

8359

& Additional Work

Diag. Cht. No. 8152-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey Hydrographic
Field No. H0-1157
Office No. H-8359 & Ad. Wk.

LOCALITY

State S.E. Alaska
General Locality El Capitan Passage
Locality Devilfish Bay to Shakan Strait

19 57-59

CHIEF OF PARTY

G.C. Mast, E.W. Richards & H.D. Reed Jr.

LIBRARY & ARCHIVES

DATE April 1, 1958

8359

& Additional Work

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-8359

Field No. HO-1157

State Alaska - S.E. Alaska

General locality S. E. Alaska El Capitan Passage

Locality Devilfish Bay to Shakar Strait
El Capitan Passage

Scale 1:10,000 Date of survey 17 Apr. - 23 May 1957

Instructions dated 21 Nov. 1955, 1 Oct. 1956 and 31 Oct. 1956.

Vessel USCGS Ship HODGSON, Launch 95, Launch 93

Chief of party G. C. Mast and E. W. Richards

Surveyed by E. W. Richards

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

Fathograms scaled by Freimuth, Sampson, Hildahl, Buell, Earhart, Turnauer

Fathograms checked by Logako, Hildahl, Machnik, Freimuth, Earhart, Buell, Turnauer.

Protracted by J. P. Randall and E. W. Richards

Soundings penciled by E. W. Richards

Soundings in fathoms correct at MLLW (Dry Pass Tide Gauge -)
and are based on velocity of sound of 800 fm/sec.

REMARKS: E. W. Richards relieved G. C. Mast on 4/21/57.

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8359 (FIELD NO. HO-1157)

EL CAPITAN PASSAGE

S. E. ALASKA

1957

SCALE 1:10,000

E. W. RICHARDS, COMDG., SHIP HODGSON

A. PROJECT:

This survey was conducted as a part of Project No. 13470 in accordance with the following instructions and pertinent letters:

- A. Revised Instructions, dated 21 November 1955. ✓
- B. Supplemental Instructions, dated 1 Oct. 1956. ✓
- C. Supplemental Instructions, dated 31 Oct. 1956. ✓
- D. Dir. Ltr. 2 May 1957 to C. O., HODGSON, Filed No. 73/rab.
- E. Dir. Ltr. 15 July 1957 to C. O., HODGSON, Filed No. 73-eef.

Survey methods and general comments in this report are more detailed than in subsequent descriptive reports and in parts apply throughout the season as well as to this hydrographic sheet.

B. SURVEY LIMITS AND DATES:

This survey was conducted in El Capitan Passage between its northwest extremity at Shakan Strait, Lat. $56^{\circ} 09' 10''$ W, Long. $133^{\circ} 27' 30''$ N, thence east through Dry Pass to Aneskett Point, and south to the approximate entrance to Devilfish Bay, Lat. $56^{\circ} 06' 00''$, Long. $133^{\circ} 17' 30''$ W. The index of hydrographic sheets was forwarded previously to the Washington Office as the 1957 proposed sheet layout.

Hydrography commenced 17 April 1957 under the Command of Cdr. G. C. Mast and continued until 21 April 1957 when an unfortunate accident required LT. E. W. Richards to assume command for the remainder of this season. This portion of the survey was completed on 24 May 1957.

(1955) The north junction is made at Shakan Strait with Hydrographic Survey H-8243 (LI-1155) at a scale of 1:10,000. On the south, junction is made with contemporary survey H-7987 (Field No. HO-1257).
(1957)

Work progressed with about normal speed but due to the extensive shoals in and around Dry Pass it was necessary to take advantage of rising tides. Seldom was it possible to work the entire day in Dry Pass.

Since this sheet was the first of the season, many conditions existed that delayed the work and introduced difficulties that were eventually resolved in subsequent work. Some of these difficulties are listed below in order that the reviewer can better understand the conditions that were encountered and to evaluate his decisions accordingly.

1. Personnel Difficulties

Practically all personnel were new. An attempt was made to train an additional hydrographic unit in order to man a second launch. One man taking angles, with previous experience aboard one of our major vessels, was frequently found reading the sextant 1° out.

Personnel were shifted around in various positions to find out their capabilities and limitations and a few were eliminated from the launch crews engaged in hydrography. The policy of hiring seasonal employees is not conducive to executing precision surveys.

2. Equipment difficulties

(See Section "C" of this Report).

(SEE SECTION

3. Control Difficulties "I" of this report.)

98% of the hydrography was completed by 9 May. An additional day was spent on development and examination of shoals on 23 May.

Good weather prevailed throughout most of the period as far as winds were concerned but snow and rain interfered at the beginning of the season.

C. VESSELS AND EQUIPMENT:

Standard hydrographic launches No. 93 and 95 were employed with good success. Numerous groundings on rocks and shoals occurred with little damage to the hull. On one occasion, a keel mounted transducer carried away, but the launch was beached and repaired. For the remainder of the season the transducer was mounted in the bilge.

The Ship HODGSON served as a base of operations for hydrographic, photogrammetric, and signal building crews. Current surveys were executed from the ship while launch parties were operating in the immediate area. Bottom samples in depths over 20 fathoms were obtained by the sounding machine on the Ship HODGSON.

During the progress of this survey, the HODGSON anchored in the following locations:

Lat. 56° 09' 38"N
Long. 133° 20' 08"W

Lat. 56° 09' 24"N
Long. 133° 18' 43"W

Lat. 56° 07' 44"N
Long. 133° 17' 34"W

On week ends the vessel returned to Edna Bay for water and mail. Approximately every five or six weeks a trip was made to a Southeast Alaskan

town for supplies, fuel and laundry. Namely: Sitka, Petersburg, Wrangell or Ketchikan. On these visits, standard tide gages and Chart Agencies were inspected as required by instructions.

The conventional 808 fathometers were employed (Nos. 62S and 106) supplemented with wire and leadline soundings.

Fathometer No. 106 gave trouble when the take up spool rubbed against a newly installed dynamotor. The result was, that slack occurred in the fathogram, allowing it to double back on the drive sprocket. This causes a gradual increase in the diameter of the drive cylinder and a resulting increase of lineal speed of the paper. If a speed error occurs under these conditions it is difficult to determine the amount due to erratic paper speed. Such a condition existed on "g" day, Loh. No. 95 (Pos. 15g - 38g).

Throughout the season and particularly at the beginning, the hydrographers were troubled by low voltage on the fathometer batteries. The batteries were so old that they would not hold a charge. When running for any extended period of time at slow speeds the generator wouldn't build up the batteries. This generally occurred when running shoreline. Later in the season we were able to cope with the situation by limiting the periods of reduced speed operation and by charging the batteries alongside the ship at night. Operating with poor equipment was deemed false economy and steps have been taken to replace them for the 1958 season. Numerous speed corrections were entered to compensate for the operators inability to recognize that the speed was dropping off.

A new governor was installed in fathometer 106S prior to "m" day in an effort to further reduce speed difficulties.

