

# 8517

Diag. Cht. No. 8201-3.

Form 504

U. S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No HO-05-1-60 Office No. H-8517

### LOCALITY

State Alaska

General locality Keku Strait

Locality Kake

1960

CHIEF OF PARTY

M. J. Tonkel

LIBRARY & ARCHIVES

DATE July 2, 1961

USCOMM-DC 5087

2158

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-8517...

Field No. HO-05-1-60...

State Alaska

General locality Keku Strait

Locality Kake

Scale 1:5,000 Date of survey May-June 1960

Instructions dated 7 January 1960, amended 11 January 1960

Vessel Ship HODGSON

Chief of party LCDR Miller J. Tonkel

Surveyed by LCDR Miller J. Tonkel, LT. Floyd J. Tucker, Ens. W. P. Yeager & J. H. Blumer

Soundings taken by ~~echo sounder~~ graphic recorder, hand lead, etc

Fathograms scaled by W. P. Yeager, J. H. Blumer, A. M. Legako, H. Hildahl

Fathograms checked by Same as above

Protracted by C. A. J. PAUW

Soundings penciled by C. A. J. PAUW

Soundings in 1 fathoms ~~to~~ at MLLW and are true depths

REMARKS:  
.....  
.....  
.....  
.....  
.....

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DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H-8517 (Field No. HO-05-1-60)

SPECIAL PROJECT 1-60  
KAKE, KEKU STRAIT, SOUTHEAST ALASKA

DATE OF SURVEY: 13 May - 6 June, 1960  
SCALE OF SURVEY: 1:5,000

USC&GS SHIP HODGSON, LCDR MILLER J. TONKEL, COMMANDING OFFICER

Surveyed by: LCDR Miller J. Tonkel, LT. Floyd J. Tucker  
ENSIGNS W.P. Yeager & J.H. Blumer

A. PROJECT:

This survey was executed as Special Project 1-60 in accordance with instructions dated 7 January 1960, amended 11 January 1960. ✓

B. SURVEY LIMITS AND DATES:

The survey extended from Lat.  $56^{\circ} 57' 44''$ , Long.  $133^{\circ} 55' 12''$ , northwesterly to Lat.  $56^{\circ} 58' 53''$ , Long.  $133^{\circ} 57' 12''$  and included ✓  
from the MLLW line to the five-fathom curve.

Field work commenced on 13 May and was completed on 16 June 1960. ✓

Previous surveys of the area were the Corps of Engineers survey ✓  
of 1951 (Drawing Q4-7-7) and survey H-2150. (1952)  
(BP 50226)

Progress in the field was slowed considerably due to the inexperience of both the hydrographer and crew. ✓

C. VESSEL AND EQUIPMENT:

The survey was completed by launch 95. Skiffs were used to complete the tagline hydrography around dock areas and for shoal development and delineation. ✓

Echo sounding equipment used throughout the survey was an 808-type fathometer No. 625. Leadline No. 7F was used for all hand lead soundings. ✓

D. TIDE STATION:

One portable automatic tide gage was maintained at Keku Cannery dock, Kake, Lat.  $56^{\circ} 57' 54''$ , Long.  $133^{\circ} 55' 30''$ . The gage was maintained only for the duration of the hydrography. There was no time or range corrections needed. ✓

E. SMOOTH SHEET:

~~To be~~ completed by the Seattle Processing Office. (See Addendum A) ✓  
W95

**F. CONTROL STATIONS:**

Basic control was established by H. A. C. 1927 (Kake, Beth, Chan) ✓  
and M. J. T. 1960 (Gunnock, Kake Harbor Light).

All visual signals were located in conjunction with the plane table  
survey of the mean high water line. (H0-A-60) T-6989 1960 ✓

**G. SHORELINE AND TOPOGRAPHY:**

The shoreline and the dock areas were surveyed by standard plane  
table methods and in accordance with special publications No. 144 and  
249. (See Topographic Survey No. ~~T-6989-1960~~ (H0-A-60) ✓

*Graphic Survey Sheet  
to be destroyed after  
V.R. ✓  
R.D. ✓*

**H. SOUNDINGS:**

*O.K. ↑ Daw*

All depths were measured with an 808 fathometer. All soundings  
were recorded in FEET. The depths were corrected for Velocity, Phase,  
Initial and Instrumental errors. The corrections were obtained by bar  
check three times daily in so far as possible. The bar was set at var-  
ious depths ranging from 6 to 42 feet in one fathom intervals. (See  
Fathometer report, Section V of this report. ✓

