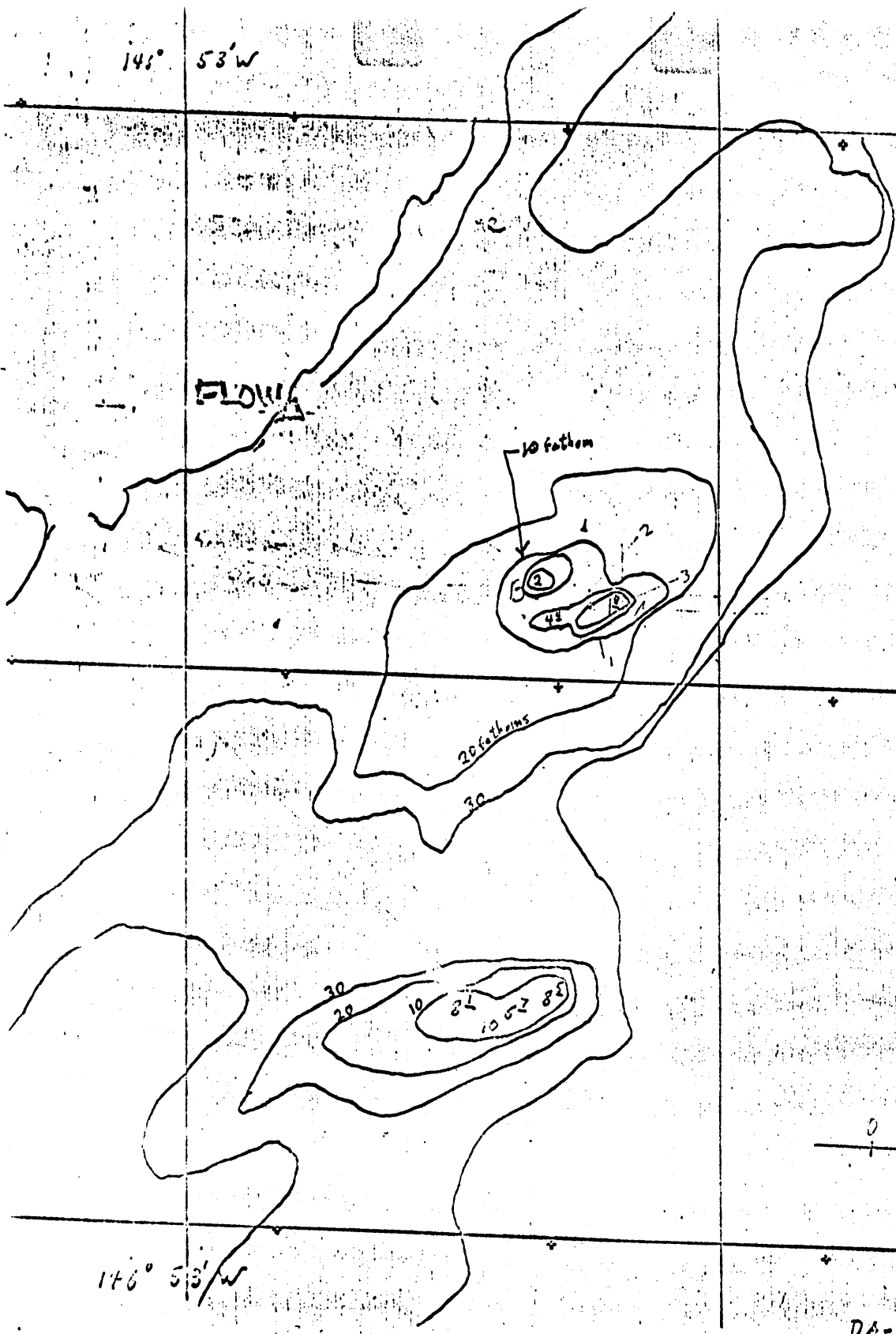
Shoreline and 10 fathom contour from  
1:10,000 blowup of H-9388 (DA-20-4-  
shoal development.

N 50° 57' 00"

145° 53' W

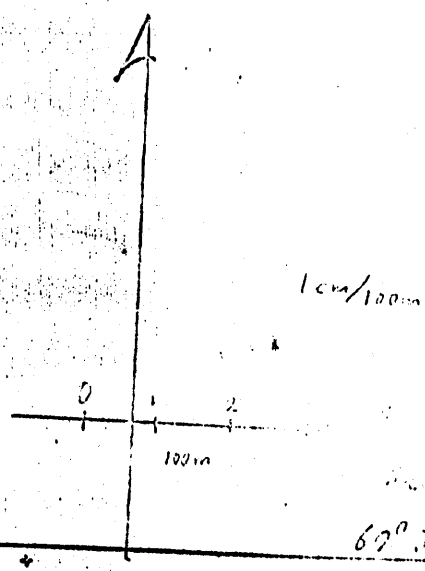
From: 60° 58' N  
DA-20-4-73  
Depth curves  
from H-4336 done  
by DAVIDSON in  
August 1973.