Depths which were recorded for bottom samples with the wire or hand lead were not used for simultaneous comparisons as the emphasis was on obtaining a bottom sample.

D. TIDE AND CURRENT STATIONS:

The tides for this survey were taken from observations at the Dry Pass Tide Gage (Lat. 56° 09' 41" N, Long. 133° 19' 42" W.,) and when it was not operative the necessary data was taken from the El Capitan Tide Gage (Lat. 56° 04' 25" N, Long. 133° 18' 48" W). No range or time corrections were deemed necessary. The latter tide gage was used on 23 May 1957, a day, ** full off smooth sheet,* Launch No. 93.

Three current stations were observed from the HODGSON at anchor with the aid of the Price Current Meter. Records have been forwarded previously. They are, namely:

No. 11	-Lat. 56° 07' 44" N,	Long. 133° 17' 04" W
No. 12	-Lat. 56° 09' 25" N,	Long. 133° 18' 43" W
No. 13	-Lat. 56° 09' 38" N,	Long. 133° 20' 08" W

DEC 26 1957
H-8359

- 4 -

E. SMOOTH SHEET:

The projection was hand-made by HODGSON personnel at the Seattle Ship's Base Processing Office.

of 1953-57

Shoreline was transferred from blue lines of T-Sheet Nos. T-9625 (advance), T-10380 (advance), and T-10381 (advance). The shoreline was verified by the photogrammetrist in accordance with standard procedures. Considerable revision was necessary in the entrance to El Capitan Passage near Shakan Strait due to faulty identification by an earlier inspection party. The interpretation of the HWL was generally incorrect. Revisions were made on the field photographs and forwarded early in the season for compilation by the Washington Office. *Revised shoreline applied to Smooth Sheet.*

F. CONTROL STATIONS:

Triangulation was established in 1922 by T. J. M. Topographic control originated from T-9625, T-10380 and T-10381. *of 1953-57.*

No weakness was determined in the triangulation scheme except as previously pointed out in correspondence listed in Section A of this report. Mis-identification of triangulation stations POINT 1922 and LAST 1922 on photos required a new compilation by the Washington Office.

Likewise, photo-hydro locations of signals south of Anesket Point were initially weak due to inexperience. This all added to the confusion and complexity of the problems at hand. These photo-hydro locations were resolved in the field. Specifically they are ADD, GAG, BOB and DOG.

G. SHORELINE AND TOPOGRAPHY:

See Topographic Descriptive Report submitted earlier by J. P. Randall on 16 June 1957 which covers the subject material.

H. SOUNDINGS:

The low water line was defined by soundings in areas of gradual sloping beaches. This was confined to that portion of El Capitan Passage west of Long. 133° 18' W. The remaining portions of the passage has steep banks and generally only the 5 fathom curve could be delineated.

Wherever practical and if it was not too congested the 4 and 6 fathom curve was pencilled. Except in areas of gradual sloping beaches, it is recommended that the practice of running shoreline paralleling the beach in Alaska be reduced in the interest of economy. The author feels that where cross channel lines are run, as was done on the remainder of our 1957 sheets, little information is gained and the hazard of hitting rocks does not justify our added expense of time and equipment. It is estimated that 20 - 30% of our sounding time was devoted to running shoreline.

I. CONTROL OF HYDROGRAPHY:

All hydrography was controlled by sextant fixes taken at required intervals and the soundings were properly spaced between fixes.

Attention is called to the varying speed along beach lines. These apparent changes of speed were caused by current, kelp, rudder drag or slight change of engine speeds. Sufficient sextant fixes were taken, however, so that no sounding ~~line~~ is appreciably displaced.

J. ADEQUACY OF SURVEY

This survey is considered to be complete and adequate. No additional field work is deemed necessary except as noted below. Junctions with contemporary surveys are in relatively good agreement.

Prior Surveys of this area are in general agreement with this survey except as noted in Section N of this report. Dry Pass is scheduled for dredging in 1958 and will therefore require additional surveys upon its completion.

P5
Review

K. CROSSLINES

Approximately 8% crosslines were run and were in good agreement except in depths over 30 fathoms. This occurred in deep water south of Lat. 56° 09'N. Soundings on "g" day are not in good agreement with the crosslines of "j" day. (See 7 to 9 g and 14 to 15 j where they cross with 35 to 36 g and 30 to 31g respectively.) In order to better evaluate these crossings, a separate system was run at the end of the survey, under what was felt to be more ideal conditions. (See "m" day Log 95). Personnel were more experienced, equipment difficulties were reduced, and control weakness had been resolved. Accordingly, weight should be given to this last set of crosslines.

Recording
of time
and spacing
of sdgs
16-38g
very poor.
This condition
corrected in
sdg vols.
and on
smooth sheet

L. COMPARISON WITH PRIOR SURVEYS

Comparison has been made with prior Survey H-4263 and 4270. See Section N and Charting Letter of 28 May 1957 for important changes. Dry Pass was surveyed in 1922 and dredged several years later. Differences between the surveys are understandable. In 1922, 1:2,000 and 1:5000 scales were used. The 1:10,000 survey approved for 1957 is considered adequate in view of the relative un-importance of the water outside the marked channel and in view of the 1958 contemplated dredging.

01/922

P5
Review

M. COMPARISON WITH CHARTS

This survey is compared with the latest edition of C&GS Chart No. 8172, which incorporates hand corrections originating from chart letters of this survey. Depths on shoals and rocks vary slightly due to final reducers. Additional information is now available for bottom characteristics. See Section N of this report for a tabulation of important least depths.

P5 & 6
Review

The basin near Dry Pass at Lat. 56° 10' and Long. 133° 25' W shows some signs of shoaling.

It was impracticable to plot all sounding lines in Dry Pass without making the appearance of the sheet illegible. The important fact is that the six-foot dredged channel depth can be carried by steering mid-channel (position 13c to 16c). The channel is so narrow that a 30-foot launch can not turn around in it.

The rock at buoy "S-5" is the most critical part of the passage and the channel is so narrow that it can only be negotiated at high water, when the rock is adequately covered or by hugging the north bank at lower stages of the tide. See positions 110k to 112k.

