7193

Diag. Cht. No. 8252-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PA-1547 *Office No.* H-7193

LOCALITY

State SOUTHEAST ALASKA

General locality SITKA SOUND

Locality BIORKA CHANNEL

1947

CHIEF OF PARTY

G. E. Boothe

LIBRARY & ARCHIVES

DATE May 23, 1950

B-1870-1 (1)

7193

Form 537
(Ed. Nov. 1941)

REG. NO. H-7193

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-7193

Field No. PA-1547

State Southeast ~~S. E.~~ Alaska

General locality Sitka Sound

Locality Biorka Channel

Scale 1:10,000 Date of survey 24 July - 7 Aug. 1947

Instructions dated 14 April 1947

Vessel Ship PATTON - Launch No. 92

Chief of party Glendon E. Boothe

Surveyed by Glendon E. Boothe and Karl B. Jeffers

Soundings taken by ~~fathometer, graphic recorder, hand lead, wire~~ 808-A Depth Recorder & Hand Lead

Protracted by Calvin W. Fanders

Soundings penciled by Calvin W. Fanders

Soundings in fathoms feet at MLW MLLW Fathoms at M.L.L.W.

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 428975

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SURVEY H-7193 (PA-1547)

BIORKA CHANNEL, SITKA SOUND

SOUTHEAST ALASKA, 1947

SCALE 1:10,000

U. S. C. & G. S. S. PATTON, GLENDON E. BOOTHE, CMDG.

A. PROJECT

Authority for field work is contained in the Instructions for Project CS-247 issued by the Director on 14 April 1947.

B. SURVEY LIMITS AND DATES

This survey joins H-6655 (1942) scale 1:20,000 on the north, H-6947 (1942-43) scale 1:10,000 north and east of the channel, and extends southward through the channel and the southern approach. The new work will supersede a portion of H-4554 (1925) scale 1:20,000.

Field work was begun on 24 July 1947 and completed on 7 August 1947.

The limits of the survey as shown on the lay-out which accompanied the instructions and as shown on the boat sheet which was furnished for the survey, excluded the inshore areas. Some inshore work was accomplished in excess of the instructions, particularly in the vicinity of Wrangell Islands.

C. VESSEL AND EQUIPMENT

All hydrography was done in Launch No. 92 operating from the PATTON. An 808 type recording fathometer No. 51 was used to obtain soundings. Bottom samples were taken by the ship using an electric wire sounding machine.

D. TIDE AND CURRENT STATIONS

No tide station was established in this area this season. Tabulations of the hourly heights of the tide at Sitka were furnished by the Washington Office for reduction of soundings.

Current observations were made in Biorka Channel. The records have been forwarded to the Washington Office.

E. SMOOTH SHEET

The smooth sheet will be constructed and plotted by personnel at the Seattle Processing Office.

F. CONTROL STATIONS

Triangulation stations established in 1925 and 1942 were recovered and used as basic control for this survey.

Topographic signals were located by graphic control methods on aluminum mounted sheets; ~~see topographic sheets T-7047 (PA-F-47)~~ and ~~T-7048 (PA-G-47)~~. Not retained - report attached

G. SHORELINE AND TOPOGRAPHY

Field inspection of air photographs of this area was completed by this party. The shoreline and topography ~~will be~~ was compiled from these photographs on T-8460 (1950)

No attempt was made to determine the low water line by hydrographic methods as the limits of the survey did not include such areas.

H. SOUNDINGS

Soundings were recorded by 808 Fathometer No. 51 operated on the fathom scale. Hand lead soundings were taken in shoal areas and in kelp beds. Bottom specimens were obtained with a wire sounding machine on the Ship PATTON.

Fathometer soundings were corrected for observed temperature and salinity of the water.

I. CONTROL OF HYDROGRAPHY

All hydrography is controlled by three point sextant fixes on shore stations. No unusual or substandard methods were employed for this purpose.

J. ADEQUACY OF SURVEY

The survey is adequate to supersede the previous surveys of this area. The junction with adjacent surveys is good with the exception of the bank noted in L.

K. CROSSLINES

The crosslines amount to 7% of the total miles of hydrography including development work. The crossings are good.