FLOW



146° 53' W

60°



DA-20-1-74

146° 52' W

60° 52'

NOAA SHIP DAVIDSON

N60°58'0"

Sounding Overlay

Shoreline and 10 fathom contour of  
1:10,000 blow up of H-9388P (DA-20-4-  
; shoal development.

10 fathom contour from DA-20-4-73 d.  
which employed visual control (Sextant  
methods.

Inked soundings are from dive inoves  
which used electronic (MiniRanger III) con  
Depths are in fathoms relative  
MLLW. Soundings reduced for Rocky Poi  
Predicted tides.

Boat sheet information

N 60° 57' 00"



Shoal Investigation OPR-999

DA-20-1-74 19 May 1974

Julian Day 139

A-2 B-3 Reduced

Fix # Depth Time #011 #003 Depth fathoms

1 31' 203120 16262 8157

Tide Reduced 21.4' 203122 16269 8157 3.6 fathoms reduced

203123 16268 8157

$\mu = 16268$  8158 Average Ranges

2 32' 203710 49 16247 8143

Tide reduced 22.4' 203715 16246 8146 3.7 fathoms reduced

203720 16247 8147

$\mu = 16247$  8145 Average Ranges

3 50' 204615 16222 8100

Tide reduced 40.4' 204620 16222 8101 6.7 fathoms reduced

204625 16223 8101

$\mu = 16222$  8101 Average Ranges

C-2, U  

---

25 May 74

FROM: LT BURGESS, MSD VALOEE

TO: LT HARRIS

1. Description of proposed aids to navigation in Prince William Sound are from the draft environmental impact statement done around February 1974. Some other aids may have been established since then.

2. Knowledge Head Anchorage buoys will not be established.

3. Phone number in Cordova for Lt Col Bill Lawrence of CGC SORVEL is 424-3256.

Home Phone:  
424-3392

This is the ship's number. Do not have his home number

to CO.

Talked to Bill Lawrence again today. Sorvel will be off Johnstone Point at 0630 Tuesday. They plan to relocate Johnstone Point light this week and work on other nav aids in the area through out the week. He would like to give us a man Monday Tuesday who will show us the locations of the new nav aids they plan to establish.

ABurgess

Feb

c. Physical elements:

(1) Aids to Navigation. The aids to navigation system which will serve the tanker route through Prince William Sound to Valdez will mark every known hazard to deep-draft vessels, and will provide aids in sufficient numbers and variety to assure ease of position fixing. Heavy reliance is placed on conventional visual aids. This system of aids used by the skilled master mariner in conjunction with shipboard radar, and to a certain degree, LORAN, will provide a safe and precise means of sailing supertankers to Port Valdez. Construction of all minor lights and placement of buoys will be by conventional means. A list of new aids or changes to existing aids in geographic sequence from seaward is as follows:

Geographic Location	Aid Type	Secondary Systems	Power Source	Nominal Range	Action
Wessels Reef	Lighted Buoy	Whistle	Battery	6 Mi	Replace unlighted buoy
Sea Rocks	Minor light	Racon daymark	Battery	8 Mi	Establish
Schooner Rock	Minor light	Daymark	Battery	6 Mi	Establish
Johnstone Point	Minor light	Daymark	110 AC from FAA	15 Mi	Upgrade, relocate
Knowles Head Anchorage "A"	Lighted Buoy	Radar reflector	Battery	6 Mi	Establish
Knowles Head Anchorage "B"	Lighted Buoy	Radar reflector	Battery	6 Mi	Establish
Knowles Head Anchorage "C"	Unlighted Buoy	Radar reflector	-----	----	Establish
Red Head	Minor light	Daymark	Battery	8 Mi 13 Mi*	Establish

Geographic Location	Aid Type	Secondary Systems	Power Source	Nominal Range	Action
Four fathom shoal off Howles Head	Lighted buoy	Bell, radar reflector	Battery	6 Mi	Establish
Dose Island	Minor light	Daymark	Battery	9 Mi	Increase range
Macier Island	Minor light		Battery	10 Mi (Lt)	Establish
Light Reef	Lighted buoy	Radar reflector	Battery	6 Mi	Increase range
Osby Island	Minor light	Daymark	Battery	9 Mi	Increase range
Rock Point	Minor light	Daymark	Battery	8 Mi	Upgrade daybeacon
Potato Point	Minor light	Daymark	Battery	8 Mi	Establish
Entrance Point	Minor light	Daymark	Battery	8 Mi	Upgrade Daybeacon
Middle Rock	Minor light	Radar reflector	Battery	7 Mi 12 Mi*	Upgrade, increase range
Entrance Island	Minor light	Daymark	Battery	8 Mi	Establish

Equipped with condensing panels

(2) Radar.

