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| Form 504 | |
| DEPARTMENT OF COMMERCE | |
| U. S. COAST AND GEODETIC SURVEY | |
| State: <u>Washington</u> | |
| <small>11-5613</small> | |
| DESCRIPTIVE REPORT. | |
| Topographic | Sheet No. <u>4182</u> |
| LOCALITY: | |
| <u>Strait of Juan de Fuca</u> | |
| <u>Crescent Bay to Deep Creek</u> | |
| | |
| | |
| | |
| 1926 | |
| CHIEF OF PARTY: | |
| <u>H.A. Cotton</u> | |

DESCRIPTIVE REPORT
to accompany
TOPOGRAPHIC SHEET NO 4182
(Field Letter "A")

CRESCENT BAY

to

DEEP CREEK

STRAIT OF JUAN DE FUCA - WASHINGTON

April-May
1926

Scale : 1 : 20,000

AUTHORITY -

The topography was executed in accordance with Instructions to the Commanding Officer of the Motor Vessel NATOMA, dated March 4th, 1926.

LIMITS -

This sheet covers the shore line of the south shore of Juan de Fuca Strait from Striped Peak to Deep Creek on the West. The eastern portion of the sheet includes Crescent Bay and Agate Bay. The longitude limits are from $123^{\circ} 41'$ to $124^{\circ} 01.5'$. The work also includes a fringe of hills, roads, railroads and streams extending on an average of about $3/4$ mile back from shore.

CONTROL -

Five recovered triangulation stations and a sixth one recovered with sufficient accuracy for topographic survey furnished the control. Triangulation Stations Tongue Point Boundary Monument, Cliff, Breakwater, Lyre, and Dode were recovered. Triangulation Station Twin Rivers has been lost due to erosion but a reference mark two meters distant was recovered and a topographic signal located from it.

ELEVATIONS -

Elevations are to surface of ground. On striped Peak and the hills on the south shore of Crescent Bay and those back of Triangulation Stations Lyre and Twin Rivers the elevations are uncertain due to the height of trees being estimated. These places are indicated on the sheet by giving the estimated height of trees.

Attention is called to the two rocks about ~~280~~ ⁵⁶⁰ and ~~460~~ ⁹²⁰ meters west of Triangulation Station Lyre on which the heights 3' and 4' respectively are shown. These elevations are above mean high water as these are islands not covered by high water. E.P.

METHODS -

The shore line was surveyed by plane table traverse by Carl I. Aslakson.

Owing to the impossibility of obtaining sufficient elevations and other detail from this traverse because of cliffs and trees which obscured the view auxilliary traverses were run along portions of the roads and railroads by M. O. Witherbee. Portions of these traverses were run with magnetic orientation and tied in whenever possible to objects located from the main traverse.

The detail around Crescent Bay extending east to signal Black was run on the main sheet by C. I. Aslakson. A magnetic traverse was run south from Crescent Bay on the Joyce Road and this was not tied in at the end.

Mr. Aslakson also ran a magnetic traverse along the unimproved road from Station Lyre to the Lyre River Bridge on the Pysht Highway and covered the portion of the highway to the eastward of its junction with this road.

METHODS - (Continued)

About 1/3 of the highway near Twin Rivers and a short traverse from the beach to the Railroad "Y" at Twin Rivers was also run on the main sheet. To supplement the elevations determined from the beach along the portion of shoreline from signal Black to Station Lyre a number of sextant cuts were taken from anchored positions of the ship by Mr. Witherbee. These elevations were computed, plotted and transferred to the main sheet.

Following is a list of traverses :

---MAIN TRAVERSES---

| <u>Location</u> | <u>Dist. (St. Mi.)</u> | <u>Closures meters</u> | <u>Run by</u> |
|-----------------------------------|------------------------|------------------------|---------------|
| Station Mon to Station Breakwater | 2.0 | 2 | C. I. A. |
| " Breakwater to " Lyre | 4.9 | 21 | C. I. A. |
| " Lyre " " Twin Rivers | 6.0 | 16 | C. I. A. |
| " Twin Rivers " " Dode | <u>4.1</u> | <u>6</u> | C. I. A. |
| Total length of traverses | 17.0 | | |
| Average " " " | 4.25 | | |
| Average closure per mile | | 2.6 | |

--- AUXILIARY TRAVERSES ---

| | | | |
|--|------------|-------|----------|
| * Signal Post inland along Joyce Road | 1.2 | -- | C. I. A. |
| * Trail from Signal Post to Agate Beach | 0.4 | -- | C. I. A. |
| * Along unimproved road from Station Lyre to Pysht Highway Bridge | 1.2 | -- | C. I. A. |
| * Short traverse to Railroad "Y" from Station Twin Rivers | 0.4 | -- | C. I. A. |
| From Pysht Highway Bridge back of Station Lyre to Station Twin Rivers along railroad and highway : | | | |
| <u>Tie-in points -</u> | | | |
| To Shingle Mill near Murdock Creek | 1.2 | ** 10 | M. O. W. |
| " First Flag | 1.5 | ** 10 | M. O. W. |
| " Second Flag | 2.0 | ** 5 | M. O. W. |
| " Station Twin Rivers | <u>1.3</u> | ** 5 | M. O. W. |
| Total length of traverse | 6.0 | | |
| From junction with main beach traverse at mouth of West Twin River, along west side of river via Pysht Highway and Logging Railroad, around to Railroad "Y" at Twin Rivers | 1.5 | 10 | M. O. W. |
| Along C. M. & St. P. Railway from "Y" to junction with Pysht Highway | 1.5 | 20 | M. O. W. |

* - Magnetic traverse, no closure.

