

8284

Diag. Cht. Nos. 8502-2 and 8556-2-

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. EX-05156 Office No. H-8284

LOCALITY

State Alaska

General locality Kodiak Island

Locality Womens Bay

194 56

CHIEF OF PARTY

George A. Nelson

LIBRARY & ARCHIVES

DATE Januray 15, 1957

B-1870-1 (1)

8284

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8284

Field No. EX-95156

State ALASKA

General locality KODIAK ISLAND

Locality WOMENS BAY

Scale 1:5,000 Date of survey 26 APRIL TO 3 MAY 1956

Instructions dated 13 FEBRUARY 1956

Vessel SHIP EXPLORER

Chief of party CAPTAIN GEORGE A. NELSON

Surveyed by LCDR JOHN O. PHILLIPS AND LT EUGENE W. RICHARDS

Soundings taken by ~~XXXXXXXX~~ graphic recorder, hand lead, ~~XXXX~~

Fathograms scaled by FATHOMETER READERS

Fathograms checked by SHIP'S OFFICERS

Protracted by ALBERT LARSEN, JR

Soundings penciled by ALBERT LARSEN, JR

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW and are based on a velocity of sound of 800 fms/sec

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8284

FIELD NO. EX-05156

ENTRANCE CHANNEL - WOMENS BAY

Project 1396 - 1956 Season

Scale: 1:5,000

Surveyed by: LCDR John O. Phillips and LT Eugene W. Richards

A. PROJECT:

This survey was accomplished in accordance with the Director's instructions dated 13 February 1956, Project 1396. ✓

B. SURVEY LIMITS AND DATES:

This survey covers an area of the Entrance Channel, Womens Bay, Kodiak, Alaska. The coordinates which best describe the area are as follows:

Latitude 57° 43.36'    Latitude 57° 43.60'    Latitude 57° 43.71' ✓  
Longitude 152° 29.30'    Longitude 152° 29.45'    Longitude 152° 28.60'

Latitude 57° 44.40'    Latitude 57° 44.35'    Latitude 57° 43.56' ✓  
Longitude 152° 27.80'    Longitude 152° 27.60'    Longitude 152° 28.40'

This area was covered by the Coast Survey in 1950 at a scale of 1:5,000, survey H-7874.

This survey was made between 26 April and 3 May 1956.

C. SURVEY VESSEL AND EQUIPMENT:

The survey was accomplished by the launches No. 1 and No. 3 using 808 graphic recorders and supplemented by hand lead sounding. All launch hydrography was controlled by sextant fixes on topographic signals located entirely by graphic triangulation.

The launches operated from the Ship EXPLORER which was moored in Womens Bay. ✓

The launches were operated at reduced speed as required by the scale of the survey

Fathometers used: Launch No. 1 - 808 fathometer, No. 49  
Launch No. 3 - 808 fathometer, Nos. 136SP, 158SPX and 127S

All fathometers are calibrated for a velocity of 800 fms/sec. ✓

D. TIDE AND CURRENT STATIONS:

The standard tide station at Womens Bay served as the basic-control station for this survey. No corrections were applied to the Womens Bay gage for the reduction of soundings for this survey. Hourly heights were furnished upon request. ✓

E. SMOOTH SHEET:

The smooth sheet projection was constructed aboard the Ship EXPLORER by hand on a flat 31" x 33" sheet of Whatman paper.

Shoreline was transferred from the previous hydrographic survey H-7874<sup>(1950)</sup> by means of tracings taken of a photostatic print. *Review, #1* ✓

Triangulation stations were plotted from known G.P. and other hydrographic signals were pricked onto smooth sheet from tracings.

The transfer of shoreline and signals has been verified in accordance with Section 757 of the Hydrographic Manual.

F. CONTROL STATIONS:

Triangulation control was used as follows:

EWE, TRAP - USC&GS 1933; ABBERT - USC&GS 1939 ✓

Topographic stations were located from graphic control sheet No. *Review, #1* EX-A-56.