L. COMPARISON WITH PREVIOUS SURVEY

The area covered by this survey was last surveyed in 1925 on Sheet No. H-4554. The 1925 survey was on a scale of 1:20,000 with widely spaced lines and wire soundings. The new survey is much more detailed and complete.

The most noteworthy differences occur in least depths on shoals and banks as listed below:-

(1) Near the 9 fathom sounding in Lat. 56° 49.48' Long. 135° 29.85' a hand lead sounding was obtained which reduced to 3.9 fms. Three spots with approximately 10 fathoms were found in the area south of this point. The ridge which lies in 25 fms along the east side of the channel was developed and was found to have less than 15 fms of water along its entire length.

(2)13 fm sounding at Lat. 56° 50.35' Long. 135° 29.80'.
This bank was developed and searched with a hand lead. The least depth found is 7.7 fms at Lat. 56° 50.48' Long. 135° 29.77'.
Another bank was found northeast of this point with a least depth of 3.1 fms in Lat. 56° 50.55' and Long. 135° 29.50'.

(3) Sunken rock symbol in Lat. 56° 50.07' Long. 135° 29.20'.
There is some kelp in this area but no indication of a sunken rock could be found. A hand lead sounding of 5.3 fms was taken at this spot. Disregard symbol

(4) Sunken rock symbol in Lat. 56° 50.12' Long. 135° 29.20'.
Several lines were run over this spot and no indication of a shoal or rock could be found. Disregard symbol.

(5) Sunken rock symbol in Lat. 56° 50.06' Long. 135° 29.12'.
This rock was seen and is bare at low tide. The exact position was not verified. Retained

(6) Sunken rock symbol in Lat. 56° 50.45' Long. 135° 28.30'.
This point lies outside the prescribed limits of the survey and time did not permit a search of the area. A fathometer sounding of 3.6 fms was recorded near this point. The area was covered with heavy kelp at the time the survey was made. Retained.

(7) Sunken rock symbol in Lat. 56° 51.46' Long. 135° 29.42'. A hand lead sounding of 1.0 fm was recorded in Lat. 56° 51.44' Long. 135° 29.40' in heavy kelp. Disregard symbol

(8) The large bank which is centered at Lat. 56° 52.23' and Long. 135° 28.70'. The least depth obtained on this bank in 1925 was 12 fms. In 1942 a least depth of 9-3/4 fms was shown on Sheet No. H-6655. A handlead sounding of 7.2 fms was found this season in Lat. 56° 52.15' Long. 135° 28.82'.

Investigations of shoal soundings on H-6947 (1942)

(1) 6-1/6 fm sounding in Lat. 56° 50.91' Long. 135° 27.37'. The least depth on this shoal is 4.2 fms. See Pos. 29a.

(2) 12 fm sounding in Lat. 56° 50.99' Long. 135° 27.34'. No ~~hand lead~~ detached investigation was made. The least depth obtained by the fathometer is 15.5 fms. (12 retained)

(3) 15 fm sounding in Lat. 56° 51.20' Long. 135° 26.92'. No indication of a shoal could be found and this sounding is 20 fms in error. The general depth at this point is 35 fms. (Disregard 15)

(4) 12 fm sounding in Lat. 56° 51.17' Long. 135° 26.46'. The least depth obtained in this area is 12.7 fms by fathometer.

M. COMPARISON WITH CHART No. 8255

The comparisons drawn in "L" are applicable when comparison is made between the new survey and the March 1947 edition of Chart No. 8255.

N. DANGERS AND SHOALS

This subject is covered under "L".

O. COAST PILOT NOTES

See special report on Coast Pilot for the Sitka Sound area.

P. AIDS TO NAVIGATION

There are no aids to navigation in this area.

Q. LANDMARKS FOR CHARTS

None.

R. GEOGRAPHIC NAMES

There are no new names or changes in charted names of geographic features.

S. SILTED AREAS

None.

