

6752

CONFIDENTIAL



Diag. Cht. No. 8861-1

Form 504 Rev. April 1935	
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. T-6752 (J-1940)
U. S. COAST & GEODETIC SURVEY LIBRARY AND ARCHIVES MAR 3 1941 Acc. No.	
State <u>Alaska</u> Alaska	
LOCALITY Islands of Four Mountains Aleutian Islands West end Yunaska Island	
1940	
CHIEF OF PARTY L. C. Wilder	

U. S. GOVERNMENT PRINTING OFFICE 102221

DECLASSIFICATION BY NOAA
PURSUANT TO DOC SYSTEMATIC REVIEW
GUIDELINES AS DESCRIBED IN SECTION
3.3 (a), EXECUTIVE ORDER 12356

6752

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. I-1940

REGISTER NO. T-6752

T6752

State ~~Alaska~~ Aleutian Islands

General locality ~~Islands of Four Mountains~~ Aleutian Islands

Locality West end Yunaska Island

Scale 1:20,000 Date of survey Aug. - Sept., 1940

Vessel M. V. "E. HESTER JONES"

Chief of party L. C. Wilder

Surveyed by John C. Ellerbe

Inked by John C. Ellerbe

Heights in feet above M.H.W. to ground ~~to top of trees~~

~~Contours, Approximate contours~~ Form line interval 100 feet

Instructions dated February 3, 1938

Remarks: _____

DESCRIPTIVE REPORT

to accompany

TOPOGRAPHIC SHEET FIELD NO. J-1940

REGISTER NO. T 6752

M.V. "E. LESTER JONES"

Project HT-218

1940

AUTHORITY:

This survey was accomplished in accordance with Director's Instructions for Project HT-218, dated February 3, 1938, and subsequent supplementals.

EXTENT:

This survey covers the western and southwestern end of Yunaska Island, and includes form lines inshore to the eastward as far as Yunaska Peak.

CONTROL:

The basic control for this sheet is triangulation executed by the Ship PIONEER in 1939, and by the PIONEER and "E. LESTER JONES" in 1940.

When the topography was begun, however, there were but five triangulation stations available for control. These were KNOB and BOLD on the south, and END, JUPE, and KING on the northern end of the sheet. The stretch between KING and BOLD was entirely devoid of control. Stations HEAD, CABIN, and SLOPE had been established, but no observations made. In order to proceed with the topography, it was therefore necessary to evolve some way to establish control over this part of the sheet. Due to prevailing bad weather and inability to make landings when and where desired, it was necessary to take advantage of any opportunity offered to make landings at any place along the entire length of shoreline. Therefore, the work could not be arranged in such a manner as to take advantage of control already established while additional triangulation was accomplished in the center parts of the sheet.

It was decided that a scheme of planetable triangulation would have to be run along the shoreline between KING and BOLD. This scheme was begun at KING, Row being located by orientation from KING and resection on SPIRE and JUPE. The line KING - Row was then used as a starting line, and carried to the southward through Red - Hum and Hum - Hit, to HEAD - Lone.

Meanwhile, BOLD had been occupied by the party of the PIONEER, and cuts obtained to flags planted at Green, Les, and Sly. Station Green was then occupied with the planetable, orienting on the azimuth from BOLD, and a position obtained by resection on KNOB. The line Green - Les was determined, and a check obtained by setting up at Les, orienting on BOLD and resecting on KNOB. This resection checked the position of Les as determined above. This scheme was then carried forward through Sly - Pat, and a planetable position of SLOPE determined by intersection of cuts from Green and Pat on the azimuth to SLOPE from BOLD.

The planetable was then set up at CABIN, oriented on BOLD, and CABIN located by resection on SLOPE and HEAD, both planetable positions. The line CABIN - SLOPE was thus established, from which control was carried to the north through Whif - Bur, Scarf - Lav, and Hil - Whir to close on the previously determined line HEAD - Lone. The greatest of care was taken with these schemes, and a flat closure was obtained on the line HEAD - Lone.

Subsequent plotting of the triangulation positions of HEAD, CABIN, and SLOPE checked the positions determined by planetable very well.