(a) Radar coverage will be provided by AN/FPS - 109 (XN-1) with five PPI scopes located in the Traffic Center and will provide separate presentations of the Port of Valdez and Valdez Narrows and Valdez Arm. The radar transmission of Valdez Narrows and Arm will be transmitted to the Control Center by microwave from the remote radar site at Potato Point with relay at East Shoup. Proper operation of the remote site will be



U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY

NOAA SHIP DAVIDSON CSS-31

Ch. L. 753(74)

Date : June 10, 1974

Reply to Attn. of:  
CPM 115/MHF

To : Chief, Marine Charts, NOS

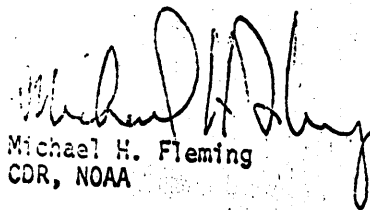
From : Commanding Officer

Subject: CHART INSPECTION, VALDEZ NARROWS, ALASKA

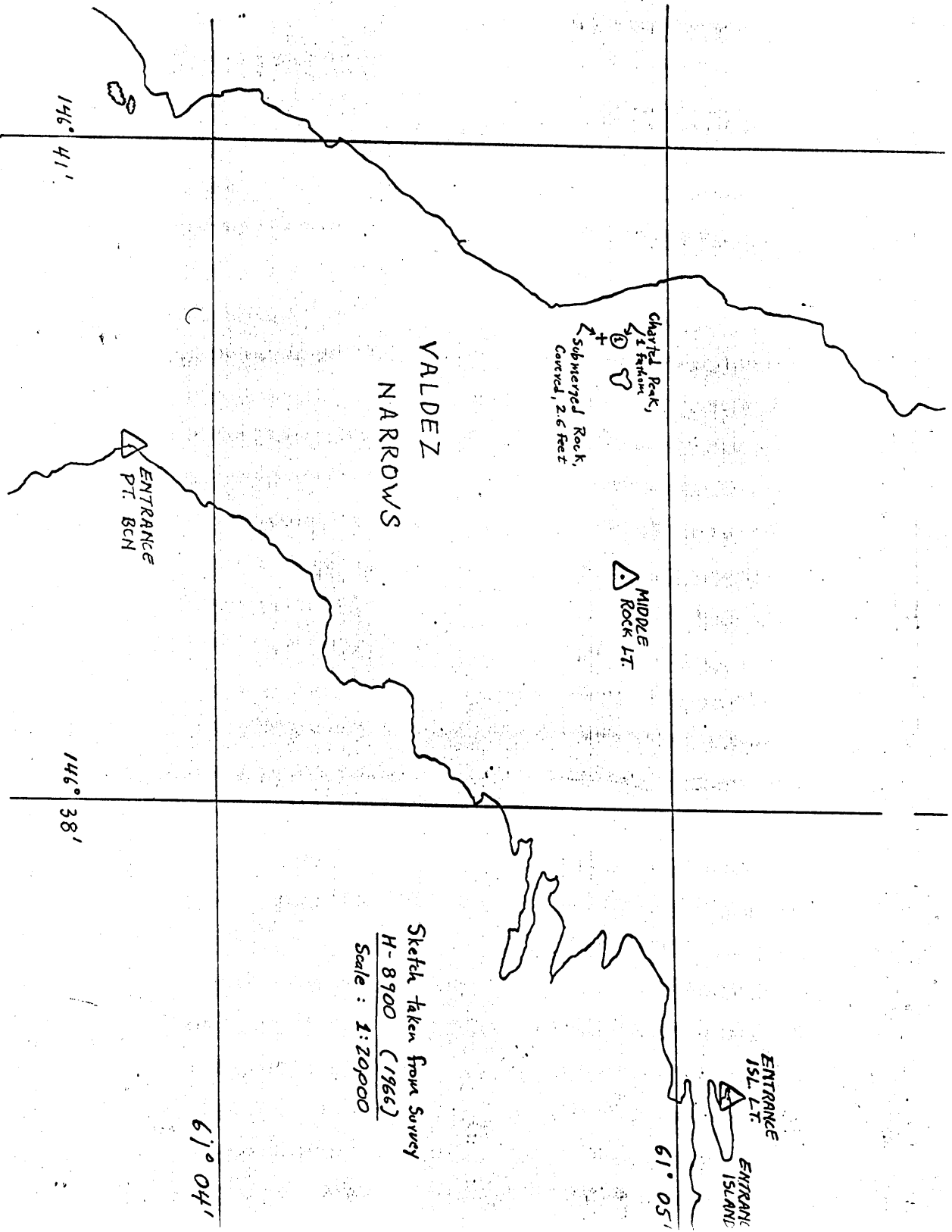
While visiting Valdez, DAVIDSON received a report that a hazardous uncharted submerged rock existed in the center of a channel frequently traversed by pleasure and small commercial fishing vessels. An investigation was conducted by DAVIDSON and the rock located.