N. DANGERS AND SHOALS

A tabulation of only important newly found dangers and shoals follows:

Danger	Latitude	Longitude	Least Depth (MLLW)	Position Number
Shoal	56° 09' 42"	133° 19' 34"	1.1 fm	13 f
Shoal	56° 09' 46"	133° 19' 47"	1.1 f -0.7 fm	13 f 143-144b
Rock	56° 09' 23"	133° 18' 40"	3.4 fm	83-84 d
Rock	56° 09' 14"	133° 18' 14"	Awash	31-b Topo
Rock	56° 09' 09"	133° 16' 23"	Awash	140-1 Topo
Shoal	56° 09' 07"	133° 16' 26"	0.4 fm	140-141d
Shoal	56° 09' 01"	133° 16' 23"	1.4 fm	35 d-36d
Shoal	56° 08' 23"	133° 16' 33"	2.8 fm	45 m-46m
Shoal	56° 08' 18"	133° 16' 47"	5.1 5.3 fm	61 a ^{62a} (blue)
Ledge	56° 07' 27"	133° 16' 49"	4.8 fm	17 k
Shoal	56° 07' 08"	133° 16' 56"	4.5 fm	25 a ^{26a} (blue)
Rock	56° 06' 34"	133° 16' 47"	2.2 1.0 fm	6 a ^{7a} (blue)
Shoal	56° 09' 22"	133° 17' 50"	2.8 fm	56-6 b
Shoal	56° 09' 22"	133° 18' 03"	4.5 fm	53 e-54e
Rock	56° 09' 54"	133° 25' 27"	(2) ft.	Topo Origin

Numerous alongshore rocks have been located by the topographer and are apparent on the smooth sheet.

H-8359
DESC. REPORT

Advance notice of new dangers and shoals was previously reported in a Charting Letter to the Director dated 28 May 1957.

Particular advantage was taken of minus tides to properly evaluate the alongshore rocks. Considerable time was saved in locating and obtaining the least depths on rocks showing at low water. This search was conducted by the topographer and noted on his photos. In some cases the hydrographer also obtained fix data on the same rock or group of rocks. The hydrographers location merely verifies the position and the topographic should be given highest weight. In most cases, the topographer stood on the high point of the rock, whereas, the hydrographer generally stood on the bow of the launch as it touched the edge of the rock or made an estimate of the distance off.

Rocks in this area taken from T-9625

There are several locations for the rock in the general area of 56° 09' 30" and 133° 21' 30". The disagreement is because the rock is actually a ledge with several different high points and at various stages of the tide, they appear as detached rocks. A rock located by the topographer and not verified by the hydrographer is located at Lat 56° 09' 55" and Long. 133° 25' 28". A study of the topographic records previously forwarded should be made and it should be charted until proven otherwise.

Rocks from T-9625 (1953-57).

(a) Photos returned to field party and not available at time of Review. Chart until its existence is verified or disproved by examination of photos. I.M.Z. (9-27-59)

O. COAST PILOT of photos. See Coast Pilot Report previously submitted and also Sections M and C of this report.

P. AIDS TO NAVIGATION

The position of Day Beacon No. 7 west of Dry Pass is the only fixed aid to navigation located on this sheet. It was reported on form 567 which was submitted for the entire season.

A list of Floating Aids follows:

Name	Latitude	Longitude	Depth	Pos. No.
Dry Pass Spar Buoy 9	56° 09' 22" ⁴	133° 27' 07"		Vol. 6p114 4/29/57
Dry Pass Spar Buoy 5	56° 09' 55"	133° 25' 34"	0.6 f	19 o 4/19/57
Dry Pass Spar Buoy 3	56° 09' 34"	133° 23' 18"	1.1 f	66o 4/19/57
Dry Pass Spar Buoy 2	56° 09' 33"	133° 23' 13"		Vol 7p33 9/2/57
Dry Pass Spar Buoy 1	56° 09' 31"	133° 22' 56"	0.2 f	26 n 5/9/57

Q. LANDMARKS FOR CHARTS

There are no landmarks prominent enough to be used as aids to navigation. Ruins of buildings and piers are practically obscured by trees and are not readily discernable at any distance.

R. GEOGRAPHIC NAMES

A special report on Geographic Names was submitted for the entire area of the 1957 field season.

S. SILTED AREAS

Some fathograms indicated that the bottom of deep channels are filled with from two to three fathoms of silt. This was verified by the bottom samples taken on the ship. The existence of this silt on a hard rock bottom can give an erroneous sounding if the gain on the fathometer is too low. A good echo return off the more substantial bottom and the penetration through the silt is not readily discernable, resulting in possible crossing discrepancies. See 8 to 9 j.

T. By-Product INFORMATION

At the time of this survey, the area was closed to commercial fishing indefinitely. There were no commercial activities engaged in mining, logging, farming, or fishing. The only inhabitants were stream guards employed by the Fish and Wildlife during the fishing season only. A few gypsy logging outfits operating around Tuxekan Island towed logs thru Dry Pass and occasionally small trollers used the protection offered by El Capitan Passage enroute to and from the fishing areas.

U. MISCELLANEOUS

This sheet was processed in the Ship Processing Pool at Seattle. The author concurs with the policy of placing priority on early processing of records. Actually, the finished product is our main objective and not the total number of sounding miles. A survey that is set aside for several years to be processed is certainly not a selling point with the tax payers. Soundings miles only take on significance, when the end product is available to the public.

Now that the Commanding Officer has written approval, which authorizes him to process in the field in times of questionable weather, it is believed that the winter processing work-load presented will be greatly reduced. As the work-load shaped up at the end of the past season, 100% processing was out of the question.

It is the authors opinion that the future success of the processing pool hinges on the following main factors:

1. Concentrate the processing on the surveys that can be completed during the winter, taking in to consideration, any priority that the Washington Office might have. In other words, it would be better, for the time being, to end up with 75% of the sheets 100% complete, than with 100% of the sheets 75% completed.
2. Strive for better Commanding Officer cooperation in processing problems, taking into consideration the total work load to be processed. Interests of the Coast Survey as a whole should be placed ahead of individual problems.
3. Full cooperation is required of the District Officer in supporting the Processing Officer and to assist in settling differences between Commanding Officers.
4. Assign specific processing projects to junior officers with the idea of stimulating interest in the work as follows:
 - a. Assign sheets to officers that have worked on them during the field season. This assignment, if made during the field season might stimulate earlier interest.
 - b. Assign one specific sheet for completion, rather than several production-line tasks to individual officers.
 - c. If the officers assigned to a ship can not complete the work load, then officers tentatively assigned to that ship for the following season should be called on next.
 - d. Officers engaged in processing should be completely divorced from collateral ship-board duties.

One particular weakness in our processing pool is the confusion and time lost in going between the office and ship. Drafting equipment and records are never entirely in one place or the other.

The foregoing evaluation is not meant to be critical, but is a presentation of the authors observations which could be analysed by higher authority and evaluated accordingly. The Processing Officer in charge of the Pool deserves a lot of credit for getting the project off to a good start.



