

# 8729

Diag. Cht. No. 8553.

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. BO-10-1-63 Office No. H-8729

### LOCALITY

State Alaska

General locality Cook Inlet

Locality Anchorage and Knik Arm

19 63

CHIEF OF PARTY

J. O. Boyer

LIBRARY & ARCHIVES

DATE 5/29/69

USCOMM-DC 37022-P66

8729

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-8729 ✓

Field No. BO-10-1-63

State Alaska

General locality Cook Inlet

Locality Anchorage and Knik Arm

Scale 1:10000 Date of survey 5 August - 21 August 1963

Instructions dated 11 Dec 1959 Revised 29 Jan 1963 Supplemented 28 June 1963

Vessel BOWIE

Chief of party John O. Boyer

Surveyed by Paul A. Chernoff, Alfred W. Cecil

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

Fathograms scaled by J. L. Brown, L. W. Pape

Fathograms checked by PAC AWC JOB CWM

Protracted by J. L. Brown J. D. Hughes

Soundings penciled by J. L. Hughes

Soundings in fathoms feet at MLW MLLW

REMARKS:

Xwd. 5/9/91

Hydrographic Survey H-8729, Field No. BO-10-1-63

Scale: 1:10,000

Date: 1963

USC&GS Ship BOWIE

John O. Boyer, Commanding

A. PROJECT

This project, OPR-413, was accomplished in accordance with instructions dated 11 December 1959, revised instructions dated 29 January 1963, and supplemental instructions dated 28 June 1963. ✓

B. AREA SURVEYED

In the northern part of Cook Inlet, that part of Knik Arm bounded by Latitude 61 degrees 12 minutes 30 seconds and 61 degrees 19 minutes 30 seconds, and by Longitude 149 degrees 47 minutes 30 seconds and 149 degrees 57 minutes 00 seconds. ✓

The dock areas at Anchorage were surveyed by the Army Corps of Engineers' survey dated May 1963, scale one inch equals forty feet, drawing number 15-04-36. Copies of this survey are supplied with the smooth sheet. ✓  
*T-12016 was used in this area on the smooth sheet and was revised from field edit of Oct-1963.*

This survey junctions at the southern limits with contemporary survey H-8728, 1:20,000, 1963. ✓

Field work was accomplished between 5 August 1963 and 21 August 1963. ✓

C. SOUNDING VESSEL

Hydrography and bottom sample work was accomplished using launch 184 (designated launch #1 in the sounding volumes). ✓

Launch 184 is a 26 foot, plastic, diesel-powered whaleboat. Its work is designated by blue lower-case letters. ✓

D. SOUNDING EQUIPMENT

All soundings were obtained using a Raytheon DE-723 fathometer. One fathometer, serial number 552, was used throughout. ✓

Corrections to the 1963 fathometer soundings are discussed in the "Special Fathometer Report" submitted on 27 November 1963 and are tabulated on Appendixes "A" and "B" of this report. ✓

E. SMOOTH SHEET:

The smooth sheet projection was prepared and verified by the Seattle Processing Office. ✓

F. CONTROL

Three point sextant fixes were used to control hydrography on this sheet. ✓

All control north of 61 degrees 15 minutes 00 seconds is by means of hydrographic signals built by ship personnel and located by third order Teleurometer Traverse performed by the Army Corps of Engineers in July 1963. A copy of the computed GP's for these signals is enclosed with this report. ✓

All control south of Latitude 61 degrees 15 minutes 00 seconds utilizes existing, prominently marked triangulation with the exception of signal LIZ and signal JAY, which were scaled from an incomplete manuscript. ✓

Signal LYN is mislocated on the boat sheet. This results in a considerable difference between the boat sheet and the smooth sheet for those fixes using signal LYN. This difference, however, is extreme at only one point (midway between signal LYN and signal PAC). ✓

*Signal LYN was correctly plotted on Smooth Sheet during Smooth Plot.*

The prevailing weather conditions during field work were clear and sunny with good visibility. ✓

