

6932

Graphic Control

Diag'd on Diag. No. 8865-1

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic **Graphic Control**

Field No. **SU-B-44** Office No. **T-6932** **Graphic C.**

LOCALITY

State **Alaska-Aleutian Islands**

General locality **Semichi Islands**

Locality **Shemya Island**

1944

CHIEF OF PARTY

C. D. Meaney

LIBRARY & ARCHIVES

DATE **Feb. 2, 1945**

B-1670-1 (1)++

6932

Graphic Control

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. T-6932 Graphic Control

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. S-B-44

REGISTER NO. T-6932 **Graphic Control**

State Alaska - Aleutian Islands

General locality Semichi Islands
Aleutian Islands

Locality Shemya Island - Semichi Is.

Scale 1:10,000 Date of survey June - Sept., 1944

Vessel SURVEYOR

Chief of party C. D. Meaney

Surveyed by J. C. Bose

Inked by J. C. Bose. Lettering by V. R. Sobieralski

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated Feb. 1, 1944; (Director's Suppl.), 19____
May 17, 1944 (Liaison Officer)

Remarks: _____

Graphic Control sheet: overlaps T-6931a.

Descriptive Report
to Accompany
Graphic Control Sheets, Nos. 6931a and 6932

Shemya Island - Aleutian Islands

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Instructions: The survey was made in compliance with Supplemental Instructions from the Director, dated February 1, 1944, Project CS-218, and with instructions from Lieut. Comdr. C. M. Durgin, Liaison Officer, dated May 17, 1944, Project 2.

Limits: The area covered by the survey consists of Shemya Island, the easternmost island of the Semichi Group. The area lies between latitude $52^{\circ} 42'$ and $52^{\circ} 45'$ N and longitude $174^{\circ} 02'$ and $174^{\circ} 11'$ E.

The survey of Shemya Island was made on two aluminum mounted topographic sheets (Reg. Nos. 6931a and 6932) on a scale of 1:10,000. The small islands in the pass were surveyed on a scale of 1:5,000 on sheet 6931b, which is the reverse side of 6931a. A separate report covers sheet 6931b.

Survey Methods: As some air photographs of the Semichi Islands existed, and as additional photographs were to be made, the survey was limited to the location of identifiable points for the control of photographs, the location of signals to control hydrography, and the delineation of such shoreline as could be accomplished without a great expenditure of time. Most of the hydrographic signals used in the year 1943 were recovered and located, and additional signals were located. One exception is signal BLACK, which was blasted out by construction workers before it could be identified and located. A list showing 1943 signals recovered and not recovered is attached to this report.

Adequate control existed in the form of third order triangulation executed in 1943-44 by the U. S. Engineers. Practically all objects were located by graphic triangulation, using standard planetable equipment, and no traverses of any appreciable length were necessary. A considerable number of traverse stations of the U. S. Engineers were located. These were marks of a standard type, consisting of U. S. Engineers bronze disks set in concrete posts, about 9 inches square and projecting about a foot above ground, having designation and year of establishment stamped on the disk. Some of the traverse was run by Army personnel and some by personnel of private contractors. It is not known by what method or with what order of accuracy the traverse was accomplished.

The air photographs in the possession of the SURVEYOR at the time of the survey were not very clear and were on a scale of about 1:20,000. Several sets of excellent photographs were taken later by the Army and the Navy and placed at the disposal of the SURVEYOR, but, unfortunately, these pictures were received too late in the season to permit proper field inspection and

sketching of shoreline. However, the photographs taken after July, 1944, have the advantage that many of the signals, especially white washes and tripods, are readily identifiable on the pictures. Many white washes, triangulation stations, and other points, such as corners of buildings, docks, gables, road intersection, etc., have been pricked and marked on the photographs.