Z. TABULATION OF APPLICABLE DATA

The reports listed below are pertinent to this survey:-

Air Photos Inspection Report

Descriptive Reports to Accompany Topographic Sheets ~~T-7047~~ (PA-F-47) and ~~T-7048~~ (PA-G-47). } attached

Temperature and Salinity Observations

Coast Pilot Notes

Data attached to this report:-

Table of Statistics

Tide Note

Table of Velocity Corrections

List of Signals

Submitted by

Karl B. Jeffers

Karl B. Jeffers
Lt. Comdr., USC&GS
Ship PATTON

STATISTICS FOR HYDROGRAPHIC SURVEY H--7193 (PA-1547)

U. S. C. & G. S. S. PATTON, PROJECT CS-247, 1947

Date 1947	Day Letter	Vol. No.	Hand Lead & Wire Soundings	Positions	Stat. Miles of Soundings
24 July	a	1	2	86	10.7
25 July	b	1		151	31.4
26 July	c	1 & 2		159	21.1
28 July	d	2		182	31.8
30 July	e	2 & 3		241	44.4
1 Aug.	f	3 & 4		164	23.2
4 Aug.	g	4		104	18.7
5 Aug.	h	4	7	138	17.3
6 Aug.	j	5	4	100	10.7
7 Aug.	k	5	1	112	15.8
7 Aug.	A(Ship)	4	43	43	- --
	Totals:		57	1480	225.1

Area = 5.1 square statute miles.

LIST OF HYDROGRAPHIC SIGNALS
PA—1547
BIORKA CHANNEL

Hydrographic Name	Source
ACE	*PA-G-47
BIG	PA-G-47
ELL	Tri. Sta. WRANGELL 1925-43
EVA	PA-G-47
FIN	Tri. Sta. FINGER 1925
GUN	PA-G-47
HAM	Tri. Sta. HAMUS 1942
KER	Tri. Sta. KER 1924-25
LEG	Tri. Sta. LEGMA 1942
MAID	Tri. Sta. MAID 1942
MID	Tri. Sta. MIDDLE 1942
NEW	PA-F-47
OAK	*PA-F-47
OR	Tri. Sta. TORSAR 1942
PEG	PA-F-47
PEISAR	Tri. Sta. PEISAR 1942
PIN	PA-F-47
RIM	R.M. No.2 Tri. Sta. PEISAR 1942
ROY	PA-F-47
RUDE	Tri. Sta. RUDE 1942
SAR	Tri. Sta. SAR 1942
SUE	PA-F-47
TOM	PA-G-47
TRAN	Tri. Sta. TRAN 1942
TRY	PA-G-47
VAN	PA-G-47
WAG	PA-G-47
WOO	Tri. Sta. WOODHOUSE 1925
YAK	PA-G-47

* PA-G-47 and PA-F-47 Graphic Control were not retained

TIDE NOTE

TYPE OF GAGE - Standard Automatic Tide Gage

LOCATION - Sitka, Baranof Island, Southeast Alaska.
Latitude 57° 02'.9; Longitude 135° 20'.3

PLANE OF REFERENCE - Mean Lower Low Water

The gage was operated and maintained by personnel of the Sitka Magnetic Observatory. The hourly heights of the tide were furnished by the Washington Office.

VELOCITY CORRECTIONS
U.S. Coast and Geodetic Survey
Ship PATTON
Glendon E. Boothe, Comdg.
Between 24 July 1947 and 7 Aug. 1947
Locality: Biorka Channel, Symonds
Bay, Kanga Bay and Vicinity H-7193
Hydrographic Surveys Nos. H-7097; H-7096, & PA-1547

* * * *

Launch No. 92
Table of Fathometer Corrections

0.0	fms				to	8.0	fms.
-0.1	"	from	8.1	fms.	"	14.9	"
-0.2	"	"	15.0	"	"	22.0	"
-0.3	"	"	22.1	"	"	28.0	"
-0.4	"	"	28.1	"	"	34.5	"
-0.6	"	"	34.6	"	"	47.0	"
-0.8	"	"	47.1	"	"	59.0	"
-1.0	"	"	59.1	"	"	71.0	"

APPROVAL SHEET TO ACCOMPANY

SHEET PA-1547 (H-7193)

The hydrography on this sheet was executed under my direct supervision as a member of the hydrographic party.

The sounding records and boatsheet have been examined and approved by me. They were inspected daily during the survey. It is my opinion that the survey is adequate and no additional work is required within the assigned limits of this survey.

The smooth sheet is to be constructed and plotted by the Seattle Processing Office. The tidal data was supplied by the Washington Office from the record of the standard tide gage at Sitka.

