

8213

Diag. Cht. No. 8502-2.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. B0-2155 Office No. H-8213

LOCALITY

State Alaska

General locality Cook Inlet

Locality Fire Island

1955

CHIEF OF PARTY

H. C. Applequist

LIBRARY & ARCHIVES

DATE July 27, 1959

COMM-DC 61300

8213

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-8213

Field No. BO-2155

State Alaska

General locality Cook Inlet

Locality Fire Island

Scale 1:20,000 Date of survey 1955

Instructions dated 27 December 1954

Vessel Ship BOWIE

Chief of party H.C. Applequist

Surveyed by H.C. Applequist

Soundings taken by fathometer, ~~graphic recorder, hand lead, wire~~

Fathograms scaled by FWL

Fathograms checked by KAM AND HCA

Protracted by C. R. Lehman

Soundings penciled by C. R. Lehman

Soundings in ~~fathoms~~ feet at ~~MLLW~~ MLLW *are based on a velocity*

REMARKS: *of sound of 800 fm per sec.*

GS
202

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SURVEY H-8213, FIELD NO. BO-2155 (Ap 52646,7)

VICINITY OF FIRE ISLAND, COOK INLET, ALASKA

SCALE: 1:20,000

USC&GSS BOWIE

H.C. Applequist, Comdg.
Survey by: H.C. Applequist

A. PROJECT:

The survey was accomplished in accordance with instructions given in the Director's letter dated 27 December 1954, 22/MEK, S-2-BO. ✓

B. SURVEY LIMITS AND DATES:

The survey covered an area in the vicinity of Fire Island from Longitude $150^{\circ} 20'$ on the West to Longitude $149^{\circ} 56'$ on the East. Field work was begun on 10 June 1955 and ended on 30 June 1955. The survey covers the same approximate area as prior survey 7186, Scale 1:20,000, 1947. ✓

C. VESSEL AND EQUIPMENT:

The Ship BOWIE was used for all sounding except a small area of development in the vicinity of buoy No. 1, Latitude $61^{\circ} 12.5'$, Longitude $150^{\circ} 05.0'$ which was done with Launch No. 133. The turning radius of the Ship BOWIE is approximately 75 meters at standard speed, Launch 133 has a turning radius of approximately 12 meters at sounding speed. Fathometer 144-SP of the 808J type was used for all ship work. Fathometer S-111, 808J, was used for the Launch development. ✓

D. TIDE AND CURRENT STATIONS:

A portable tide gage was maintained at Fire Island, Latitude $61^{\circ} 09.6'$, Longitude $150^{\circ} 13.98'$. Three tide zones were used, ✓
Zone 1 was from the western limits of the survey to a diagonal line defined by Latitude $61^{\circ} 11'$, Longitude $150^{\circ} 07'$ and Latitude $61^{\circ} 15'$, Longitude $150^{\circ} 11'$, to which no time or range corrections were applied. ✓
Zone 2 was from the above diagonal line eastward to Longitude $150^{\circ} 03'$ to which a plus 7 minute time correction and a 1.04 range factor were applied.
Zone 3 was from Longitude $150^{\circ} 03'$ to the eastern limits of the survey, to which a time correction of plus 15 minutes and 1.084 range factor were applied.

F. CONTROL STATIONS:

A complete list of signals used with their origins is included with this report. ✓

Note Elevation determined for rock awash at Lat. $61^{\circ} 09.6'$
Long $150^{\circ} 13.84'$ from Tide Report of H-8468 (1959)

H.W.B.

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topographic detail for this survey were furnished on the boat sheet by the Washington Office. ✓

H. SOUNDINGS:

All soundings were taken with 808J fathometers, for a few soundings deeper than the "D" scale range, the phasing head was turned solid against the shift button, this was called "X" scale. Phase comparisons were made and a correction of plus 154 feet was applied to "A" scale readings to obtain depths recorded on "X" scale. See page 33, Vol. 1 of sounding volumes. ✓

A bar check was taken to determine the setting of the initial at 4.0 ft. On "F" day, 18 June 1955, a switch was made to keel transducers which are mounted two feet lower and the initial setting was changed to 6.0 feet. ✓

J. ADEQUACY OF SURVEY:

Survey is considered complete and adequate to supersede prior surveys for charting. ✓

K. CROSSLINES:

Adequate crosslines were run on the southern portion of the survey. Crosslines were not run on the shoal to the north due to unfavorable tides. ✓