Description of Coast: The shoreline of Shemya Island is very irregular, especially on the north and on the east sides. The high water line is irregular and is fringed by very irregular rocky ledges, reefs, and rocks, awash. Some of the higher parts of the rocky ledge remain above M.H.W. The shoreline has also undergone - and is still undergoing at the present time - artificial changes as the result of construction work. A road is being built along the entire shoreline of the island, and the construction of the breakwaters in Alcan Cove has necessitated much blasting and removal of rock from various points on the shore. From the northern and eastern shoreline, the land slopes rapidly upward to elevations of 250 to 100 feet to a well defined edge or ridge, then slopes gradually downward to sea level at the south shore of the island. The surface of the island is covered with characteristic Aleutian tundra and moss.

The south shore of the island is, on the whole, less irregular at the high water line than the north shore. However, there are many rocky ledges and scattered rocks awash.

Construction of public works and military installations was in progress while the survey was being made, and as a result, there was considerable change in objects located. Some objects would disappear soon after being located, while new objects would appear elsewhere. The various sets of photographs taken at different times, show such changes.

The mean high water line was located on the sheets for part of the south shore. It is shown between signals SCOOP and ACE (where the low water line is also shown), near signals GUS, MAP, LOW, PUP, and TALL. The shoreline east of SAN 2 is sandy and flat and it is difficult to determine the M.H.W. line merely by its appearance without knowledge of the height of the tide at a given time.

On the north shore, the only mean high water line located is in a bight west of signal MON (on sheet 6932) and on the rocks by triangulation stations GUM and BOB (on sheet 6931a). Road construction on the north shore made changes in the shoreline, but the latest photographs probably show the shore as it will remain.

The breakwaters at Alcan Harbor were not completed at the time of the survey. Construction work was still in progress and changes as the result of stormy weather were still taking place. Even the latest photographs do not show the east breakwater completed.

Statistics:

Area (square statute miles), sheets 6931a and 6932 -----	22.9
Shoreline, Statute miles -----	1.8
Roads, breakwaters, docks -----	2.2

Miscellaneous:


Most of the planetable work was done by Lieut. Comdr. J. C. Bose. However, some of it, especially, along the east shore of Shemya Island, was done by Lieut. V. R. Sobieralski.

The five mooring buoys south of Skoots Island (station GAS) are of the type known as net buoys.

Respectfully submitted,


J. C. Bose, Lieut. Comdr. C. & G.S.

Approved and Forwarded:


C. D. Meaney
Comdg. Officer,
U.S.C. & G.S.S. SURVEYOR

Air Photographs: The following is a resume of the various sets of photographs pertaining to the survey of the Semichi Islands:

<u>Date of Flight</u>	<u>Approx. Scale</u>	<u>No. of Photos.</u>	<u>Remarks</u>
9-22-43	20,000	31	Semichi Islands
5-25-44	5,000	1- 26	Alaid I. only.
8-19-44	8,500	1- 18	Shemya & Nizki Is. Three sets, vertical. right, and left.
8-19-44	7,500	1- 61	
9-18-44	10,500	1- 45	
10-19-44	8,000	1- 65	
10- 4-44	8,500	flight line 1 (1-32) 2 (1-35) 3 (1-7) 4 (1-29) 5 (1-10) 6 (1-23)	Semichi Islands by Navy

Junction with Other Surveys: Sheets 6931a and 6932 make a junction with each other and 6931a joins 6931b (scale 1:5,000). There is no discrepancy in junction with any of the sheets.

Geographic Names: Aside of such well established names as Pacific Ocean, Bering Sea, and Shemya Island, the only geographic names to be considered are as follows:

Alcan Harbor - The bight in the northwestern part of Shemya Island was originally named "Alcan Cove" by the U. S. Army. This name appears at the present time on C. & G. S. chart No. 9125. Since the construction of the breakwaters, docks, and other harbor facilities, the cove or harbor is almost invariably called "Alcan Harbor" by all personnel on the island. It is recommended that the name "Alcan Harbor" be adopted.

Skoots Island - This is a small island on the south shore of Shemya Island near its western end. There is no very logical origin for the name, but the name seems to have become fairly well established.