A check was made by the Hydrographer on the fathometer speed at  
the time of bar checks and at various times during the day. ✓

All soundings around dock faces and over shoal areas were obtained  
by lead line No. 7E. ✓

The bar check line and the lead line were checked against a steel tape  
during the period of hydrography. ✓

**I. CONTROL OF HYDROGRAPHY:**

All hydrography was controlled by sextant fixes, generally at one  
minute intervals. ✓

To facilitate control, a system of ranges was constructed on the  
beach extending from Lat. 56° 58' 18", Long. 133° 56' 18" to Lat. 56°  
57' 56", Long 133° 55' 30". The ranges were stakes approximately 100  
meters apart placed perpendicular to the High Water line at 45-meter  
intervals. When hydrography started, two men carrying flags walked along  
the beach, marking each set of stakes as hydrography progressed. ✓

**J. ADEQUACY OF HYDROGRAPHY: ✓**

The survey is adequate and complete to supersede all prior surveys  
of the area. ✓

**K. CROSSLINES: ✓**

Approximately 6% crosslines were run normal to the regular scheme  
of hydrography. All crossings appear to agree. ✓

**L. COMPARISON WITH PRIOR SURVEYS: ✓**

The survey was compared with the Corps of Engineers survey, Draw-  
ing Q4-7-7, Kake, Small Boat Harbor Site and the applicable portions of  
survey H-2150. The depths in the Kake Harbor Area (Lats. 56° 58' 15" to  
58' 30" and Longs. 133° 56' 30" to 57' 00") compared favorably. The var-  
iations between the present survey and prior ones is ±1 foot. The sparse  
soundings on both the above mentioned surveys makes accurate comparison  
difficult. ✓

L. CONT:

The Alluvial fan from Big and Little Gunnes<sup>u</sup> Creek is from 3 to 4 feet shoaler than the depths shown on H-2150. However, the deposit does not appear to have extended appreciably into the channel since the prior survey made in 1892.

See  
Profile-  
view.

The dock shown on Corps of Engineers Survey Q-4-7-7 is now in ruins. A new dock has been constructed on and, extending out from, the break water approximately 75 meters. The new dock has an airplane float attached on the northwest side.

M. COMPARISON WITH CHARTS:

Since the Kake insert on Chart 8201 was completed from the Corps of Engineers Survey Q4-7-7 it compares the same as above with the following exceptions:

1. The reef shown on the insert at Lat.  $56^{\circ} 58' 16''$  with a depth of  $1 \frac{3}{4}$  fathoms and marked by lighted bouy #3 was found to be  $1 \frac{1}{3}$  fathoms and no longer marked by bouy #3.

Long.  $133^{\circ} 56' 36''$

2. The rock shown on the insert at Lat.  $56^{\circ} 58' 18''$ , Long.  $133^{\circ} 56' 53''$  is a reef line extending from Lat.  $56^{\circ} 58' 15''$ , Long.  $133^{\circ} 56' 47''$  in a northwesterly direction to Lat.  $56^{\circ} 58' 18''$ , Long.  $133^{\circ} 56' 56''$ . The southeast extremity of this reef is now marked by lighted bouy #3. A section of this reef bares at MLLW at Lat.  $56^{\circ} 58' 16.5''$ , Long.  $133^{\circ} 56' 51''$ .

50.5

N. DANGERS AND SHOALS:

Two dangerous shoal areas were discovered. The first at Lat.  $56^{\circ} 58' 15.2''$ , Long.  $133^{\circ} 56' 36.5''$  is unmarked and presents a serious danger to navigation. The second is marked at its southern extremity by lighted bouy #3 (See Section M of this report.)

The location of both shoals was reported to the United States Coast Guard by letter dated 2 July 1960.

O. COAST PILOT INFORMATION:

The 10th (1952) Edition of U. S. Coast Pilot for Southeast Alaska, Dixon Entrance to Yakutat Bay, and the 8th Supplement of January 1960 is accurate and adequate for the area of the survey, except as follows:

Page 314: Delete lines 19 through 23. Add "Kake is a native village with a post office, store, and Alaska Public Health Center with nurse, on the northeast side of Keku Strait, about 4.5 miles southeast of Point Macartney. An extensive flat makes off from the village and is marked at its outer edge by two buoys. Air transportation to Petersburg is scheduled daily in the summer and 3 days per week during the winter. Radio communication is maintained with Alaska Communication System."

