

7186

Diag'd. on Diag. Ch. No. 8502-2

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. LJ-2147 Office No. H-7186

LOCALITY

State Alaska

General locality Cook Inlet - Knik Arm

Locality Fire Island To Pt. Mackenzie

1947

CHIEF OF PARTY

L. S. Hubbard

LIBRARY & ARCHIVES

DATE

7186

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-7186

Field No. LJ-2147

State Alaska

General locality Cook Inlet - Knik Arm

Locality Fire Island to Point Mackenzie

Scale 1:20,000 Date of survey July - August, 1947

Instructions dated 16 July 1947

Vessel Lester Jones

Chief of party L. S. Hubbard

Surveyed by L. S. Hubbard

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

Protracted by H. A. Curtis

Soundings penciled by H. A. Curtis

Soundings in ~~XXXXX~~ feet at MLW MLLW

REMARKS: This survey was smooth-plotted in the Washington Office

DESCRIPTIVE REPORT

TO ACCOMPANY

REVISION HYDROGRAPHIC SURVEY

FIELD NUMBER LJ-2147 H 7186

Scale 1:20,000

USC & GS Ship LESTER JONES L. S. Hubbard, Commanding

PROJECT

This survey was executed in accordance with Supplemental Instructions, 22/MEK, s-2-LJ, dated 16 July 1947, for a hydrographic revision survey in Cook Inlet, Alaska, under project CS-264.

SURVEY LIMITS AND DATES

The area surveyed is located between Fire Island and Point Mackenzie. Field work on the project was started 20 July and was completed 21 August.

The survey ^{lies entirely} makes a ~~junction on all sides~~ with hydrographic survey H-6658 executed in 1941 on a scale of 1:20,000 with the exception of the north and northwest portion. There the present survey exceeds the limits of the 1941 survey.

Destruction of old bench marks and triangulation stations required an unexpected amount of preliminary work. Hydrography was not started until 30 July.

VESSEL AND EQUIPMENT

The LESTER JONES was used for all hydrography. An 808J fathometer, serial 102S, was used for soundings. Check depths on shoals and bottom samples in all depths were obtained by sounding machine and wire. Sheave number H407 registered the depths obtained by wire.

The turning radius of the LESTER JONES under normal operating conditions is about 180 meters.

TIDE STATION

A tide staff was established on the Government Pier at Anchorage. This was read at five minute intervals during the time hydrography was being carried on.

The lower portion of the tide staff was buried in the mud. A marking was placed on a leadline at the dock level when the lead was even with the 2 foot mark on the tide staff. Whenever the tide fell below the 2 foot marking on the staff the leadline was used to obtain the readings. By holding the lead at the water level and marking the leadline at the dock level the tide reading could be determined.

For the area being surveyed a time correction of minus 20 minutes and a range factor of 0.93 was applied to the tide heights observed at Anchorage. This time correction will be discussed further under "Crosslines".

CURRENTS

In the area northeast of Fire Island the difference in the ship speed when traveling with and when traveling against the current indicated that currents in excess of four knots run much of the time.

These currents and the resulting swirls made the proper spacing of parallel sounding lines no easy matter.

CONTROL STATIONS

All control stations used in the hydrography were located by triangulation. One station established by H. W. Rhodes in 1909 and a number established L. C. Wilder in 1941 were recovered. Several additional stations were established by the 1947 party.

SOUNDINGS

Soundings were taken in feet using the 808J fathometer. Soundings were read to the nearest half foot except in shoal areas where they were read to the nearest 0.2 foot. Serial temperatures were taken at the beginning of the project. Bar checks were taken at the beginning and the end of each day of sounding. It was found that the draft of the vessel varied from day to day, so a slightly different initial correction is applied for each day of sounding. Comparisons between readings on the A, B, C and D scales of the fathometer were made. In the sounding records the correction for initial setting and the phase scale setting are combined to make one correction for instrumental error.

In addition to the corrections for initial and phase setting, the soundings were corrected for velocity of sound and for tide. All corrections were made to the nearest 0.2 foot.

Registering sheave H-407 was checked for error on 30 July. No correction factor need be applied.

