DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Alaska

DESCRIPTIVE REPORT
Topographic Sheet No. 4313
Hydrographic

LOCALITY
Kenai Peninsula
Southern part of Nuka Bay

1987
CHIEF OF PARTY
R.R. Lukens
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

State: S. W. ALASKA

DESCRIPTIVE REPORT.

Topographic Sheet No. [ ]

Locality:
Nuka Bay southern part

1927

Chief of Party:
R. R. Lukens
Descriptive Report to Accompany Topo. Sheet No. "3d"

This survey was executed by the party on the launch "Wildcat" under instructions issued to the Commanding Officer of the Str. SURVEYOR dated February 3rd, 1927.

General Description. This sheet covers the southern part of Nuka Bay and is bounded on the western side by the eastern coast of Nuka Island, and on the eastern side by the Pye Islands. Two other topographic sheets, completed this season, join this sheet to northward and cover the East and West Arms of Nuka Bay.

Pye Islands are three rugged, mountainous islands, densely wooded on the lower slopes. Pye Island, the outermost island, has a prominent peak, 1316 feet high, at its eastern end. This peak forms a ridge in an east and west direction, the top of which is covered with huge granite blocks. The top of this ridge is bare of trees, but the remainder of the island is thickly wooded. The eastern end of Pye Island was surveyed at high water, during a calm sea, and the breakers mentioned in the Coast Pilot were not seen. Pye Island reef is well described in the Coast Pilot.

Rabbit Island, the second island of the group, is densely wooded throughout. The eastern shore of the island is rugged and broken, and being exposed to the open sea, makes landing impossible, except in a very smooth sea.

Crooked Island, the innermost island of the group, is only shown in part on this sheet. The remainder of the island is shown on topographic sheet (field letter) "E". The highest mountain on this island, A Ked, is 1587 feet high and is quite prominent from the eastward.

Wildcat Pass is a good navigable pass lying between Crooked and Rabbit Islands. Kitten Pass, good only for small launches in a smooth sea, lies between Rabbit and Pye Islands. These passes are described in detail in the Descriptive Report of the hydrographic sheet of this area.

Nuka Island is 7-1/2 miles long and about 3-1/2 miles wide. The western shore of this island borders on Nuka Island Pass and is sketched on topographic sheet (field letter) "L". The eastern shore of Nuka Island is bold and rocky. The only important indentation in this shore is at Island Cove, which affords anchorage for small boats in fair weather only. The northern half of the island is thickly wooded in the valleys and on the lower slopes of the mountains. The southern half of the island is grass-covered and the eastern shore rises precipitately to the mountain top and is of bare shale and talus formation.

South Point, the southern point of Nuka Island, is fairly prominent. This point is formed by a projection of land about one mile long and 5/8 miles wide with a peak 755 feet high near its center. This point is connected with the main part of the island by a fairly low, narrow neck of land so that, from a distance, the point resembles a large high
island, with a fairly regular slope to the water. The eastern and southern shores of this point rise in sheer rock cliffs, making a landing impossible.

**Inshore Dangers.** South Rock, lying nearly 1/2 mile, 180° true from the southern tip of South Point, is the most outlying danger found off this point. The rock shows about 3 feet above high water, but breakers wash clear over it in a moderate swell at high water. Numerous other rocks lie all along the eastern shore of Nuka Island, extending from 1/8 to 3/8 miles off shore. Pinnacle Rock, 66 feet high, is the most prominent landmark along this shore. Reefs extend inshore from this rock, but deep water lies close offshore. The rock is in the shape of a cone with the tip pointing off shore, and is so steep that it is impossible to climb it. Nuka Island Reef is formed by two large rocks, 25 and 30 feet high, and is very prominent. Deep water lies close outside these rocks.

Numerous rocks lie close inshore around the Pfei Islands, all of them showing at all stages of the tide, or being well marked by kelp. Strong tide-rips were noticed to eastward of the eastern point of Pfei Island, and since this area was not surveyed, by hydrography, it should be given a good berth.