G. SHORELINE

Shoreline for the boat sheet is taken from the manuscript south of 61 degrees 15 minutes 00 seconds, and sketched from the existing chart of the area north of 61 degrees 15 minutes 00 seconds Latitude. ✓

*See item 2 in Review - Control and Shoreline*

No final manuscripts are available and no shoreline is shown on the smooth sheet. ✓

*See item 2 in Review - Control and Shoreline*

H. CROSSLINES

Approximately five per-cent crosslines were run. The agreement with the regular system of lines was satisfactory. ✓

I. JUNCTIONS

Agreement at the junction with contemporary survey H-8728 is good. ✓

*As to existing discrepancies, verification and inking has been suspended on H-8728. Ref. letter CF-22-4060/02- Sept 6, 1966*

J. COMPARISON WITH PRIOR SURVEYS

Prior surveys of the area were: ✓

H 3200	1:40,000	1910
H 8203	1:10,000	1955
H 8527	1:10,000	1960

Surveys H-8203 and H-8527 cover the southern portion of H-8729 below Latitude 61 degrees 13 minutes only. The northern portion of the sheet is compared with H-3200. ✓

Comparing H-8213<sup>0</sup> (1955) with H-8729 (1963), it was noticed that the zero curve just west of Ships Creek at Latitude 61 degrees 13 minutes 30 seconds North Longitude 149 degrees 53 minutes 30 seconds west has shifted shoreward about 0.1 nautical mile. The channel depths elsewhere have changed slightly, shoaling in some places and deepening in others. For example, at Latitude 61 degrees 14 minutes 30 seconds north Longitude 149 degrees 53 minutes 30 seconds west the 1955 depth was 71 feet. In 1963 it was 65 feet. At Latitude 61 degrees 15 minutes 00 seconds North, Longitude 149 degrees 55 minutes 00 seconds West the 1955 and 1963 depths were 109 feet and 113 feet respectively. ✓

Comparing H-8527 (1960) and H-8729 (1963) revealed the same minor changes. The zero curve at the entrance to Ships Creek has moved away from shore during the 1955-1960 period. Then from 1960 to 1963 it has moved inshore about 200 yards closer to 100 " at 1:10,000 scale ✓

The northern portion of the survey between Latitudes 61 degrees 15 minutes North to 61 degrees 19 minutes North was compared with H-3200 (1910). Agreement of the general bottom features was surprisingly good considering the age of H-3200. Bottom features were sufficiently unchanged to remain recognizable. For example, the gravel bar jutting out from Cairn Point was unchanged for the most part after 53 years. ✓

Depths in midchannel have remained relatively constant. On the eastern side of the channel the depth has increased an average of ten to fifteen feet since 1910. The western side has shown a corresponding shoaling. ✓

A Corps of Engineers survey was made in May 1963 at a scale of 1:480. The drawing number was 15-04-36 and the area covered, the Army Dock in Anchorage Harbor. The scale of this survey was too large for comparison with BC-10-1-63. ✓

#### K. COMPARISON WITH CHART

The largest scale chart of the area is 8557, latest edition 3 July 1961. A comparison with H-8729 revealed minor changes, the greatest being a slight easterward shift at the channel north of Anchorage Harbor. The chart showed a six foot sounding at Latitude 61 degrees 15.55 minutes North, Longitude 149 degrees 54.9 minutes ~~9 seconds~~ West. This sounding was investigated according to instructions on the pre-survey review. The shoalest soundings found was ~~eight~~<sup>five and six</sup> feet on H-8729. No new dangers to navigation were found. The four foot sounding listed A supporting sounding of 6 feet was also carried forward in orange to the present survey from H-6658 (1941) which plotted 40 meters north of the 6 foot sounding on H-8729 ✓

at Latitude 61 degrees 15.7 minutes ~~7 seconds~~ North, Longitude 149 degrees 53.3 minutes ~~3 seconds~~ North by the pre-survey review was also investigated. The shoalest sounding obtained here was eight feet. No new dangers to navigation were found.

