

9684

Diag. Cht. No. 8556

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. .... RA-10-1-77  
Office No..... H-9684

LOCALITY

State ..... Alaska  
General Locality Shelikof Strait  
Locality ..... Inner Malina and Malka Bays

19 77

CHIEF OF PARTY  
James P. Randall

LIBRARY & ARCHIVES

DATE ..... September 5, 1978

9684

Area 6  
Cht  
116604  
116580  
116594

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTER NO.  H-9684
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**HYDROGRAPHIC TITLE SHEET**

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.	FIELD NO. RA-10-1-77
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State Alaska

General locality Shelikof Strait

Locality Inner Malina and Malka Bays

Scale 1:10,000 Date of survey 15 June - 30 June 1977

Instructions dated 2 February 1977 Project No. OPR-478-RA-77

Vessel SHIP RAINIER  
Launches RA-6 (2126) and RA-5 (2125)

Chief of party CAPT James P. Randall

Surveyed by LCDR L.A. Lapine, LT C.P. Berg, LCDR T.W. Richards

Soundings taken by echo sounder, ~~and lead, etc.~~ Ross Finesline Fathometer

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Positions verified XXXXXXXXXX by Thelma O. Jones Automated plot by PMC Xynetics Plotter

Soundings Verification by Thelma O. Jones

Soundings in and tenths fathoms ~~feet~~ at ~~MLLW~~ MLLW

REMARKS: Time meridian: 0° GMT

"Miscellaneous data filed with field records"

Applied to SLD's  
1-9-79 WJD

A. PROJECT

This survey was accomplished in accordance with PROJECT INSTRUCTIONS OPR-478-RA-77, Shelikof Strait, Alaska, dated 2 February 1977; Change No. 1: Amendment to Instructions, dated 31 March 1977; Change No. 2: Supplement to Instructions, dated 28 June 1977. ✓

B. AREA SURVEYED

The area surveyed was Malina Bay and Malka Bay on the west side of Afognak Island, Alaska, beginning at latitude  $58^{\circ} 12' 30''$  N where the survey junctions with H-9369 (RA-20-5-73) and extends to the head of navigation in both bays. Two shoals in the northwestern part of the junction area that had not been adequately investigated in 1973 were developed. ✓

The survey was conducted between 15 June 1977 and ~~29~~<sup>30</sup> June 1977.

C. SOUNDING VESSEL

The sounding vessel for the survey was NOAA Ship RAINIER's aluminum launch RA-6 (2126). The data acquisition system aboard RA-6 consisted of a standard hydroplot controller with a remote thumbwheel option, Digital PDP 8/e computer, Ross Fineline Model 4000 Fathometer and two Teledyne-Gurley Digital Sextants. The digital sextants' performance exceeded all expectations and contributed significantly to the speed and accuracy of the survey. See Section P for more comments on digital sextants. No unusual vessel configurations were used nor problems encountered which might have affected the accuracy of the survey. ✓

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

All echo soundings obtained during this survey were taken with the Ross Fineline Fathometer system including the following components: Ross Model 4000 Transceiver S/N 1042, Ross Model 5000 Analog Recorder S/N 1070, Ross Model 6000 Digitizer S/N 1041, and a 100 kHz transducer.

Sound velocity corrections for echo soundings were derived from analysis of sea water samples obtained by a Nansen cast (see H.O. 607, Instruction Manual for Obtaining Oceanographic Data, Third Edition, U.S. Naval Oceanographic Office, 1968). A cast was taken at 0940 GMT, 28 June 1977 at Latitude  $58^{\circ} 11' 27''$  N, Longitude  $152^{\circ} 57' 45''$  W. This site was centrally located in the H-9684 survey limits. Samples from the cast were analysed for salinity using standard laboratory procedures, (See H.O. 607). The salinometer used for this analysis was a Bisset/Berman Model 6210, S/N 1040, which was last calibrated ✓

in April, 1977 by the Northwest Regional Calibration Center, Bellevue, Washington. Data from the Nansen cast and salinity measurement was input to computer program RK 530 - Velocity Correction Computations, and run on the RAINIER PDP 8/e digital computer, S/N 1015. Output from this program was used to plot a graph of "Actual Depth Minus Velocity Correction versus Velocity Correction." Preliminary and final velocity correctors were scaled from this curve using standard procedures (see Provisional Hydrographic Manual, Fourth Edition). Preliminary correctors were determined aboard RAINIER shortly after data from the Nansen cast had been processed, and these correctors were applied to soundings on smooth field sheets. Final correctors were calculated at the completion of the survey and submitted to PMC with other data. Since only one Nansen cast was taken for this project, the preliminary and final velocity correctors were identical except for some minor differences in scaling depth values. ✓

Corrections for launch draft and residual instrument errors were determined from standard bar checks (see Provisional Hydrographic Manual, Fourth Edition). Bar checks were performed each day prior to beginning of and at completion of sounding operations. The first bar check was taken at one fathom increments to a depth of seven fathoms, and the second check was performed similarly to a depth of three fathoms. Graduations on bar check hand lines were compared with steel measuring tapes prior to beginning of and at completion of the hydrographic operations, and were found to be accurate. ✓

Fathometer values of bar depth were abstracted at the end of each day. These statistics were scanned at completion of the survey and since no discernable changes were observed, bar check values were averaged for the survey. The mean values were subtracted from the corresponding true bar depths to obtain a series of "bar check correctors." Bar check correctors were co-plotted on the sound velocity correction curve. From these combined plots, the mean horizontal distances between bar and velocity correction curves were determined. These values represent the computed corrections for launch draft and residual instrument errors. However, since these correction values were not available until completion of the survey, an estimated launch draft and residual instrument error correction of 0.3 fathoms was used for plotting of boat, semi-smooth, and smooth field sheets. Computed launch draft and residual instrument error corrections were supplied to PMC in TC/TI tapes that accompanied other survey data. ✓

Settlement and squat of the survey launch was not determined during this survey. However, the settlement and squat of launch RA-3 was measured during a previous survey (OPR-471-RA-76) by the following procedure. A self-leveling Zeiss Ni 2 level was set up on stable ground and a tide staff was positioned vertically on the launch deck. ✓

over the transducer position. The launch was run toward the level instrument at various speeds and the staff reading at each pass was recorded. No appreciable change in staff reading was noted during this test and consequently the settlement and squat of launch RA-3 was assumed to be negligible. Launch RA-6 (2126) has not as yet been tested for settlement and squat, but since it is of nearly identical design to launch RA-3 its settlement and squat was also assumed to be negligible. Thus, no settlement and squat corrections were applied to any of the soundings obtained in this survey. The maximum "on-line" speed used in this survey was 1800 rpm. ✓

Launch RA-6 utilizes two modes for recording soundings. The first is a digital mode in which depth is intermittently sampled and recorded on teletype printout and on punch tape. The second is an analog mode in which depth is continuously sampled and recorded on fathograms. Digital data is used for basic compilation of field sheets with corrections and supplemental information taken from the analog record. The major error sources associated with each sounding system and methods used to compensate for these errors are discussed below. ✓

A "blanking" function is utilized in the digitizer system to prevent the logging of soundings from above a pre-set depth, i.e., spurious returns from fish, seaweed, etc. During survey operations, the blanking depth was set to a value slightly shoaler than the shoalest bottom depth expected in the immediate area and was adjusted as the depth changed. When a bottom depth shoaler than the blanking depth was encountered, missed digital depths were replaced with corresponding analog depths. ✓

During hydrography, the analog initial would occasionally wander. Soundings were corrected for these initial errors during check scanning.