Page 314: Delete lines 24 through 28. Add "There is a salmon cannery with wharf and a fuel wharf about 0.8 miles southeast of the village. The wharf has a face of 121 feet with a least depth of 22.0 feet, June 1960. Fresh water is available at all times. The fuel wharf, close to the southeast of the cannery wharf, has a least depth of 24.5 feet alongside. Marine products are available in limited quantities. There is a crab cannery about 0.5 miles southeast of the salmon cannery."

21.6  
smooth  
sheet  
Jaw

23.9  
smooth  
sheet  
Jaw

Page 314: Delete lines through 29-31. Add "In approaching the salmon cannery wharf, pass to southward of the buoys lying off the village of Kake, on course 129 until southward and eastward of a group of piles and the Kake Cannery Flats Buoy #5. Do not allow bearing to the fuel wharf to close under 040. Make either a port or starboard landing at the wharf. Good anchorage may be found in about 15 fathoms, midway between the village and Grave Island. Bottom is of soft green mud." *where?*

Page 314: Line 33, delete "6 miles", add "7 miles". Refer to 1960 Light list.

Page 315: Delete lines 41 and 42, add "--buoy 1 mile southwestward of Point White. Pass 0.5 miles eastward of the lighted buoy and steer 129."

P. AIDS TO NAVIGATION:

Aids to navigation in the survey area are as follows: (1.) Kake Harbor Light, Lat. 56° 57' 39.8", Long. 133° 57' 03.8". (2.) Day Beacon, Lat. 56° 58' 24.4", Long. 133° 56' 44.6". (3.) Black Can Buoy #1, Lat. 56° 58' 15", Long. 133° 57' 11". (4.) Lighted Buoy #3, Lat. 56° 58' 15", Long. 133° 56' 47". (5.) Black Can Buoy #5, Lat. 56° 57' 53.1", Long. 133° 56' 05.8".

Q. LANDMARKS FOR CHARTS:

Refer to attached form 567.

R. GEOGRAPHIC NAMES:

See Geographic Names Report previously submitted.

S. SILTED AREAS:

There are no silted areas excepting the extensive delta of Big and Little Gunnek Creeks.

T. BOTTOM CHARACTERISTICS:

The general bottom is a mixture of medium gravel, fine sand, and some broken shell.

U. SHOAL DEVELOPMENT:

The two shoal areas mentioned previously in this report under section M were developed in a rather unique manner. Both shoals were delineated quickly and accurately by employing the use of skin divers equipped with aqua-lungs and rubber diving suits. The divers, all volunteers using their personal equipment, first located the highest point of the area and then the extremities, marking same with buoys. It was then a simple matter to obtain the location and depth of the shoalest point of each reef.

The use of skin-divers in reef location is to be highly recommended. It alleviates much drifting and ~~hand~~ hand lead sounding and at the same time gives much better results. The divers are able to examine the entire reef and give the Hydrographer a clear picture as to its characteristics.

This method of development is limited to relatively clear and calm waters. Shoal delineation by divers in strong currents or rough seas is not recommended.

V. FATHOMETER REPORT:

1. Equipment:

Model 808 Echo Sounder #625 was used to record all echo depths taken from Launch 95.

All depths were recorded in FEET throughout the survey. The sounder was calibrated for 800 fathoms per second.

2. Corrections:

The basic corrections were for Echo, Index, and Phase. These corrections were derived from periodic tests and comparisons, computations, and curves using standard methods. The original tests and comparisons are recorded in the volumes.

a. Echo corrections were based on values obtained from daily bar checks. The standard reflecting bar method was used. Temperature and salinity observations were taken but since the project was confined to shoal areas (0-30 ft.) the bar check range was sufficient to compute the velocity correction. (See Zc & Zf)

1. Settlement and squat corrections were determined by using the "echo-sounding over a fixed point" method in accordance with paragraph 553 of the Hydrographic Manual. (See Zd)

b. Index correction was considered any deviation from the set initial. The initial was held at 0.0. The draft was included in the echo-sounder correction.

c. Phase comparisons were taken between A and B scale. (See Zg)

WtoY Not applicable.

Z. TABULATION OF APPLICABLE DATA

*O.K. Dew*

1. Topographic sheet #6989 to be forwarded.
2. Topographic Report.
3. Coastal Pilot Report.
4. Geographic Names Report.
5. Attached Material
  - a. List of signals ✓
  - b. Statistics ✓
  - c. Velocity and instrument corrections (bar check data) ✓
  - d. Settlement and Squat tests ✓
  - e. Leadline and barline calibrations ✓
  - f. Echo correction applied ✓
  - g. Phase comparisons ✓
  - h. Tidal note ✓
  - i. Non-floating aids or landmarks for charts ✓
  - j. Addendum A (Smooth Plotter notes) ✓
  - k. Approval sheet ✓
  - l. Sketch of project ✓
  - m. Print of Corps of Engineers' Drawing Q4-7-7 ✓  
(Included in original copy of this report.)