L. COMPARISON WITH PRIOR SURVEYS:

Drastic shifting of the shoal area is noted when compared with prior survey 7186, a detailed comparison will be made by the smooth plotter. ✓

N. DANGERS AND SHOALS:

?
The shoal in the vicinity of buoy No. 1, Latitude 61 12.5', Longitude 150 05.0', was developed using a special boat sheet. Buoy No. 1 which marks this shoal was dragged out of position by a tug and barge just prior to its location by the hydrographic party. This fact was reported to the Kodiak Coast Guard and it is assumed that the buoy has been restored to its former charted position. ✓

buoy not shown on smooth sheet due to above mentioned displacement

COAST PILOT INFORMATION:

No additions or deletions are recommended. ✓

AIDS TO NAVIGATION AND LANDMARKS FOR CHARTS:

Botm 567 was attached to Photogrammetric report for this area. ✓

GEOGRAPHIC NAMES:

No additions or deletions are recommended.

Respectfully submitted:

Allen L. Powell
for H.C. Applequist
Commander, C&GS

✓

SIGNALS

NAME	ORIGIN
Hut ○	Traverse, Vol. 1, page 3
Tide ○	Hydrographic, Vol. 5, page 3
Race △	RACE PT., 1909 ✓
Wind ○	BO-B-55 ✓
Road ○	BO-B-55 ✓
Fish ○	BO-B-55 ✓
Camp ○	BO-B-55 ✓
Gold ○	BO-B-55 ✓
Drif ○	BO-B-55 ✓
Light △	RACE PT. LT., 1941 ✓
Bear ○	BO-B-55 ✓
Gabe ○	BO-B-55 ✓
Rock ○	BO-B-55 ✓
Bold ○	BO-B-55 ✓
East ○	BO-B-55 ✓
Bea △	BEA, 1941 ✓
White ○	* Theodolite cuts
Wor ○	R.M. 2, WORONZOF, 3, 1947 ✓
Fun ○	Hydrographic, Vol. 6, page 2
Keni △	Anchorage Radio Station, KENI, Tower, 1954 ✓ landmark
Knik ○	BO-A-55 ✓ landmark
High ○	BO-B-55 ✓
Ware ○	BO-B-55 ✓
West ○	BO-B-55 ✓
Tow △	Anchorage Radio Station, KFQD, Tower, 1954 ✓
Pie ○	* Theodolite cuts

* BO-A-55, BO-B-55 not in office 12-15-59 JCL.

* * Records are possibly in Geodesy - source not checked ✓

* Note B.O.-A-55, BO B-55 not in office
on 7/13/60 - NWP.

* B.O.-A-55 & B-55 inspected. Signal
positions confirmed. D.R.E. 10-19-62

TIDE NOTE

Soundings were reduced using data from the portable gage at Fire Island. ✓

Soundings were reduced to MLLW. Mean Lower Low Water corresponds to 4.0 feet on the staff. ✓

STATISTICS

Date	Day	POSITIONS			MILES OF SOUNDINGS				NAUT. MILES		
		Ltr	Vol.	Vol.	Total	Nautical		Statute		To & From	Misc. Run
1955	A	1	109		109	28.3	28.3	32.4	32.4	27.0	2.0
6-14	B	1	145			35.3		40.5			
6-14	B	2	132		277	32.7	68.0	37.6	78.1	15.0	6.0
6-15	C	2	168			38.0		43.7			
6-15	C	3	264		432	63.0	101.0	73.4	116.1	4.5	5.0
6-16	D	3	112			26.0		72.5			
6-16	D	4	295		407	63.0	89.0	29.9	102.4	2.0	4.0
6-17	E	5	60		60	15.0	15.0	17.3	17.3	15.0	2.0
6-18	F	5	208		208	34.5	34.5	39.6	39.6	2.0	3.0
6-19	G	6	271			54.1		62.1			
6-19	G	7	9		280	1.2	55.3	1.4	63.5	16.0	2.0
6-20	H	7	79		79	17.7	17.7	20.4	20.4	16.0	1.0
6-21	J	7	117		117	27.0	27.0	31.0	31.0	8.5	2.0
6-22	K	7	39			9.1		10.5			
6-22	K	8	228			37.4		42.9			
6-22	K	9	79		346	17.0	63.5	19.5	72.9	5.0	18.0
6-27	L	9	184			42.1		48.4			
6-27	L	10	131		315	30.2	72.3	34.7	83.1	1.5	8.0
6-28	M	10	130			28.0		32.2			
6-28	M	11	171		301	40.2	68.2	46.0	78.2	10.0	2.0
6-29	N	11	88			19.7		22.7			
6-29	N	12	271			71.5		81.8			
6-29	N	13	54		413	11.5	102.7	13.2	117.7	14.5	10.0
6-30	P	13	221		221	44.9	44.9	51.9	51.9	15.0	5.0
TOTAL FOR SHIP BOWIE					3565		760.4		873.6	152.0	75.0
6-30	a	14	85		85	13.2	13.2	15.1	15.1	1.5	0.5
TOTAL FOR LAUNCH 133					85		13.2		15.1	1.5	0.5
TOTAL					3650		773.6		888.7	153.5	75.5