E. W. Richards
LCDR., C&GS

Z. TABULATION OF APPLICABLE DATA

1. Record of Current Observations forwarded for stations No 11 12, and 13 on May 5, 1957
2. Field Inspection Report forwarded 16 June 1957
3. Tide Data for Dry Pass Gage forwarded 11 May 1957
4. Tide Data for El Capitan Gage forwarded 10 July 1957
5. Geographic Names Report forwarded 8 November 1957
6. Coast Pilot Report forwarded 6 March 1958
7. Manuscripts to be forwarded with this report
8. Index Sheet (See Boat Sheet Layout of 1957 previously submitted)
9. Fathometer Phase Comparisons attached to this report
10. Leadline Comparison (Attached to this report)
11. Form 567 (Nonfloating Aids to Navigation) submitted 19 March 1958
12. Special Current Report submitted 13 August 1957



E. W. Richards
LCDR. C&GS

STATISTICS

HYDROGRAPHIC SURVEY H-8359 (FIELD NO. HO-1157)

VOL.	DAY	DATE	POS.	NAUT. MI. SOUNDING	H. L.
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SHIP HODGSON (Purple)

7	A	5/3	9	0.0	9
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LAUNCH NO. 95 (Purple)

1	a	4/17	167	16.5	
1&2	b	4/18	191	17.9	
2	c	4/19	115	9.0	
2	d	4/22	84	12.2	
3	e	4/25	70	6.3	1
3	f	4/26	44	1.4	18
3	g	4/28	76	11.3	
3&4	h	4/29	172	19.8	
4&5	j	4/30	162	16.6	
5	k	5/1	123	12.1	
5&6	l	5/2	161	19.3	
6	m	5/8	46	4.2	
6	n	5/9	29	1.7	2

LAUNCH NO. 93 (Blue)

7	a	5/23	89	3.9	2
TOTALS			1538	152.4	32

TIDE NOTE

HYDROGRAPHIC SURVEY H-8359 (FIELD NO. HO-1157)

TIDE STATION

DRY PASS

Lat. $56^{\circ} 09' 19''$ N
Long. $133^{\circ} 19' 49''$ W

MLLW on staff = 4.6 ft.

EL CAPITAN (1st bight S of Devilfish Bay)

Lat. $56^{\circ} 04' 25''$ N
Long. $133^{\circ} 18' 48''$ W

Not on sheet H-8359

MLLW on staff = 3.8 ft.

The latter gage was used for Loh. 93, "a" day, 23 May 1957 only.
No time or range corrections were deemed necessary.

LEADLINE CALIBRATION

NO. 35A (WITH BOTTOM SAMPLER ATTACHED)

<u>RANGE</u>	<u>CORRECTION</u>
0.0 - 2.0 fm.	0.0 fm.
2.1 - 5.6 fm.	-0.1 fm.
5.7 - 9.4 fm.	-0.2 fm.
9.5 - 13.4 fm.	-0.3 fm.
13.5 - 17.8 fm.	-0.4 fm.
17.9 - 23.4 fm.	-0.5 fm.
23.5 - 29.2 fm.	-0.6 fm.
29.3 - 35 fm.	-0.7 fm.

All leadlines were checked as required and found to be correct except No. 35A.

Following are the phase corrections to be applied for Path. 106:

Beginning to 1200 on 5/10/57

A - B +0.2 fm.

1200 on 5/10/57 to end of sheet

A - B +0.8

A - C +0.8 +0.5 = +1.3 fm.

Path. No. 62S

5/25/57

A	B	Corr.	B	C	Corr.
44.4	44.2	+0.2	81.0	76.2	+4.8
44.4	44.2	+0.2	81.0	76.0	+5.0
44.5	44.3	+0.2	80.0	75.0	+5.0
44.3	44.1	+0.2	80.8	75.4	+5.4
44.4	44.0	+0.4	82.0	77.6	+4.4
44.3	44.0	+0.3	83.0	78.2	+4.8
44.2	44.0	+0.2	83.4	78.4	+5.0
44.2	44.0	+0.2	83.5	78.6	+4.9
44.1	44.0	+0.1	83.3	78.4	+4.9
44.1	44.0	+0.1	83.1	78.4	+4.7
	Total	42.1		Total =	48.9
	Mean =	+0.2 fm.		Mean =	+4.9 fm.

7/23/57

A	B	Corr.
44.4	44.5	-0.1
44.4	44.5	-0.1
45.0	45.0	0.0
45.4	45.5	-0.1
45.8	46.0	-0.2
46.4	46.5	-0.1
46.8	47.1	-0.3
47.4	47.4	0.0
47.5	47.6	-0.1
47.7	47.7	0.0
	Total =	-1.0
	Mean =	-0.1 fm.

A - B comparison on 5/25/57 = +0.2
A - B comparison on 7/23/57 = -0.1
Mean = 0.0

PHASE COMPARISON

Two fathometers were used on this sheet - Nos. 62S and 106. The phase comparisons taken and corrections to be applied are as follows:

FATH. NO. 106

4/30/57

A	B	Corr.
49.5	49.4	+0.1
52.4	52.0	+0.4
53.0	52.6	+0.4
53.0	52.7	+0.3
53.0	53.0	0.0
53.2	53.0	+0.2

Total = 1.4
Mean = +0.2

5/25/57

A	B	Corr.	B	C	Corr.
47.3	47.0	+0.3	82.0	81.5	+0.5
47.0	46.0	+1.0	82.0	81.5	+0.5
47.0	45.5	+1.5	82.0	81.5	+0.5
43.0	42.0	+1.0	82.0	81.5	+0.5
42.4	41.7	+0.7	82.0	81.5	+0.5
42.4	41.5	+0.9	82.0	81.5	+0.5
40.0	39.0	+1.0	82.0	81.5	+0.5
39.9	38.9	+1.0	82.0	81.5	+0.5
40.2	40.00	+0.2	81.8	81.3	+0.5
41.5	40.7	+0.8	81.8	81.3	+0.5

Total = 8.4
Mean = +0.8

Mean = +0.5

Note: On 5/10/57, a new phasing head was installed in Fathometer 106. It was assumed that this accounted for the difference between the comparison obtained on 4/30/57 and that obtained on 5/25/57. Therefore, the results of the 4/30/57 phase comparison were used from the beginning of the season until 1200 on 5/10/57. From that time on, the results of the 5/25/57 phase comparison were used. The C scale was not used prior to 5/10/57.

Following are the phase corrections to be applied for Fath. 62S:

A - B - 0.0

A - C - +4.9

LIST OF GEOGRAPHIC NAMES

PENCILLED ON SMOOTH SHEET

SHAKAN STRAIT

DRY PASS

EL CAPITAN PASSAGE

PRINCE OF WALES ISLAND

ANESKETT POINT

KOSCIUSKO ISLAND

APPROVAL SHEET

HYDROGRAPHIC SURVEY NO. H-8359 (FIELD NO. HO-1157)

The boat sheet and records were inspected periodically during the field season by the Commanding Officer. Plotting of the smooth sheet was done under my immediate supervision.

The survey is considered adequate and hereby approved.

Your attention is called to the fact that Dry Pass is scheduled for dredging by the Army Engineers during the 1958 season.