The charted 4-ft sounding originating from H-6657 (1941) was carried forward to the present survey in red and plotted 50 meters S.W. of the 8-ft sounding on H-8729 - in an unsounded area on the present survey

L. ADEQUACY OF SURVEY

The survey is considered adequate to supersede prior surveys for charting.

M. AIDS TO NAVIGATION

The only aids to navigation were two spar <sup>buoys</sup> marking the entrance to Ships Creek. They are privately maintained

N. STATISTICS

Launch #1

Number of positions.....1689

Nautical miles of sounding lines..... 223

Number of bottom samples..... 27

Total square nautical miles..... 10.5

Tide stations..... 1 (Anchorage Harbor)

Q. REFERENCE TO REPORTS

Fathometer Report OPR-413, submitted 27 November 1963.

Shoran Report OPR-413, submitted 27 November 1963.

Both by transmittal reference number BO-35-63.

Respectfully submitted

*Alfred W. Cecil*

Alfred W. Cecil, Ensign C&GS

Approved

*Wesley V. Hull*

Wesley V. Hull, Lt. C&GS

APPENDIX A ✓

H-8729

TIDE NOTE

BO-10-1-63

The one tide gage for this sheet was located at the Army Ocean Dock in the harbor of Anchorage, Latitude 61 degrees 14.2 minutes, Longitude 149 degrees 53.4 minutes.

The height of MLLW on the staff was 3.6 feet.

The tides from this gage were used without correction for time or height.

The time meridian for this gage was 150 degrees West.

TIDE NOTE FOR HYDROGRAPHIC SHEET ✓

August 18, 1964

Nautical Chart Division: Seattle Regional Officer

Plane of reference approved in  
8 volumes of sounding records for

HYDROGRAPHIC SHEET 8729

Locality: Cook Inlet, Alaska

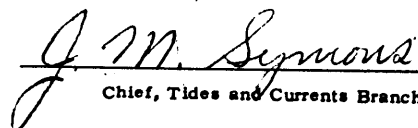
Chief of Party: J. O. Boyer

Plane of reference is mean lower low water.

Tide Station Used (Form C&GS-681): Anchorage, Alaska

Height of Mean High Water above Plane of Reference is as follows: 29.4 feet

Remarks

  
Chief, Tides and Currents Branch



APPENDIX B

FATHOMETER CORRECTIONS ✓

PHASE CORRECTIONS

<u>Scale</u>	<u>Correction</u>
A	<del>/</del> 0.0
B	<del>/</del> 0.3
C	<del>/</del> 0.6
D	<del>/</del> 0.9
E	<del>/</del> 1.1

VELOCITY CORRECTIONS (FEET)

"a" day.....-1.3 feet for all depths ← Initial was set at 2.0 ft.

"b" through "p" day....-0.3 feet for all depths ← Initial was set at 1.0 ft.

See Fathometer Report, OPR-413 forwarded to Washington 27 November 1963.

APPENDIX C

LIST OF SIGNALS ✓

<u>Signal</u>	<u>Source</u>
ACS	Anchorage ACS Microwave Relay Tower, 1960
BAY	Fourth order intersections by USE
CITY	Anchorage city watertank, 1941, 1960
GAR	Fourth order intersections by USE
JAY	Incomplete manuscript T-12016
KAR	Fourth order intersections by USE
KENI	Anchorage radio station KENI, 1954, 1960
KTVA	Anchorage television station KTVA, 1954
LIZ	Incomplete manuscript T-12016
LYN	Fourth order intersections by USE
MAG	Fourth order intersections by USE
NIP	Fourth order intersections by USE
PAC	Fourth order intersections by USE
SAN	Fourth order intersections by USE
TANK	Anchorage Alaska Railroad elevated <u>tank</u> , 1947, 1960
TRY	Fourth order intersections by USE
WAG	Fourth order intersections by USE
WHITE	Fourth order intersections by USE

See accompanying list of signals located by U.S. Army Corps of Engineers in 1963 and their GP.