The position of the rock was determined by sextant angles on objects previously located by DAVIDSON to third order precision. A reduced least depth of 2.6 feet (MLLW) was determined by lead line. The tide reducer applied was the average of the predicted tides of Valdez and Rocky Point.

It is recommended that Charts 8519 and 8551 be corrected accordingly.

  
Michael H. Fleming  
CDR, NOAA





Sketch taken from Survey  
 H-8900 (1966)  
 Scale: 1:20000

ABSTRACT OF FIELD DATA

TIME: 2040 Z 27 May 1974

Least Sounding, Leadline (unreduced) 2.0 feet

Left Obj.:	ENTRANCE ISLAND LIGHT	61° 05' 07.22" N	146° 36' 41.64" W
Center Obj.:	MIDDLE ROCK LIGHT	61° 04' 53.84" N	146° 39' 03.32" W
Right Obj.:	ENTRANCE PT BCH	61° 03' 49.01" N	146° 39' 36.08" W

Left Angle: 04° 30.0'

Right Angle: 81° 01.0'

Computed Position: 61° 04' 51.37" N 146° 40' 07.11" W

NOAA FORM 76-40  
(2-71)  
PRESCRIBED BY  
PHOTOGRAMMETRY INSTRUCTION NO. 64.

U.S. DEPARTMENT OF COMMERCE-NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
**NONFLOATING AIDS OR LANDMARKS FOR CHARTS**  
ORIGINATING LOCATION  
NOAA SHIP DAVIDSON CSS-31

TO BE CHARTED  
 TO BE DELETED

DATE  
8 June, '74

ORIGINATING ACTIVITY  
 FIELD INSPECTION  
 FIELD EDIT  
 COMPILATION  
 FINAL REVIEW  
 QUALITY CONTROL AND REVIEW  
(See reverse for responsible personnel)

The following objects have (have not) been inspected from seaward to determine their value as landmarks:

JOB NUMBER PH-	SURVEY NUMBER T- TP-	DATUM North American 1927				METHOD AND DATE OF LOCATION (See instructions on reverse of this form)			CHARTS AFFECTED
		LATITUDE POSITION		LONGITUDE POSITION		FIELD INSPECTION	COMPILATION	FIELD EDIT	
CHARTING NAME	DESCRIPTION	0	✓	0	✓				
Day Beacon	Entrance Pt. Day Bcn. NR on Pyramid	61	03	49.01	146 39	36.08	Verif May 74	8519	
Day Bcn Light	Rocky Point Light/Day Bcn (Characteristics unknown, operational?)	60	57	04.03	146 45	58.96	19 May 74 F.La.	8519	
Light	NR on Woodframe Middle Rock Light Fl. W., 45	60	04	53.48	146 39	03.32	Verif. May 74	8519	
NOTE: These aids to navigation are presently being upgraded by the Coast Guard. Their geographical positions have been verified or re-observed, and their latitude and longitude noted. The Coast Guard plans to establish new characteristics for these aids during one week in the future; these will be listed in the "Notice to Mariners" at the appropriate time.									

OCEANOGRAPHIC LOG SHEET - M  
BOTTOM SEDIMENT DATA

VESSEL **DAVIDSON** PROJ. NO. **OPR. 999** YEAR **1974** CHECKED BY **VALDEZ AB21, ALASKA** DATE CHECKED

SERIAL NO.	DATE	SAMPLE POSITION		W.P.C. DEPTH (Peak to Peak) (Mts.)	WEIGHT OF SAMPLER	AP. PROX. TRA- TION	LENGTH OF CORE	COLOR OF SEDI- MENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting, cutter, seal, neg. type of bottom relief i.e., slope, plain, disposition, etc.)
		LATITUDE	LONGITUDE							
1001	16	61°01.6'	146°46.8'	240					sfgy M	TIME GMT 1819
1002	16	61°02.3'	146°46.4'	92					dk. gy. MCI	1945
1003	16	61°02.5'	146°44.2'	286					dk. gym CI, sh	2001
1004	16	61°02.2'	146°41.8'	292					dk gym CI	2016
1005	16	60°59.2'	146°44.7'	265					dk-gy M. CI.	2117
1006	16	60°59.5'	146°43.1'	171					dk gy M CI	2146
1007	16	61°00.0'	146°42.3'	81					dk gym CI BK	2201
1008	16	61°00.9'	146°41.6'	131					dk gym CI BK	2210
1009	16	61°02.1'	146°40.6'	210					CI	2225
1010	16	61°02.8'	146°39.9'	259					dk gym CI	2238
1011	16	61°03.1'	146°39.8'	74					gy M CI	2249
1012	16	61°04.0'	146°40.7'	227					M CI	2303
1013	16	61°03.5'	146°41.2'	92					bkr R M CI	2321
1014	16	61°02.8'	146°42.7'	274					M CI	2347
1015	17	61°01.6'	146°44.0'	320					CI	0005
1016	17	61°00.9'	146°43.1'	332					M CI	0021
1017	17	61°00.0'	146°44.7'	344					M CI	0037