E. W. Richards,
LCDR, C&GS
Chief of Party

GEOGRAPHIC NAMES

Survey No. H-8359

GEOGRAPHIC NAMES		Survey No. H-8359									
Name on Survey	<div>On Chart No.</div> <div>On previous survey No.</div> <div>On U. S. quadrangle Maps</div> <div>From local information</div> <div>On local Maps</div> <div>P. O. Guide or Map</div> <div>Rand McNally Atlas</div> <div>U. S. Light List</div>										
	A	B	C	D	E	F	G	H	K		
<u>Southeast Alaska</u>			(for title)							1	
<u>Kosciusko Island</u>										2	
<u>El Capitan Passage</u>									BGN	3	
<u>Aneskett Point</u>										4	
<u>Dry Pass</u>									BGN	5	
<u>Shakan Strait</u>										6	
<u>Prince of Wales Island</u>			Names approved May 6, 1958.								7
<u>El Capitan Creek</u>										8	
										9	
										10	
										11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	
										26	
										27	
										M 234	

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8359...

Records accompanying survey:

Boat sheets ...7.; sounding vols. 7.+1.; wire drag vols.;

bomb vols.; graphic recorder rolls ~~6~~ Envelopes + 1 Env.

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

Source Material: Manuscripts T-9625, T-10380, + T-10381

Blue lines " " "

March 1964

Polio Survey: 4963 - 45101 - 4550

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

Number of positions on sheet

Number of positions checked 185

Number of positions revised 2
.....

Number of soundings revised
(refers to depth only) . . . 0 . . .

Number of soundings erroneously spaced . . . 0 . . .

Number of signals erroneously plotted
or transferred

Topographic details Time 4:00

Junctions Time ...4...

Verification of soundings from graphic record Time 4

Verification by James B. Chamber.....Total time 146..... Date 5/25/59

Reviewed by John Jackson Time 40 Date 6-22-99

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8359

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
5/21/58	B201	C.R. Wittmann	Before After Verification and Review Examined - no com.
4/28/58	8172	H.W. Burgoyne	Before After Verification and Review Critical Corrections only
10-22-58	B152	R.E. Elkins	Before After Verification and Review Partly applied
4/28/60	8172	M. Egan	Before After Verification and Review Partial application, but to be considered final until chart is reconstructed.
10-24-60	B152	R.E. Elkins	Before After Verification and Review No revisions Considered fully applied. Comp app'd. dated 10/24/60 to chart
3/14/61	8201	J.H. Eaton	Before After Verification and Review
8/27/80	17387(8172)	Kanis	Fri Before After Verification and Review Signature Reapplied in conjunction with completed 7-Sheets
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-216B-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.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8359

FIELD NO. HO-1157

S. E. Alaska, El Capitan Passage, Devilfish Bay
to Shakan Strait

Surveyed - April - May 1957

Scale 1:10,000

Project No. 13470

Soundings:

Control:

808 Depth Recorder
Leadline and Wire

Sextant fixes on shore
signals

Chief of Party ----- G. C. Mast and E. W. Richards
Surveyed by ----- E. W. Richards
Protracted by ----- J. P. Randall and E. W. Richards
Soundings plotted by -- E. W. Richards
Verified and inked by - J. C. Chambers
Reviewed by ----- I. M. Zeskind
Inspected by ----- R. H. Carstens

Date: 6/22/59

1. Shoreline and Control

The shoreline originates with unreviewed air-photographic surveys T-9625, T-10380, and 10381 of 1953 - 1957.

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

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The depth curves are adequately delineated.

The bottom is very irregular. Submarine features such as deeps, shoals, reefs and ledges contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7987 (1957) on the south. The junction with Survey H-8243 (1955) which joins the present survey on the west at Shakan Strait will be considered in the review of that survey.

5. Comparison with Prior Surveys

H-4263 (1922), 1-2,000 & 1-5,000
H-4270 (1922), 1-10,000

These surveys together cover the area of the present survey. A comparison between the prior and present surveys reveals present survey depths to be from 2 - 5 fms. shoaler in the portion of El Capitan Passage which lies south of Aneskett Pt. and 1 - 6 ft. shoaler in that portion of the Passage which lies west of 133°17.5'.

Survey H-4263 is a closely developed survey on a larger scale than the present survey. Should greater detail in bottom configuration be required, supplementary information should be obtained from this survey, except in channels where Corps of Engineers' surveys provide adequate coverage.

Specific attention is directed to the following:

1. The 1-fm sounding charted in lat. 56°09.83', long. 133°25.80', from H-4263 (1922) falls in present depths of 1.5 to 2.1 fms. and 8 - 12 ft. on a subsequent survey by the Corps of Engineers of 1958 (Bp 57031). The shoaler 1-fm. depth should be superseded by depths on the Corps of Engineers' survey of 1958.
2. The 3/4 fm. sounding charted in lat. 56°09.79', long. 133°25.68', from H-4263, has been carried forward to the present survey as 0.9 fms. This sounding falls on the present survey in depths of 2 fms. in an area which has not been adequately developed to confirm or disprove the 3/4 fm. sounding. Instructions for Special Project 11-59 provide for field investigation of this sounding.
3. The 2-5/6 fm. sounding charted as 2-3/4 fms. in lat. 56°09.64', long. 133°20.40' from H-4263 (1922), falls in present depths of 3.9 fms. The 2-5/6 fm. sounding is believed to be 1 fm. in error and actually should be 3-5/6 fms. The charted 2-5/6 fms. sounding should be disregarded.

09 deleted -
 approved in AW 1959

4. The zero sounding plotted on H-4263 (1922) in lat. $56^{\circ}09.66'$, long. $133^{\circ}26.48'$ falls in a channel where depths of $1\frac{2}{6}$ - $1\frac{5}{6}$ fms. are found. The zero sounding is believed to be 1 fm. too shoal and should be disregarded.
5. The zero sounding plotted on H-4263 (1922) in lat. $56^{\circ}09.59'$, long. $133^{\circ}26.30'$, falls in a channel where depths of $\frac{5}{6}$ - $1\frac{5}{6}$ fms. are found. The sounding is plotted out of position and actually falls about 15 meters southward where comparable depths are found.
6. The 1-fm. sounding charted in lat. $56^{\circ}09.26'$, long. $133^{\circ}27.31'$, from H-4263 (1922) was plotted out of position on H-4263 and should fall about 20 meters northwestward where comparable depths are found on the present survey. The 1-fm. sounding should be deleted from the chart.

A number of bottom characteristics and soundings have been carried forward from the prior surveys to provide supplementary information sufficient for the present survey.

With the addition of the above-mentioned bottom characteristics and soundings, the present survey is adequate to supersede the prior survey for charting.

6. Comparison with Chart 8172 (Latest print date 9/1/58)

A. Hydrography

The charted hydrography originates principally with the previously discussed prior surveys which need no further consideration, supplemented by a few critical depths from the present survey prior to verification and review and one sounding from the U. S. Corps of Engineers survey of 1948 (Bp 46375).

The $\frac{1}{4}$ -fm. sounding charted in lat. $56^{\circ}09.49'$, long. $133^{\circ}26.90'$, originates with a 1.4 ft. sounding on the U. S. Corps of Engineers' survey of 1948 (Bp 46375). This sounding falls on the subsequent U. S. Corps of Engineers survey of 1958 (Bp 57028) in depths of 17 - 18 ft. and on the present survey in depths of 2 - 2.3 fms. Several lines of sounding from the 1948 survey appear to be in error. Instructions for Special Project 11-59 provide for field investigation of this sounding. The sounding should be retained on the chart pending the investigation.