Phase error is caused by improper internal adjustment of the analog recorder and manifests itself by differences between analog and digital depths. The presence of phase error is determined by introducing an electronically simulated exact depth into the analog system and comparing the resultant analog value with the exact value. During hydrography phase error of the analog system was frequently monitored and the analog recorder was adjusted so as to have no phase errors at the mean sounding depth. Consequently, no corrections for phase were needed nor applied. ✓

The trace taken during heavy seas and/or swells, were scaled by assuming the bottom to be located one third of a trace-width from the top of the trace. This procedure yielded depth values that were shoaler or more conservative than the apparent depths. ✓

Lead line soundings were made on all shoals having depths of seven fathoms or less. The lead line markings were compared with a steel measuring tape before and after the survey and found to be accurate. Since the records of lead line soundings were interspersed with fathometer soundings, special care was taken during processing to prevent the application of sound velocity corrections to lead line depths. Least depths found by hand line were logged collectively on a single punch tape and referred to Velocity Correction Table 2, which contains zero corrections for all depths. ✓

#### E. HYDROGRAPHIC SHEETS

The modified Transverse Mercator Projection and all soundings were plotted by RAINIER personnel using two Digital PDP 8/e Complot systems aboard the ship. Equipment included two Digital PDP 8/e computers, serial numbers 11430 and 01015, and two Complot plotters, Model DP-3, serial numbers 5848-18 and 5445-7. ✓

Rough plots were made daily and a semi-smooth plot was performed as work progressed. To insure against the possibility of accepting bad visual fixes a daily position plot was made and examined prior to generating the semi-smooth sheet. All sheets were standard sizes and none were skewed. ✓

The smooth field sheet was begun on 12 August 1977 and completed on 13 August 1977. No discernable distortion was detected on the mylar smooth sheet. Preliminary velocity correctors, TRA and predicted tides were applied to all fathometer soundings on the smooth sheet. All data was transferred to PMC for verification.

#### F. CONTROL STATIONS

Three point digital sextant fixes using photogrammetrically located signals, subpointed signals off of photogrammetrically located stations and resected hydrographic signals were used to control the position of the soundings taken during the survey. There was no geodetic control within the area of this survey. The configuration of the survey area was not amenable to electronic control. ✓

Jumps in vessel position while on line necessitated redetermination of the geographic position for six photogrammetrically located stations. Geographic positions for signal numbers 345, 346, 349, and 362 were redetermined by theodolite resection using a Wild T-2 theodolite. Geographic positions for signal numbers 318 and 391 were redetermined by sextant resection. Geographic positions for signal numbers 300, 375, 398, and 399 were determined by the method of subpointing from known photogrammetrically located signals. The geographic position for ✓

hydrographic station 390 was determined by sextant resection from photogrammetrically located stations.

The Master Station List located in the separates following the text of this report gives the signal number, geographic position and method used for the location of all signals. For more complete documentation on computations used see Field Edit reports for TP-00294, OPR-478-RA-77, TP-00295, OPR-478-RA-77, and TP-00301, OPR-478-RA-77. ✓

#### G. HYDROGRAPHIC POSITION CONTROL

All positions on this survey were controlled by visual means, positions being determined by three-point sextant fixes.

All positions taken used Teledyne Digital Sextants (left angle S/N TG-0318; right angle S/N TG-0320). On 24 June (after Fix #6358) the right sextant was damaged and subsequently replaced by Teledyne Digital Sextant S/N TG-0319. The index correction of both sextants was checked frequently and noted on the raw data printout. The index correction was checked by zeroing the sextants and annotating the digital readouts in half minutes. This was done at the beginning of each day, at the end of each series of lines and whenever there was a change in angles. Whenever an error of more than 1.5 minutes was noted, the sextants were re-zeroed. ✓

Visual signals used for this survey included photo-picked signals and hydro signals resected by both sextant and Wild T-2 as stated in Section F of this report.

No unusual atmospheric conditions or weak geometric configurations were encountered that might have degraded the positional accuracy of soundings taken during the survey.

#### H. SHORELINE

The final shoreline on the 1:10,000 scale smooth sheet was transferred from field edited 1:20,000 scale National Ocean Survey shoreline manuscripts TP-00301, (field edit performed concurrently with survey) via a pantograph by RAINIER personnel. One ~~islet~~ <sup>rock</sup> at latitude  $58^{\circ} 10' 20''$  N, longitude  $152^{\circ} 53' 42''$  W was deleted, while one rock spit at latitude  $58^{\circ} 10' 20''$  N, longitude  $152^{\circ} 53' 42''$  W was added to both manuscript and smooth field sheet. Both items were verified by the field editor. Because so many rocks are contained on the smooth field sheet a table was used to summarize all pertinent information. \* Table 1 following this section contains field edit and launch personnel investigation information on numerous rocks. The major sources for these rocks were the 1908 survey H-2973, published charts and newly found by field edit. For more detail on shoreline see the separate Field Edit Reports for OPR-478-RA-77, H-9684. ✓

\* Filed with Field records.

## I. CROSSLINES

Approximately 14.4 nautical miles of crosslines were run on H-9684 which represents 10.0 percent of the mainscheme mileage. Most of the area surveyed in the two bays had a regular bottom, and as a result 85 percent of the crossings agreed exactly to the fathom, while another 8 percent agreed within one fathom. The remaining 7 percent of the crossings disagreed by no more than two fathoms and in these cases the depth was changing rapidly and the difference was due more to slight position differences between soundings compared rather than due to sounding error. All crosslines are plotted in red ink. Survey launch RA-6 (2126) was used exclusively for all mainscheme and crossline soundings.

## J. JUNCTIONS

The hydrographic survey for H-9684, (RA-10-1-77) junctions only with survey H-9369, (RA-20-5-73) and this junction occurs along latitude  $58^{\circ} 12' 10.0''$  N. In the junction area 80 soundings from the 1973 survey (H-9369) were compared; 76 agreed within one fathom, while 4 soundings differed by more than one fathom. The difference in soundings in these four cases possibly resulted from small position errors which occurred during hand transfer of the earlier soundings onto the H-9684 survey sheet in areas of a rapidly changing bottom.

Two shoals in the junction area were developed to supplement 1973 work. The first shoal development at latitude  $58^{\circ} 12' 33.0''$  N, longitude  $153^{\circ} 02' 27.3''$  W was determined to have a least depth of 11.8 fathoms. The shoal was investigated by running 50 meter spaced lines North - South in the area of the shoal. A crossline was run through the area to confirm the 50 meter North - South lines. The least depth of 11.8 fathoms is corrected for ~~predicted~~<sup>actual</sup> tides, sound velocity and TRA of the sounding vessel. (See Table 2 for more details).

The second shoal contained three peaks, and was developed in the following manner: The approximate position of each peak was scaled off the boat sheet and an anchored buoy deployed at that location. A series of 20 meter (maximum) spaced lines, first run North - South then East - West, were used to develop the area and determine the exact geographic location of each peak. A hand line was used to verify the least fathometer depth and a standard hydrographic sextant was used to obtain a check fix angle at each location. Table 2 following this section contains a list of geographic positions and reduced least depths for the four peaks in the two foul areas.