18 December 1947

Glendon E. Boothe
Lieut. Comdr., USC&GS
Comdg., USC&GSS PATTON

H-7193
Pa-1547

Sitka Sound

Processing Office Notes

Projection

The projection was hand made on Whatman paper. The shoreline was taken from uninspected air-photo compilation T-8480.

William M. Martin

William M. Martin
for
Edgar E. Smith
Cart. Engr.

H-7193
Pa-1547

Sitka Sound

List of geographic names penciled on sheet.

Biorka Island

Biorka Channel

Wrangell Island

Middle Rock

Legma ~~No.~~ I.

Maid Island

Tava ~~No.~~ I.

Ataku Island

Golovni ~~No.~~ I.

Terbilon ~~No.~~ I.

Gunboat Rock

Form 537a
Ed. Nov. 1929

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. ~~T-7047~~

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. PA-F-47 (Not retained)

REGISTER NO. ~~T-7047~~

State Southeastern Alaska

General Locality Sitka Sound

Locality Biorka Channel

Scale 1:10,000 Date of survey July, 1947

Vessel PATTON

Chief of party Glendon E. Boothe

Surveyed by Arthur L. Wardwell

Inked by Arthur L. Wardwell

Heights in feet above MHW to ground ~~to tops of trees~~

Contour, Approximate contour, Form line interval --- feet

Instructions dated 14 April, 1947

Remarks: Project CS-247

GPO 266853

DESCRIPTIVE REPORT TO ACCOMPANY

TOPOGRAPHIC SHEETS PA-F-47, PA-G-47 (Not Retained)

BIORKA CHANNEL, ALASKA

SCALE 1:10,000

USC&GSS PATTON, GLENDON E. BOOTHE, CHIEF OF PARTY

AUTHORITY

The survey was made in accordance with Revised Instructions dated 14 April 1947, Project CS-247.

PURPOSE

The purpose of the survey is to locate signals for control of the hydrography in Biorka Channel.

CONTROL

Existing triangulation stations were used to control the survey.

SURVEY METHODS

Standard graphic control methods were used in locating the necessary signals.

Because of the precipitous nature of the shoreline, and the ease with which it can be identified on the air photographs, it was impractical to rod in any high water line.

GEOGRAPHIC NAMES 814

No changes in geographic names are recommended.

Submitted by

Arthur L. Wardwell
Arthur L. Wardwell
Lieut., USC&GS

Approved and Forwarded:

Glendon E. Boothe
Glendon E. Boothe
Lieut. Comdr., USC&GS
Cmdg., USC&GSS PATTON

GEOGRAPHIC NAMES

Survey No. H-7193

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps.	F P. O. Guide or Map	G Rand McNally Atlas	H	K U. S. Light List	
Alaska			(for title)							1
Sitka Sound			"	"						2
										3
Biorka Channel									USGB	4
Biorka Island									"	5
Wrangell Island										6
Terbilon Island										7
Gunboat Rock									USGB	8
Golovni Island										9
Ateku Island										10
Tava Island										11
Maid Island									USGB	12
Legma Island										13
Middle Rock										14
										15
				Names underlined in red are approved. 6-6-50 L. Heck						16
										17
										18
Sitka			(location of tide gage)						USGB	19
										20
										21
										22
										23
										24
										25
										26
										27
										M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7193

Records accompanying survey:

Boat sheets 1; sounding vols. 5; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 1 envel.;

special reports, etc. .....

.....

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

Number of positions on sheet		1480
Number of positions checked (Detached pos. for bottom samples)		43 32
Number of positions revised		9
Number of soundings revised (refers to depth only)		13
Number of soundings erroneously spaced		51
Number of signals erroneously plotted or transferred		———
Topographic details	Time	18
Junctions	Time	17
Verification of soundings from graphic record	Time	5

Verification by E. B. Fearley Total time 178 Date 11-1-50

Reviewed by P. F. Jordan Time 19 Date 1-30-51

M-2232-1

RHC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~ 6 June 1950

Division of Charts: R. H. Carstens

Plane of reference approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 7193

Locality Biorka Channel, Sitka Sound, Alaska

Chief of Party: G. E. Boothe in 1947
Plane of reference is mean lower low water, reading
5.0 ft. on tide staff at Sitka
13.1 ft. below B. M. 8 (1924)

Height of mean high water above plane of reference is 9.1 feet.