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M  
BOTTOM SEDIMENT DATA

VESSEL		PROJ. NO.	YEAR	VALDEZ ARMY, ALASKA			CHECKED BY	DATE CHECKED		
SERIAL NO.	DATE	SAMPLE POSITION		DEPTH MTRS	WEIGHT OF SAMPLE	AP- PROX. TRA- TION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, coherence, denting, cutters, stain, no.; type of bottom relief i.e., slope, plain, disposition, etc.)
1018	17	61°00.8' N	45.80'	346					C1	0055 GMT
1019	19	60°59.5'	49.10'	295					M C1	1845
1020	19	60°58.6'	47.75'	361					M C1	1904
1021	19	60°59.9'	48.30'	226					C1 RK	1916
1022	19	60°58.3'	45.8'	360					M C1	1937
1023	19	60°58.3'	44.7'	195					C1	1950
1024	19	60°57.4'	47.3'	337					M C1	2016
1025	19	60°57.5'	50.2'	355					C1	2111
1026	19	61°00.5'	48.7'	213					M C1	2148
1027	19	61°01.02'	47.6'	143					C1 RK	2200

Use more than one line per sample if necessary.

APPROVAL SHEET

Navigable Area Survey

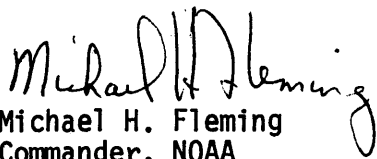
DA-20-1-74

H-9422

OPR-999

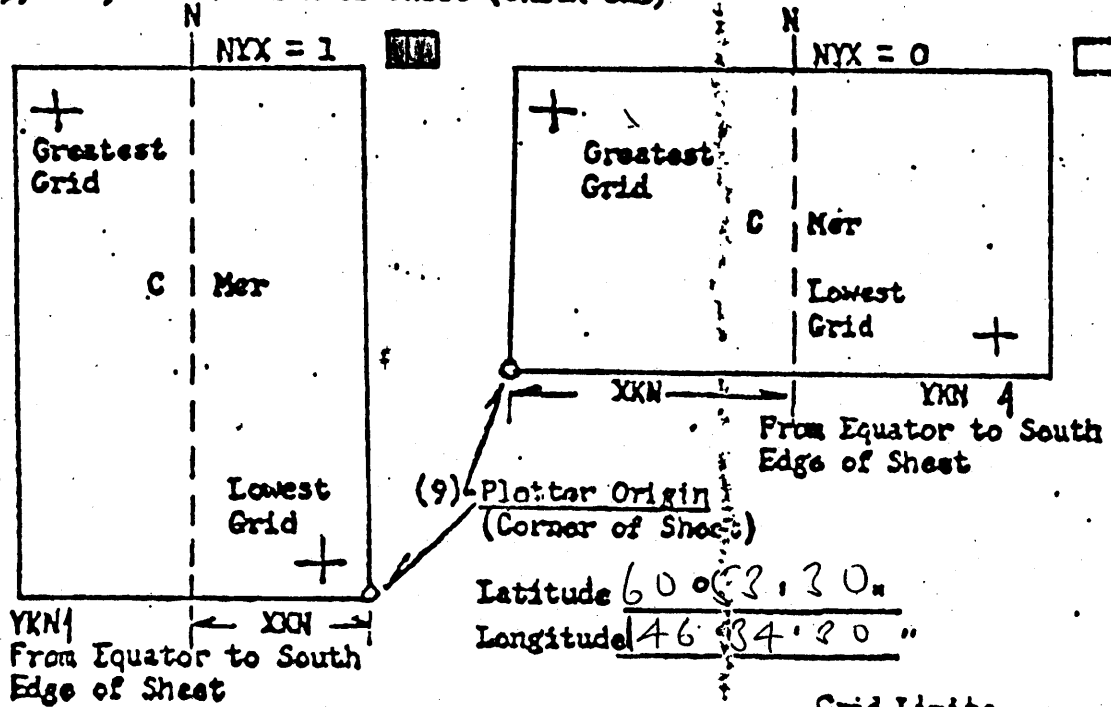
Valdez Arm, Alaska

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

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

FORM # 4  
PARAMETERS FOR DIGITAL COMPUTING  
POLYCONIC PROJECTION

- (1) Project No. 999 (4) Requested by Green  
 (2) H No. 9422 (5) Ship or Office \_\_\_\_\_  
 (3) Field No. 04 20-1-74 (6) Date Required \_\_\_\_\_  
 (7) Visual  Ft.(0) or Fathoms (1)  (8) Electronic  (fill out form #3)  
 (10) XKN (SP 5) Distance from CTR to East Edge (NYX = 1) or West Edge (NYX = 0). (Origin) 9501.4103 Meters  
 (11) YKN (SP 241) Distance from Equator to South Edge of Sheet. (Origin) 6,753,217.582 Meters  
 (12) Central Meridian 146° 45' 00"  
 (13) Survey Scale 1: 200 00  
 (14) Size of Sheet (Check one) 36x60  42x60  36 x 44  
 (15) NYX, Orientation of sheet (Check one)