TABLE 2: SHOAL AREA INVESTIGATIONS

Investigation Position #	Latitude North	Longitude West	Fatho. Depth Reduced	Lead Line Depth Reduced
<del>668906</del> 7311	58/12/33.0	153/02/27.3	11.8	Not Taken
7300	58/12/19.4	153/02/02.8	4. <del>4</del> <sup>6</sup>	4.7
<sup>5</sup> 7302	58/12/21.8	153/02/01.4	4. <del>2</del> <sup>3</sup>	4.6
<sup>6</sup> 7308	58/12/24.9	153/01/56.0	5. <del>8</del> <sup>8</sup>	6.2

All fathometer depths values are in fathoms and tenths of fathoms and have been corrected for ~~predicted~~<sup>actual</sup> tides, sound velocity, and TRA for the sounding vessel. Lead line depths were corrected for predicted tides.

#### K. COMPARISON WITH PRIOR SURVEYS

Comparison of the present survey with H-2973, 1908, 1:20,000 showed very good agreement throughout. Prior survey soundings, plotted in purple on the boat sheet, were distributed throughout the survey area. Soundings in Malina Bay on all National Ocean Survey charts were derived from the 1908 survey and are discussed in Section L of this report. ✓

#### Presurvey Review Item Investigation

*dashed circle*  
Presurvey Review Item #1, ten fathom shoal, charted at latitude 58° 11' 32.33" N, longitude 153° 00' 15.13" W was developed using 40 meter spaced lines, (positions 6644-6647, 7053-7056). A crossline, (positions 7083-7090) was also run through this area to insure that the mainscheme lines were valid. A 9.~~2~~<sup>6</sup> fathom sounding (7 seconds after position #6856) at latitude 58° 11' 30.9" N, longitude 153° 00' 12.0" W superseded the 10 fathom shoal (which did actually exist) as being the shoalest depth in the area. The least depth of 9.~~2~~<sup>6</sup> fathoms was corrected for ~~predicted~~<sup>actual</sup> tides, sound velocity and TRA of the sounding vessel. A lead line was not used in this investigation. It is recommended that the ~~ten fathom sounding be retained on future charts along with the addition of the 9.~~2~~<sup>6</sup> fathom sounding be charted.~~ ✓

Origin  
H-2973  
(1908)

*dashed circle*  
Presurvey Review Item #2, 1½ fathom shoal, charted at latitude 58° 10' 20.24" N, longitude 152° 54' 39.55" W was developed using 40 meter spaced lines (positions #6736-6738, 7251-7255, 6746-6750). A crossline (positions 7267-7270) was also run through this area to insure that the mainscheme lines were valid. A depth of 2.~~4~~<sup>6</sup> fathoms (4 seconds after the 3rd out of position #7251) which was corrected for predicted tides, sound velocity and TRA of the vessel was found to be the shoalest depth in the area encountered while crossing a very gently sloping sand bar. ✓

See Verifications  
Report

Origin H-2973 (1908)

A lead line was not used in conjunction with this investigation because no peaks were found in the vicinity of the presurvey review item. It is recommended that the  $1\frac{1}{4}$  fathom sounding be removed from future charts and that mainscheme depths be used. *concur*

The location of rocks and other shoreline features as discussed in Section H of this report should be used on future charts in lieu of those from the 1908 survey. Finally, it is recommended that all present survey soundings supersede prior survey soundings for charting.

#### L. COMPARISON WITH THE CHART

There are three charts which cover the Malina Bay area: 16594 (8534), scale 1:78,000; 16604 (8533), scale 1:78,000 and 16580 (8556), scale 1:350,000.

The largest scale chart used during the Malina Bay survey was 16604 (formerly 8533) at a scale of 1:78,000. The chart is the 7th Edition and dated 26 June 1976. This chart shows a total of fifty-two soundings in the RA-10-1-77 survey area. When compared to the new boat sheet forty soundings either agreed exactly or differed only by one fathom and the remaining twelve soundings differed by less than  $\pm$  two fathoms.

The charted foul areas, shallow areas along the shore, navigational limits and small islands in Malina and Malka Bay were in agreement with current conditions. Retention of these features on future charts is advised. See Field Edit Reports for TP-00294, TP-00295 and TP-00301, OPR-478-RA-77 for additional information. Existence and location of rocks along the shoreline in both bays, discussed in Section H of this report.

Chart 16594 (formerly 8534) is the same scale as chart 16604 and contains exactly the same information of Malina Bay. Chart 16580 (formerly 8556) is such a small scale, 1:350,000, that it would not be used for navigational purposes in the Malina Bay area.

It is recommended that a new chart of the Malina Bay area be produced at a scale of 1:20,000. A chart of this scale would be of considerable value to the numerous fishermen working in the bays along Kodiak and Afognak Islands. It would also be of value to include a note on any chart covering Malina Bay that it is an excellent storm refuge area and would offer a good anchorage under all conditions.

#### M. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting. All fathograms were scanned for peaks and appropriate changes

made to the records where necessary. Since this represents the first modern extensive hydrographic survey in Malina and Malka Bay south of latitude  $58^{\circ} 12' 15''$  N it should provide new, valuable information for those who may want to navigate in the area. ✓

N. AIDS TO NAVIGATION

There were no floating or fixed aids to navigation on this survey nor are any recommended.

O. STATISTICS

During the hydrographic survey of sheet H-9684 a total of 1541 positions were obtained over 143.7 nautical miles of hydrography in an area of 4.0 square nautical miles.

There were three tide stations in the immediate area of the survey. A tide staff was located at the head of Malina Bay and another at the head of Malka Bay. A tide gage and staff were located on a small island in Malina Bay at latitude  $58^{\circ} 11.6'$  N, longitude  $152^{\circ} 59.3'$  W. The specifics of these tide stations can be found in the tide note in the separates following the text. ✓

There were forty-one bottom samples taken over the project area and their specifics may be found in the copy of NOAA form 75-44 appended to this report.

MILEAGE ABSTRACT

<u>Vessel</u>	<u>L.N.M.</u>	<u>S.N.M.</u>	<u>No. of Positions</u>	<u>Bottom Samples</u>
Launch RA-6 (2126)	143.7	4.0	1500	0
Launch RA-5 (2125)	0	0	41	41

P. MISCELLANEOUS

The use of digital sextants for hydrographic surveys and the "Red Tide" found during the survey are mentioned in this section because of their general nature, however, both are of importance to Malina and Malka Bays. ✓

The configuration of Malina Bay would have made the use of electronic navigation control difficult if not impossible. The use of digital sextants, however, allowed the survey not only to be completed rapidly but have proved themselves an indispensable tool for the hydrographer.

Not since the advent of digital loggers has a piece of equipment been so welcome aboard a survey launch. The instrument is very easy to use, its optics are far superior to the manual hydrographic sextant, and the fact that the hydrographer now has a method of keeping the launch on line (through use of the steering indicator) makes for neat and accurate surveys. ✓

"Red Tide" was seen in Malina and Malka Bays almost every day during the survey. Since it has a very detrimental effect on shellfish, making them highly toxic, it was felt reference should be made at this time. The Alaska Fish and Game Commission in Kodiak, Alaska was informed verbally.