Condition of records satisfactory except as noted below:

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

U. S. GOVERNMENT PRINTING OFFICE 756675

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY REGISTRY NO. H-7193

FIELD NO. PA-1547

Southeast Alaska, Sitka Sound, Biorka Channel
Surveyed during July and August, 1947 Scale 1:10,000
Project No. CS-247

Soundings:

808 Fathometer
Hand lead

Control:

Visual fixes on shore signals

Chief of Party - G. E. Boothe
Surveyed by - G. E. Boothe and K. B. Jeffers
Protracted by - C. W. Fanders
Soundings plotted by - C. W. Fanders
Verified and inked by - E. S. Yearley
Reviewed by - G. F. Jordan, 29 January 1951
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline is from unreviewed air photographic manuscript T-8480 (1947) which was compiled from air photographs inspected during the present survey.

The control for this survey originates with triangulation stations of 1924 to 1943, supplemented by topographic stations established by the present survey. The graphic control sheets PA-F-47 and PA-G-47 (report attached) were not retained.

2. Bottom Configuration and Depth Curves

This survey covers a fairly irregular bottom except in the deeper part of the channel where it is smooth.

The depth curves are complete within the prescribed limits of the survey and adequately delineate the bottom. Inshore areas were excluded by the Project Instructions.

3. Crossings

The depths at sounding line crossings are in very good agreement.

4. Adjoining Surveys

Adequate junctions were effected with H-6655 (1940-41) on the north and H-6947 (1942-43) on the east. There are no other adjoining contemporary surveys.

In the southern approaches to Biorka Channel the soundings charted at the limits of the present survey compare favorably with present depths.

5. Comparison with Prior Surveys

a. H-2175 (1893) 1:40,000 scale;H-4554 (1925) 1:20,000 scale

The soundings on these prior surveys are sparse in comparison with the present larger-scale development. The surveys failed to reveal several shoals and critical depths; for example, the 3.9-fm. shoal in lat. 56° 50.55', long. 135° 29.50'.

Although there are some differences in depths, a comparison with the present survey reveals no differences that are significant. The present survey adequately supersedes both surveys in the common area.

b. H -6947 (1942-43) 1:10,000 scale

Three shoal areas recommended for development in the Review of H-6947 were covered by additional development on the present survey. The present work disproved a 15-fm. sounding on H-6947 (Chart 8255) in lat. 56° 51.2', long. 135° 26.9', falling in 34-fm. depths. This Dorsey 3 fathometer sounding is 20-fm. too shoal and should be disregarded.

c. T-4179 (1925) 1:20,000 scale

The sunken rock on the prior survey (Chart 8255) at lat. 56° 50.08', long. 135° 29.15', and a rock 100 meters north-northwestward should be disregarded. According to the Descriptive Report these rocks were investigated and not found. Probably, the topographer on the prior survey misinterpreted the presence of kelp in this area.

6. Comparison with Chart 8255 (Print of April 7, 1950)

a. Hydrography

The charted hydrography originates with the previously discussed surveys except for a few critical depths applied from the present survey before verification.

Further consideration is unnecessary.

b. Aids to Navigation

There are no floating aids to navigation charted in the area of the present survey.

7. Condition of the Survey

a. The sounding records and Descriptive Report are complete and comprehensive.

b. The survey was accurately and neatly smooth-plotted.

c. Special mention is made of the excellent coverage for bottom characteristics.

8. Compliance with Project Instructions

The survey adequately complies with the project instructions.

9. Additional Field Work Recommended

This is an excellent basic survey and no additional field work is recommended. Consideration might be given, however, to the advisability of including the northern portion of the present survey in any future wire-drag coverage in the vicinity. There are several 11-and 12-fm. shoals in the northern approach to Biorka Channel. Although it is believed that appreciably shoaler depths will not be found here, wire-dragging might be desirable.

H. R. Edmonston
Chief, Nautical Chart Branch

Examined and approved:

R. W. Knox
Chief, Division of Charts

L. S. Hubbard
Chief, Section of Hydrography

for W. M. Scaife
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7193

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8/15/51	8255	[illegible]	~~Before~~ After Verification and Review Partial Application
8-14-60	8252	[illegible]	~~Before~~ After Verification and Review Completely appd.
1/25/65	8255	LMyers	~~Before~~ After Verification and Review Completely applied.
			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
			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.