G. SHORELINE AND TOPOGRAPHY:

The shoreline and foreshore detail was made from tracings of a photostatic copy of a previous hydrographic survey, H-7874<sup>(1950)</sup>. The only shoreline changes within the limits of this survey are in the bight west of station ABBERT. Refer to Descriptive Report to Accompany Graphic Control Sheet No. EX-A-56. *Review, #1* ✓

H. SOUNDINGS:

Launch soundings were obtained from 808 graphic recorders supplemented by hand lead soundings in critical areas. Bottom samples were obtained with a snapper cup sampler. ✓

All soundings have been check-scanned by ship's officers and corrected for tide, variation from initial setting, draft, and phase where necessary.

I. CONTROL OF HYDROGRAPHY:

All launch hydrography is controlled by visual fixes on shore signals. ✓

J. ADEQUACY OF SURVEY:

This survey is adequate and should supersede all previous hydrographic surveys of this area. ✓

K. CROSSLINES:

The crosslines constitute approximately 14% of all lines run. The crossings are excellent and the discrepancies are not in excess of what could be expected for this area. ✓

L. COMPARISON WITH PRIOR SURVEYS: See Review, #5

The area covered by this sheet was previously surveyed by the Coast Survey in 1950, H-7874, on a 1:5,000 scale. A newly dredged control depth of 30 feet is indicated in the channel area along with a dumping area with shoal conditions. (See paragraph N. DANGERS AND SHOALS.) ✓

The use of this area as a dumping ground is the cause of the bumpy configuration of the depth curves in this immediate vicinity.

This survey should supersede the old survey. ✓

M. COMPARISON WITH CHART: See Review, #6

The charted soundings are derived from survey No. H-7<sup>6</sup>74<sup>(1950)</sup>. (See chart No. 8546, 3rd edition print, September 1947.) The new survey should supersede for the reasons cited in paragraph L above.

N. DANGERS AND SHOALS:

The following newly found shoal areas should be charted:

- (1) Latitude 57° 44' 18" Longitude 152° 28' 04.5" - Least depth ~~8~~ 13 ft. - Pos. 89 - 90e, Launch No. 3, Vol. 5 of 5
  - (2) Latitude 57° 44' 33.75" Longitude 152° 27' 47.25" - Least depth ~~8~~ 15 ft. - Pos. 131 - 132d, Launch No. 1, Vol. 2 of 5
- Original readings on kelp - see survey for least depths.* Review, #6 A.

These two shoal areas are located at the extreme ends of a "dumping area" strip. Approximately 15 minutes was spent in investigation of each shoal area. ✓

O. COAST PILOT INFORMATION:

No significant changes have been noted. ✓

P. AIDS TO NAVIGATION:

Fixed aids to navigation are covered in the descriptive report for ~~Geographic~~ Control, No. EX-A-56. (attached herein)

FLOATING AIDS

			<u>Depth</u>	<u>Position</u>	<u>Date</u>
Entrance Channel Buoy 14	Lat 57 44.36 <sup>5</sup> ✓ Long 152 27.79		28	5a of vol. 3 of 5	4/26/56
St. Paul Entrance Lighted Bell Buoy 15	Lat See Pos. 7a of a Long Vol. 3 of 5 ✓		36	7 of a of vol. 3 of 5	"
St. Paul Entrance Lighted Bell Buoy 15	Lat 57 44.54 ✓ Long 152 27.05 ✓		--	7a of a of vol. 3 of 5	"
Entrance Channel Buoy 16	Lat See Pos. 3a ✓ Long Vol. 3 of 5		19	6a of vol. 1 of 5 <sup>N</sup>	"
Entrance Channel Buoy 16	Lat 57 43.87 ✓ Long 152 28.31		18	3a of vol. 3 of 5 ✓	"
Entrance Channel Lighted Bell Buoy 17	Lat 57 44.35 ✓ Long 152 27.60		30	6a of vol. 3 of 5	"
Entrance Channel Lighted Bell 18	Lat See Pos. 5a ✓ Long Vol. 1 of 5 ✓		33	1a of vol. 3 of 5 <sup>NP</sup>	"
Entrance Channel Lighted Buoy 18	Lat 57 43.71 ✓ Long 152 28.60 ✓		32	5a of vol. 1 of 5 <sup>Painted</sup>	"
Entrance Channel Buoy 19	Lat 57 44.02 ✓ Long 152 27.95 ✓		23	4a of vol. 3 of 5	"
Entrance Channel Lighted Bell Buoy 19A	Lat 57 43.81 ✓ Long 152 28.19		43	2a of vol. 3 of 5 <sup>P</sup>	"
Entrance Channel Lighted Bell Buoy 19A	Lat See Pos. 2a Long Vol. 3 of 5		43	7a of vol. 1 of 5 <sup>P</sup>	"
Entrance Channel Buoy 21	Lat 57 43.61 ✓ Long 152 28.56 ✓		34	4a of vol. 1 of 5	"
Entrance Channel Buoy 23	Lat 57 43.81 <sup>51</sup> ✓ Long 152 29.11 ✓		34	3a of vol. 1 of 5	"
Entrance Channel Lighted Buoy 25	Lat 57 43.25 ✓ Long 152 29.90 ✓		29	1a of vol. 1 of 5 <sup>P</sup>	"
Entrance Channel Lighted Buoy 25	Lat See Pos. 1a Long Vol. 1 of 5		--	2a of vol. 1 of 5 <sup>N</sup>	"