TOTAL AREA: SQUARE STATUTE MILES

PROCESSING OFFICE NOTES H-8213

SMOOTH SHEET

The smooth sheet was hand constructed by the Seattle Hydrographic Processing Unit using standard methods of construction and checking.

SHORELINE AND TOPOGRAPHY

The shoreline was transferred from T-3038 and T-3039 both in 1909 and T-3102 in 1910 also Photo Manuscript T-11570 (which was reduced in the Salzman Projector from 1/10,000 to 1/20,000. (1955)

SOUNDINGS

Due to the wide range of tide and the radical bottom changes in this area the 3' correction was accepted - W.M.B.
Soundings on "k" day between positions 161 and 227 did not agree with crossings or soundings on adjacent lines by about 3 feet. No reason could be found for the discrepancy except that the paper appears to have been torn in passing over the rollers also there appear to be jumps in the paper. A note or two in the record book mentions the jamming of the paper in the fathometer. A plus-3 foot correction was applied to the soundings and now they appear reasonable.

COMPARISON WITH PRIOR SURVEYS

The torn paper and fathogram jumps were accepted as a cause for these differences. Tides may also contribute to this, but were not checked. Corrections accepted as entered by P.O. JBC
No comparison with H-7186 was made because the only copy available was used as the boat sheet for this survey and is difficult to follow.
See Review item 5B

COMPARISON WITH CHART

Comparison was made with Chart 8557 7th Ed dated 10-15-55.
From H-6458 (1941)
Except for the 12-foot sounding charted at Lat. 61° 12.'3 N., Long. 150° 05.'3 W. which was not found on this survey, the differences between the chart and the smooth sheet appear to be about a one foot tidal difference. There is no sounding on the smooth sheet where the 12 foot sounding is charted, it falling between soundings of 15 and 17 feet.
See Review, item 6A

Respectfully submitted

William M. Martin
WILLIAM M. MARTIN
Supervisory Cartographer

APPROVED & FORWARDED:

G.C. Mast
G. C. MAST, Captain, C&GS
SEATTLE DISTRICT OFFICER

GEOGRAPHIC NAMES PENCILED ON H-8213

ANCHORAGE ✓
chester creek (omit)

FIRE ISLAND ✓

KNIK ARM ✓

LITTLE CAMPBELL CREEK

(omit)

if used, Fish
Creek instead
of little Campbell
Lt. Cr.

NORTH POINT ✓

(omit)

POINT CAMPBELL ✓

(omit)

POINT MACKENZIE ✓

POINT WORONZOF ✓

RACE POINT ✓

SHELTER BAY ✓

WEST POINT ✓

WOODROW CREEK

(omit)

changed to Ship Cr by 1954 B.G.N.
decision, as on latest 8553, 8557

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ~~8213~~.....

Records accompanying survey:

Boat sheets ~~1~~...; sounding vols. ~~14~~...; wire drag vols.;
bomb vols.; graphic recorder rolls ~~13~~ **Envelopes**
special reports, etc. ~~1-Smooth sheet and 1-Descriptive report~~.....
.....

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

Number of positions on sheet	.....	3650
Number of positions checked	.....	40
Number of positions revised	.....	4
Number of soundings revised (refers to depth only)	.....	50
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	..... 4
Junctions	Time	..... 4
Verification of soundings from graphic record	Time	..... 8

Verification by *J. H. Chabert*..... Total time *2.08*.. Date *3/11/60*

Reviewed by *Herbert W. Burgoyne*..... Time *.87*... Date *7/12/60*

TIDE NOTE FOR HYDROGRAPHIC SHEET

8 September 1959

Chart Division: R. H. Carstens

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 8213

Locality Cook Inlet, Alaska

Chief of Party: H. C. Applequist in 1955

Plane of reference is mean lower low water, reading

4.0 ft. on tide staff at Fire Island

29.7 ft. below B.M. 5 (1941)

Height of mean high water above plane of reference is 26.8 feet.