TOPO SIGNALS

	G.P.	FWD	BACK	TOTAL	30"	
BAY ✓	61° 16' 15.05 149° 55' 14.71	465.9 ✓ 219.2 ✓	462.8 ✓ 227.9 ✓	928.7 447.1	928.6 447.1	
MAG ✓	61° 18' 30.53 149° 54' 31.21	16.4 ✓ 18.0 ✓	912.2 ✓ 428.5 ✓	928.6 446.5	928.6 446.5	
GAR ✕	61° 15' 09.83 149° 52' 35.77 ○	304.3 ✓ 86.0 ✓	624.3 ✓ 361.3 ✓	928.6 447.3	928.6 447.3	
NIP ✓	61° 16' 07.82 149° 51' 36.35	242.1 ✓ 5.2 ✓	684.6 ✓ 441.9 ✓	928.7 447.1	928.7 447.1	
WAG ✓	61° 16' 36.51 149° 50' 52.73	263.4 ✓ 338.7 ✓	665.2 ✓ 108.3 ✓	928.6 447.0	928.6 447.0	
LYN ✓✓	61° 17' 05.91 149° 50' 31.57	182.9 ✓ 23.4 ✓	745.7 ✓ 423.5 ✓	928.6 446.9	928.6 446.9	correctly plotted on Smooth Sheet
PAC ✓	61° 17' 39.38 149° 49' 55.24	290.4 ✓ 375.9 ✓	638.3 ✓ 70.9 ✓	928.7 446.8	928.7 446.8	
TRY ✓	61° 18' 04.51 149° 49' 36.21	139.6 ✓ 92.5 ✓	789.0 ✓ 354.2 ✓	928.6 446.7	928.6 446.7	
SAN ✕	61° 18' 30.51 149° 49' 02.89	15.8 ✓ 43.0 ✓	912.9 ✓ 463.5 ✓	928.7 446.5	928.7 446.5	
KAR ✕	61° 18' 57.65 149° 46' 28.98	855.9 ✓ 431.3 ✓	72.7 ✓ 15.2 ✓	928.6 446.5	928.6 446.4	
WHITE ✓	61° 15' 32.075 149° 52' 34.820 ✓	67.2 ✓ 71.9 ✓	864.4 ✓ 375.4 ✓	928.6 447.3	928.6 447.3	
LIZ ✓	61° 14' <del>32.075</del> 149° 53'	652.6 225.0	276.0 222.6	928.6 447.6	928.6 447.6	

△ Signals

		G.P.	Fwd.	Back	TOTAL	30"
# 827	Anchorage, Radio Station <u>KENI</u> , TOWER, <del>1954</del> 1954-1960	61° 12' 25.193 149° 55' 20.324	779.6 303.5	1488 144.5	928.6 448.0	928.6 448.0
# 826	Anchorage, TV Station <u>KTVB</u> , Tower, 1954, <del>1952</del>	61° 13' 09.991 149° 52' 31.124	309.3 16.8	619.4 431.0	928.7 447.8	928.6 447.8
# 836	Anchorage, City Water Tank, <del>1941</del> APex (Steel) 1941, 1960	61° 13' 17.880 149° 52' 07.133	553.5 106.5	375.2 341.3	928.7 447.8	928.6 447.8
#	Anchorage, Alaska Railroad, Elevated Tank, 1947-1960	61° 13' 46.483 149° 52' 35.333	510.2 79.6	418.4 368.1	928.6 447.7	928.6 447.7
# 854	Anchorage, <u>ACS</u> Microwave Relay Tower, <del>RED</del> RED LIGHT, 1960	61° 13' 55.381 149° 52' 21.613	804.2 322.5	124.4 125.1	928.6 447.6	928.6 447.6

