8440

Diag. Cht. No.8102-3.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. LJ-1158 Office No. H-8440

LOCALITY

State S. E. Alaska

General locality Prince of Wales Island

Locality Moira Sound

1958

CHIEF OF PARTY

H. J. Seaborg

LIBRARY & ARCHIVES

DATE March 23, 1959

USCOMM-DC 37022-P66

8440

Form 537
(Ed. June 1946)

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-8440

Field No. L J - 1158

State S E ALASKA

General locality PRINCE OF WALES ISLAND

Locality MOIRA SOUND

Scale 1:10,000 Date of survey 5 May 1958 - 10 June 1958

Instructions dated 2 October 1956 Supp Instr dated 25 October, 1957

Vessel Ship LESTER JONES Hydrography with Launch No. 88

Chief of party H. J. SEABORG

Surveyed by L. G. TAYLOR

Soundings taken by ~~fathometer~~, graphic recorder, hand lead, ~~wire~~ GRAPHIC RECORDER, Hand lead

Fathograms scaled by Ship's Personnel

Fathograms checked by Ship's Personnel

Protracted by M. T. EGAN

Soundings penciled by M. T. EGAN

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW Fathoms at MLLW based on a velocity of sound of 800 fm/sec

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY
FIELD NO LJ - 1158 Scale 1:10,000

A. PROJECT:

Project No CS-381. Instructions dated 20 October 1956. Supp. Instr. dated 25 October 1957.

B. SURVEY LIMITS AND DATES:

The survey covers all of Moira Sound west of Longitude 132° 10.5' West, which includes the south end of South Arm, West Arm, Frederick Cove and Dickman Bay.

Field work began on 5 May 1958 and was completed on 16 June 1958.

This sheet junctions with Contemporary Survey H-8384 at Longitude 132° 10.5' West, surveyed in 1957 at 1:10,000 scale.

Sub plans were used to cover Fredrick Cove and the North Arm of Dickman Bay because these bays extended further to the westward than indicated on Chart 8102 which was used as a base for sheet layouts. Smooth sheet is oversize; subplan only for North Arm of Dickman Bay.

The progress of the work was satisfactory; however, this is the first sheet accomplished in 1958 and it was necessary to train new men for anglemen and recorders.

C. VESSELS & EQUIPMENT:

Launch No 88 was used throughout the survey and operated from the LESTER JONES which based in various anchorages convenient to the work. Portable depth recorder 808 - 102S was used throughout.

D. TIDE & CURRENT STATIONS:

Portable automatic tide gage at entrance to South Arm, Moira Sound, latitude 55° 00.3' North, longitude 132° 06.9' West, was used without correction for the entire survey. Tide Gage not on this sheet; see H-8384

Staff readings were reduced to MLLW by applying (-5.8') correction in accordance with ltr. ref. 36-185-982 elj dated 19 May 1958 and ltr. 36-396-982 elj dated 3 October 1957.

No current stations were observed within the limits of this survey. For current station information on this project refer to ltr. to Director, subj: Report on Current Stations 1958 season dated 21 August 1958.

E. SMOOTH SHEET: (Smooth sheet processing)

/

E. SMOOTH SHEET (Added by smooth sheet plotter)
(See "Approval Sheet," H.J. Seaborg, this D.R.)

The projection was made by hand in Ketchikan in July 1958.

The transfer of shoreline, using blue line manuscripts, has been verified in accordance with the Hydrographic Manual.

Most signals were transferred from black line manuscripts and the topographic sheet after being located by photogrammetric or topographic means.

Signals plotted by special methods are:

"Mum", located by sextants on sheet H-8384 (LJ-1257), was transferred to smooth sheet LJ-1158 by plotting the signal on T-11525 from the sextants cuts and pricking through to the smooth sheet.

"Sol", was located by transfer from boat sheet present survey (LJ-1158) toT-11525 and pricked through. This method was used as the signal cannot be plotted on a T sheet without plotting another hydrographically located signal from H-8384 (LJ-1257). As the signal is used only a few times, the former method was deemed accurate enough.

"Out" was plotted on topographic sheet LJ-A-58 and transferred to smooth sheet. The signal was located by sextants on Sheet H-8384 (LJ-1257).

F. CONTROL STATIONS:

There are no triangulation stations within the limits of this survey. Δ End 1912 is shown on sheet just east of survey limit and can be used as reference station 751/3 10-20-45

Topographic control was located by photogrammetric and graphic control methods on T-11301; T-11522; T-11525 and graphic control sheet LJ-A-58.

Refer to Descriptive Report, Field No LJ-A-58 and addendum to Compilation Report Surveys T-11522 and T-11525 dated 20 August 1958 for adjustments made to control and shoreline.

G. SHORELINE & TOPOGRAPHY:

All shoreline was compiled from blackline topographic manuscripts T-11301; T-11522; T-11525. Shoreline changes were submitted to Wash. D. C. for the area and shoreline has been revised by Washington Office in accordance with these changes and control sheet LJ-A-58. Reference Addendum to Compilation Report Surveys T-11522 & T-11525 dated 20 August 1958.

Extensive shoreline ~~revision was made from~~ differences exist with original hydrographic survey H-1649, 1885. (H-1649 "b")

Steep bluffs and numerous ledges prevented identifying the low-water line by soundings in many areas. In areas where it was not possible to delineate the low-water line by soundings, numerous notes and references were made by the hydrographer to identify the low water line and serve as a means of field inspection for verification of the shoreline detail on the topographic manuscripts.

Shoreline features shown in red on the boat sheet indicate the correct location of the feature by the hydrographic party. Along shore features indicated in black ink on the boat sheet denote an agreement between the hydrographic party location and the topographic manuscript interpretation.

H. SOUNDINGS:

All soundings were taken with 808 portable depth recorder. Hand lead soundings were taken during some investigations to determine the least depth.

I. CONTROL OF HYDROGRAPHY:

Standard visual control methods of sextant fixes were used throughout.