Q. LANDMARKS FOR CHARTS:

See special report of landmarks for charts, previously submitted. L. 386(1956)

R. GEOGRAPHIC NAMES:

There are no new geographic names for this area. ✓

S. - Y. NOT APPLICABLE IN THIS REPORT

U. VELOCITY CORRECTIONS:

All echo sounding equipment used is calibrated for a velocity of 800 fms/sec. ✓

The initial in launch No. 1 was set at 2.0 feet and in launch No. 3 at 0.0 feet. Any variation from this setting was applied as an initial correction. ✓

Bar checks were taken at 12, 18 and 30 foot depths only to obtain an index or draft correction. These corrections are entered in the sounding volumes in the first column under "echo correction." ✓

The 808 fathometer, No. 49, in launch No. 1 is the only fathometer used on this sheet in depths off the A scale. Phase corrections for this fathometer were obtained on 26 April 1956. Phase corrections are combined with index corrections and entered in the sounding record in the first column under "echo correction." ✓

Tabulation of fathometer corrections applied to soundings:

	<u>Fathometers</u>			
	808 - 49	136SP	158SPX	127S
Index (Draft) Correction	0.0	+1.8	+1.8	+1.8
Phase Correction (B-A)	+1.0	- -	- -	- -

*Prob. no fath. corr. report submitted as per letter 6/1/59 of EX.*

(Total correction applied outside of initial variations)

Z. TABULATION OF APPLICABLE DATA:

- (1) Submitted with this report:
  - (a) 1 smooth sheet
  - (b) 2 boat sheets
  - (c) 5 volumes of sounding records
  - (d) 2 envelopes of fathograms
- (2) Submitted separately:
  - (a) 1 copy General Layout Sheet No. 9, dated 1 January 1955, Bp. 53688 Naval Station, Kodiak, Alaska - Forwarded 11 May 1956 C.L. 386(56)
  - (b) Season's report, Ship EXPLORER, Project 13960

Respectfully submitted,

*Albert Larsen Jr.*  
Albert Larsen, Jr.  
Ensign, C&GS

STATISTICS

HYDROGRAPHIC SURVEY H-8284

FIELD NO. EX-8284

SHIP EXPLORER

Project 13960

Vol. No. Day Ltn. Date No. Pos. Hand Lead Naut. Miles  
Sdg. Line

Launch No. 1

1	a	4/26/56	92	0	7.2
11	b	4/27/56	113	0	10.9
1	c	4/28/56	35	0	3.0
1	d	5/2/56	124	16 (bottom characteristics)	6.0
2	d	5/2/56	33	0	2.5

Launch No. 3

3	a	4/26/56	84	0	9.0
3	b	4/27/56	120	0	9.5
4	b	4/27/56	38	0	3.4
4	c	4/28/56	54	0	4.8
4	d	4/30/56	27	0	2.3
4	e	5/2/56	71	0	6.6
5	e	5/2/56	63	0	6.3
5	f	5/3/56	32	4 (school investigation)	2.6

TOTALS 886 20 74.1

AREA SURVEYED: 0.796 sq. naut. mi.