Condition of records satisfactory except as noted below:


Signature

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8213

FIELD NO. B0-2155

Alaska - Cook Inlet - Fire Island

SURVEYED: June 1955

SCALE: 1:20,000

PROJECT NO. Letter 12/27/54, 22/MEK, S-2-B0

SOUNDINGS: 808 depth recorder

CONTROL: Sextant Fixes

Chief of Party ----- H. C. Applequist
Surveyed by ----- H. C. Applequist
Protracted by ----- C. R. Lehman
Soundings plotted by ----- C. R. Lehman
Verified and inked by ----- J. E. Gearhart
Reviewed by ----- H. W. Burgoyne
Inspected by ----- R. H. Carstens

DATE: 7/12/60

1. Shoreline and Control

The shoreline originates with reviewed manuscript T-11570 (1955), and planetable surveys T-3102 (1910), T-3038 (1909), and T-3039 (1909).

The source of the control is given in the Descriptive Report.

2. Sounding Line Crossings

The depths at sounding line crossings are in fair agreement considering the wide range of tide (26.8 feet). Portions of certain lines were not plotted where crossline soundings did not present a true configuration of the bottom.

3. Depth Curves and Bottom Configuration

The standard depth curves are adequately delineated. Types of bottom configuration range from smooth to very irregular. An example of the occasional rough bottom occurs at Lat. 61°12.3', Long. 150°05.3' where shoal depths of 12-15 feet occur in general depths of 31 to 41 feet of water. The most prominent feature on the survey is the large shoal in the center of the survey uncovering at MLLW. Channels are found on the north and south sides of this shoal.

4. Junctions with Contemporary Surveys

Present survey depths on the east are in adequate agreement with junctional depths on H-8203 (1955). The junction with H-8468 (1959) on the west will be considered in the review of that survey.

5. Comparison with Prior Surveys

A. H-3044 (1909) - 1,100,000	H-3200a (1914) - 1:40,000
H-3199 (1910) - 1,100,000	H-4035 (1918) - 1:10,000
<u>H-3200 (1910) - 1:40,000</u>	<u>H-5104 (1930) - 1:40,000</u>

As the above surveys have been superseded by H-7186 (1947), H-6658 (1941), and H-6678 (1941), they are not considered in detail in this review. However, two charted rocks awash on the north side of Fire Island and an uncharted 15-foot sounding at Lat. $61^{\circ}09.42'$, Long. $150^{\circ}14.63'$, were brought forward from H-3200 (1910) to the present survey.

B. H-6658 (1941) - 1:20,000
H-6678 (1941) - 1:40,000
<u>H-7186 (1947) - 1:20,000</u>

H-6658 was superseded for the most part by H-7186. Only that section of the 1941 surveys west of Long. $150^{\circ}14'$ was not covered in the review of H-7186.

Radical bottom changes have taken place since the 1941 surveys. The present survey shows 53-55 feet of water at Lat. $61^{\circ}13.04'$, Long. $150^{\circ}15.35'$ where mean lower low water existed on H-6658 (1941). A shoal bearing at mean lower low water on the present survey has extended into former depths of 30-feet on H-6658 at Lat. $61^{\circ}11.55'$, Long. $150^{\circ}15.3'$. The extension of this shoal will be discussed more fully under the comparison with prior survey H-7186 (1947).

A 12-foot charted sounding at Lat. $61^{\circ}12.30'$, Long. $150^{\circ}05.34'$, a 36-foot uncharted sounding at Lat. $61^{\circ}09.18'$, Long. $150^{\circ}17.4'$, and several charted rocks awash were brought forward from H-6658 to the present survey.

Prior survey H-7186 falls entirely within the area of the present survey except for a few stray lines at the eastern edge of the sheet. The eastern and southwestern portions of the present survey show no appreciable change in bottom configuration. The central and northern portions show radical changes in depth, and in location of shoals and natural channels. The shoal bearing at mean lower low water in Lat. $61^{\circ}12.9'$, Long. $150^{\circ}09'$, on H-7186 has extended approximately $3\frac{1}{4}$ miles to the southwest. This

same shoal has enlarged in size in a northwesterly direction and at Lat. $61^{\circ}12.7'$, Long. $150^{\circ}13.2'$, the shoal bares at MLLW on the present survey where formerly 38 feet of water existed. The natural channel north of the shoal has moved further northward on the present survey and 33 feet of water is now present at Lat. $61^{\circ}14.05'$, Long. $150^{\circ}10.5'$, where formerly MLLW existed. A 35-foot uncharted sounding at Lat. $61^{\circ}13.31'$, Long. $149^{\circ}59.9'$ is one of 5 soundings brought forward from H-7186 to the present survey.