Q. RECOMMENDATIONS

The survey is complete and adequate to supercede all previous hydrography in the area. No additional field work or unusual conditions exist which might affect the nature of the bay in the near future. A 1:20,000 scale chart of the area might be useful as it is a very safe anchorage for vessels during storms. ✓

R. AUTOMATED DATA PROCESSING

Data aquisition and processing were accomplished per instructions in the Provisional Hydrographic Manual, Manual Automated Hydrographic Surveys, and the PMC OPORDER. ✓

Soundings and positions were taken by the Hydroplot system, using RK 171, RK 175, and RK 176. There are daily master tapes and corresponding corrector tapes which include the launches TRA. Velocity corrections were generated from Nansen Cast data. The following is a list of all computer programs used for this sheet:

<u>PDP 8/e</u>	<u>VERSION DATE</u>
RK 171 Visual Hydrolog Loader	05/18/76
RK 175 Visual Hydrolog	05/03/76
RK 176 Visual Hydrolog Restarter	05/01/74
RK 201 Grid, Signal and Lattice Plot	07/12/75
RK 212 Visual Station Table Load and Plot	04/01/74
RK 215 Visual Station and Sounding Plot	08/16/74
RK 300 Utility Computations	02/10/76
RK 407 Geodetic Inverse/Direct	10/23/76
RK 409 Geodetic Utility Package	09/05/73
RK 500 Predicted Tide Generator	11/10/72
RK 530 Layer Corrections for Velocity	05/10/76
RK 602 Line Oriented Editor - ELINORE	05/22/74

S. REFERENCES TO REPORTS

Report on Corrections to Echo Soundings, OPR-478-RA-77

Field Edit Report, Job 7071, OPR-478-RA-77, TP-00294

Field Edit Report, Job 7071, OPR-478-RA-77, TP-00295

Field Edit Report, Job 7071, OPR-478-RA-77, TP-00301

Respectfully submitted,



Douglas G. Brockhouse, ENS, NOAA

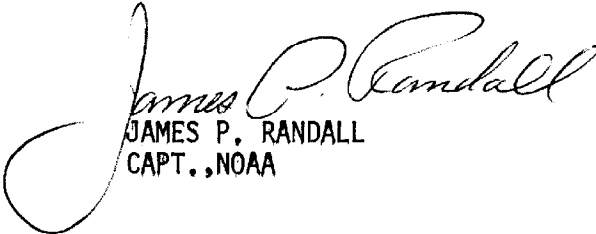
APPROVAL SHEET  
DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY

H-9684

RA-10-1-77

In producing this sheet, standard procedures were observed in accordance with the Provisional Hydrographic Manual and the PMC OPORDER. The data was examined by me daily during the execution of the survey.

The boatsheet and the accompanying records have been examined and are complete and adequate for charting purposes and are approved.

  
JAMES P. RANDALL  
CAPT., NOAA

MASTER STATION LIST  
RA-10-1-77(H-9684)  
SHELIKOF STRAIT, ALASKA

## FINAL VERSION

300 4	58 11	51092	152 58	46480	252 0000	000000	
/HYDRO	SIGNAL					TP-00295	
301 6	58 11	58116	153 00	55883	243 0000	000000	
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302 3	58 11	52983	153 00	48145	243 0000	000000	
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355	5	58	10	04661	152	53	48196	243	0000	000000	
/PHOTO SIGNAL										TP-00295	



356	2	58	10	04072	152	53	03988	243	0000	000000	TP-00295
/PHOTO SIGNAL											
359	2	58	10	33840	152	54	24218	243	0000	000000	TP-00295
/PHOTO SIGNAL											
361	4	58	10	46080	152	54	57500	243	0000	000000	TP-00295
/PHOTO SIGNAL											
362	4	58	11	09238	152	55	11026	252	0000	000000	TP-00295
/HYDRO SIGNAL											
363	4	58	11	31639	152	55	27674	243	0000	000000	TP-00295
/PHOTO SIGNAL											
364	2	58	11	40452	152	57	19513	243	0000	000000	TP-00295
/PHOTO SIGNAL											
366	2	58	11	56219	152	58	19250	243	0000	000000	TP-00295
/PHOTO SIGNAL											
367	2	58	12	05236	152	58	51831	243	0000	000000	TP-00295
/PHOTO SIGNAL											
368	2	58	12	11341	152	59	33055	243	0000	000000	TP-00295
/PHOTO SIGNAL											
369	2	58	12	27295	153	00	07716	243	0000	000000	TP-00295
/PHOTO SIGNAL											
370	6	58	12	09444	153	01	50337	243	0000	000000	TP-00294
/PHOTO SIGNAL											
371	4	58	12	03502	153	00	25971	252	0000	000000	TP-00294
/HYDRO SIGNAL											
372	4	58	12	42563	153	00	17082	243	0000	000000	TP-00294
/PHOTO SIGNAL											
373	4	58	13	25087	153	00	50916	243	0000	000000	TP-00294
/PHOTO SIGNAL											
374	2	58	11	41661	152	57	37481	243	0000	000000	TP-00295
/PHOTO SIGNAL											
375	5	58	11	28178	152	58	19218	252	0000	000000	TP-00295
/HYDRO SIGNAL											



ASCII SIGNAL TAPE LISTING  
RA-10-1-77(H-9684)

## FINAL VERSION

300	4	58	11	51092	152	58	46480	252	0000	000000
301	6	58	11	58116	153	00	55883	243	0000	000000
302	3	58	11	52983	153	00	48145	243	0000	000000
303	3	58	11	46412	153	00	41925	243	0000	000000
304	4	58	11	32589	153	00	35571	243	0000	000000
305	3	58	11	21193	153	00	26959	243	0000	000000
306	5	58	11	08116	153	00	23802	243	0000	000000
308	3	58	10	45097	153	00	08100	243	0000	000000
310	6	58	10	20831	152	59	53866	243	0000	000000
312	4	58	10	22143	152	59	28178	243	0000	000000
313	4	58	10	36852	152	59	32509	243	0000	000000
315	5	58	11	38850	152	59	24595	243	0000	000000
318	7	58	11	29958	152	59	37859	252	0000	000000
321	4	58	11	12534	152	59	53492	243	0000	000000
323	4	58	10	59806	152	59	47458	243	0000	000000
329	6	58	11	35479	152	59	07337	243	0000	000000
330	5	58	11	43824	152	59	10900	243	0000	000000
331	7	58	11	46235	152	59	10429	243	0000	000000
336	6	58	11	36170	152	58	48016	243	0000	000000
340	5	58	11	27159	152	58	18496	243	0000	000000
341	5	58	12	04044	153	00	02513	243	0000	000000
344	0	58	11	47398	152	59	51423	243	0000	000000
345	5	58	10	59055	152	58	01433	243	0000	000000
346	5	58	10	13571	152	54	21503	252	0000	000000
348	5	58	10	34428	152	56	50481	243	0000	000000
349	5	58	10	28500	152	56	13317	252	0000	000000
352	4	58	10	01522	152	54	49438	243	0000	000000
354	4	58	10	11086	152	54	06698	243	0000	000000
355	5	58	10	04661	152	53	48196	243	0000	000000
356	2	58	10	04072	152	53	03988	243	0000	000000
359	2	58	10	33840	152	54	24218	243	0000	000000
361	4	58	10	46080	152	54	57500	243	0000	000000
362	4	58	11	09238	152	55	11026	252	0000	000000
363	4	58	11	31639	152	55	27674	243	0000	000000
364	2	58	11	40452	152	57	19513	243	0000	000000
366	2	58	11	56219	152	58	19250	243	0000	000000
367	2	58	12	05236	152	58	51831	243	0000	000000
368	2	58	12	11341	152	59	33055	243	0000	000000
369	2	58	12	27295	153	00	07716	243	0000	000000
370	6	58	12	09444	153	01	50337	243	0000	000000
371	4	58	12	03502	153	00	25971	252	0000	000000
372	4	58	12	42563	153	00	17082	243	0000	000000