✓CRL

No. 42 HYDROGRAPHIC SURVEY

Field No. 50-10-1-63 Reg. No. H-8729

Scale 1: 10,000 Plotted: Verified

Projection: AEE CRL

Tri Sta. AEE VFF

Topo. Sta. AEE VFF

Hydro. Sta. \_\_\_\_\_

Datum NA 1927

Exp. Sta. ACS 1960

Lat. 61° 13' 17.880 N

Long. 149° 52' 07.133 W

		FWD.	BACK	TOTAL	30"
JAY ✓	61° 14' 149° 53'	395.0 313.5	533.6 134.1	928.6 447.6	928.6 447.6

APPROVAL SHEET ✓

Field work for these surveys was done under my direction and was inspected daily. This survey is considered adequate to supersede all prior surveys.

The smooth sheet was transferred to the Seattle Processing Office without shoreline and geographical names. They will be added when the information becomes available.

*for Wesley V. Hull*  
John O. Boyer  
CDR, USC&GS  
Commanding  
Ship BOWIE

GEOGRAPHIC NAMES

Survey No. H-8729

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		
Anchorage ✓										1
Cairn Point ✓										2
Knik Arm ✓										3
ship creek ✓										4
										5
										6
										7
										8
										9
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										24
										25
										26
										27

PREPARED BY

*Jordan W. Pickett*

CARTOGRAPHIC TECHNICIAN

APPROVED BY

*A. J. Wright*

CHIEF GEOGRAPHER

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. *H-8729 (BO-10-1-63)*

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		<i>1</i>	BOAT SHEETS		<i>1</i>	
DESCRIPTIVE REPORT		<i>1</i>	OVERLAYS		<i>0</i>	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	<i>1</i>					
VOLUMES	<i>8</i>					
BOXES						
T-SHEET PRINTS (List) <i>none</i>						
SPECIAL REPORTS (List)						

OFFICE PROCESSING ACTIVITIES

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


PROCESSING ACTIVITY	AMOUNTS			TOTALS
	PRE-VERIFICATION	VERIFICATION	REVIEW	
POSITIONS ON SHEET				<i>1689</i>
POSITIONS CHECKED		<i>876</i>		
POSITIONS REVISED		<i>42</i>		
DEPTH SOUNDINGS REVISED		<i>492</i>		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		<i>38</i>		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		<i>0</i>		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		<i>0</i>		
JUNCTIONS		<i>0</i>		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		<i>27</i>		
SPECIAL ADJUSTMENTS		<i>10</i>		
ALL OTHER WORK		<i>161</i>		
TOTALS		<i>198</i>	<i>172</i>	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>Cornelius A. J. Pany</i>	<i>June 21 1966</i>		<i>Aug 4th 1966</i>	
REVIEW BY <i>George A. Kozemczak</i>	BEGINNING DATE		ENDING DATE	
			<i>APR-14-1972</i>	

*Inspected by: Dale E. Wettrick - 58 hrs.*

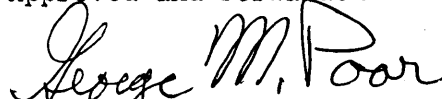
Approval Sheet

The smooth sheet has been inspected and meets the requirements of the Hydrographic Manual. (Note: Exceptions are noted in the verifier's report.)

Examined and Approved

  
William M. Martin  
Supervisory Carto. Tech.

Approved and Forwarded

  
George M. Poor, CDR, USESSA  
Chief, Processing Division, PMC

ADDENDUM

The inked shoreline on this survey comes from Shoreline Manuscripts T-12003 and T-12007. That part left in pencil comes from an old sheet T-11570 which is no longer shown on the index. The shoreline is shown in this manner as per tele/comm Carstens/ Martin on 5/9/69.



OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8729

FIELD NO. BO-10-1063

Alaska, Cook Inlet, Anchorage and Knik Arm

SURVEYED: August 5, 1963 through August 21, 1963

SCALE: 1:10,000

PROJECT NO.: OPR-413

SOUNDINGS: Raytheon DE-723 Depth Recorder

CONTROL: Sextant fixes on shore signals

Chief of Party .....	J.O. Boyer
Surveyed by .....	P.A. Chernoff
.....	A.W. Cecil
Protracted by .....	J.L. Brown
.....	J.D. Hughes
Soundings Plotted by .....	J.D. Hughes
Verified and Inked by .....	C.A.J. Pauw (PMC)
Reviewed by .....	G.A. Kozemczak
.....	Date: April 14, 1972
Inspected by .....	D.E. Westbrook

1. Description of the Area

This is a survey of an area in the northern part of Cook Inlet, Alaska, covering that part of Knik Arm from Pt. MacKenzie and the docks at Anchorage to north lat.  $61^{\circ}19'15''$ .

The configuration of the bottom is primarily the result of past glacial action, and present tidal currents. The shores are strewn with rocks and there are extensive mud flats which uncover at low tide. The slopes are irregular and steep in this fiord. The main channel reaches depths as great as 176 ft. along its narrowest width (approx. 1100 meters) near Cairn Pt. Because of strong currents and numerous sand ridges, much of the area covered by this survey is continually scouring and filling. The bottom characteristics vary over the survey area and consist of rocks, gravel, coarse gray sand, fine gray sand, and mud.

2. Control and Shoreline

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

No shoreline was shown on the smooth sheet at the time of the review. The shoreline was added in this office by the reviewer from the latest shoreline manuscripts available, which are advance photogrammetric manuscripts T-12003 (1961), T-12007 (1961); incomplete manuscripts T-12004, T-12008, and unreviewed shoreline manuscript T-12016 (1960-63).

### 3. Hydrography

A. Depths at sounding line crossings are in good agreement.

B. The usual depth curves were adequately delineated.

A few dashed and brown curves have been added to emphasize certain important bottom features.

C. The development of the bottom configuration and the investigation of least depths are considered adequate, except that the 16-ft. sounding in lat.  $61^{\circ}17.86'$ , long.  $149^{\circ}51.52'$  should have been investigated for least depth, and the shoal in lat.  $61^{\circ}15.67'$ , long.  $149^{\circ}53.28'$  was not adequately developed. In the latter instance, however, a 4-ft. sounding was brought forward from H-6657 (1941) to supplement the present survey.

### 4. Condition of the Survey

The field plotting, PMC verification, sounding records and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual except for the following:

A. In numerous cases where the rock awash elevations were reduced correctly in the volumes they were inked erroneously on the smooth sheet during verification.

B. Attention had to be given to rescanning of fathograms because a number of shoaler depths were omitted that fell between equal interval soundings. Much difficulty was encountered in rescanning the fathograms in areas having sharp rising pinnacles that varied, for example, from 70 ft to 5 ft. within 40 seconds. This required the fathometer operator to rapidly switch at times from A to E phases. Easier scanning would have been possible if these depths had been recorded on the fathom scale as was done so well on n-day.

C. The depth curves were inaccurately inked by the verifier and some detached curves were overlooked.

## 5. Junctions

No contemporary survey junctions on the north. The junction with H-8728 (1963) on the south will be considered in the review of that survey.

## 6. Comparison with Prior Surveys

- A. H-3200 (1910) 1:40,000  
 H-3200a (1914) 1:40,000  
H-4035 (1918) 1:10,000

H-3200 covers the entire area of the present survey and H-3200a covers a small area on the south edge of the present survey. A comparison between the prior and present depths reveals a changeable bottom. Some 12-ft. shoals on the prior survey have washed considerably deeper, to 20-25 ft. on the present survey in the vicinity of lat.  $61^{\circ}18'30''$ , long.  $149^{\circ}50'45''$ . In the deeper portions of the present survey area depths have, in some cases, shoaled as much as 15-20 ft., since the prior surveys as in lat.  $61^{\circ}18'30''$ , long.  $149^{\circ}52'15''$ .