The motor speed of the depth recorder was verified on 30 July. It was found to be correct. The results are listed in Volume #1, page 62.

VERTICAL CASTS AND BOTTOM SAMPLES

Bottom samples were taken over the entire area surveyed. A sounding machine with wire and heavy lead were used for obtaining the samples. Vertical casts and fathometer comparisons were obtained at the same time. Due to the strong currents and swirls which prevail most of the time the depths obtained by the vertical casts were usually greater than those obtained by fathometer. A closer agreement between wire soundings and fathometer soundings was obtained in shoal water.

CONTROL OF HYDROGRAPHY

Visual three point fixes were used to control all hydrography.

ADEQUACY OF SURVEY

The survey is a complete revision of the area covered and is adequate to supersede prior surveys. The 12 foot shoal located in latitude $61^{\circ}-12.3'$, longitude $150^{\circ}-05.2'$ should be retained from the 1941 survey. (H-6658)

12 ft sdg trans. referred to present survey. 14 ft. least depth on present survey.

The junction at the eastern end of the work with the 1941 survey is fair. The junction on the south side and off Race Point is fair. Radical changes in depths have occurred on the north side of the surveyed area. The 1947 survey exceeds the limits of the 1941 survey in places.

See par. 4 of Review.

Depth curves can be drawn at the junctions with previous surveys except for the north and northeast part of the survey.

CROSSLINES

About ten per cent crosslines were run. Many of the crossings check to one foot, but there are also many crossings with differences of two and three feet. One line fails to check the others by four and five feet. (Position 70L to 80L). It is believed that this is due to an erroneous choice of tide time difference between Anchorage and the area surveyed. The tide often rises or falls two feet in 10 minutes. An error of 10 minutes during a rising tide compared to an error of 10 minutes during a falling tide could cause a difference of four feet in crossing lines.

See par 2, Review.

COMPARISON WITH PRIOR SURVEYS

The area surveyed consists of shifting sand and mud bottom. As a result there is no general agreement between the new survey and survey H-6658 executed in 1941. The greatest change is the washing out of the shoal located in latitude $61^{\circ}-12.5'$, longitude $150^{\circ}-06.3'$ and the building up of a long shoal in latitude $61^{\circ}-12.9'$, longitude $150^{\circ}-08.7'$. A new channel has also been scoured out north of the new shoal in a area previously covered by mud flats.

COMPARISON WITH CHART

Since the 1947 survey extends beyond the limits of the 1941 survey on the north side comparison must be made with chart 8557. A new channel has scoured through an area previously charted as mud flats. The junction between the 1947 survey and the charted mud flats is not complete because of the danger of maneuvering a vessel the size of the LESTER JONES close to and over steeply sloping mud banks.

SHOALS

The new shoal located in latitude $61^{\circ}-12.9'$, longitude $150^{\circ}-08.7'$ has a least depth of -3.7 feet at MLLW according to fathometer soundings taken on 7 August (position 43F) and according to soundings taken on 12 August (positions 136J - 137J). The fathograms are clear and distinct on these shoal soundings.

On 18 August the LESTER JONES anchored near the shoal and waited for it to bare. The shoal became awash at 1250. The tide reducer resulted in a least depth of -1.0 foot on the shoal. (fix 24N). At 1430 a survey party landed on the shoal and while standing on the highest part of the sand bar read a level rod held at the waters edge. An average of three readings gave a least depth of -1.0 foot on the shoal (position 25N).

The survey party found the shoal to consist of fine black sand with light colored specks. The sand bar was soft and not firm under their feet. The top was so nearly level that it was difficult to pick out the highest point. Undulating ridges about two feet high cut across the surface of the sand. There can be no doubt about the highest point being obtained on 18 August. The least depth of -1.0 foot can only be reconciled with the least depth of -3.7 feet obtained on two different days before then by assuming that the time correction applied to the Anchorage tide readings is not the true correction or else that the top of the shoal had washed away 2.7 feet in six days time.

Because of uncertainty of tide reducer, 3 ft. plotted.

