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a&b

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Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

TOPOGRAPHIC

Type of Survey (Air-photographic & plane-table)

Field No. PI-A-47
PI-B-47 *Office No.* T-7051

LOCALITY

State Alaska

General locality Aleutian Islands

Locality Buldir Island

1947

CHIEF OF PARTY

Frank S. Borden

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DATE APR 8 1948

8-1870-1 (1)

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Form 537a

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

REGISTRY No. 7051 4 B

Field No. PI - A - 47 (1:10000)
PI - B - 47 (1:20000)

Scale

State Aleutian Islands General locality Buldir Island

Specific locality West Coast

Dates: Survey began 14 June 1947 Completed 24 June 1947

Photography, Supplemented by ground surveys to

Project No. CS-218 Instructions dated 2/3/38, 4/3/39, 4/8/40, 4/16/43, 2/1/44.

Vessel / Party or PIONEER Chief of party Frank S. Borden

Field work by L. F. Woodcock Office work by L. F. Woodcock

Final inking by L. F. Woodcock

Ground elevations / ~~Trigonometric elevations~~ in feet above { M. H. W. / XXXX / }

Contours / Approximate contours / Form lines by { Planetable / Multiplex / } Interval ft.

REMARKS

U. S. GOVERNMENT PRINTING OFFICE 16—38129-1

EXAMINATION REPORT

I have examined the sheets and reports covering the topographic and graphic control work accomplished on Buldir Island.

The character of this small island is such that the shoreline could not be traversed to any appreciable extent and sea conditions were such that it was rare that landings could be made. Fog enveloped the island the greater portion of the time.

Working under the above conditions it was necessary in some respects to resort to unorthodox methods in order to determine the location of the signals required to complete the hydrographic survey, and thus avoid delaying completion of the survey for another season. It is not believed that the accuracy of this survey or of the related inshore hydrographic surveys has been impaired by the methods used.

Frank S. Borden

Frank S. Borden
Captain, USC&GS
Comdg. Ship PIONEER

REPORT ON

AIR PHOTO FIELD INSPECTION AND RADIAL PLOT

BULDIR ISLAND

ALEUTIAN ISLANDS - ALASKA

1947

USC&GSS PIONEER Project CS-218

Project CS-218 is a combined operations project and field inspection of photographs was accomplished in connection with other phases of field work.

DESCRIPTION OF TERRAIN

Buldir Island is about four miles long in an east-west direction and about two and one-fourth miles wide at the widest point. It is hilly and mountainous except for the low grassy flat near the northwest end of the island. The narrow rocky beaches are backed by high precipitous bluffs composed of volcanic soil and boulders and there is no shore passage around the rocky points at the east end and along the south side of the island. The bluffs are usually a dirty grey in appearance.

The lower hills are grass covered and the soil varies from a sticky loam to light sand and volcanic ash with a few small rocks. The slopes are moderate except along the shoreline where errosion has made steep slopes. Above about nine hundred feet elevation the hills are bare and cinder and gravel covered with a scattering of boulders. Except for the main peak and its outlying shoulders the slopes are reasonably smooth and the tops rounded. The slopes become steeper in the vicinity of the higher peaks. The main peak is about midway of the south side of the island and is about two thousand feet high.

There is a sand and cobblestone beach along the north side of the low grassy flat at the northwest end of the island. The bluff in back of the beach is about twenty feet high but access to the flat is easy at the mouths of the two streams traversing the flat. During periods of calm weather the sand builds up outside the cobblestones but during storms the water line recedes to the cobblestones. In calm weather a thirty-six foot landing craft can be beached with a dry ramp. At times not all bottom cobblestones are sand covered and propellor damage may be sustained. During the summer there is a heavy kelp patch offshore from the beach. Good anchorage during southerly weather is available in fifteen fathoms of water, sandy bottom, off this beach.

A small cabin is located inshore along the west side of the flat. It was built by the Army during the war and will probably not last many more winters. There are numerous small streams, especially at the northwest end of the island, and any draw of much size and length will contain a small stream. The two streams traversing the grassy flat contain many small trout. There are many birds on the island and during the summer flocks of geese nest on the grass covered hills. Several species of birds are particularly noisy at night.