During the course of the planetable triangulation, all possible cuts to whitewashes and auxiliary flags planted at vantage points along the bluff were taken, and the necessity for running traverses in this area were thus eliminated, since sufficient control points were located to merely set up the planetable at these points and rod in the shoreline.

GENERAL DESCRIPTION:

From seaward, to the west, the island appears as rolling grass and tundra covered hills in the center, with high bluffs on the north and south end, rising abruptly inshore to Yunaska Peak, a 3100 foot mountain with two large tits at the summit. These tits stand out particularly from the westward, that is when they are not covered by cloud formation, which is seldom.

A low bluff extends all along the western coastline, from KING on the north to CABIN on the south. North of KING and south of CABIN a much higher bluff begins, rising from 300 to 600 feet in places. Also, a 300 foot bluff extends for about 1/2 mile under HEAD, at the foot of which is a black sand beach, about 40 meters wide and 550 meters long.

With the exception of the above short stretch of sand beach, the shoreline from KING to immediately south of CABIN is rough and rugged with many reefs and rocks awash offshore. Many lava points extend outward from the general bluffline. Thick kelp extends from 50 to 200 meters outside of the rocks.

Where the bluff line rises at KING and becomes higher to the north-eastward, the beach line becomes a narrow boulder shelf at the foot of the bluff, the boulders extending out into the water for some distance. Large fields of kelp, about 200 meters wide, extend continuously offshore of the beach. Similar conditions obtain to the southward of CABIN, with the exception of the point off of topo signal Ski, where a large reef extends offshore for 300 meters.

Southeast of BOLD, there is a short stretch of shoreline where the cliffs drop immediately into the water, with not even a shelf at their foot. Several large offshore rocks exist in this section. At topo signal Mu, the boulder beach at the foot of the bluff begins again and extends eastward to KNOB, where the cliffs again drop sheer into the water, and several large rocks lie well offshore.

The 510 foot Knoll at KNOB is very prominent from the southeastward. It is highest at the offshore side and drops very quickly along the axis of the ridge which extends inshore to the north. There is a sheer drop off from KNOB to the water. A large pinnacle rock about 200 feet high lies about 150 meters offshore to the southeastward at this point, affording an additional means of identification.

METHODS USED:

As explained under the section on CONTROL, numerous points along the beach between KING and BOLD (as far south as White) were located during the progress of the planetable triangulation control scheme. Therefore, in this section, the planetable was merely set up at these points and the shoreline rodged in therefrom. In a few cases, it was necessary to make a side setup to obtain shots on features otherwise hidden, but where this was necessary, the auxilliary setups were checked by resection on existing known points.

On the northern end of the sheet, a traverse was begun at SPIRE and extended along the top of the bluff to locate by cuts points on the beach for control. Sop and Ras were thus located at the beginning of the traverse, and from Sig, the position of which was checked by resection on JUPE and END, a cut was obtained to topo signal Nog. The planetable was then set up at Nog, oriented on Sig, and resection obtained on Sop and END. From this point, a traverse was run along the beach, checking in on Sop in passing, and closing on One, which was one of the stations located by the planetable scheme run up the west side of the island. A flat closure was obtained at both Sop and One.

On the southern end of the sheet, a traverse was begun at White, which had been located by planetable triangulation and checked by setting up the planetable at the station, orienting on Pat, and resecting on Les (this procedure amounting to measuring the third angle of the triangle White - Pat - Les). This traverse was extended along the beach to Set₂, closure being made on No, which had been previously located by theodolite cut from KNOB and planetable cuts from Flag and

Fig. The position of Set₂ was checked by a measured distance to No and resection on KNOB and PINN, in conjunction with a back azimuth to Flag. KNOB had previously been occupied with a theodolite and cuts obtained to Flag and all whitewashes to the eastward. These cuts, when plotted on the sheet with a 3-arm steel protractor, checked the positions of these stations as determined by planetable.

It is to be noted that the above method of tying in this traverse was not all that could be desired, but due to the difficulties of establishing a control station on the beach in the vicinity of KNOB, a special method applicable to the situation was necessary. Since resection on all stations located along the traverse from the position of Set₂ as determined above checked their positions, it is felt that the traverse is adequately tied in to existing control.