An irregular rocky shoal was found in latitude $61^{\circ}-12.32'$, longitude $150^{\circ}-19.2'$. This is marked on chart 8557 by a 12 foot sounding. A number of sounding lines were run over this area. The least depth found was 14.6 feet (position 125J - 126J). Wire soundings found a hard bottom. The sounding lead came up brightly nicked, indicating hard rock. Due to the strong currents, maneuvering over the shoal was difficult and the wire soundings did not obtain the least depth. It is quite possible that the new survey missed a pinnacle rock. It is therefore recommended that the 12 foot sounding be retained on the chart.

12 ft. charted carried forward from chart 6658 (1941).

COAST PILOT INFORMATION

Coast Pilot Notes have been submitted as a separate report. ✓

The safest channel now appears to be on a straight course of 70 degrees true from 0.5 mile off Race Point to 0.6 mile off ^{by} Cape Woronzof. This course passes close to the 12 foot sounding, however. At low tide very careful navigation will be required to pass between the 12 foot sounding and the shoals laying south of the channel.

There is a natural, deep water channel north of the new shoal ^{sand} spit. This is not recommended for general use because of the difficulty of controlling the ships position in the unbuoyed channel unless the course is plotted frequently by visual three point fixes.

AIDS TO NAVIGATION

If the amount of deep draft traffic to Anchorage justifies it, it is recommended that the U. S. Coast Guard place a buoy on the 12 foot spot. *See par 6B of Review*

LANDMARKS FOR CHARTS

Recommended landmarks for charts are submitted on form 567. *(Chart Letter 573 (1947))*

TABULATION OF DATA

A tabulation of all data and records used in this survey is attached to this report.

Respectfully submitted,

L. S. Hubbard
 L. S. Hubbard, Comdg.
 USC & GS Ship LESTER JONES

STATISTICS - HYDROGRAPHY

DATE	DAY	LETTER	VOLUME	NO. POSITIONS	MILES OF SOUNDING (STATUTE)
1947					
30 July	---	A	----- 1	----- 178	----- 55.0
2 Aug	---	B	----- 2	----- 105	----- 32.2
4 Aug	---	C	----- 2	----- 96	----- 32.0
5 Aug	---	D	----- 3	----- 152	----- 46.0
6 Aug	---	E	----- 3-4	----- 99	----- 22.4
7 Aug	---	F	----- 4-5	----- 190	----- 48.3
9 Aug	---	G	----- 5	----- 86	----- 27.0
11 Aug	---	H	----- 5-6	----- 215	----- 60.6
12 Aug	---	J	----- 6-7	----- 228	----- 52.8
14 Aug	---	K	----- 7-8	----- 142	----- 36.0
15 Aug	---	L	----- 8	----- 179	----- 43.7
16 Aug	---	M	----- 9	----- 22	----- (spot sounding)
18 Aug	---	N	----- 9	----- 34	----- (spot sounding)
20 Aug	---	P	----- 9	----- 184	----- 49.6
21 Aug	---	Q	----- 10	----- 124	----- 33.8
			Totals	----- 2034	----- 539.6

Total area surveyed, square miles, statute ----- 39.7

Total number of wire soundings ----- 65

Soundings taken with 808 depth recorder --- continuous profile

TIDAL NOTE

A tide staff established on Government Wharf, latitude $61^{\circ}-14.0'$ north, longitude $149^{\circ}-53.8'$ west was used for reducing the soundings plotted on the sheet. From the field results the zero of the tide staff was determined to be 0.25 ft. below MLLW. A time difference of minus 20 minutes and range factor of 0.93 was applied to the observed tide readings.

SIMULTANEOUS COMPARISONS OF SOUNDINGS

NOTE: These vertical casts were taken in strong currents with swirls. They can not be used for determining the correction to the fathometer. Their chief value is in obtaining bottom characteristics.