A chain of bold rocks and small islands extends northwest about one mile from the northwest end of the island. There is no visible evidence of submerged rocks around the perimeter of the group of rocks. At the east end of the island there are several groups of rocks, the farthest about one-fourth mile east of the end of the island. These rocks are kelp covered when less than about ten feet high. There is no evidence of sunken rocks beyond the easter'ly group of rocks. The south coast of the island is foul inshore and should be approached with caution, other shores are more free of rocks. An inshore band of kelp nearly encircles the island.

HORIZONTAL CONTROL

Triangulation stations were located on the photographs simultaneously with the progress of triangulation control. Stations BEND, POND, BLUF, and EXTRA were not located due to the adequacy of other control. Station SCOT was not revisited after the signal was built and no opportunity was available to tie the station to the photographs after the plan to carry control to the east side of the island was abandoned. The intersection stations at the northwest end of the island were located on the photographs after viewing the islands and rocks from close at hand.

FIELD INSPECTION OF SHORE AREA

A radial plot was run aboard ship prior to any field inspection of the shore area. Points for use as hydrographic signals were selected on the photographs for the south and east coasts of the island. Along the north coast suitable points could not be identified due to shadows and lack of clarity in the photographs. Signals had already been located by plane table control along the west coast and the northwest end of the island and additional points were not radial plotted in this area except for one signal DEN at the outer end of the group of small islands. Field inspection was accomplished at the time the points selected for hydrographic signals were identified and white washed. Along the east shore the office points were satisfactory but along the south shore additional points had to be picked due to insufficient prominence of the points selected in the office of inability to land a white wash party because of heavy seas.

It was not possible to identify individual rocks in some of the offshore groups of rocks due to lack of time and lack of clarity in the photographs available.

PHOTOGRAPHS USED

All field inspection was done on single lens photographs taken in 1943 by the U.S. Army, 11th Mapping Squadron, scale about 1:24,000. The contrast prints were used and the inspection appears on prints Nos. V 1-2, V 1-3, V 2-4, V 3-2, and V 3-5.

RADIAL PLOT

The single lens photographs taken by the U.S. Army in 1943, scale about 1:24,000, were used to run a radial plot of the island at a scale of 1:14,600. This scale was selected in order that the shore line could be taken direct from the 1934 photographs. The photographs used in the radial plot were mounted on chart paper in cases where it was necessary to prolong the radial lines. No templets were made and the photographs were mounted individually under the acetate projection. Several radial plots were made before arriving at the final plot.

A stereoscope was not available when the initial points were selected and transferred on the photogrpphs. Later on a stereoscope was borrowed from the Ship EXPLORER and some of the points were repricked.

A list is attached to this report giving the DMs and DPs of the hydrographic signals located by radial plot. The radial plot positions of these hydrographic signals did not give any appreciable "jumps" when used to control sounding lines with visual fixes.

Submitted by

Gilbert R. Fish

Gilbert R. Fish
Lt. Cdr. USC&GS

Approved and forwarded:

Frank S. Borden

Frank S. Borden
Comdg. Ship PIONEER

POSITIONS OF

HYDROGRAPHIC CONTROL POINTS FROM RADIAL PLOT

BULDIR ISLAND

AUGUST 1947

Name	Lat.N.	D.M.	D.M. (back)	Long.E.	D.P.	D.P. (back)
Den	52° 23'	569	1206	175° 50'	988	148
Cat	52 20	1028	827	175 53	1054	82
Pop	52 20	718	1137	175 54	234	902
Use	52 20	499	1356	175 54	310	826
Sli	52 20	527	1328	175 54	624	512
Ash	52 20	364	1491	175 54	692	444
Yel	52 20	392	1463	175 54	1030	106
Elm	52 20	329	1526	175 55	299	837
Fog	52 20	579	1276	175 55	826	310
Gum	52 20	611	1244	175 55	943	193
Hit	52,20	425	1430	175 56	105	1031
Jug	52 20	468	1387	175 56	827	309
Mut	52 20	1014	841	175 57	23	1113
Nak	52 20	1540	315	175 57	244	892
Kay	52 21	171	1684	175 57	444	692
Par	52 21	621	1234	175 57	928	207
Rot	52 21	992	863	175 58	28	1107
Good	52 21	1084	771	175 58	193	942
Peak	52 21	1171	684	175 58	701	434
Dome	52 21	1192	663	175 59	63	1072
Tip	52 21	1401	454	175 58	621	514

DESCRIPTIVE REPORT TO ACCOMPANY SHEET NO. PI-A-47 and PI-B-47,
REGISTRY NO. 7051 (1947)

Instructions dated: 2/3/38, 4/3/39, 4/8/40, 4/16/43, and 2/1/44.