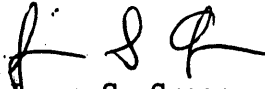


Grid Limits	
(16) Greatest Latitude	<u>61° 06' 00"</u> (Projection Line Interval Page 4 Hydro Manual)
(17) Lowest Latitude	<u>60° 54' 00"</u>
(18) Difference	<u>12' 00"</u>
(21) Greatest Longitude	<u>146° 54' 04"</u>
(22) Lowest Longitude	<u>146° 35' 04"</u>
(23) Difference	<u>19' 00"</u>
(19)	<u>1700 "</u>
(20)	<u>12 YSN</u>
(24)	<u>1,00 "</u>
(25)	<u>19 YSN</u>

APPROVAL SHEET

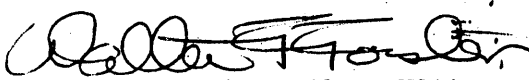
The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report)

Examined and approved,



James S. Green  
Supervisory Cartographic Technician

Approved and forwarded,

 12/74

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



TIDE NOTE

CORRIDOR SURVEY

OPR-999  
PRINCE WILLIAM SOUND  
VALDEZ ARM

SHEET: H-9422, DA-20-1-74

CONTROL GAGE: VALDEZ, ALASKA

PREDICTED TIDES: ROCKY POINT, VALDEZ ARM, *lat. 60°58'*, *long. 46°45'*

TIME OF SURVEY: 000 GMT

LOCAL TIME: ALASKAN DAYLIGHT SAVINGS TIME, +9hrs

Predicted tides of Rocky Point, Valdez Arm, were applied as tide correctors to soundings. These predicted tides are based on Cordova because there are no published predicted tides for the control gage at Valdez, Alaska. These tides were obtained from the PDP8/e computer aboard NOAA Ship FAIRWEATHER, using Program AM 500.

Prior to beginning hydrography, a new ADR gage, tide house, and staff were established in Valdez, Alaska, per Project Instructions OPR-418-74, dated April 1974 and Supplement to Instructions dated 7 May 1974.

GAGE

A Bristol bubbler gage was installed at Rocky Point, Valdez Arm: N. 60°56.8' 146° 45.3' W.. It was installed on 13 May 1974 and removed on 21 May 1974. The gage functioned well and there were no difficulties either with the staff or the gage. The marigram trace was good and no time or height differences were detected.

LEVELS

Five benchmarks were leveled on installation and removal. The leveling confirms that the staff did not move from its position during the survey period.

RECOMMENDATIONS AND REMARKS

A bubbler gage is adequate for less than 30 days. However, if a gage is needed for a month or more, an ADR gage is recommended for installation at Rocky Point.

This gage is located in a sheltered cove and is ideal for any gage installations.

7/10/74

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: May 14. - May 21, 1974

HYDROGRAPHIC SHEET: H9422

OPR: 999

Locality: Prince William Sound

Plane of reference (mean lower low water): 8.8 ft.

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

Remarks: Zone direct.

*James L. Hubbell*  
for Chief, Tides Branch

# GEOGRAPHIC NAMES

Survey No.

H-9422

Name on Survey

On Chart No.  
 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

Name on Survey	A	B	C	D	E	F	G	H	K
✓ GALENA BAY ✓									1
✓ JACK BAY									2
✓ ROCKY POINT ✓									3
✓ POTATO POINT ✓									4
✓ POINT LOWE ✓									5
✓ SAWMILL BAY ✓									6
✓ VALDEZ ARM ✓									7
✓ VALDEZ NARROWS ✓									8
✓ ENTRANCE POINT ✓									9
✓ TONGUE POINT ✓									10
Middle Rock ✓									11
									12
									13
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									21
									22
									23
									24
									25
									26

Approved  
 Chas. E. Harrington  
 Staff Geographer  
 26 Feb. 1975

**HYDROGRAPHIC SURVEY STATISTICS**  
**HYDROGRAPHIC SURVEY NO. H-9422**

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & PNO		1	BOAT SHEETS		1	
DESCRIPTIVE REPORT		1	OVERLAYS		7 <del>X</del>	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			1			
CAHIERS	1	<del>X</del>				
VOLUMES		2				
BOXES						

T-SHEET PRINTS (List)

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				
POSITIONS CHECKED		1225	10	
POSITIONS REVISED		40	2	
DEPTH SOUNDINGS REVISED		925	25	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		0	50	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		1	0	
	TIME (MANHOURS)			
Verification of Control		7	5	
Verification of Positions		38	10	
Verification of Soundings		92	40	
Smooth Sheet Compilation		60	100	
ALL OTHER WORK		2	36	
<b>TOTALS</b>		<b>199</b>	<b>191</b>	