** - Rather large azimuth error due to many short shots but azimuth error swung in.

CHARACTER OF SHORE LINE -

The coast line at Tongue Point, Crescent Head and extending about one mile west of the western end of Agate Bay is rocky with reefs of outcropping bed rock. The rest of the shore line excepting Crescent Bay and Agate Bay has cobblestone or boulder beaches.

Crescent Bay has a sand beach and Agate Bay a shingle beach.

About 200 meters east of Whiskey Beach there is a fair shingle beach but numerous boulders scattered below the high water mark make landing difficult in heavy weather.

Along the rest of the shore line landing is very difficult if there is any sea running as boulders cause the seas to break heavily from 200 to 500 meters offshore.

The low water mark from a point about 2 miles east of Station Lyre to Station Dode is very indefinite. The shoal area consists mostly of shale bed rock covered thickly with all sizes of boulders of a harder material. Owing to the unfeasibility of locating all of these rocks accurately the topographer located the outermost ones by intersection or rodding and sketched in the others. On all these outermost rocks the heights which they bare, were obtained by noting in the field the date, time and height bared. Considerable care was taken with this work and all of the low water line was run at or within an hour and a half of low water. A number of extra set ups were taken solely for the determination of the low water mark or of rocks awash.

Of the area shown within the low water mark, not all of it bares, small areas being covered with from a few inches to a foot of water.

Kelp extends from 1/4 to 1/2 mile offshore over the entire length of shore line to the westward of Station Lyre. This fringe of kelp extends well outside the rocks which bare.

DESCRIPTION OF COUNTRY -

The greater portion of the hills have been logged and are covered by a scattering second growth and bush. The hills back of Twin Rivers are being logged at the present time. A convention of stumps has been used to indicate cut-over land.

The main road shown is known as the Pysht Road. It runs from Port Angeles to Pysht and is the main country highway.

The road running inland from Crescent Bay is a country road connecting with the Pysht Road at Joyce, about 2 miles inland.

Communication between points on the highway and Port Angeles is maintained by bus lines out of Port Angeles.

The C. M. & St. P. Railway extends only as far as Twin Rivers. The logging railroad continues on to the westward. Tri-weekly trains are run over the Milwaukee.

There are no stores or post offices within the area covered by the sheet, though there is a store and post office at Joyce.

The main industry is logging but numerous small farms are springing up in the area cleared.

PROMINENT OBJECTS AND RECOVERABLE POINTS -

Four stations, Ag, Rock, Stone and Reef were marked.

There are few prominent objects within the limites of the sheet with the exception of the railroad cuts between Lyre and Twin Rivers and the series of cliffs just west of Agate Bay. All of these are covered by descriptions or lists of topographic stations.

The tree marked prominent tree on Crescent Head is the largest tree on the point but at certain angles becomes confused with other trees. The face of the cliff here is steep and therefore tangents to the point are very definite.

GEOGRAPHIC NAMES -

The local name of the small bay just west of Crescent Bay is Agate Bay.

It is recommended that the name "Crescent Head" be given to the western point of Crescent Bay. This head of land is prominent when viewed from along shore and therefore should be named. X

BAYS AND ANCHORAGES -

The only bay that furnishes any protection is Crescent Bay. This offers good shelter for small craft in all but very heavy weather.

Care should be taken to avoid the broken off piles shown on the sheet. At present there is a pile standing near the outer end of this row but it is eaten by teredos and may be lost at any time. Broken off piles which just bare at low water extend from a point 10 meters outside this pile, all the way to shore.

This bay has a sand beach except for portions of the small cove on the western side.

Agate Bay has a steep shingle beach. There are rocks in the bay and 3 fathoms may be carried to within 100 meters of shore.

The cove between the two shoals formed by the Twin Rivers offers fair shelter for small boats and has a good shingle beach. About 4 fathoms can be carried within 100 meters of beach.

CHANGES AND DISCREPANCIES BETWEEN THIS AND PREVIOUS SURVEYS -

The point at Station Twin Rivers is eroding slowly and the station has been washed away. This change is slow, the point having cut back about four meters in 34 years.

In the bight about 1/3 mile to the eastward of Station Twin Rivers the cliff is very evidently cutting away over a stretch of several hundred meters. A comparison with the last survey shows that it has cut back about 12 meters.

The point of land about 1 mile to the eastward of Station Dode was found to be in error on the previous survey by about 40 meters the high water mark being about 40 meters farther north than was shown on the bromide. This discrepancy was carefully checked by tangents taken from both Station Lyre and Station Dode. The high water mark and tree line are coincident and very definite on this point.