373	4	58	13	25087	153	00	50916	243	0000	000000
374	4	58	11	41661	152	57	37481	243	0000	000000
375	4	58	11	28178	152	58	19218	252	0000	000000
388	4	58	11	49638	153	00	00732	243	0000	000000
390	1	58	10	39986	152	54	48956	252	0000	000000
391	2	58	10	19163	152	53	41091	252	0000	000000
392	4	58	10	05986	152	52	41333	243	0000	000000
393	4	58	09	51302	152	52	53810	243	0000	000000
394	4	58	10	04056	152	53	33083	243	0000	000000
395	4	58	10	24063	153	00	13921	243	0000	000000
396	4	58	10	13274	152	59	48294	243	0000	000000
398	4	58	10	22317	152	59	27726	252	0000	000000
399	4	58	10	05851	152	59	38356	252	0000	000000

VELOCITY CORRECTOR TAPE LISTING  
RA-10-1-77 (H-9684)

## TABLE NO. 3

LAUNCH - 2126(RA-6)

SCALE - FATHOMS

000032 0 0000 0003 001 212600 009684

000177 0 0001

000338 0 0002

000492 0 0003

000637 0 0004

999999 0 0005

## TABLE NO. 4

LAUNCH - 2126(RA-6)

LEADLINE - D.P.S ONLY

SCALE - FATHOMS

000200 0 0000 0004 001 212600 009684

999999 0 0001

## TABLE NO. 5

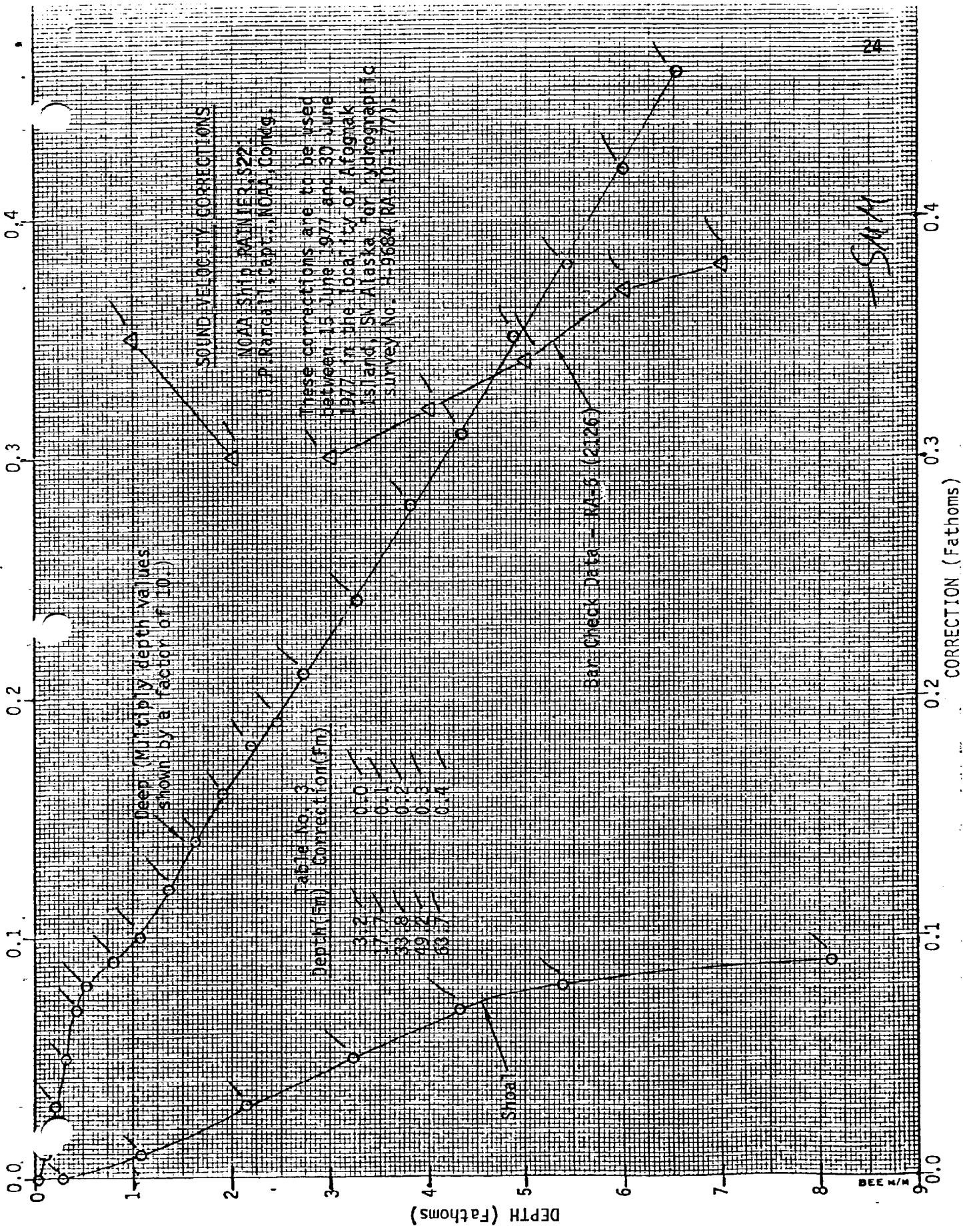
LAUNCH - 2125(RA-5)

BOTTOM SAMPLES ONLY

SCALE - FATHOMS

000637 0 0000 0004 001 212500 009684

999999 0 0001



CORRECTION (Fathoms)

DEPTH (Fathoms)

BEE W/H

## FIELD TIDE NOTE

H-9684  
 OPR-478  
 SHELIKOF STRAIT, ALASKA

Field tide reduction of soundings for H-9684 was based on station number 1813, Malina Bay, of the predicted tide tables; using Seldovia, Alaska as the reference station. These predicted tides were converted to GMT tide correctors with a PDP 8/e computer using program AM 500 PREDICTED TIDE GENERATOR, version 10 November 1972. All tide observations were done on GMT (000<sup>0</sup>W) by RAINIER personnel.

One station was established and two (2) tide staffs were used to monitor the tides within the project limits.

<u>Station</u>	<u>Location</u>	<u>Operation Dates</u>
T-1, Malina Bay 945-7427	Lat. 58 <sup>0</sup> 11.65' N Lon. 152 <sup>0</sup> 59.32' W	1 May - 30 June 1977 61 days
Malina Bay Staff Only	Lat. 58 <sup>0</sup> 09.83' N Lon. 152 <sup>0</sup> 51.98' W	25 June - 30 June 1977 6 days *
Malka Bay Staff Only	Lat. 58 <sup>0</sup> 10.40' N Lon. 153 <sup>0</sup> 00.01' W	25 June - 28 June 1977 4 days *

\*Observations done for a full  $\frac{1}{2}$  tidal cycle and for times of hydrography, NOT continuous 24 hour observations.

T-1, Malina Bay, 945-7427

T-1 was a 0 - 40 ft. Bristol Bubble tide gage, S/N 736620. T-1 ran  $1\frac{1}{2}$  to 2 minutes slow per day and the water went below the orifice on six (6) occasions in 61 days of operation. A reference mark and an inverted tape was used as a portable staff.

At 1800 on 2 May the ink trace was lost. At 0000 on 5 May the pen was cleaned and cleared and there were no further problems with the pen.

On 19 May an observation was done but the clock was not wound, so the gage ran down at 0745 on 23 May. The station was tended and reset on 24 May at 2300.

Metric levels were run to five (5) bench marks. Installation levels were run on 9 May and removal levels on 22 June. Level records indicate the staff did not move. Nine hours of 15 minute staff/gage comparison observations were done on 26 and 27 June from well before to well after high and low tide stages. 0.0 ft. on the marigram equalled 29.23 ft. on the staff.