L. S. Hubbard
L. S. Hubbard

(No sheave correction
required)

Date 1947	No. WM	Echo Depth				Vertical Wire Measurement		Bottom
		Ob- served	Instru- mental correc- tion	Veloc- ity correc- tion	Cor- rected depth	Ob- served	Difference E-V	
16 Aug 16	1	84.8	3.0	-1.4	86.4	90.0	-3.6	hard
	2	65.8	3.0	-1.2	67.6	70.8	-3.2	hard
	3	36.2	5.1	-0.6	40.7	45.6	-4.9	crs S
	4	38.0	5.1	-0.6	42.5	44.4	-1.9	crs S
	5	41.5	5.1	-0.6	46.0	46.8	-0.8	crs S
	6	41.0	5.1	-0.6	45.5	45.6	-0.1	fne S
	7	63.0	3.0	-1.0	65.0	64.8	0.2	fne S
	8	75.0	3.0	-1.2	76.8	76.2	0.6	fne S
	9	73.0	3.0	-1.2	74.8	74.4	0.4	fne S
	10	77.9	3.0	-1.4	79.5	81.6	-2.1	fne S
	11	60.0	3.0	-1.0	62.0	62.4	-0.4	fne S
	12	59.5	3.0	-1.0	61.5	63.6	-2.1	fne S
	13	41.1	5.1	-0.6	45.6	46.8	-1.2	fne S
	14	24.0	5.1	-0.4	28.7	30.0	-1.3	fne S
	15	24.0	5.1	-0.4	28.7	29.4	-0.7	fne S
	16	22.0	5.1	-0.2	26.9	27.6	-0.7	fne S
	17	14.0	5.1	-0.2	18.9	19.2	-0.3	fne S
	18	24.7	5.1	-0.4	29.4	32.4	-3.0	fne S
	19	26.5	5.1	-0.4	31.2	33.6	-2.4	crs S
	20	23.9	5.1	-0.4	28.6	29.4	-0.8	crs S
	21	15.0	5.1	-0.2	19.9	20.4	-0.5	crs S
	22	35.0	5.1	-0.6	39.5	42.6	-3.1	fne S

SIMULTANEOUS COMPARISONS OF SOUNDINGS (CONT'D)

Date	No.	Echo Depth			Vertical Wire Measurement			Bottom
		Observed	Instru- mental correc- tion	Veloc- ity correc- tion	Cor- rected depth	Ob- served	Difference E-V	
1947	"N"							
18 Aug	1	32.8	5.2	-0.6	37.4	40.8	-3.4	fne S
	2	24.0	5.2	-0.4	28.8	29.4	-0.6	fne S
	3	22.9	5.2	-0.4	27.7	31.2	-3.5	fne S
	4	20.8	5.2	-0.2	25.8	25.2	0.6	fne S
	5	18.0	5.2	-0.2	23.0	23.4	-0.4	fne S
	6	15.6	5.2	-0.2	20.6	23.4	-2.8	fne S
	7	13.5	5.2	-0.2	18.5	19.2	-0.7	fne S
	8	13.0	5.2	-0.2	18.0	19.2	-1.2	fne S
	9	11.6	5.2	0.0	16.8	16.8	0.0	fne S
	10	12.2	5.2	-0.2	17.2	16.8	0.4	fne S
	11	10.8	5.2	0.0	16.0	15.6	-0.4	fne S
	12	36.3	5.2	-0.6	40.9	45.6	-4.7	fne S
	13	58.5	3.1	-1.0	60.6	69.6	-9.0	fne S
	14	42.8	5.2	-0.6	47.4	49.2	-1.8	fne S
	15	46.5	5.2	-0.8	50.9	51.6	-0.7	fne S
	16	43.5	5.2	-0.8	47.9	48.6	-0.7	fne S
	17	44.0	5.2	-0.8	48.4	54.6	-6.2	fne S
	18	23.0	5.2	-0.4	27.8	30.6	-2.8	fne S
	19	34.4	5.2	-0.6	39.0	42.6	-3.6	fne S
	20	53.1	3.1	-0.8	55.4	56.4	-1.0	fne S
	21	49.9	5.2	-0.8	54.3	54.6	-0.3	fne S
	22	46.0	5.2	-0.8	50.4	51.6	-1.2	fne S
	23	33.0	5.2	-0.6	37.6	40.8	-3.2	fne S
	26	30.1	5.2	-0.4	34.9	33.6	1.3	fne S
	27	32.0	5.2	-0.4	36.8	34.8	2.0	fne S
	28	37.2	5.2	-0.6	41.8	40.8	1.0	fne S
	29	48.0	5.2	-0.8	52.4	52.8	-0.4	fne S
	30	95.0	1.5	-1.6	94.9	93.6	1.3	fne S