Fox Beach - This is the name of a small beach near the southeast end of Shemya Island. The name was assigned by the Army and now appears on C. & G. S. chart No. 9125. The beach was designated as Beach F, "Fox" being the phonetic code word for F.

HYDROGRAPHIC SIGNALS USED IN 1943 LOCATED ON TOPOGRAPHIC SHEETS T-6931a & T-6932

1943 Name	1944 Name	Remarks
ABE	ABE	Old w.w. recovered
BET	BET	Old w.w. recovered
FOX	FOX	Old w.w. recovered
OUT	OUT	Old w.w. recovered
TEN	TEN	Old banner recovered
TRI*	TRIP*	* Located by hydrographic cuts, Sheet H-6939 Removed before topographic location obtained
ROCK	ROCK	Only prominent rock awash in vicinity; undoubtedly same rock as used in 1943
PUP	PUP	Old banner recovered
CON	CON	Same tower as 1943
NED	NED	Old s.w. recovered
LO	LO	Old w.w. recovered
NAT	NAT	Old banner recovered
BAG	BAG	Old w.w. recovered
ACL	ACL	Old w.w. recovered
KOR	KOR	Old tripod recovered
SCOOT	SCOOT	Skoots I. radio mast
MASTER	MASTER	Harbormaster Tower - U.S.N.
FOIL	- -	Apparently same as flagpole - N.A.A.S.
LIT	LIT	Re-whitewashed by EXPLORER, 1944, apparently same as used in 1943
LIL	*LIL	Highest part of reef
"	1944	" Located by triangulation, 1944
PCIO		
COL *	*TOP 1944	* Located by triangulation, 1944

In 1944 when the party on the SURVEYOR took up work in the Lemich Islands, the coordinates of stations SHENYA and ALID as determined were used in their triangulation computations. To reconcile the azimuths so these positions could be used on Form 27 "Position Computations", an inverse computation was made. Starting with the position of SHENYA as determined, and using the azimuth of the line SHENYA-ALID as determined by the inverse computation and the length of the line SHENYA-SAL 2 as furnished by the Resident Army Engineer, the positions of triangulation stations in the Lemich Islands were computed. The positions of triangulation stations on this topographic sheet were so determined.

Later in the season, the triangulation executed by Goffe and Sylar was recomputed by Lt. Genie. Shelton on the EXPLORER, starting with the astronomical position of station CHIC as determined by the Navy in 1934 (USN GMMBT 1934 datum). This data was not available to the party on the SURVEYOR at the time work was commenced. The recomputed values of ALID and SHENYA differed slightly in latitude and longitude from that obtained by applying the datum difference.

<u>SHENYA:</u>	<u>Latitude</u>	<u>Longitude</u>
By applying datum difference	52° 44' 36.591	174° 05' 41.555
as recomputed by Shelton	52 44 36.594	174 05 41.072
Difference -----	00.003	-00.583

After the parties had returned to Seattle, the Army furnished a revised length of their base line on Shenya Island, which gave a slightly different length of the line SHENYA-SAL 2 than that furnished the SURVEYOR by the Resident Engineer.

The triangulation executed by the SURVEYOR in the Lemich Islands, 1944, was recomputed using the position of SHENYA and azimuth SHENYA-ALID as determined by Shelton's recomputations, and for length, the revised length of the line SHENYA-SAL 2.

The following agreements were obtained on the line SAL 2-SHENYA:

Computed from Army base on SHENYA	6223.52 meters
Computed from Massacre Bay base	6223.16 meters

Difference ----- 0.36

(approximately 1 part in 17,000)

Position of ALID:

	<u>Latitude</u>	<u>Longitude</u>
Recomputed by Shelton (Massacre Bay base)	52° 46' 1286.9 m.	173° 52' 144.9
Recomputed SURVEYOR's work	52 46 1267.4	173 52 144.9
(Army adjusted base)		
Difference -----	0.5 m.	0.0

DATUM

There is a small difference of approximately 11 meters between the coordinates of triangulation stations determined in the field and those later computed. In the later computations a more accurate determination of azimuth and length and also of the position of the initial station in Y. were used than was available to the field party.