J. ADEQUACY OF SURVEY:

This survey is satisfactory to supersede prior surveys for charting.

The junctions with contemporary surveys is satisfactory and adequate depth curves can be drawn.

K. CROSSLINES:

Crosslines were run approximately 8% spacing of the regular system of lines with a good agreement of depths throughout.

L. COMPARISON WITH PRIOR SURVEYS:
Hydrographic Survey H-1649b, 1:80,000 scale, 1885, indicated a few soundings for the area. A rough comparison was made which indicates that the agreement is satisfactory for these soundings. No accurate comparison was attempted because of the reconnaissance nature of the original survey and the large scale difference.

The agreement of depths at junctions with H-8384, 1:10,000 scale, 1957 was good.

The rock awash shown on T-11522 at Lat. 55° 01.86', Long. 132° 17.01' was investigated and not found. Refer to pos 55p and pos 56p of hydrographic volume. This rock should be deleted from the shoreline manuscript.

Neither rock on "Advance" shoreline manuscript

The rock awash shown on T-11522 at lat. 55° 03.03', long. 132° 16.90' was investigated and not found. Refer to pos 55j in hydrographic volume. This rock should be deleted from the shoreline manuscript.

Neither rock charted on Chart No. 8086

M. COMPARISON WITH CHART:

The largest scale chart for the area surveyed is 8102 scale 1:229,376 which does not indicate any information in addition to H-1649b which has been discussed under section L. Reviewer's comparison with Chart #8086 (1:40,000)

N. DANGERS AND SHOALS:

Important new Dangers & Shoals

Pos No	Depth	Lat 55	Long	Remarks
59e	0.9	54 56.89	132 12.32	Shoal in anchorage area
115f	1.1	54 56.56	132 11.37	Shoal in channel
107r	2.3	54 58.96	132 16.53	" " "
128r	4.4	54 58.90	132 16.68	" " "
131r	4.0	54 59.39	132 15.90	Shoal in anchorage area
137m-139m	0.5	55 03.08	132 17.15	Rocks in channel
167m	0.7	55 03.11	132 17.32	" " "

O. COAST PILOT INFORMATION:

The following areas are recommended as anchorages:

LAT	Long	Depth (fms)	Bottom	Remarks
54 56.0	132 12.2	7	Stky M	

1. The south end of South Arm, Moira Sound at Lat 54° 56.0 long 132. 12.2 provides a good all weather anchorage for vessels in about 7 fathoms. The bottom is sticky brown mud overlaying a hard bottom and provides excellent anchor holding qualities.

The anchorage is approached from Moira Sound holding mid channel courses. Vessels should pass midway between the eastern shore and the reef at Latitude 54° 58' Longitude 132° 09' then continue with mid-channel courses to the anchorage. The eastern tree line of island provides a good front range to follow a mid channel course and avoid charted shoal areas on either side of the channel. A prominent high point on the reef at Lat. 54° 56.10' longitude 132° 11.65' is visible except at extreme high tides and provides a useful landmark. The anchorage was not used by the survey party and no other vessels were in the area during the progress of the survey; however, the three streams at the head of the bay carry considerable salmon during the season and it is likely that this anchorage would be used at that time. Not a landmark. Islet peak bates 3 ft. above MHW.

2. A good all weather anchorage is available at the western end of Frederick Cove in about 7 fathoms with a soft mud bottom at Latitude 54° 58.85 longitude 132°-17.9'. Mid-channel courses may be carried to this anchorage except for the shoal at latitude 54° 58.97 longitude 132° 16.5.

The best channel at this point is midway between the shoal and the north shore.

Strong currents were experienced at this point during certain stages of the tide. The survey party did not use this anchorage during the progress of the survey.

3. Survey Ship Anchorages are as follows:

Lat. 55° 00.16', long 132° 14.22' in 15 fathoms with a hard bottom. This anchorage offers good protection from all but northerly winds and is readily accessible from Moira Sound.

Lat. 55° 01.5', long 132° 15.5' in 17 fathoms with a soft mud bottom. This anchorage provides good protection but has limited swinging radius.

P. AIDS TO NAVIGATION:

There are no fixed or floating aids to navigation in the areas covered by this survey.

Q. LANDMARKS FOR CHARTS:

Form No. 567 is furnished for landmarks in this area. (No landmark on this smooth sheet.)

R. GEOGRAPHIC NAMES:

There are no changes or additions to charted geographic names.

S. SILTED AREAS:

The South end of South Arm and the western portion of Frederick Cove shows evidence of an accumulation of silt approximately 6 feet thick which overlays a hard bottom. This is undoubtedly due to the overburden carried by the fresh water streams emptying into the respective bays. During and after a heavy rainfall the bay water has a distinctive brown color indicating the presence of sediment carried in by the streams. See fath. trace 230-232 "a", vol. 9, p.6 vicinity 61 "a", 85 "a", vol. 2

T-Y Not applicable.

Z. TABULATION OF DATA:

a. Descriptive Report LJ-A-58 (field)
b. Addendum to Compilation Report T-11522, T-11525 dated 20 August 1958.
c. Ltr. ref 36-185-982 elj dated 19 May 1958
d. Ltr. ref 36-396-982 elj dated 3 Oct 1957
e. See Addendum for list of Hydrographic signals used and their source.