Respectfully submitted,

*James H. Blumer*  
James H. Blumer,  
Ensign C&GS

DESCRIPTIVE REPORT (Kake)

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Z5a. LIST OF SIGNALS USED ON H-8517

<u>NAME</u>	<u>ORIGIN</u>
GUN	Triangulation Station GUNNOCK, 1960
KAKE	" " KAKE, 1927
LIG	" " KAKE HARBOR LIGHT, 1960
GAGE	Topographic Station GAGE, 1960 (not marked)
FISH	" " FISH, 1960
LUBE	" " LUBE, 1960
FIN	Topo-Hydrographic
TUB	"
ZIG	"
YEN	"
WAR	"
EAT	"
VIM	"
DOC	"
SUE	"
ABE	"
BAG	"
CAT	"
DOG	"
EGG	"
FOX	"
GAL	"
HOE	"
ICE	"
JAY	"
KID	"
LAM	"
MAN	"
NUT	"
ODD	"
PUP	"
RAG	"
RIP	"
SOX	"
ZOO	"
TOM	"
OUT	"
WAG	"
VET	"
USE	"
YAM	"
IRK	"



DESCRIPTIVE REPORT (Kake)

STATISTICS

HYDROGRAPHIC SURVEY H-8517 (HO-05-1-60)

USC&GSS HODGSON

PROJECT 1-60

LAUNCH NO. 95

VOL.	DAY	DATE	POS	NAUT. MI. SDG. LINE	H.L.
3	a	5/25/60	131	5.0	---
3	b	5/26/60	122	6.0	---
3&4	c	6/2/60	43	1.7	---
4	d	6/3/60	90	3.5	---
4	e	6/4/60	54	3.0	---
4	f	6/5/60	86	3.5	---
4	g	6/6/60	<u>47</u>	<u>1.3</u>	---
TOTALS			5753	24.0	

SKIFF AND TAGLINE

1	a	5/20/60	53	--	53
1 Tagline	b	5/21/60	117	--	117
1	c	6/2/60	5	--	5
1	d	6/3/60	41	--	---
1	e	6/4/60	22	--	22
1&2 Skiff	f	6/5/60	80	0.5	112
1	g	6/6/60	<u>52</u>	<u>0.5</u>	<u>97</u>
<del>GRAND TOTALS</del> Total			<del>520</del>	<del>14.0</del>	<del>406</del>
Grand Total			943	25.0	406

DESCRIPTIVE REPORT

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Z5c

SUMMARY OF BAR CHECK CORRECTIONS  
 SPECIAL PROJECT 1-60 SHEET H-8517  
 KAKE HARBOR KEKU STRAIT  
 LAUNCH 95 MAY-JUNE 1960  
 FATHOMETER NO. 62s

<u>DATE</u>	<u>DAY</u>	<u>6</u>	<u>12</u>	<u>18</u>	<u>30</u>	<u>42</u>
5/25/60	a	+0.95	+1.25	+1.40	+1.80	+2.20
	a	0.90	1.30	1.25	1.80	2.20
	a	0.90	1.15	1.20	1.35	1.60
5/26/60	b	1.00	1.10	1.00	1.10	1.30
	b	1.00	1.20	1.05	1.30	1.40
	b	1.15	1.40	1.25	1.80	1.90
6/2/60	c	1.10	1.55	1.55	2.10	—
	c	1.15	1.20	1.15	—	—
6/3/60	d	1.15	1.25	1.55	2.00	1.50
	d	0.90	1.25	1.25	1.90	2.10
	d	1.00	1.45	1.35	2.20	2.60
6/4/60	e	1.05	1.35	1.50	1.90	2.50
	e	0.95	1.25	1.35	1.90	—
6/5/60	f	0.75	0.80	0.95	2.00	2.40
	f	0.80	1.25	1.20	2.00	2.40
	f	1.10	1.45	1.65	2.40	—
6/6/60	g	1.20	1.35	1.60	1.80	2.00
	g	<u>1.15</u>	<u>1.55</u>	<u>1.70</u>	<u>2.00</u>	<u>2.30</u>
	Total	18.20	23.10	24.30	31.35	28.40
	Average	1.01	1.28	1.35	1.84	2.03
	Bar line correc.	<u>+0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>	<u>0.17</u>
	Corr.	1.18	1.45	1.52	2.01	2.20

Z-5g PHASE COMPARISONS

A to B use -0.2 feet

Z-5g SETTLEMENT AND SQUAT

500 RPM use 0.0  
 700 RPM use 0.2

DESCRIPTIVE REPORT

Z5e LEADLINE AND BAR LINE CALIBRATIONS

No corrections were applied to leadline depths as it was within 0.1 of a foot of being correct distance.