The purpose of this sheet was to furnish control for the inshore hydrography of Buldir Island. The work was done by plane-table on two scales, on opposite sides of an aluminum mounted sheet.

The topography was done prior to the determination of the geographic positions of the triangulation stations. This was necessary because until later in the season, weather conditions did not permit observations from station Buldir, the only position on the island for which a geographic position had been determined. The triangulation was plotted by swinging distance arcs, and the projections were added after geographic positions were determined.

The small bight near the northwest point of Buldir Island and adjacent coastline was done on a scale of 1:10,000. This bight was used as an anchorage by the PIONEER while establishing and servicing the base camp and shoran station on Buldir Island.

There is a sand and cobble-stone beach at the head of the bight, upon which landings may readily be made in calm weather. About 20 meters inshore from the high water line is a 20 ft. bluff which extends around the entire bight. There are several small breaks in the bluff, permitting the passage of a weasel.

A traverse was started at triangulation station North and run eastward to a closure on triangulation station North Rock No. 3. The closing error was 4 meters, for which the traverse has been adjusted proportionately throughout its length.

Another traverse was run from triangulation station North to the westward and around the northwest point of Buldir Island. The traverse was closed with a rod reading on triangulation station End. The closing error was 7 meters, for which the traverse has been adjusted proportionately throughout its length.

The work on a scale of 1:20,000 was started at triangulation station End. A traverse was run along the west coast of the island to the southward, closing on triangulation station Peb with an error of 4 meters. The traverse has been adjusted proportionately throughout its length for the error of closure.

The coast of Buldir along this section rises abruptly in bold steep cliffs, with a scarf of rocks and boulders ten to twenty meters wide along the water's edge.

All elevations are in feet above the mean high water line, and were determined by means of the plane-table alidade and hypsograph. Rod readings were taken at intervals on the shore line, which are indicated by dots. The shore-line was sketched between dots.

H-7595

A list of plane-table positions follows:

NAME	LATITUDE	D.M.	LONGITUDE	D.P.	REMARKS
Leo	52° 22'	1234	175° 54'	772	Rock awash
N.Rock#2	do	1199	do	767	Rock awash
Kid	do	1049	do	808	White-wash
Ice	do	1098	do	366	White-wash
How	do	1040	do	127	White-wash
Guy	do	894	175° 53'	1036	White-wash
Fox	do	784	do	687	White-wash
Egg	do	654	do	350	White tripod
Chic	do	301	do	389	White bldg.
Dog	do	704	do	10	White tripod
Cut	do	850	175° 52'	1015	White-wash
Bag	do	998	do	665	White-wash
Abe	do	1079	do	*447	White-wash
Rum	do	686	do	604	White-wash
Sam	do	546	do	775	White-wash
Oil	do	1779	175° 51'	941	Rock
Nan	do	1486	do	1131	White-wash
Pal	do	1328	do	804	White-wash
Zag	do	152	175° 52'	? 836	White-wash
Sue	52° 21'	1461	do	737	White-wash
Jim	do	1235	do	915	White-wash
Hat	do	807	175° 53'	321	White-wash
Leg	do	197	do	? 562	White-wash
Sap	52° 20'	1521	do	? 617	White-wash

Lorin F. Woodcock
Lorin F. Woodcock
Lieut., USC&GS

Approved and forwarded:

Frank S. Borden
Frank S. Borden
Captain, USC&GS
Comdg. Ship PIONEER

* This distance was scaled in the Washington photogrammetric office to be 417 rather than 447. The hydrographic sheet agrees with the planetable sheet so that no other changes were made W.D.Harris 9/3/48

This graphic control survey has been compared with contemporary hydrographic surveys. This control has been used in compiling air photographic manuscript T-9125-5795. No further review by the Hydrographic Surveys Section is necessary at the present time.

J. A. Winsmore
2/21/49

GEOGRAPHIC NAMES

Survey No. T-7051 a & b

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 U. S. Light List	K	
Alaska			(for title)							1
Aleutian Islands			"	"						2
Buldir Island			"	"					USGB	3
Northwest Point										4
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Names underlined in red are approved. 4/15/48 L. Heck

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