Respectfully submitted,

Lorne G. Taylor

Lorne G. Taylor, Lcdr, C&GS

ADDENDUM TO HYDROGRAPHIC DESCRIPTIVE REPORT SHEET LJ-1158

SIGNAL NAME	SOURCE
ABE	T-11525 (1957)
ACE	T-11301 (1957)
ADD	T-11522
AIM	LJ-A-58
ALP	T-11525
ANT	LJ-A-58
ARM	T-11522 (1957)
AXE	T-11522
BAG	T-11301 (1957)
BAT	T-11525
BED	T-11525 (1957)
BIB	T-11522
BOB	T-11301 (1957)
BON	LJ-A-58
BOX	T-11522
BUM	T-11525
BUT	T-11522
CAB	LJ-A-58
CAR	LJ-A-58
CAT	T-11522
CAW	T-11525
COP	T-11522
CRY	T-11301 (1957)
DAY	T-11525
DEB	LJ-A-58
DIM	T-11525 (1957)
DIP	T-11301 (1957)
DOC	T-11301 (1957)
DOG	T-11522
DOT	LJ-A-58
DUO	LJ-A-58
EAR	T-11525 (1957)
EBB	T-11525
EGG	LJ-A-58
END	T-11525
EVA	T-11522
FAR	T-11522
FAT	T-11525
FIG	Hydro Vol 1 LJ-1158 ~~LJ-A-58~~
FIX	LJ-A-58
FLY	T-11522
FOE	T-11525
FOG	LJ-A-58
FOX	T-11522
GAM	LJ-A-58
GAS	T-11522
GEM	LJ-A-58
GET	T-11525 (1957)
GOT	T-11525 (1957)
GUM	T-11301 (1957)
GUY	T-11522
HAT	LJ-A-58
HER	LJ-A-58
HOE	T-11522
HOW	T-11522
IDA	T-11522
IVY	LJ-A-58
JAP	Hydro Vol 1 ~~LJ-A-58~~ LJ-1158
JAR	LJ-A-58
JIB	T-11522
JIM	T-11522 (1957)
JOY	T-11522
JUT	LJ-A-58
KED	T-11522
KEN	T-11522
KID	T-11525
LAX	LJ-A-58
LEG	T-11301 (1957)
LEO	T-11522
LIP	T-11522
MAG	Hydro Vol 1 (Lj-1158)
MAL	LJ-A-58
MAX	T-11522
MUM	Hydro Vol 1 H-8384
NAY	T-11522
NED	LJ-A-58
NEW	T-11522
NOD	Hydro Vol 1 LJ-1158
NIL	T-11522
NIP	T-11525
NUB	T-11522
OAK	T-11522
ODD	LJ-A-58
OFF	T-11522
OLD	T-11525
OUT	~~T-11525~~ (1957) HYDRO VOL I LJ 1158
PAD	T-11522
PEG	T-11522
PET	T-11522
PIN	T-11525
PIT	T-11525 (1957)
POT	T-11525 (1957)
PUP	T-11522
RAT	LJ-A-58
RAM	T-11522
RED	LJ-A-58
RIM	T-11525
LUG	T-11525

ADDENDUM (con't)

RIO	T-11522
SAD	T-11522 (1957)
SAL	T-11522
SAX	T-11522
SEM	T-11522 (1957)
SOL	Hydro Vol 1 H-8384
SIC	LJ-A-58
TAP	T-11522
TAX	T-11525
TOE	T-11522
TOM	T-11522
TOY	LJ-A-58
TUB	T-11522
VET	T-11522
VEX	LJ-A-58
VIM	Hydro Vol 1 LJ-1158
WAG	T-11522
WAR	LJ-A-58
WEE	T-11525
WHO	T-11522
WIT	T-11522
WIG	T-11522 (1957)
YES	T-11522
YET	LJ-A-58
ZAG	T-11522 (1957)
ZIG	T-11522
ZOO	LJ-A-58

YAM - T-11525

STATISTICS FOR
HYDROGRAPHIC SURVEY H-8440
FIELD NO. LJ-1158

Day Letter	Number of pos.	Stat. Mi. soundings	Total Naut. Mi. Launch run
(red)			
a	95	12.5	12.9
b	115	9.7	13.7
c	17	1.7	3.0
d	106	7.5	12.3
e	75	4.3	12.3
f	130	9.5	16.3
g	4	0.0	15.0
h	178	19.8	19.5
j	213	21.4	27.2
k	216	25.9	29.5
l	221	29.8	34.6
m	183	18.2	25.4
n	138	10.8	25.1
p	56	2.8	14.0
q	242	29.7	35.0
r	138	10.7	20.9
s	33	0.9	9.8
(blue)			
a	170	25.7	30.8
b	150	13.1	19.4
c	163	15.8	23.1
d	161	15.9	22.4
e	4	0.0	0.0
f	162	13.1	19.4
g	94	6.7	13.9
Totals red & blue	3064	305.5	455.5

TIDAL NOTE TO ACCOMPANY
HYDROGRAPHIC SURVEY
H-8440

A portable automatic tide gage was maintained at South Arm, Monta Sound, Latitude 55° 00.26'; Longitude 132° 06.89'; for the work on this survey. Tide reducers were applied without correction in accordance with ref. ltr. 36-185-982elj dated 19 May 1958.

No current stations were observed within the limits of the survey.

APPROVAL SHEET ✓

The field work on this survey was done under the personal supervision of the Chief of Party. The boat sheet was examined daily and the survey is considered complete and adequate for charting. No. further field work is recommended.

Protracting on this sheet was begun by Ensign V. B. Miller at Ketchikan but shortly discontinued because of some question on control. Completion of protracting and the remaining smooth sheet work was done by Ensign Martin T. Egan in Seattle. Supervision of smooth plotting was by the Chief of Party and LCDR. E. W. Richards.

Ensign Egan was not involved in the launch field work but assisted in ship hydrography. He, therefore, had some knowledge of field operations. Ensign Egan was very interested in doing a good and complete job of smooth sheet plotting and it is believed that the verification of this sheet will bear out his creditable job.

H. J. Seaborg
Chief of Party

Form 537a

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

GRAPHIC CONTROL
TOPOGRAPHIC TITLE SHEET

Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

REGISTRY No. .....

Field No. LJ-A-58

Scale 1/10,000

State ALASKA General locality PRINCE OF WALES ISLAND

Specific locality MOIRA SOUND (WEST ARM)

Dates: Survey began 12 MAY 1958 Completed 28 MAY 1958

Photography ....., Supplemented by ground surveys to .....