The bar check line was 0.17 Ft. short-0.17 was added to all bar check readings.

Z5f ECHO CORRECTIONS APPLIED(this included Z5c,Z5d&Z5e)

<u>For 500 RPM use</u>			<u>For 750 RPM use</u>	
+ 1.0	0.0 to 2.1	Ft.	+ 1.2	
1.2	2.2 to 7.5		1.4	
1.4	7.6 to 14.0		1.6	
1.6	14.1 to 24.2		1.8	
1.8	24.3 to 47.5		2.0	
2.0	47.6 to 70.0 & over		2.2	

Z-5h

TIDAL NOTE

TIDE STATION: KEKU CANNERY DOCK

Lat. 56 57' 54"  
Long. 133 55' 30"

MLLW on staff = 5.6 feet



Z 5k

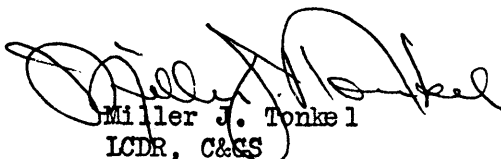
APPROVAL SHEET

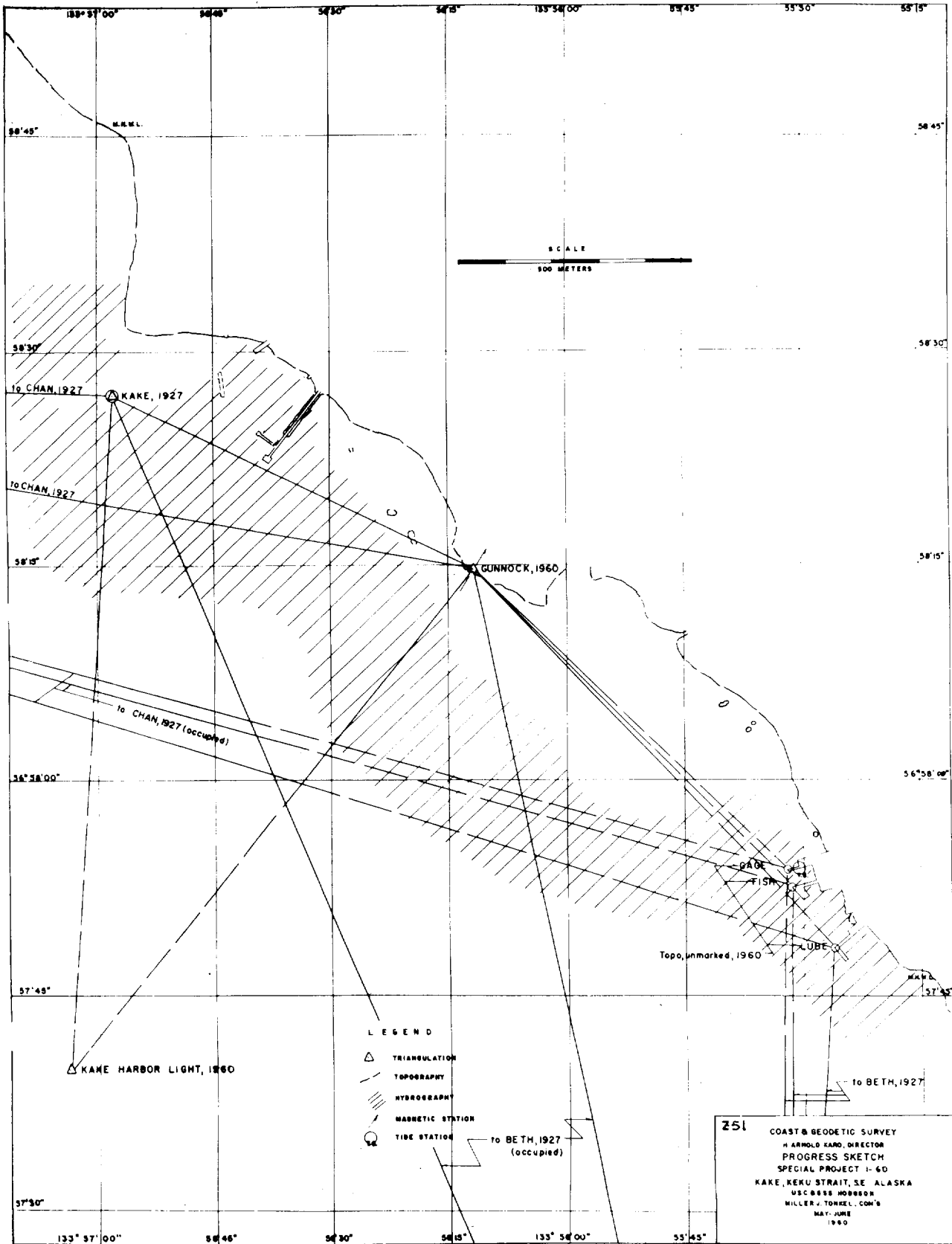
HYDROGRAPHIC SHEET NO. H-8517

The boat sheet and field records for this survey were executed by members of the complement of the Ship HODGSON, and were examined daily during the field season.

The smooth sheet is to be completed by the Seattle Processing Office and all records have been so transferred. Reference is made to the Director's <sup>ltr</sup> 22/mm, dated 28 September 1960, to the Seattle District Officer.

The survey is complete and adequate with no additional field work considered necessary. Junctions with contemporary and/or prior surveys are satisfactory.

  
Miller J. Tonkel  
LCDR, C&S  
Chief of Party



SMOOTH SHEET

The smooth sheet was hand constructed and checked by Seattle Hydrographic Processing Unit personnel, using standard methods. ✓

COMPARISON WITH CHART

This survey has been compared with insert on Chart 8201, scale 1:10,000 dated Aug. 20, 1960. ✓

See copy of insert for comparison. ✓

DANGERS AND SHOALS

The following is a list of notable shoal soundings on this survey:

Latitude	Longitude	Depth
58° 58' 22" ✓	133° 57' 08" ✓	0.6 fms ✓
58° 58' 17" ✓	133° 57' 00" ✓	0.4 " ✓
58° 58' 17" ✓	133° 56' 53" ✓	0.2 " ✓
58° 58' 16" ✓	133° 56' 36" ✓	1.2 " ✓
58° 58' 16".5 ✓	133° 56' 50".5 ✓	0.0 " ✓ ← shown as rock awash on smooth sheet.

ENLARGEMENT OF KEKU CANNERY

The enlargement to scale 1:1,000 originates from the topo plate HO-A-60. It was accomplished by drafting methods and checked by scaling the topo signals and replotting them on the enlargement.

The hydrography was controlled by tagline. Considerable use was made of the boat sheet to ensure that the bearings and distances recorded were correctly interpreted. ✓