LIST OF PLANE TABLE POSITIONS-

- 7 -

| Object & Description | Latitude | | Seconds | | Height ft. | Remarks |
|---|----------|----|---------|--------|---------------|--|
| | & | | in | Meters | | |
| | o | ' | | | | |
| <u>STONE</u> - recoverable, inconspicuous boulder | 48 | 09 | 1837 | 795 | 1 | Marked Note 3. Described form 524. |
| <u>TIP</u> - highest cliff between Lyre & Twin Rivers | 48 | 09 | 970 | 00 | 303 | Described form 524. |
| <u>STONE</u> - recoverable inconspicuous boulder | 48 | 09 | 1307 | 980 | 1 | Marked Note 3. Described form 524. |
| <u>ROCK</u> - westernmost of 3 large boulders | 48 | 09 | 690 | 969 | 6 | Marked Note 3. Described form 524. |
| <u>SHINGLE MILL</u> - north gable | 48 | 08 | 1690 | 760 | 230 | group of small buildings to westward. |
| <u>LIGHT</u> - Low point | 48 | 09 | 1158 | 645 | -- | Post light, two small buildings, whitewash. |
| <u>GRAY</u> - diamond shaped patch in rock cliff face | 48 | 09 | 1065 | 1055 | -- | Described form 524. |
| <u>BLACK</u> - conical black boulder | 48 | 09 | 1269 | 431 | 8 | Recoverable not marked Described form 524. |
| <u>BOTTOM</u> - of sharp ravine | 48 | 09 | 1300 | 1030 | 60 | Described form 524. |
| <u>AG</u> - point of sharp ledge, east side of Agate Bay | 48 | 09 | 1641 | 65 | 6 | Marked Note 3. Described form 524. |
| <u>TREE</u> - large tree, Crescent Head | 48 | 09 | 1719 | 856 | -- | Described form 524. |
| <u>PILE</u> - lone pile, west side of Crescent Bay | 48 | 09 | 1309 | 554 | -- | Only standing pile of old wharf. Worn thin by Teredos. |
| <u>BARN</u> - Crescent Bay, north gable | 48 | 09 | 788 | 456 | -- | Described form 524. |
| <u>CHIM</u> - Chimney in yellow house east side, Crescent Bay | 48 | 09 | 1271 | 428 | -- | Described form 524. |

CHANGES AND DISCREPANCIES BETWEEN THIS AND PREVIOUS SURVEYS - (Continued)

The short stretch of shore line about 1/4 mile to the westward of Station Breakwater was found to vary from that shown on the bromide of the previous survey, and was carefully checked to assure its accuracy.

Tongue Point was found to agree with the 1 - 1000 bromide of the boundary survey and therefore was not inked in on this sheet as more detail can be obtained from the larger scale.

STATISTICS

| | |
|--|-----|
| Statute miles shoreline - highwater | 17 |
| " " " low-water line | 16 |
| " " creeks, sloughs, etc. | 10 |
| " " roads, railroad, etc. | 18 |
| Area - square statute miles | 14 |
| Number of Elevations | 110 |
| Also 28 rocks. | |
| Number of Elevations per Square Statute Mile | 8 |
| Number of Recoverable Stations | 12 |
| Triangulation | 4 |
| Plane Table | 8 |
| Positions occupied | 165 |

Examined, approved and forwarded,

Respectfully submitted,

Harold A. Cotton

HAROLD A. COTTON,
Hyd. & Geo. Engineer
C. & G. Survey
Commanding M. V. NATOMA

Carl I. Aslakson

CARL I. ASLAKSON,
Jr. Hyd. & Geo. Eng'r.
C. & G. Survey

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO NO. 11-DEM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

February 18, 1927.

SECTION OF FIELD RECORDS

Report on Topographic Sheet No. 4182

Crescent Bay to Deep Creek, Strait of Juan de Fuca.

Surveyed in 1926

Instructions dated March 4, 1926 (NATOMA)

Chief of Party, H. A. Cotton.

Surveyed by C. I. Aslakson and M. O. Witherbee.

Inked by C. I. Aslakson.

1. The records as well as the plan and character of the survey conform to the requirements of the General Instructions.
2. The plan and extent of the survey satisfy the specific instructions.
3. The junctions with the adjoining sheets are satisfactory.
4. No further surveying is required.
5. The character and scope of the surveying and field drafting are good.
6. Reviewed by E. P. Ellis, October, 1926.

Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

4182

The finished Topographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey. Δ

Register No. 4182

State Washington
General locality Strait of Juan de Fuca
Locality Crescent Bay to Deep Creek
Chief of party Harold A. Cotton
Surveyed by Carl I. Aslakson & M. O. Witherbee
Date of survey April - May, 1926
Scale 1 = 20,000
Heights in feet above M. H. Water
Contour interval . *100 . feet.

Inked by **Carl I. Aslakson** Lettered by . **Carl I. Aslakson** . .

Records accompanying sheet (check those forwarded): Photographs,

Descriptive report, Horizontal angle books, Field computations,
Recovery notes and descriptions of topographic stations.

Data from other sources affecting sheet

Remarks:

* **Except in a few instances where 50 foot contours were used.**