Project No. OS-381 Instructions dated 2 October 1956 and 25 October 1957 (Supp)

Vessel / Party or LESTER JONES / H. J. SEABORG Chief of party H. J. SEABORG

Field work by V. B. MILLER Office work by H. J. SEABORG

Final inking by H. J. SEABORG

Ground elevations / Treetop elevations in feet above { M. H. W. / or / ----------

Contours / Approximate contours / Form lines by { Planetable / Multiplex / ---------- } Interval ..... ft.

REMARKS This survey supplements photogrammetric methods in this area due to inadequate photo coverage.

U. S. GOVERNMENT PRINTING OFFICE 16—38129-1

GRAPHIC CONTROL SHEET
LJ-A-58
ALASKAN COAST
Project 381 1958 Field Season
Ship LESTER JONES H. J. SEABORG, CDR

AUTHORITY: Instructions, Project CS-381, Clarence Strait, Alaska, dated 2 October 1956 and Supplemental Instructions dated 25 October 1957.

REQUIREMENT: Due to inadequate photographic coverage for hydrographic signal location in West Arm and the lower portion of Dickman Bay, Moira Sound, it became necessary to resort to graphic planetable control. One sheet, LJ-A-58, at the same 1/10,000 scale of the furnished T sheets was required.

CONTROL: Third order triangulation stations:

SOUND 1912, MOI 1912 and END 1912

PHOTO-HYDRO stations:

COP, LEO, TOE and GAS 1958. Located on Incomplete Manuscript T-11522.
FOE and EBB 1958. Located on Incomplete Manuscript T-11525.
ZAG and WIG 1957. Located on Incomplete Manuscript T-11523.
COW 1957. Located on Incomplete Manuscript T-11526.

METHODS: The sheet was laid out to include three recovered triangulation stations at the eastern limit and five photo-hydro stations along the western limit. Beginning with known control at the eastern limit graphic triangulation was extended westerly to junction with the photo-hydro stations. As the work progressed additional stations were located for hydrography. At most planetable setups small sections of shoreline were mapped.

CLOSURES: Two independent closures by graphic triangulation from the triangle SOUND-END-MOI were made to photo station as follows:

Line COP-LEO (4 miles)	COP	17 m
	LEO	10 m
Line FOE-EBB (3.6 miles)	FOE	11 m
	EBB	19 m

As a check on orientation and to provide azimuths, SOUND 1912 and topo station CAR 1958 were occupied with a theodolite. The following azimuths were computed using scaled values for latitude of CAR 1958 and distance between SOUND and CAR:

Closures, continued:

SOUND - CAR	90° 43' 18"
CAR - SOUND	270° 38' 49"
CAR - COP	125° 00' 41"
CAR - LEO	153° 45' 19"
CAR - TOE	165° 41' 13"

Using the above values, azimuths were carefully drawn on the planetable sheet. After adjusting CAR 4 m to the south to conform with the observed azimuth the following closures in azimuth were obtained:

COP	6 m
LEO	9 m
TOE	18 m

These closures are roughly in proportion to distances from CAR and in the same direction.

Beginning with the photo signals line COP - LEO as transferred from T-11522 graphic control was expanded to the line TOE - GAS. Closure at TOE was 17 m, at GAS, 28 m.

ADJUSTMENTS: Photo stations LEO and COP were identified close to the edge of field prints 540-341 and 540-342 respectively. Station LEO was deemed the more positive location of the two and hence was held fixed in this part of the adjustment. Topographic stations AIM, DEB, GEM, HAT and LAX in the southern portion of Dickman Bay were thus adjusted.

Topographic stations HER, IVY and JUT on the east shore of Dickman Bay were adjusted between the lines COP - LEO and TOE - GAS.

Subsequent hydrography proved this adjustment in Dickman Bay as there were no detectable errors.

The photogrammetric location of FOE was accepted but the 19 m closure at EBB (both of these stations are at the entrance to Frederick Cove) was adjusted half on topo and half on the photo. The adjusted position of EBB is also shown on T-11525. Topographic stations between CAR and EBB were then adjusted.

Subsequent to the topographic survey identification of PAD was made on photograph 310B and transferred to T-11522. No plotable descrepancy exists between the two locations of the same signal.

The topographic location of all other signals (West Arm proper) were accepted without further adjustment. Photo stations COW, ZAG and WIG from the 1957 work were checked with no plotable discrepancy.

SHORELINE: Short sections of shoreline were added in at most of the planetable set-ups. All shoreline was adjusted to conform with final station positions. Agreement with the shoreline as derived from the incomplete manuscripts was not too good. Large sections of the area has overhanging trees obscuring the HWL in many of the photographs. This was especially so at station AIM.

CONCLUSIONS: This survey filled the need created by inadequate photograph coverage for signal location. After station CAR was adjusted 4 m south to conform to the observed geodetic azimuth, Directions to COP, LEO and TOE might indicate that the photogrammetric plot was slightly out of azimuth in this area as shown in section on closures.

The hydrographic party checked shoreline throughout this area. In several instances there is considerable disagreement with the photo location. All shoreline changes have been indicated on paper copies of the manuscripts which will be forwarded shortly for review.

Signal locations were adjusted to provide adequate agreement for the purpose of control of hydrography.