Respectfully submitted

*William M. Martin*  
 WILLIAM M. MARTIN  
 SUPERVISORY CARTOGRAPHER

Approved and Forwarded

*M. E. Wennermark*  
 M. E. WENNERMARK  
 CAPTAIN, C&GS  
 SEATTLE DISTRICT OFFICER



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TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

August 18, 1961

Division of Charts: R. H. Carstens

Plane of reference approved in  
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8517

Locality Kake, Keku Strait, Southeast Alaska

Chief of Party: M. J. Tonkel (1960)  
Plane of reference is mean lower low water reading  
5.6 ft. on tide staff at Kake, Keku, Alaska  
24.3 ft. below B. M. 1 (1960)

Height of mean high water above plane of reference is: 13.1 ft.

Condition of records satisfactory except as noted below:

Burt W. Wilcox  
Chief, Tides & Currents Branch

~~Chief, Division of Tides and Currents~~

GEOGRAPHIC NAMES  
 Survey No. H-8517

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
Kake	x									x	1
Keku Cannery											2
Keku Strait	x										3
Kupreanof Island	x									x	4
											5
Gannuk Cr											6
											7
											8
											9
											10
											11
											12
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											25
											26
											27

*George M. Bane*  
 Geographic Names Section  
 3 August 1961

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. ...8517...

Records accompanying survey: Smooth sheets <sup>1</sup>....; boat sheets ..<sup>1</sup>.; sounding vols. ....<sup>4</sup>; wire drag vols. ....; Descriptive Reports ..<sup>1</sup>.; graphic recorder envelopes ....<sup>3</sup>; special reports, etc. ....

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

Number of positions on sheet	..881.
Number of positions checked	..333.
Number of positions revised	...14.
Number of soundings revised (refers to depth only)	.....8
Number of soundings erroneously spaced	NONE.
Number of signals erroneously plotted or transferred	NONE.
Topographic details	Time ..1. hr.
Junctions	Time .....
Verification of soundings from graphic record	Time ..4. hr.
Special adjustments	Time ..4. hr.