SIMULTANEOUS COMPARISONS OF SOUNDINGS (CONT'D)

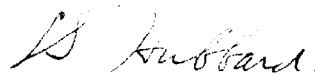
Date	No.	Echo Depth				Vertical Wire Measurement		Bottom
		Observed	Instru- mental correc- tion	Veloc- ity correc- tion	Cor- rected depth	Ob- served	Difference E-V	
1947	"N"							
18 Aug	31	81.0	3.1	-1.4	82.7	85.2	2.5	fne S
	32	58.0	3.1	-1.0	60.1	67.2	-7.1	fne S
	33	94.9	1.5	-1.6	94.8	103.2	-8.4	fne S
	34	77.6	3.1	-1.4	79.3	81.6	-2.3	fne S
Date	No.	Echo Depth				Vertical Wire Measurement		Bottom
1947	"P"	Observed	Instru- mental correc- tion	Veloc- ity correc- tion	Cor- rected depth	Ob- served	Difference E-V	
20 Aug	38	45.3	5.2	-0.8	49.7	50.4	-0.7	hard
	39	41.7	3.1	-0.6	44.2	51.6	-7.4	hard
	40	44.0	5.2	-0.8	48.4	48.6	-0.2	hard

TABULATION OF RECORDS AND DATA

TITLE	FORM NUMBER	QUANTITY	DATE FORWARDED TO WASHINGTON OFFICE
Report, Tide Station -----	681	-- 1 ea	August 1947
Leveling Record -----	258	-- 1 ea	"
Tides -----	277	-- 2 vols	"
Horizontal Directions -----	251a	-- 2 vols	"
Horizontal Angles -----	250	-- 1 vol	"
Double-Zenith Distances -----	252	-- 1 vol	"
List of directions -----	24A	-- 4 pages	"
Abstract of Directions -----	470	-- 3 pages	"
Computation of Triangles -----	25	-- 4 pages	"
Position Computations -----	27	-- 6 pages	"
Geographic Positions -----	28B	-- 1 page	"
Abstract of Zenith Distances -----	29	-- 4 pages	"
Computation of Elevations -----	29B	-- 5 pages	"
Recovery Note, Triangulation -----	526	-- 5 cards	"
Description of Triangulation Station ---	525	-- 6 cards	"
Sounding Records -----	275	--10 vols	"
Fathograms -----		16 ea	"
Temperatures, Salinities -----	717	-- 1 page	"
Fathometer Corrections -----	J-100-5	-- 1 page	"
Graphs, Water Temperatures -----	B-1528-5	- 1 page	"
Landmarks of Charts -----	567	-- 2 pages	"
Coast Pilot Notes -----		3 pages	"

APPROVAL SHEET

The records and boat sheet were examined daily.
The survey is considered adequate and no additional
work is recommended.



L. S. Hubbard
Chief of Party, C&GS

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 17186

Records accompanying survey:

Boat sheets ¹.....; sounding vols. ¹⁰.....; wire drag vols. ⁰.....;
 bomb vols. ⁰.....; graphic recorder rolls ¹⁵.....;
 special reports, etc. 1. Serial temperature data.....
 ..2. Pages landmarks for charts.....

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

Number of positions on sheet		<u>2034</u>	
Number of positions checked		<u>78</u>	
Number of positions revised		<u>—</u>	
Number of soundings revised (refers to depth only)		<u>359</u>	
Number of soundings erroneously spaced		<u>—</u>	
Number of signals erroneously plotted or transferred		<u>—</u>	
Topographic details	Time	<u>—</u>	
Junctions	Time	<u>—</u>	
Verification of soundings from graphic record	Time	<u>20</u>	
Verification by..... <i>I. M. Zeskind</i> <i>R. E. Elkins</i>	Total time	<u>9</u> <u>95</u>	Date <u>1-6-49</u> <u>7-28-48</u>
Reviewed by..... <i>I. M. Zeskind</i>	Time	<u>68</u>	Date <u>1-6-49</u>

GEOGRAPHIC NAMES

Survey No.