Malina Bay Tide Staff - A twenty foot tide staff was installed in Malina Bay to control hydrography in the narrow eastern end of the survey.

Metric levels were run to three (3) recoverable points. Installation levels were run on 23 June and removal levels on 27 June. Comparison of level records indicate that the staff moved up 0.10 meters (0.05 fms). Nine (9) hours of fifteen minute staff/gage comparison observations were done on 25 and 26 June from well before to well after high and low tide stages.

Malka Bay Tide Staff - A twenty foot tide staff was installed in Malka Bay to control hydrography in that bay.

Metric levels were run to three (3) recoverable points. Installation levels were run on 23 June and removal levels on 27 June 1977. Level records indicate that the staff did not move. Nine (9) hours of fifteen minute staff/gage comparison observations were done on 25 and 26 June, 1977 from well before to well after high and low tide stages.

Comparison Among Gages - A comparison was done between the Malina Bay station and: 1) the two tide staffs, and 2) the predicted tides used to reduce hydrography. (Station number 1813, Malina Bay).

Malina Bay Staff - Malina Bay (based on Malina Bay)

A comparison of tide range and the times of high and low tides was done between the Malina Bay staff and the Malina Bay station for all extreme tides recorded at the Malina Bay staff.

Malina Bay staff records show an earlier time of high tides (0.08 hr.), approximately the same time of low tides (±0.05 hr.), and a smaller range of tides (7%) than the Malina Bay station.

Malka Bay staff - Malina Bay (based on Malina Bay)

A comparison of tide range and the times of high and low tides was performed between the Malka Bay staff and the Malina Bay station for all the extreme tides recorded at the Malka Bay staff. Malka Bay staff records show a slightly earlier time of high tide



(0.08 hr.), a slightly later time of low tide (0.08 hr.), and the same tidal range ( $\pm 4\%$ ) as the Malina Bay station.

Predicted Tides (Malina Bay #1813) - Malina Bay

The comparison of predicted tides to those on the marigram from the Malina Bay station was done for 20 and 21 May, 1977. Values compared were: 1) times of high and low tides, and 2) the tidal range. In general, predicted tides were earlier and had greater range than T-1. The maximum difference in times of high and low tide was 0.25 hours (15 min.) with a mean difference of 0.12 hours (6.9 min.). The maximum difference in tidal range was 0.21 fathoms (1.25 ft.) with a mean difference of 0.11 fathoms (0.63 ft.).

Recommended Zoning - The maximum difference in times of high and low tide among the staffs and gage was 0.08 hrs. The Malka Bay staff records indicate the same tidal range as the gage, and the Malina Bay staff indicated a slightly smaller tidal range than the gage but the maximum difference in the range is less than 0.1 fathom.

Unless Rockville Smooth Tides display significantly different comparison information to the above, it is recommended that H-9684 be reduced using only smooth tides from the Malina Bay station and that no zoning is required.

February 1, 1978

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): 945-9427 Malina Bay, Ak.

Period: May 16-June 30, 1977

HYDROGRAPHIC SHEET: H-9684

OPR: 478

Locality: Malina Bay, Shelikof Strait, Alaska

Plane of reference (mean lower low water): 3.2 ft.

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

Remarks: Zone direct.

*Don Spallman*

Chief, Tides Branch

GEOGRAPHIC NAMES

H-9684

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO. 18604	ON PREVIOUS SURVEY	ON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	RAND McNALLY ATLAS	U.S. LIGHT LIST			
AFOGNAK ISLAND	X										1
MALINA BAY	X										2
MALKA BAY	X										3
											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

APPROVED  
*Chas. E. Harrington*  
 CHIEF GEOGRAPHER - C3X8  
 9 Nov. 1978

APPROVAL SHEET  
FOR  
SURVEY H- 9684

- 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: 1 Aug 1978

Signed: \_\_\_\_\_

Title: Chief, Verification Branch

HYDROGRAPHIC SURVEY STATISTICS

H-9684

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		6	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		3 *	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES			1- Smooth			
CAHIERS	1 with printouts & misc. data					
VOLUMES						
BOXES						

T-SHEET PRINTS (List) TP-00294, TP-00295, TP-00301

SPECIAL REPORTS (List) N/A \* 1- depth curve plot, 1- tide plot

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			1369
POSITIONS CHECKED		1369	
POSITIONS REVISED		2	
SOUNDINGS REVISED		58	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	5		
VERIFICATION OF CONTROL		8	
VERIFICATION OF POSITIONS		33	
VERIFICATION OF SOUNDINGS		113	
COMPILATION OF SMOOTH SHEET		50	
APPLICATION OF TOPOGRAPHY		98	
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		15	
COMPARISON WITH PRIOR SURVEYS & CHARTS		29	
VERIFIER'S REPORT		25	
OTHER		8	
TOTALS	5	379	

Pre-Verification by <b>James S. Green</b>	Beginning Date <b>1 Dec 77</b>	Ending Date <b>1 Dec 77</b>
Verification by <b>Thelma O. Jones</b>	Beginning Date <b>7 Dec 77</b>	Ending Date <b>18 July 78</b>
Verification Check by <b>A.E. Eichelberger/J.S. Green</b>	Time (Hours) <b>35</b>	Date <b>27 July 78</b>
Marine Center Inspection by <b>HIT</b>	Time (Hours) <b>19</b>	Date <b>9 AUG. 78</b>
Quality Control Inspection by <b>R.W. Derkajanian</b>	Time (Hours) <b>48</b>	Date <b>11/9/78</b>
Requirements Evaluation by <b>D.J. Hill</b>	Time (Hours) <b>1</b>	Date <b>12/7/78</b>

*Car. Insp. by M. T. M. 10 hrs 11/29/78*

Reg. No. 9684

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:

PACIFIC MARINE CENTER  
VERIFIER'S REPORT

REGISTRY NO: H-9684

FIELD NO: RA-10-1-77

Alaska, Shelikof Strait, Inner Malina and Malika Bays

SURVEYED: 15 June - 30 June 1977

SCALE: 1:10,000

PROJECT NO: OPR-478-RA-77

SOUNDINGS: Ross Model 4000  
Fineline Fathometer

CONTROL: Visual-Digital Sextant

Chief of Party.....CAPT James P. Randall  
Surveyed by.....LCDR L.A. Lapine, LT C.P. Berg  
LCDR T.W. Richards  
Automated plot by.....PMC Xynetics Plotter  
Verified by.....Thelma O. Jones  
July 18, 1978

INTRODUCTION

H-9684 is a basic survey conducted by NOAA Ship RAINIER from 15 June to 30 June 1977. The area surveyed was Inner Malina Bay and Malika Bay on the west side of Afognak Island, Alaska. Two shoals in the junction area to the north that were not adequately investigated in 1973 were developed.

Field tide reduction of soundings was based on predicted tides from station 1813, Malina Bay, using Seldovia, Alaska as the reference station, smooth sheet soundings were reduced using smooth tidal data from Malina Bay tide station.

Projection parameters used to plot the field sheets have been revised to center the hydrography on the smooth sheet. Parameters used by PMC are listed in the Printout. All correctors used to plot and reduce soundings on H-9684 are listed in the printout.

The fractional soundings transferred from prior survey H-2973, were converted to fathoms and tenths.

It is the hydrographer's recommendation that a 1:20,000 scale chart of the area would be useful, since Malina Bay provides safe Anchorage for vessels during storms. It was also noted that "Red Tide" which is toxic to shellfish, was observed nearly every day of the survey.