Except for the $\frac{1}{4}$ -fm. sounding the present survey is adequate to supersede the charted hydrography within the common area.

1/4 fm. disapproved
11/11/59

B. Aids to Navigation

The present survey positions of aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended.

C. Dredged Channels

The present survey depths in the dredged channel through Dry Pass are in harmony with the charted controlling depth of 6 ft. The present survey shows a controlling depth of 5 ft. in the dredged channel in approximately lat. $56^{\circ}09.8'$, long. $133^{\circ}25.85$, where the charted controlling depth of 6 ft. originates with the U. S. Corps of Engineers survey of 1948 (Bp 46376).

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 Hydrographic Manual.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

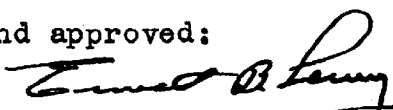
The area westward of long. $133^{\circ}23.0'$ could well have been surveyed on a scale of 1:5,000, thus enabling the hydrographer a better opportunity to provide more complete delineation in a constricted area of irregular bottom.

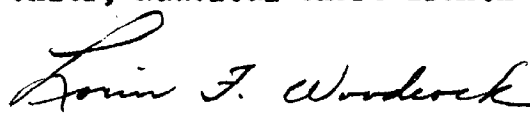
9. Additional Field Work Recommended


The survey provides basic coverage for present charting purposes. In areas outside of the marked channels westward of Dry Pass, supplementary hydrography is available from H-4263 for additional information. Instructions for Special Project 11-59 provide for additional field investigation of the charted $1/4$ and $3/4$ fm. depths previously mentioned.

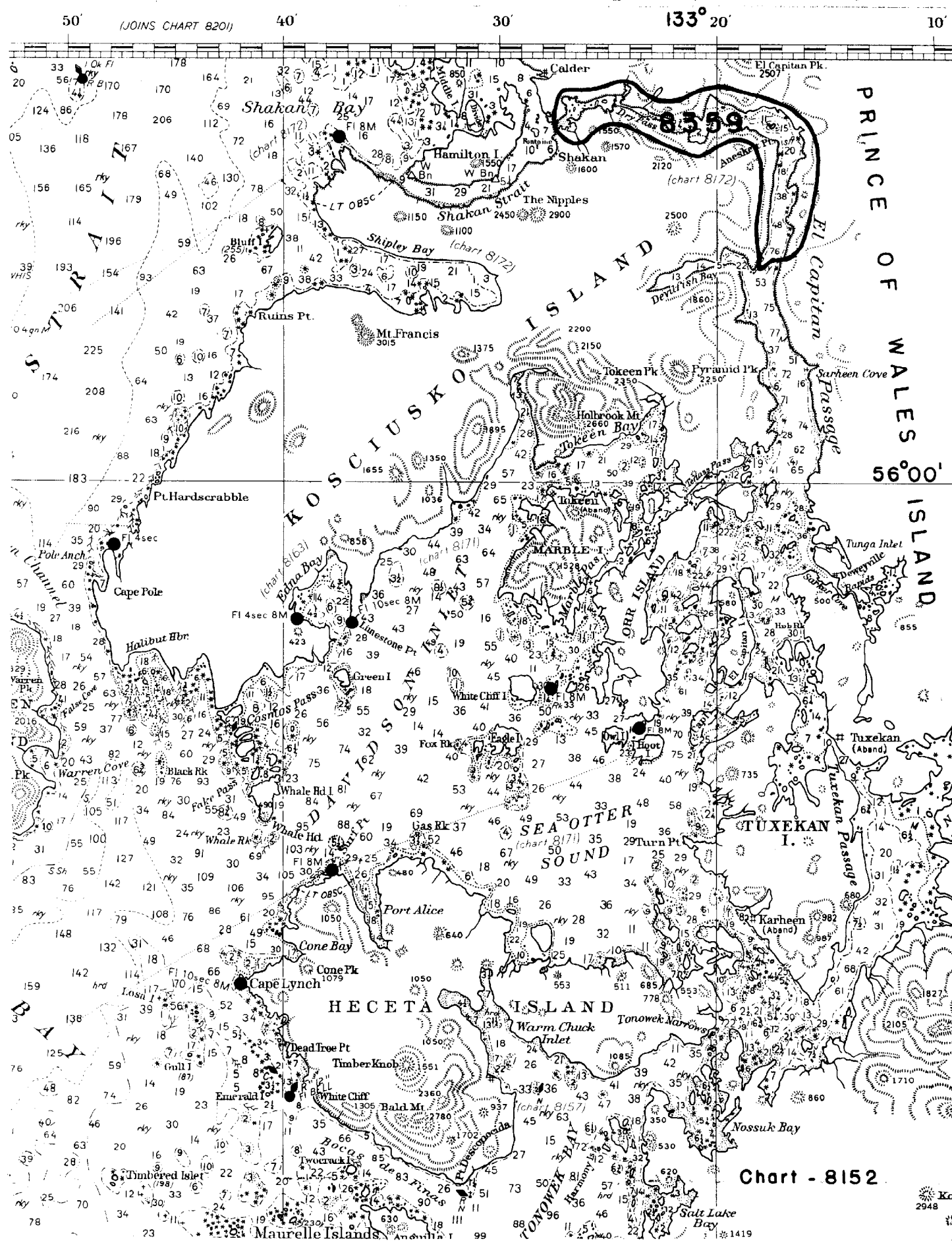
Examined and approved:


Max G. Ricketts
Chief, Nautical Chart Branch


Ernest B. Lewey
Chief, Division of Charts


Lorin F. Woodcock
Chief, Hydrography Branch


Samuel B. Grenell
Chief, Division of Coastal Surveys



RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

25 April 1958

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 8359

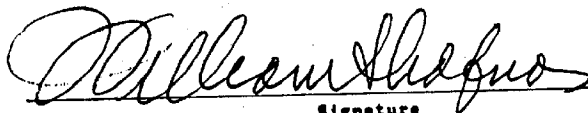
Locality El Capitan Passage, Alaska

Chief of Party: E. W. Richards in 1957

Plane of reference is mean lower low water, reading
4.6 ft. on tide staff at Bight East of Dry Pass
12.0 ft. below B.M. 5 (1957)

Height of mean high water above plane of reference is 10.0 feet.

Condition of records satisfactory except as noted below:



Signature

Chief, Tides Branch

8359
Additional work

8359
Additional work

Form 504	
U. S. DEPARTMENT OF COMMERCE	
COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	HYDROGRAPHIC
Field No.	Special Survey 11-59
	Office No.
LOCALITY	
State	Alaska
General locality	El Capitan Passage
Locality	
1959	
CHIEF OF PARTY	
H. D. REED, JR.	
LIBRARY & ARCHIVES	
DATE	NOV 12 1959

USCOMM-DC 5087

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-8359(1959) Ad.WK.