The present survey, with the addition of rocks awash, bottom characteristics, and shoal soundings brought forward from the prior surveys, is adequate to supersede the prior surveys within the common area.

C. H-4036 W.D. (1918) - 1:10,000

This wire drag survey covers that part of the present survey which lies in the vicinity of Point MacKenzie east of Long. $150^{\circ}03.'$. No conflicts exist between the effective drag depths and depths on the present survey. Two wire-drag soundings were carried forward to the present survey.

6. Comparison with Chart 8557 (Latest print date 9/29/58)
Chartlet 8557 (Dated 8/1/59)
Chart 8553 (Latest print date 5/12/58)
Chartlet 8553 (No date)

A. Hydrography

The charted hydrography for Chart 8557 and Chart 8553 originates with the prior surveys supplemented with advance information from the present survey (Blueprints 52646-7).

The chartlets attached to Chart 8557 and Chart 8553 cover the shoal area northwest of Fire Island and contain advance information applied subsequent to the present survey from Blueprint 58200 (1959 work on H-8468).

Chart 8557

A number of revisions of 1-2 feet were made during verification of the present survey. Attention is called to the following items:

1. An uncharted 32-foot sounding is located at Lat. $61^{\circ}09.08'$, Long. $150^{\circ}17.18'$.

2. The charted 23-foot sounding at Lat. $61^{\circ}12.95'$, Long. $149^{\circ}59.7'$, should be disregarded. The sounding, originating with Bp 52646, was plotted in error, and should be 29 feet. However, an uncharted 22-foot sounding is located at Lat. $61^{\circ}12.90'$, Long. $149^{\circ}59.40'$.
3. Three charted soundings; 25 feet, 27 feet, and 36 feet respectively, originating with H-6658 (1941) and located at approximately Lat. $61^{\circ}14.2'$, Long. $149^{\circ}56.4'$, are among several soundings falling outside the developed limits on the present survey and should be retained.
4. Charted rocks awash east of Long. $150^{\circ}02'$, originating with H-6658 (1941), fall outside the limits of the present survey and should be retained.
5. Several uncharted rocks awash appearing on the present survey on the north and west shore of Fire Island apparently originated with a 1955 planetable sheet which cannot be found in the Washington Office.

Chart 8553 (West of longitude $150^{\circ}17.5'$)

Only a small portion of the present survey falls on Chart 8553 west of the junction with Chart 8557. The present survey is adequate to supersede the charted hydrography on Chart 8557 and Chart 8553 except for subsequent information applied to the chartlets from Blueprint 58200.

B. Aids to Navigation

The fixed aids to navigation are in agreement with their charted positions. The Descriptive Report mentions that lighted buoy No. 1 at Lat. $61^{\circ}12.25'$, Long. $150^{\circ}05'.25'$, was temporarily off its official position at the time of location by the hydrographic party and therefore the buoy was not shown. The red buoys, "2" and "4" charted off Race Point and Point Woronzof, respectively, were not located on the present survey.

7. Condition of Survey

- a. The descriptive report and sounding records are complete and comprehensive.
- b. The survey was smooth plotted accurately and neatly.
- c. Because of the frequent radical changes in the bottom, additional bottom characteristics would have been an asset to the survey.

8. Compliance with Project Instructions

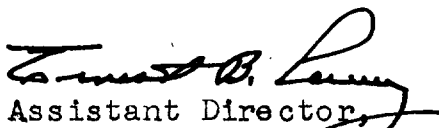
This survey adequately complies with project instructions.