Respectfully submitted,

H. J. SEABORG, Comdg.,
SHIP LESTER JONES

LJ/HJS/cks
File: 706

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 470
Ed. Oct., 1932

ABSTRACT OF DIRECTIONS

State ALASKA

Station CAR 1958 (Topographic) Computed by H.J.S. Date May 28, 1958

Observer V.B. Miller Checked by V.B.M. Inst. No. Wild 19302

U. S. GOVERNMENT PRINTING OFFICE 16—33704-3

DO NOT WRITE IN THIS MARGIN

POSITION NO.	STATIONS OBSERVED								
	SOUND 1912	COP 1958 (Photo)	LEO 1958 (Photo)	TOE 1958 (Photo)					
	(INITIAL) 0° 00′	° ′ 214 21	° ′ 243 06	° ′ 255 02	° ′	° ′	° ′	° ′	° ′
	″	″	″	″	″	″	″	″	″
1	0.00	53.4	31.2	22.3					
2	0.00	51.7	28.9	26.4					
3	0.00								
4	0.00								
5	0.00								
6	0.00								
7	0.00								
8	0.00								
9	0.00								
10	0.00								
11	0.00								
12	0.00								
13	0.00								
14	0.00								
15	0.00								
16	0.00								
Sum,									
Mean,		52.6	30.0	14.4					
Cor. for ecc.,									
Direction,									

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 470
Ed. Oct., 1932

ABSTRACT OF DIRECTIONS

State ALASKA

Station SOUND 1912 Computed by H. J. S. Date May 23, 1958

Observer H. J. Seaborg Checked by V. B. M. Inst. No. Wild 19302

U. S. GOVERNMENT PRINTING OFFICE 16—88705-2

DO NOT WRITE IN THIS MARGIN

POSITION NO.	STATIONS OBSERVED							
	MOI 1912	END 1912	CAR 1958					
	(INITIAL) 0° 00′	° ′ 260 13	° ′ 291 31	° ′	° ′	° ′	° ′	° ′
	″	″	″	″	″	″	″	″
1	0.00	39.4	18.4					
2	0.00	41.3	21.8					
3	0.00	41.8	18.2					
4	0.00	44.1	27.4					
5	0.00							
6	0.00							
7	0.00							
8	0.00							
9	0.00							
10	0.00							
11	0.00							
12	0.00							
13	0.00							
14	0.00							
15	0.00							
16	0.00							
Sum,		166.6	85.8					
Mean,		41.6	21.4					
Cor. for ecc.,								
Direction,								

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 24A
Rev. Oct., 1932

LIST OF DIRECTIONS

Station SOUND 1912 State ALASKA

Chief of party H. J. Seaberg Date May 23, 1958 Computed by H.J.S.

Observer H.J.S. Instrument Wild T3 02 Checked by V.B.M.

11—9503

OBSERVED STATION	Observed direction	Eccentric reduction	Sea level reduction*	Corrected direction with zero initial	Adjusted direction*
	° ′ ″	′ ″	″	° ′ ″	′ ″
MOI 1912	0 00 00.00			0 00 00.00	
END 1912	260 13 41.6				
CAR 1958	291 31 21.4				

Note:

CAR is topographic station to be used for magnetic observations. Directions taken to determine geodetic azimuth of line CAR to SOUND.

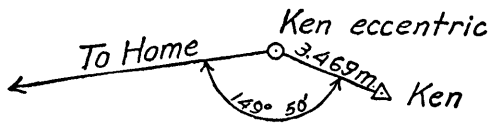
* These columns are for office use and should be left blank in the field.

Station: Ken | *State:* Maryland

Chief of party: C. V. H. | *Date:* 1917 | *Computed by:* O. P. S.

Observer: C. V. H. | *Instrument:* No. 168 | *Checked by:* W. F. R.

OBSERVED STATION	Observed direction	Eccentric reduction	Sea level reduction	Corrected direction with zero initial	Adjusted direction
	° ′ ″	′ ″	″	° ′ ″	′ ″
Chevy	0 00 00.00	− 7.31		0 00 00.00	
Tank west of △ Dulce	29 03 37.0	−1 09.8		29 02 34.5	
Ken (center), 3.469 meters	176 42				
Forest Glen standpipe	313 24 53.0	+3 01.2		313 28 01.5	
Home	326 31 30.21	+ 31.93		326 32 09.45	
Bureau of Standards, wireless pole	352 17 20.8	+ 5.7		352 17 33.8	
Reno	357 28 48.63	− 1.16		357 28 54.78	
Reference mark, 16.32 m	358 31 20				



This form, with the first three and fifth columns properly filled out and checked, must be furnished by field parties. *To be acceptable it must contain every direction observed at the station.*

It should be used for observations with both repeating and direction theodolites.

The directions at only one station should be placed on a page.

If a repeating theodolite is used, do not abstract the angles in tertiary triangulation. The local adjustment corrections (to close horizon only) are to be written in the Horizontal Angle Record, and the List of Directions is to be made from that record directly.

Choose as an initial for Form 24A some station involved in the local adjustment, and preferably one which has been used as an initial for a round of directions on objects not in the main scheme. Use but one initial at a station. Call the direction of the initial 0° 00′ 00.″ 00, and by applying the corrected angles to this, fill in opposite each station its direction reckoned *clockwise* around the whole circumference regardless of the direction of graduation of the instrument. The clockwise reckoning is necessary for uniformity and to make the directions comparable with azimuths.

If a station has been occupied eccentrically, reduce to the center and enter in this form, in ink, the resulting corrections to the observed directions in the column provided for them. If an eccentric reduction is necessary, but not made in the field, leave the column blank. If the station was occupied centrally, and no eccentric reduction is required, put dashes in the column to show that no corrections are necessary.

Directions in the main scheme should be entered to hundredths of seconds in first-order triangulation; otherwise to tenths only. Points observed upon but once, direct and reverse, should be carried to tenths in first-order and second-order triangulation, and to even seconds only in third-order triangulation. In general, but two uncertain figures should be given.

It is recommended that the following simple plan of observing be used with a repeating instrument: Measure each single angle in the scheme at each station and the outside angle necessary to close the horizon. *Measure no sum angles.* Follow each measurement of every angle immediately by a measurement of its explement. Six repetitions are to constitute a measurement. The local adjustment will consist simply of the distribution of the error of closure of the horizon.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 24A
Rev. Oct., 1932

LIST OF DIRECTIONS

Station CAR 1958 (Topo) State ALASKA

Chief of party H.J. SEABORG Date MAY 28, 1958 Computed by H.J.S.

Observer V.B. MILLER Instrument WILD T3302 Checked by V.B.M.