TIDAL NOTE

TO ACCOMPANY HYDROGRAPHIC SHEET EX-05156, Reg. No. H-8284

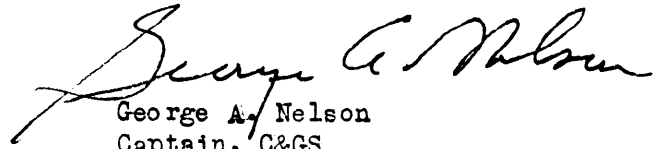
Tide reducers for the whole sheet were taken from the records of the Womens Bay standard gage, Kodiak, Alaska, with no correction for distance from the gage.

Position of the gage:	Latitude	54° 43.7' N
	Longitude	152° 31.2' W

Hourly heights above MLLW were furnished by the Washing Office.

APPROVAL SHEET

The sheet and records for survey H-8284 have been examined and are approved.



George A. Nelson  
Captain, C&GS  
Commanding Ship EXPLORER

GEOGRAPHIC NAMES

Survey No. H-8284

Name on Survey	Source									No.	
	A	B	C	D	E	F	G	H	K		
<u>Alaska</u>											1
<u>Kodiak Island</u>										AGN	2
<u>Womens Bay</u>				(tide station)						"	3
<u>Zaimka Island</u>										"	4
<u>Nyman Peninsula</u>				(off of sheet)							5
<u>Blodgett Island</u>										BMN	6
CLIFF I.											7
											8
											9
											10
											11
											12
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											17
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											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved  
1-25-57 L. Heck

See chart 8546 for placement of  
names after inking.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8284....

Records accompanying survey:

Boat sheets ..2..; sounding vols. ..5..; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls 5-Envelopes  
 special reports, etc. .1-Descriptive report and 1-Smooth sheet.  
 .....

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

Number of positions on sheet	.....	886
Number of positions checked	.....	174
Number of positions revised	.....	20
Number of soundings revised (refers to depth only)	.....	6
Number of soundings erroneously spaced	.....	52
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	4
Junctions	Time	0
Verification of soundings from graphic record	Time	10

Verification by *F.P. Saulsbury*..... Total time ..166... Date *5-1-57*.....

Reviewed by *J.A. Dinmore*..... Time ..24... Date *14 June 1957*.....

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. EX-A-56

REGISTER NO.

State Alaska

General Locality Kodiak Island

Locality Entrance to Womens Bay

Scale 1:5,000 Date of survey April, 1956

Vessel EXPLORER

Chief of party George A. Nelson

Surveyed by Charles W. Clark

Inked by Albert Larsen

Heights in feet above ..... to ground to tops of trees

Contour, Approximate contour, Form line interval ..... feet

Instructions dated 13 February, 1956

Remarks: Graphic control only.

Descriptive Report  
to accompany  
Graphic Control Sheet  
Field No. EX-A-56

Kodiak Island, Alaska  
Entrance to Womens Bay

Scale 1:5,000

April 1956

Ship ~~EXPLORER~~, G.A. Nelson, Comdg.

INSTRUCTIONS

Instructions - Project 1396, Entrance Channel Womens Bay, Kodiak Island, Alaska, dated 13 February 1956. ✓

PURPOSE

The purpose of this survey was to locate signals for control of hydrography in Womens Bay Entrance Channel. The survey is entirely graphic control. ✓

CONTROL

All control is third-order triangulation established by the Coast and Geodetic Survey in 1939. ✓

LIMITS

The sheet covers the shoreline on both sides of Womens Bay Entrance Channel where hydrography was required. The sheet was skewed about 30° so that the entire area could be covered by one sheet. ✓

METHODS

All signals were located by graphic triangulation. There were no traverses. Planetable setups were made over stations ABBERT, ENGLISH and TRAP and at GAS (USN) after it was located from the first three stations. At least three cuts were obtained on all signals except BAG. BAG was visible from ENGLISH and TRAP only. ✓

TOPOGRAPHY

The survey is entirely graphic control for location of hydro-graphic signals. No shoreline revision was accomplished. The only shoreline changes within the limits of this survey are in the bight west of station ABBERT. A crash-boat house, a boat basin and breakwaters have recently been constructed in this area. Signal GABE is the seaward (southeast) gable of the boat house. The entire project--boat house, breakwaters, etc.--is shown on General Layout Sheet No. 9, dated 1 January 1955, Naval Station, Kodiak, Alaska, forwarded the Washington Office in Package No. 24, 11 May 1956.