With reference to the special methods found necessary for the accomplishment of this survey, attention is called to the fact that this area of Yunaska Id. was particularly difficult to cover with any sort of survey. As stated before, there was, at the time the work was in progress, no control on the west side. On the southern side, the two stations available were so placed that they were practically useless. BOLD would not see the beach at all from Ski to the eastward, and could not be used. Hence the establishment of White. KNOB was 510 feet high, at the top of a sheer bluff, thus it was impossible to tie into that station. This necessitated the establishment, by planetable methods, of a tie in station at the foot of the bluff. Since the cut from KNOB (theodolite) checked the planetable position of Flag, which had been located by traverse run from White (2nd set-up after White), it was felt that that station had been located with sufficient accuracy to warrant consideration of cuts therefrom as good. By means of the cuts from Flag and KNOB, the position of ~~Set~~ was determined, and subsequent available checks proved the adequacy of this method of location.

A similar situation was encountered on the northern end of the sheet, where it was necessary to run two traverses to cover the area-- the first along the top of the bluff, where control was available, to establish control on the beach by which to govern the second.

Attention is also called to the fact that this area was particularly dangerous, by reason of continuous heavy westerly and south-westerly seas pounding on the beach. These seas, in conjunction with swift tidal currents, resulted in heavy tide rips, particularly in the vicinity of topographic signals White and Ski, and around the northern end of the work. Safe landings could be made at only two or three places along the beach under these conditions, which necessitated long hikes and heightened the possibilities of the party not being able to get off the beach at the end of the day. Rodding in the shoreline and rocks was particularly dangerous, due to the heavy surf, which at some places, on a fairly calm day (for that locality) was hurled 50 to 100 feet in the air. Thus work was feasible only on the calmest of days, of which there were very few during August

and September. Heavy fogs and misty rain, which would close in with no warning whatever, also complicated the progress of the survey. It was only due to the exercise of the greatest care that the work was accomplished without accident.

Attention is also called to the fact that if air photos of this area had been available, the work would have been considerably simplified, and much of the dangerous landings eliminated. It is felt that this sheet could have been finished in a fraction of the time actually taken, thus effecting a considerable saving in money, and a great lessening of the dangers encountered by the party doing the work. It is highly recommended that air photos be secured of the areas to the westward before work is continued in that direction.

FORM LINES:

The form lines in the central part of the sheet were determined during the progress of the scheme of planetable triangulation. On the north and south ends, however, where high cliffs prevented seeing inshore, elevations were obtained by cuts from the ship while lying well offshore, and the form lines drawn in accordingly.

LANDMARKS:

There are no landmarks for charts on this sheet.

COMPARISON WITH PREVIOUS SURVEYS:

There were no previous surveys available for comparison.

JUNCTIONS:

This sheet joins topographic sheet field No. 4 -40, EXPLORER, Register No. T6751. A satisfactory junction was affected at Nog and PINN.

GEOGRAPHIC NAMES:

No new geographic names were assigned to features on this sheet.

ANCHORAGES:

No anchorages were found on this sheet.

MAGNETICS:

Magnetic observations with the declinatoire were obtained at eight places along the shoreline. It will be noted that at Bur and White, there is considerable local attraction apparent, though the area between these stations seems to be normal.

Observed magnetic variation at Bur is 8° less than charted variation. Other observations ranged from -2° to $+6^{\circ}$ from charted variation.

Compass declinometer observations were obtained in 1939 at either KING or JUPE by the party on the PIONEER; but it is recommended that a further magnetic survey of the western end of the island be made to determine the extent of the area affected by local attraction. No compass declinometer was available on this vessel for such a survey during the season 1940.

A separate report on standardization of the declinatoire used is attached.

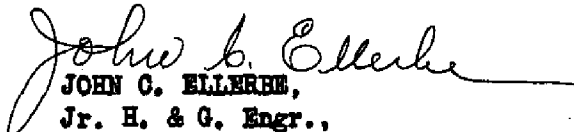
DATUM:

The datum used on this sheet is Unalaska 1901, partially adjusted.