11—9503

OBSERVED STATION	Observed direction	Eccentric reduction	Sea level reduction*	Corrected direction with zero initial	Adjusted direction*
	° ′ ″	′ ″	″	° ′ ″	′ ″
SOUND 1912	0 00 00.00			0 00 00.00	
COP 1958 (Photo)	214 21 53				
LEO 1958 (Photo)	243 06 30				
TOE 1958 (Photo)	255 02 24				

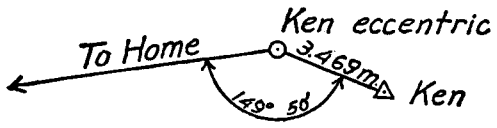
* These columns are for office use and should be left blank in the field.

Station: Ken | *State:* Maryland

Chief of party: C. V. H. | *Date:* 1917 | *Computed by:* O. P. S.

Observer: C. V. H. | *Instrument:* No. 168 | *Checked by:* W. F. R.

OBSERVED STATION	Observed direction			Eccentric reduction		Sea level reduction	Corrected direction with zero initial			Adjusted direction	
	°	′	″	′	″	″	°	′	″	′	″
Chevy	0	00	00.00	−	7.31		0	00	00.00		
Tank west of △ Dulce	29	03	37.0	−1	09.8		29	02	34.5		
Ken (center), 3.469 meters	176	42									
Forest Glen standpipe	313	24	53.0	+3	01.2		313	28	01.5		
Home	326	31	30.21	+	31.93		326	32	09.45		
Bureau of Standards, wireless pole	352	17	20.8	+	5.7		352	17	33.8		
Reno	357	28	48.63	−	1.16		357	28	54.78		
Reference mark, 16.32 m	358	31	20								



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Choose as an initial for Form 24a some station involved in the local adjustment, and preferably one which has been used as an initial for a round of directions on objects not in the main scheme. Use but one initial at a station. Call the direction of the initial 0° 00′ 00.″ 00, and by applying the corrected angles to this, fill in opposite each station its direction reckoned *clockwise* around the whole circumference regardless of the direction of graduation of the instrument. The clockwise reckoning is necessary for uniformity and to make the directions comparable with azimuths.

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Scaled Dist. SOUND - CAR = 5839m   Sta. CAR 1958 is topographic see sheet LJ-A-58

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27
Ed. April, 1929

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

		°	′	″			°	′	″
α	2 SOUND 1912 to 3 END 1912	59	25	37.8	α	3 SOUND 1912 to 2 MOI 1912	159	11	47.6
2d ∠	&	+ 31	17	39.8	3d ∠	&	− 68	28	38.6
α	2 SOUND 1912 to 1 CAR 1958	90	43	17.6	α	3 SOUND 1912 to 1 CAR 1958	90	43	09.0
Δα		−	04	29.0	Δα				
		180	00	00.0			180	00	00.0
α′	1 CAR 1958 to 2 SOUND 1912	270	38	48.6	α′	1 to 3			

FIRST ANGLE OF TRIANGLE

	°	′	″			°	′	″		°	′	″			°	′	″
φ	55	00	03.05	2 SOUND	λ	132	08	12.65	φ				3	λ			
Δφ					Δλ	+	05	28.4	Δφ					Δλ			
φ′	55	00	05 *	1 CAR	λ′	132	13	41.05	φ′				1	λ′			

	Logarithms	Values in seconds				Logarithms	Values in seconds
s				½(φ+φ′)			
Cos α				s		3.766 338	
B		1st term	″	Sin α		9.999 966	
h				A′		8.508 738	
s²				Sec φ′		0.241 424	″
Sin² α				Δλ		2.516 466	328.4
C		2d term	+	Sin ½(φ+φ′)		9.913 370	
h²				−Δα		2.429 836	269.0
D		3d term	+				
		−Δφ					

	Logarithms	Values in seconds				Logarithms	Values in seconds
s				½(φ+φ′)			
Cos α				s			
B		1st term	″	Sin α			
h				A′			
s²				Sec φ′			″
Sin² α				Δλ			
C		2d term	+	Sin ½(φ+φ′)			
h²				−Δα			
D		3d term	+				
		−Δφ					

11—9362   U. S. GOVERNMENT PRINTING OFFICE: 1929

* Scaled from topo sheet 41.05″ = 729m
Scaled = 731m
Diff. 02m between computed and scaled (longitude)

Comp. [illegible]

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-8440 ✓

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Alaska			(title)							1
Southeast Alaska			"							2
Prince of Wales Island			"							3
Moira Sound			"							4
South Arm			(Tide station location)							5
West Arm										6
Frederick Cove										7
Dickman Bay										8
										9
			Names approved 4-23-59							10
			L. Heck							11
There are no known names for the arms of Dickman Bay.										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8440

Records accompanying survey: Destroyed 3/24/70

Boat sheets 1 (3-parts); sounding vols. 12; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 7-Envelopes

special reports, etc. 1-Smooth sheet and 1-Descriptive report.

1 each Blackline impressions T-11522 + T-11525

2 each Blueline impressions T-11522 + T-11525

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

		VERIF.	Review
Number of positions on sheet		3,064	
Number of positions checked	Approx.	8 per cent	37
Number of positions revised		4	0
Number of soundings revised (refers to depth only)		14	0
Number of soundings erroneously spaced		0	0
Number of signals erroneously plotted or transferred		3	0
Topographic details	Time	16 hrs.	3 hrs.
Junctions	Time	6 hrs.	1 hr.
Verification of soundings from graphic record	Time	12 hrs.	8 hrs.

Verification by George A. Rozewicz Total time 399 hrs. Date Oct 7-1965

Reviewed by S. Rose Time 104 hrs. Date July 23, '69

Review: June 2, 1969
to
July 23, 1969
(Worked on another sheet
June 4 - June 27, 1969)

M-2232-1

RHC

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

30 April 1959

Plane of reference approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 8440

Locality Moira Sound, Alaska

Chief of Party: H. J. Seaborg in 1958

Plane of reference is mean lower low water, reading

5.8 ft. on tide staff at South Arm, Moira Sound

23.1 ft. below B.M. 1 (1957)

Height of mean high water above plane of reference is 13.8 foot.