Survey H-4035 covers a portion of Knik Arm in the vicinity of Anchorage. A comparison with the present survey reveals numerous changes in the bottom, some very extensive. For instance, in lat.  $61^{\circ}14.31'$ , long.  $149^{\circ}53.51'$ , near the present Anchorage Dock area, depths of 86-ft. on the prior survey have now shoaled to 46-ft. In other areas, however, scouring of up to 38 ft has occurred.

The present survey adequately supersedes these prior surveys within the common area.

- B. H-6657 (1941) 1:5,000  
 H-6658 (1941) 1:20,000  
H-7186 (1947) 1:20,000

These prior surveys cover the southeastern and southwestern portion of the present survey. A comparison between the prior and present surveys reveal only a few changes in the bottom with good general agreement from the high-water line to the 60-ft. curve. Some shoaling of about 10-ft. has occurred along the 60-ft. curve on the present survey, west and northwest of the docks at Anchorage. The gravel bar jutting out from Cairn Point and the bar jutting out from the western shore of Knik Arm near the same parallel remain unchanged for the most part.

Several soundings and rocks awash were brought forward from H-6657 and H-6658 to supplement the present survey. A few of these soundings were in areas not completely sounded on the present survey. Others represent the least depths obtained on the gravel bars jutting out from the east and west sides of Knik Arm along the  $61^{\circ}15'30''$  parallel.

With the addition of the items noted above, the present survey is adequate to supersede these prior surveys within the common area.

- C. H-8203 (1955) 1:10,000  
 H-8527 (1960) 1:10,000 (unverified)  
H-8528 (1960) 1:20,000 (unverified)

H-8203 covers the southern part of the present survey. A few important differences in depths were noted. For example, the vicinity of lat.  $61^{\circ}15'00''$ , long.  $149^{\circ}54'30''$  the present survey depths are deeper by as much as 30-ft. Shoaling of 5 to 10 ft. is evident in lat.  $61^{\circ}14'30''$ , long.  $149^{\circ}53'30''$  approximately 300 meters west of the docks at Anchorage. Otherwise, the bottom appears to be relatively stable.

Several soundings in the vicinity of lat.  $61^{\circ}15.05'$ , long.  $149^{\circ}53.55'$  and a rock awash in lat.  $61^{\circ}14.91'$ , long.  $149^{\circ}52.68'$  have been brought forward from H-8203 to supplement the present survey.

H-8527 and H-8528 cover the area of the present survey along the docks at Anchorage. A comparison between the prior and present survey reveals both shoaling and deepening. For example, in the vicinity of lat.  $61^{\circ}14'30''$ , long.  $149^{\circ}55'00''$ , a trough with depths ranging from 65 to 70 ft. in 1960 has shoaled as much as 25 to 30 ft. on the present survey. In contrast, the area 700 meters northwest of this location contained depths of 70 to 75 ft. in 1960, but the present survey depths are as much as 5 to 10 ft. deeper.

With the addition of the soundings and rock awash noted above, the present survey is adequate to supersede these prior surveys within the common area.

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

The effective depths shown on this wire drag survey do not conflict with the depths on the present hydrographic survey, except for the two 38-ft. shoal areas on the present survey in lat.  $61^{\circ}14.50'$ , long.  $149^{\circ}54.91'$  and lat.  $61^{\circ}14.63'$ , long.  $149^{\circ}54.71'$  which were shown to be cleared by 44 ft. on the wire-drag survey. Shoaling has occurred in these areas since the wire-drag

survey, thus the wire-drag effective depths should no longer be considered valid where there is conflict with present survey depths.

One sounding, a 27-ft. depth, in lat.  $61^{\circ}15.05'$ , long.  $149^{\circ}53.55'$  was brought forward from the wire-drag survey to supplement the present survey.

The other soundings on the wire-drag survey were in good agreement with present survey depths with the exception of the prior 27-ft. sounding in lat.  $61^{\circ}14.99'$ , long.  $149^{\circ}53.71'$ , which was not brought forward to the present survey as it was discredited by H-6657 (1941).