H7186

Name on Survey

	A	B	C	D	E	F	G	H	K		
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List			
<u>Alaska</u>				(for title)						1	
<u>Cook Inlet</u>			" "							2	
<u>Knik Arm</u>			" "							3	
<u>Point Mackenzie</u>										4	
<u>Fire Island</u>										5	
<u>North Point</u>									USGB	6	
<u>Race Point</u>										7	
										8	
				Names und rlined in red are approved.							9
				2/19/48	L. Heck					10	
										11	
<u>Government Wharf, Anchorage</u>				(location of tide staff)						12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	
										26	
										27	

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

30 Sept. 1947

Division of Charts: H. W. MURRAY

Plane of reference approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 7186

Locality - Cook Inlet (Vicinity of Fire Island), Alaska

Chief of Party: L. S. Hubbard in 1947

Plane of reference is mean lower low water, reading
0.3 ft. on tide staff at Anchorage (Government Wharf)
43.0 ft. below B. M. 9 (1918)

Height of mean high water above plane of reference is 26.7 feet.

NOTE: Allowance made for time and range of tide at place of soundings
as follows: Anchorage tides corrected by minus (-) 0:20^m and
by a range factor of 0.93.

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division~~ of Tides and Currents

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7186

FIELD NO. LJ-2147

Alaska, Cook Inlet-Knik Arm, Fire I. to Pt. MacKenzie
Surveyed in July - August 1947 Scale 1:20,000
Project No. CS-264

Soundings:

808 Fathometer

Control:

Three-point fixes on shore
signals

Chief of Party - L. S. Hubbard
Surveyed by - L. S. Hubbard
Protracted by - H. A. Curtis
Soundings plotted by - H. A. Curtis
Verified and inked by - R. E. Elkins
Reviewed by - I. M. Zeskind, January 6, 1949
Inspected by - R. H. Carstens

1. Shoreline and Signals

The portion of shoreline shown on the present survey is from T-6826 (1941). There are no other recent topographic surveys in this area.

The signal control originates with triangulation stations established in 1909, 1941 and 1947.

2. Sounding Line Crossings

Discrepancies of 2 to 5 ft. in depths at crossings are attributed to the application of faulty tide reducers. A constant correction for time and range of tide at Anchorage was applied to reducers for the entire area of the present survey. Because of the unusually high range of tide (24 to 26 ft.) and a 2 ft. difference in the range of tide within the area covered by the present survey, better agreement would undoubtedly have resulted if the survey had been divided into zones for the purpose of applying tide corrections. Several sounding lines have been rejected because of faulty tide reducers.

3. Depth Curves and Bottom Configuration

The bottom is generally smooth except for minor irregularities in the vicinity of lat. $61^{\circ} 12.3'$, long. $150^{\circ} 05.3'$ where shoals rise to within 12 to 17 ft. of MLLW, from general depths of 25 to 40 ft. Occasional irregularities also occur elsewhere on this survey. The most prominent feature in the area is the sandy shoal which uncovers at MLLW in the western part of the survey. Natural channels are found on the north and south sides of this sandy shoal.

4. Junctions with Contemporary Surveys

No contemporary surveys join the present survey. The project instructions contemplated junctions only with survey H-6658 (1941) within the limits not to extend beyond Race Point on the west and Point MacKenzie on the east; however, because of radical bottom changes, satisfactory junctions were not effected. The charted hydrography at the eastern and western limits of the present survey is in substantial agreement with present survey depths.

5. Comparison with Prior Surveys

- A. H-3044 (1909) 1:100,000
 H-3200 (1910) 1:40,000
 H-3200a (1914) 1:40,000
 H-4035 (1918) 1:10,000
H-5104 (1930) 1:300, 1:5,000 and 1:40,000

Inasmuch as the above surveys have been superseded by H-6658 (1941), they need not be considered in this review.