Field No. Special Survey 11-59

State Alaska

General locality El Capitan Passage

Locality Devilish Bay to Shokan Strait

Scale 1:10,000 Date of survey 2 October 1959

Instructions dated 10 July 1959

Vessel Launch #88

Chief of party H. D. Reed, Jr.

Surveyed by K. E. Taggart

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

Fathograms scaled by C. E. Strom

Fathograms checked by M. T. Egan

Protracted by

Soundings penciled by

* Soundings in fathoms /feet/ at /MLLW/ MLLW

REMARKS: * Soundings were recorded in feet and converted to fathoms
for plotting.

DESCRIPTIVE REPORT TO ACCOMPANY

SPECIAL SURVEY 11-59

EL CAPITAN PASSAGE, SOUTHEAST ALASKA

USC&GSS LESTER JONES

H. D. REED, JR. COMDG.

SCALE 1:10,000

A. PROJECT

Work on Special Survey 11-59 was performed as per Director's Instructions 22/MEK, S-2-LJ, dated 10 July 1959 to Commanding Officer, Ship LESTER JONES.

B. SURVEY LIMITS AND DATES

The purpose of this survey was to conduct a hydrographic investigation for two, presently charted shoals in El Capitan Passage which were not verified on survey H-8359 (1957). Field work was limited to the two areas as noted on chart 8172, furnished with project instructions. Field work was begun on 1 October 1959 and completed on 2 October.

C. VESSELS AND EQUIPMENT

C&GS Launch #88 operating from the Ship LESTER JONES was used in this survey. Soundings were obtained using 808 Fathometer No. 102S.

D. TIDE STATION

A tide staff was established at Shakan Strait (northeast end) and read every half hour during the survey. (See tidal note attached to this report)

E. SMOOTH SHEET

Smooth plotting is to be done in the Washington Office.

F. CONTROL STATIONS

The three hydrographic signals, DIX, CUE and ACT, were recovered from survey H - 8359 and used for control. Signals ART, TAN, TUB, STU and CUT

F. CONTROL STATIONS - Cont.

were located by radial plot from nine-lens photographs furnished and are pricked on field print 41631. Signal PEN is from H - 4263 (1922) as indicated on survey sheet H - 8359 (1957).

H. SOUNDINGS

Most depths were measured with the 808 fathometer. Considerable time was spent drifting over the two areas at low tide with both lead line and fathometer. Since neither of the shoals could be located, a least depth hand lead sounding was limited to the approximate vicinity of each charted shoal. Echo corrections for the fathometer were obtained using the bar check method.

I. CONTROL OF HYDROGRAPHY

Position control was by standard three point fixes using sextant angles taken from the launch.

J. ADEQUACY OF SURVEY

This survey is considered to be complete and adequate to represent the purpose for which it was made. Sufficient coverage of the areas involved was made to disprove the existence of both shoals as shown on chart 8172.

L. COMPARISON WITH PRIOR SURVEY

Hydrographic survey H - 8359 (1957), H - 4263 (1922), Corps of Engineers survey No. Q-2-4-13 (1948) and No. Q-2-4-15 (1958): This survey is in good agreement with H - 4263 and Q-2-4-15 but disagrees with H-4263 and Q-2-4-13 which are the origins of the two respective shoals.

H-8359 Ad. Wk.

Special Survey 11-59 is considered to be adequate to supersede all prior surveys in their common areas.

M. COMPARISON WITH CHART

The two ~~presently charted~~ shoals, Lat. $56^{\circ} 09' 5''$ Long. $133^{\circ} 26' 9''$ and Lat. $56^{\circ} 09' 8''$ Long. $133^{\circ} 25' 7''$, are considered to be disproved with this survey. No evidence could be found of their existence. *See Review*

N. DANGERS AND SHOALS

No new dangers or shoals were located or investigated.

P. AIDS TO NAVIGATION

All aids to navigation were removed from the area during the survey because of blasting operations by the Corps of Engineers.

Z. TABULATION OF APPLICABLE DATA

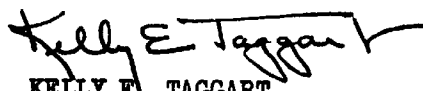
The following records are being forwarded separately.

Form 258 - 1 volume Leveling Record, Tide Station
Form 277 - 1 sheet Tide Staff Recordings
Nine-lens Office Prints

41606 thru 41607
41630 thru 41632

Nine-lens Field Print

41631


KELLY E. TAGGART
LT C&GS

STATISTICS

SPECIAL SURVEY 11-59

"a" day, Launch #88

Number of positions 30

Hand Lead Soundings 2

Nautical miles of sounding line 1.2

Area - 0.04 sq. nautical mile

TIDAL NOTE

SPECIAL SURVEY 11-59

A tide staff was established at the northeast end of Shakan Strait, Lat. $56^{\circ} 08.8$, Long. $133^{\circ} 27.6$ and connected to existing bench marks established in 1955. Starting with the old elevation of B.M. 3, the value of MLLW was found to be equal to 5.8 feet on the tide staff and the tide reducers for the survey were computed using this value. No correction for time or range were applied.

APPROVAL SHEET

Special Survey 11-59 and accompanying records have been examined by me and are approved. No additional field work is recommended.