## II. CONTROL AND SHORELINE

Horizontal control is adequately described in Section F of the Descriptive Report. ✓

The class I unreviewed photogrammetric manuscripts used for this survey, with their respective dates of photography and field edit are: ✓

TP-00294	1971-1973, 77
TP-00295	1971-1973, 77
TP-00301	1971-1973, 77

A tabulation of rocks verified by field edit is included in the Descriptive Report, pages 6-11. *Filed with Field records* ✓

The following signals plot outside of the high-water line and are not described in the hydrographic records: 329, 344, 345, 349, 390 and 391. ✓

## III. HYDROGRAPHY

Crossline agreement was excellent, with a maximum difference of one (1) fathom throughout the survey. ✓

The standard depth curves could be adequately drawn except for portions of the zero curve and within foul areas. ✓

The main scheme hydrography is adequate to delineate bottom configuration and to determine least depths. ✓

There are forty-one (41) bottom samples in this survey.

## IV. CONDITION OF SURVEY

The hydrographic records, overlays, smooth sheet and reports are adequate and conform to the requirements of the Hydrographic Manual, except for the least depths noted in Section VI were not investigated. ✓

Abstract of tides requested from Rockville did not include field edit on J.D. 148-149. ✓

## V. JUNCTIONS

H-9684 junctions with contemporary survey H-9369, 1:20,000 (1973) along the northwest portion of the survey. Sounding agreement was within two fathoms, and curves could be joined adequately. The junction curves and notes were inked accordingly. ✓

Two shoals in the junction area were developed to supplement the 1973 work on H-9369. The geographic positions and least depths of the development of these shoals are tabulated on page 13 of the Descriptive Report. ✓



VI. COMPARISON WITH PRIOR SURVEYS H-2973 (1908) 1:20,000  
T-2872 (1908) 1:20,000

Comparison with prior survey H-2973, 1:20,000 (1908) showed very good sounding agreement, generally within 2 fathoms, except for the following: a 4 1/2 fathom sounding in 10-11 fathoms at approximately 58°12'08", 153°00'32", and a 4 3/4 fathom sounding in 12-14 fathoms at approximately 58°11'42", 153°00'08". These shoaler soundings were transferred to the present survey because there was not sufficient development to disprove their existence. Additional soundings were transferred to aid in delineating the depth curves.

There have been extensive changes <sup>noted</sup> in the shoreline, possibly due to the use of aerial photography.

~~The spit at 58°10'21", 152°53'42" has changed to include the rock at that point shown on the prior survey.~~

The rock at 58°11'45", 153°00'05" that the hydrographers could not find, has apparently become part of the ledge as shown on the present survey.

There have been changes in the small islands, possibly due to erosion sedimentation and the photogrammetric compilation of the manuscripts.

Presurvey Review dashed circle item #1 was adequately disposed of by the ship. See D.R. para K.

Presurvey Review dashed circle item #2: Although the 2.6 fathom sounding mentioned in Section K, paragraph 3, of the Descriptive Report, was the shoalest depth in the area of the Sand Bar, it is approximately 200 meters east of the position of the 1 1/4 fathoms in question. The shoalest sounding in that area is 3 fathoms (3rd out of position 7268). The prior 1 1/4 fathom sounding ~~was transferred to the present survey because the area was rejected. not adequately developed by the present survey to disprove its existence.~~ <sup>Prior records indicate a sand bottom; the area has deepened significantly to discredit prior depth.</sup> With the transference of the soundings from the prior survey, H-9684 is adequate to supersede prior survey H-2973 in areas of common hydrography.

VII. COMPARISON WITH CHART (16604, 7th Ed., 26 June 1976, 1:78,000)

a. Hydrography

All of the ~~identifiable~~ hydrography and topography originated with <sup>the</sup> ~~prior surveys~~ <sup>discussed above</sup> ~~survey H-2973, 1:20,000 (1908).~~ Sounding comparison and topographic discrepancies were discussed in Section VI. <sup>which requires no further consideration.</sup>

The following features are uncharted:

rock - latitude	58°11'40"	longitude	152°59'20"	
"	"	58°12'01"	"	153°01'17"
"	"	58°11'57"	"	153°01'12"
"	"	58°11'41"	"	152°59'48"
"	"	58°12'03"	"	153°00'17"
"	"	58°10'05"	"	152°53'07"
"	"	58°11'15"	"	152°55'20"
"	"	58°10'22"	"	152°55'42"
"	"	58°11'47"	"	152°58'19"
"	"	58°11'38"	"	152°58'47"
"	"	58°11'42"	"	152°59'11"
"	"	58°11'42"	"	152°59'30"
"	"	58°12'03"	"	153°00'00"
"	"	58°12'15"	"	152°59'38"

Change rock from lat. 58°12'00", long. 153°00'53" to 58°11'59", 153°00'56"  
" " " " 58°11'08", " 152°55'12" to 58°11'09", 152°55'12"

It is recommended that these features be charted as shown on the smooth sheet.

~~The following rocks are charted from data not identifiable from the prior survey H 2973 (1908).~~

1. Rock at 58°11'05", 152°55'04": The rock does not appear on Class I manuscript TP-00295. It is recommended the rock be deleted and replaced by a rock at 58°11'05", 152°54'58".  
*Origin Ledge H-2973 (1908)*
2. Three rocks at 58°10'00", 152°52'45": These rocks do not appear on Class I manuscript TP-00295. It is recommended the compiler check the source of the group of rocks and exercise charting judgment.  
*Origin T-2872 (1908)*

This survey is adequate to supersede all charted hydrography of common areas.

b. Aids to Navigation

There are no aids to navigation pertaining to this survey.

VIII. COMPLIANCE WITH PROJECT INSTRUCTIONS

This survey adequately complies with the Project Instructions dated 2 February 1977, Change No. 1 dated 31 March 1977 and Change No. 2 dated 28 June 1977.

IX. ADDITIONAL FIELD WORK

This is a very good basic survey. No additional field work is recommended.

Examined and approved,

*J. S. Green*  
James S. Green  
Chief, Verification Branch

Respectfully submitted,


*A. E. Eichelberger*  
*for* Thelma O. Jones  
Cartographic Technician  
July 18, 1978



**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

Pacific Marine Center  
1801 Fairview Ave. E.  
Seattle, WA 98102

CPM3/GRS/SLML

DATE : 15 August 1978  
TO : Eugene A. Taylor  
Director, Pacific Marine Center  
FROM :   
Glen R. Schaefer  
Chief, Processing Division

SUBJECT: PMC Hydrographic Inspection Team Report for Survey H-9684

This survey is a basic hydrographic survey of Inner Malina and Malka Bays, Shelikof Strait, Alaska. This survey was conducted by NOAA Ship RAINIER in 1977 in accordance with Project Instructions OPR-478-RA-77 dated 2 February 1977, Change No. 1 dated 31 March 1977, and Change No. 2 dated 28 June 1977.


Six visual hydrographic signals were located by multiple sextant fixes from control also located by sextant fixes. This constitutes poor field procedure in violation of the Hydrographic Manual (3.1.3.3.) which states that "stations located by sextant angles shall not be used for locating other stations".

The HIT team concurs with the verifier that shoal areas were not sufficiently developed to assure that least depths were found.

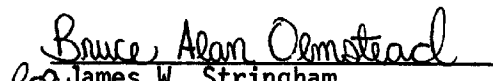
Sounding lines in Malka Bay and near Latitude 58°11'20", Longitude 152°55'40" parallel the depth curves in contradiction to the Hydrographic Manual requirements. Depth curves in these areas were consequently not well defined.