7. Comparison with Chart 8557 (latest print date 12th Ed., December 20, 1969)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys which require no further consideration and with Corps of Engineer blueprints, supplemented by partial application of depths from the boat sheet and verified smooth sheet of the present survey.

Only minor differences are noted between the present survey and charted depths. Numerous soundings charted from the boat sheet and unverified smooth sheet of H-8786 (1964) which is postearthquake hydrography, are considered to supersede the present survey information and should be retained on the chart.

Attention is directed to the following:

1. The following items were applied subsequent to the date of the present survey from sources indicated and should be retained on the chart:

(a). A dolphin charted in lat.  $61^{\circ}13.76'$ , long.  $149^{\circ}54.42'$  from Bp-98365 (1964 aerial photographs).

(b). A dolphin charted in lat.  $61^{\circ}13.99'$ , long.  $149^{\circ}53.90'$  from Bp-98365 (1964 aerial photography).

(c). The Disposal Area depths in lat.  $61^{\circ}14.40'$ , long.  $149^{\circ}53.40'$  charted from H8786 (1964). The two disposal areas are from Chart Letter No. 1557 of 1966 and No. 1638 of 1967.

(d). The hydrography charted in the vicinity of lat.  $61^{\circ} 14.40'$ , long.  $149^{\circ} 53.20'$  from Bp-75874 (1968), Bp-77147-48 (1969), and Bp-77462-64 (1969).

(e). The mooring buoy charted in lat.  $61^{\circ} 13.80'$ , long.  $149^{\circ} 54.55'$  originates with Chart Letter No. 466 (1961). The buoy was located on H-8728 (1963), which joins the present survey, and should be retained on the chart.

(f). The TV-tower charted in lat.  $61^{\circ} 13' 08''$ , long.  $149^{\circ} 53' 35''$  from Chart Letter No. 672 (1964).

(g). The City Pier and Municipal Petroleum Terminal charted in the vicinity of lat.  $61^{\circ} 14' 19''$ , long.  $149^{\circ} 53' 16''$  from Chart Letter No. 1638 (1967) Bp-72976 and Chart Letter No. 1177 (1968) Bp-74606.

(h). A few other piers and a substantial portion of shoreline have been charted from post-earthquake photography and should be retained as charted.

(i). The rock awash charted in lat.  $61^{\circ} 15' 49''$ , long.  $149^{\circ} 54' 57''$  is apparently from H-6658 (1941) but is charted out of position. The chart should be revised to reflect the position of the rock as shown on the present survey.

2. Several rocks have been plotted in duplicate on the chart within the area of the present survey. This was caused by first charting the rocks from the boat sheet of H-8729 (1963) all the rocks on the boat sheet which were located using signal SAN are erroneous due to an error in plotting of that signal.

The rocks are now shown in their correct positions on the smooth sheet and the chart should be revised accordingly.

## B. Aids to Navigation

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

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.


8. Compliance with Instructions

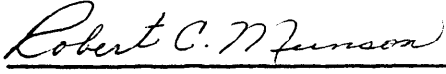
The survey adequately complies with the Project Instructions.

9. Additional Field Work

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

Examined and Approved:

  
Chief  
Marine Chart Division

  
Associate Director  
Office of Marine Surveys and Maps

H-8729 (1963)

Items for Future Pre-Survey Reviews

The bottom is considered adequately developed on the present survey. Significant changes were noted in the bottom since the prior surveys, these natural bottom changes such as continual scouring and filling are due to the strong currents and character of the bottom. This is a preearthquake survey. The date of the Alaskan Earthquake was March 27, 1964.

Position index - lat. 611, long. 1500

Bottom change - 8

Use index - 2

Resurvey cycle - 10 yrs.

Position index - lat. 611, long. 1495

Bottom change - 8

Use index - 1

Resurvey cycle - 25 yrs.