B. H-6658 (1941) 1:20,000

The present survey falls entirely within the area of this prior survey. Although 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 location of shoals and natural channels. Of particular note is the erosion of mud flats on the north side of Cook Inlet westward from long. $150^{\circ} 00.0'$. For example in the vicinity of lat. $61^{\circ} 13.6'$, long. $150^{\circ} 11.6'$, where mud flats formerly existed, depths of 42 to 45 ft. are now found. The shoal baring at MLLW in lat. $61^{\circ} 12.8'$, long. $150^{\circ} 09.0'$, has shifted approximately 1 mile northwestward from its prior position and supersedes prior depths of 25 to 45 ft.

The 12-ft. sounding (charted) in lat. $61^{\circ} 12.30'$, long. $150^{\circ} 05.34'$, originates with H-6658 and falls on a present 14-ft. shoal. Strong currents interfered with the maneuvering of the surveying vessel during the present survey of this shoal and it is, therefore, probable that the least depth was not obtained. This sounding is carried forward to the present survey.

The present survey, with the indicated addition, 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. Three wire-drag soundings are carried forward to the present survey.

6. Comparison with Chart 8557 (Latest print date 10/20/47)

A. Hydrography

The charted hydrography within the limits of the survey originates principally with advance information of the present survey shown on Bp. 42760 (1947). A number of revisions of 1-3 ft. in depths of 20-50 ft. were made during verification.

The more important discrepancies with the present survey are as follows:

The 38-ft. sounding charted in lat. $61^{\circ} 12.81'$, long. $150^{\circ} 02.98'$, originates with a 48-ft. sounding on the boat sheet of the present survey. The erroneously charted 38 should, therefore, be disregarded.

The 41-ft. sounding charted in lat. $61^{\circ} 12.88'$, long. $150^{\circ} 02.55'$, should be disregarded. This sounding originates with the boat sheet of the present survey where a 48 ft. sounding was erroneously plotted as 41 ft.

The 18-ft. sounding charted in lat. $61^{\circ} 12.60'$, long. $150^{\circ} 04.95'$, is erroneously shown 50 m. northwest of its correct position. This sounding originates with the boat sheet of the present survey where it was plotted out of position.

The 36-ft. sounding charted in lat. $61^{\circ} 11.90'$, long. $150^{\circ} 09.20'$, is erroneously shown 230 m. southwest of its correct position. This sounding originates with the boat sheet of the present survey where it was plotted out of position.

The 17-ft. sounding charted in lat. $61^{\circ} 11.80'$, long. $150^{\circ} 14.60'$, originates with the boat sheet of the present survey on which a 27-ft. sounding was erroneously plotted as 17 ft. The erroneously charted 17 should, therefore, be disregarded.

About 10 charted soundings differing from present smooth sheet depths by 2 to 5 ft. originate with boat sheet sounding lines which have subsequently been rejected because of faulty tide reducers.

The present survey supersedes the charted information.

B. Aids to Navigation

The fixed aids to navigation are in agreement with their charted positions and adequately mark the features intended. There are no floating aids to navigation within the limits of the survey, however, on page 5 of the Descriptive Report it is recommended that if deep draft traffic to Anchorage warrants it, a buoy be stationed on the 12 ft. shoal in lat. $61^{\circ} 12.30'$, long. $150^{\circ} 05.34'$.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The protracting and plotting was carefully executed and is in compliance with the requirements of the Hydrographic Manual.
- c. Tidal reducers applied to some of the soundings are considered to be faulty because of insufficient tidal information in this area (see paragraph 2). Soundings on portions of H and L day lines were rejected because of faulty tide reducers.


8. Compliance with Project Instructions

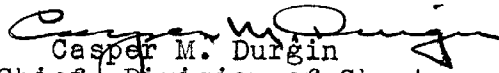
This survey adequately complies with the project instructions.


9. Additional Field Work Recommended

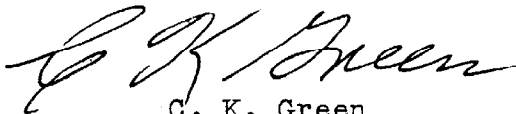
With the retention of 4 prior soundings, this survey is considered basic for the area.

Examined and approved:


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