Verification by *Dale E. Vestbrook* Total time *45 1/2 hrs.* Date *14 Oct 1963*

Reviewed by ...*Dale E. Vestbrook*... Time *28 1/2 hrs.* Date *17 Oct 1963*

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8517

FIELD NO. HO 05-1-60

Alaska, Keku Strait, Kake

SURVEYED: May-June 1960

SCALE: 1:5,000

PROJECT NO. Special Project 1-60

SOUNDINGS: 808 Depth Recorder  
Leadline

CONTROL: Sextant fixes  
on shore signals

Chief of Party-----M. J. Tonkel

Surveyed by-----M. J. Tonkel

F. J. Tucker

W. P. Yeager

J. H. Blumer

Protracted by-----Personnel of Seattle Hydro-  
Graphic Processing Office

Soundings Plotted by-----Personnel of Seattle Hydro-  
Graphic Processing Office

Verified and Inked by-----D. E. Westbrook

Reviewed by-----D. E. Westbrook

Inspected by-----R. H. Carstens

Date: 10-16-63

1. Description of the Area

This survey covers the part of Keku Strait immediately adjacent to the town of Kake, Alaska, and extends southeast to include the area adjoining the Keku Cannery and the fuel pier. Hydrography included development of the area between the low water line and the 5-fathom curve.

The bottom topography at Kake is irregular and marked by reefs, rocks, and shoals. To the southeastward, however, the major feature is the alluvial deposit extending about 1/4 mile offshore where Gunnuk Creek empties into Keku Strait. Most of the alluvial deposit is bare at MLLW, but at its outer edge offshore depths increase rapidly.

## 2. Control and Shoreline

Both the shoreline and control originate with plane table survey T-6989 (1960). A complete list of signals is given in the descriptive report.

During verification of the present survey it was found that  $\Delta$  Kake, 1927 is located on a rock islet which was bare at MHW. The size and orientation of this islet was pieced together from 1962 aerial photographs 62W5566 and 62W5567, position 10 f-day SKIFF, and the description of triangulation station KAKE, 1927. Because of the indefinite nature of this determination, a future survey may find this islet to be larger or smaller than shown.

## 3. Hydrography

Depths at crossings were in good agreement. The usual depth curves were adequately delineated, except that in several areas the low-water line was not defined due to the foul nature of the bottom. The bottom configuration and least depths on shoals were adequately developed.

The reef in Lat.  $56^{\circ}58'16''$ , Long.  $133^{\circ}56'36''$  which is mentioned in the instructions for the project (Special Project 1-60, 7 January 1960, par. 4) was reported to be bare at low water in October 1959 (Chart letter 1096, 1959). This reef was investigated by scuba divers, buoyed, and the least depth determined to be 1.2 fathom (Position 65-66 a LAUNCH). This determination is considered to be adequate to disprove the existence of the bare reef reported in the chart letter.

*1.2 fms feet  
8175 New  
chart*

## 4. Condition of Survey

The field plotting, records, and reports of this survey are adequate and conform to the requirements of the Hydrographic Manual except that the signals used for control which fell

in the water area were not adequately described on the boat sheet (Hydrographic Manual 20-2, par. 5-10).

5. Junctions

This survey is joined on the south by H-8658 (1962), which has not yet been received by the Washington Office. Its junction with the present survey will be discussed in the review of H-8658.

6. Comparison with Prior Survey

The only prior survey of this bureau covering the area of the present survey is H-2150 (1892) 1:40,000. The relatively small scale and few soundings in the common area afford no adequate basis for comparison with the present survey.

The present survey is adequate to supersede the prior survey in the common area.

7. Comparison with Chart 8201, Kake Inset (latest print date 3-4-63).

A. Hydrography

The charted hydrography originates principally with the boatsheet of the present survey, with several minor changes which were made before verification of the smooth sheet of the present survey, and with the U. S. Corps of Engineers' survey of 1951 (BP-50226).

In general there are only minor differences ( $\pm 1/4$  fathom) between the charted and present survey depths, except in several areas where differences as great as  $1 1/2$  fathom are noted.

The following important differences between the charted and present survey data are specifically discussed:

1. The rock awash charted in Lat.  $56^{\circ}58.52'$ , Long.  $133^{\circ}57.18'$  originates with the boat sheet of the present survey, where it is plotted out of position. The feature actually falls about 25 meters to the eastward on a reef. The charted reef symbol should be revised as shown on the smooth sheet.