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY <i>[Signature]</i> Howard E. Clark	BEGINNING DATE 6/28/74	ENDING DATE 12/9/74
REVIEW BY J.T. Gallahan	BEGINNING DATE 03-06-75	ENDING DATE 04-30-75

*Sup J.K. Meyer 25 hrs 8/25/75  
Carters 6 9/30/75*

Reg. 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 REQ'D \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

Reg. No. \_\_\_\_\_

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 REQ'D. \_\_\_\_\_ INITIALS \_\_\_\_\_

REMARKS:

H-9422

Information for Future Presurvey Reviews

This survey covers Valdez Arm between Rocky Point and Entrance Point. The bottom is stable. Adverse weather and sea conditions may hinder survey operations in this area.

With the city of Valdez as the southern terminus of the Trans-Alaskan oil pipeline, shipping should increase significantly in this area.

Resurvey Cycle Information

<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 (Years)</u>
605	1465	1	1	50
610	1465	1	1	50

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

REGISTRY NO. H-9422

FIELD NO. DA-20-1-74

Alaska, Prince William Sound, Upper Portion of Valdez Arm

SURVEYED: May 15 - 21, 1974

SCALE: 1:20,000

PROJECT NO.: OPR-999

SOUNDINGS: Ross 5000 Digital  
Depth Recorder

CONTROL: Mini-Ranger  
(Range-Range)

Chief of Party .....	M. H. Fleming
Surveyed by .....	J. J. Kapler
.....	J. Sarb
.....	R. West
Automated Plot by .....	Gerber Digital Plotter (PMC)
Verified by .....	H. E. Clark
Reviewed by .....	J. T. Gallahan
.....	Date: April 30, 1975
Inspected by .....	G. K. Myers

1. Control and Shoreline

The source of the control is adequately covered in section E of the Descriptive Report.

The shoreline and other topographic information originating with the following class III surveys, T-12991 (1965-72), T-12992 (1965), T-12994 (1965), and T-00264 (1972) was left in pencil on the present navigable area survey.

A small section of the shoreline north of latitude 61°04', which originates with class I topographic survey T-12655 (1964-67), was inked on the present survey. Low water detail inked on the boat sheet has been inked on the smooth sheet.

2. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves were adequately delineated. Depth curves near Rocky Point daybeacon, Entrance Point daybeacon, and the areas on the east and west coasts of Valdez Arm should be better delineated with the inshore hydrography of OPR-452.

C. The development of the bottom configuration and investigation of least depths are considered adequate.

### 3. Condition of the Survey

The sounding records, smooth plotting, Descriptive Report, and printouts are adequate and conform to the requirements of the Hydrographic Manual and the Instruction Manual - Automated Hydrographic Surveys.

### 4. Junctions

Adequate junctions were effected with H-9388(1973) on the south and H-8900(1966) on the north. There are no contemporary junctional surveys in the area of Galena Bay and Jack Bay on the east and Sawmill Bay on the west. However, present survey depths are in general harmony with charted depths in these areas

### 5. Comparison with Prior Surveys

H-2627	(1902)	1:20,000
H-2628	(1902)	1:20,000

The reconnaissance nature of the prior surveys precludes an adequate detailed comparison between prior and present depths. However, there is evidence that the Alaskan earthquake of March 27, 1964, caused little change to the area. The present survey is adequate to supersede these prior surveys within the common area.

### 6. Comparison with Chart 8519 (latest print date May 11, 1974)

#### A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration and with other miscellaneous data.

The 3-fathom sounding charted at lat.  $60^{\circ}57.63'$ , long.  $146^{\circ}52.50'$  originates with Chart Letter 469 of 1947. An investigation of this shoal by divers (detached positions 9006-9014) revealed a least depth of 4.1 fathoms. Inasmuch as lesser depths fall in the common area of H-9388, this sounding is not recorded on the present survey. ✓ 11/17/77

A 43-fathom sounding charted at lat.  $61^{\circ}03.21'$ , long.  $146^{\circ}41.12'$  originates with Chart Letter 193 of 1972, a bathymetric survey by the Alyeska Pipeline Company. The charted sounding from the above source is superseded by the present survey. ✓ 11/17/77



The present survey is adequate to supersede the charted information within the common area.

B. Aids to Navigation

The charted positions of Rocky Point daybeacon, Entrance Point daybeacon and Middle Rock light agree with the present survey positions and adequately serve the purpose intended

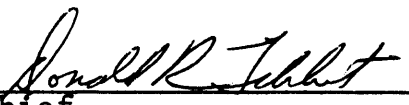
7. Compliance with Instructions

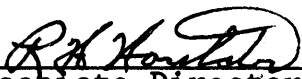
This survey adequately complies with the Project Instructions.

8. Additional Field Work

This is a good basic survey and no additional field work is recommended.