**Landmarks.** Most of the locations listed on the List of Plane Table Positions, attached herewith, are of prominent objects which can be used by future hydrographic parties completing the surveys of this area to southward. It is believed that there are enough of these listed, so that no additional topographic work will be necessary. These are all natural objects of sufficient prominence, so that they will require no additional signals. The objects listed on Form #567 are only those objects of sufficient prominence for charting.

**Survey Methods.** Along the eastern coast of Nuka Island, there were frequent triangulation stations, which furnished excellent control. A plane table traverse was begun at Station TREZ and carried southward along the coast. The triangulation stations were so close together, here, that the closing error was very small. This traverse was extended to O Sharp, inshore from Pinnacle Rock. Southward from here, it was impossible to land anywhere with a plane table and points and signals were cut in from a launch by sextant fixes and the shore between was sketched in. The most prominent rocks were also located by sextant cuts, but many of the inshore rocks were only spotted in their apparent position. This portion of the coast is so foul, that no vessel should attempt to approach it close and it is believed that all the important or outermost rocks are correctly located. The inshore hydrography was not done southward of Pinnacle Rock so there was no hydrographic check of this topography.

The locations and elevation of the peaks at the northern end of Nuka Island were determined by plane table methods, good checks being obtained in most cases. The mountains in the central and southern part of the island were obscured by clouds at all times while the topography was in progress. These locations and elevations were determined by sextant cuts.
taken by the hydrographic party. All locations and elevations were approximately checked by photographs taken from the hydrographic launch at frequent intervals along the coast.

Since there were no shore triangulation stations on the Pye Islands, within the limits of this sheet, it was necessary to start this topography by a three-point fix. Since the alidade would not reach to the stations on Nuka Island, the fixes were taken by sextant, and plotted with a steel protractor. Signals Hump, Rab and Gran were located by excellent fixes on triangulation stations Tree, Nuka Island Reef, and South Rock; the location of Gran being checked by cuts to Pye and Pye Island Reef, and the location of Hump being checked by a cut to Pye. From these points the topography was extended around the island by a combination of traverse and plane table triangulation, with check cuts to As Pye, Ked, Crook and Hoof. All locations and elevations of peaks on the Pye Islands were determined by usual plane-table methods. At Rex, where the survey ended, a standard disc topographic mark was cemented in the rock.

Pye Island and the southern shore of Rabbit Island was surveyed by H. O. Westby, Aid, and the remainder of the sheet was surveyed by Wm. D. Patterson, H & G Eng.

New Place Names. Of the Pye Islands, only Pye Island had previously been named. The field party named the other two islands, Rabbit Island and Crooked Island, on account of their shape. There are no local names in use for these islands.

Wildcat Pass and Kitten Pass have no local names and these names are suggested by the field party.

In the absence of a local name the field party suggests Island Cove as an appropriate name for the small bight on the northeastern side of Nuka Island.

The names Nuka Island Reef, Pinnacle Rock, South Rocks, and South Point are also suggested by the field party as appropriate names. There are no local names for these objects.

Respectfully submitted,

[Signature]
Wm. D. Patterson
H & G Eng., C & G Survey

Approved
[Signature]
P. J. Eber

Inspected and found adequate
[Signature]
P. E. E., Mar. 1928
## PLANE TABLE POSITIONS