The latitude and longitude of the reference station as recomputed is shown on the sheet in pencil. Also shown is the recomputed datum mark.

All hydrographic sheets submitted in 1944 with the exception of H-6987, which has been forwarded to Washington, are based on the recomputed datum. The hydrographic boat sheets submitted by the Navy are on the field datum. Those submitted by the EXPLORER with the exception of H-6947 are on the recomputed datum.

The following is a brief resume of triangulation in the Bear Islands as used for control on hydrographic and topographic sheets.

The triangulation in the vicinity of Usencro Bay, by Scaife in 1943, started from an assumed datum. Scaife's work was extended north by Sylar, USN, to make a recovery of the Navy's astronomical station of 1934, which was near station CHIC. Assuming the position of station CHIC to be the same as the astronomical station, the following datum differences were obtained:

	<u>Latitude</u>	<u>Longitude</u>
Scaife's datum CHIC 1943	52° 56' 18.7318	173° 14' 27.740
USN Observation Pier 1934	52 55 48.25	173 14 24.36
Correction from Scaife and Sylar, 1943, to USN 1934 -----	-30.068	-93.380

Note: The astronomical pier is five or six feet from CHIC and is exactly on the line towards Adf 1943. The pier was too large for Sylar to occupy with his instrument without leaning against the pier, which sat in tundra and moved under pressure. Hence the new station. See Sylar's description for distance between them. This difference has been ignored and CHIC assumed to be a recovery of the astronomical station.

When plotting the 1943 smooth sheets, the difference shown above was applied to all of Scaife's and Sylar's geographic positions to bring the sheets on the USN 1934 datum.

ADDITION TO DESCRIPTIVE REPORT T-6932

Washington Office, May 15, 1945

Details shown in green on T-6932 were compiled from air photographs in this office.

Photographs:

5-3, 5-4, 5-5, 5-6, 5-7 at 1:10,000, dated 1944
1-V-4, 1-V-5, 1-V-6, 1-V-7, 1-V-8, 1-V-9, 1-V-10 at
1:10,000, dated 1944
1-21 to 1-28, inclusive, dated 1944, scale 1:10,000

Field Inspection:

Photographs were field inspected by the planetable party only to the extent of locating hydrographic signals and triangulation. No shoreline or other detail was inspected.

Compilation:

Compilation was accomplished by holding to hydrographic signals and triangulation stations that were identified on the photographs. Shoreline and other shore and off-shore detail was delineated on the photographs with the aid of a stereoscope and projected onto the sheet by use of a vertical projector.

At latitude $52^{\circ}43.2'$ longitude $174^{\circ}05.7'$, and latitude $52^{\circ}42.8'$ longitude $174^{\circ}07.0'$ there is some disagreement in the high water line between the planetable survey and the detail added from the photographs. This is probably due to the area either being filled in, or wave action.

The position of "Outermost High Rock" as located by planetable, disagrees with the air photo position by approximately 0.8 mm. It is believed that the position as plotted from the photographs is correct. The positions of most of the off-shore rocks were hard to locate exactly as the only means of identification was ~~the breakers~~ because of the breakers.

Compiled by: A. H. Faulds

Verified by: *Michael G. Meilick*

Inspected by: *L. C. Landy* *B. J. Jones*

J. A. Mc Cormick

10/11/45

R. H. Cavatone

8/15/46

GEOGRAPHIC NAMES

Survey No.

T6932

Graphic Control

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A	B	C	D	E	F	G	H	K	
Aleutian Islands			(for title)						1
Semichi Islands			"		525	7406		USGB	2
Shemya Island			"		"			"	3
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Names underlined in red approved

by L. Heck on 10/11/45

Applied to chart 9125 2.m.a. 6-7-45
" " " 9198 & 8865 2.m.a. June 1945 after inspection