✓  
8175

2. Triangulation station KAKE, 1927 charted in Lat.  $56^{\circ}58.45'$ , Long.  $133^{\circ}56.97'$  should be deleted from the chart. The bare islet indicated on the present survey in that position should be charted (See par. 2 of this report). The reef symbol in that vicinity should also be revised to agree with the present survey.

✓ 8175

3. The 1/4 fm. sounding in Lat.  $56^{\circ}58.42'$ , Long.  $133^{\circ}56.86'$  which originates with the boat sheet (BP-59794), should be deleted from the chart. Two rocks awash, located during the survey but not plotted on the boat sheet, should be located in their respective positions as shown on the smooth sheet in place of the above sounding.

✓ # on 8175

4. The 1-Fm. depth curve in Lat.  $56^{\circ}58.38'$ , Long.  $133^{\circ}56.90'$  charted from the boat sheet should be extended to enclose the area between the two rocks and the detached reef as shown on the smooth sheet.

✓ 4175

5. A 1-fm. sounding in Lat.  $56^{\circ}58.12$ , Long.  $133^{\circ}56.49'$  found on the present survey has not been charted. It is recommended that this sounding be added to the chart and that the depth curve be revised to agree with the smooth sheet.

✓ 8175

6. A rock awash at MLLW in Lat.  $56^{\circ}57.91'$ , Long.  $133^{\circ}55.52'$  shown on the present survey has not been charted. It is recommended that this rock awash be added to the chart.

✓ 8175  
Kake Inset

7. A rock awash at each of the following locations was charted from the U. S. Corps of Engineers' survey of 1951 (BP-50226). These rocks were not verified or disproved by the present survey and they should be retained on the chart:

- A. A rock awash in Lat.  $56^{\circ}58.49'$ , Long.  $133^{\circ}56.66'$
- B. A rock awash in Lat.  $56^{\circ}58.39'$ , Long.  $133^{\circ}56.39'$
- C. A rock awash in Lat.  $56^{\circ}58.37'$ , Long.  $133^{\circ}56.40'$

✓  
✓ 5175

8. The dock area charted in Lat.  $56^{\circ}57.88'$ , Long.  $133^{\circ}55.49'$  originates with the U. S. Corps of Engineers' survey of 1947 (C.L. 39, 1954). The area should be revised to agree with plans table survey T-6989 (1960). ✓

See T-12186

9. The two rocks awash shown on plane table survey T-6989 (1960) in the vicinity of Lat.  $56^{\circ}58.06'$ , Long.  $133^{\circ}55.61'$  have not been charted. These features should be charted. ✓

10. The reef shown on plane table survey T-6989 (1960) in Lat.  $56^{\circ}58.08'$ , Long.  $133^{\circ}55.66'$  has not been charted. This feature should be charted. ✓

11. The ruins charted in Lat.  $56^{\circ}58.36'$ , Long.  $133^{\circ}56.30'$  originate with a pier on U. S. Corps of Engineers 1951 survey (BP-50226). This pier was subsequently charted as ruins by the authority of Chart Letter No. 567 of 1960 from the Commanding Officer USC&GS Ship HODGSON. The ruins have not been disproved by the present survey and therefore should be retained on the chart. } 5

8175

With the exception of items 7 and 11 above, the present survey is adequate to supersede the charted information in the common area. ✓

B. Aids to Navigation

The present survey positions of aids to navigation are in substantial agreement with the charted aids and adequately mark the features intended. A log mooring buoy located on the present survey in Lat.  $56^{\circ}57.68'$  Long.  $133^{\circ}55.35'$  has not been charted. Another log mooring buoy located on the present survey in Lat.  $56^{\circ}57.54'$ , Long.  $133^{\circ}55.09'$  falls in the area of the Portage Bay Anchorage inset, Chart 8201, and has not been charted.



8. Compliance with Instructions

The survey adequately complies with the project instructions.

9. Field Work Recommended

This survey is considered to be an excellent basic survey and no additional field work is recommended.

*Louis G. Taylor*  
Chief, Marine Chart  
Division

Examined and Approved:  
*Raymond M. Stoe*  
**Acting**  
Associate Director, Office of  
Hydrography and Oceanography

H-8517

Information for Future Pre-Survey Reviews

Due to a lack of prior history in the area of this survey, no definite statements can be made which would be of help in preparing a pre-survey review.

With the information at hand it cannot be definitely determined whether or not the alluvial deposit at the mouth of Gunnuk Creek is building or eroding.