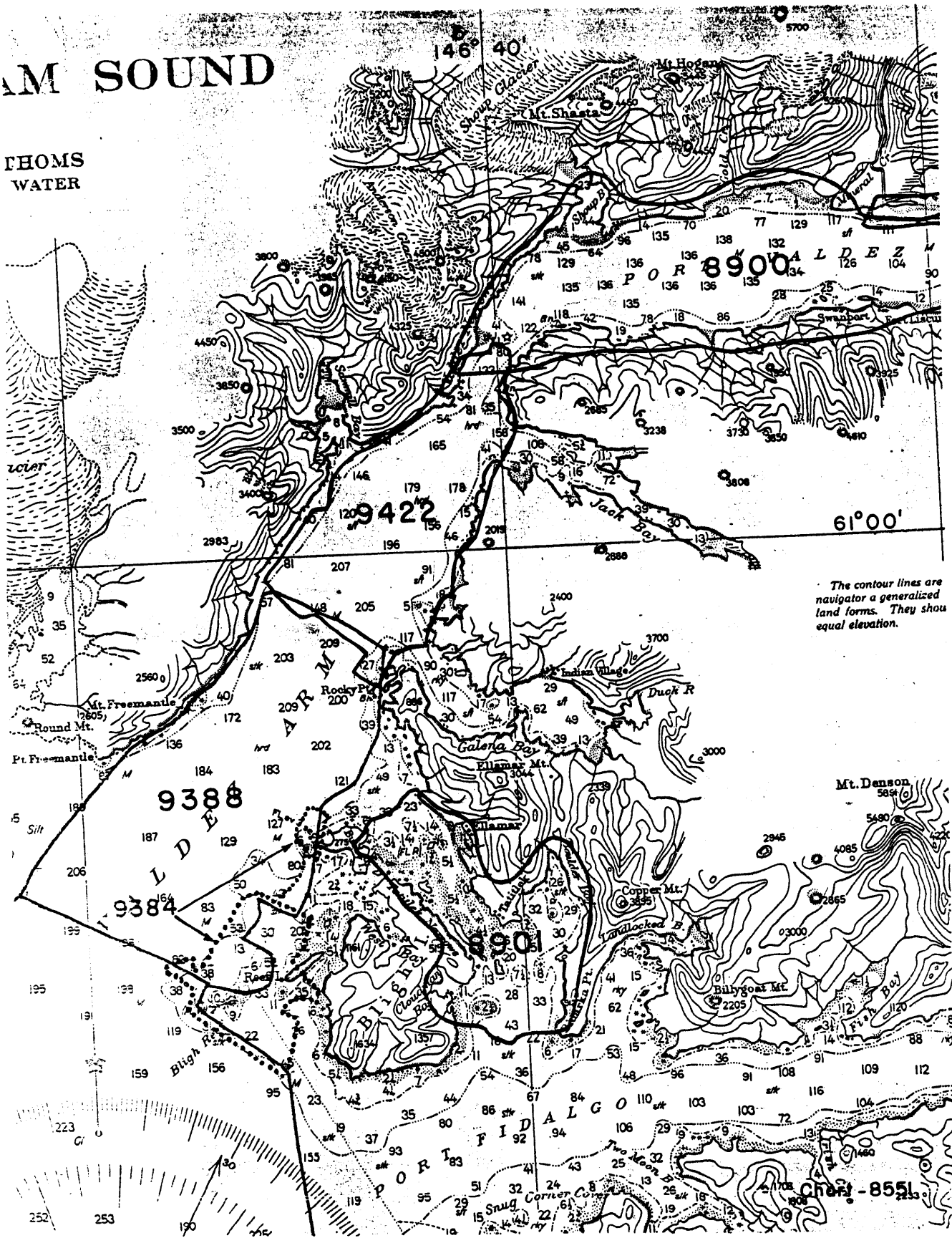
Examined and Approved:

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

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

# AM SOUND

THOMS  
WATER



The contour lines are navigational generalized land forms. They show equal elevation.

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9422

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	4/14/74	B. Mastey	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Examined for critical corrections only. Revised curves, snags, and rocks.</i>
8551	6/25/75	T. W. Alexander	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Exam. for critical corr's. Revised snags, curves and added rocks. <del>Added</del> <del>to</del> <del>chart</del> <del>8519.</del> before rocks washed.</i>
8519	1/26/75	T. W. Alexander	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Reapplied entire survey due to faulty tide corr's. (soundings, curves, rocks washed)</i>
8551 <del>8519</del>	11/21/75	N. J. Borawski	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>App'd Soundings Thru New Selection Made on Cht. 8519, Revised Curves Directly From H-Survey!</i>
8519	5/27/77	C. J. Forber	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>No additional corrections required.</i>
8519	6/15/77	N. J. Borawski	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Fully App'd</i>
8551	8/26/77	M. J. Friese	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i>Fully app'd throughout the common area thru Chart 8519 DWG. A.P. #16</i>
16707	10/28/77	Rector	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. <i> </i>
			<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No.
			<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No.