*Bp. 53688 L 386 (56)*

Other signals in the water area are permanent objects as follows:

- ACE - dolphin
- BAG - rocky islet
- DAW - rock
- PEG - pile

Shoreline on the sheet was transferred from prints of a previous hydrographic survey.

AIDS TO NAVIGATION

There are no official fixed aids to navigation maintained by the Coast Guard within the limits of this survey. Front Range Mark and Rear Range Mark are entrance channel range daybeacons. These are apparently the same structures as former range lights. These daybeacons are not listed in the 1955 or 1956 Light Lists.

PLANE-TABLE POSITIONS

Object	<u>Latitude</u>			<u>Longitude</u>		
	°	'	meters	°	'	meters
GAS (USN) (dim)	57	44	116.0(1740.2)	152	29	652.7(340.2)
Front Range Mark (Daybeacon)	57	43	827 (1029)	152	28	709 (284)
Rear Range Mark (Daybeacon)	57	42	1774 (82)	152	29	269 (724)

Respectfully submitted,

*Charles W. Clark*  
Charles W. Clark  
Commander, C&GS

Approved and forwarded:  
*George A. Nelson*  
George A. Nelson, Chief of Party

Inasmuch as all useful information has been transferred to H-8284 (1956), this graphic control survey sheet has been destroyed.

*J. A. Dinsmore*  
June 1957

DIVISION OF CHARTS  
REVIEW SECTION - NAUTICAL CHART BRANCH  
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8284

FIELD NO. EX-95156

Alaska, Kodiak Island, Womens Bay

Project No. CS-1396

Surveyed - April - May 1956

Scale 1:5,000

Soundings:

Control:

808 Depth Recorder

Sextant fixes on  
shore signals

Chief of Party - G. A. Nelson  
Surveyed by - J. O. Phillips and E. W. Richards  
Protracted by - A. Larsen, Jr.  
Soundings plotted by - A. Larsen, Jr.  
Verified and inked by - F. P. Saulsbury  
Reviewed by - T. A. Dinsmore 14 June 1957  
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates principally with topographic surveys T-6695, T-6696 and T-1197 of 1939. Shoreline changes and additions shown in brown ink are from blueprint 53688 (U. S. Navy, 1955.).

The signals are from graphic control survey EX-A-56 which will be destroyed as all useful information has been transferred to the present survey smooth sheet.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

Intermittant shoals in the form of spoil banks flank the channel on the northwest. Except for some lumpiness, the bottom throughout the dredged channel is generally smooth.



4. Adjoining Surveys

No contemporary surveys adjoin the present survey. However, charted information from 1939 - 1950 surveys by this Bureau and various surveys by the U. S. Navy is in harmony with depths at the limits of the present survey.

5. Comparison with Prior Surveys

- a. H-2929 (1907) 1:20,000                      H-5440 (1933) 1:20,000

The prior surveys have been compared with and superseded by the 1939 surveys. Further consideration of the above surveys is therefore deemed unnecessary.

- b. H-6479 (1939) 1:5,000                      H-6481 (1939) 1:10,000

These prior surveys have been compared with and superseded by H-7874 (1950) through the channel area. The only significant area to be compared with the present survey is the spoil banks bordering the channel on the northwest. In this area, conspicuous examples of changes in bottom are shown in the following comparison:

<u>Latitude</u>	<u>Longitude</u>	<u>Prior depths</u>	<u>Present depths</u>
57°43.88'	152°28.52'	12	3
57°43.97'	152°28.44'	14	5
57°44.14'	152°28.26'	22	7
57°44.27'	152°28.09'	24	9
57°44.35'	152°28.01'	24	12
57°44.46'	152°27.89'	26	15
57°44.53'	152°27.79'	27	14
57°44.66'	152°27.75'	26	15

The shoaler present depths are attributed to the disposal of spoil from the dredged channel.