Condition of records satisfactory except as noted below:

Signature

Chief, Tides Branch

Comm-DC 34330

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8440 FIELD NO. LJ-1158

Southeast Alaska, Clarence Strait, Moira Sound

SURVEYED: May 5, 1958 through June 10, 1958

SCALE: 1:10,000 PROJECT NO.: CS-381

SOUNDINGS: Type 808 Depth Recorders CONTROL: Sextant Fixes on Shore Signals

Chief of Party..... H. J. Seaborg
Surveyed by..... L. G. Taylor
Protracted by..... M. T. Egan
Soundings Plotted by..... M. T. Egan
Verified by..... G. A. Kozemczak
Reviewed by..... S. Rose
..... Date: July 23, 1969
Inspected by..... R. H. Carstens

1. Description of the Area

This is a survey of the West Arm of Moira Sound; it includes Dickman Bay, Frederick Cove and the southern half of South Arm. This is the first closely developed survey of this area.

The shore is steep, and in general the foreshore bottom extends sharply into deep waters. Numerous rocks, shoals and islets rise abruptly from deep depths even from the center of natural channels.

The bottom is predominently mud. Rocky ledges extend along much of the shoreline.

2. Control and Shoreline

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

The shoreline originates with advance manuscripts, field inspected but unreviewed, of T-11522 and T-11525 of 1954-58. The southern tip of South Arm falls on T-11301 which is incomplete. These sheets are based upon year 1954 photography and were field inspected in 1958. However, no advance manuscript is available for T-11301. A short section of high waterline at signal "AIM" was transferred from a temporary graphic control sheet LJ-A-58.

3. Hydrography

A. Depths at crossings are in good agreement.

B. Standard depth curves are adequately delineated. However, the steep gradient of much of the shore prevented developing the low water line and some of the 1-fathom curve.

C. The development of the bottom configuration and least depths is adequate. However, the shoals which were investigated only by the use of fathometer, should have been corroborated for least depth by the use of hand lead.

4. Condition of the Survey

The field plotting, sounding records and the Descriptive Report are adequate, and conform to the requirement of the Hydrographic Manual except that two different colors for position identification were used for the same launch, with identical "day letters". Several reefs awash at minus tide, but covered three or more feet at MLLW, were inked on the boatsheet as low water features and caused confusion in the interpretation of records.

5. Junctions

An adequate junction was affected with H-8384 (1957) on the East.

6. Comparison With Prior Surveys

H-1649 "b" (1885) 1:80,000

Because of the small scale and paucity of soundings of this survey, a detailed comparison between it and the present survey is not meaningful. The present survey supersedes the prior survey in the common area.

7. Comparison With Chart No. 8086, Revised First Edition, September 20, 1965.

A. Hydrography

The charted hydrography in the area of the present survey is from the verified smooth sheet of the present survey before review. Fractional soundings in depths less than 11 fathoms are charted in fathoms and feet; the conversion to this form from fathoms and tenths on the smooth sheet, is accurate. This is the first chart representing on a large scale the arms of Moira Sound.

Attention is directed to the following:

(1) The charted 3-fathom 5-feet sounding at lat. 55°01.69' - long. 132°16.68' originates with the verified smooth sheet of the present survey before review. Forty meters southeast of this sounding a least depth of 3.1-fathom is shown in mid-channel· a sounding of 3 fathoms should be charted in this position.

(2) The rock awash symbol charted at lat. 54°59.08' long. 132°16.40' from the verified smooth sheet of the present survey was misplotted by the smooth plotter. The ledge from shore in this vicinity extends about 75 meters further eastward than charted. The rock awash symbol should be removed from the chart, and the representation of the area corrected as shown on the reviewed smooth sheet.

(3) The 2-fathom 3-feet sounding charted at lat. 54°56.54' - long. 132°11.38' originates with the verified smooth sheet of this survey. An examination of the records reveals a 1$\frac{7}{}$ fathom which should be charted on this feature.

(4) The reef (12) charted at lat. 54°56.10' - long. 132°11.64' originates with the verified smooth sheet of the present survey. The records indicate that the high point, apparently, is an islet which bares 3 feet at MHW. The descriptive report emphasizes the value of this feature for navigating in this area.

(5) The 34 charted in lat. 55°00.28' - long. 132°14.04' from the present survey after verification, was subsequently found to be in error and should be 66.

(6) The rock awash symbol charted in lat. 54°59.73' - long. 132°14.23' from the present survey after verification is covered 5 feet at MLLW and is not a low water feature.

(7) The 1 fathom, 1 foot sounding and adjacent ledge charted in lat. 55°02.95' - long. 132°17.13' from the present survey prior to review were found to be plotted in error. The chart should be revised to agree with the present plot.

Except as noted above there are only minor differences between the present survey and charted information.

B. Aids to Navigation

There are no aids to navigation within the area of the present survey.

8. Compliance with Instructions

The present survey adequately complies with project instructions.