The inspection team finds H-9684 to be a good basic survey adequate to supersede common areas of prior surveys and charted hydrography. Administrative approval is recommended.

  
Glen R. Schaefer

  
David B. MacFarland, Jr.

  
James W. Steensland

  
for James W. Stringham



ADMINISTRATIVE APPROVAL  
H-9684

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.



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Eugene A. Taylor, RADM  
Director  
Pacific Marine Center

15 AUG 1978  
Date



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

C352/RWD

November 9, 1978

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

THRU: Chief, Quality Control Branch

FROM: R. W. DerKazarian *R.W. DerKazarian*  
Quality Evaluator

SUBJECT: Quality Control Report for H-9684 (1977), Inner Malina and  
Malka Bays, Shelikof Strait, Alaska

A quality control inspection of H-9684 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, shoreline transfer, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, the survey was found to conform to the National Ocean Survey's standards and requirements except as stated in the Verifier's Report, the HIT Report, and as follows:

1. In several instances heights of rocks were positioned too far from the features they identify. Care should be exercised to ensure that placement of a rock elevation clearly shows the feature which it describes.

The label "cov 1' MLLW" as shown on the smooth sheet is not the commonly accepted note for features submerged 1 foot at the chart datum. "cov 1 ft at MLLW" is more appropriate. (See Hydrographic Manual, appendix B, Cartographic Code 094.)

2. Rocky foreshore descriptions have been appropriately changed to rocks.

3. The following information supersedes in part and is in addition to the Verifier's Report, Paragraph VI, "Comparison with Prior Surveys":

H-2973 (1908) 1:20,000

Numerous soundings (approximately 60) have been carried forward during quality evaluation to supplement the present survey. In several instances



the location of shoal depths in areas of deeper soundings on the prior work was attributed to poor control and erroneous spacing between depths.

The 4 1/2-fathom sounding in latitude 58°12.12', longitude 153°00.54' has been repositioned approximately 60 meters east by plotting soundings on range. The revised position places this depth in agreement with present hydrography.

No indication of the 4 3/4-fathom sounding in latitude 58°11.70', longitude 153°00.13' exists on the present survey. The prior work was probably recorded 10 fathoms in error and should be disregarded.

A rock awash in latitude 58°11.67', longitude 152°58.9' located in an area of shoal depths on the prior survey was carried forward to the present survey. Depths along a sounding line on the present survey were adjusted by time and course during quality control in order to reconcile a conflict between prior and present soundings in this area.

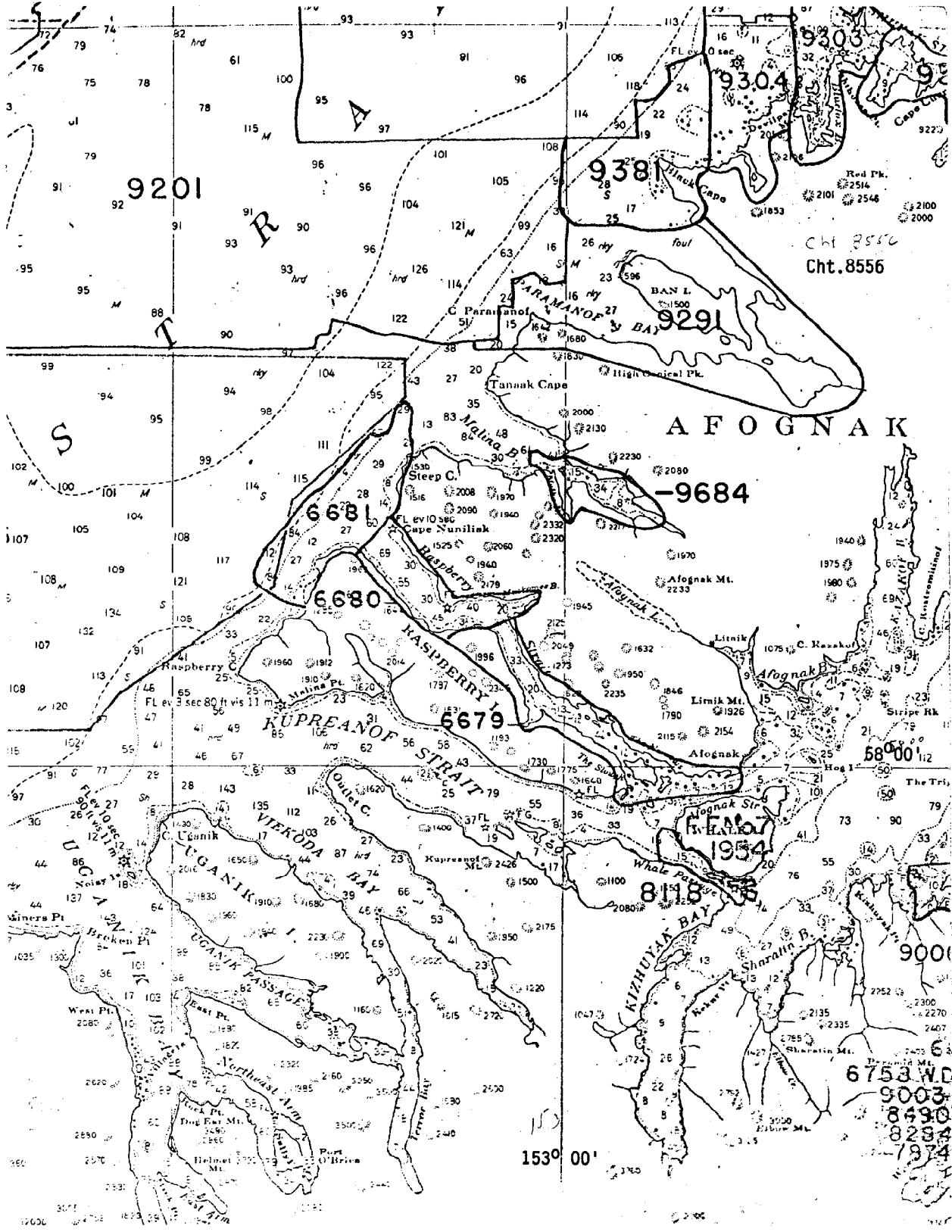
T-2872 (1908) 1:20,000

Three charted elevations of islands from this prior survey have been carried forward to the present survey.

With the addition of soundings, rocks, elevations, and bottom characteristics carried forward, the present survey is adequate to supersede the prior surveys in the common area.

4. The list of rocks noted for charting in paragraph VII of the Verifier's Report is unnecessary. The compiler will chart hydrography in accordance with the present survey.

cc:  
C35  
C351



9201

9381

9303

9304

9291

AFOGNAK

-9684

6681

6680

6679

1954

8118

9001

6753 WD

9003

8490

8294

1974

150° 00'

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. 9684

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
16604	2/18/79	Rennon John Bailey	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. Exam. for NM items added 2 1/2 11 fm, 11 fm Deleted 17 and added 3 1/2 fm
16594	2/12/79	Rennon John Bailey	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 15 Exam. for NM items added 2 1/2 fm, 11 fm, 11 fm Deleted 17 fm added 3 1/2 fm
16604	8/6/79	Raitor	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 13 Misc corr only
16594	11/4/80	Raitor	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 15
16600	01/11/81	Jamara A. O'Neil	Full Part <del>Before</del> After Verification Review Inspection Signed Via Drawing No. 19 Fully applied through Chrt. 16594, Draw #15
16604	12-8-82	Lager	Full <del>Part Before</del> After Verification Review Inspection Signed Via Drawing No. 14 Fully applied thru chart 16594, Draw #15
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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