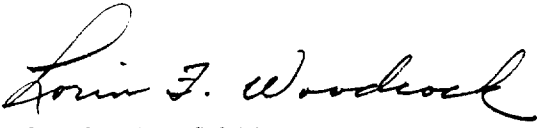
9. Additional Field Work Recommended


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

Examined and Approved:


Chief, 11/8/60
Nautical Chart Division


Assistant Director,
Office of Cartography


Projects Officer,
Operations Division

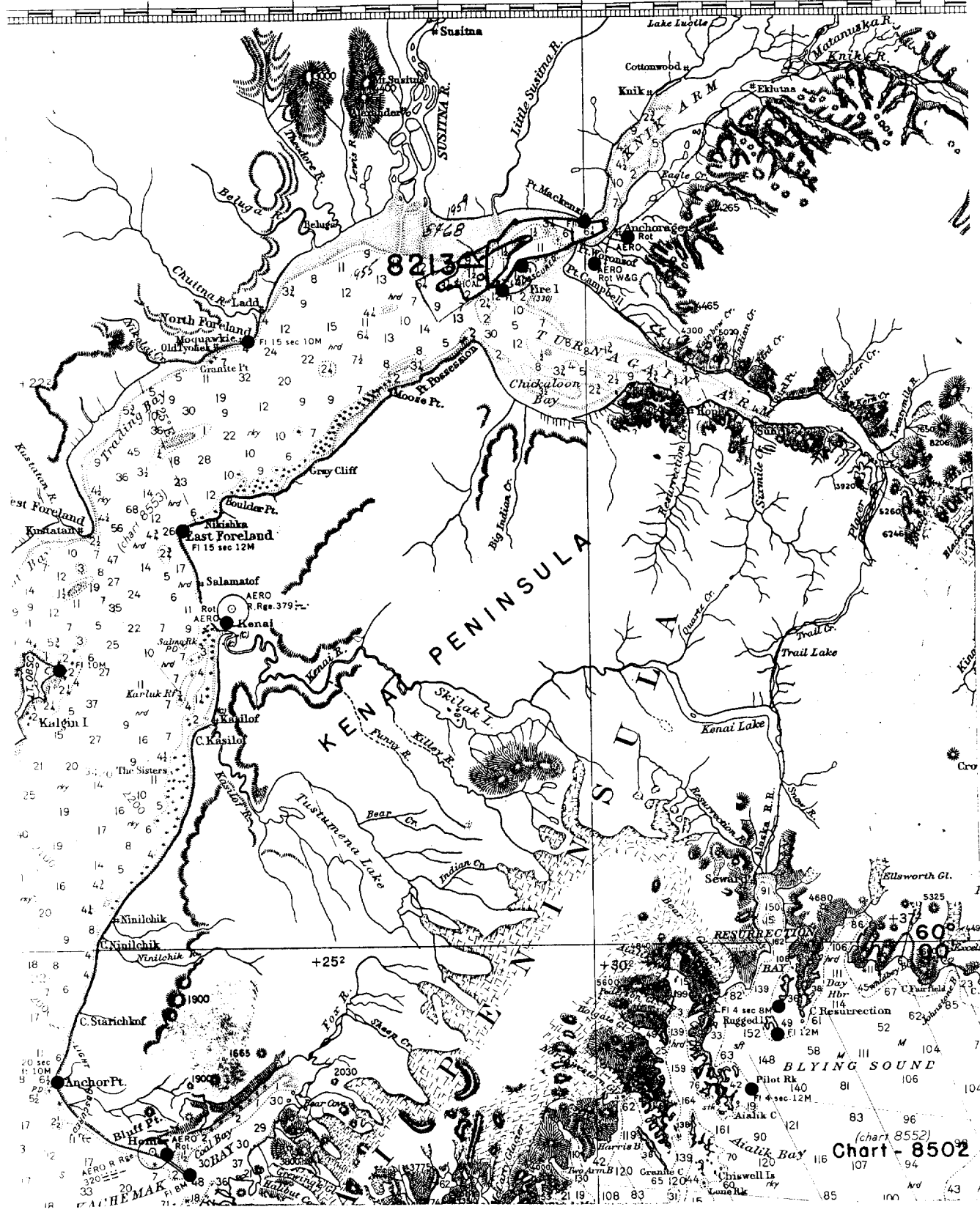

Assistant Director,
Office of Oceanography

152°

151°

150°

149°



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8213

Record of Application to Charts

(30-2155) Rep 52646-7 fully applied to 85574

DATE	CHART	CARTOGRAPHER	REMARKS
10-5-60	8557	M. Rogers	Fully applied Before After Verification and Review
7-20-61	8553	Earl M. Brown	Fully applied Before After Verification and Review This 8557
7-19-65	8557 EXT	Earl M. Brown	Before After Verification and Review Fully applied to EXT
			Before After Verification and Review
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			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.