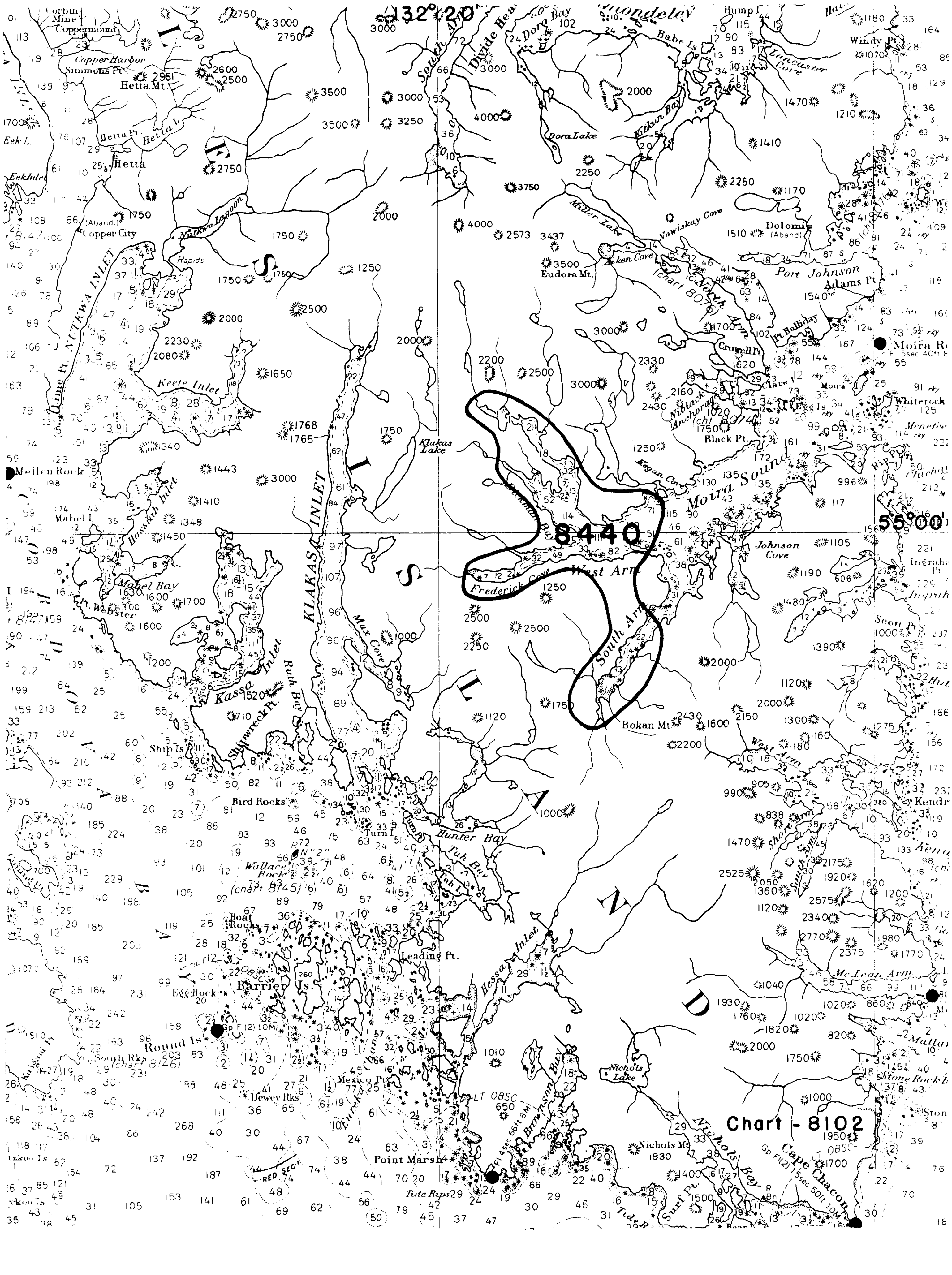
9. Additional Field Work

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

Examined and Approved:

John A. Boyer
Chief
Marine Chart Division

Associate Director
Hydrography and Oceanography



132° 20'
55° 00'
8440
Chart - 8102
Copper Harbor
Simmons Pt.
Hetta Mt.
Hetta
Hetta L.
Eek Inlet
Copper City
Nutkwa Lagoon
Rapids
NUTKWA INLET
Lime Pt.
Keete Inlet
Mellen Rock
Mabel I.
Hassiah Inlet
Mabel Bay
Pt. Webster
Kassa Inlet
Ruth Bay
Shipwreck Pt.
Ship Is.
KLAKAS INLET
Klakas Lake
Max Cove
Bird Rocks
Turn I.
Hunter Bay
Tah Bay
Tah I.
Wallace Rock
(chart 8145)
Boat Rocks
Barrier Is.
Leading Pt.
Egg Rock
Round Is.
South Rks
(chart 8146)
Dewey Rks
Mexico Pt.
Eureka Chan.
Point Marsh
Tide Rips
Hessa Inlet
Brownson Bay
Nichols Lake
Nichols Mt.
Nichols Bay
Surf Pt.
Cape Chacon
South Arm
Divide Head
Dora Bay
Dora Lake
Kitkun Bay
Babe Is.
Lancaster Cove
Miller Lake
Nowiskay Cove
Eudora Mt.
Aiken Cove
North Arm
(chart 8074)
Dolomi
(Aband.)
Port Johnson
Adams Pt.
Pt. Halliday
Crowell Pt.
Clare I.
Niblack Anchorage
(cht 8074)
Egg Is.
Black Pt.
Moira Rk
Moira Sound
Kegan Cove
Frederick Cove
West Arm
South Arm
Johnson Cove
Bokan Mt.
West Arm
Short Arm
South Arm
McLean Arm
Windy Pt.
Whiterock
Menefee
Ingraham Pt.
Scott Pt.
Stone Rock B.
Mallard
Hump I.
Bn.
LT OBSC
Gp Fl (2) 15sec 50ft 10M
Gp Fl (2) 10M
Fl 4sec 66ft 8M
Fl 5sec 40ft 8
RED SEC
I S L A N D

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8440

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
5/20/59	8102	M. Rogers	Examined Before ~~After~~ Verification and Review added 1 * and revised 1 sounding.
2-11-61	New Chf. 8086	M. Rogers	Fully appl. Before ~~After~~ Verification and Review
11 Mar 61	8002	Earl M Bragg	Before ~~After~~ Verification and Review No Corr at this scale consider as Comp. appl thru 8086 N.C. & 8102 drwg #14
4-15-71	8102	E. Frey	Part appd Before After Verification and Review & inspection Checked review for critical corrections only
9/23/73	8086	James Graham	~~Before~~ After Verification and Review Dwg #4 Fully app'd hydro to cht 8086 proof after final inspection
4/4/74	8102	E. Frey	~~Before~~ After Verification and Review & inspection Fully app'd via cht 8086 dwg #4
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.