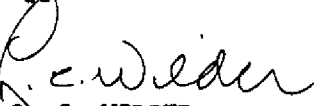
STATISTICS:

Statute miles of shoreline	23.5
Area in square statute miles	18.9
Numbers of elevations obtained	103

Respectfully Submitted:


JOHN C. ELLERBE,
Jr. H. & G. Engr.,
U. S. Coast and Geodetic Survey.

Approved and Forwarded:


L. C. WILDER,
H. & G. E., Ch. of Pty.,
Comdg., M.V. "E. LESTER JONES".

REPORT

ON

STANDARDIZATION OF DECLINATOIRES

Season 1940

W.V. "E. LESTER JONES"

L. C. WILDER, COMMANDING

During the field season 1940, while working on projects HT-216 and HT-247, the two declinatoires aboard this vessel were standardized in accordance with instructions.

The spring standardization was made at the Sitka Magnetic Observatory, on April 18, 1940. The azimuth of the mark was obtained from the magnetic observer there. Complete computations for the error of the two instruments were made. It will be noted that declinoire No. 172 was slightly sluggish.

The fall standardization was made at the newly established station at Lincoln Park, Seattle, Washington, the line from the station to Alki Point Light being used for reference. No magnetic values for the station are known, therefore the computations are being submitted unfinished. It will be noted that declinoire No. 172 was again found sluggish.

Four readings were taken for the standardization of each instrument. The angles made with the true azimuth line were then scaled with a steel protractor, and the four values meaned. The resulting mean angle was applied to the true azimuth of the mark in each case to determine the value of magnetic north by declinoire. The true variation was then applied to this value to determine the error of the instrument concerned.

Declinoire No. 172, which is obviously out of order, is being returned to the office and requisition for replacement has been made.

Following are the computations for each standardization:

(1). SITKA MAGNETIC OBSERVATORY--April 18, 1940.

Declination	29° - 57' E.
Diurnal Variation	<u>402'</u>
Actual Variation	29° - 59' E.

	Declinatoire C.L. Berger & Sons(A) (10:25 a.m.)	Declinatoire # 172 (10:30 a.m.)
Asimuth of mark	172° - 36' True	172° - 36' True
Mn. angle measured (4)	<u>142° - 39'</u>	<u>141° - 31'</u>
Magnetic North by declinatoire	29° - 57'	31° - 05'
Actual Variation	<u>29° - 59'</u>	<u>29° - 59'</u>
Declinatoire Error	-02'	+1° - 06'

(2). LINCOLN PARK, SEATTLE, WASHINGTON--October 12, 1940.

*Found unsuitable
for standardization
purposes.*

Declination

Diurnal Variation

Actual Variation

	Declinatoire C.L. Berger & Sons(A) (1:08 p.m.)	Declinatoire # 172 (1:04 p.m.)
Asimuth of Mark	342° - 37' True	342° - 37' True
Mn. Angle measured (4)	<u>40° - 42'</u>	<u>39° - 53'</u>
Magnetic North by declinatoire	<u>23° - 19'</u>	<u>22° - 30'</u>
Actual Variation		
Declinatoire Error		

The values which are unknown are to be filled in by the Office and computations completed.

Respectfully Submitted:

John C. Ellerbe
J. C. ELLERBE,
Jr. H. & G. Engr.
U. S. Coast and Geodetic Survey

Forwarded; Approved:

L. C. Wilder
L. C. WILDER,
H.A.G.E., Ch. of Pty.,
Comdg., N.V. "E. LESTER JONES".

Forwarded
Scott Beane
Officer in Charge,
Seattle Processing Office

POST-OFFICE ADDRESS: Ship PIONEER, Box 1197, Oakland, Calif.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