H. D. REED, JR.
LCDR C&GS
Chief of Party



Set No. 11.0

D

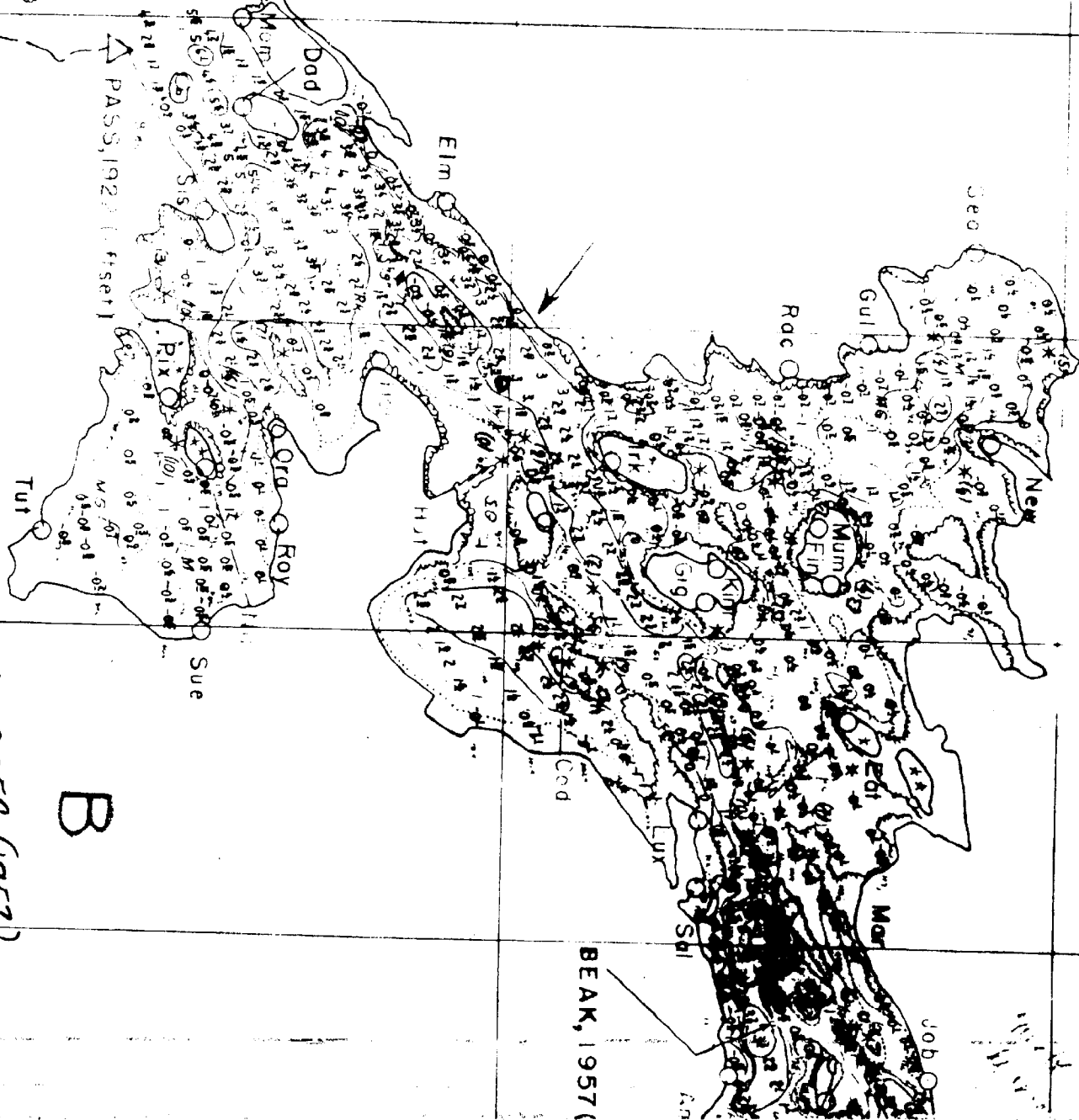
133° 10' 00"

133° 27'

09° 30"

09° 00' (MOR, 1922)

09° 00'



PASS, 1922 (1st set)

B

H-8359 (1957)

BEAK, 1957

N. 52,500
- 24 + 10

EF 25+10

[illegible]

Pass

52000

10001

File No. Q-2

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8359.Ad, Wk.

Records accompanying survey:

Boat sheets ...1...; sounding vols.; wire drag vols.;
bomb vols.; graphic recorder rolls;
special reports, etc. .1-Descriptive report.....
~~of survey H-4263.1 Section of Ch. 8172, and 1-Blue line copy,...~~
~~1-Blue line tracing, 1-Ozalid copy of T-9625,~~

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

Number of positions on sheet	.....	30
Number of positions checked	.....	30
Number of positions revised	.....	8
Number of soundings revised (refers to depth only)	.....	15
Number of soundings erroneously spaced	.....
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	.....
Junctions	Time	.....
Verification of soundings from graphic record	Time	.....

Verification by *Mark J. Friese* Total time 4 hrs. Date *July 12, 1976*

Reviewed by *Mark J. Friese* Time 2 hrs. Date *July 12, 1976*

Can Imp. Dennis J. Romeburg 2 hrs. 1-25-78
D R. Engle 4 hrs 6-5-79

Review of Additional Work 1959

Hydrographic Survey H-8359 Ad. Wk.

H. D. Reed, Jr. - Chief of Party

1. The additional work was accomplished in October 1959 in accordance with Special Project Instructions 11-59, dated July 10, 1959.

The purpose of the survey was to confirm or disprove the existence of a 1/4-fathom shoal at latitude $56^{\circ}09.5'$, longitude $133^{\circ}26.9'$ from Corps of Engineers Survey Bp-46375 (1948) and a 3/4-fathom shoal at latitude $56^{\circ}09.8'$, longitude $133^{\circ}25.7'$ from H-4263 (1922).

2. The additional work of 1959 consisted of sounding these two areas with 20-meter line spacing at a 1:10,000 scale and drift sounding with lead line and fathometer at low tide.

3. The results of the investigation disproved the existence of the 1/4-fathom and 3/4-fathom shoals at the above positions. Several soundings from the additional work were added to H-8359 (1957) in violet. The 1/4-fathom and 3/4-fathom depths had been removed from Chart 8172, 7th Edition, January 13, 1973.

4. Attention is directed to the rock uncovered 2 feet at MLLW in latitude $56^{\circ}09.92'$, longitude $133^{\circ}25.46'$ from unreviewed photogrammetric manuscript T-9625 (1953-57). This rock was not investigated during the 1959 work. However, its position is believed to be nearer shore than shown on the survey, inasmuch as sounding lines from the 1957 work and Corps of Engineers dredging surveys (Bp-57031 and 59395 of 1958-59) discredit a rock at this position. The charted position of the rock has been revised accordingly.

Reviewed by: M. J. Friese, July 12, 1976

Inspected by: D. J. Romesburg, January 25, 1978

Approved
R. H. Carstens
Acting Chief
Hydro Surveys Div.
6/8/79

NAUTICAL CHARTS BRANCH

SURVEY NO. 8359 Ad. Wk.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4/25/60	8172	M. Egan JR.	Before After Verification and Review Partially
10-24-60	B152	R.E. Elkins	Before After Verification and Review No revision Considered fully applied
3/14/61	8201	J.H. Eaton	Comp App L. Before After Verification and Review
8/29/80	N387(8172)	Lewis	Before After Verification and Review, Inspection Fully Applied
10-14-83	17387(Inset)	Sager	Before After Verification and Review, Inspection Fully applied to Inset (Reconstruction) Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

TIDE NOTE FOR HYDROGRAPHIC SHEET

6 May 1960

~~Division of Hydrography and Topography~~
~~XXXXXX~~

Division of Charts: R. H. Carstens

Plane of reference approved in
1 volumes of sounding records for

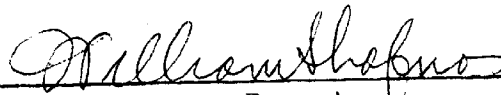
HYDROGRAPHIC SHEET 8359 Ad. Wk.

Locality El Capitan Passage, Alaska

Chief of Party: H. D. Reed, Jr. in 1959
Plane of reference is mean lower low water, reading
5.8 ft. on tide staff at Shakan Strait (N.E. End)
14.5 ft. below B. M. 1 (1956)

Height of mean high water above plane of reference is 10.9 feet.

Condition of records satisfactory except as noted below:



Chief, Tides Branch

~~Chief, Division of Tides and Currents~~