<table>
<thead>
<tr>
<th>Objects &amp; Descriptions</th>
<th>Lat.</th>
<th>D.M.</th>
<th>Long.</th>
<th>D.P.</th>
<th>Height</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>O Rex d.m.</td>
<td>59</td>
<td>24</td>
<td>197</td>
<td>150</td>
<td>924</td>
<td>30</td>
</tr>
<tr>
<td>Flat rock (O Kin)</td>
<td>59</td>
<td>23</td>
<td>0</td>
<td>150</td>
<td>262</td>
<td>20</td>
</tr>
<tr>
<td>Clump of trees (O Chow)</td>
<td>59</td>
<td>21</td>
<td>158</td>
<td>150</td>
<td>408</td>
<td>80</td>
</tr>
<tr>
<td>Shaft of rock (O Thumb)</td>
<td>59</td>
<td>20</td>
<td>939</td>
<td>150</td>
<td>55</td>
<td>125</td>
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<tr>
<td>Granite rock (O Ice)</td>
<td>59</td>
<td>20</td>
<td>706</td>
<td>150</td>
<td>412</td>
<td>70</td>
</tr>
<tr>
<td>Granite rock (O Gran)</td>
<td>59</td>
<td>20</td>
<td>824</td>
<td>150</td>
<td>192</td>
<td>82</td>
</tr>
<tr>
<td>Black Pinnacle rock</td>
<td>59</td>
<td>19</td>
<td>532</td>
<td>150</td>
<td>28</td>
<td>20</td>
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<tr>
<td>Largest of two grassy</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>pinnacle rocks</td>
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<td>18</td>
<td>1742</td>
<td>150</td>
<td>322</td>
<td>35</td>
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<tr>
<td>High brown point</td>
<td>59</td>
<td>18</td>
<td>874</td>
<td>150</td>
<td>743</td>
<td>75</td>
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<tr>
<td>High dark point</td>
<td>59</td>
<td>18</td>
<td>225</td>
<td>150</td>
<td>214</td>
<td>80</td>
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<tr>
<td>Grassy hump</td>
<td>59</td>
<td>17</td>
<td>1819</td>
<td>150</td>
<td>227</td>
<td>100</td>
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<td>Outermost of two bare</td>
<td>59</td>
<td>17</td>
<td>773</td>
<td>150</td>
<td>133</td>
<td>3</td>
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<td>points on reef</td>
<td>59</td>
<td>17</td>
<td>684</td>
<td>150</td>
<td>800</td>
<td>2</td>
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<td>Flat bare rock</td>
<td>59</td>
<td>17</td>
<td>387</td>
<td>150</td>
<td>456</td>
<td>80</td>
</tr>
<tr>
<td>High square rock with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>perpendicular sides</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
LANDMARKS FOR CHARTS

Director
U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

<table>
<thead>
<tr>
<th>Description</th>
<th>Position</th>
<th>Method of determination</th>
<th>Charts affected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Latitude</td>
<td>Longitude</td>
<td>Datum</td>
</tr>
<tr>
<td></td>
<td>D. M. meters</td>
<td>D. P. meters</td>
<td></td>
</tr>
<tr>
<td>Nuka Id. Reef</td>
<td>59.21</td>
<td>244.8</td>
<td>150 36 224.5</td>
</tr>
<tr>
<td>Pinnacle Rock</td>
<td>59.19</td>
<td>275.2</td>
<td>150 39 484.3</td>
</tr>
<tr>
<td>South Rock</td>
<td>59.16</td>
<td>1510.8</td>
<td>150 43 474.0</td>
</tr>
<tr>
<td>Fye Id. Reef</td>
<td>59.18</td>
<td>1636.5</td>
<td>150 26 676.0</td>
</tr>
<tr>
<td>Bare granite rock, 82 ft. high (O Grani)</td>
<td>59.20</td>
<td>624.0</td>
<td>150 26 192.0</td>
</tr>
<tr>
<td>Bare granite rock, 70 ft. high (O Ice)</td>
<td>59.20</td>
<td>706.0</td>
<td>150 23 412.0</td>
</tr>
<tr>
<td>Mt. Peak (Δ Ked)</td>
<td>59.24</td>
<td>1066.8</td>
<td>150 23 830.6</td>
</tr>
</tbody>
</table>

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaffs and like objects are not sufficiently permanent to chart.
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. __________________________

REGISTER NO. 4313

State ________________________________

General locality ____________________________

Locality ________________________________

Scale 1:20,000  Date of survey July _______ Sept _______, 1927

Vessel ________________________________

Chief of Party ____________________________

Surveyed by ____________________________

Inked by ________________________________

Heights in feet above M. W. _______ to ground

Contour, Approximate contour Form line interval _______ feet

Instructions dated ____________________________

Remarks: ________________________________

February 3rd, 1927

____________________________