- c. H-7874 (1950) 1:5,000

Except for the area of spoil banks northwest of the channel, this prior survey generally covers the area of the present survey. Present survey depths are generally 1 to 3 ft. deeper than the prior depths through the dredged channel area. Present depths of 14 - 15 ft. in lat. 57°44.53', long. 152°27.79', supersede prior depths of 24 ft. This shoaling has resulted from spoil disposal. Except as noted, only minor differences of 1 - 2 ft. are found between the prior and present depths. In inshore areas of no bottom changes, two critical soundings have been retained from this prior survey. With these additions, the present survey is adequate to supersede the prior surveys of 1939 and 1950 within the common area.

d. H-6480WD (1939) 1:5,000

This wire-drag survey covers most of the present survey area. Numerous conflicts are found between the effective drag depths and present survey depths. The conflicts occur along the northwestern limit of the present survey where spoil banks have risen in recent years from spoil disposal from channel dredging. The prior clearance depths should be disregarded where they conflict with the shoaler depths on the present survey.

6. Comparison with Chart 8546 (Chartlet dated 2/9/57)A. Hydrography

A small chartlet attached to chart 8546 covering the present survey area has been published as Notice to Mariners No. 6 (1957). The chartlet shows revised hydrography in the subject area based on partial application of the present survey prior to verification and review. Some of the charted information originates with the previously discussed prior surveys and with various prior surveys by the U. S. Navy.

The 6-ft. sounding charted in lat.  $57^{\circ}44.3'$ , long.  $152^{\circ}28.08'$ , and the 8-ft. sounding charted in lat.  $57^{\circ}44.56'$ , long.  $152^{\circ}27.78'$ , originate with kelp recordings on the fathograms of the present survey. The erroneous soundings have been subsequently revised during verification of the present survey.

Attention is directed to the pile charted in lat.  $57^{\circ}44.35'$ , long.  $152^{\circ}27.58'$ . Deletion of this pile from the chart was recommended in the review of H-7874 (1950).

The present survey entirely supersedes the charted information.

B. Aids to Navigation

The buoy charted in lat.  $57^{\circ}43.80'$ , long.  $152^{\circ}28.23'$ , was located about 40 meters northeastward on the present survey. The buoy charted in lat.  $57^{\circ}43.47'$ , long.  $152^{\circ}29.29'$ , was located about 200 meters northeastward on the present survey. The survey positions of channel buoys N-16 and C-19 fall in depths of 18 and 22 ft. respectively and do not adequately mark the edge of the 29-ft. channel. The charted positions adequately serve the purposes intended.

Except as noted, the aids to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended.

C. Dredged Channel

The charted controlling depth of 29 ft., April 1956 originates with the present survey prior to verification and review. The charted information is correct.

7. Condition of Survey

a. The sounding records are complete; the Descriptive Report covers all matters of importance.

b. The smooth plotting was generally accurate. The verifier experienced difficulty in reading and identifying many of the position numbers inked with poor quality green ink on the smooth sheet. The practice of adding the day letter to every fifth position was not always followed by the smooth plotter. About 50 soundings were erroneously spaced, usually being plotted on a regular interval rather than at the correct uneven interval.

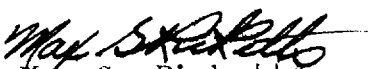
8. Compliance with Project Instructions

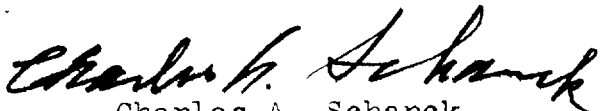
The survey adequately complies with the Project Instructions.


9. Additional Field Work


This is an adequate basic survey of the channel area and no additional field work is required.

Examined and Approved:

  
Max G. Ricketts  
Chief, Nautical Chart Branch

  
Charles A. Schanck  
Chief, Division of Charts

  
Karl B. Jeffers  
Chief, Hydrography Branch

  
Samuel B. Grenell  
Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

29 January 1957

Division of Charts: R. H. Carstens

Plane of reference approved in  
5 volumes of sounding records for

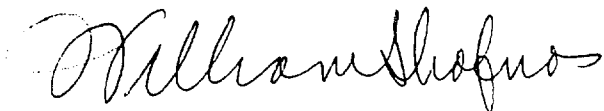
HYDROGRAPHIC SHEET 8284

Locality Womens Bay, Alaska

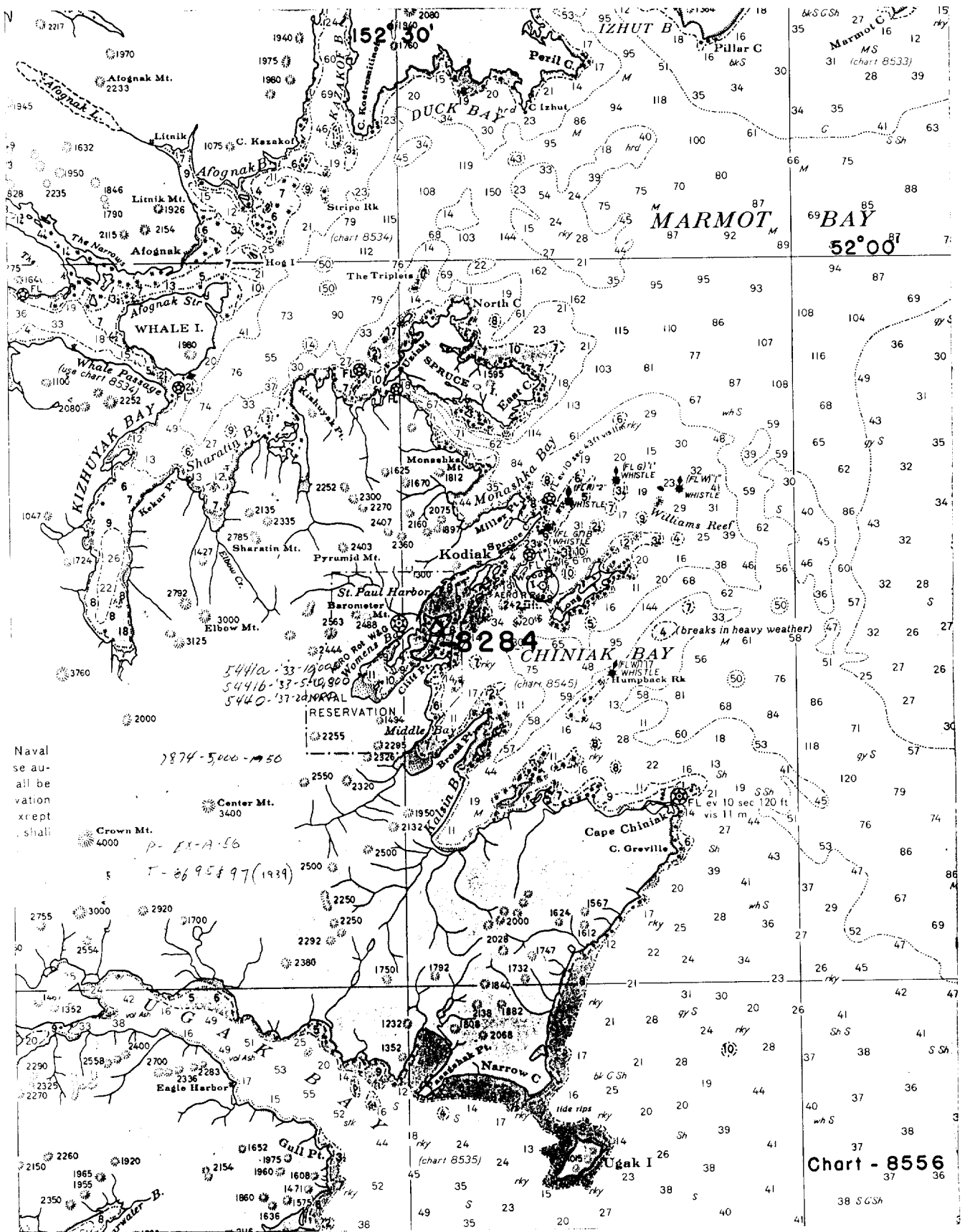
Chief of Party: G. A. Nelson in 1956  
Plane of reference is mean lower low water, reading  
5.2 ft. on tide staff at Womens Bay  
14.9 ft. below B. M. L (1949)

Height of mean high water above plane of reference is  
7.9 feet.

Condition of records satisfactory except as noted below:



Branch  
Chief, ~~Division of Tides and Currents~~



Naval  
 se au-  
 all be  
 vation  
 xcept  
 shall

7874-5000-50  
 Crown Mt.  
 4000  
 Center Mt.  
 3400  
 P-IX-A-56  
 T-2695897(1939)

Chart - 8556  
 37  
 36