C O P Y

DEPARTMENT OF COMMERCE

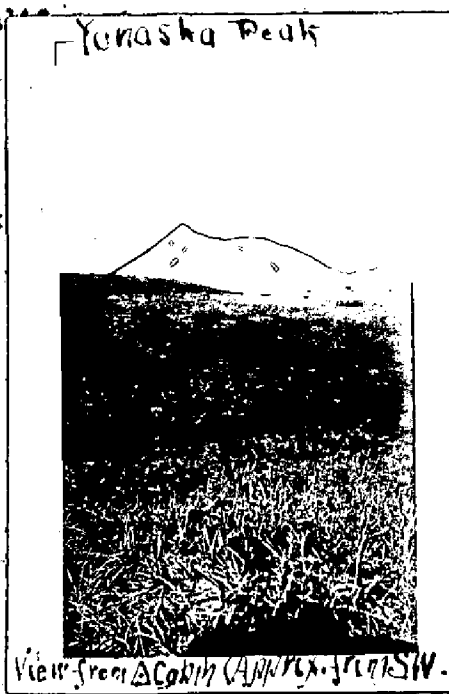
U. S. COAST AND GEODETIC SURVEY

February 15, 1941

To: George L. Bean,
Officer in Charge,
Seattle Processing Office,
Seattle, Wash.

From: Commanding Officer,
U S C & G S PIONEER,
Oakland, Calif.

Subject: Intersection station YUNASKA PEAK.



In reply to your letter of February 14, please be advised that there is no copy of the description for intersection station YUNASKA PEAK available here. This description was written in 1938, and stated only that the point observed was the highest point of the highest peak on the west end of Yunaska Island. A print is enclosed showing this peak as it appears from the cabin in the vicinity of triangulation station CABIN.

The geographic position furnished was computed from stations FLAT and EASY, and is a no-check position. Other triangles could be computed based on the lines EASY - AMUKTA, FLAT - AMUKTA and ULIAGA - CONCORD. These triangles were not computed in the field since the triangle from the eastward was very weak, covered several figures of the main-scheme, and would be based on an inverse. The triangulation to the westward of Yunaska Island was not directly connected but was based on an inverse between END and BOLD. It was felt that these additional triangles would not serve as checks at least until after the main-scheme was adjusted.

The cuts to Yunaska Peak from FLAT and EASY were taken in three positions. The point observed on was the definite high point as seen from these directions, and there was no question in the observers mind as to the points being identical from both stations. The elevation of the peak as determined by vertical angles from station EASY is 3130 feet.

(Signed)

Wm. D. Patterson
Lient. Comdr. C. & G. S.
Commanding Ship PIONEER.

C O P Y

Remarks.

Decisions

1		525705 0.56B
2		"
3	For title	
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. **T6752**

GEOGRAPHIC NAMES											
Survey No. T6752											
Name on Survey											
		A,	B,	C,	D	E	F	G	H	K	
Yunaska Island											1
Yunaska Peak											2
Islands of Four											3
Mountains											4
Names underlined in red approved											5
by L. * Heck on 3/20/42											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

M 234

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~PHOTOSTAT OF~~

No. H
~~192001x~~

No. T

T6752

(Confidential)

received Mar. 3, 1941
registered Mar. 5, 1941
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓	HHC	Pages 2 and 3
26			
30			
40	✓	OWS	Pages 5 and 6
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

✓ JBR

< }

CONFIDENTIAL

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF TOPOGRAPHIC SURVEY

REGISTER NO. T-6752

Field No. J-40

Aleutian Islands, Islands of Four Mountains,
West End Yunaska Island
Surveyed August - September 1940, Scale 1:20,000
Instructions dated February 3, 1938

Plane Table Survey

Aluminum Mounted

Chief of Party - L. C. Wilder
Surveyed by - John C. Ellerbe
Inked by - John C. Ellerbe
Reviewed by - R. H. Carstens
Inspected by - H. R. Edmonston

1. Junctions with Contemporary Surveys

A satisfactory junction was made with T-6751 (1940)
on the east.

2. Comparison with Prior Surveys

No prior surveys of the area have been made by this
Bureau.

3. Comparison with Chart 8802 (Latest print date 1-29-42)

The topography shown on the chart originates with
miscellaneous sources and is from 0 to 3 miles out of
position. The present survey should supersede the
charted topography.

4. Condition of Survey

a. Topography

The inking of the shoreline and other topographic
features was very well done.

b. Magnetic Meridians

(See descriptive report)

5. Compliance with Instructions

Satisfactory.

6.. Additional Field Work Recommended

None.

7. Superseded Surveys

None.

Examined and approved:



Chief, Surveys Section



Chief, Division of Charts



Chief, Section of Hydrography



Chief, Division of Coastal
Surveys